



Delphi API Reference

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1. Introduction

This manual is intended to be used as a reference for Yoctopuce Delphi library, in order to interface your code with USB sensors and controllers.

The next chapter is taken from the free USB device Yocto-Demo, in order to provide a concrete examples of how the library is used within a program.

The remaining part of the manual is a function-by-function, class-by-class documentation of the API. The first section describes all general-purpose global function, while the forthcoming sections describe the various classes that you may have to use depending on the Yoctopuce device being used. For more informations regarding the purpose and the usage of a given device attribute, please refer to the extended discussion provided in the device-specific user manual.

2. Using Yocto-Demo with Delphi

Delphi is a descendent of Turbo-Pascal. Originally, Delphi was produced by Borland, Embarcadero now edits it. The strength of this language resides in its ease of use, as anyone with some notions of the Pascal language can develop a Windows application in next to no time. Its only disadvantage is to cost something¹.

Delphi libraries are provided not as VCL components, but directly as source files. These files are compatible with most Delphi versions.²

To keep them simple, all the examples provided in this documentation are console applications. Obviously, the libraries work in a strictly identical way with VCL applications.

You will soon notice that the Delphi API defines many functions which return objects. You do not need to deallocate these objects yourself, the API does it automatically at the end of the application.

2.1. Preparation

Go to the Yoctopuce web site and download the Yoctopuce Delphi libraries³. Uncompress everything in a directory of your choice, add the subdirectory *sources* in the list of directories of Delphi libraries.⁴

By default, the Yoctopuce Delphi library uses the *yapi.dll* DLL, all the applications you will create with Delphi must have access to this DLL. The simplest way to ensure this is to make sure *yapi.dll* is located in the same directory as the executable file of your application.

2.2. Control of the Led function

Launch your Delphi environment, copy the *yapi.dll* DLL in a directory, create a new console application in the same directory, and copy-paste the piece of code below:

```
program helloworld;
{$APPTYPE CONSOLE}
uses
  SysUtils,
  yocto_api,
  yocto_led;
```

¹ Actually, Borland provided free versions (for personal use) of Delphi 2006 and 2007. Look for them on the Internet, you may still be able to download them.

² Delphi libraries are regularly tested with Delphi 5 and Delphi XE2.

³ www.yoctopuce.com/EN/libraries.php

⁴ Use the **Tools / Environment options** menu.

```

Procedure Usage();
var
  exe : string;

begin
  exe:= ExtractFileName(paramstr(0));
  WriteLn(exe+' <serial_number>');
  WriteLn(exe+' <logical_name>');
  WriteLn(exe+' any');
  halt;
End;

procedure setLedState(led:TYLed; state:boolean);
begin
  if (led.isOnline()) then
    begin
      if state then led.set_power(Y_POWER_ON)
                  else led.set_power(Y_POWER_OFF);
    end
  else Writeln('Module not connected (check identification and USB cable)');
end;

var
  c          : char;
  led        : TYLed;
  errmsg     : string;

begin

  // Setup the API to use local USB devices
  if yRegisterHub('usb', errmsg)<>YAPI_SUCCESS then
  begin
    Write('RegisterHub error: '+errmsg);
    exit;
  end;

  if paramstr(1)='any' then
  begin
    // use the first available led
    led := yFirstLed();
    if led=nil then
      begin
        writeln('No module connected (check USB cable)');
        halt;
      end
    end
  end
  else // or use the one specified on the command line
  led:= YFindLed(paramstr(1)+'.led');

  // make sure it is connected
  if not(led.isOnline()) then
  begin
    Writeln('Module not connected (check identification and USB cable)');
    halt;
  end;

  // minimalist UI
  Writeln('0: turn test led OFF');
  Writeln('1: turn test led ON');
  Writeln('x: exit');
  repeat
    read(c);
    case c of
      '0' : setLedState(led, false);
      '1' : setLedState(led, true);
    end;
  until c='x';

end.

```

There are only a few really important lines in this sample example. We will look at them in details.

yocto_api and yocto_led

These two units provide access to the functions allowing you to manage Yoctopuce modules. `yocto_api` must always be used, `yocto_led` is necessary to manage modules containing a led, such as Yocto-Demo.

yRegisterHub

The `yRegisterHub` function initializes the Yoctopuce API and specifies where the modules should be looked for. When used with the parameter '`usb`', it will use the modules locally connected to the computer running the library. If the initialization does not succeed, this function returns a value different from `YAPI_SUCCESS` and `errmsg` contains the error message.

yFindLed

The `yFindLed` function allows you to find a led from the serial number of the module on which it resides and from its function name. You can also use logical names, as long as you have initialized them. Let us imagine a Yocto-Demo module with serial number `YCTOPOC1-123456` which you have named "`MyModule`", and for which you have given the `led` function the name "`MyFunction`". The following five calls are strictly equivalent, as long as "`MyFunction`" is defined only once.

```
led := yFindLed("YCTOPOC1-123456.led");
led := yFindLed("YCTOPOC1-123456.MyFunction");
led := yFindLed("MyModule.led");
led := yFindLed("MyModule.MyFunction");
led := yFindLed("MyFunction");
```

`yFindLed` returns an object which you can then use at will to control the led.

isOnline

The `isOnline()` method of the object returned by `yFindLed` allows you to know if the corresponding module is present and in working order.

set_power

The `set_power()` function of the objet returned by `yFindLed` allows you to turn on and off the led. The argument is `Y_POWER_ON` or `Y_POWER_OFF`. In the reference on the programming interface, you will find more methods to precisely control the luminosity and make the led blink automatically.

2.3. Control of the module part

Each module can be controlled in a similar manner, you can find below a simple sample program displaying the main parameters of the module and enabling you to activate the localization beacon.

```
program modulecontrol;
{$APPTYPE CONSOLE}
uses
  SysUtils,
  yocto_api;

const
  serial = 'YCTOPOC1-123456'; // use serial number or logical name

procedure refresh(module:Tymodule) ;
begin
  if (module.isOnline())  then
  begin
    Writeln('');
    Writeln('Serial      : ' + module.get_serialNumber());
    Writeln('Logical name : ' + module.get_logicalName());
    Writeln('Luminosity   : ' + intToStr(module.get_luminosity()));
    Write('Beacon      :');
    if  (module.get_beacon()=Y_BEACON_ON)  then Writeln('on')
                                              else Writeln('off');
    Writeln('uptime      : ' + intToStr(module.get_upTime() div 1000)+'s');
    Writeln('USB current  : ' + intToStr(module.get_usbCurrent())+'mA');
    Writeln('Logs        : ');
    Writeln(module.get_lastlogs());
    Writeln('');
    Writeln('r : refresh / b:beacon ON / space : beacon off');
  end
  else Writeln('Module not connected (check identification and USB cable)');
end;
```

```

procedure beacon (module:Tymodule;state:integer);
begin
  module.set_beacon(state);
  refresh(module);
end;

var
  module : TYModule;
  c      : char;
  errmsg : string;

begin
  // Setup the API to use local USB devices
  if yRegisterHub('usb', errmsg)<>YAPI_SUCCESS then
  begin
    Write('RegisterHub error: '+errmsg);
    exit;
  end;

  module := yFindModule(serial);
  refresh(module);

  repeat
    read(c);
    case c of
      'r': refresh(module);
      'b': beacon(module,Y_BEACON_ON);
      ' ': beacon(module,Y_BEACON_OFF);
    end;
  until c = 'x';
end.

```

Each property `xxx` of the module can be read thanks to a method of type `get_xxxx()`, and properties which are not read-only can be modified with the help of the `set_xxx()` method. For more details regarding the used functions, refer to the API chapters.

Changing the module settings

When you want to modify the settings of a module, you only need to call the corresponding `set_xxx()` function. However, this modification is performed only in the random access memory (RAM) of the module: if the module is restarted, the modifications are lost. To memorize them persistently, it is necessary to ask the module to save its current configuration in its permanent memory. To do so, use the `saveToFlash()` method. Inversely, it is possible to force the module to forget its current settings by using the `revertFromFlash()` method. The short example below allows you to modify the logical name of a module.

```

program savesettings;
{$APPTYPE CONSOLE}
uses
  SysUtils,
  yocto_api;

const
  serial = 'YCTOPOC1-123456'; // use serial number or logical name

var
  module : TYModule;
  errmsg : string;
  newname : string;

begin
  // Setup the API to use local USB devices
  if yRegisterHub('usb', errmsg)<>YAPI_SUCCESS then
  begin
    Write('RegisterHub error: '+errmsg);
    exit;
  end;

  module := yFindModule(serial);
  if (not(module.isOnline)) then
  begin
    writeln('Module not connected (check identification and USB cable)');
    exit;
  end;

```

```

end;

Writeln('Current logical name : '+module.get_logicalName());
Write('Enter new name : ');
Readln(newname);
if (not(yCheckLogicalName(newname))) then
begin
  Writeln('invalid logical name');
  exit;
end;
module.set_logicalName(newname);
module.saveToFlash();

Writeln('logical name is now : '+module.get_logicalName());
end.

```

Warning: the number of write cycles of the nonvolatile memory of the module is limited. When this limit is reached, nothing guarantees that the saving process is performed correctly. This limit, linked to the technology employed by the module micro-processor, is located at about 100000 cycles. In short, you can use the `saveToFlash()` function only 100000 times in the life of the module. Make sure you do not call this function within a loop.

Listing the modules

Obtaining the list of the connected modules is performed with the `yFirstModule()` function which returns the first module found. Then, you only need to call the `nextModule()` function of this object to find the following modules, and this as long as the returned value is not `nil`. Below a short example listing the connected modules.

```

program inventory;
{$APPTYPE CONSOLE}
uses
  SysUtils,
  yocto_api;

var
  module : TYModule;
  errmsg : string;

begin
  // Setup the API to use local USB devices
  if yRegisterHub('usb', errmsg)<>YAPI_SUCCESS then
  begin
    Write('RegisterHub error: '+errmsg);
    exit;
  end;

  Writeln('Device list');

  module := yFirstModule();
  while module<>nil  do
  begin
    Writeln( module.get_serialNumber()+' ('+module.get_productName()+' )');
    module := module.nextModule();
  end;
end.

```

2.4. Error handling

When you implement a program which must interact with USB modules, you cannot disregard error handling. Inevitably, there will be a time when a user will have unplugged the device, either before running the software, or even while the software is running. The Yoctopuce library is designed to help you support this kind of behavior, but your code must nevertheless be conceived to interpret in the best possible way the errors indicated by the library.

The simplest way to work around the problem is the one used in the short examples provided in this chapter: before accessing a module, check that it is online with the `isOnline` function, and then hope that it will stay so during the fraction of a second necessary for the following code lines to run.

This method is not perfect, but it can be sufficient in some cases. You must however be aware that you cannot completely exclude an error which would occur after the call to `isOnline` and which could crash the software. The only way to prevent this is to implement one of the two error handling techniques described below.

The method recommended by most programming languages for unpredictable error handling is the use of exceptions. By default, it is the behavior of the Yoctopuce library. If an error happens while you try to access a module, the library throws an exception. In this case, there are three possibilities:

- If your code catches the exception and handles it, everything goes well.
- If your program is running in debug mode, you can relatively easily determine where the problem happened and view the explanatory message linked to the exception.
- Otherwise... the exception makes your program crash, bang!

As this latest situation is not the most desirable, the Yoctopuce library offers another possibility for error handling, allowing you to create a robust program without needing to catch exceptions at every line of code. You simply need to call the `yDisableExceptions()` function to commute the library to a mode where exceptions for all the functions are systematically replaced by specific return values, which can be tested by the caller when necessary. For each function, the name of each return value in case of error is systematically documented in the library reference. The name always follows the same logic: a `get_state()` method returns a `Y_STATE_INVALID` value, a `get_currentValue` method returns a `Y_CURRENTVALUE_INVALID` value, and so on. In any case, the returned value is of the expected type and is not a null pointer which would risk crashing your program. At worst, if you display the value without testing it, it will be outside the expected bounds for the returned value. In the case of functions which do not normally return information, the return value is `YAPI_SUCCESS` if everything went well, and a different error code in case of failure.

When you work without exceptions, you can obtain an error code and an error message explaining the source of the error. You can request them from the object which returned the error, calling the `errType()` and `errMessage()` methods. Their returned values contain the same information as in the exceptions when they are active.

3. Reference

3.1. General functions

These general functions should be used to initialize and configure the Yoctopuce library. In most cases, a simple call to function `yRegisterHub()` should be enough. The module-specific functions `yFind...()` or `yFirst...()` should then be used to retrieve an object that provides interaction with the module.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_api.js'></script>
node.js var yoctolib = require('yoctolib');
var YAPI = yoctolib.YAPI;
var YModule = yoctolib.YModule;
php require_once('yocto_api.php');
cpp #include "yocto_api.h"
m #import "yocto_api.h"
pas uses yocto_api;
vb yocto_api.vb
cs yocto_api.cs
java import com.yoctopuce.YoctoAPI.YModule;
py from yocto_api import *

```

Global functions

`yCheckLogicalName(name)`

Checks if a given string is valid as logical name for a module or a function.

`yDisableExceptions()`

Disables the use of exceptions to report runtime errors.

`yEnableExceptions()`

Re-enables the use of exceptions for runtime error handling.

`yEnableUSBHost(osContext)`

This function is used only on Android.

`yFreeAPI()`

Frees dynamically allocated memory blocks used by the Yoctopuce library.

`yGetAPIVersion()`

Returns the version identifier for the Yoctopuce library in use.

`yGetTickCount()`

Returns the current value of a monotone millisecond-based time counter.

`yHandleEvents(errmsg)`

Maintains the device-to-library communication channel.

`yInitAPI(mode, errmsg)`

Initializes the Yoctopuce programming library explicitly.

`yPreregisterHub(url, errmsg)`

Fault-tolerant alternative to RegisterHub().

`yRegisterDeviceArrivalCallback(arrivalCallback)`

Register a callback function, to be called each time a device is plugged.

`yRegisterDeviceRemovalCallback(removalCallback)`

Register a callback function, to be called each time a device is unplugged.

`yRegisterHub(url, errmsg)`

Setup the Yoctopuce library to use modules connected on a given machine.

`yRegisterHubDiscoveryCallback(hubDiscoveryCallback)`

3. Reference

Register a callback function, to be called each time an Network Hub send an SSDP message.

yRegisterLogFunction(logfun)

Registers a log callback function.

ySelectArchitecture(arch)

Select the architecture or the library to be loaded to access to USB.

ySetDelegate(object)

(Objective-C only) Register an object that must follow the protocol YDeviceHotPlug.

ySetTimeout(callback, ms_timeout, arguments)

Invoke the specified callback function after a given timeout.

ySleep(ms_duration, errmsg)

Pauses the execution flow for a specified duration.

yTriggerHubDiscovery(errmsg)

Force a hub discovery, if a callback as been registered with yRegisterDeviceRemovalCallback it will be called for each net work hub that will respond to the discovery.

yUnregisterHub(url)

Setup the Yoctopuce library to no more use modules connected on a previously registered machine with RegisterHub.

yUpdateDeviceList(errmsg)

Triggers a (re)detection of connected Yoctopuce modules.

yUpdateDeviceList_async(callback, context)

Triggers a (re)detection of connected Yoctopuce modules.

YAPI.CheckLogicalName()**YAPI****yCheckLogicalName()yCheckLogicalName()**

Checks if a given string is valid as logical name for a module or a function.

js	function yCheckLogicalName(name)
node.js	function CheckLogicalName(name)
php	function yCheckLogicalName(\$name)
cpp	bool yCheckLogicalName(const string& name)
m	BOOL yCheckLogicalName(NSString * name)
pas	function yCheckLogicalName(name: string): boolean
vb	function yCheckLogicalName(ByVal name As String) As Boolean
cs	bool CheckLogicalName(string name)
java	boolean CheckLogicalName(String name)
py	def CheckLogicalName(name)

A valid logical name has a maximum of 19 characters, all among A..Z, a..z, 0..9, _, and -. If you try to configure a logical name with an incorrect string, the invalid characters are ignored.

Parameters :

name a string containing the name to check.

Returns :

true if the name is valid, false otherwise.

YAPI.DisableExceptions()**YAPI****yDisableExceptions()yDisableExceptions()**

Disables the use of exceptions to report runtime errors.

js	function yDisableExceptions()
node.js	function DisableExceptions()
php	function yDisableExceptions()
cpp	void yDisableExceptions()
m	void yDisableExceptions()
pas	procedure yDisableExceptions()
vb	procedure yDisableExceptions()
cs	void DisableExceptions()
py	def DisableExceptions()

When exceptions are disabled, every function returns a specific error value which depends on its type and which is documented in this reference manual.

YAPI.EnableExceptions() yEnableExceptions()yEnableExceptions()

YAPI

Re-enables the use of exceptions for runtime error handling.

```
js function yEnableExceptions( )
nodejs function EnableExceptions( )
php function yEnableExceptions( )
cpp void yEnableExceptions( )
m void yEnableExceptions( )
pas procedure yEnableExceptions( )
vb procedure yEnableExceptions( )
cs void EnableExceptions( )
py def EnableExceptions( )
```

Be aware than when exceptions are enabled, every function that fails triggers an exception. If the exception is not caught by the user code, it either fires the debugger or aborts (i.e. crash) the program. On failure, throws an exception or returns a negative error code.

YAPI.EnableUSBHost() yEnableUSBHost()

YAPI

This function is used only on Android.

```
java void EnableUSBHost( Object osContext)
```

Before calling `yRegisterHub("usb")` you need to activate the USB host port of the system. This function takes as argument, an object of class `android.content.Context` (or any subclass). It is not necessary to call this function to reach modules through the network.

Parameters :

osContext an object of class `android.content.Context` (or any subclass).

YAPI.FreeAPI() yFreeAPI()yFreeAPI()

YAPI

Frees dynamically allocated memory blocks used by the Yoctopuce library.

js	function yFreeAPI()
nodejs	function FreeAPI()
php	function yFreeAPI()
cpp	void yFreeAPI()
m	void yFreeAPI()
pas	procedure yFreeAPI()
vb	procedure yFreeAPI()
cs	void FreeAPI()
java	void FreeAPI()
py	def FreeAPI()

It is generally not required to call this function, unless you want to free all dynamically allocated memory blocks in order to track a memory leak for instance. You should not call any other library function after calling `yFreeAPI()`, or your program will crash.

YAPI.GetAPIVersion() yGetAPIVersion()yGetAPIVersion()

YAPI

Returns the version identifier for the Yoctopuce library in use.

```
js function yGetAPIVersion( )
node.js function GetAPIVersion( )
php function yGetAPIVersion( )
cpp string yGetAPIVersion( )
m NSString* yGetAPIVersion( )
pas function yGetAPIVersion( ): string
vb function yGetAPIVersion( ) As String
cs String GetAPIVersion( )
java String GetAPIVersion( )
py def GetAPIVersion( )
```

The version is a string in the form "Major.Minor.Build", for instance "1.01.5535". For languages using an external DLL (for instance C#, VisualBasic or Delphi), the character string includes as well the DLL version, for instance "1.01.5535 (1.01.5439)".

If you want to verify in your code that the library version is compatible with the version that you have used during development, verify that the major number is strictly equal and that the minor number is greater or equal. The build number is not relevant with respect to the library compatibility.

Returns :

a character string describing the library version.

YAPI.GetTickCount() yGetTickCount()yGetTickCount()

YAPI

Returns the current value of a monotone millisecond-based time counter.

```
js function yGetTickCount( )
nodejs function GetTickCount()
php function yGetTickCount( )
cpp u64 yGetTickCount( )
m u64 yGetTickCount( )
pas function yGetTickCount( ): u64
vb function yGetTickCount( ) As Long
cs ulong GetTickCount( )
java long GetTickCount( )
py def GetTickCount( )
```

This counter can be used to compute delays in relation with Yoctopuce devices, which also uses the millisecond as timebase.

Returns :
a long integer corresponding to the millisecond counter.

YAPI.HandleEvents() yHandleEvents()yHandleEvents()

YAPI

Maintains the device-to-library communication channel.

```
js function yHandleEvents( errmsg)
node.js function HandleEvents( errmsg)
php function yHandleEvents( &$errmsg)
cpp YRETCODE yHandleEvents( string& errmsg)
m YRETCODE yHandleEvents( NSError** errmsg)
pas function yHandleEvents( var errmsg: string): integer
vb function yHandleEvents( ByRef errmsg As String) As YRETCODE
cs YRETCODE HandleEvents( ref string errmsg)
java int HandleEvents( )
py def HandleEvents( errmsg=None)
```

If your program includes significant loops, you may want to include a call to this function to make sure that the library takes care of the information pushed by the modules on the communication channels. This is not strictly necessary, but it may improve the reactivity of the library for the following commands.

This function may signal an error in case there is a communication problem while contacting a module.

Parameters :

errmsg a string passed by reference to receive any error message.

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.InitAPI()**yInitAPI()yInitAPI()****YAPI**

Initializes the Yoctopuce programming library explicitly.

js	function yInitAPI(mode, errmsg)
nodejs	function InitAPI(mode, errmsg)
php	function yInitAPI(\$mode, &\$errmsg)
cpp	YRETCODE yInitAPI(int mode, string& errmsg)
m	YRETCODE yInitAPI(int mode, NSError** errmsg)
pas	function yInitAPI(mode: integer, var errmsg: string): integer
vb	function yInitAPI(ByVal mode As Integer, ByRef errmsg As String) As Integer
cs	int InitAPI(int mode, ref string errmsg)
java	int InitAPI(int mode)
py	def InitAPI(mode, errmsg=None)

It is not strictly needed to call `yInitAPI()`, as the library is automatically initialized when calling `yRegisterHub()` for the first time.

When `Y_DETECT_NONE` is used as detection mode, you must explicitly use `yRegisterHub()` to point the API to the VirtualHub on which your devices are connected before trying to access them.

Parameters :

mode an integer corresponding to the type of automatic device detection to use. Possible values are `Y_DETECT_NONE`, `Y_DETECT_USB`, `Y_DETECT_NET`, and `Y_DETECT_ALL`.
errmsg a string passed by reference to receive any error message.

Returns :

`YAPI_SUCCESS` when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.PreregisterHub()

YAPI

yPreregisterHub()yPreregisterHub()

Fault-tolerant alternative to RegisterHub().

```
js function yPreregisterHub( url, errmsg)
node.js function PreregisterHub( url, errmsg)
php function yPreregisterHub( $url, &$errmsg)
cpp YRETCODE yPreregisterHub( const string& url, string& errmsg)
m YRETCODE yPreregisterHub( NSString * url, NSError** errmsg)
pas function yPreregisterHub( url: string, var errmsg: string): integer
vb function yPreregisterHub( ByVal url As String,
                           ByRef errmsg As String) As Integer
cs int PreregisterHub( string url, ref string errmsg)
java int PreregisterHub( String url)
py def PreregisterHub( url, errmsg=None)
```

This function has the same purpose and same arguments as RegisterHub(), but does not trigger an error when the selected hub is not available at the time of the function call. This makes it possible to register a network hub independently of the current connectivity, and to try to contact it only when a device is actively needed.

Parameters :

url a string containing either "usb", "callback" or the root URL of the hub to monitor
errmsg a string passed by reference to receive any error message.

Returns :

YAPI_SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

YAPI.RegisterDeviceArrivalCallback()**YAPI****yRegisterDeviceArrivalCallback()****yRegisterDeviceArrivalCallback()**

Register a callback function, to be called each time a device is plugged.

```
js    function yRegisterDeviceArrivalCallback( arrivalCallback)
node.js function RegisterDeviceArrivalCallback( arrivalCallback)
php   function yRegisterDeviceArrivalCallback( $arrivalCallback)
cpp   void yRegisterDeviceArrivalCallback( yDeviceUpdateCallback arrivalCallback)
m     void yRegisterDeviceArrivalCallback( yDeviceUpdateCallback arrivalCallback)
pas   procedure yRegisterDeviceArrivalCallback( arrivalCallback: yDeviceUpdateFunc)
vb    procedure yRegisterDeviceArrivalCallback( ByVal arrivalCallback As yDeviceUpdateFunc)
cs    void RegisterDeviceArrivalCallback( yDeviceUpdateFunc arrivalCallback)
java  void RegisterDeviceArrivalCallback( DeviceArrivalCallback arrivalCallback)
py    def RegisterDeviceArrivalCallback( arrivalCallback)
```

This callback will be invoked while `yUpdateDeviceList` is running. You will have to call this function on a regular basis.

Parameters :

`arrivalCallback` a procedure taking a `YModule` parameter, or `null`

YAPI.RegisterDeviceRemovalCallback()

YAPI

yRegisterDeviceRemovalCallback()**yRegisterDeviceRemovalCallback()**

Register a callback function, to be called each time a device is unplugged.

```
js function yRegisterDeviceRemovalCallback( removalCallback)
nodejs function RegisterDeviceRemovalCallback( removalCallback)
php function yRegisterDeviceRemovalCallback( $removalCallback)
cpp void yRegisterDeviceRemovalCallback( yDeviceUpdateCallback removalCallback)
m void yRegisterDeviceRemovalCallback( yDeviceUpdateCallback removalCallback)
pas procedure yRegisterDeviceRemovalCallback( removalCallback: yDeviceUpdateFunc)
vb procedure yRegisterDeviceRemovalCallback( ByVal removalCallback As yDeviceUpdateFunc)
cs void RegisterDeviceRemovalCallback( yDeviceUpdateFunc removalCallback)
java void RegisterDeviceRemovalCallback( DeviceRemovalCallback removalCallback)
py def RegisterDeviceRemovalCallback( removalCallback)
```

This callback will be invoked while `yUpdateDeviceList` is running. You will have to call this function on a regular basis.

Parameters :

`removalCallback` a procedure taking a `YModule` parameter, or `null`

YAPI.RegisterHub()**YAPI****yRegisterHub()yRegisterHub()**

Setup the Yoctopuce library to use modules connected on a given machine.

js	function yRegisterHub(url, errmsg)
node.js	function RegisterHub(url, errmsg)
php	function yRegisterHub(\$url, &\$errmsg)
cpp	YRETCODE yRegisterHub(const string& url, string& errmsg)
m	YRETCODE yRegisterHub(NSString * url, NSError** errmsg)
pas	function yRegisterHub(url: string, var errmsg: string): integer
vb	function yRegisterHub(ByVal url As String, ByRef errmsg As String) As Integer
cs	int RegisterHub(string url, ref string errmsg)
java	int RegisterHub(String url)
py	def RegisterHub(url, errmsg=None)

The parameter will determine how the API will work. Use the following values:

usb: When the **usb** keyword is used, the API will work with devices connected directly to the USB bus. Some programming languages such as Javascript, PHP, and Java don't provide direct access to USB hardware, so **usb** will not work with these. In this case, use a VirtualHub or a networked YoctoHub (see below).

x.x.x.x or **hostname**: The API will use the devices connected to the host with the given IP address or hostname. That host can be a regular computer running a VirtualHub, or a networked YoctoHub such as YoctoHub-Ethernet or YoctoHub-Wireless. If you want to use the VirtualHub running on your local computer, use the IP address 127.0.0.1.

callback: that keyword makes the API run in "*HTTP Callback*" mode. This is a special mode allowing to take control of Yoctopuce devices through a NAT filter when using a VirtualHub or a networked YoctoHub. You only need to configure your hub to call your server script on a regular basis. This mode is currently available for PHP and Node.JS only.

Be aware that only one application can use direct USB access at a given time on a machine. Multiple access would cause conflicts while trying to access the USB modules. In particular, this means that you must stop the VirtualHub software before starting an application that uses direct USB access. The workaround for this limitation is to setup the library to use the VirtualHub rather than direct USB access.

If access control has been activated on the hub, virtual or not, you want to reach, the URL parameter should look like:

```
http://username:password@adresse:port
```

You can call *RegisterHub* several times to connect to several machines.

Parameters :

url a string containing either "**usb**", "**callback**" or the root URL of the hub to monitor
errmsg a string passed by reference to receive any error message.

Returns :

YAPI_SUCCESS when the call succeeds.

On failure, throws an exception or returns a negative error code.

YAPI.RegisterHubDiscoveryCallback() yRegisterHubDiscoveryCallback() yRegisterHubDiscoveryCallback()

YAPI

Register a callback function, to be called each time an Network Hub send an SSDP message.

```
cpp void yRegisterHubDiscoveryCallback( YHubDiscoveryCallback hubDiscoveryCallback)
m +(void) yRegisterHubDiscoveryCallback : (YHubDiscoveryCallback) hubDiscoveryCallback
pas procedure yRegisterHubDiscoveryCallback( hubDiscoveryCallback: YHubDiscoveryCallback)
vb procedure yRegisterHubDiscoveryCallback( ByVal hubDiscoveryCallback As
                                         YHubDiscoveryCallback)
cs void RegisterHubDiscoveryCallback( YHubDiscoveryCallback hubDiscoveryCallback)
java void RegisterHubDiscoveryCallback( HubDiscoveryCallback hubDiscoveryCallback)
py def RegisterHubDiscoveryCallback( hubDiscoveryCallback)
```

The callback has two string parameter, the first one contain the serial number of the hub and the second contain the URL of the network hub (this URL can be passed to RegisterHub). This callback will be invoked while yUpdateDeviceList is running. You will have to call this function on a regular basis.

Parameters :

hubDiscoveryCallback a procedure taking two string parameter, or null

YAPI.RegisterLogFunction()**YAPI****yRegisterLogFunction()yRegisterLogFunction()**

Registers a log callback function.

cpp	void yRegisterLogFunction(yLogFunction logfun)
m	void yRegisterLogFunction(yLogCallback logfun)
pas	procedure yRegisterLogFunction(logfun: yLogFunc)
vb	procedure yRegisterLogFunction(ByVal logfun As yLogFunc)
cs	void RegisterLogFunction(yLogFunc logfun)
java	void RegisterLogFunction(LogCallback logfun)
py	def RegisterLogFunction(logfun)

This callback will be called each time the API have something to say. Quite useful to debug the API.

Parameters :

logfun a procedure taking a string parameter, or null

YAPI.SelectArchitecture() ySelectArchitecture()

YAPI

Select the architecture or the library to be loaded to access to USB.

py def SelectArchitecture(arch)

By default, the Python library automatically detects the appropriate library to use. However, for Linux ARM, it is not possible to reliably distinguish between a Hard Float (armhf) and a Soft Float (armel) install. For this case, it is therefore recommended to manually select the proper architecture by calling SelectArchitecture() before any other call to the library.

Parameters :

arch A string containing the architecture to use. Possible values are: "armhf", "armel", "i386", "x86_64", "32bit", "64bit"

Returns :

nothing.

On failure, throws an exception.

YAPI.SetDelegate() ySetDelegate()

YAPI

(Objective-C only) Register an object that must follow the protocol YDeviceHotPlug.

```
m void ySetDelegate( id object)
```

The methods `yDeviceArrival` and `yDeviceRemoval` will be invoked while `yUpdateDeviceList` is running. You will have to call this function on a regular basis.

Parameters :

object an object that must follow the protocol YAPIDelegate, or nil

YAPI.SetTimeout() ySetTimeout()

YAPI

Invoke the specified callback function after a given timeout.

```
js  function ySetTimeout( callback, ms_timeout, arguments )
node.js function SetTimeout( callback, ms_timeout, arguments )
```

This function behaves more or less like Javascript `setTimeout`, but during the waiting time, it will call `yHandleEvents` and `yUpdateDeviceList` periodically, in order to keep the API up-to-date with current devices.

Parameters :

- callback** the function to call after the timeout occurs. On Microsoft Internet Explorer, the callback must be provided as a string to be evaluated.
- ms_timeout** an integer corresponding to the duration of the timeout, in milliseconds.
- arguments** additional arguments to be passed to the callback function can be provided, if needed (not supported on Microsoft Internet Explorer).

Returns :

`YAPI_SUCCESS` when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.Sleep() ySleep()ySleep()

YAPI

Pauses the execution flow for a specified duration.

```

js   function ySleep( ms_duration, errmsg)
nodejs function Sleep( ms_duration, errmsg)
php  function ySleep( $ms_duration, &$errmsg)
cpp   YRETCODE ySleep( unsigned ms_duration, string& errmsg)
m    YRETCODE ySleep( unsigned ms_duration, NSError ** errmsg)
pas   function ySleep( ms_duration: integer, var errmsg: string): integer
vb    function ySleep( ByVal ms_duration As Integer,
                     ByRef errmsg As String) As Integer
cs    int Sleep( int ms_duration, ref string errmsg)
java  int Sleep( long ms_duration)
py   def Sleep( ms_duration, errmsg=None)

```

This function implements a passive waiting loop, meaning that it does not consume CPU cycles significantly. The processor is left available for other threads and processes. During the pause, the library nevertheless reads from time to time information from the Yoctopuce modules by calling `yHandleEvents()`, in order to stay up-to-date.

This function may signal an error in case there is a communication problem while contacting a module.

Parameters :

ms_duration an integer corresponding to the duration of the pause, in milliseconds.

errmsg a string passed by reference to receive any error message.

Returns :

`YAPI_SUCCESS` when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.TriggerHubDiscovery()**YAPI****yTriggerHubDiscovery()yTriggerHubDiscovery()**

Force a hub discovery, if a callback has been registered with yRegisterDeviceRemovalCallback it will be called for each net work hub that will respond to the discovery.

cpp	YRETCODE yTriggerHubDiscovery(string& errmsg)
m	+ (YRETCODE) yTriggerHubDiscovery : (NSError**) errmsg
pas	function yTriggerHubDiscovery(var errmsg: string): integer
vb	function yTriggerHubDiscovery(ByRef errmsg As String) As Integer
cs	int TriggerHubDiscovery(ref string errmsg)
java	int TriggerHubDiscovery()
py	def TriggerHubDiscovery(errmsg=None)

Parameters :

errmsg a string passed by reference to receive any error message.

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.UnregisterHub() yUnregisterHub()yUnregisterHub()

YAPI

Setup the Yoctopuce library to no more use modules connected on a previously registered machine with RegisterHub.

```
js function yUnregisterHub( url)
nodejs function UnregisterHub( url)
php function yUnregisterHub( $url)
cpp void yUnregisterHub( const string& url)
m void yUnregisterHub( NSString * url)
pas procedure yUnregisterHub( url: string)
vb procedure yUnregisterHub( ByVal url As String)
cs void UnregisterHub( string url)
java void UnregisterHub( String url)
py def UnregisterHub( url)
```

Parameters :

url a string containing either "usb" or the

YAPI.UpdateDeviceList()

YAPI

yUpdateDeviceList()yUpdateDeviceList()

Triggers a (re)detection of connected Yoctopuce modules.

```
js function yUpdateDeviceList( errmsg)
node.js function UpdateDeviceList( errmsg)
php function yUpdateDeviceList( &$errmsg)
cpp YRETCODE yUpdateDeviceList( string& errmsg)
m YRETCODE yUpdateDeviceList( NSError** errmsg)
pas function yUpdateDeviceList( var errmsg: string): integer
vb function yUpdateDeviceList( ByRef errmsg As String) As YRETCODE
cs YRETCODE UpdateDeviceList( ref string errmsg)
java int UpdateDeviceList( )
py def UpdateDeviceList( errmsg=None)
```

The library searches the machines or USB ports previously registered using `yRegisterHub()`, and invokes any user-defined callback function in case a change in the list of connected devices is detected.

This function can be called as frequently as desired to refresh the device list and to make the application aware of hot-plug events.

Parameters :

errmsg a string passed by reference to receive any error message.

Returns :

`YAPI_SUCCESS` when the call succeeds. On failure, throws an exception or returns a negative error code.

YAPI.UpdateDeviceList_async() yUpdateDeviceList_async()

YAPI

Triggers a (re)detection of connected Yoctopuce modules.

```
js   function yUpdateDeviceList_async( callback, context )
nodejs function UpdateDeviceList_async( callback, context )
```

The library searches the machines or USB ports previously registered using `yRegisterHub()`, and invokes any user-defined callback function in case a change in the list of connected devices is detected.

This function can be called as frequently as desired to refresh the device list and to make the application aware of hot-plug events.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox Javascript VM that does not implement context switching during blocking I/O calls.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the result code (`YAPI_SUCCESS` if the operation completes successfully) and the error message.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

3.2. Accelerometer function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_accelerometer.js'></script>
nodejs var yoctolib = require('yoctolib');
var YAccelerometer = yoctolib.YAccelerometer;
php require_once('yocto_accelerometer.php');
cpp #include "yocto_accelerometer.h"
m #import "yocto_accelerometer.h"
pas uses yocto_accelerometer;
vb yocto_accelerometer.vb
cs yocto_accelerometer.cs
java import com.yoctopuce.YoctoAPI.YAccelerometer;
py from yocto_accelerometer import *

```

Global functions

yFindAccelerometer(func)

Retrieves an accelerometer for a given identifier.

yFirstAccelerometer()

Starts the enumeration of accelerometers currently accessible.

YAccelerometer methods

accelerometer→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

accelerometer→describe()

Returns a short text that describes unambiguously the instance of the accelerometer in the form TYPE (NAME) = SERIAL . FUNCTIONID.

accelerometer→get_advertisedValue()

Returns the current value of the accelerometer (no more than 6 characters).

accelerometer→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

accelerometer→get_currentValue()

Returns the current value of the acceleration.

accelerometer→get_errorMessage()

Returns the error message of the latest error with the accelerometer.

accelerometer→get_errorType()

Returns the numerical error code of the latest error with the accelerometer.

accelerometer→get_friendlyName()

Returns a global identifier of the accelerometer in the format MODULE_NAME . FUNCTION_NAME.

accelerometer→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

accelerometer→get_functionId()

Returns the hardware identifier of the accelerometer, without reference to the module.

accelerometer→get_hardwareId()

Returns the unique hardware identifier of the accelerometer in the form SERIAL . FUNCTIONID.

accelerometer→get_highestValue()	Returns the maximal value observed for the acceleration since the device was started.
accelerometer→get_logFrequency()	Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.
accelerometer→get_logicalName()	Returns the logical name of the accelerometer.
accelerometer→get_lowestValue()	Returns the minimal value observed for the acceleration since the device was started.
accelerometer→get_module()	Gets the YModule object for the device on which the function is located.
accelerometer→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located (asynchronous version).
accelerometer→get_recordedData(startTime, endTime)	Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.
accelerometer→get_reportFrequency()	Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.
accelerometer→get_resolution()	Returns the resolution of the measured values.
accelerometer→get_unit()	Returns the measuring unit for the acceleration.
accelerometer→get(userData)	Returns the value of the userData attribute, as previously stored using method set(userData).
accelerometer→get_xValue()	Returns the X component of the acceleration, as a floating point number.
accelerometer→get_yValue()	Returns the Y component of the acceleration, as a floating point number.
accelerometer→get_zValue()	Returns the Z component of the acceleration, as a floating point number.
accelerometer→isOnline()	Checks if the accelerometer is currently reachable, without raising any error.
accelerometer→isOnline_async(callback, context)	Checks if the accelerometer is currently reachable, without raising any error (asynchronous version).
accelerometer→load(msValidity)	Preloads the accelerometer cache with a specified validity duration.
accelerometer→loadCalibrationPoints(rawValues, refValues)	Retrieves error correction data points previously entered using the method calibrateFromPoints.
accelerometer→load_async(msValidity, callback, context)	Preloads the accelerometer cache with a specified validity duration (asynchronous version).
accelerometer→nextAccelerometer()	Continues the enumeration of accelerometers started using yFirstAccelerometer().
accelerometer→registerTimedReportCallback(callback)	Registers the callback function that is invoked on every periodic timed notification.
accelerometer→registerValueCallback(callback)	Registers the callback function that is invoked on every change of advertised value.

3. Reference

accelerometer→set_highestValue(newval)

Changes the recorded maximal value observed.

accelerometer→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

accelerometer→set_logicalName(newval)

Changes the logical name of the accelerometer.

accelerometer→set_lowestValue(newval)

Changes the recorded minimal value observed.

accelerometer→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

accelerometer→set_resolution(newval)

Changes the resolution of the measured physical values.

accelerometer→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

accelerometer→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YAccelerometer.FindAccelerometer() yFindAccelerometer()yFindAccelerometer()

YAccelerometer

Retrieves an accelerometer for a given identifier.

<code>js</code>	<code>function yFindAccelerometer(func)</code>
<code>nodejs</code>	<code>function FindAccelerometer(func)</code>
<code>php</code>	<code>function yFindAccelerometer(\$func)</code>
<code>cpp</code>	<code>YAccelerometer* yFindAccelerometer(const string& func)</code>
<code>m</code>	<code>YAccelerometer* yFindAccelerometer(NSString* func)</code>
<code>pas</code>	<code>function yFindAccelerometer(func: string): TYAccelerometer</code>
<code>vb</code>	<code>function yFindAccelerometer(ByVal func As String) As YAccelerometer</code>
<code>cs</code>	<code>YAccelerometer FindAccelerometer(string func)</code>
<code>java</code>	<code>YAccelerometer FindAccelerometer(String func)</code>
<code>py</code>	<code>def FindAccelerometer(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the accelerometer is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YAccelerometer.isOnLine()` to test if the accelerometer is indeed online at a given time. In case of ambiguity when looking for an accelerometer by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the accelerometer

Returns :

a `YAccelerometer` object allowing you to drive the accelerometer.

YAccelerometer.FirstAccelerometer() yFirstAccelerometer()yFirstAccelerometer()

YAccelerometer

Starts the enumeration of accelerometers currently accessible.

```
js function yFirstAccelerometer( )
node.js function FirstAccelerometer( )
php function yFirstAccelerometer( )
cpp YAccelerometer* yFirstAccelerometer( )
m YAccelerometer* yFirstAccelerometer( )
pas function yFirstAccelerometer( ): TYAccelerometer
vb function yFirstAccelerometer( ) As YAccelerometer
cs YAccelerometer FirstAccelerometer( )
java YAccelerometer FirstAccelerometer( )
py def FirstAccelerometer( )
```

Use the method `YAccelerometer.nextAccelerometer()` to iterate on next accelerometers.

Returns :

a pointer to a `YAccelerometer` object, corresponding to the first accelerometer currently online, or a null pointer if there are none.

accelerometer→calibrateFromPoints() accelerometer.calibrateFromPoints()

YAccelerometer

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
node.js function calibrateFromPoints( rawValues, refValues)
php  function calibrateFromPoints( $rawValues, $refValues)
cpp   int calibrateFromPoints( vector<double> rawValues,
                           vector<double> refValues)

m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
      : (NSMutableArray*) refValues

pas  function calibrateFromPoints( rawValues: TDoubleArray,
                                  refValues: TDoubleArray): LongInt

vb   procedure calibrateFromPoints( )

cs   int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def calibrateFromPoints( rawValues, refValues)
cmd  YAccelerometer target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.
refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→describe()accelerometer.describe()**YAccelerometer**

Returns a short text that describes unambiguously the instance of the accelerometer in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the accelerometer (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

accelerometer→get_advertisedValue()
accelerometer→advertisedValue()
accelerometer.get_advertisedValue()

YAccelerometer

Returns the current value of the accelerometer (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YAccelerometer target get_advertisedValue

Returns :

a string corresponding to the current value of the accelerometer (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

accelerometer→get_currentRawValue()
accelerometer→currentRawValue()
accelerometer.get_currentRawValue()

YAccelerometer

Returns the uncalibrated, unrounded raw value returned by the sensor.

```
js function get_currentRawValue( )
nodejs function get_currentRawValue( )
php function get_currentRawValue( )
cpp double get_currentRawValue( )
m -(double) currentRawValue
pas function get_currentRawValue( ): double
vb function get_currentRawValue( ) As Double
cs double get_currentRawValue( )
java double get_currentRawValue( )
py def get_currentRawValue( )
cmd YAccelerometer target get_currentRawValue
```

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns **Y_CURRENTRAWVALUE_INVALID**.

accelerometer→get_currentValue()
accelerometer→currentValue()
accelerometer.get_currentValue()

YAccelerometer

Returns the current value of the acceleration.

js	function get_currentValue()
nodejs	function get_currentValue()
php	function get_currentValue()
cpp	double get_currentValue()
m	-(double) currentValue
pas	function get_currentValue() : double
vb	function get_currentValue() As Double
cs	double get_currentValue()
java	double get_currentValue()
py	def get_currentValue()
cmd	YAccelerometer target get_currentValue

Returns :

a floating point number corresponding to the current value of the acceleration

On failure, throws an exception or returns **Y_CURRENTVALUE_INVALID**.

accelerometer→get_errorMessage()
accelerometer→errorMessage()
accelerometer.get_errorMessage()**YAccelerometer**

Returns the error message of the latest error with the accelerometer.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the accelerometer object

accelerometer→get_errorType()
accelerometer→errorType()
accelerometer.get_errorType()

YAccelerometer

Returns the numerical error code of the latest error with the accelerometer.

<code>js</code>	<code>function get_errorType()</code>
<code>node.js</code>	<code>function get_errorType()</code>
<code>php</code>	<code>function get_errorType()</code>
<code>cpp</code>	<code>YRETCODE get_errorType()</code>
<code>pas</code>	<code>function get_errorType(): YRETCODE</code>
<code>vb</code>	<code>function get_errorType() As YRETCODE</code>
<code>cs</code>	<code>YRETCODE get_errorType()</code>
<code>java</code>	<code>int get_errorType()</code>
<code>py</code>	<code>def get_errorType()</code>

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the accelerometer object

accelerometer→get_friendlyName()
accelerometer→friendlyName()**YAccelerometer**

Returns a global identifier of the accelerometer in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the accelerometer if they are defined, otherwise the serial number of the module and the hardware identifier of the accelerometer (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the accelerometer using logical names (ex: MyCustomName.relay1)

On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

accelerometer→get_functionDescriptor()
accelerometer→functionDescriptor()
accelerometer.get_functionDescriptor()

YAccelerometer

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

accelerometer→get_functionId()
accelerometer→functionId()**YAccelerometer**

Returns the hardware identifier of the accelerometer, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the accelerometer (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

accelerometer→get_hardwareId()
accelerometer→hardwareId()**YAccelerometer**

Returns the unique hardware identifier of the accelerometer in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the accelerometer. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the accelerometer (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

accelerometer→get_highestValue()
accelerometer→highestValue()
accelerometer.get_highestValue()**YAccelerometer**

Returns the maximal value observed for the acceleration since the device was started.

js function **get_highestValue()**
nodejs function **get_highestValue()**
php function **get_highestValue()**
cpp double **get_highestValue()**
m -(double) highestValue
pas function **get_highestValue(): double**
vb function **get_highestValue() As Double**
cs double **get_highestValue()**
java double **get_highestValue()**
py def **get_highestValue()**
cmd YAccelerometer **target get_highestValue**

Returns :

a floating point number corresponding to the maximal value observed for the acceleration since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

accelerometer→get_logFrequency()
accelerometer→logFrequency()
accelerometer.get_logFrequency()

YAccelerometer

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

```
js   function get_logFrequency( )  
nodejs function get_logFrequency( )  
php  function get_logFrequency( )  
cpp   string get_logFrequency( )  
m    -(NSString*) logFrequency  
pas   function get_logFrequency( ): string  
vb    function get_logFrequency( ) As String  
cs   string get_logFrequency( )  
java  String get_logFrequency( )  
py    def get_logFrequency()  
cmd   YAccelerometer target get_logFrequency
```

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns `Y_LOGFREQUENCY_INVALID`.

accelerometer→get_logicalName()
accelerometer→logicalName()
accelerometer.get_logicalName()

YAccelerometer

Returns the logical name of the accelerometer.

```
js function get_logicalName( )  
nodejs function get_logicalName( )  
php function get_logicalName( )  
cpp string get_logicalName( )  
m -(NSString*) logicalName  
pas function get_logicalName( ): string  
vb function get_logicalName( ) As String  
cs string get_logicalName( )  
java String get_logicalName( )  
py def get_logicalName( )  
cmd YAccelerometer target get_logicalName
```

Returns :

a string corresponding to the logical name of the accelerometer. On failure, throws an exception or returns `Y_LOGICALNAME_INVALID`.

accelerometer→get_lowestValue()
accelerometer→lowestValue()
accelerometer.get_lowestValue()

YAccelerometer

Returns the minimal value observed for the acceleration since the device was started.

js	function get_lowestValue()
nodejs	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue(): double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YAccelerometer target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the acceleration since the device was started

On failure, throws an exception or returns **Y_LOWESTVALUE_INVALID**.

accelerometer→get_module()**YAccelerometer****accelerometer→module()accelerometer.get_module()**

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
node.js	function get_module()
php	function get_module()
cpp	<code>YModule * get_module()</code>
m	<code>-(YModule*) module</code>
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	<code>YModule get_module()</code>
java	<code>YModule get_module()</code>
py	<code>def get_module()</code>

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

accelerometer→get_module_async()
accelerometer→module_async()**YAccelerometer**

Gets the **YModule** object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned **YModule** object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested **YModule** object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

accelerometer → `get_recordedData()`
accelerometer → `recordedData()`
accelerometer.`get_recordedData()`

YAccelerometer

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the `DataSet` class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without ending limit.

Returns :

an instance of `YDataSet`, providing access to historical data. Past measures can be loaded progressively using methods from the `YDataSet` object.

accelerometer→get_reportFrequency()
accelerometer→reportFrequency()
accelerometer.get_reportFrequency()

YAccelerometer

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js   function get_reportFrequency( )  
nodejs function get_reportFrequency( )  
php  function get_reportFrequency( )  
cpp   string get_reportFrequency( )  
m    -(NSString*) reportFrequency  
pas   function get_reportFrequency( ): string  
vb    function get_reportFrequency( ) As String  
cs    string get_reportFrequency( )  
java  String get_reportFrequency( )  
py    def get_reportFrequency( )  
cmd   YAccelerometer target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns `Y_REPORTFREQUENCY_INVALID`.

accelerometer→get_resolution()
accelerometer→resolution()
accelerometer.get_resolution()

YAccelerometer

Returns the resolution of the measured values.

```
js function get_resolution( )
nodejs function get_resolution( )
php function get_resolution( )
cpp double get_resolution( )
m -(double) resolution
pas function get_resolution( ): double
vb function get_resolution( ) As Double
cs double get_resolution( )
java double get_resolution( )
py def get_resolution( )
cmd YAccelerometer target get_resolution
```

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

accelerometer→get_unit()**YAccelerometer****accelerometer→unit()accelerometer.get_unit()**

Returns the measuring unit for the acceleration.

js	function get_unit()
nodejs	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YAccelerometer target get_unit

Returns :

a string corresponding to the measuring unit for the acceleration

On failure, throws an exception or returns **Y_UNIT_INVALID**.

accelerometer→get(userData)
accelerometer→userData()
accelerometer.get(userData)

YAccelerometer

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

```
js function get(userData) {  
nodejs function get(userData) {  
php function get(userData) {  
cpp void * get(userData) {  
m -(void*) userData  
pas function get(userData): Tobject  
vb function get(userData) As Object  
cs object get(userData)  
java Object get(userData)  
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

accelerometer→get_xValue()**YAccelerometer****accelerometer→xValue()accelerometer.get_xValue()**

Returns the X component of the acceleration, as a floating point number.

js	function get_xValue()
node.js	function get_xValue()
php	function get_xValue()
cpp	double get_xValue()
m	-(double) xValue
pas	function get_xValue(): double
vb	function get_xValue() As Double
cs	double get_xValue()
java	double get_xValue()
py	def get_xValue()
cmd	YAccelerometer target get_xValue

Returns :

a floating point number corresponding to the X component of the acceleration, as a floating point number

On failure, throws an exception or returns **Y_XVALUE_INVALID**.

accelerometer→get_yValue()**YAccelerometer****accelerometer→yValue()accelerometer.get_yValue()**

Returns the Y component of the acceleration, as a floating point number.

```
js function get_yValue( )
node.js function get_yValue( )
php function get_yValue( )
cpp double get_yValue( )
m -(double) yValue
pas function get_yValue( ): double
vb function get_yValue( ) As Double
cs double get_yValue( )
java double get_yValue( )
py def get_yValue( )
cmd YAccelerometer target get_yValue
```

Returns :

a floating point number corresponding to the Y component of the acceleration, as a floating point number

On failure, throws an exception or returns Y_YVALUE_INVALID.

accelerometer→get_zValue()**YAccelerometer****accelerometer→zValue()accelerometer.get_zValue()**

Returns the Z component of the acceleration, as a floating point number.

js	function get_zValue()
nodejs	function get_zValue()
php	function get_zValue()
cpp	double get_zValue()
m	-(double) zValue
pas	function get_zValue(): double
vb	function get_zValue() As Double
cs	double get_zValue()
java	double get_zValue()
py	def get_zValue()
cmd	YAccelerometer target get_zValue

Returns :

a floating point number corresponding to the Z component of the acceleration, as a floating point number

On failure, throws an exception or returns **Y_ZVALUE_INVALID**.

accelerometer→isOnline()accelerometer.isOnline()**YAccelerometer**

Checks if the accelerometer is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	-BOOL isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the accelerometer in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the accelerometer.

Returns :

true if the accelerometer can be reached, and false otherwise

accelerometer→isOnline_async()**YAccelerometer**

Checks if the accelerometer is currently reachable, without raising any error (asynchronous version).

js	function isOnline_async(callback, context)
node.js	function isOnline_async(callback, context)

If there is a cached value for the accelerometer in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

accelerometer→load()accelerometer.load()**YAccelerometer**

Preloads the accelerometer cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

accelerometer→loadCalibrationPoints() accelerometer.loadCalibrationPoints()

YAccelerometer

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php  function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt

vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def loadCalibrationPoints( rawValues, refValues)
cmd  YAccelerometer target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→load_async()

YAccelerometer

Preloads the accelerometer cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

accelerometer→nextAccelerometer()**YAccelerometer**

Continues the enumeration of accelerometers started using `yFirstAccelerometer()`.

<code>js</code>	<code>function nextAccelerometer()</code>
<code>nodejs</code>	<code>function nextAccelerometer()</code>
<code>php</code>	<code>function nextAccelerometer()</code>
<code>cpp</code>	<code>YAccelerometer * nextAccelerometer()</code>
<code>m</code>	<code>-(YAccelerometer*) nextAccelerometer</code>
<code>pas</code>	<code>function nextAccelerometer(): TYAccelerometer</code>
<code>vb</code>	<code>function nextAccelerometer() As YAccelerometer</code>
<code>cs</code>	<code>YAccelerometer nextAccelerometer()</code>
<code>java</code>	<code>YAccelerometer nextAccelerometer()</code>
<code>py</code>	<code>def nextAccelerometer()</code>

Returns :

a pointer to a `YAccelerometer` object, corresponding to an accelerometer currently online, or a null pointer if there are no more accelerometers to enumerate.

**accelerometer→registerTimedReportCallback()
accelerometer.registerTimedReportCallback()****YAccelerometer**

Registers the callback function that is invoked on every periodic timed notification.

```
js   function registerTimedReportCallback( callback )
node.js function registerTimedReportCallback( callback )
php  function registerTimedReportCallback( $callback )
cpp   int registerTimedReportCallback( YAccelerometerTimedReportCallback callback )
m    -(int) registerTimedReportCallback : (YAccelerometerTimedReportCallback) callback
pas   function registerTimedReportCallback( callback: TYAccelerometerTimedReportCallback): LongInt
vb    function registerTimedReportCallback( ) As Integer
cs    int registerTimedReportCallback( TimedReportCallback callback )
java  int registerTimedReportCallback( TimedReportCallback callback )
py    def registerTimedReportCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

accelerometer→registerValueCallback() accelerometer.registerValueCallback()

YAccelerometer

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback)
nodejs function registerValueCallback( callback)
php  function registerValueCallback( $callback)
cpp   int registerValueCallback( YAccelerometerValueCallback callback)
m    -(int) registerValueCallback : (YAccelerometerValueCallback) callback
pas   function registerValueCallback( callback: TYAccelerometerValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs   int registerValueCallback( ValueCallback callback)
java  int registerValueCallback( UpdateCallback callback)
py    def registerValueCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

accelerometer→set_highestValue()
accelerometer→setHighestValue()
accelerometer.set_highestValue()

YAccelerometer

Changes the recorded maximal value observed.

```
js function set_highestValue( newval)
nodejs function set_highestValue( newval)
php function set_highestValue( $newval)
cpp int set_highestValue( double newval)
m -(int) setHighestValue : (double) newval
pas function set_highestValue( newval: double): integer
vb function set_highestValue( ByVal newval As Double) As Integer
cs int set_highestValue( double newval)
java int set_highestValue( double newval)
py def set_highestValue( newval)
cmd YAccelerometer target set_highestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→set_logFrequency()
accelerometer→setLogFrequency()
accelerometer.set_logFrequency()

YAccelerometer

Changes the datalogger recording frequency for this function.

js	function set_logFrequency(newval)
node.js	function set_logFrequency(newval)
php	function set_logFrequency(\$newval)
cpp	int set_logFrequency(const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency(newval: string): integer
vb	function set_logFrequency(ByVal newval As String) As Integer
cs	int set_logFrequency(string newval)
java	int set_logFrequency(String newval)
py	def set_logFrequency(newval)
cmd	YAccelerometer target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→set_logicalName()
accelerometer→setLogicalName()
accelerometer.set_logicalName()

YAccelerometer

Changes the logical name of the accelerometer.

```
js function set_logicalName( newval)
nodejs function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YAccelerometer target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the accelerometer.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

accelerometer→set_lowestValue()
accelerometer→setLowestValue()
accelerometer.set_lowestValue()

YAccelerometer

Changes the recorded minimal value observed.

```
js function set_lowestValue( newval)
nodejs function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YAccelerometer target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→set_reportFrequency()
accelerometer→setReportFrequency()
accelerometer.set_reportFrequency()

YAccelerometer

Changes the timed value notification frequency for this function.

```
js    function set_reportFrequency( newval)
nodejs function set_reportFrequency( newval)
php   function set_reportFrequency( $newval)
cpp   int set_reportFrequency( const string& newval)
m     -(int) setReportFrequency : (NSString*) newval
pas   function set_reportFrequency( newval: string): integer
vb    function set_reportFrequency( ByVal newval As String) As Integer
cs    int set_reportFrequency( string newval)
java  int set_reportFrequency( String newval)
py    def set_reportFrequency( newval)
cmd   YAccelerometer target set_reportFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→set_resolution()
accelerometer→setResolution()
accelerometer.set_resolution()

YAccelerometer

Changes the resolution of the measured physical values.

js	function set_resolution(newval)
nodejs	function set_resolution(newval)
php	function set_resolution(\$newval)
cpp	int set_resolution(double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution(newval: double): integer
vb	function set_resolution(ByVal newval As Double) As Integer
cs	int set_resolution(double newval)
java	int set_resolution(double newval)
py	def set_resolution(newval)
cmd	YAccelerometer target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

accelerometer→**set(userData)**
accelerometer→**setUserData()**
accelerometer.set(userData)

YAccelerometer

Stores a user context provided as argument in the userData attribute of the function.

```
js  function setUserData( data)
nodejs function setUserData( data)
php  function setUserData( $data)
cpp  void setUserData( void* data)
m    -(void) setUserData : (void*) data
pas   procedure setUserData( data: Tobject)
vb    procedure setUserData( ByVal data As Object)
cs    void setUserData( object data)
java  void setUserData( Object data)
py    def setUserData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

accelerometer→wait_async()**YAccelerometer**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.3. AnButton function interface

Yoctopuce application programming interface allows you to measure the state of a simple button as well as to read an analog potentiometer (variable resistance). This can be used for instance with a continuous rotating knob, a throttle grip or a joystick. The module is capable to calibrate itself on min and max values, in order to compute a calibrated value that varies proportionally with the potentiometer position, regardless of its total resistance.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_anbutton.js'></script>
nodejs var yoctolib = require('yoctolib');
var YAnButton = yoctolib.YAnButton;
php require_once('yocto_anbutton.php');
cpp #include "yocto_anbutton.h"
m #import "yocto_anbutton.h"
pas uses yocto_anbutton;
vb yocto_anbutton.vb
cs yocto_anbutton.cs
java import com.yoctopuce.YoctoAPI.YAnButton;
py from yocto_anbutton import *

```

Global functions

yFindAnButton(func)

Retrieves an analog input for a given identifier.

yFirstAnButton()

Starts the enumeration of analog inputs currently accessible.

YAnButton methods

anbutton→describe()

Returns a short text that describes unambiguously the instance of the analog input in the form TYPE (NAME)=SERIAL.FUNCTIONID.

anbutton→get_advertisedValue()

Returns the current value of the analog input (no more than 6 characters).

anbutton→get_analogCalibration()

Tells if a calibration process is currently ongoing.

anbutton→get_calibratedValue()

Returns the current calibrated input value (between 0 and 1000, included).

anbutton→get_calibrationMax()

Returns the maximal value measured during the calibration (between 0 and 4095, included).

anbutton→get_calibrationMin()

Returns the minimal value measured during the calibration (between 0 and 4095, included).

anbutton→get_errorMessage()

Returns the error message of the latest error with the analog input.

anbutton→get_errorType()

Returns the numerical error code of the latest error with the analog input.

anbutton→get_friendlyName()

Returns a global identifier of the analog input in the format MODULE_NAME . FUNCTION_NAME.

anbutton→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

anbutton→get_functionId()

Returns the hardware identifier of the analog input, without reference to the module.

anbutton→get_hardwareId()

Returns the unique hardware identifier of the analog input in the form SERIAL.FUNCTIONID.

anbutton→get_isPressed()

Returns true if the input (considered as binary) is active (closed contact), and false otherwise.

anbutton→get_lastTimePressed()

Returns the number of elapsed milliseconds between the module power on and the last time the input button was pressed (the input contact transitionned from open to closed).

anbutton→get_lastTimeReleased()

Returns the number of elapsed milliseconds between the module power on and the last time the input button was released (the input contact transitionned from closed to open).

anbutton→get_logicalName()

Returns the logical name of the analog input.

anbutton→get_module()

Gets the YModule object for the device on which the function is located.

anbutton→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

anbutton→get_pulseCounter()

Returns the pulse counter value

anbutton→get_pulseTimer()

Returns the timer of the pulses counter (ms)

anbutton→get_rawValue()

Returns the current measured input value as-is (between 0 and 4095, included).

anbutton→get_sensitivity()

Returns the sensibility for the input (between 1 and 1000) for triggering user callbacks.

anbutton→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

anbutton→isOnline()

Checks if the analog input is currently reachable, without raising any error.

anbutton→isOnline_async(callback, context)

Checks if the analog input is currently reachable, without raising any error (asynchronous version).

anbutton→load(msValidity)

Preloads the analog input cache with a specified validity duration.

anbutton→load_async(msValidity, callback, context)

Preloads the analog input cache with a specified validity duration (asynchronous version).

anbutton→nextAnButton()

Continues the enumeration of analog inputs started using yFirstAnButton().

anbutton→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

anbutton→resetCounter()

Returns the pulse counter value as well as his timer

anbutton→set_analogCalibration(newval)

Starts or stops the calibration process.

anbutton→set_calibrationMax(newval)

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Changes the maximal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration.

anbutton→set_calibrationMin(newval)

Changes the minimal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration.

anbutton→set_logicalName(newval)

Changes the logical name of the analog input.

anbutton→set_sensitivity(newval)

Changes the sensibility for the input (between 1 and 1000) for triggering user callbacks.

anbutton→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

anbutton→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YAnButton.FindAnButton() yFindAnButton()yFindAnButton()

YAnButton

Retrieves an analog input for a given identifier.

js	function yFindAnButton(func)
nodejs	function FindAnButton(func)
php	function yFindAnButton(\$func)
cpp	YAnButton* yFindAnButton(const string& func)
m	YAnButton* yFindAnButton(NSString* func)
pas	function yFindAnButton(func: string): TYAnButton
vb	function yFindAnButton(ByVal func As String) As YAnButton
cs	YAnButton FindAnButton(string func)
java	YAnButton FindAnButton(String func)
py	def FindAnButton(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the analog input is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YAnButton.isOnline()` to test if the analog input is indeed online at a given time. In case of ambiguity when looking for an analog input by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the analog input

Returns :

a `YAnButton` object allowing you to drive the analog input.

YAnButton.FirstAnButton() yFirstAnButton()yFirstAnButton()

YAnButton

Starts the enumeration of analog inputs currently accessible.

```
js function yFirstAnButton( )  
node.js function FirstAnButton( )  
php function yFirstAnButton( )  
cpp YAnButton* yFirstAnButton( )  
m YAnButton* yFirstAnButton( )  
pas function yFirstAnButton( ): TYAnButton  
vb function yFirstAnButton( ) As YAnButton  
cs YAnButton FirstAnButton( )  
java YAnButton FirstAnButton( )  
def FirstAnButton( )
```

Use the method `YAnButton.nextAnButton()` to iterate on next analog inputs.

Returns :

a pointer to a `YAnButton` object, corresponding to the first analog input currently online, or a null pointer if there are none.

anbutton→describe()anbutton.describe()**YAnButton**

Returns a short text that describes unambiguously the instance of the analog input in the form
TYPE (**NAME**)=**SERIAL**.**FUNCTIONID**.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, **TYPE** is the type of the function, **NAME** is the name used for the first access to the function, **SERIAL** is the serial number of the module if the module is connected or "unresolved", and **FUNCTIONID** is the hardware identifier of the function if the module is connected. For example, this method returns `Relay(MyCustomName.relay1)=RELAYL01-123456.relay1` if the module is already connected or `Relay(BadCustomName.relay1)=unresolved` if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the analog input (ex: `Relay(MyCustomName.relay1)=RELAYL01-123456.relay1`)

anbutton→get_advertisedValue()
anbutton→advertisedValue()
anbutton.get_advertisedValue()

YAnButton

Returns the current value of the analog input (no more than 6 characters).

js function **get_advertisedValue()**
nodejs function **get_advertisedValue()**
php function **get_advertisedValue()**
cpp string **get_advertisedValue()**
m -(NSString*) advertisedValue
pas function **get_advertisedValue(): string**
vb function **get_advertisedValue() As String**
cs string **get_advertisedValue()**
java String **get_advertisedValue()**
py def **get_advertisedValue()**
cmd YAnButton target **get_advertisedValue**

Returns :

a string corresponding to the current value of the analog input (no more than 6 characters). On failure, throws an exception or returns **Y_ADVERTISEDVALUE_INVALID**.

anbutton→get_analogCalibration()
anbutton→analogCalibration()
anbutton.get_analogCalibration()

YAnButton

Tells if a calibration process is currently ongoing.

```
js    function get_analogCalibration( )  
node.js function get_analogCalibration( )  
php   function get_analogCalibration( )  
cpp   Y_ANALOGCALIBRATION_enum get_analogCalibration( )  
m     -(Y_ANALOGCALIBRATION_enum) analogCalibration  
pas   function get_analogCalibration( ): Integer  
vb    function get_analogCalibration( ) As Integer  
cs    int get_analogCalibration( )  
java  int get_analogCalibration( )  
py    def get_analogCalibration( )  
cmd   YAnButton target get_analogCalibration
```

Returns :

either Y_ANALOGCALIBRATION_OFF or Y_ANALOGCALIBRATION_ON

On failure, throws an exception or returns Y_ANALOGCALIBRATION_INVALID.

anbutton→get_calibratedValue()
anbutton→calibratedValue()
anbutton.get_calibratedValue()

YAnButton

Returns the current calibrated input value (between 0 and 1000, included).

js	function get_calibratedValue()
nodejs	function get_calibratedValue()
php	function get_calibratedValue()
cpp	int get_calibratedValue()
m	-(int) calibratedValue
pas	function get_calibratedValue() : LongInt
vb	function get_calibratedValue() As Integer
cs	int get_calibratedValue()
java	int get_calibratedValue()
py	def get_calibratedValue()
cmd	YAnButton target get_calibratedValue

Returns :

an integer corresponding to the current calibrated input value (between 0 and 1000, included)

On failure, throws an exception or returns Y_CALIBRATEDVALUE_INVALID.

anbutton→get_calibrationMax()
anbutton→calibrationMax()
anbutton.get_calibrationMax()**YAnButton**

Returns the maximal value measured during the calibration (between 0 and 4095, included).

js	function get_calibrationMax()
node.js	function get_calibrationMax()
php	function get_calibrationMax()
cpp	int get_calibrationMax()
m	-(int) calibrationMax
pas	function get_calibrationMax() : LongInt
vb	function get_calibrationMax() As Integer
cs	int get_calibrationMax()
java	int get_calibrationMax()
py	def get_calibrationMax()
cmd	YAnButton target get_calibrationMax

Returns :

an integer corresponding to the maximal value measured during the calibration (between 0 and 4095, included)

On failure, throws an exception or returns Y_CALIBRATIONMAX_INVALID.

anbutton→get_calibrationMin()
anbutton→calibrationMin()
anbutton.get_calibrationMin()**YAnButton**

Returns the minimal value measured during the calibration (between 0 and 4095, included).

```
js function get_calibrationMin( )
nodejs function get_calibrationMin( )
php function get_calibrationMin( )
cpp int get_calibrationMin( )
m -(int) calibrationMin
pas function get_calibrationMin( ): LongInt
vb function get_calibrationMin( ) As Integer
cs int get_calibrationMin( )
java int get_calibrationMin( )
py def get_calibrationMin( )
cmd YAnButton target get_calibrationMin
```

Returns :

an integer corresponding to the minimal value measured during the calibration (between 0 and 4095, included)

On failure, throws an exception or returns Y_CALIBRATIONMIN_INVALID.

anbutton→get_errorMessage()
anbutton→errorMessage()
anbutton.get_errorMessage()**YAnButton**

Returns the error message of the latest error with the analog input.

js	function get_errorMessage()
node.js	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage() : string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the analog input object

anbutton→get_errorType()**YAnButton****anbutton→errorType()anbutton.get_errorType()**

Returns the numerical error code of the latest error with the analog input.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the analog input object

anbutton→get_friendlyName()
anbutton→friendlyName()**YAnButton**

Returns a global identifier of the analog input in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the analog input if they are defined, otherwise the serial number of the module and the hardware identifier of the analog input (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the analog input using logical names (ex: MyCustomName . relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

**anbutton→get_functionDescriptor()
anbutton→functionDescriptor()
anbutton.get_functionDescriptor()****YAnButton**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

anbutton→get_functionId()
anbutton→functionId()**YAnButton**

Returns the hardware identifier of the analog input, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the analog input (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

anbutton→get_hardwareId()
anbutton→hardwareId()**YAnButton**

Returns the unique hardware identifier of the analog input in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the analog input. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the analog input (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

anbutton→get_isPressed()**YAnButton****anbutton→isPressed()anbutton.get_isPressed()**

Returns true if the input (considered as binary) is active (closed contact), and false otherwise.

js	function get_isPressed()
nodejs	function get_isPressed()
php	function get_isPressed()
cpp	Y_ISPRESSED_enum get_isPressed()
m	-(Y_ISPRESSED_enum) isPressed
pas	function get_isPressed(): Integer
vb	function get_isPressed() As Integer
cs	int get_isPressed()
java	int get_isPressed()
py	def get_isPressed()
cmd	YAnButton target get_isPressed

Returns :

either Y_ISPRESSED_FALSE or Y_ISPRESSED_TRUE, according to true if the input (considered as binary) is active (closed contact), and false otherwise

On failure, throws an exception or returns Y_ISPRESSED_INVALID.

anbutton→get_lastTimePressed()
anbutton→lastTimePressed()
anbutton.get_lastTimePressed()

YAnButton

Returns the number of elapsed milliseconds between the module power on and the last time the input button was pressed (the input contact transitionned from open to closed).

```
js function get_lastTimePressed( )
nodejs function get_lastTimePressed( )
php function get_lastTimePressed( )
cpp s64 get_lastTimePressed( )
m -(s64) lastTimePressed
pas function get_lastTimePressed( ): int64
vb function get_lastTimePressed( ) As Long
cs long get_lastTimePressed( )
java long get_lastTimePressed( )
py def get_lastTimePressed( )
cmd YAnButton target get_lastTimePressed
```

Returns :

an integer corresponding to the number of elapsed milliseconds between the module power on and the last time the input button was pressed (the input contact transitionned from open to closed)

On failure, throws an exception or returns `Y_LASTTIMEPRESSED_INVALID`.

anbutton→get_lastTimeReleased()
anbutton→lastTimeReleased()
anbutton.get_lastTimeReleased()

YAnButton

Returns the number of elapsed milliseconds between the module power on and the last time the input button was released (the input contact transitionned from closed to open).

```
js function get_lastTimeReleased( )
nodejs function get_lastTimeReleased( )
php function get_lastTimeReleased( )
cpp s64 get_lastTimeReleased( )
m -(s64) lastTimeReleased
pas function get_lastTimeReleased( ): int64
vb function get_lastTimeReleased( ) As Long
cs long get_lastTimeReleased( )
java long get_lastTimeReleased( )
py def get_lastTimeReleased( )
cmd YAnButton target get_lastTimeReleased
```

Returns :

an integer corresponding to the number of elapsed milliseconds between the module power on and the last time the input button was released (the input contact transitionned from closed to open)

On failure, throws an exception or returns `Y_LASTTIMERELEASED_INVALID`.

anbutton→get_logicalName()**YAnButton****anbutton→logicalName()anbutton.get_logicalName()**

Returns the logical name of the analog input.

js	function get_logicalName()
node.js	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName() : string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YAnButton target get_logicalName

Returns :

a string corresponding to the logical name of the analog input. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

anbutton→get_module()**YAnButton****anbutton→module()anbutton.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

anbutton→get_module_async()
anbutton→module_async()**YAnButton**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

anbutton→get_pulseCounter()
anbutton→pulseCounter()
anbutton.get_pulseCounter()

YAnButton

Returns the pulse counter value

js	function get_pulseCounter()
nodejs	function get_pulseCounter()
php	function get_pulseCounter()
cpp	s64 get_pulseCounter()
m	-(s64) pulseCounter
pas	function get_pulseCounter(): int64
vb	function get_pulseCounter() As Long
cs	long get_pulseCounter()
java	long get_pulseCounter()
py	def get_pulseCounter()

Returns :

an integer corresponding to the pulse counter value

On failure, throws an exception or returns **Y_PULSECOUNTER_INVALID**.

anbutton→get_pulseTimer()**YAnButton****anbutton→pulseTimer()&anbutton.get_pulseTimer()**

Returns the timer of the pulses counter (ms)

js function **get_pulseTimer()****node.js** function **get_pulseTimer()****php** function **get_pulseTimer()****cpp** s64 **get_pulseTimer()****m** -(s64) pulseTimer**pas** function **get_pulseTimer(): int64****vb** function **get_pulseTimer() As Long****cs** long **get_pulseTimer()****java** long **get_pulseTimer()****py** def **get_pulseTimer()****Returns :**

an integer corresponding to the timer of the pulses counter (ms)

On failure, throws an exception or returns **Y_PULSE_TIMER_INVALID**.

anbutton→get_rawValue()**YAnButton****anbutton→rawValue()anbutton.get_rawValue()**

Returns the current measured input value as-is (between 0 and 4095, included).

js	function get_rawValue()
nodejs	function get_rawValue()
php	function get_rawValue()
cpp	int get_rawValue()
m	-(int) rawValue
pas	function get_rawValue(): LongInt
vb	function get_rawValue() As Integer
cs	int get_rawValue()
java	int get_rawValue()
py	def get_rawValue()
cmd	YAnButton target get_rawValue

Returns :

an integer corresponding to the current measured input value as-is (between 0 and 4095, included)

On failure, throws an exception or returns Y_RAWVALUE_INVALID.

anbutton→get_sensitivity()**YAnButton****anbutton→sensitivity()|anbutton.get_sensitivity()**

Returns the sensibility for the input (between 1 and 1000) for triggering user callbacks.

js	function get_sensitivity()
node.js	function get_sensitivity()
php	function get_sensitivity()
cpp	int get_sensitivity()
m	-(int) sensitivity
pas	function get_sensitivity() : LongInt
vb	function get_sensitivity() As Integer
cs	int get_sensitivity()
java	int get_sensitivity()
py	def get_sensitivity()
cmd	YAnButton target get_sensitivity

Returns :

an integer corresponding to the sensibility for the input (between 1 and 1000) for triggering user callbacks

On failure, throws an exception or returns Y_SENSITIVITY_INVALID.

anbutton→get(userData)**YAnButton****anbutton→userData()anbutton.get(userData)**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

anbutton→isOnline()anbutton.isOnline()**YAnButton**

Checks if the analog input is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the analog input in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the analog input.

Returns :

true if the analog input can be reached, and false otherwise

anbutton→isOnline_async()**YAnButton**

Checks if the analog input is currently reachable, without raising any error (asynchronous version).

js	function isOnline_async(callback, context)
node.js	function isOnline_async(callback, context)

If there is a cached value for the analog input in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

anbutton→load()**YAnButton**

Preloads the analog input cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

anbutton→load_async()

YAnButton

Preloads the analog input cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

anbutton→nextAnButton()anbutton.nextAnButton()**YAnButton**

Continues the enumeration of analog inputs started using `yFirstAnButton()`.

js	<code>function nextAnButton()</code>
nodejs	<code>function nextAnButton()</code>
php	<code>function nextAnButton()</code>
cpp	<code>YAnButton * nextAnButton()</code>
m	<code>-(YAnButton*) nextAnButton</code>
pas	<code>function nextAnButton(): TYAnButton</code>
vb	<code>function nextAnButton() As YAnButton</code>
cs	<code>YAnButton nextAnButton()</code>
java	<code>YAnButton nextAnButton()</code>
py	<code>def nextAnButton()</code>

Returns :

a pointer to a `YAnButton` object, corresponding to an analog input currently online, or a `null` pointer if there are no more analog inputs to enumerate.

anbutton→registerValueCallback() anbutton.registerValueCallback()

YAnButton

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback(callback)
node.js	function registerValueCallback(callback)
php	function registerValueCallback(\$callback)
cpp	int registerValueCallback(YAnButtonValueCallback callback)
m	-(int) registerValueCallback : (YAnButtonValueCallback) callback
pas	function registerValueCallback(callback : TYAnButtonValueCallback): LongInt
vb	function registerValueCallback() As Integer
cs	int registerValueCallback(ValueCallback callback)
java	int registerValueCallback(UpdateCallback callback)
py	def registerValueCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

anbutton→resetCounter()|anbutton.resetCounter()**YAnButton**

Returns the pulse counter value as well as his timer

js	function resetCounter()
nodejs	function resetCounter()
php	function resetCounter()
cpp	int resetCounter()
m	- (int) resetCounter
pas	function resetCounter() : LongInt
vb	function resetCounter() As Integer
cs	int resetCounter()
java	int resetCounter()
py	def resetCounter()

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

anbutton→set_analogCalibration()
anbutton→setAnalogCalibration()
anbutton.set_analogCalibration()

YAnButton

Starts or stops the calibration process.

js	function set_analogCalibration(newval)
nodejs	function set_analogCalibration(newval)
php	function set_analogCalibration(\$newval)
cpp	int set_analogCalibration(Y_ANALOGCALIBRATION_enum newval)
m	-(int) setAnalogCalibration : (Y_ANALOGCALIBRATION_enum) newval
pas	function set_analogCalibration(newval: Integer): integer
vb	function set_analogCalibration(ByVal newval As Integer) As Integer
cs	int set_analogCalibration(int newval)
java	int set_analogCalibration(int newval)
py	def set_analogCalibration(newval)
cmd	YAnButton target set_analogCalibration newval

Remember to call the `saveToFlash()` method of the module at the end of the calibration if the modification must be kept.

Parameters :

newval either `Y_ANALOGCALIBRATION_OFF` or `Y_ANALOGCALIBRATION_ON`

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

anbutton→set_calibrationMax()
anbutton→setCalibrationMax()
anbutton.set_calibrationMax()

YAnButton

Changes the maximal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration.

js	function set_calibrationMax(newval)
nodejs	function set_calibrationMax(newval)
php	function set_calibrationMax(\$newval)
cpp	int set_calibrationMax(int newval)
m	- (int) setCalibrationMax : (int) newval
pas	function set_calibrationMax(newval: LongInt): integer
vb	function set_calibrationMax(ByVal newval As Integer) As Integer
cs	int set_calibrationMax(int newval)
java	int set_calibrationMax(int newval)
py	def set_calibrationMax(newval)
cmd	YAnButton target set_calibrationMax newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the maximal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

anbutton→set_calibrationMin()
anbutton→setCalibrationMin()
anbutton.set_calibrationMin()

YAnButton

Changes the minimal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration.

js	function set_calibrationMin(newval)
nodejs	function set_calibrationMin(newval)
php	function set_calibrationMin(\$newval)
cpp	int set_calibrationMin(int newval)
m	-(int) setCalibrationMin : (int) newval
pas	function set_calibrationMin(newval: LongInt): integer
vb	function set_calibrationMin(ByVal newval As Integer) As Integer
cs	int set_calibrationMin(int newval)
java	int set_calibrationMin(int newval)
py	def set_calibrationMin(newval)
cmd	YAnButton target set_calibrationMin newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the minimal calibration value for the input (between 0 and 4095, included), without actually starting the automated calibration

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

anbutton→set_logicalName()
anbutton→setLogicalName()
anbutton.set_logicalName()

YAnButton

Changes the logical name of the analog input.

```
js function set_logicalName( newval)
nodejs function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YAnButton target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the analog input.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

anbutton→set_sensitivity()**YAnButton****anbutton→setSensitivity()|anbutton.set_sensitivity()**

Changes the sensibility for the input (between 1 and 1000) for triggering user callbacks.

js	<code>function set_sensitivity(newval)</code>
node.js	<code>function set_sensitivity(newval)</code>
php	<code>function set_sensitivity(\$newval)</code>
cpp	<code>int set_sensitivity(int newval)</code>
m	<code>-(int) setSensitivity : (int) newval</code>
pas	<code>function set_sensitivity(newval: LongInt): integer</code>
vb	<code>function set_sensitivity(ByVal newval As Integer) As Integer</code>
cs	<code>int set_sensitivity(int newval)</code>
java	<code>int set_sensitivity(int newval)</code>
py	<code>def set_sensitivity(newval)</code>
cmd	<code>YAnButton target set_sensitivity newval</code>

The sensibility is used to filter variations around a fixed value, but does not preclude the transmission of events when the input value evolves constantly in the same direction. Special case: when the value 1000 is used, the callback will only be thrown when the logical state of the input switches from pressed to released and back. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the sensibility for the input (between 1 and 1000) for triggering user callbacks

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

anbutton→set(userData)**YAnButton****anbutton→setUserData()anbutton.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

```
js   function setUserData( data)
node.js function setUserData( data)
php  function setUserData( $data)
cpp   void setUserData( void* data)
m    -(void) setUserData : (void*) data
pas   procedure setUserData( data: Tobject)
vb    procedure setUserData( ByVal data As Object)
cs    void setUserData( object data)
java  void setUserData( Object data)
py    def setUserData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

anbutton→wait_async()

YAnButton

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context )
nodejs function wait_async( callback, context )
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.4. CarbonDioxide function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_carbondioxide.js'></script>
nodejs var yoctolib = require('yoctolib');
var YCarbonDioxide = yoctolib.YCarbonDioxide;
php require_once('yocto_carbondioxide.php');
cpp #include "yocto_carbondioxide.h"
m #import "yocto_carbondioxide.h"
pas uses yocto_carbondioxide;
vb yocto_carbondioxide.vb
cs yocto_carbondioxide.cs
java import com.yoctopuce.YoctoAPI.YCarbonDioxide;
py from yocto_carbondioxide import *

```

Global functions

yFindCarbonDioxide(func)

Retrieves a CO2 sensor for a given identifier.

yFirstCarbonDioxide()

Starts the enumeration of CO2 sensors currently accessible.

YCarbonDioxide methods

carbondioxide→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

carbondioxide→describe()

Returns a short text that describes unambiguously the instance of the CO2 sensor in the form TYPE (NAME) = SERIAL . FUNCTIONID.

carbondioxide→get_advertisedValue()

Returns the current value of the CO2 sensor (no more than 6 characters).

carbondioxide→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

carbondioxide→get_currentValue()

Returns the current value of the CO2 concentration.

carbondioxide→get_errorMessage()

Returns the error message of the latest error with the CO2 sensor.

carbondioxide→get_errorType()

Returns the numerical error code of the latest error with the CO2 sensor.

carbondioxide→get_friendlyName()

Returns a global identifier of the CO2 sensor in the format MODULE_NAME . FUNCTION_NAME.

carbondioxide→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

carbondioxide→get_functionId()

Returns the hardware identifier of the CO2 sensor, without reference to the module.

carbondioxide→get_hardwareId()

Returns the unique hardware identifier of the CO2 sensor in the form SERIAL . FUNCTIONID.

carbondioxide→get_highestValue()

Returns the maximal value observed for the CO2 concentration since the device was started.

carbondioxide→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

carbondioxide→get_logicalName()

Returns the logical name of the CO2 sensor.

carbondioxide→get_lowestValue()

Returns the minimal value observed for the CO2 concentration since the device was started.

carbondioxide→get_module()

Gets the YModule object for the device on which the function is located.

carbondioxide→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

carbondioxide→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

carbondioxide→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

carbondioxide→get_resolution()

Returns the resolution of the measured values.

carbondioxide→get_unit()

Returns the measuring unit for the CO2 concentration.

carbondioxide→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

carbondioxide→isOnline()

Checks if the CO2 sensor is currently reachable, without raising any error.

carbondioxide→isOnline_async(callback, context)

Checks if the CO2 sensor is currently reachable, without raising any error (asynchronous version).

carbondioxide→load(msValidity)

Preloads the CO2 sensor cache with a specified validity duration.

carbondioxide→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

carbondioxide→load_async(msValidity, callback, context)

Preloads the CO2 sensor cache with a specified validity duration (asynchronous version).

carbondioxide→nextCarbonDioxide()

Continues the enumeration of CO2 sensors started using yFirstCarbonDioxide().

carbondioxide→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

carbondioxide→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

carbondioxide→set_highestValue(newval)

Changes the recorded maximal value observed.

carbondioxide→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

carbondioxide→set_logicalName(newval)

Changes the logical name of the CO2 sensor.

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carbondioxide→set_lowestValue(newval)

Changes the recorded minimal value observed.

carbondioxide→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

carbondioxide→set_resolution(newval)

Changes the resolution of the measured physical values.

carbondioxide→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

carbondioxide→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YCarbonDioxide.FindCarbonDioxide() yFindCarbonDioxide()yFindCarbonDioxide()

YCarbonDioxide

Retrieves a CO2 sensor for a given identifier.

js	function yFindCarbonDioxide(func)
node.js	function FindCarbonDioxide(func)
php	function yFindCarbonDioxide(\$func)
cpp	YCarbonDioxide* yFindCarbonDioxide(const string& func)
m	YCarbonDioxide* yFindCarbonDioxide(NSString* func)
pas	function yFindCarbonDioxide(func: string): TYCarbonDioxide
vb	function yFindCarbonDioxide(ByVal func As String) As YCarbonDioxide
cs	YCarbonDioxide FindCarbonDioxide(string func)
java	YCarbonDioxide FindCarbonDioxide(String func)
py	def FindCarbonDioxide(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the CO2 sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YCarbonDioxide.isOnline()` to test if the CO2 sensor is indeed online at a given time. In case of ambiguity when looking for a CO2 sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the CO2 sensor

Returns :

a `YCarbonDioxide` object allowing you to drive the CO2 sensor.

YCarbonDioxide.FirstCarbonDioxide() yFirstCarbonDioxide()yFirstCarbonDioxide()

YCarbonDioxide

Starts the enumeration of CO2 sensors currently accessible.

```
js function yFirstCarbonDioxide( )
node.js function FirstCarbonDioxide( )
php function yFirstCarbonDioxide( )
cpp YCarbonDioxide* yFirstCarbonDioxide( )
m YCarbonDioxide* yFirstCarbonDioxide( )
pas function yFirstCarbonDioxide( ): TYCarbonDioxide
vb function yFirstCarbonDioxide( ) As YCarbonDioxide
cs YCarbonDioxide FirstCarbonDioxide( )
java YCarbonDioxide FirstCarbonDioxide( )
py def FirstCarbonDioxide( )
```

Use the method `YCarbonDioxide.nextCarbonDioxide()` to iterate on next CO2 sensors.

Returns :

a pointer to a `YCarbonDioxide` object, corresponding to the first CO2 sensor currently online, or a null pointer if there are none.

carbondioxide→calibrateFromPoints()**carbondioxide.calibrateFromPoints()****YCarbonDioxide**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php  function calibrateFromPoints( $rawValues, $refValues)
cpp   int calibrateFromPoints( vector<double> rawValues,
                             vector<double> refValues)

m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function calibrateFromPoints( rawValues: TDoubleArray,
                           refValues: TDoubleArray): LongInt

vb   procedure calibrateFromPoints( )

cs   int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def calibrateFromPoints( rawValues, refValues)

cmd  YCarbonDioxide target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.
refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→describe()carbon dioxide.describe()**YCarbonDioxide**

Returns a short text that describes unambiguously the instance of the CO2 sensor in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the CO2 sensor (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

carbondioxide→get_advertisedValue()
carbondioxide→advertisedValue()
carbondioxide.get_advertisedValue()

YCarbonDioxide

Returns the current value of the CO2 sensor (no more than 6 characters).

```
js function get_advertisedValue( )  
node.js function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YCarbonDioxide target get_advertisedValue
```

Returns :

a string corresponding to the current value of the CO2 sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

carbon dioxide → get_currentRawValue()
carbon dioxide → currentRawValue()
carbon dioxide.get_currentRawValue()**YCarbonDioxide**

Returns the uncalibrated, unrounded raw value returned by the sensor.

js function **get_currentRawValue()**
nodejs function **get_currentRawValue()**
php function **get_currentRawValue()**
cpp double **get_currentRawValue()**
m -(double) currentRawValue
pas function **get_currentRawValue()**: double
vb function **get_currentRawValue()** As Double
cs double **get_currentRawValue()**
java double **get_currentRawValue()**
py def **get_currentRawValue()**
cmd YCarbonDioxide **target get_currentRawValue**

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns **Y_CURRENTRAWVALUE_INVALID**.

carbondioxide→get_currentValue()
carbondioxide→currentValue()
carbondioxide.get_currentValue()

YCarbonDioxide

Returns the current value of the CO2 concentration.

js	function get_currentValue()
node.js	function get_currentValue()
php	function get_currentValue()
cpp	double get_currentValue()
m	-(double) currentValue
pas	function get_currentValue() : double
vb	function get_currentValue() As Double
cs	double get_currentValue()
java	double get_currentValue()
py	def get_currentValue()
cmd	YCarbonDioxide target get_currentValue

Returns :

a floating point number corresponding to the current value of the CO2 concentration

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

carbondioxide→get_errorMessage()
carbondioxide→errorMessage()
carbondioxide.get_errorMessage()**YCarbonDioxide**

Returns the error message of the latest error with the CO2 sensor.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the CO2 sensor object

carbondioxide→get_errorType()
carbondioxide→errorType()
carbondioxide.get_errorType()**YCarbonDioxide**

Returns the numerical error code of the latest error with the CO2 sensor.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the CO2 sensor object

carbon dioxide → get_friendlyName()
carbon dioxide → friendlyName()**YCarbonDioxide**

Returns a global identifier of the CO2 sensor in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the CO2 sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the CO2 sensor (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the CO2 sensor using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

carbondioxide→get_functionDescriptor()
carbondioxide→functionDescriptor()
carbondioxide.get_functionDescriptor()

YCarbonDioxide

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

carbon dioxide → get_functionId()
carbon dioxide → functionId()**YCarbonDioxide**

Returns the hardware identifier of the CO2 sensor, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the CO2 sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

carbondioxide→get.hardwareId()**YCarbonDioxide****carbondioxide→hardwareId()**

Returns the unique hardware identifier of the CO2 sensor in the form SERIAL.FUNCTIONID.

js	function get.hardwareId()
nodejs	function get.hardwareId()
php	function get.hardwareId()
cpp	string get.hardwareId()
m	-(NSString*) hardwareId
vb	function get.hardwareId() As String
cs	string get.hardwareId()
java	String get.hardwareId()
py	def get.hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the CO2 sensor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the CO2 sensor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

carbon dioxide → get_highestValue()
carbon dioxide → highestValue()
carbon dioxide.get_highestValue()**YCarbonDioxide**

Returns the maximal value observed for the CO2 concentration since the device was started.

js	function get_highestValue()
nodejs	function get_highestValue()
php	function get_highestValue()
cpp	double get_highestValue()
m	-(double) highestValue
pas	function get_highestValue() : double
vb	function get_highestValue() As Double
cs	double get_highestValue()
java	double get_highestValue()
py	def get_highestValue()
cmd	YCarbonDioxide target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the CO2 concentration since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

carbondioxide→get_logFrequency()
carbondioxide→logFrequency()
carbondioxide.get_logFrequency()

YCarbonDioxide

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

```
js   function get_logFrequency( )  
nodejs function get_logFrequency( )  
php  function get_logFrequency( )  
cpp   string get_logFrequency( )  
m    -(NSString*) logFrequency  
pas   function get_logFrequency( ): string  
vb    function get_logFrequency( ) As String  
cs   string get_logFrequency( )  
java  String get_logFrequency( )  
py    def get_logFrequency()  
cmd   YCarbonDioxide target get_logFrequency
```

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns `Y_LOGFREQUENCY_INVALID`.

carbon dioxide → get_logicalName()
carbon dioxide → logicalName()
carbon dioxide.get_logicalName()**YCarbonDioxide**

Returns the logical name of the CO2 sensor.

```
js function get_logicalName( )
nodejs function get_logicalName( )
php function get_logicalName( )
cpp string get_logicalName( )
m -(NSString*) logicalName
pas function get_logicalName( ): string
vb function get_logicalName( ) As String
cs string get_logicalName( )
java String get_logicalName( )
py def get_logicalName( )
cmd YCarbonDioxide target get_logicalName
```

Returns :

a string corresponding to the logical name of the CO2 sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

carbondioxide→get_lowestValue()
carbondioxide→lowestValue()
carbondioxide.get_lowestValue()

YCarbonDioxide

Returns the minimal value observed for the CO2 concentration since the device was started.

js	function get_lowestValue()
node.js	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue(): double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YCarbonDioxide target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the CO2 concentration since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

**carbon dioxide → get_module()
carbon dioxide → module()
carbon dioxide.get_module()****YCarbonDioxide**

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

carbondioxide→get_module_async()
carbondioxide→module_async()**YCarbonDioxide**

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

carbondioxide → `get_recordedData()`
carbondioxide → `recordedData()`
carbondioxide.`get_recordedData()`

YCarbonDioxide

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the `DataSet` class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without ending limit.

Returns :

an instance of `YDataSet`, providing access to historical data. Past measures can be loaded progressively using methods from the `YDataSet` object.

carbondioxide→get_reportFrequency()
carbondioxide→reportFrequency()
carbondioxide.get_reportFrequency()**YCarbonDioxide**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js   function get_reportFrequency( )
nodejs function get_reportFrequency( )
php  function get_reportFrequency( )
cpp   string get_reportFrequency( )
m    -(NSString*) reportFrequency
pas   function get_reportFrequency( ): string
vb    function get_reportFrequency( ) As String
cs   string get_reportFrequency( )
java  String get_reportFrequency( )
py    def get_reportFrequency( )
cmd   YCarbonDioxide target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns `Y_REPORTFREQUENCY_INVALID`.

carbondioxide→get_resolution()
carbondioxide→resolution()
carbondioxide.get_resolution()

YCarbonDioxide

Returns the resolution of the measured values.

```
js function get_resolution( )
nodejs function get_resolution( )
php function get_resolution( )
cpp double get_resolution( )
m -(double) resolution
pas function get_resolution( ): double
vb function get_resolution( ) As Double
cs double get_resolution( )
java double get_resolution( )
py def get_resolution( )
cmd YCarbonDioxide target get_resolution
```

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

carbondioxide→get_unit()**YCarbonDioxide****carbondioxide→unit()carbondioxide.get_unit()**

Returns the measuring unit for the CO2 concentration.

js	function get_unit()
nodejs	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YCarbonDioxide target get_unit

Returns :

a string corresponding to the measuring unit for the CO2 concentration

On failure, throws an exception or returns **Y_UNIT_INVALID**.

carbon dioxide → get(userData)
carbon dioxide → userData()
carbon dioxide.get(userData)**YCarbonDioxide**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

```
js function get(userData) {  
nodejs function get(userData) {  
php function get(userData) {  
cpp void * get(userData) {  
m -(void*) userData  
pas function get(userData): Tobject  
vb function get(userData) As Object  
cs object get(userData) {  
java Object get(userData)  
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

carbondioxide→isOnline()**YCarbonDioxide**

Checks if the CO2 sensor is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the CO2 sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the CO2 sensor.

Returns :

`true` if the CO2 sensor can be reached, and `false` otherwise

carbondioxide→isOnline_async()

YCarbonDioxide

Checks if the CO2 sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the CO2 sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

carbondioxide→load()carbon dioxide.load()**YCarbonDioxide**

Preloads the CO2 sensor cache with a specified validity duration.

js	function load(msValidity)
node.js	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

carbondioxide→loadCalibrationPoints() carbondioxide.loadCalibrationPoints()

YCarbonDioxide

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php  function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt

vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def loadCalibrationPoints( rawValues, refValues)
cmd  YCarbonDioxide target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→load_async()

YCarbonDioxide

Preloads the CO2 sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

carbon dioxide → nextCarbonDioxide()
carbon dioxide.nextCarbonDioxide()**YCarbonDioxide**

Continues the enumeration of CO2 sensors started using `yFirstCarbonDioxide()`.

js	function nextCarbonDioxide()
node.js	function nextCarbonDioxide()
php	function nextCarbonDioxide()
cpp	YCarbonDioxide * nextCarbonDioxide()
m	-(YCarbonDioxide*) nextCarbonDioxide
pas	function nextCarbonDioxide() : TYCarbonDioxide
vb	function nextCarbonDioxide() As YCarbonDioxide
cs	YCarbonDioxide nextCarbonDioxide()
java	YCarbonDioxide nextCarbonDioxide()
py	def nextCarbonDioxide()

Returns :

a pointer to a `YCarbonDioxide` object, corresponding to a CO2 sensor currently online, or a null pointer if there are no more CO2 sensors to enumerate.

carbondioxide→registerTimedReportCallback() carbondioxide.registerTimedReportCallback()

YCarbonDioxide

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback(callback)
node.js	function registerTimedReportCallback(callback)
php	function registerTimedReportCallback(\$callback)
cpp	int registerTimedReportCallback(YCarbonDioxideTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YCarbonDioxideTimedReportCallback) callback
pas	function registerTimedReportCallback(callback : TYCarbonDioxideTimedReportCallback): LongInt
vb	function registerTimedReportCallback() As Integer
cs	int registerTimedReportCallback(TimedReportCallback callback)
java	int registerTimedReportCallback(TimedReportCallback callback)
py	def registerTimedReportCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

carbon dioxide → registerValueCallback() carbon dioxide.registerValueCallback()

YCarbonDioxide

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YCarbonDioxideValueCallback callback )
m    -(int) registerValueCallback : (YCarbonDioxideValueCallback) callback
pas   function registerValueCallback( callback: TYCarbonDioxideValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

carbondioxide→set_highestValue()
carbondioxide→setHighestValue()
carbondioxide.set_highestValue()

YCarbonDioxide

Changes the recorded maximal value observed.

```
js function set_highestValue( newval)
nodejs function set_highestValue( newval)
php function set_highestValue( $newval)
cpp int set_highestValue( double newval)
m -(int) setHighestValue : (double) newval
pas function set_highestValue( newval: double): integer
vb function set_highestValue( ByVal newval As Double) As Integer
cs int set_highestValue( double newval)
java int set_highestValue( double newval)
py def set_highestValue( newval)
cmd YCarbonDioxide target set_highestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbon dioxide → set_logFrequency()
carbon dioxide → setLogFrequency()
carbon dioxide.set_logFrequency()

YCarbonDioxide

Changes the datalogger recording frequency for this function.

```
js   function set_logFrequency( newval)
nodejs function set_logFrequency( newval)
php  function set_logFrequency( $newval)
cpp   int set_logFrequency( const string& newval)
m    -(int) setLogFrequency : (NSString*) newval
pas   function set_logFrequency( newval: string): integer
vb    function set_logFrequency( ByVal newval As String) As Integer
cs    int set_logFrequency( string newval)
java  int set_logFrequency( String newval)
py    def set_logFrequency( newval)
cmd   YCarbonDioxide target set_logFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→set_logicalName()
carbondioxide→setLogicalName()
carbondioxide.set_logicalName()

YCarbonDioxide

Changes the logical name of the CO2 sensor.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YCarbonDioxide target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the CO2 sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

carbon dioxide → set_lowestValue()
carbon dioxide → setLowestValue()
carbon dioxide.set_lowestValue()

YCarbonDioxide

Changes the recorded minimal value observed.

```
js function set_lowestValue( newval)
nodejs function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YCarbonDioxide target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→set_reportFrequency()
carbondioxide→setReportFrequency()
carbondioxide.set_reportFrequency()

YCarbonDioxide

Changes the timed value notification frequency for this function.

js	function set_reportFrequency(newval)
node.js	function set_reportFrequency(newval)
php	function set_reportFrequency(\$newval)
cpp	int set_reportFrequency(const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency(newval: string): integer
vb	function set_reportFrequency(ByVal newval As String) As Integer
cs	int set_reportFrequency(string newval)
java	int set_reportFrequency(String newval)
py	def set_reportFrequency(newval)
cmd	YCarbonDioxide target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→set_resolution()
carbondioxide→setResolution()
carbondioxide.set_resolution()

YCarbonDioxide

Changes the resolution of the measured physical values.

```
js function set_resolution( newval)
nodejs function set_resolution( newval)
php function set_resolution( $newval)
cpp int set_resolution( double newval)
m -(int) setResolution : (double) newval
pas function set_resolution( newval: double): integer
vb function set_resolution( ByVal newval As Double) As Integer
cs int set_resolution( double newval)
java int set_resolution( double newval)
py def set_resolution( newval)
cmd YCarbonDioxide target set_resolution newval
```

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

carbondioxide→set(userData)
carbondioxide→setUserData()
carbondioxide.set(userData)

YCarbonDioxide

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	-(void) setUserData : (void*) data
pas	procedure set(userData data: Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

carbondioxide→wait_async()

YCarbonDioxide

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.5. ColorLed function interface

Yoctopuce application programming interface allows you to drive a color led using RGB coordinates as well as HSL coordinates. The module performs all conversions from RGB to HSL automatically. It is then self-evident to turn on a led with a given hue and to progressively vary its saturation or lightness. If needed, you can find more information on the difference between RGB and HSL in the section following this one.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_colorled.js'></script>
node.js	var yoctolib = require('yoctolib');
php	var YColorLed = yoctolib.YColorLed;
cpp	require_once('yocto_colorled.php');
m	#include "yocto_colorled.h"
pas	#import "yocto_colorled.h"
vb	uses yocto_colorled;
cs	yocto_colorled.vb
java	yocto_colorled.cs
py	import com.yoctopuce.YoctoAPI.YColorLed;
	from yocto_colorled import *

Global functions

yFindColorLed(func)

Retrieves an RGB led for a given identifier.

yFirstColorLed()

Starts the enumeration of RGB leds currently accessible.

YColorLed methods

colorled→describe()

Returns a short text that describes unambiguously the instance of the RGB led in the form TYPE (NAME) = SERIAL . FUNCTIONID.

colorled→get_advertisedValue()

Returns the current value of the RGB led (no more than 6 characters).

colorled→get_errorMessage()

Returns the error message of the latest error with the RGB led.

colorled→get_errorType()

Returns the numerical error code of the latest error with the RGB led.

colorled→get_friendlyName()

Returns a global identifier of the RGB led in the format MODULE_NAME . FUNCTION_NAME.

colorled→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

colorled→get_functionId()

Returns the hardware identifier of the RGB led, without reference to the module.

colorled→get_hardwareId()

Returns the unique hardware identifier of the RGB led in the form SERIAL . FUNCTIONID.

colorled→get_hslColor()

Returns the current HSL color of the led.

colorled→get_logicalName()

Returns the logical name of the RGB led.

3. Reference

colorled→get_module()	Gets the YModule object for the device on which the function is located.
colorled→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located (asynchronous version).
colorled→get_rgbColor()	Returns the current RGB color of the led.
colorled→get_rgbColorAtPowerOn()	Returns the configured color to be displayed when the module is turned on.
colorled→get_userData()	Returns the value of the userData attribute, as previously stored using method set(userData).
colorled→hslMove(hsl_target, ms_duration)	Performs a smooth transition in the HSL color space between the current color and a target color.
colorled→isOnline()	Checks if the RGB led is currently reachable, without raising any error.
colorled→isOnline_async(callback, context)	Checks if the RGB led is currently reachable, without raising any error (asynchronous version).
colorled→load(msValidity)	Preloads the RGB led cache with a specified validity duration.
colorled→load_async(msValidity, callback, context)	Preloads the RGB led cache with a specified validity duration (asynchronous version).
colorled→nextColorLed()	Continues the enumeration of RGB leds started using yFirstColorLed().
colorled→registerValueCallback(callback)	Registers the callback function that is invoked on every change of advertised value.
colorled→rgbMove(rgb_target, ms_duration)	Performs a smooth transition in the RGB color space between the current color and a target color.
colorled→set_hslColor(newval)	Changes the current color of the led, using a color HSL.
colorled→set_logicalName(newval)	Changes the logical name of the RGB led.
colorled→set_rgbColor(newval)	Changes the current color of the led, using a RGB color.
colorled→set_rgbColorAtPowerOn(newval)	Changes the color that the led will display by default when the module is turned on.
colorled→set_userData(data)	Stores a user context provided as argument in the userData attribute of the function.
colorled→wait_async(callback, context)	Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YColorLed.FindColorLed() yFindColorLed()yFindColorLed()

YColorLed

Retrieves an RGB led for a given identifier.

js	function yFindColorLed(func)
nodejs	function FindColorLed(func)
php	function yFindColorLed(\$func)
cpp	YColorLed* yFindColorLed(const string& func)
m	YColorLed* yFindColorLed(NSString* func)
pas	function yFindColorLed(func: string): TYColorLed
vb	function yFindColorLed(ByVal func As String) As YColorLed
cs	YColorLed FindColorLed(string func)
java	YColorLed FindColorLed(String func)
py	def FindColorLed(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the RGB led is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YColorLed.isOnline()` to test if the RGB led is indeed online at a given time. In case of ambiguity when looking for an RGB led by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the RGB led

Returns :

a `YColorLed` object allowing you to drive the RGB led.

YColorLed.FirstColorLed() yFirstColorLed()yFirstColorLed()

YColorLed

Starts the enumeration of RGB leds currently accessible.

```
js function yFirstColorLed( )
node.js function FirstColorLed( )
php function yFirstColorLed( )
cpp YColorLed* yFirstColorLed( )
m YColorLed* yFirstColorLed( )
pas function yFirstColorLed( ): TYColorLed
vb function yFirstColorLed( ) As YColorLed
cs YColorLed FirstColorLed( )
java YColorLed FirstColorLed( )
py def FirstColorLed( )
```

Use the method `YColorLed.nextColorLed()` to iterate on next RGB leds.

Returns :

a pointer to a `YColorLed` object, corresponding to the first RGB led currently online, or a `null` pointer if there are none.

colorled→describe()colorled.describe()**YColorLed**

Returns a short text that describes unambiguously the instance of the RGB led in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the RGB led (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

colorled→get_advertisedValue()
colorled→advertisedValue()
colorled.get_advertisedValue()**YColorLed**

Returns the current value of the RGB led (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue(): string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YColorLed target get_advertisedValue

Returns :

a string corresponding to the current value of the RGB led (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

colorled→get_errorMessage()
colorled→errorMessage()
colorled.get_errorMessage()**YColorLed**

Returns the error message of the latest error with the RGB led.

js	function get_errorMessage()
node.js	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage() : string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the RGB led object

colorled→get_errorType()**YColorLed****colorled→errorType()colorled.get_errorType()**

Returns the numerical error code of the latest error with the RGB led.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the RGB led object

colorled→get_friendlyName()
colorled→friendlyName()**YColorLed**

Returns a global identifier of the RGB led in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the RGB led if they are defined, otherwise the serial number of the module and the hardware identifier of the RGB led (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the RGB led using logical names (ex: MyCustomName . relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

**colorled→get_functionDescriptor()
colorled→functionDescriptor()
colorled.get_functionDescriptor()****YColorLed**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

colorled→get_functionId()
colorled→functionId()**YColorLed**

Returns the hardware identifier of the RGB led, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the RGB led (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

colorled→get_hardwareId()
colorled→hardwareId()**YColorLed**

Returns the unique hardware identifier of the RGB led in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the RGB led. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the RGB led (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

colorled→get_hslColor()**colorled→hslColor()colorled.get_hslColor()****YColorLed**

Returns the current HSL color of the led.

js	function get_hslColor()
nodejs	function get_hslColor()
php	function get_hslColor()
cpp	int get_hslColor()
m	-(int) hslColor
pas	function get_hslColor() : LongInt
vb	function get_hslColor() As Integer
cs	int get_hslColor()
java	int get_hslColor()
py	def get_hslColor()
cmd	YColorLed target get_hslColor

Returns :

an integer corresponding to the current HSL color of the led

On failure, throws an exception or returns Y_HSLCOLOR_INVALID.

colorled→get_logicalName()**YColorLed****colorled→logicalName()colorled.get_logicalName()**

Returns the logical name of the RGB led.

```
js function get_logicalName( )
node.js function get_logicalName( )
php function get_logicalName( )
cpp string get_logicalName( )
m -(NSString*) logicalName
pas function get_logicalName( ): string
vb function get_logicalName( ) As String
cs string get_logicalName( )
java String get_logicalName( )
py def get_logicalName( )
cmd YColorLed target get_logicalName
```

Returns :

a string corresponding to the logical name of the RGB led. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

colorled→get_module()**YColorLed****colorled→module()colorled.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

colorled→get_module_async()
colorled→module_async()**YColorLed**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

colorled→get_rgbColor()**colorled→rgbColor()colorled.get_rgbColor()****YColorLed**

Returns the current RGB color of the led.

js	function get_rgbColor()
nodejs	function get_rgbColor()
php	function get_rgbColor()
cpp	int get_rgbColor()
m	-(int) rgbColor
pas	function get_rgbColor(): LongInt
vb	function get_rgbColor() As Integer
cs	int get_rgbColor()
java	int get_rgbColor()
py	def get_rgbColor()
cmd	YColorLed target get_rgbColor

Returns :

an integer corresponding to the current RGB color of the led

On failure, throws an exception or returns **Y_RGBCOLOR_INVALID**.

colorled→get_rgbColorAtPowerOn()
colorled→rgbColorAtPowerOn()
colorled.get_rgbColorAtPowerOn()**YColorLed**

Returns the configured color to be displayed when the module is turned on.

js function **get_rgbColorAtPowerOn()**
nodejs function **get_rgbColorAtPowerOn()**
php function **get_rgbColorAtPowerOn()**
cpp int **get_rgbColorAtPowerOn()**
m -(int) **rgbColorAtPowerOn**
pas function **get_rgbColorAtPowerOn(): LongInt**
vb function **get_rgbColorAtPowerOn() As Integer**
cs int **get_rgbColorAtPowerOn()**
java int **get_rgbColorAtPowerOn()**
py def **get_rgbColorAtPowerOn()**
cmd YColorLed target **get_rgbColorAtPowerOn**

Returns :

an integer corresponding to the configured color to be displayed when the module is turned on

On failure, throws an exception or returns **Y_RGBCOLORATPOWERON_INVALID**.

colorled→get(userData)**YColorLed****colorled→userData()colorled.get(userData)**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

colorled→hslMove()colorled.hslMove()

YColorLed

Performs a smooth transition in the HSL color space between the current color and a target color.

```
js function hslMove( hsl_target, ms_duration)
nodejs function hslMove( hsl_target, ms_duration)
php function hslMove( $hsl_target, $ms_duration)
cpp int hslMove( int hsl_target, int ms_duration)
m -(int) hslMove : (int) hsl_target : (int) ms_duration
pas function hslMove( hsl_target: LongInt, ms_duration: LongInt): integer
vb function hslMove( ByVal hsl_target As Integer,
                     ByVal ms_duration As Integer) As Integer
cs int hslMove( int hsl_target, int ms_duration)
java int hslMove( int hsl_target, int ms_duration)
py def hslMove( hsl_target, ms_duration)
cmd YColorLed target hslMove hsl_target ms_duration
```

Parameters :

hsl_target desired HSL color at the end of the transition

ms_duration duration of the transition, in millisecond

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

colorled→isOnline()colorled.isOnline()**YColorLed**

Checks if the RGB led is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	-(BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the RGB led in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the RGB led.

Returns :

true if the RGB led can be reached, and false otherwise

colorled→isOnline_async()

YColorLed

Checks if the RGB led is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the RGB led in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

colorled→load()colorled.load()

YColorLed

Preloads the RGB led cache with a specified validity duration.

js	function load(msValidity)
node.js	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

colorled→load_async()

YColorLed

Preloads the RGB led cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

colorled→nextColorLed()colorled.nextColorLed()**YColorLed**

Continues the enumeration of RGB leds started using `yFirstColorLed()`.

js	function nextColorLed()
nodejs	function nextColorLed()
php	function nextColorLed()
cpp	YColorLed * nextColorLed()
m	-(YColorLed*) nextColorLed
pas	function nextColorLed() : TYColorLed
vb	function nextColorLed() As YColorLed
cs	YColorLed nextColorLed()
java	YColorLed nextColorLed()
py	def nextColorLed()

Returns :

a pointer to a `YColorLed` object, corresponding to an RGB led currently online, or a `null` pointer if there are no more RGB leds to enumerate.

**colorled→registerValueCallback()
colorled.registerValueCallback()****YColorLed**

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YColorLedValueCallback callback )
m    -(int) registerValueCallback : (YColorLedValueCallback) callback
pas   function registerValueCallback( callback: TYColorLedValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

colorled→rgbMove()colorled.rgbMove()**YColorLed**

Performs a smooth transition in the RGB color space between the current color and a target color.

js	function rgbMove(rgb_target, ms_duration)
nodejs	function rgbMove(rgb_target, ms_duration)
php	function rgbMove(\$rgb_target, \$ms_duration)
cpp	int rgbMove(int rgb_target, int ms_duration)
m	-(int) rgbMove : (int) rgb_target : (int) ms_duration
pas	function rgbMove(rgb_target: LongInt, ms_duration: LongInt): integer
vb	function rgbMove(ByVal rgb_target As Integer, ByVal ms_duration As Integer) As Integer
cs	int rgbMove(int rgb_target, int ms_duration)
java	int rgbMove(int rgb_target, int ms_duration)
py	def rgbMove(rgb_target, ms_duration)
cmd	YColorLed target rgbMove rgb_target ms_duration

Parameters :

rgb_target desired RGB color at the end of the transition

ms_duration duration of the transition, in millisecond

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

colorled→set_hslColor()**YColorLed****colorled→setHslColor()colorled.set_hslColor()**

Changes the current color of the led, using a color HSL.

```
js function set_hslColor( newval)
node.js function set_hslColor( newval)
php function set_hslColor( $newval)
cpp int set_hslColor( int newval)
m -(int) setHslColor : (int) newval
pas function set_hslColor( newval: LongInt): integer
vb function set_hslColor( ByVal newval As Integer) As Integer
cs int set_hslColor( int newval)
java int set_hslColor( int newval)
py def set_hslColor( newval)
cmd YColorLed target set_hslColor newval
```

Encoding is done as follows: 0xHHSSL.

Parameters :

newval an integer corresponding to the current color of the led, using a color HSL

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

colorled→set_logicalName()
colorled→setLogicalName()
colorled.set_logicalName()

YColorLed

Changes the logical name of the RGB led.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YColorLed target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the RGB led.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

colorled→set_rgbColor()**YColorLed****colorled→setRgbColor()colorled.set_rgbColor()**

Changes the current color of the led, using a RGB color.

js	function set_rgbColor(newval)
node.js	function set_rgbColor(newval)
php	function set_rgbColor(\$newval)
cpp	int set_rgbColor(int newval)
m	-{int) setRgbColor : (int) newval
pas	function set_rgbColor(newval: LongInt): integer
vb	function set_rgbColor(ByVal newval As Integer) As Integer
cs	int set_rgbColor(int newval)
java	int set_rgbColor(int newval)
py	def set_rgbColor(newval)
cmd	YColorLed target set_rgbColor newval

Encoding is done as follows: 0xRRGGBB.

Parameters :

newval an integer corresponding to the current color of the led, using a RGB color

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

colorled→set_rgbColorAtPowerOn()
colorled→setRgbColorAtPowerOn()
colorled.set_rgbColorAtPowerOn()

YColorLed

Changes the color that the led will display by default when the module is turned on.

js	function set_rgbColorAtPowerOn(newval)
node.js	function set_rgbColorAtPowerOn(newval)
php	function set_rgbColorAtPowerOn(\$newval)
cpp	int set_rgbColorAtPowerOn(int newval)
m	-(int) setRgbColorAtPowerOn : (int) newval
pas	function set_rgbColorAtPowerOn(newval: LongInt): integer
vb	function set_rgbColorAtPowerOn(ByVal newval As Integer) As Integer
cs	int set_rgbColorAtPowerOn(int newval)
java	int set_rgbColorAtPowerOn(int newval)
py	def set_rgbColorAtPowerOn(newval)
cmd	YColorLed target set_rgbColorAtPowerOn newval

This color will be displayed as soon as the module is powered on. Remember to call the `saveToFlash()` method of the module if the change should be kept.

Parameters :

newval an integer corresponding to the color that the led will display by default when the module is turned on

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

colorled→set(userData)**YColorLed****colorled→setUserData()|colorled.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

```
js   function setUserData( data)
node.js function setUserData( data)
php  function setUserData( $data)
cpp   void setUserData( void* data)
m    -(void) setUserData : (void*) data
pas   procedure setUserData( data: Tobject)
vb    procedure setUserData( ByVal data As Object)
cs    void setUserData( object data)
java  void setUserData( Object data)
py    def setUserData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

colorled→wait_async()

YColorLed

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.6. Compass function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_compass.js'></script>
nodejs var yoctolib = require('yoctolib');
var YCompass = yoctolib.YCompass;
php require_once('yocto_compass.php');
cpp #include "yocto_compass.h"
m #import "yocto_compass.h"
pas uses yocto_compass;
vb yocto_compass.vb
cs yocto_compass.cs
java import com.yoctopuce.YoctoAPI.YCompass;
py from yocto_compass import *

```

Global functions

yFindCompass(func)

Retrieves a compass for a given identifier.

yFirstCompass()

Starts the enumeration of compasses currently accessible.

YCompass methods

compass→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

compass→describe()

Returns a short text that describes unambiguously the instance of the compass in the form TYPE(NAME)=SERIAL.FUNCTIONID.

compass→get_advertisedValue()

Returns the current value of the compass (no more than 6 characters).

compass→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

compass→get_currentValue()

Returns the current value of the relative bearing.

compass→get_errorMessage()

Returns the error message of the latest error with the compass.

compass→get_errorType()

Returns the numerical error code of the latest error with the compass.

compass→get_friendlyName()

Returns a global identifier of the compass in the format MODULE_NAME.FUNCTION_NAME.

compass→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

compass→get_functionId()

Returns the hardware identifier of the compass, without reference to the module.

compass→get_hardwareId()

Returns the unique hardware identifier of the compass in the form SERIAL.FUNCTIONID.

compass→get_highestValue()

Returns the maximal value observed for the relative bearing since the device was started.

compass→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

compass→get_logicalName()

Returns the logical name of the compass.

compass→get_lowestValue()

Returns the minimal value observed for the relative bearing since the device was started.

compass→get_magneticHeading()

Returns the magnetic heading, regardless of the configured bearing.

compass→get_module()

Gets the YModule object for the device on which the function is located.

compass→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

compass→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

compass→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

compass→get_resolution()

Returns the resolution of the measured values.

compass→get_unit()

Returns the measuring unit for the relative bearing.

compass→get(userData)

Returns the value of the userData attribute, as previously stored using method set(userData).

compass→isOnline()

Checks if the compass is currently reachable, without raising any error.

compass→isOnline_async(callback, context)

Checks if the compass is currently reachable, without raising any error (asynchronous version).

compass→load(msValidity)

Preloads the compass cache with a specified validity duration.

compass→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

compass→load_async(msValidity, callback, context)

Preloads the compass cache with a specified validity duration (asynchronous version).

compass→nextCompass()

Continues the enumeration of compasses started using yFirstCompass().

compass→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

compass→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

compass→set_highestValue(newval)

Changes the recorded maximal value observed.

compass→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

3. Reference

compass→set_logicalName(newval)

Changes the logical name of the compass.

compass→set_lowestValue(newval)

Changes the recorded minimal value observed.

compass→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

compass→set_resolution(newval)

Changes the resolution of the measured physical values.

compass→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

compass→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YCompass.FindCompass() yFindCompass()yFindCompass()

YCompass

Retrieves a compass for a given identifier.

<code>js</code>	<code>function yFindCompass(func)</code>
<code>nodejs</code>	<code>function FindCompass(func)</code>
<code>php</code>	<code>function yFindCompass(\$func)</code>
<code>cpp</code>	<code>YCompass* yFindCompass(const string& func)</code>
<code>m</code>	<code>YCompass* yFindCompass(NSString* func)</code>
<code>pas</code>	<code>function yFindCompass(func: string): TYCompass</code>
<code>vb</code>	<code>function yFindCompass(ByVal func As String) As YCompass</code>
<code>cs</code>	<code>YCompass FindCompass(string func)</code>
<code>java</code>	<code>YCompass FindCompass(String func)</code>
<code>py</code>	<code>def FindCompass(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the compass is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YCompass.isOnline()` to test if the compass is indeed online at a given time. In case of ambiguity when looking for a compass by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the compass

Returns :

a `YCompass` object allowing you to drive the compass.

YCompass.FirstCompass() yFirstCompass()yFirstCompass()

YCompass

Starts the enumeration of compasses currently accessible.

js	function yFirstCompass()
node.js	function FirstCompass()
php	function yFirstCompass()
cpp	YCompass* yFirstCompass()
m	YCompass* yFirstCompass()
pas	function yFirstCompass(): TYCompass
vb	function yFirstCompass() As YCompass
cs	YCompass FirstCompass()
java	YCompass FirstCompass()
py	def FirstCompass()

Use the method `YCompass.nextCompass()` to iterate on next compasses.

Returns :

a pointer to a `YCompass` object, corresponding to the first compass currently online, or a `null` pointer if there are none.

compass→calibrateFromPoints() compass.calibrateFromPoints()

YCompass

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php  function calibrateFromPoints( $rawValues, $refValues)
cpp   int calibrateFromPoints( vector<double> rawValues,
                           vector<double> refValues)

m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
      : (NSMutableArray*) refValues

pas  function calibrateFromPoints( rawValues: TDoubleArray,
                                  refValues: TDoubleArray): LongInt

vb   procedure calibrateFromPoints( )

cs   int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def calibrateFromPoints( rawValues, refValues)
cmd  YCompass target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.
refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→describe()compass.describe()**YCompass**

Returns a short text that describes unambiguously the instance of the compass in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the compass (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

compass→get_advertisedValue()
compass→advertisedValue()
compass.get_advertisedValue()

YCompass

Returns the current value of the compass (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue(): string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YCompass target get_advertisedValue

Returns :

a string corresponding to the current value of the compass (no more than 6 characters). On failure, throws an exception or returns **Y_ADVERTISEDVALUE_INVALID**.

compass→get_currentRawValue()
compass→currentRawValue()
compass.get_currentRawValue()

YCompass

Returns the uncalibrated, unrounded raw value returned by the sensor.

js function **get_currentRawValue()**
nodejs function **get_currentRawValue()**
php function **get_currentRawValue()**
cpp double **get_currentRawValue()**
m -(double) currentRawValue
pas function **get_currentRawValue(): double**
vb function **get_currentRawValue() As Double**
cs double **get_currentRawValue()**
java double **get_currentRawValue()**
py def **get_currentRawValue()**
cmd YCompass **target get_currentRawValue**

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns **Y_CURRENTRAWVALUE_INVALID**.

compass→get_currentValue()
compass→currentValue()
compass.get_currentValue()

YCompass

Returns the current value of the relative bearing.

<code>js</code>	function get_currentValue()
<code>node.js</code>	function get_currentValue()
<code>php</code>	function get_currentValue()
<code>cpp</code>	double get_currentValue()
<code>m</code>	-(double) currentValue
<code>pas</code>	function get_currentValue() : double
<code>vb</code>	function get_currentValue() As Double
<code>cs</code>	double get_currentValue()
<code>java</code>	double get_currentValue()
<code>py</code>	def get_currentValue()
<code>cmd</code>	YCompass target get_currentValue

Returns :

a floating point number corresponding to the current value of the relative bearing

On failure, throws an exception or returns **Y_CURRENTVALUE_INVALID**.

compass→get_errorMessage()
compass→errorMessage()
compass.get_errorMessage()**YCompass**

Returns the error message of the latest error with the compass.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the compass object

compass→get_errorType()**YCompass****compass→errorType()compass.get_errorType()**

Returns the numerical error code of the latest error with the compass.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the compass object

compass→get_friendlyName()
compass→friendlyName()**YCompass**

Returns a global identifier of the compass in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the compass if they are defined, otherwise the serial number of the module and the hardware identifier of the compass (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the compass using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

compass→get_functionDescriptor()
compass→functionDescriptor()
compass.get_functionDescriptor()

YCompass

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

compass→get_functionId()
compass→functionId()**YCompass**

Returns the hardware identifier of the compass, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	- (NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the compass (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

compass→get_hardwareId()**YCompass****compass→hardwareId()**

Returns the unique hardware identifier of the compass in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the compass. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the compass (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

compass→get_highestValue()
compass→highestValue()
compass.get_highestValue()**YCompass**

Returns the maximal value observed for the relative bearing since the device was started.

js function **get_highestValue()**
nodejs function **get_highestValue()**
php function **get_highestValue()**
cpp double **get_highestValue()**
m -(double) highestValue
pas function **get_highestValue(): double**
vb function **get_highestValue() As Double**
cs double **get_highestValue()**
java double **get_highestValue()**
py def **get_highestValue()**
cmd YCompass **target get_highestValue**

Returns :

a floating point number corresponding to the maximal value observed for the relative bearing since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

compass→get_logFrequency()
compass→logFrequency()
compass.get_logFrequency()

YCompass

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

```
js   function get_logFrequency( )  
nodejs function get_logFrequency( )  
php  function get_logFrequency( )  
cpp   string get_logFrequency( )  
m    -(NSString*) logFrequency  
pas   function get_logFrequency( ): string  
vb    function get_logFrequency( ) As String  
cs    string get_logFrequency( )  
java  String get_logFrequency( )  
py    def get_logFrequency()  
cmd   YCompass target get_logFrequency
```

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns `Y_LOGFREQUENCY_INVALID`.

compass→get_logicalName()**YCompass****compass→logicalName()compass.get_logicalName()**

Returns the logical name of the compass.

```
js function get_logicalName( )  
node.js function get_logicalName( )  
php function get_logicalName( )  
cpp string get_logicalName( )  
m -(NSString*) logicalName  
pas function get_logicalName( ): string  
vb function get_logicalName( ) As String  
cs string get_logicalName( )  
java String get_logicalName( )  
py def get_logicalName( )  
cmd YCompass target get_logicalName
```

Returns :

a string corresponding to the logical name of the compass. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

compass→get_lowestValue()**YCompass****compass→lowestValue()compass.get_lowestValue()**

Returns the minimal value observed for the relative bearing since the device was started.

js	function get_lowestValue()
node.js	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue(): double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YCompass target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the relative bearing since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

compass→get_magneticHeading()
compass→magneticHeading()
compass.get_magneticHeading()

YCompass

Returns the magnetic heading, regardless of the configured bearing.

```
js function get_magneticHeading( )  
nodejs function get_magneticHeading( )  
php function get_magneticHeading( )  
cpp double get_magneticHeading( )  
m -(double) magneticHeading  
pas function get_magneticHeading( ): double  
vb function get_magneticHeading( ) As Double  
cs double get_magneticHeading( )  
java double get_magneticHeading( )  
py def get_magneticHeading( )  
cmd YCompass target get_magneticHeading
```

Returns :

a floating point number corresponding to the magnetic heading, regardless of the configured bearing

On failure, throws an exception or returns Y_MAGNETICHEADING_INVALID.

compass→get_module()**YCompass****compass→module()compass.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

compass→get_module_async()
compass→module_async()**YCompass**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

compass→get_recordedData()
compass→recordedData()
compass.get_recordedData()

YCompass

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData(startTime, endTime)
node.js	function get_recordedData(startTime, endTime)
php	function get_recordedData(\$startTime, \$endTime)
cpp	YDataSet get_recordedData(s64 startTime, s64 endTime)
m	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData(startTime: int64, endTime: int64): TYDataSet
vb	function get_recordedData() As YDataSet
cs	YDataSet get_recordedData(long startTime, long endTime)
java	YDataSet get_recordedData(long startTime, long endTime)
py	def get_recordedData(startTime, endTime)
cmd	YCompass target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

compass→get_reportFrequency()
compass→reportFrequency()
compass.get_reportFrequency()

YCompass

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js   function get_reportFrequency( )  
nodejs function get_reportFrequency( )  
php  function get_reportFrequency( )  
cpp   string get_reportFrequency( )  
m    -(NSString*) reportFrequency  
pas   function get_reportFrequency( ): string  
vb    function get_reportFrequency( ) As String  
cs    string get_reportFrequency( )  
java  String get_reportFrequency( )  
py    def get_reportFrequency( )  
cmd   YCompass target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

compass→get_resolution()**YCompass****compass→resolution()compass.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution()
nodejs	function get_resolution()
php	function get_resolution()
cpp	double get_resolution()
m	-(double) resolution
pas	function get_resolution(): double
vb	function get_resolution() As Double
cs	double get_resolution()
java	double get_resolution()
py	def get_resolution()
cmd	YCompass target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

compass→get_unit()**YCompass****compass→unit()compass.get_unit()**

Returns the measuring unit for the relative bearing.

js	function get_unit()
node.js	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YCompass target get_unit

Returns :

a string corresponding to the measuring unit for the relative bearing

On failure, throws an exception or returns Y_UNIT_INVALID.

compass→get(userData)**YCompass****compass→userData()compass.get(userData())**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

compass→isOnline()compass.isOnline()**YCompass**

Checks if the compass is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the compass in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the compass.

Returns :

true if the compass can be reached, and false otherwise

compass→isOnline_async()

YCompass

Checks if the compass is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the compass in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

compass→load()compass.load()**YCompass**

Preloads the compass cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

compass→loadCalibrationPoints() compass.loadCalibrationPoints()

YCompass

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php  function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt

vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def loadCalibrationPoints( rawValues, refValues)
cmd  YCompass target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→load_async()

YCompass

Preloads the compass cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

compass→nextCompass()|compass.nextCompass()**YCompass**

Continues the enumeration of compasses started using `yFirstCompass()`.

js	<code>function nextCompass()</code>
node.js	<code>function nextCompass()</code>
php	<code>function nextCompass()</code>
cpp	<code>YCompass * nextCompass()</code>
m	<code>-(YCompass*) nextCompass</code>
pas	<code>function nextCompass(): TYCompass</code>
vb	<code>function nextCompass() As YCompass</code>
cs	<code>YCompass nextCompass()</code>
java	<code>YCompass nextCompass()</code>
py	<code>def nextCompass()</code>

Returns :

a pointer to a `YCompass` object, corresponding to a compass currently online, or a `null` pointer if there are no more compasses to enumerate.

compass→registerTimedReportCallback() compass.registerTimedReportCallback()

YCompass

Registers the callback function that is invoked on every periodic timed notification.

```
js   function registerTimedReportCallback( callback)
node.js function registerTimedReportCallback( callback)
php  function registerTimedReportCallback( $callback)
cpp   int registerTimedReportCallback( YCompassTimedReportCallback callback)
m    -(int) registerTimedReportCallback : (YCompassTimedReportCallback) callback
pas   function registerTimedReportCallback( callback: TYCompassTimedReportCallback): LongInt
vb    function registerTimedReportCallback( ) As Integer
cs    int registerTimedReportCallback( TimedReportCallback callback)
java  int registerTimedReportCallback( TimedReportCallback callback)
py    def registerTimedReportCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

compass→registerValueCallback() compass.registerValueCallback()

YCompass

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback(callback)
node.js	function registerValueCallback(callback)
php	function registerValueCallback(\$callback)
cpp	int registerValueCallback(YCompassValueCallback callback)
m	-(int) registerValueCallback : (YCompassValueCallback) callback
pas	function registerValueCallback(callback : TYCompassValueCallback): LongInt
vb	function registerValueCallback() As Integer
cs	int registerValueCallback(ValueCallback callback)
java	int registerValueCallback(UpdateCallback callback)
py	def registerValueCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

compass→set_highestValue()
compass→setHighestValue()
compass.set_highestValue()**YCompass**

Changes the recorded maximal value observed.

```
js function set_highestValue( newval)
nodejs function set_highestValue( newval)
php function set_highestValue( $newval)
cpp int set_highestValue( double newval)
m -(int) setHighestValue : (double) newval
pas function set_highestValue( newval: double): integer
vb function set_highestValue( ByVal newval As Double) As Integer
cs int set_highestValue( double newval)
java int set_highestValue( double newval)
py def set_highestValue( newval)
cmd YCompass target set_highestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→set_logFrequency()
compass→setLogFrequency()
compass.set_logFrequency()

YCompass

Changes the datalogger recording frequency for this function.

js	function set_logFrequency(newval)
node.js	function set_logFrequency(newval)
php	function set_logFrequency(\$newval)
cpp	int set_logFrequency(const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency(newval: string): integer
vb	function set_logFrequency(ByVal newval As String) As Integer
cs	int set_logFrequency(string newval)
java	int set_logFrequency(String newval)
py	def set_logFrequency(newval)
cmd	YCompass target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→set_logicalName()
compass→setLogicalName()
compass.set_logicalName()

YCompass

Changes the logical name of the compass.

```
js function set_logicalName( newval)
nodejs function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YCompass target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the compass.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

compass→set_lowestValue()
compass→setLowestValue()
compass.set_lowestValue()

YCompass

Changes the recorded minimal value observed.

```
js   function set_lowestValue( newval)
nodejs function set_lowestValue( newval)
php  function set_lowestValue( $newval)
cpp   int set_lowestValue( double newval)
m    -(int) setLowestValue : (double) newval
pas   function set_lowestValue( newval: double): integer
vb    function set_lowestValue( ByVal newval As Double) As Integer
cs    int set_lowestValue( double newval)
java  int set_lowestValue( double newval)
py    def set_lowestValue( newval)
cmd   YCompass target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→set_reportFrequency()
compass→setReportFrequency()
compass.set_reportFrequency()**YCompass**

Changes the timed value notification frequency for this function.

```
js  function set_reportFrequency( newval)
nodejs function set_reportFrequency( newval)
php  function set_reportFrequency( $newval)
cpp  int set_reportFrequency( const string& newval)
m   -(int) setReportFrequency : (NSString*) newval
pas  function set_reportFrequency( newval: string): integer
vb   function set_reportFrequency( ByVal newval As String) As Integer
cs   int set_reportFrequency( string newval)
java int set_reportFrequency( String newval)
py   def set_reportFrequency( newval)
cmd  YCompass target set_reportFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→set_resolution()**YCompass****compass→setResolution()compass.set_resolution()**

Changes the resolution of the measured physical values.

js	function set_resolution(newval)
nodejs	function set_resolution(newval)
php	function set_resolution(\$newval)
cpp	int set_resolution(double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution(newval: double): integer
vb	function set_resolution(ByVal newval As Double) As Integer
cs	int set_resolution(double newval)
java	int set_resolution(double newval)
py	def set_resolution(newval)
cmd	YCompass target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

compass→set(userData)**YCompass****compass→setUserData()compass.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

```
js   function setUserData( data)
node.js function setUserData( data)
php  function setUserData( $data)
cpp   void setUserData( void* data)
m    -(void) setUserData : (void*) data
pas   procedure setUserData( data: Tobject)
vb    procedure setUserData( ByVal data As Object)
cs    void setUserData( object data)
java  void setUserData( Object data)
py    def setUserData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

compass→wait_async()

YCompass

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context )
nodejs function wait_async( callback, context )
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.7. Current function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_current.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YCurrent = yoctolib.YCurrent;
php	require_once('yocto_current.php');
cpp	#include "yocto_current.h"
m	#import "yocto_current.h"
pas	uses yocto_current;
vb	yocto_current.vb
cs	yocto_current.cs
java	import com.yoctopuce.YoctoAPI.YCurrent;
py	from yocto_current import *

Global functions

yFindCurrent(func)

Retrieves a current sensor for a given identifier.

yFirstCurrent()

Starts the enumeration of current sensors currently accessible.

YCurrent methods

current→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

current→describe()

Returns a short text that describes unambiguously the instance of the current sensor in the form TYPE (NAME) = SERIAL . FUNCTIONID.

current→get_advertisedValue()

Returns the current value of the current sensor (no more than 6 characters).

current→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

current→get_currentValue()

Returns the current measure for the current.

current→get_errorMessage()

Returns the error message of the latest error with the current sensor.

current→get_errorType()

Returns the numerical error code of the latest error with the current sensor.

current→get_friendlyName()

Returns a global identifier of the current sensor in the format MODULE_NAME . FUNCTION_NAME.

current→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

current→get_functionId()

Returns the hardware identifier of the current sensor, without reference to the module.

current→get_hardwareId()

Returns the unique hardware identifier of the current sensor in the form SERIAL . FUNCTIONID.

current→get_highestValue()

Returns the maximal value observed for the current.

current→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

current→get_logicalName()

Returns the logical name of the current sensor.

current→get_lowestValue()

Returns the minimal value observed for the current.

current→get_module()

Gets the YModule object for the device on which the function is located.

current→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

current→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

current→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

current→get_resolution()

Returns the resolution of the measured values.

current→get_unit()

Returns the measuring unit for the current.

current→get(userData)

Returns the value of the userData attribute, as previously stored using method set(userData).

current→isOnline()

Checks if the current sensor is currently reachable, without raising any error.

current→isOnline_async(callback, context)

Checks if the current sensor is currently reachable, without raising any error (asynchronous version).

current→load(msValidity)

Preloads the current sensor cache with a specified validity duration.

current→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

current→load_async(msValidity, callback, context)

Preloads the current sensor cache with a specified validity duration (asynchronous version).

current→nextCurrent()

Continues the enumeration of current sensors started using yFirstCurrent().

current→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

current→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

current→set_highestValue(newval)

Changes the recorded maximal value observed pour the current.

current→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

current→set_logicalName(newval)

Changes the logical name of the current sensor.

3. Reference

current→set_lowestValue(newval)

Changes the recorded minimal value observed pour the current.

current→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

current→set_resolution(newval)

Changes the resolution of the measured values.

current→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

current→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YCurrent.FindCurrent()**YCurrent****yFindCurrent()yFindCurrent()**

Retrieves a current sensor for a given identifier.

<code>js</code>	<code>function yFindCurrent(func)</code>
<code>nodejs</code>	<code>function FindCurrent(func)</code>
<code>php</code>	<code>function yFindCurrent(\$func)</code>
<code>cpp</code>	<code>YCurrent* yFindCurrent(const string& func)</code>
<code>m</code>	<code>YCurrent* yFindCurrent(NSString* func)</code>
<code>pas</code>	<code>function yFindCurrent(func: string): TYCurrent</code>
<code>vb</code>	<code>function yFindCurrent(ByVal func As String) As YCurrent</code>
<code>cs</code>	<code>YCurrent FindCurrent(string func)</code>
<code>java</code>	<code>YCurrent FindCurrent(String func)</code>
<code>py</code>	<code>def FindCurrent(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the current sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YCurrent.isOnline()` to test if the current sensor is indeed online at a given time. In case of ambiguity when looking for a current sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the current sensor

Returns :

a `YCurrent` object allowing you to drive the current sensor.

YCurrent.FirstCurrent() yFirstCurrent()yFirstCurrent()

YCurrent

Starts the enumeration of current sensors currently accessible.

```
js function yFirstCurrent( )
node.js function FirstCurrent( )
php function yFirstCurrent( )
cpp YCurrent* yFirstCurrent( )
m YCurrent* yFirstCurrent( )
pas function yFirstCurrent( ): TYCurrent
vb function yFirstCurrent( ) As YCurrent
cs YCurrent FirstCurrent( )
java YCurrent FirstCurrent( )
py def FirstCurrent( )
```

Use the method `YCurrent.nextCurrent()` to iterate on next current sensors.

Returns :

a pointer to a `YCurrent` object, corresponding to the first current sensor currently online, or a null pointer if there are none.

current→calibrateFromPoints() current.calibrateFromPoints()

YCurrent

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php  function calibrateFromPoints( $rawValues, $refValues)
cpp   int calibrateFromPoints( vector<double> rawValues,
                             vector<double> refValues)

m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                  : (NSMutableArray*) refValues

pas  function calibrateFromPoints( rawValues: TDoubleArray,
                                 refValues: TDoubleArray): LongInt

vb   procedure calibrateFromPoints( )

cs   int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def calibrateFromPoints( rawValues, refValues)
cmd  YCurrent target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.
refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→describe()current.describe()**YCurrent**

Returns a short text that describes unambiguously the instance of the current sensor in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the current sensor (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

current→get_advertisedValue()
current→advertisedValue()
current.get_advertisedValue()**YCurrent**

Returns the current value of the current sensor (no more than 6 characters).

<code>js</code>	<code>function get_advertisedValue()</code>
<code>node.js</code>	<code>function get_advertisedValue()</code>
<code>php</code>	<code>function get_advertisedValue()</code>
<code>cpp</code>	<code>string get_advertisedValue()</code>
<code>m</code>	<code>-(NSString*) advertisedValue</code>
<code>pas</code>	<code>function get_advertisedValue(): string</code>
<code>vb</code>	<code>function get_advertisedValue() As String</code>
<code>cs</code>	<code>string get_advertisedValue()</code>
<code>java</code>	<code>String get_advertisedValue()</code>
<code>py</code>	<code>def get_advertisedValue()</code>
<code>cmd</code>	<code>YCurrent target get_advertisedValue</code>

Returns :

a string corresponding to the current value of the current sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

current→get_currentRawValue()
current→currentRawValue()
current.get_currentRawValue()

YCurrent

Returns the uncalibrated, unrounded raw value returned by the sensor.

```
js function get_currentRawValue( )  
nodejs function get_currentRawValue( )  
php function get_currentRawValue( )  
cpp double get_currentRawValue( )  
m -(double) currentRawValue  
pas function get_currentRawValue( ): double  
vb function get_currentRawValue( ) As Double  
cs double get_currentRawValue( )  
java double get_currentRawValue( )  
py def get_currentRawValue( )  
cmd YCurrent target get_currentRawValue
```

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

current→get_currentValue()**YCurrent****current→currentValue()current.get_currentValue()**

Returns the current measure for the current.

js	function get_currentValue()
node.js	function get_currentValue()
php	function get_currentValue()
cpp	double get_currentValue()
m	-(double) currentValue
pas	function get_currentValue() : double
vb	function get_currentValue() As Double
cs	double get_currentValue()
java	double get_currentValue()
py	def get_currentValue()
cmd	YCurrent target get_currentValue

Returns :

a floating point number corresponding to the current measure for the current

On failure, throws an exception or returns **Y_CURRENTVALUE_INVALID**.

current→get_errorMessage()**YCurrent****current→errorMessage()current.getErrorMessage()**

Returns the error message of the latest error with the current sensor.

js	function getErrorMessage()
node.js	function getErrorMessage()
php	function getErrorMessage()
cpp	string getErrorMessage()
m	-(NSString*) errorMessage
pas	function getErrorMessage() : string
vb	function getErrorMessage() As String
cs	string getErrorMessage()
java	String getErrorMessage()
py	def getErrorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the current sensor object

current→get_errorType()**YCurrent****current→errorType()current.get_errorType()**

Returns the numerical error code of the latest error with the current sensor.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the current sensor object

current→get_friendlyName()
current→friendlyName()**YCurrent**

Returns a global identifier of the current sensor in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the current sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the current sensor (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the current sensor using logical names (ex: MyCustomName.relay1)

On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

current→get_functionDescriptor()
current→functionDescriptor()
current.get_functionDescriptor()

YCurrent

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**current→get_functionId()
current→functionId()****YCurrent**

Returns the hardware identifier of the current sensor, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the current sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

current→get_hardwareId()**YCurrent****current→hardwareId()**

Returns the unique hardware identifier of the current sensor in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the current sensor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the current sensor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

current→get_highestValue()**YCurrent****current→highestValue()current.get_highestValue()**

Returns the maximal value observed for the current.

js function **get_highestValue()****node.js** function **get_highestValue()****php** function **get_highestValue()****cpp** double **get_highestValue()****m** -(double) highestValue**pas** function **get_highestValue(): double****vb** function **get_highestValue() As Double****cs** double **get_highestValue()****java** double **get_highestValue()****py** def **get_highestValue()****cmd** YCurrent target **get_highestValue****Returns :**

a floating point number corresponding to the maximal value observed for the current

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

current→get_logFrequency()**YCurrent****current→logFrequency()current.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YCurrent target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

current→get_logicalName()**YCurrent****current→logicalName()current.get_logicalName()**

Returns the logical name of the current sensor.

js	function get_logicalName()
node.js	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	- (NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YCurrent target get_logicalName

Returns :

a string corresponding to the logical name of the current sensor. On failure, throws an exception or returns **Y_LOGICALNAME_INVALID**.

current→get_lowestValue()
current→lowestValue()current.get_lowestValue()**YCurrent**

Returns the minimal value observed for the current.

js	function get_lowestValue()
nodejs	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue(): double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YCurrent target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the current

On failure, throws an exception or returns **Y_LOWESTVALUE_INVALID**.

current→get_module()
current→module()current.get_module()**YCurrent**

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
node.js	function get_module()
php	function get_module()
cpp	<code>YModule * get_module()</code>
m	<code>-(YModule*) module</code>
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	<code>YModule get_module()</code>
java	<code>YModule get_module()</code>
py	<code>def get_module()</code>

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

current→get_module_async()
current→module_async()**YCurrent**

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

current→get_recordedData() YCurrent current→recordedData()current.get_recordedData()

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData(startTime, endTime)
node.js	function get_recordedData(startTime, endTime)
php	function get_recordedData(\$startTime, \$endTime)
cpp	YDataSet get_recordedData(s64 startTime, s64 endTime)
m	- (YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData(startTime: int64, endTime: int64): TYDataSet
vb	function get_recordedData() As YDataSet
cs	YDataSet get_recordedData(long startTime, long endTime)
java	YDataSet get_recordedData(long startTime, long endTime)
py	def get_recordedData(startTime, endTime)
cmd	YCurrent target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

current→get_reportFrequency()
current→reportFrequency()
current.get_reportFrequency()**YCurrent**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency()
node.js	function get_reportFrequency()
php	function get_reportFrequency()
cpp	string get_reportFrequency()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency() : string
vb	function get_reportFrequency() As String
cs	string get_reportFrequency()
java	String get_reportFrequency()
py	def get_reportFrequency()
cmd	YCurrent target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns **Y_REPORTFREQUENCY_INVALID**.

current→get_resolution() YCurrent
current→resolution()current.get_resolution()

Returns the resolution of the measured values.

```
js function get_resolution( )
node.js function get_resolution( )
php function get_resolution( )
cpp double get_resolution( )
m -(double) resolution
pas function get_resolution( ): double
vb function get_resolution( ) As Double
cs double get_resolution( )
java double get_resolution( )
py def get_resolution( )
cmd YCurrent target get_resolution
```

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

current→get_unit()**YCurrent****current→unit()current.get_unit()**

Returns the measuring unit for the current.

js	function get_unit()
nodejs	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YCurrent target get_unit

Returns :

a string corresponding to the measuring unit for the current

On failure, throws an exception or returns Y_UNIT_INVALID.

current→get(userData)**YCurrent****current→userData()current.get(userData)**

Returns the value of the userData attribute, as previously stored using method set(userData).

js	function get(userData)
node.js	function get(userData)
php	function get(userData)
cpp	void * get(userData)
m	-(void*) userData
pas	function get(userData): Tobject
vb	function get(userData) As Object
cs	object get(userData)
java	Object get(userData)
py	def get(userData)

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

current→isOnline()current.isOnline()**YCurrent**

Checks if the current sensor is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	-(BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the current sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the current sensor.

Returns :

true if the current sensor can be reached, and false otherwise

current→isOnline_async()**YCurrent**

Checks if the current sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the current sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

current→load()current.load()**YCurrent**

Preloads the current sensor cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>node.js</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

current→loadCalibrationPoints() current.loadCalibrationPoints()

YCurrent

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php   function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                               vector<double>& refValues)

m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt

vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def loadCalibrationPoints( rawValues, refValues)
cmd  YCurrent target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→load_async()

YCurrent

Preloads the current sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

current→nextCurrent()current.nextCurrent()**YCurrent**

Continues the enumeration of current sensors started using `yFirstCurrent()`.

js `function nextCurrent()`
nodejs `function nextCurrent()`
php `function nextCurrent()`
cpp `YCurrent * nextCurrent()`
m `-(YCurrent*) nextCurrent`
pas `function nextCurrent(): TYCurrent`
vb `function nextCurrent() As YCurrent`
cs `YCurrent nextCurrent()`
java `YCurrent nextCurrent()`
py `def nextCurrent()`

Returns :

a pointer to a `YCurrent` object, corresponding to a current sensor currently online, or a `null` pointer if there are no more current sensors to enumerate.

current→registerTimedReportCallback() current.registerTimedReportCallback()

YCurrent

Registers the callback function that is invoked on every periodic timed notification.

```
js   function registerTimedReportCallback( callback )
nodejs function registerTimedReportCallback( callback )
php  function registerTimedReportCallback( $callback )
cpp   int registerTimedReportCallback( YCurrentTimedReportCallback callback )
m     -(int) registerTimedReportCallback : (YCurrentTimedReportCallback) callback
pas   function registerTimedReportCallback( callback: TYCurrentTimedReportCallback): LongInt
vb    function registerTimedReportCallback( ) As Integer
cs    int registerTimedReportCallback( TimedReportCallback callback )
java  int registerTimedReportCallback( TimedReportCallback callback )
py    def registerTimedReportCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

**current→registerValueCallback()
current.registerValueCallback()****YCurrent**

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YCurrentValueCallback callback )
m    -(int) registerValueCallback : (YCurrentValueCallback) callback
pas   function registerValueCallback( callback: TYCurrentValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

current→set_highestValue()
current→setHighestValue()
current.set_highestValue()

YCurrent

Changes the recorded maximal value observed pour the current.

js	function set_highestValue(newval)
nodejs	function set_highestValue(newval)
php	function set_highestValue(\$newval)
cpp	int set_highestValue(double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue(newval: double): integer
vb	function set_highestValue(ByVal newval As Double) As Integer
cs	int set_highestValue(double newval)
java	int set_highestValue(double newval)
py	def set_highestValue(newval)
cmd	YCurrent target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed pour the current

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→set_logFrequency()
current→setLogFrequency()
current.set_logFrequency()

YCurrent

Changes the datalogger recording frequency for this function.

```
js   function set_logFrequency( newval)
nodejs function set_logFrequency( newval)
php  function set_logFrequency( $newval)
cpp   int set_logFrequency( const string& newval)
m    -(int) setLogFrequency : (NSString*) newval
pas   function set_logFrequency( newval: string): integer
vb    function set_logFrequency( ByVal newval As String) As Integer
cs    int set_logFrequency( string newval)
java  int set_logFrequency( String newval)
py    def set_logFrequency( newval)
cmd   YCurrent target set_logFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→set_logicalName()

YCurrent

Changes the logical name of the current sensor.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YCurrent target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the current sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

current→set_lowestValue() YCurrent**current→setLowestValue()current.set_lowestValue()**

Changes the recorded minimal value observed pour the current.

```
js function set_lowestValue( newval)
node.js function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YCurrent target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed pour the current

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→set_reportFrequency()
current→setReportFrequency()
current.set_reportFrequency()

YCurrent

Changes the timed value notification frequency for this function.

js	function set_reportFrequency(newval)
nodejs	function set_reportFrequency(newval)
php	function set_reportFrequency(\$newval)
cpp	int set_reportFrequency(const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency(newval: string): integer
vb	function set_reportFrequency(ByVal newval As String) As Integer
cs	int set_reportFrequency(string newval)
java	int set_reportFrequency(String newval)
py	def set_reportFrequency(newval)
cmd	YCurrent target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

**current→set_resolution()
current→setResolution()current.set_resolution()****YCurrent**

Changes the resolution of the measured values.

js	function set_resolution(newval)
node.js	function set_resolution(newval)
php	function set_resolution(\$newval)
cpp	int set_resolution(double newval)
m	- (int) setResolution : (double) newval
pas	function set_resolution(newval: double); integer
vb	function set_resolution(ByVal newval As Double) As Integer
cs	int set_resolution(double newval)
java	int set_resolution(double newval)
py	def set_resolution(newval)
cmd	YCurrent target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured values

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

current→set(userData)**YCurrent****current→setUserData()current.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData) \$data
cpp	void set(userData) void* data
m	-(void) setUserData : (void*) data
pas	procedure set(userData) Tobject
vb	procedure set(userData) ByVal data As Object
cs	void set(userData) object data
java	void set(userData) Object data
py	def set(userData) data

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

current→wait_async()

YCurrent

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.8. DataLogger function interface

Yoctopuce sensors include a non-volatile memory capable of storing ongoing measured data automatically, without requiring a permanent connection to a computer. The DataLogger function controls the global parameters of the internal data logger.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_datalogger.js'></script>
node.js	var yoctolib = require('yoctolib');
php	var YDataLogger = yoctolib.YDataLogger;
require_once('yocto_datalogger.php');	
cpp	#include "yocto_datalogger.h"
m	#import "yocto_datalogger.h"
pas	uses yocto_datalogger;
vb	yocto_datalogger.vb
cs	yocto_datalogger.cs
java	import com.yoctopuce.YoctoAPI.YDataLogger;
py	from yocto_datalogger import *

Global functions

yFindDataLogger(func)

Retrieves a data logger for a given identifier.

yFirstDataLogger()

Starts the enumeration of data loggers currently accessible.

YDataLogger methods

datalogger→describe()

Returns a short text that describes unambiguously the instance of the data logger in the form TYPE (NAME)=SERIAL.FUNCTIONID.

datalogger→forgetAllDataStreams()

Clears the data logger memory and discards all recorded data streams.

datalogger→get_advertisedValue()

Returns the current value of the data logger (no more than 6 characters).

datalogger→get_autoStart()

Returns the default activation state of the data logger on power up.

datalogger→get_currentRunIndex()

Returns the current run number, corresponding to the number of times the module was powered on with the dataLogger enabled at some point.

datalogger→get_dataSets()

Returns a list of YDataSet objects that can be used to retrieve all measures stored by the data logger.

datalogger→get_dataStreams(v)

Builds a list of all data streams hold by the data logger (legacy method).

datalogger→get_errorMessage()

Returns the error message of the latest error with the data logger.

datalogger→get_errorType()

Returns the numerical error code of the latest error with the data logger.

datalogger→get_friendlyName()

Returns a global identifier of the data logger in the format MODULE_NAME . FUNCTION_NAME.

datalogger→get_functionDescriptor()

datalogger→get_functionId()	Returns a unique identifier of type YFUN_DESCR corresponding to the function.
datalogger→get_hardwareId()	Returns the hardware identifier of the data logger, without reference to the module.
datalogger→get_logicalName()	Returns the unique hardware identifier of the data logger in the form SERIAL.FUNCTIONID.
datalogger→get_module()	Returns the logical name of the data logger.
datalogger→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located.
datalogger→get_recording()	Gets the YModule object for the device on which the function is located (asynchronous version).
datalogger→get_timeUTC()	Returns the current activation state of the data logger.
datalogger→get_userData()	Returns the Unix timestamp for current UTC time, if known.
datalogger→isOnline()	Returns the value of the userData attribute, as previously stored using method set(userData).
datalogger→isOnline_async(callback, context)	Checks if the data logger is currently reachable, without raising any error.
datalogger→load(msValidity)	Checks if the data logger is currently reachable, without raising any error (asynchronous version).
datalogger→load_async(msValidity, callback, context)	Preloads the data logger cache with a specified validity duration.
datalogger→nextDataLogger()	Preloads the data logger cache with a specified validity duration (asynchronous version).
datalogger→registerValueCallback(callback)	Continues the enumeration of data loggers started using yFirstDataLogger().
datalogger→set_autoStart(newval)	Registers the callback function that is invoked on every change of advertised value.
datalogger→set_logicalName(newval)	Changes the default activation state of the data logger on power up.
datalogger→set_recording(newval)	Changes the logical name of the data logger.
datalogger→set_timeUTC(newval)	Changes the activation state of the data logger to start/stop recording data.
datalogger→set_timeUTC(callback, context)	Changes the current UTC time reference used for recorded data.
datalogger→set_userData(data)	Stores a user context provided as argument in the userData attribute of the function.
datalogger→wait_async(callback, context)	Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YDataLogger.FindDataLogger() yFindDataLogger()yFindDataLogger()

YDataLogger

Retrieves a data logger for a given identifier.

js	function yFindDataLogger(func)
nodejs	function FindDataLogger(func)
php	function yFindDataLogger(\$func)
cpp	YDataLogger* yFindDataLogger(string func)
m	+ (YDataLogger*) yFindDataLogger : (NSString*) func
pas	function yFindDataLogger(func: string): TYDataLogger
vb	function yFindDataLogger(ByVal func As String) As YDataLogger
cs	YDataLogger FindDataLogger(string func)
java	YDataLogger FindDataLogger(String func)
py	def FindDataLogger(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the data logger is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YDataLogger.isOnline()` to test if the data logger is indeed online at a given time. In case of ambiguity when looking for a data logger by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the data logger

Returns :

a `YDataLogger` object allowing you to drive the data logger.

YDataLogger.FirstDataLogger() yFirstDataLogger()yFirstDataLogger()

YDataLogger

Starts the enumeration of data loggers currently accessible.

js	function yFirstDataLogger()
node.js	function FirstDataLogger()
php	function yFirstDataLogger()
cpp	YDataLogger* yFirstDataLogger()
m	YDataLogger* yFirstDataLogger()
pas	function yFirstDataLogger(): TYDataLogger
vb	function yFirstDataLogger() As YDataLogger
cs	YDataLogger FirstDataLogger()
java	YDataLogger FirstDataLogger()
py	def FirstDataLogger()

Use the method `YDataLogger.nextDataLogger()` to iterate on next data loggers.

Returns :

a pointer to a `YDataLogger` object, corresponding to the first data logger currently online, or a null pointer if there are none.

datalogger→describe()datalogger.describe()**YDataLogger**

Returns a short text that describes unambiguously the instance of the data logger in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the data logger (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

datalogger→forgetAllDataStreams()
datalogger.forgetAllDataStreams()**YDataLogger**

Clears the data logger memory and discards all recorded data streams.

js	function forgetAllDataStreams()
node.js	function forgetAllDataStreams()
php	function forgetAllDataStreams()
cpp	int forgetAllDataStreams()
m	- (int) forgetAllDataStreams
pas	function forgetAllDataStreams() : LongInt
vb	function forgetAllDataStreams() As Integer
cs	int forgetAllDataStreams()
java	int forgetAllDataStreams()
py	def forgetAllDataStreams()
cmd	YDataLogger target forgetAllDataStreams

This method also resets the current run index to zero.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

datalogger→get_advertisedValue()
datalogger→advertisedValue()
datalogger.get_advertisedValue()

YDataLogger

Returns the current value of the data logger (no more than 6 characters).

<code>js</code>	<code>function get_advertisedValue()</code>
<code>node.js</code>	<code>function get_advertisedValue()</code>
<code>php</code>	<code>function get_advertisedValue()</code>
<code>cpp</code>	<code>string get_advertisedValue()</code>
<code>m</code>	<code>-(NSString*) advertisedValue</code>
<code>pas</code>	<code>function get_advertisedValue(): string</code>
<code>vb</code>	<code>function get_advertisedValue() As String</code>
<code>cs</code>	<code>string get_advertisedValue()</code>
<code>java</code>	<code>String get_advertisedValue()</code>
<code>py</code>	<code>def get_advertisedValue()</code>
<code>cmd</code>	<code>YDataLogger target get_advertisedValue</code>

Returns :

a string corresponding to the current value of the data logger (no more than 6 characters). On failure, throws an exception or returns `Y_ADVERTISEDVALUE_INVALID`.

datalogger→get_autoStart()**YDataLogger****datalogger→autoStart()datalogger.get_autoStart()**

Returns the default activation state of the data logger on power up.

```
js function get_autoStart( )
node.js function get_autoStart( )
php function get_autoStart( )
cpp Y_AUTOSTART_enum get_autoStart( )
m -(Y_AUTOSTART_enum) autoStart
pas function get_autoStart( ): Integer
vb function get_autoStart( ) As Integer
cs int get_autoStart( )
java int get_autoStart( )
py def get_autoStart( )
cmd YDataLogger target get_autoStart
```

Returns :

either Y_AUTOSTART_OFF or Y_AUTOSTART_ON, according to the default activation state of the data logger on power up

On failure, throws an exception or returns Y_AUTOSTART_INVALID.

datalogger→get_currentRunIndex()
datalogger→currentRunIndex()
datalogger.get_currentRunIndex()**YDataLogger**

Returns the current run number, corresponding to the number of times the module was powered on with the dataLogger enabled at some point.

```
js function get_currentRunIndex( )
nodejs function get_currentRunIndex( )
php function get_currentRunIndex( )
cpp int get_currentRunIndex( )
m -(int) currentRunIndex
pas function get_currentRunIndex( ): LongInt
vb function get_currentRunIndex( ) As Integer
cs int get_currentRunIndex( )
java int get_currentRunIndex( )
py def get_currentRunIndex( )
cmd YDataLogger target get_currentRunIndex
```

Returns :

an integer corresponding to the current run number, corresponding to the number of times the module was powered on with the dataLogger enabled at some point

On failure, throws an exception or returns `Y_CURRENTRUNINDEX_INVALID`.

datalogger→get_dataSets()**YDataLogger****datalogger→dataSets()datalogger.get_dataSets()**

Returns a list of YDataSet objects that can be used to retrieve all measures stored by the data logger.

```
js function get_dataSets( )  
nodejs function get_dataSets( )  
php function get_dataSets( )  
cpp vector<YDataSet> get_dataSets( )  
m -(NSMutableArray*) dataSets  
pas function get_dataSets( ): TYDataSetArray  
vb function get_dataSets( ) As List  
cs List<YDataSet> get_dataSets( )  
java ArrayList<YDataSet> get_dataSets( )  
py def get_dataSets( )  
cmd YDataLogger target get_dataSets
```

This function only works if the device uses a recent firmware, as YDataSet objects are not supported by firmwares older than version 13000.

Returns :

a list of YDataSet object.

On failure, throws an exception or returns an empty list.

datalogger→get_dataStreams()
datalogger→dataStreams()
datalogger.get_dataStreams()

YDataLogger

Builds a list of all data streams hold by the data logger (legacy method).

js	function get_dataStreams(v)
node.js	function get_dataStreams(v)
php	function get_dataStreams(&\$v)
cpp	int get_dataStreams()
m	-(int) dataStreams : (NSArray**) v
pas	function get_dataStreams(v: Tlist): integer
vb	procedure get_dataStreams(ByVal v As List)
cs	int get_dataStreams(List<YDataStream> v)
java	int get_dataStreams(ArrayList<YDataStream> v)
py	def get_dataStreams(v)

The caller must pass by reference an empty array to hold YDataStream objects, and the function fills it with objects describing available data sequences.

This is the old way to retrieve data from the DataLogger. For new applications, you should rather use `get_dataSets()` method, or call directly `get_recordedData()` on the sensor object.

Parameters :

v an array of YDataStream objects to be filled in

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

datalogger→get_errorMessage()
datalogger→errorMessage()
datalogger.get_errorMessage()

YDataLogger

Returns the error message of the latest error with the data logger.

```
js function get_errorMessage( )  
nodejs function get_errorMessage( )  
php function get_errorMessage( )  
cpp string get_errorMessage( )  
m -(NSString*) errorMessage  
pas function get_errorMessage( ): string  
vb function get_errorMessage( ) As String  
cs string get_errorMessage( )  
java String get_errorMessage( )  
py def get_errorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the data logger object

datalogger→get_errorType()**YDataLogger****datalogger→errorType()datalogger.get_errorType()**

Returns the numerical error code of the latest error with the data logger.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the data logger object

**datalogger→get_friendlyName()
datalogger→friendlyName()****YDataLogger**

Returns a global identifier of the data logger in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the data logger if they are defined, otherwise the serial number of the module and the hardware identifier of the data logger (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the data logger using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

datalogger→get_functionDescriptor()
datalogger→functionDescriptor()
datalogger.get_functionDescriptor()

YDataLogger

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

datalogger→get_functionId()
datalogger→functionId()**YDataLogger**

Returns the hardware identifier of the data logger, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	- (NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the data logger (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

datalogger→get_hardwareId()
datalogger→hardwareId()**YDataLogger**

Returns the unique hardware identifier of the data logger in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the data logger. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the data logger (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

datalogger→get_logicalName()
datalogger→logicalName()
datalogger.get_logicalName()

YDataLogger

Returns the logical name of the data logger.

```
js function get_logicalName( )  
nodejs function get_logicalName( )  
php function get_logicalName( )  
cpp string get_logicalName( )  
m -(NSString*) logicalName  
pas function get_logicalName( ): string  
vb function get_logicalName( ) As String  
cs string get_logicalName( )  
java String get_logicalName( )  
py def get_logicalName( )  
cmd YDataLogger target get_logicalName
```

Returns :

a string corresponding to the logical name of the data logger. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

**datalogger→get_module()
datalogger→module()datalogger.get_module()****YDataLogger**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

**datalogger→get_module_async()
datalogger→module_async()****YDataLogger**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

datalogger→get_recording()**YDataLogger****datalogger→recording()datalogger.get_recording()**

Returns the current activation state of the data logger.

js	function get_recording()
nodejs	function get_recording()
php	function get_recording()
cpp	Y_RECORDING_enum get_recording()
m	-(Y_RECORDING_enum) recording
pas	function get_recording() : Integer
vb	function get_recording() As Integer
cs	int get_recording()
java	int get_recording()
py	def get_recording()
cmd	YDataLogger target get_recording

Returns :

either Y_RECORDING_OFF or Y_RECORDING_ON, according to the current activation state of the data logger

On failure, throws an exception or returns Y_RECORDING_INVALID.

datalogger→get_timeUTC()**YDataLogger****datalogger→timeUTC()datalogger.get_timeUTC()**

Returns the Unix timestamp for current UTC time, if known.

```
js function get_timeUTC( )  
node.js function get_timeUTC( )  
php function get_timeUTC( )  
cpp s64 get_timeUTC( )  
m -(s64) timeUTC  
pas function get_timeUTC( ): int64  
vb function get_timeUTC( ) As Long  
cs long get_timeUTC( )  
java long get_timeUTC( )  
py def get_timeUTC( )  
cmd YDataLogger target get_timeUTC
```

Returns :

an integer corresponding to the Unix timestamp for current UTC time, if known

On failure, throws an exception or returns Y_TIMEUTC_INVALID.

datalogger→get(userData)**YDataLogger****datalogger→userData()datalogger.get(userData)**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

datalogger→isOnline()datalogger.isOnline()**YDataLogger**

Checks if the data logger is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the data logger in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the data logger.

Returns :

true if the data logger can be reached, and false otherwise

datalogger→isOnline_async()

YDataLogger

Checks if the data logger is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the data logger in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

datalogger→load()datalogger.load()**YDataLogger**

Preloads the data logger cache with a specified validity duration.

```
js function load( msValidity)
nodejs function load( msValidity)
php function load( $msValidity)
cpp YRETCODE load( int msValidity)
m -(YRETCODE) load : (int) msValidity
pas function load( msValidity: integer): YRETCODE
vb function load( ByVal msValidity As Integer) As YRETCODE
cs YRETCODE load( int msValidity)
java int load( long msValidity)
py def load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

datalogger→load_async()

YDataLogger

Preloads the data logger cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

datalogger→nextDataLogger()
datalogger.nextDataLogger()**YDataLogger**

Continues the enumeration of data loggers started using `yFirstDataLogger()`.

<code>js</code>	<code>function nextDataLogger()</code>
<code>node.js</code>	<code>function nextDataLogger()</code>
<code>php</code>	<code>function nextDataLogger()</code>
<code>cpp</code>	<code>YDataLogger * nextDataLogger()</code>
<code>m</code>	<code>-(YDataLogger*) nextDataLogger</code>
<code>pas</code>	<code>function nextDataLogger(): TYDataLogger</code>
<code>vb</code>	<code>function nextDataLogger() As YDataLogger</code>
<code>cs</code>	<code>YDataLogger nextDataLogger()</code>
<code>java</code>	<code>YDataLogger nextDataLogger()</code>
<code>py</code>	<code>def nextDataLogger()</code>

Returns :

a pointer to a `YDataLogger` object, corresponding to a data logger currently online, or a `null` pointer if there are no more data loggers to enumerate.

datalogger→registerValueCallback() datalogger.registerValueCallback()

YDataLogger

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback(callback)
node.js	function registerValueCallback(callback)
php	function registerValueCallback(\$callback)
cpp	int registerValueCallback(YDataLoggerValueCallback callback)
m	-(int) registerValueCallback : (YDataLoggerValueCallback) callback
pas	function registerValueCallback(callback : TYDataLoggerValueCallback): LongInt
vb	function registerValueCallback() As Integer
cs	int registerValueCallback(ValueCallback callback)
java	int registerValueCallback(UpdateCallback callback)
py	def registerValueCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

datalogger→set_autoStart()**YDataLogger****datalogger→setAutoStart()datalogger.set_autoStart()**

Changes the default activation state of the data logger on power up.

js	function set_autoStart(newval)
node.js	function set_autoStart(newval)
php	function set_autoStart(\$newval)
cpp	int set_autoStart(Y_AUTOSTART_enum newval)
m	-(int) setAutoStart : (Y_AUTOSTART_enum) newval
pas	function set_autoStart(newval: Integer): integer
vb	function set_autoStart(ByVal newval As Integer) As Integer
cs	int set_autoStart(int newval)
java	int set_autoStart(int newval)
py	def set_autoStart(newval)
cmd	YDataLogger target set_autoStart newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval either `Y_AUTOSTART_OFF` or `Y_AUTOSTART_ON`, according to the default activation state of the data logger on power up

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

datalogger→set_logicalName()
datalogger→setLogicalName()
datalogger.set_logicalName()

YDataLogger

Changes the logical name of the data logger.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YDataLogger target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the data logger.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

datalogger→set_recording()
datalogger→setRecording()
datalogger.set_recording()

YDataLogger

Changes the activation state of the data logger to start/stop recording data.

```
js function set_recording( newval)
nodejs function set_recording( newval)
php function set_recording( $newval)
cpp int set_recording( Y_RECORDING_enum newval)
m -(int) setRecording : (Y_RECORDING_enum) newval
pas function set_recording( newval: Integer): integer
vb function set_recording( ByVal newval As Integer) As Integer
cs int set_recording( int newval)
java int set_recording( int newval)
py def set_recording( newval)
cmd YDataLogger target set_recording newval
```

Parameters :

newval either Y_RECORDING_OFF or Y_RECORDING_ON, according to the activation state of the data logger to start/stop recording data

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

datalogger→set_timeUTC()**datalogger→setTimeUTC()datalogger.set_timeUTC()****YDataLogger**

Changes the current UTC time reference used for recorded data.

js	function set_timeUTC(newval)
nodejs	function set_timeUTC(newval)
php	function set_timeUTC(\$newval)
cpp	int set_timeUTC(s64 newval)
m	-(int) setTimeUTC : (s64) newval
pas	function set_timeUTC(newval: int64): integer
vb	function set_timeUTC(ByVal newval As Long) As Integer
cs	int set_timeUTC(long newval)
java	int set_timeUTC(long newval)
py	def set_timeUTC(newval)
cmd	YDataLogger target set_timeUTC newval

Parameters :

newval an integer corresponding to the current UTC time reference used for recorded data

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

datalogger→set(userData)**YDataLogger****datalogger→setUserData()datalogger.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

```
js   function set(userData) {  
node.js function set(userData) {  
php  function set(userData) {  
cpp   void set(userData) {  
m    -(void) setUserData : (void*) userData  
pas  procedure set(userData: Tobject);  
vb   procedure set(userData: ByVal data As Object);  
cs   void set(userData: object data);  
java void set(userData: Object data);  
py   def set(userData: data);
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

datalogger→wait_async()

YDataLogger

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

`js` `function wait_async(callback, context)`

`nodejs` `function wait_async(callback, context)`

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.9. Formatted data sequence

A run is a continuous interval of time during which a module was powered on. A data run provides easy access to all data collected during a given run, providing on-the-fly resampling at the desired reporting rate.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_datalogger.js'></script>
nodejs var yoctolib = require('yoctolib');
var YDataLogger = yoctolib.YDataLogger;
php require_once('yocto_datalogger.php');
cpp #include "yocto_datalogger.h"
m #import "yocto_datalogger.h"
pas uses yocto_datalogger;
vb yocto_datalogger.vb
cs yocto_datalogger.cs
java import com.yoctopuce.YoctoAPI.YDataLogger;
py from yocto_datalogger import *

```

YDataRun methods

datarun→get_averageValue(measureName, pos)

Returns the average value of the measure observed at the specified time period.

datarun→get_duration()

Returns the duration (in seconds) of the data run.

datarun→get_maxValue(measureName, pos)

Returns the maximal value of the measure observed at the specified time period.

datarun→get_measureNames()

Returns the names of the measures recorded by the data logger.

datarun→get_minValue(measureName, pos)

Returns the minimal value of the measure observed at the specified time period.

datarun→get_startTimeUTC()

Returns the start time of the data run, relative to the Jan 1, 1970.

datarun→get_valueCount()

Returns the number of values accessible in this run, given the selected data samples interval.

datarun→get_valueInterval()

Returns the number of seconds covered by each value in this run.

datarun→set_valueInterval(valueInterval)

Changes the number of seconds covered by each value in this run.

datarun→get_averageValue()
datarun→averageValue()**YDataRun**

Returns the average value of the measure observed at the specified time period.

```
js   function get_averageValue( measureName, pos)
nodejs function get_averageValue( measureName, pos)
php  function get_averageValue( $measureName, $pos)
java double get_averageValue( String measureName, int pos)
py   def get_averageValue( measureName, pos)
```

Parameters :

measureName the name of the desired measure (one of the names returned by `get_measureNames`)
pos the position index, between 0 and the value returned by `get_valueCount`

Returns :

a floating point number (the average value)

On failure, throws an exception or returns `Y_AVERAGEVALUE_INVALID`.

datarun→get_duration()
datarun→duration()**YDataRun**

Returns the duration (in seconds) of the data run.

```
js function get_duration( )  
nodejs function get_duration( )  
php function get_duration( )  
java long get_duration( )  
py def get_duration( )
```

When the datalogger is actively recording and the specified run is the current run, calling this method reloads last sequence(s) from device to make sure it includes the latest recorded data.

Returns :

an unsigned number corresponding to the number of seconds between the beginning of the run (when the module was powered up) and the last recorded measure.

datarun→get_maxValue()
datarun→maxValue()**YDataRun**

Returns the maximal value of the measure observed at the specified time period.

```
js function get_maxValue( measureName, pos)
nodejs function get_maxValue( measureName, pos)
php function get_maxValue( $measureName, $pos)
java double get_maxValue( String measureName, int pos)
py def get_maxValue( measureName, pos)
```

Parameters :

measureName the name of the desired measure (one of the names returned by `get_measureNames`)
pos the position index, between 0 and the value returned by `get_valueCount`

Returns :

a floating point number (the maximal value)

On failure, throws an exception or returns `Y_MAXVALUE_INVALID`.

datarun→get_measureNames()
datarun→measureNames()**YDataRun**

Returns the names of the measures recorded by the data logger.

```
js function get_measureNames( )
nodejs function get_measureNames( )
php function get_measureNames( )
java ArrayList<String> get_measureNames( )
py def get_measureNames( )
```

In most case, the measure names match the hardware identifier of the sensor that produced the data.

Returns :

a list of strings (the measure names) On failure, throws an exception or returns an empty array.

datarun→get_minValue()
datarun→minValue()**YDataRun**

Returns the minimal value of the measure observed at the specified time period.

```
js function get_minValue( measureName, pos)
nodejs function get_minValue( measureName, pos)
php function get_minValue( $measureName, $pos)
java double get_minValue( String measureName, int pos)
py def get_minValue( measureName, pos)
```

Parameters :

measureName the name of the desired measure (one of the names returned by `get_measureNames`)
pos the position index, between 0 and the value returned by `get_valueCount`

Returns :

a floating point number (the minimal value)

On failure, throws an exception or returns `Y_MINVALUE_INVALID`.

datarun→get_startTimeUTC()
datarun→startTimeUTC()

YDataRun

Returns the start time of the data run, relative to the Jan 1, 1970.

If the UTC time was not set in the datalogger at any time during the recording of this data run, and if this is not the current run, this method returns 0.

Returns :

an unsigned number corresponding to the number of seconds between the Jan 1, 1970 and the beginning of this data run (i.e. Unix time representation of the absolute time).

datarun→get_valueCount()**YDataRun****datarun→valueCount()**

Returns the number of values accessible in this run, given the selected data samples interval.

```
js function get_valueCount( )  
nodejs function get_valueCount( )  
php function get_valueCount( )  
java int get_valueCount( )  
py def get_valueCount( )
```

When the datalogger is actively recording and the specified run is the current run, calling this method reloads last sequence(s) from device to make sure it includes the latest recorded data.

Returns :

an unsigned number corresponding to the run duration divided by the samples interval.

**datarun→get_valueInterval()
datarun→valueInterval()****YDataRun**

Returns the number of seconds covered by each value in this run.

```
js function get_valueInterval( )
nodejs function get_valueInterval( )
php function get_valueInterval( )
java int get_valueInterval( )
py def get_valueInterval( )
```

By default, the value interval is set to the coarsest data rate archived in the data logger flash for this run. The value interval can however be configured at will to a different rate when desired.

Returns :

an unsigned number corresponding to a number of seconds covered by each data sample in the Run.

**datarun→set_valueInterval()
datarun→setValueInterval()****YDataRun**

Changes the number of seconds covered by each value in this run.

```
js function set_valueInterval( valueInterval)
nodejs function set_valueInterval( valueInterval)
php function set_valueInterval( $valueInterval)
java void set_valueInterval( int valueInterval)
py def set_valueInterval( valueInterval)
```

By default, the value interval is set to the coarsest data rate archived in the data logger flash for this run. The value interval can however be configured at will to a different rate when desired.

Parameters :

valueInterval an integer number of seconds.

Returns :

nothing

3.10. Recorded data sequence

YDataSet objects make it possible to retrieve a set of recorded measures for a given sensor and a specified time interval. They can be used to load data points with a progress report. When the YDataSet object is instanciated by the `get_recordedData()` function, no data is yet loaded from the module. It is only when the `loadMore()` method is called over and over than data will be effectively loaded from the dataLogger.

A preview of available measures is available using the function `get_preview()` as soon as `loadMore()` has been called once. Measures themselves are available using function `get_measures()` when loaded by subsequent calls to `loadMore()`.

This class can only be used on devices that use a recent firmware, as YDataSet objects are not supported by firmwares older than version 13000.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_api.js'></script>
nodejs var yoctolib = require('yoctolib');
var YAPI = yoctolib.YAPI;
var YModule = yoctolib.YModule;
php require_once('yocto_api.php');
cpp #include "yocto_api.h"
m #import "yocto_api.h"
pas uses yocto_api;
vb yocto_api.vb
cs yocto_api.cs
java import com.yoctopuce.YoctoAPI.YModule;
py from yocto_api import *

```

YDataSet methods

`dataset→get_endTimeUTC()`

Returns the end time of the dataset, relative to the Jan 1, 1970.

`dataset→get_functionId()`

Returns the hardware identifier of the function that performed the measure, without reference to the module.

`dataset→get_hardwareId()`

Returns the unique hardware identifier of the function who performed the measures, in the form SERIAL.FUNCTIONID.

`dataset→get_measures()`

Returns all measured values currently available for this DataSet, as a list of YMeasure objects.

`dataset→get_preview()`

Returns a condensed version of the measures that can retrieved in this YDataSet, as a list of YMeasure objects.

`dataset→get_progress()`

Returns the progress of the downloads of the measures from the data logger, on a scale from 0 to 100.

`dataset→get_startTimeUTC()`

Returns the start time of the dataset, relative to the Jan 1, 1970.

`dataset→get_summary()`

Returns an YMeasure object which summarizes the whole DataSet.

`dataset→get_unit()`

Returns the measuring unit for the measured value.

dataset→loadMore()

Loads the the next block of measures from the dataLogger, and updates the progress indicator.

dataset→loadMore_async(callback, context)

Loads the the next block of measures from the dataLogger asynchronously.

dataset→get_endTimeUTC()**YDataSet****dataset→endTimeUTC()dataset.get_endTimeUTC()**

Returns the end time of the dataset, relative to the Jan 1, 1970.

```
js function get_endTimeUTC( )  
node.js function get_endTimeUTC( )  
php function get_endTimeUTC( )  
cpp s64 get_endTimeUTC( )  
m -(s64) endTimeUTC  
pas function get_endTimeUTC( ): int64  
vb function get_endTimeUTC( ) As Long  
cs long get_endTimeUTC( )  
java long get_endTimeUTC( )  
py def get_endTimeUTC( )
```

When the YDataSet is created, the end time is the value passed in parameter to the `get_dataSet()` function. After the very first call to `loadMore()`, the end time is updated to reflect the timestamp of the last measure actually found in the dataLogger within the specified range.

Returns :

an unsigned number corresponding to the number of seconds between the Jan 1, 1970 and the end of this data set (i.e. Unix time representation of the absolute time).

dataset→get_functionId()**YDataSet****dataset→functionId()dataset.get_functionId()**

Returns the hardware identifier of the function that performed the measure, without reference to the module.

js	function get_functionId()
nodejs	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
pas	function get_functionId() : string
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `temperature1`.

Returns :

a string that identifies the function (ex: `temperature1`)

dataset→get_hardwareId()**YDataSet****dataset→hardwareId()dataset.get_hardwareId()**

Returns the unique hardware identifier of the function who performed the measures, in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
pas	function get_hardwareId() : string
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the function (for example THRMCPL1-123456.temperature1)

Returns :

a string that uniquely identifies the function (ex: THRMCPL1-123456.temperature1)

On failure, throws an exception or returns Y_HARDWAREID_INVALID.

dataset→get_measures()**YDataSet****dataset→measures()dataset.get_measures()**

Returns all measured values currently available for this DataSet, as a list of YMeasure objects.

js	function get_measures()
node.js	function get_measures()
php	function get_measures()
cpp	vector<YMeasure> get_measures()
m	-(NSMutableArray*) get_measures()
pas	function get_measures(): TYMeasureArray
vb	function get_measures() As List
cs	List<YMeasure> get_measures()
java	ArrayList<YMeasure> get_measures()
py	def get_measures()

Each item includes: - the start of the measure time interval - the end of the measure time interval - the minimal value observed during the time interval - the average value observed during the time interval - the maximal value observed during the time interval

Before calling this method, you should call `loadMore()` to load data from the device. You may have to call `loadMore()` several time until all rows are loaded, but you can start looking at available data rows before the load is complete.

The oldest measures are always loaded first, and the most recent measures will be loaded last. As a result, timestamps are normally sorted in ascending order within the measure table, unless there was an unexpected adjustment of the datalogger UTC clock.

Returns :

a table of records, where each record depicts the measured value for a given time interval

On failure, throws an exception or returns an empty array.

dataset→get_preview()**YDataSet****dataset→preview()dataset.get_preview()**

Returns a condensed version of the measures that can retrieved in this YDataSet, as a list of YMeasure objects.

```
js function get_preview( )
nodejs function get_preview( )
php function get_preview( )
cpp vector<YMeasure> get_preview( )
m -(NSMutableArray*) preview
pas function get_preview( ): TYMeasureArray
vb function get_preview( ) As List
cs List<YMeasure> get_preview( )
java ArrayList<YMeasure> get_preview( )
py def get_preview( )
```

Each item includes: - the start of a time interval - the end of a time interval - the minimal value observed during the time interval - the average value observed during the time interval - the maximal value observed during the time interval

This preview is available as soon as `loadMore()` has been called for the first time.

Returns :

a table of records, where each record depicts the measured values during a time interval

On failure, throws an exception or returns an empty array.

dataset→get_progress()**YDataSet****dataset→progress()dataset.get_progress()**

Returns the progress of the downloads of the measures from the data logger, on a scale from 0 to 100.

js	function get_progress()
nodejs	function get_progress()
php	function get_progress()
cpp	int get_progress()
m	-(int) progress
pas	function get_progress(): LongInt
vb	function get_progress() As Integer
cs	int get_progress()
java	int get_progress()
py	def get_progress()

When the object is instanciated by `get_dataSet`, the progress is zero. Each time `loadMore()` is invoked, the progress is updated, to reach the value 100 only once all measures have been loaded.

Returns :

an integer in the range 0 to 100 (percentage of completion).

dataset→get_startTimeUTC()**YDataSet****dataset→startTimeUTC()dataset.get_startTimeUTC()**

Returns the start time of the dataset, relative to the Jan 1, 1970.

```
js function getStartTimeUTC( )
node.js function getStartTimeUTC( )
php function getStartTimeUTC( )
cpp s64 getStartTimeUTC( )
m -(s64) startTimeUTC
pas function getStartTimeUTC( ): int64
vb function getStartTimeUTC( ) As Long
cs long getStartTimeUTC( )
java long getStartTimeUTC( )
py def getStartTimeUTC( )
```

When the YDataSet is created, the start time is the value passed in parameter to the `get_dataSet()` function. After the very first call to `loadMore()`, the start time is updated to reflect the timestamp of the first measure actually found in the dataLogger within the specified range.

Returns :

an unsigned number corresponding to the number of seconds between the Jan 1, 1970 and the beginning of this data set (i.e. Unix time representation of the absolute time).

dataset→get_summary()**YDataSet****dataset→summary()dataset.get_summary()**

Returns an YMeasure object which summarizes the whole DataSet.

```
js function get_summary( )
nodejs function get_summary( )
php function get_summary( )
cpp YMeasure get_summary( )
m -(YMeasure*) summary
pas function get_summary( ): TYMeasure
vb function get_summary( ) As YMeasure
cs YMeasure get_summary( )
java YMeasure get_summary( )
py def get_summary( )
```

In includes the following information: - the start of a time interval - the end of a time interval - the minimal value observed during the time interval - the average value observed during the time interval - the maximal value observed during the time interval

This summary is available as soon as `loadMore()` has been called for the first time.

Returns :

an YMeasure object

dataset→get_unit()**dataset→unit()dataset.get_unit()****YDataSet**

Returns the measuring unit for the measured value.

js function **get_unit()**

node.js function **get_unit()**

php function **get_unit()**

cpp string **get_unit()**

m -(NSString*) **unit**

pas function **get_unit()**: string

vb function **get_unit()** As String

cs string **get_unit()**

java String **get_unit()**

py def **get_unit()**

Returns :

a string that represents a physical unit.

On failure, throws an exception or returns Y_UNIT_INVALID.

dataset→loadMore()dataset.loadMore()**YDataSet**

Loads the the next block of measures from the dataLogger, and updates the progress indicator.

js	function loadMore()
node.js	function loadMore()
php	function loadMore()
cpp	int loadMore()
m	- (int) loadMore
pas	function loadMore() : LongInt
vb	function loadMore() As Integer
cs	int loadMore()
java	int loadMore()
py	def loadMore()

Returns :

an integer in the range 0 to 100 (percentage of completion), or a negative error code in case of failure.

On failure, throws an exception or returns a negative error code.

dataset→loadMore_async()**YDataSet**

Loads the the next block of measures from the dataLogger asynchronously.

```
js function loadMore_async( callback, context)
nodejs function loadMore_async( callback, context)
```

Parameters :

callback callback function that is invoked when the w The callback function receives three arguments: - the user-specific context object - the YDataSet object whose loadMore_async was invoked - the load result: either the progress indicator (0...100), or a negative error code in case of failure.

context user-specific object that is passed as-is to the callback function

Returns :

nothing.

3.11. Unformatted data sequence

YDataStream objects represent bare recorded measure sequences, exactly as found within the data logger present on Yoctopuce sensors.

In most cases, it is not necessary to use YDataStream objects directly, as the YDataSet objects (returned by the `get_recordedData()` method from sensors and the `get_dataSets()` method from the data logger) provide a more convenient interface.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_api.js'></script>
nodejs var yoctolib = require('yoctolib');
var YAPI = yoctolib.YAPI;
var YModule = yoctolib.YModule;
php require_once('yocto_api.php');
cpp #include "yocto_api.h"
m #import "yocto_api.h"
pas uses yocto_api;
vb yocto_api.vb
cs yocto_api.cs
java import com.yoctopuce.YoctoAPI.YModule;
py from yocto_api import *

```

YDataStream methods

`datastream→get_averageValue()`

Returns the average of all measures observed within this stream.

`datastream→get_columnCount()`

Returns the number of data columns present in this stream.

`datastream→get_columnNames()`

Returns the title (or meaning) of each data column present in this stream.

`datastream→get_data(row, col)`

Returns a single measure from the data stream, specified by its row and column index.

`datastream→get_dataRows()`

Returns the whole data set contained in the stream, as a bidimensional table of numbers.

`datastream→get_dataSamplesIntervalMs()`

Returns the number of milliseconds between two consecutive rows of this data stream.

`datastream→get_duration()`

Returns the approximate duration of this stream, in seconds.

`datastream→get_maxValue()`

Returns the largest measure observed within this stream.

`datastream→get_minValue()`

Returns the smallest measure observed within this stream.

`datastream→getRowCount()`

Returns the number of data rows present in this stream.

`datastream→get_runIndex()`

Returns the run index of the data stream.

`datastream→get_startTime()`

Returns the relative start time of the data stream, measured in seconds.

`datastream→get_startTimeUTC()`

3. Reference

Returns the start time of the data stream, relative to the Jan 1, 1970.

datastream→get_averageValue()
datastream→averageValue()
datastream.get_averageValue()

YDataStream

Returns the average of all measures observed within this stream.

js	function get_averageValue()
node.js	function get_averageValue()
php	function get_averageValue()
cpp	double get_averageValue()
m	-(double) averageValue
pas	function get_averageValue() : double
vb	function get_averageValue() As Double
cs	double get_averageValue()
java	double get_averageValue()
py	def get_averageValue()

If the device uses a firmware older than version 13000, this method will always return Y_DATA_INVALID.

Returns :

a floating-point number corresponding to the average value, or Y_DATA_INVALID if the stream is not yet complete (still recording).

On failure, throws an exception or returns Y_DATA_INVALID.

datastream→get_columnCount()
datastream→columnCount()
datastream.get_columnCount()

YDataStream

Returns the number of data columns present in this stream.

js	function get_columnCount()
nodejs	function get_columnCount()
php	function get_columnCount()
cpp	int get_columnCount()
m	-(int) columnCount
pas	function get_columnCount() : LongInt
vb	function get_columnCount() As Integer
cs	int get_columnCount()
java	int get_columnCount()
py	def get_columnCount()

The meaning of the values present in each column can be obtained using the method `get_columnNames()`.

If the device uses a firmware older than version 13000, this method fetches the whole data stream from the device if not yet done, which can cause a little delay.

Returns :

an unsigned number corresponding to the number of columns.

On failure, throws an exception or returns zero.

datastream→get_columnNames()
datastream→columnNames()
datastream.get_columnNames()

YDataStream

Returns the title (or meaning) of each data column present in this stream.

js	function get_columnNames()
node.js	function get_columnNames()
php	function get_columnNames()
cpp	vector<string> get_columnNames()
m	-(NSMutableArray*) columnNames
pas	function get_columnNames() : TStringArray
vb	function get_columnNames() As List
cs	List<string> get_columnNames()
java	ArrayList<String> get_columnNames()
py	def get_columnNames()

In most case, the title of the data column is the hardware identifier of the sensor that produced the data. For streams recorded at a lower recording rate, the dataLogger stores the min, average and max value during each measure interval into three columns with suffixes _min, _avg and _max respectively.

If the device uses a firmware older than version 13000, this method fetches the whole data stream from the device if not yet done, which can cause a little delay.

Returns :

a list containing as many strings as there are columns in the data stream.

On failure, throws an exception or returns an empty array.

`datastream->get_data()`
`datastream->data()datastream.get_data()`

YDataStream

Returns a single measure from the data stream, specified by its row and column index.

The meaning of the values present in each column can be obtained using the method `get_columnNames()`.

This method fetches the whole data stream from the device, if not yet done.

Parameters :

row row index

col column index

Returns :

a floating-point number

On failure, throws an exception or returns Y_DATA_INVALID.

datastream→get_dataRows()**YDataStream****datastream→dataRows()datastream.get_dataRows()**

Returns the whole data set contained in the stream, as a bidimensional table of numbers.

```
js   function get_dataRows( )  
nodejs function get_dataRows( )  
php  function get_dataRows( )  
cpp   vector< vector<double> > get_dataRows( )  
m    -(NSMutableArray*) dataRows  
pas   function get_dataRows( ): TDoubleArrayList  
vb    function get_dataRows( ) As List  
cs    List<List<double>> get_dataRows( )  
java  ArrayList<ArrayList<Double>> get_dataRows( )  
py    def get_dataRows( )
```

The meaning of the values present in each column can be obtained using the method `get_columnNames()`.

This method fetches the whole data stream from the device, if not yet done.

Returns :

a list containing as many elements as there are rows in the data stream. Each row itself is a list of floating-point numbers.

On failure, throws an exception or returns an empty array.

`datastream→get_dataSamplesIntervalMs()`
`datastream→dataSamplesIntervalMs()`
`datastream.get_dataSamplesIntervalMs()`

YDataStream

Returns the number of milliseconds between two consecutive rows of this data stream.

js	function get_dataSamplesIntervalMs()
nodejs	function get_dataSamplesIntervalMs()
php	function get_dataSamplesIntervalMs()
cpp	int get_dataSamplesIntervalMs()
m	-(int) dataSamplesIntervalMs
pas	function get_dataSamplesIntervalMs(): LongInt
vb	function get_dataSamplesIntervalMs() As Integer
cs	int get_dataSamplesIntervalMs()
java	int get_dataSamplesIntervalMs()
py	def get_dataSamplesIntervalMs()

By default, the data logger records one row per second, but the recording frequency can be changed for each device function

Returns :

an unsigned number corresponding to a number of milliseconds.

datastream→get_duration()**YDataStream****datastream→duration()datastream.get_duration()**

Returns the approximate duration of this stream, in seconds.

js	function get_duration()
nodejs	function get_duration()
php	function get_duration()
cpp	int get_duration()
m	-(int) duration
pas	function get_duration() : LongInt
vb	function get_duration() As Integer
cs	int get_duration()
java	int get_duration()
py	def get_duration()

Returns :

the number of seconds covered by this stream.

On failure, throws an exception or returns Y_DURATION_INVALID.

datastream→get_maxValue()**YDataStream****datastream→maxValue()datastream.get_maxValue()**

Returns the largest measure observed within this stream.

```
js function get_maxValue( )
node.js function get_maxValue( )
php function get_maxValue( )
cpp double get_maxValue( )
m -(double) maxValue
pas function get_maxValue( ): double
vb function get_maxValue( ) As Double
cs double get_maxValue( )
java double get_maxValue( )
py def get_maxValue( )
```

If the device uses a firmware older than version 13000, this method will always return Y_DATA_INVALID.

Returns :

a floating-point number corresponding to the largest value, or Y_DATA_INVALID if the stream is not yet complete (still recording).

On failure, throws an exception or returns Y_DATA_INVALID.

datastream→get_minValue()**YDataStream****datastream→minValue()datastream.get_minValue()**

Returns the smallest measure observed within this stream.

js	function get_minValue()
node.js	function get_minValue()
php	function get_minValue()
cpp	double get_minValue()
m	-(double) minValue
pas	function get_minValue(): double
vb	function get_minValue() As Double
cs	double get_minValue()
java	double get_minValue()
py	def get_minValue()

If the device uses a firmware older than version 13000, this method will always return Y_DATA_INVALID.

Returns :

a floating-point number corresponding to the smallest value, or Y_DATA_INVALID if the stream is not yet complete (still recording).

On failure, throws an exception or returns Y_DATA_INVALID.

datastream→getRowCount()**YDataStream****datastream→rowCount()datastream.getRowCount()**

Returns the number of data rows present in this stream.

js	function getRowCount()
node.js	function getRowCount()
php	function getRowCount()
cpp	int getRowCount()
m	-(int) rowCount
pas	function getRowCount() : LongInt
vb	function getRowCount() As Integer
cs	int getRowCount()
java	int getRowCount()
py	def getRowCount()

If the device uses a firmware older than version 13000, this method fetches the whole data stream from the device if not yet done, which can cause a little delay.

Returns :

an unsigned number corresponding to the number of rows.

On failure, throws an exception or returns zero.

datastream→get_runIndex()**YDataStream****datastream→runIndex()datastream.get_runIndex()**

Returns the run index of the data stream.

js	function get_runIndex()
node.js	function get_runIndex()
php	function get_runIndex()
cpp	int get_runIndex()
m	-(int) runIndex
pas	function get_runIndex(): LongInt
vb	function get_runIndex() As Integer
cs	int get_runIndex()
java	int get_runIndex()
py	def get_runIndex()

A run can be made of multiple datastreams, for different time intervals.

Returns :

an unsigned number corresponding to the run index.

datastream→getStartTime()**YDataStream****datastream→startTime()datastream.getStartTime()**

Returns the relative start time of the data stream, measured in seconds.

js	function getStartTime()
node.js	function getStartTime()
php	function getStartTime()
cpp	int getStartTime()
m	-(int) startTime
pas	function getStartTime(): LongInt
vb	function getStartTime() As Integer
cs	int getStartTime()
java	int getStartTime()
py	def getStartTime()

For recent firmwares, the value is relative to the present time, which means the value is always negative. If the device uses a firmware older than version 13000, value is relative to the start of the time the device was powered on, and is always positive. If you need an absolute UTC timestamp, use `getStartTimeUTC()`.

Returns :

an unsigned number corresponding to the number of seconds between the start of the run and the beginning of this data stream.

datastream→getStartTimeUTC()
datastream→startTimeUTC()
datastream.getStartTimeUTC()**YDataStream**

Returns the start time of the data stream, relative to the Jan 1, 1970.

js	function getStartTimeUTC()
node.js	function getStartTimeUTC()
php	function getStartTimeUTC()
cpp	s64 getStartTimeUTC()
m	-(s64) startTimeUTC
pas	function getStartTimeUTC() : int64
vb	function getStartTimeUTC() As Long
cs	long getStartTimeUTC()
java	long getStartTimeUTC()
py	def getStartTimeUTC()

If the UTC time was not set in the datalogger at the time of the recording of this data stream, this method returns 0.

Returns :

an unsigned number corresponding to the number of seconds between the Jan 1, 1970 and the beginning of this data stream (i.e. Unix time representation of the absolute time).

3.12. Digital IO function interface

The Yoctopuce application programming interface allows you to switch the state of each bit of the I/O port. You can switch all bits at once, or one by one. The library can also automatically generate short pulses of a determined duration. Electrical behavior of each I/O can be modified (open drain and reverse polarity).

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_digitalio.js'></script>
nodejs var yoctolib = require('yoctolib');
var YDigitalIO = yoctolib.YDigitalIO;
php require_once('yocto_digitalio.php');
cpp #include "yocto_digitalio.h"
m #import "yocto_digitalio.h"
pas uses yocto_digitalio;
vb yocto_digitalio.vb
cs yocto_digitalio.cs
java import com.yoctopuce.YoctoAPI.YDigitalIO;
py from yocto_digitalio import *

```

Global functions

yFindDigitalIO(func)

Retrieves a digital IO port for a given identifier.

yFirstDigitalIO()

Starts the enumeration of digital IO ports currently accessible.

YDigitalIO methods

digitalio->delayedPulse(bitno, ms_delay, ms_duration)

Schedules a pulse on a single bit for a specified duration.

digitalio->describe()

Returns a short text that describes unambiguously the instance of the digital IO port in the form TYPE(NAME)=SERIAL.FUNCTIONID.

digitalio->get_advertisedValue()

Returns the current value of the digital IO port (no more than 6 characters).

digitalio->get_bitDirection(bitno)

Returns the direction of a single bit from the I/O port (0 means the bit is an input, 1 an output).

digitalio->get_bitOpenDrain(bitno)

Returns the type of electrical interface of a single bit from the I/O port.

digitalio->get_bitPolarity(bitno)

Returns the polarity of a single bit from the I/O port (0 means the I/O works in regular mode, 1 means the I/O works in reverse mode).

digitalio->get_bitState(bitno)

Returns the state of a single bit of the I/O port.

digitalio->get_errorMessage()

Returns the error message of the latest error with the digital IO port.

digitalio->get_errorType()

Returns the numerical error code of the latest error with the digital IO port.

digitalio->get_friendlyName()

Returns a global identifier of the digital IO port in the format MODULE_NAME . FUNCTION_NAME.

digitalio→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

digitalio→get_functionId()

Returns the hardware identifier of the digital IO port, without reference to the module.

digitalio→get_hardwareId()

Returns the unique hardware identifier of the digital IO port in the form SERIAL.FUNCTIONID.

digitalio→get_logicalName()

Returns the logical name of the digital IO port.

digitalio→get_module()

Gets the YModule object for the device on which the function is located.

digitalio→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

digitalio→get_outputVoltage()

Returns the voltage source used to drive output bits.

digitalio→get_portDirection()

Returns the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output.

digitalio→get_portOpenDrain()

Returns the electrical interface for each bit of the port.

digitalio→get_portPolarity()

Returns the polarity of all the bits of the port.

digitalio→get_portSize()

Returns the number of bits implemented in the I/O port.

digitalio→get_portState()

Returns the digital IO port state: bit 0 represents input 0, and so on.

digitalio→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

digitalio→isOnline()

Checks if the digital IO port is currently reachable, without raising any error.

digitalio→isOnline_async(callback, context)

Checks if the digital IO port is currently reachable, without raising any error (asynchronous version).

digitalio→load(msValidity)

Preloads the digital IO port cache with a specified validity duration.

digitalio→load_async(msValidity, callback, context)

Preloads the digital IO port cache with a specified validity duration (asynchronous version).

digitalio→nextDigitalIO()

Continues the enumeration of digital IO ports started using yFirstDigitalIO().

digitalio→pulse(bitno, ms_duration)

Triggers a pulse on a single bit for a specified duration.

digitalio→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

digitalio→set_bitDirection(bitno, bitdirection)

Changes the direction of a single bit from the I/O port.

digitalio→set_bitOpenDrain(bitno, opendrain)

Changes the electrical interface of a single bit from the I/O port.

digitalio→set_bitPolarity(bitno, bitpolarity)

3. Reference

Changes the polarity of a single bit from the I/O port.

digitalio→set_bitState(bitno, bitstate)

Sets a single bit of the I/O port.

digitalio→set_logicalName(newval)

Changes the logical name of the digital IO port.

digitalio→set_outputVoltage(newval)

Changes the voltage source used to drive output bits.

digitalio→set_portDirection(newval)

Changes the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output.

digitalio→set_portOpenDrain(newval)

Changes the electrical interface for each bit of the port.

digitalio→set_portPolarity(newval)

Changes the polarity of all the bits of the port: 0 makes a bit an input, 1 makes it an output.

digitalio→set_portState(newval)

Changes the digital IO port state: bit 0 represents input 0, and so on.

digitalio→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

digitalio→toggle_bitState(bitno)

Reverts a single bit of the I/O port.

digitalio→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YDigitalIO.FindDigitalIO() yFindDigitalIO()yFindDigitalIO()

YDigitalIO

Retrieves a digital IO port for a given identifier.

<code>js</code>	<code>function yFindDigitalIO(func)</code>
<code>node.js</code>	<code>function FindDigitalIO(func)</code>
<code>php</code>	<code>function yFindDigitalIO(\$func)</code>
<code>cpp</code>	<code>YDigitalIO* yFindDigitalIO(const string& func)</code>
<code>m</code>	<code>YDigitalIO* yFindDigitalIO(NSString* func)</code>
<code>pas</code>	<code>function yFindDigitalIO(func: string): TYDigitalIO</code>
<code>vb</code>	<code>function yFindDigitalIO(ByVal func As String) As YDigitalIO</code>
<code>cs</code>	<code>YDigitalIO FindDigitalIO(string func)</code>
<code>java</code>	<code>YDigitalIO FindDigitalIO(String func)</code>
<code>py</code>	<code>def FindDigitalIO(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the digital IO port is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YDigitalIO.isOnline()` to test if the digital IO port is indeed online at a given time. In case of ambiguity when looking for a digital IO port by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the digital IO port

Returns :

a `YDigitalIO` object allowing you to drive the digital IO port.

YDigitalIO.FirstDigitalIO() yFirstDigitalIO()yFirstDigitalIO()

YDigitalIO

Starts the enumeration of digital IO ports currently accessible.

js	function yFirstDigitalIO()
node.js	function FirstDigitalIO()
php	function yFirstDigitalIO()
cpp	YDigitalIO* yFirstDigitalIO()
m	YDigitalIO* yFirstDigitalIO()
pas	function yFirstDigitalIO() : TYDigitalIO
vb	function yFirstDigitalIO() As YDigitalIO
cs	YDigitalIO FirstDigitalIO()
java	YDigitalIO FirstDigitalIO()
py	def FirstDigitalIO()

Use the method `YDigitalIO.nextDigitalIO()` to iterate on next digital IO ports.

Returns :

a pointer to a `YDigitalIO` object, corresponding to the first digital IO port currently online, or a null pointer if there are none.

digitalio→delayedPulse()digitalio.delayedPulse()

YDigitalIO

Schedules a pulse on a single bit for a specified duration.

js	function delayedPulse (bitno , ms_delay , ms_duration)
nodejs	function delayedPulse (bitno , ms_delay , ms_duration)
php	function delayedPulse (\$ bitno , \$ ms_delay , \$ ms_duration)
cpp	int delayedPulse (int bitno , int ms_delay , int ms_duration)
m	-(int) delayedPulse : (int) bitno : (int) ms_delay : (int) ms_duration
pas	function delayedPulse (bitno : LongInt, ms_delay : LongInt, ms_duration : LongInt): LongInt
vb	function delayedPulse () As Integer
cs	int delayedPulse (int bitno , int ms_delay , int ms_duration)
java	int delayedPulse (int bitno , int ms_delay , int ms_duration)
py	def delayedPulse (bitno , ms_delay , ms_duration)
cmd	YDigitalIO target delayedPulse bitno ms_delay ms_duration

The specified bit will be turned to 1, and then back to 0 after the given duration.

Parameters :

bitno the bit number; lowest bit has index 0
ms_delay waiting time before the pulse, in milliseconds
ms_duration desired pulse duration in milliseconds. Be aware that the device time resolution is not guaranteed up to the millisecond.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→describe()digitalio.describe()**YDigitalIO**

Returns a short text that describes unambiguously the instance of the digital IO port in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	- (NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the digital IO port (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

digitalio→get_advertisedValue()
digitalio→advertisedValue()
digitalio.get_advertisedValue()**YDigitalIO**

Returns the current value of the digital IO port (no more than 6 characters).

js	function get_advertisedValue()
node.js	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YDigitalIO target get_advertisedValue

Returns :

a string corresponding to the current value of the digital IO port (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

digitalio→get_bitDirection() digitalio→bitDirection()digitalio.get_bitDirection()

YDigitalIO

Returns the direction of a single bit from the I/O port (0 means the bit is an input, 1 an output).

js	function get_bitDirection(bitno)
node.js	function get_bitDirection(bitno)
php	function get_bitDirection(\$bitno)
cpp	int get_bitDirection(int bitno)
m	-(int) bitDirection : (int) bitno
pas	function get_bitDirection(bitno : LongInt): LongInt
vb	function get_bitDirection() As Integer
cs	int get_bitDirection(int bitno)
java	int get_bitDirection(int bitno)
py	def get_bitDirection(bitno)
cmd	YDigitalIO target get_bitDirection bitno

Parameters :

bitno the bit number; lowest bit has index 0

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→get_bitOpenDrain()**YDigitalIO****digitalio→bitOpenDrain()digitalio.get_bitOpenDrain()**

Returns the type of electrical interface of a single bit from the I/O port.

js	<code>function get_bitOpenDrain(bitno)</code>
nodejs	<code>function get_bitOpenDrain(bitno)</code>
php	<code>function get_bitOpenDrain(\$bitno)</code>
cpp	<code>int get_bitOpenDrain(int bitno)</code>
m	<code>-(int) bitOpenDrain : (int) bitno</code>
pas	<code>function get_bitOpenDrain(bitno: LongInt): LongInt</code>
vb	<code>function get_bitOpenDrain() As Integer</code>
cs	<code>int get_bitOpenDrain(int bitno)</code>
java	<code>int get_bitOpenDrain(int bitno)</code>
py	<code>def get_bitOpenDrain(bitno)</code>
cmd	<code>YDigitalIO target get_bitOpenDrain bitno</code>

(0 means the bit is an input, 1 an output).

Parameters :

bitno the bit number; lowest bit has index 0

Returns :

0 means the a bit is a regular input/output, 1 means the bit is an open-drain (open-collector) input/output.

On failure, throws an exception or returns a negative error code.

digitalio→get_bitPolarity()**YDigitalIO****digitalio→bitPolarity()digitalio.get_bitPolarity()**

Returns the polarity of a single bit from the I/O port (0 means the I/O works in regular mode, 1 means the I/O works in reverse mode).

```
js function get_bitPolarity( bitno)
nodejs function get_bitPolarity( bitno)
php function get_bitPolarity( $bitno)
cpp int get_bitPolarity( int bitno)
m -(int) bitPolarity : (int) bitno
pas function get_bitPolarity( bitno: LongInt): LongInt
vb function get_bitPolarity( ) As Integer
cs int get_bitPolarity( int bitno)
java int get_bitPolarity( int bitno)
py def get_bitPolarity( bitno)
cmd YDigitalIO target get_bitPolarity bitno
```

Parameters :

bitno the bit number; lowest bit has index 0

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→get_bitState()**YDigitalIO****digitalio→bitState()digitalio.get_bitState()**

Returns the state of a single bit of the I/O port.

js	function get_bitState(bitno)
node.js	function get_bitState(bitno)
php	function get_bitState(\$bitno)
cpp	int get_bitState(int bitno)
m	-(int) bitState : (int) bitno
pas	function get_bitState(bitno: LongInt): LongInt
vb	function get_bitState() As Integer
cs	int get_bitState(int bitno)
java	int get_bitState(int bitno)
py	def get_bitState(bitno)
cmd	YDigitalIO target get_bitState bitno

Parameters :

bitno the bit number; lowest bit has index 0

Returns :

the bit state (0 or 1)

On failure, throws an exception or returns a negative error code.

digitalio→get_errorMessage()
digitalio→errorMessage()
digitalio.get_errorMessage()**YDigitalIO**

Returns the error message of the latest error with the digital IO port.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the digital IO port object

digitalio→get_errorType()**YDigitalIO****digitalio→errorType()digitalio.get_errorType()**

Returns the numerical error code of the latest error with the digital IO port.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the digital IO port object

digitalio→get_friendlyName()
digitalio→friendlyName()**YDigitalIO**

Returns a global identifier of the digital IO port in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the digital IO port if they are defined, otherwise the serial number of the module and the hardware identifier of the digital IO port (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the digital IO port using logical names (ex: MyCustomName.relay1)

On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

digitalio→get_functionDescriptor()
digitalio→functionDescriptor()
digitalio.get_functionDescriptor()**YDigitalIO**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**digitalio→get_functionId()
digitalio→functionId()****YDigitalIO**

Returns the hardware identifier of the digital IO port, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the digital IO port (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

digitalio→get.hardwareId()
digitalio→hardwareId()**YDigitalIO**

Returns the unique hardware identifier of the digital IO port in the form SERIAL.FUNCTIONID.

js	function get.hardwareId()
nodejs	function get.hardwareId()
php	function get.hardwareId()
cpp	string get.hardwareId()
m	-(NSString*) hardwareId
vb	function get.hardwareId() As String
cs	string get.hardwareId()
java	String get.hardwareId()
py	def get.hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the digital IO port. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the digital IO port (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

digitalio→get_logicalName()**YDigitalIO****digitalio→logicalName()digitalio.get_logicalName()**

Returns the logical name of the digital IO port.

js	function get_logicalName()
node.js	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	- (NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YDigitalIO target get_logicalName

Returns :

a string corresponding to the logical name of the digital IO port. On failure, throws an exception or returns **Y_LOGICALNAME_INVALID**.

digitalio→get_module()**YDigitalIO****digitalio→module()digitalio.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

digitalio→get_module_async() digitalio→module_async()

YDigitalIO

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

digitalio→get_outputVoltage()
digitalio→outputVoltage()
digitalio.get_outputVoltage()**YDigitalIO**

Returns the voltage source used to drive output bits.

js	function get_outputVoltage()
node.js	function get_outputVoltage()
php	function get_outputVoltage()
cpp	Y_OUTPUTVOLTAGE_enum get_outputVoltage()
m	-(Y_OUTPUTVOLTAGE_enum) outputVoltage
pas	function get_outputVoltage() : Integer
vb	function get_outputVoltage() As Integer
cs	int get_outputVoltage()
java	int get_outputVoltage()
py	def get_outputVoltage()
cmd	YDigitalIO target get_outputVoltage

Returns :

a value among Y_OUTPUTVOLTAGE_USB_5V, Y_OUTPUTVOLTAGE_USB_3V and Y_OUTPUTVOLTAGE_EXT_V corresponding to the voltage source used to drive output bits

On failure, throws an exception or returns Y_OUTPUTVOLTAGE_INVALID.

digitalio→get_portDirection()**YDigitalIO****digitalio→portDirection()digitalio.get_portDirection()**

Returns the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output.

```
js function get_portDirection( )
node.js function get_portDirection( )
php function get_portDirection( )
cpp int get_portDirection( )
m -(int) portDirection
pas function get_portDirection( ): LongInt
vb function get_portDirection( ) As Integer
cs int get_portDirection( )
java int get_portDirection( )
py def get_portDirection( )
cmd YDigitalIO target get_portDirection
```

Returns :

an integer corresponding to the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output

On failure, throws an exception or returns Y_PORTDIRECTION_INVALID.

digitalio→get_portOpenDrain()
digitalio→portOpenDrain()
digitalio.get_portOpenDrain()**YDigitalIO**

Returns the electrical interface for each bit of the port.

js	function get_portOpenDrain()
node.js	function get_portOpenDrain()
php	function get_portOpenDrain()
cpp	int get_portOpenDrain()
m	-(int) portOpenDrain
pas	function get_portOpenDrain() : LongInt
vb	function get_portOpenDrain() As Integer
cs	int get_portOpenDrain()
java	int get_portOpenDrain()
py	def get_portOpenDrain()
cmd	YDigitalIO target get_portOpenDrain

For each bit set to 0 the matching I/O works in the regular, intuitive way, for each bit set to 1, the I/O works in reverse mode.

Returns :

an integer corresponding to the electrical interface for each bit of the port

On failure, throws an exception or returns **Y_PORTOPENRAIN_INVALID**.

digitalio→get_portPolarity()**YDigitalIO****digitalio→portPolarity()digitalio.get_portPolarity()**

Returns the polarity of all the bits of the port.

```
js function get_portPolarity( )
node.js function get_portPolarity( )
php function get_portPolarity( )
cpp int get_portPolarity( )
m -(int) portPolarity
pas function get_portPolarity( ): LongInt
vb function get_portPolarity( ) As Integer
cs int get_portPolarity( )
java int get_portPolarity( )
py def get_portPolarity( )
cmd YDigitalIO target get_portPolarity
```

For each bit set to 0, the matching I/O works the regular, intuitive way; for each bit set to 1, the I/O works in reverse mode.

Returns :

an integer corresponding to the polarity of all the bits of the port

On failure, throws an exception or returns Y_PORTPOLARITY_INVALID.

digitalio→get_portSize()**YDigitalIO****digitalio→portSize()digitalio.get_portSize()**

Returns the number of bits implemented in the I/O port.

js	function get_portSize()
nodejs	function get_portSize()
php	function get_portSize()
cpp	int get_portSize()
m	-(int) portSize
pas	function get_portSize() : LongInt
vb	function get_portSize() As Integer
cs	int get_portSize()
java	int get_portSize()
py	def get_portSize()
cmd	YDigitalIO target get_portSize

Returns :

an integer corresponding to the number of bits implemented in the I/O port

On failure, throws an exception or returns **Y_PORTSIZERO_INVALID**.

**digitalio→get_portState()
digitalio→portState()digitalio.get_portState()****YDigitalIO**

Returns the digital IO port state: bit 0 represents input 0, and so on.

js	function get_portState()
node.js	function get_portState()
php	function get_portState()
cpp	int get_portState()
m	-(int) portState
pas	function get_portState(): LongInt
vb	function get_portState() As Integer
cs	int get_portState()
java	int get_portState()
py	def get_portState()
cmd	YDigitalIO target get_portState

Returns :

an integer corresponding to the digital IO port state: bit 0 represents input 0, and so on

On failure, throws an exception or returns **Y_PORTSTATE_INVALID**.

digitalio→get(userData)**YDigitalIO****digitalio→userData()digitalio.get(userData)**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

digitalio→isOnline()digitalio.isOnline()

YDigitalIO

Checks if the digital IO port is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	- (BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the digital IO port in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the digital IO port.

Returns :

true if the digital IO port can be reached, and false otherwise

digitalio→isOnline_async()

YDigitalIO

Checks if the digital IO port is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the digital IO port in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

digitalio→load()**digitalio.load()**

YDigitalIO

Preloads the digital IO port cache with a specified validity duration.

```
js function load( msValidity)
nodejs function load( msValidity)
php function load( $msValidity)
cpp YRETCODE load( int msValidity)
m -(YRETCODE) load : (int) msValidity
pas function load( msValidity: integer): YRETCODE
vb function load( ByVal msValidity As Integer) As YRETCODE
cs YRETCODE load( int msValidity)
java int load( long msValidity)
py def load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

digitalio→load_async()

YDigitalIO

Preloads the digital IO port cache with a specified validity duration (asynchronous version).

```
js   function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

digitalio→nextDigitalIO()digitalio.nextDigitalIO()**YDigitalIO**

Continues the enumeration of digital IO ports started using `yFirstDigitalIO()`.

<code>js</code>	<code>function nextDigitalIO()</code>
<code>nodejs</code>	<code>function nextDigitalIO()</code>
<code>php</code>	<code>function nextDigitalIO()</code>
<code>cpp</code>	<code>YDigitalIO * nextDigitalIO()</code>
<code>m</code>	<code>-(YDigitalIO*) nextDigitalIO</code>
<code>pas</code>	<code>function nextDigitalIO(): TYDigitalIO</code>
<code>vb</code>	<code>function nextDigitalIO() As YDigitalIO</code>
<code>cs</code>	<code>YDigitalIO nextDigitalIO()</code>
<code>java</code>	<code>YDigitalIO nextDigitalIO()</code>
<code>py</code>	<code>def nextDigitalIO()</code>

Returns :

a pointer to a `YDigitalIO` object, corresponding to a digital IO port currently online, or a `null` pointer if there are no more digital IO ports to enumerate.

digitalio→pulse()

YDigitalIO

Triggers a pulse on a single bit for a specified duration.

js	function pulse(bitno, ms_duration)
nodejs	function pulse(bitno, ms_duration)
php	function pulse(\$bitno, \$ms_duration)
cpp	int pulse(int bitno, int ms_duration)
m	- (int) pulse : (int) bitno : (int) ms_duration
pas	function pulse(bitno: LongInt, ms_duration: LongInt): LongInt
vb	function pulse() As Integer
cs	int pulse(int bitno, int ms_duration)
java	int pulse(int bitno, int ms_duration)
py	def pulse(bitno, ms_duration)
cmd	YDigitalIO target pulse bitno ms_duration

The specified bit will be turned to 1, and then back to 0 after the given duration.

Parameters :

bitno the bit number; lowest bit has index 0

ms_duration desired pulse duration in milliseconds. Be aware that the device time resolution is not guaranteed up to the millisecond.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→registerValueCallback() digitalio.registerValueCallback()

YDigitalIO

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YDigitalIOValueCallback callback )
m    -(int) registerValueCallback : (YDigitalIOValueCallback) callback
pas   function registerValueCallback( callback: TYDigitalIOValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

digitalio→set_bitDirection()**YDigitalIO****digitalio→setBitDirection()digitalio.set_bitDirection()**

Changes the direction of a single bit from the I/O port.

js	<code>function set_bitDirection(bitno, bitdirection)</code>
nodejs	<code>function set_bitDirection(bitno, bitdirection)</code>
php	<code>function set_bitDirection(\$bitno, \$bitdirection)</code>
cpp	<code>int set_bitDirection(int bitno, int bitdirection)</code>
m	<code>-(int) setBitDirection : (int) bitno : (int) bitdirection</code>
pas	<code>function set_bitDirection(bitno: LongInt, bitdirection: LongInt): LongInt</code>
vb	<code>function set_bitDirection() As Integer</code>
cs	<code>int set_bitDirection(int bitno, int bitdirection)</code>
java	<code>int set_bitDirection(int bitno, int bitdirection)</code>
py	<code>def set_bitDirection(bitno, bitdirection)</code>
cmd	<code>YDigitalIO target set_bitDirection bitno bitdirection</code>

Parameters :

bitno the bit number; lowest bit has index 0

bitdirection direction to set, 0 makes the bit an input, 1 makes it an output. Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→set_bitOpenDrain()
digitalio→setBitOpenDrain()
digitalio.set_bitOpenDrain()

YDigitalIO

Changes the electrical interface of a single bit from the I/O port.

```
js function set_bitOpenDrain( bitno, opendrain)
nodejs function set_bitOpenDrain( bitno, opendrain)
php function set_bitOpenDrain( $bitno, $opendrain)
cpp int set_bitOpenDrain( int bitno, int opendrain)
m -(int) setBitOpenDrain : (int) bitno : (int) opendrain
pas function set_bitOpenDrain( bitno: LongInt, opendrain: LongInt): LongInt
vb function set_bitOpenDrain( ) As Integer
cs int set_bitOpenDrain( int bitno, int opendrain)
java int set_bitOpenDrain( int bitno, int opendrain)
py def set_bitOpenDrain( bitno, opendrain)
cmd YDigitalIO target set_bitOpenDrain bitno opendrain
```

Parameters :

bitno the bit number; lowest bit has index 0

opendrain 0 makes a bit a regular input/output, 1 makes it an open-drain (open-collector) input/output.
Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→set_bitPolarity()**YDigitalIO****digitalio→setBitPolarity()digitalio.set_bitPolarity()**

Changes the polarity of a single bit from the I/O port.

js	<code>function set_bitPolarity(bitno, bitpolarity)</code>
nodejs	<code>function set_bitPolarity(bitno, bitpolarity)</code>
php	<code>function set_bitPolarity(\$bitno, \$bitpolarity)</code>
cpp	<code>int set_bitPolarity(int bitno, int bitpolarity)</code>
m	<code>-(int) setBitPolarity : (int) bitno : (int) bitpolarity</code>
pas	<code>function set_bitPolarity(bitno: LongInt, bitpolarity: LongInt): LongInt</code>
vb	<code>function set_bitPolarity() As Integer</code>
cs	<code>int set_bitPolarity(int bitno, int bitpolarity)</code>
java	<code>int set_bitPolarity(int bitno, int bitpolarity)</code>
py	<code>def set_bitPolarity(bitno, bitpolarity)</code>
cmd	<code>YDigitalIO target set_bitPolarity bitno bitpolarity</code>

Parameters :

bitno the bit number; lowest bit has index 0.

bitpolarity polarity to set, 0 makes the I/O work in regular mode, 1 makes the I/O works in reverse mode.

Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→set_bitState() digitalio→setBitState()digitalio.set_bitState()

YDigitalIO

Sets a single bit of the I/O port.

```
js function set_bitState( bitno, bitstate)
node.js function set_bitState( bitno, bitstate)
php function set_bitState( $bitno, $bitstate)
cpp int set_bitState( int bitno, int bitstate)
m -(int) setBitState : (int) bitno : (int) bitstate
pas function set_bitState( bitno: LongInt, bitstate: LongInt): LongInt
vb function set_bitState( ) As Integer
cs int set_bitState( int bitno, int bitstate)
java int set_bitState( int bitno, int bitstate)
py def set_bitState( bitno, bitstate)
cmd YDigitalIO target set_bitState bitno bitstate
```

Parameters :

bitno the bit number; lowest bit has index 0

bitstate the state of the bit (1 or 0)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→set_logicalName()

digitalio→setLogicalName()

digitalio.set_logicalName()

YDigitalIO

Changes the logical name of the digital IO port.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YDigitalIO target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the digital IO port.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

digitalio→set_outputVoltage()
digitalio→setOutputVoltage()
digitalio.set_outputVoltage()

YDigitalIO

Changes the voltage source used to drive output bits.

js	function set_outputVoltage(newval)
nodejs	function set_outputVoltage(newval)
php	function set_outputVoltage(\$newval)
cpp	int set_outputVoltage(Y_OUTPUTVOLTAGE_enum newval)
m	- (int) setOutputVoltage : (Y_OUTPUTVOLTAGE_enum) newval
pas	function set_outputVoltage(newval: Integer): integer
vb	function set_outputVoltage(ByVal newval As Integer) As Integer
cs	int set_outputVoltage(int newval)
java	int set_outputVoltage(int newval)
py	def set_outputVoltage(newval)
cmd	YDigitalIO target set_outputVoltage newval

Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Parameters :

newval a value among `Y_OUTPUTVOLTAGE_USB_5V`, `Y_OUTPUTVOLTAGE_USB_3V` and `Y_OUTPUTVOLTAGE_EXT_V` corresponding to the voltage source used to drive output bits

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→set_portDirection()

digitalio→setPortDirection()

digitalio.set_portDirection()

YDigitalIO

Changes the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output.

js	function set_portDirection(newval)
node.js	function set_portDirection(newval)
php	function set_portDirection(\$newval)
cpp	int set_portDirection(int newval)
m	-(int) setPortDirection : (int) newval
pas	function set_portDirection(newval: LongInt): integer
vb	function set_portDirection(ByVal newval As Integer) As Integer
cs	int set_portDirection(int newval)
java	int set_portDirection(int newval)
py	def set_portDirection(newval)
cmd	YDigitalIO target set_portDirection newval

Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Parameters :

newval an integer corresponding to the IO direction of all bits of the port: 0 makes a bit an input, 1 makes it an output

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→set_portOpenDrain()
digitalio→setPortOpenDrain()
digitalio.set_portOpenDrain()

YDigitalIO

Changes the electrical interface for each bit of the port.

```
js function set_portOpenDrain( newval)
nodejs function set_portOpenDrain( newval)
php function set_portOpenDrain( $newval)
cpp int set_portOpenDrain( int newval)
m -(int) setPortOpenDrain : (int) newval
pas function set_portOpenDrain( newval: LongInt): integer
vb function set_portOpenDrain( ByVal newval As Integer) As Integer
cs int set_portOpenDrain( int newval)
java int set_portOpenDrain( int newval)
py def set_portOpenDrain( newval)
cmd YDigitalIO target set_portOpenDrain newval
```

0 makes a bit a regular input/output, 1 makes it an open-drain (open-collector) input/output. Remember to call the `saveToFlash()` method to make sure the setting is kept after a reboot.

Parameters :

newval an integer corresponding to the electrical interface for each bit of the port

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→set_portPolarity()**YDigitalIO****digitalio→setPortPolarity()digitalio.set_portPolarity()**

Changes the polarity of all the bits of the port: 0 makes a bit an input, 1 makes it an output.

js	function set_portPolarity(newval)
nodejs	function set_portPolarity(newval)
php	function set_portPolarity(\$newval)
cpp	int set_portPolarity(int newval)
m	-(int) setPortPolarity : (int) newval
pas	function set_portPolarity(newval: LongInt): integer
vb	function set_portPolarity(ByVal newval As Integer) As Integer
cs	int set_portPolarity(int newval)
java	int set_portPolarity(int newval)
py	def set_portPolarity(newval)
cmd	YDigitalIO target set_portPolarity newval

Remember to call the `saveToFlash()` method to make sure the setting will be kept after a reboot.

Parameters :

newval an integer corresponding to the polarity of all the bits of the port: 0 makes a bit an input, 1 makes it an output

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→set_portState()**YDigitalIO****digitalio→setPortState()digitalio.set_portState()**

Changes the digital IO port state: bit 0 represents input 0, and so on.

js	function set_portState(newval)
node.js	function set_portState(newval)
php	function set_portState(\$newval)
cpp	int set_portState(int newval)
m	-(int) setPortState : (int) newval
pas	function set_portState(newval: LongInt): integer
vb	function set_portState(ByVal newval As Integer) As Integer
cs	int set_portState(int newval)
java	int set_portState(int newval)
py	def set_portState(newval)
cmd	YDigitalIO target set_portState newval

This function has no effect on bits configured as input in `portDirection`.

Parameters :

newval an integer corresponding to the digital IO port state: bit 0 represents input 0, and so on

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→set(userData)**YDigitalIO****digitalio→setUserData()digitalio.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData)
cpp	void set(userData) (void* data)
m	-(void) set(userData : (void*) data
pas	procedure set(userData : Tobject)
vb	procedure set(userData : ByVal data As Object)
cs	void set(userData : object data)
java	void set(userData : Object data)
py	def set(userData : data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

digitalio→toggle_bitState()|digitalio.toggle_bitState()**YDigitalIO**

Reverts a single bit of the I/O port.

```
js function toggle_bitState( bitno)
nodejs function toggle_bitState( bitno)
php function toggle_bitState( $bitno)
cpp int toggle_bitState( int bitno)
m -(int) toggle_bitState : (int) bitno
pas function toggle_bitState( bitno: LongInt): LongInt
vb function toggle_bitState( ) As Integer
cs int toggle_bitState( int bitno)
java int toggle_bitState( int bitno)
py def toggle_bitState( bitno)
cmd YDigitalIO target toggle_bitState bitno
```

Parameters :

bitno the bit number; lowest bit has index 0

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

digitalio→wait_async()

YDigitalIO

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.13. Display function interface

Yoctopuce display interface has been designed to easily show information and images. The device provides built-in multi-layer rendering. Layers can be drawn offline, individually, and freely moved on the display. It can also replay recorded sequences (animations).

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_display.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YDisplay = yoctolib.YDisplay;
php	require_once('yocto_display.php');
cpp	#include "yocto_display.h"
m	#import "yocto_display.h"
pas	uses yocto_display;
vb	yocto_display.vb
cs	yocto_display.cs
java	import com.yoctopuce.YoctoAPI.YDisplay;
py	from yocto_display import *

Global functions

yFindDisplay(func)

Retrieves a display for a given identifier.

yFirstDisplay()

Starts the enumeration of displays currently accessible.

YDisplay methods

display→copyLayerContent(srcLayerId, dstLayerId)

Copies the whole content of a layer to another layer.

display→describe()

Returns a short text that describes unambiguously the instance of the display in the form TYPE (NAME)=SERIAL.FUNCTIONID.

display→fade(brightness, duration)

Smoothly changes the brightness of the screen to produce a fade-in or fade-out effect.

display→get_advertisedValue()

Returns the current value of the display (no more than 6 characters).

display→get_brightness()

Returns the luminosity of the module informative leds (from 0 to 100).

display→get_displayHeight()

Returns the display height, in pixels.

display→get_displayLayer(layerId)

Returns a YDisplayLayer object that can be used to draw on the specified layer.

display→get_displayType()

Returns the display type: monochrome, gray levels or full color.

display→get_displayWidth()

Returns the display width, in pixels.

display→get_enabled()

Returns true if the screen is powered, false otherwise.

display→get_errorMessage()

Returns the error message of the latest error with the display.

display→get_errorType()

Returns the numerical error code of the latest error with the display.

display→get_friendlyName()

Returns a global identifier of the display in the format MODULE_NAME . FUNCTION_NAME.

display→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

display→get_functionId()

Returns the hardware identifier of the display, without reference to the module.

display→get_hardwareId()

Returns the unique hardware identifier of the display in the form SERIAL . FUNCTIONID.

display→get_layerCount()

Returns the number of available layers to draw on.

display→get_layerHeight()

Returns the height of the layers to draw on, in pixels.

display→get_layerWidth()

Returns the width of the layers to draw on, in pixels.

display→get_logicalName()

Returns the logical name of the display.

display→get_module()

Gets the YModule object for the device on which the function is located.

display→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

display→get_orientation()

Returns the currently selected display orientation.

display→get_startupSeq()

Returns the name of the sequence to play when the displayed is powered on.

display→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

display→isOnline()

Checks if the display is currently reachable, without raising any error.

display→isOnline_async(callback, context)

Checks if the display is currently reachable, without raising any error (asynchronous version).

display→load(msValidity)

Preloads the display cache with a specified validity duration.

display→load_async(msValidity, callback, context)

Preloads the display cache with a specified validity duration (asynchronous version).

display→newSequence()

Starts to record all display commands into a sequence, for later replay.

display→nextDisplay()

Continues the enumeration of displays started using yFirstDisplay().

display→pauseSequence(delay_ms)

Waits for a specified delay (in milliseconds) before playing next commands in current sequence.

display→playSequence(sequenceName)

Replays a display sequence previously recorded using newSequence() and saveSequence().

display→registerValueCallback(callback)

3. Reference

Registers the callback function that is invoked on every change of advertised value.

display→resetAll()

Clears the display screen and resets all display layers to their default state.

display→saveSequence(sequenceName)

Stops recording display commands and saves the sequence into the specified file on the display internal memory.

display→set_brightness(newval)

Changes the brightness of the display.

display→set_enabled(newval)

Changes the power state of the display.

display→set_logicalName(newval)

Changes the logical name of the display.

display→set_orientation(newval)

Changes the display orientation.

display→set_startupSeq(newval)

Changes the name of the sequence to play when the displayed is powered on.

display→set(userData)

Stores a user context provided as argument in the userData attribute of the function.

display→stopSequence()

Stops immediately any ongoing sequence replay.

display→swapLayerContent(layerIdA, layerIdB)

Swaps the whole content of two layers.

display→upload(pathname, content)

Uploads an arbitrary file (for instance a GIF file) to the display, to the specified full path name.

display→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YDisplay.FindDisplay() yFindDisplay()yFindDisplay()

YDisplay

Retrieves a display for a given identifier.

js	function yFindDisplay(func)
nodejs	function FindDisplay(func)
php	function yFindDisplay(\$func)
cpp	YDisplay* yFindDisplay(string func)
m	+(YDisplay*) yFindDisplay : (NSString*) func
pas	function yFindDisplay(func: string): TYDisplay
vb	function yFindDisplay(ByVal func As String) As YDisplay
cs	YDisplay FindDisplay(string func)
java	YDisplay FindDisplay(String func)
py	def FindDisplay(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the display is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YDisplay.isOnline()` to test if the display is indeed online at a given time. In case of ambiguity when looking for a display by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the display

Returns :

a `YDisplay` object allowing you to drive the display.

YDisplay.FirstDisplay() yFirstDisplay()yFirstDisplay()

YDisplay

Starts the enumeration of displays currently accessible.

```
js function yFirstDisplay( )
node.js function FirstDisplay( )
php function yFirstDisplay( )
cpp YDisplay* yFirstDisplay( )
m YDisplay* yFirstDisplay( )
pas function yFirstDisplay( ): TYDisplay
vb function yFirstDisplay( ) As YDisplay
cs YDisplay FirstDisplay( )
java YDisplay FirstDisplay( )
py def FirstDisplay( )
```

Use the method `YDisplay.nextDisplay()` to iterate on next displays.

Returns :

a pointer to a `YDisplay` object, corresponding to the first display currently online, or a `null` pointer if there are none.

display→copyLayerContent() display.copyLayerContent()

YDisplay

Copies the whole content of a layer to another layer.

```

js   function copyLayerContent( srcLayerId, dstLayerId)
nodejs function copyLayerContent( srcLayerId, dstLayerId)
php  function copyLayerContent( $srcLayerId, $dstLayerId)
cpp   int copyLayerContent( int srcLayerId, int dstLayerId)
m     -(int) copyLayerContent : (int) srcLayerId
                  : (int) dstLayerId

pas  function copyLayerContent( srcLayerId: LongInt,
                               dstLayerId: LongInt): LongInt

vb   function copyLayerContent( ) As Integer
cs    int copyLayerContent( int srcLayerId, int dstLayerId)
java  int copyLayerContent( int srcLayerId, int dstLayerId)
py    def copyLayerContent( srcLayerId, dstLayerId)
cmd   YDisplay target copyLayerContent srcLayerId dstLayerId

```

The color and transparency of all the pixels from the destination layer are set to match the source pixels. This method only affects the displayed content, but does not change any property of the layer object. Note that layer 0 has no transparency support (it is always completely opaque).

Parameters :

srcLayerId the identifier of the source layer (a number in range 0..layerCount-1)
dstLayerId the identifier of the destination layer (a number in range 0..layerCount-1)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→describe()display.describe()**YDisplay**

Returns a short text that describes unambiguously the instance of the display in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the display (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

display→fade()`display.fade()`

YDisplay

Smoothly changes the brightness of the screen to produce a fade-in or fade-out effect.

```
js function fade( brightness, duration)
nodejs function fade( brightness, duration)
php function fade( $brightness, $duration)
cpp int fade( int brightness, int duration)
m -(int) fade : (int) brightness : (int) duration
pas function fade( brightness: LongInt, duration: LongInt): LongInt
vb function fade( ) As Integer
cs int fade( int brightness, int duration)
java int fade( int brightness, int duration)
py def fade( brightness, duration)
cmd YDisplay target fade brightness duration
```

Parameters :

brightness the new screen brightness

duration duration of the brightness transition, in milliseconds.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→get_advertisedValue()
display→advertisedValue()
display.get_advertisedValue()**YDisplay**

Returns the current value of the display (no more than 6 characters).

```
js function get_advertisedValue( )  
nodejs function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YDisplay target get_advertisedValue
```

Returns :

a string corresponding to the current value of the display (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

display→get_brightness() display→brightness()display.get_brightness()

YDisplay

Returns the luminosity of the module informative leds (from 0 to 100).

js	function get_brightness()
nodejs	function get_brightness()
php	function get_brightness()
cpp	int get_brightness()
m	-(int) brightness
pas	function get_brightness() : LongInt
vb	function get_brightness() As Integer
cs	int get_brightness()
java	int get_brightness()
py	def get_brightness()
cmd	YDisplay target get_brightness

Returns :

an integer corresponding to the luminosity of the module informative leds (from 0 to 100)

On failure, throws an exception or returns Y_BRIGHTNESS_INVALID.

display→get_displayHeight() YDisplay
display→displayHeight()display.get_displayHeight()

Returns the display height, in pixels.

```
js function get_displayHeight( )  
node.js function get_displayHeight( )  
php function get_displayHeight( )  
cpp int get_displayHeight( )  
m -(int) displayHeight  
pas function get_displayHeight( ): LongInt  
vb function get_displayHeight( ) As Integer  
cs int get_displayHeight( )  
java int get_displayHeight( )  
py def get_displayHeight( )  
cmd YDisplay target get_displayHeight
```

Returns :

an integer corresponding to the display height, in pixels

On failure, throws an exception or returns Y_DISPLAYHEIGHT_INVALID.

display→get_displayLayer() display→displayLayer()

YDisplay

Returns a YDisplayLayer object that can be used to draw on the specified layer.

```
js function get_displayLayer( layerId)
nodejs function get_displayLayer( layerId)
php function get_displayLayer( $layerId)
cpp YDisplayLayer* get_displayLayer( unsigned layerId)
m -(YDisplayLayer*) displayLayer : (unsigned) layerId
vb function get_displayLayer( ) As YDisplayLayer
cs YDisplayLayer get_displayLayer( int layerId)
java synchronized YDisplayLayer get_displayLayer( int layerId)
py def get_displayLayer( layerId)
```

The content is displayed only when the layer is active on the screen (and not masked by other overlapping layers).

Parameters :

layerId the identifier of the layer (a number in range 0..layerCount-1)

Returns :

an YDisplayLayer object

On failure, throws an exception or returns null.

display→get_displayType()**YDisplay****display→displayType()display.get_displayType()**

Returns the display type: monochrome, gray levels or full color.

js	function get_displayType()
node.js	function get_displayType()
php	function get_displayType()
cpp	Y_DISPLAYTYPE_enum get_displayType()
m	-(Y_DISPLAYTYPE_enum) displayType
pas	function get_displayType() : Integer
vb	function get_displayType() As Integer
cs	int get_displayType()
java	int get_displayType()
py	def get_displayType()
cmd	YDisplay target get_displayType

Returns :

a value among Y_DISPLAYTYPE_MONO, Y_DISPLAYTYPE_GRAY and Y_DISPLAYTYPE_RGB corresponding to the display type: monochrome, gray levels or full color

On failure, throws an exception or returns Y_DISPLAYTYPE_INVALID.

display→get_displayWidth()**YDisplay****display→displayWidth()display.get_displayWidth()**

Returns the display width, in pixels.

js	function get_displayWidth()
nodejs	function get_displayWidth()
php	function get_displayWidth()
cpp	int get_displayWidth()
m	-(int) displayWidth
pas	function get_displayWidth() : LongInt
vb	function get_displayWidth() As Integer
cs	int get_displayWidth()
java	int get_displayWidth()
py	def get_displayWidth()
cmd	YDisplay target get_displayWidth

Returns :

an integer corresponding to the display width, in pixels

On failure, throws an exception or returns **Y_DISPLAYWIDTH_INVALID**.

display→get_enabled()
display→enabled()display.get_enabled()**YDisplay**

Returns true if the screen is powered, false otherwise.

```
js function get_enabled( )
node.js function get_enabled( )
php function get_enabled( )
cpp Y_ENABLED_enum get_enabled( )
m -(Y_ENABLED_enum) enabled
pas function get_enabled( ): Integer
vb function get_enabled( ) As Integer
cs int get_enabled( )
java int get_enabled( )
py def get_enabled( )
cmd YDisplay target get_enabled
```

Returns :

either Y_ENABLED_FALSE or Y_ENABLED_TRUE, according to true if the screen is powered, false otherwise

On failure, throws an exception or returns Y_ENABLED_INVALID.

display→get_errorMessage()**YDisplay****display→errorMessage()display.getErrorMessage()**

Returns the error message of the latest error with the display.

js	function getErrorMessage()
nodejs	function getErrorMessage()
php	function getErrorMessage()
cpp	string getErrorMessage()
m	-(NSString*) errorMessage
pas	function getErrorMessage() : string
vb	function getErrorMessage() As String
cs	string getErrorMessage()
java	String getErrorMessage()
py	def getErrorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the display object

**display→get_errorType()
display→errorType()display.get_errorType()****YDisplay**

Returns the numerical error code of the latest error with the display.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the display object

**display→get_friendlyName()
display→friendlyName()****YDisplay**

Returns a global identifier of the display in the format MODULE_NAME . FUNCTION_NAME.

```
js function get_friendlyName( )  
nodejs function get_friendlyName( )  
php function get_friendlyName( )  
cpp string get_friendlyName( )  
m -(NSString*) friendlyName  
cs string get_friendlyName( )  
java String get_friendlyName( )  
py def get_friendlyName( )
```

The returned string uses the logical names of the module and of the display if they are defined, otherwise the serial number of the module and the hardware identifier of the display (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the display using logical names (ex: MyCustomName . relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

**display→get_functionDescriptor()
display→functionDescriptor()
display.get_functionDescriptor()****YDisplay**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

display→get_functionId()
display→functionId()**YDisplay**

Returns the hardware identifier of the display, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the display (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

**display→get_hardwareId()
display→hardwareId()****YDisplay**

Returns the unique hardware identifier of the display in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the display. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the display (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

display→get_layerCount() display→layerCount()display.get_layerCount()

YDisplay

Returns the number of available layers to draw on.

```
js function get_layerCount( )
nodejs function get_layerCount( )
php function get_layerCount( )
cpp int get_layerCount( )
m -(int) layerCount
pas function get_layerCount( ): LongInt
vb function get_layerCount( ) As Integer
cs int get_layerCount( )
java int get_layerCount( )
py def get_layerCount( )
cmd YDisplay target get_layerCount
```

Returns :

an integer corresponding to the number of available layers to draw on

On failure, throws an exception or returns Y_LAYERCOUNT_INVALID.

display→get_layerHeight()**YDisplay****display→layerHeight()display.get_layerHeight()**

Returns the height of the layers to draw on, in pixels.

js function **get_layerHeight()****node.js** function **get_layerHeight()****php** function **get_layerHeight()****cpp** int **get_layerHeight()****m** -(int) **layerHeight****pas** function **get_layerHeight(): LongInt****vb** function **get_layerHeight() As Integer****cs** int **get_layerHeight()****java** int **get_layerHeight()****py** def **get_layerHeight()****cmd** YDisplay **target get_layerHeight****Returns :**

an integer corresponding to the height of the layers to draw on, in pixels

On failure, throws an exception or returns **Y_LAYERHEIGHT_INVALID**.

display→get_layerWidth() display→layerWidth()display.get_layerWidth()

YDisplay

Returns the width of the layers to draw on, in pixels.

```
js function get_layerWidth( )
nodejs function get_layerWidth( )
php function get_layerWidth( )
cpp int get_layerWidth( )
m -(int) layerWidth
pas function get_layerWidth( ): LongInt
vb function get_layerWidth( ) As Integer
cs int get_layerWidth( )
java int get_layerWidth( )
py def get_layerWidth( )
cmd YDisplay target get_layerWidth
```

Returns :

an integer corresponding to the width of the layers to draw on, in pixels

On failure, throws an exception or returns Y_LAYERWIDTH_INVALID.

display→get_logicalName()**YDisplay****display→logicalName()display.get_logicalName()**

Returns the logical name of the display.

```
js function get_logicalName( )
node.js function get_logicalName( )
php function get_logicalName( )
cpp string get_logicalName( )
m -(NSString*) logicalName
pas function get_logicalName( ): string
vb function get_logicalName( ) As String
cs string get_logicalName( )
java String get_logicalName( )
py def get_logicalName( )
cmd YDisplay target get_logicalName
```

Returns :

a string corresponding to the logical name of the display. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

**display→get_module()
display→module()display.get_module()****YDisplay**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

display→get_module_async()
display→module_async()**YDisplay**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

display→get_orientation() display→orientation()display.get_orientation()

YDisplay

Returns the currently selected display orientation.

```
js function get_orientation( )
nodejs function get_orientation( )
php function get_orientation( )
cpp Y_ORIENTATION_enum get_orientation( )
m -(Y_ORIENTATION_enum) orientation
pas function get_orientation( ): Integer
vb function get_orientation( ) As Integer
cs int get_orientation( )
java int get_orientation( )
py def get_orientation( )
cmd YDisplay target get_orientation
```

Returns :

a value among Y_ORIENTATION_LEFT, Y_ORIENTATION_UP, Y_ORIENTATION_RIGHT and Y_ORIENTATION_DOWN corresponding to the currently selected display orientation

On failure, throws an exception or returns Y_ORIENTATION_INVALID.

display→get_startupSeq() YDisplay
display→startupSeq()display.get_startupSeq()

Returns the name of the sequence to play when the displayed is powered on.

```
js function get_startupSeq( )  
node.js function get_startupSeq( )  
php function get_startupSeq( )  
cpp string get_startupSeq( )  
m -(NSString*) startupSeq  
pas function get_startupSeq( ): string  
vb function get_startupSeq( ) As String  
cs string get_startupSeq( )  
java String get_startupSeq( )  
py def get_startupSeq( )  
cmd YDisplay target get_startupSeq
```

Returns :

a string corresponding to the name of the sequence to play when the displayed is powered on

On failure, throws an exception or returns Y_STARTUPSEQ_INVALID.

display→get(userData) display→userData()display.get(userData)

YDisplay

Returns the value of the userData attribute, as previously stored using method set(userData).

```
js function get(userData) 
nodejs function get(userData) 
php function get(userData) 
cpp void * get(userData) 
m -(void*) userData 
pas function get(userData): Tobject 
vb function get(userData) As Object 
cs object get(userData) 
java Object get(userData) 
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

display→isOnline()display.isOnline()**YDisplay**

Checks if the display is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	- (BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the display in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the display.

Returns :

true if the display can be reached, and false otherwise

display→isOnline_async()

YDisplay

Checks if the display is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the display in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

display→load()display.load()

YDisplay

Preloads the display cache with a specified validity duration.

```
js function load( msValidity)
nodejs function load( msValidity)
php function load( $msValidity)
cpp YRETCODE load( int msValidity)
m -(YRETCODE) load : (int) msValidity
pas function load( msValidity: integer): YRETCODE
vb function load( ByVal msValidity As Integer) As YRETCODE
cs YRETCODE load( int msValidity)
java int load( long msValidity)
py def load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

display→load_async()

YDisplay

Preloads the display cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

display→newSequence()display.newSequence()**YDisplay**

Starts to record all display commands into a sequence, for later replay.

```
js function newSequence( )  
nodejs function newSequence( )  
php function newSequence( )  
cpp int newSequence( )  
m -(int) newSequence  
pas function newSequence( ): LongInt  
vb function newSequence( ) As Integer  
cs int newSequence( )  
java int newSequence( )  
py def newSequence( )  
cmd YDisplay target newSequence
```

The name used to store the sequence is specified when calling `saveSequence()`, once the recording is complete.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→nextDisplay()display.nextDisplay()**YDisplay**

Continues the enumeration of displays started using `yFirstDisplay()`.

js	function nextDisplay()
nodejs	function nextDisplay()
php	function nextDisplay()
cpp	YDisplay * nextDisplay()
m	-(YDisplay *) nextDisplay
pas	function nextDisplay() : TYDisplay
vb	function nextDisplay() As YDisplay
cs	YDisplay nextDisplay()
java	YDisplay nextDisplay()
py	def nextDisplay()

Returns :

a pointer to a `YDisplay` object, corresponding to a display currently online, or a `null` pointer if there are no more displays to enumerate.

display→pauseSequence()`display.pauseSequence()`

YDisplay

Waits for a specified delay (in milliseconds) before playing next commands in current sequence.

```
js function pauseSequence( delay_ms)
nodejs function pauseSequence( delay_ms)
php function pauseSequence( $delay_ms)
cpp int pauseSequence( int delay_ms)
m -(int) pauseSequence : (int) delay_ms
pas function pauseSequence( delay_ms: LongInt): LongInt
vb function pauseSequence( ) As Integer
cs int pauseSequence( int delay_ms)
java int pauseSequence( int delay_ms)
py def pauseSequence( delay_ms)
cmd YDisplay target pauseSequence delay_ms
```

This method can be used while recording a display sequence, to insert a timed wait in the sequence (without any immediate effect). It can also be used dynamically while playing a pre-recorded sequence, to suspend or resume the execution of the sequence. To cancel a delay, call the same method with a zero delay.

Parameters :

delay_ms the duration to wait, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→playSequence()`display.playSequence()`

YDisplay

Replays a display sequence previously recorded using `newSequence()` and `saveSequence()`.

```
js function playSequence( sequenceName)
nodejs function playSequence( sequenceName)
php function playSequence( $sequenceName)
cpp int playSequence( string sequenceName)
m -(int) playSequence : (NSString*) sequenceName
pas function playSequence( sequenceName: string): LongInt
vb function playSequence( ) As Integer
cs int playSequence( string sequenceName)
java int playSequence( String sequenceName)
py def playSequence( sequenceName)
cmd YDisplay target playSequence sequenceName
```

Parameters :

`sequenceName` the name of the newly created sequence

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→registerValueCallback() display.registerValueCallback()

YDisplay

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YDisplayValueCallback callback )
m    -(int) registerValueCallback : (YDisplayValueCallback) callback
pas   function registerValueCallback( callback: TYDisplayValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

display→resetAll()display.resetAll()**YDisplay**

Clears the display screen and resets all display layers to their default state.

js	function resetAll()
nodejs	function resetAll()
php	function resetAll()
cpp	int resetAll()
m	- (int) resetAll
pas	function resetAll(): LongInt
vb	function resetAll() As Integer
cs	int resetAll()
java	int resetAll()
py	def resetAll()
cmd	YDisplay target resetAll

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→saveSequence()display.saveSequence()**YDisplay**

Stops recording display commands and saves the sequence into the specified file on the display internal memory.

```
js function saveSequence( sequenceName)
nodejs function saveSequence( sequenceName)
php function saveSequence( $sequenceName)
cpp int saveSequence( string sequenceName)
m -(int) saveSequence : (NSString*) sequenceName
pas function saveSequence( sequenceName: string): LongInt
vb function saveSequence( ) As Integer
cs int saveSequence( string sequenceName)
java int saveSequence( String sequenceName)
py def saveSequence( sequenceName)
cmd YDisplay target saveSequence sequenceName
```

The sequence can be later replayed using `playSequence()`.

Parameters :

sequenceName the name of the newly created sequence

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→set_brightness()**display→setBrightness()display.set_brightness()****YDisplay**

Changes the brightness of the display.

js	<code>function set_brightness(newval)</code>
nodejs	<code>function set_brightness(newval)</code>
php	<code>function set_brightness(\$newval)</code>
cpp	<code>int set_brightness(int newval)</code>
m	<code>-(int) setBrightness : (int) newval</code>
pas	<code>function set_brightness(newval: LongInt): integer</code>
vb	<code>function set_brightness(ByVal newval As Integer) As Integer</code>
cs	<code>int set_brightness(int newval)</code>
java	<code>int set_brightness(int newval)</code>
py	<code>def set_brightness(newval)</code>
cmd	<code>YDisplay target set_brightness newval</code>

The parameter is a value between 0 and 100. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the brightness of the display

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

**display→set_enabled()
display→setEnabled()
display.set_enabled()****YDisplay**

Changes the power state of the display.

```
js function set_enabled( newval)
node.js function set_enabled( newval)
php function set_enabled( $newval)
cpp int set_enabled( Y_ENABLED_enum newval)
m -(int) setEnabled : (Y_ENABLED_enum) newval
pas function set_enabled( newval: Integer): integer
vb function set_enabled( ByVal newval As Integer) As Integer
cs int set_enabled( int newval)
java int set_enabled( int newval)
py def set_enabled( newval)
cmd YDisplay target set_enabled newval
```

Parameters :

newval either Y_ENABLED_FALSE or Y_ENABLED_TRUE, according to the power state of the display

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→set_logicalName() display→setLogicalName()display.set_logicalName()

YDisplay

Changes the logical name of the display.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YDisplay target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the display.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

display→set_orientation() display→setOrientation()display.set_orientation()

YDisplay

Changes the display orientation.

js	function set_orientation (newval)
node.js	function set_orientation (newval)
php	function set_orientation (\$ newval)
cpp	int set_orientation (Y_ORIENTATION_enum newval)
m	-(int) setOrientation : (Y_ORIENTATION_enum) newval
pas	function set_orientation (newval : Integer): integer
vb	function set_orientation (ByVal newval As Integer) As Integer
cs	int set_orientation (int newval)
java	int set_orientation (int newval)
py	def set_orientation (newval)
cmd	YDisplay target set_orientation newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a value among Y_ORIENTATION_LEFT, Y_ORIENTATION_UP, Y_ORIENTATION_RIGHT and Y_ORIENTATION_DOWN corresponding to the display orientation

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→set_startupSeq() display→setStartupSeq()display.set_startupSeq()

YDisplay

Changes the name of the sequence to play when the displayed is powered on.

js	function set_startupSeq(newval)
nodejs	function set_startupSeq(newval)
php	function set_startupSeq(\$newval)
cpp	int set_startupSeq(const string& newval)
m	-(int) setStartupSeq : (NSString*) newval
pas	function set_startupSeq(newval: string): integer
vb	function set_startupSeq(ByVal newval As String) As Integer
cs	int set_startupSeq(string newval)
java	int set_startupSeq(String newval)
py	def set_startupSeq(newval)
cmd	YDisplay target set_startupSeq newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the name of the sequence to play when the displayed is powered on

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→set(userData) display→setUserData()display.set(userData)

YDisplay

Stores a user context provided as argument in the userData attribute of the function.

```
js function set(userData) data
node.js function set(userData) data
php function set(userData) $data
cpp void set(userData( void* data)
m -(void) setUserData : (void*) data
pas procedure set(userData( data: Tobject)
vb procedure set(userData( ByVal data As Object)
cs void set(userData( object data)
java void set(userData( Object data)
py def set(userData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

display→stopSequence()display.stopSequence()**YDisplay**

Stops immediately any ongoing sequence replay.

js	function stopSequence()
node.js	function stopSequence()
php	function stopSequence()
cpp	int stopSequence()
m	-(int) stopSequence
pas	function stopSequence(): LongInt
vb	function stopSequence() As Integer
cs	int stopSequence()
java	int stopSequence()
py	def stopSequence()
cmd	YDisplay target stopSequence

The display is left as is.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→swapLayerContent() display.swapLayerContent()

YDisplay

Swaps the whole content of two layers.

```

js   function swapLayerContent( layerIdA, layerIdB)
node.js function swapLayerContent( layerIdA, layerIdB)
php  function swapLayerContent( $layerIdA, $layerIdB)
cpp   int swapLayerContent( int layerIdA, int layerIdB)
m    -(int) swapLayerContent : (int) layerIdA
                 : (int) layerIdB

pas  function swapLayerContent( layerIdA: LongInt, layerIdB: LongInt): LongInt
vb   function swapLayerContent( ) As Integer
cs   int swapLayerContent( int layerIdA, int layerIdB)
java  int swapLayerContent( int layerIdA, int layerIdB)
py    def swapLayerContent( layerIdA, layerIdB)
cmd   YDisplay target swapLayerContent layerIdA layerIdB

```

The color and transparency of all the pixels from the two layers are swapped. This method only affects the displayed content, but does not change any property of the layer objects. In particular, the visibility of each layer stays unchanged. When used between one hidden layer and a visible layer, this method makes it possible to easily implement double-buffering. Note that layer 0 has no transparency support (it is always completely opaque).

Parameters :

layerIdA the first layer (a number in range 0..layerCount-1)
layerIdB the second layer (a number in range 0..layerCount-1)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→upload()display.upload()**YDisplay**

Uploads an arbitrary file (for instance a GIF file) to the display, to the specified full path name.

js	function upload (pathname , content)
nodejs	function upload (pathname , content)
php	function upload (\$pathname , \$content)
cpp	int upload (string pathname , string content)
m	- (int upload : (NSString*) pathname : (NSData*) content
pas	function upload (pathname : string, content : TByteArray): LongInt
vb	procedure upload ()
cs	int upload (string pathname)
java	int upload (String pathname)
py	def upload (pathname , content)
cmd	YDisplay target upload pathname content

If a file already exists with the same path name, its content is overwritten.

Parameters :

pathname path and name of the new file to create
content binary buffer with the content to set

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

display→wait_async()

YDisplay

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.14. DisplayLayer object interface

A DisplayLayer is an image layer containing objects to display (bitmaps, text, etc.). The content is displayed only when the layer is active on the screen (and not masked by other overlapping layers).

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_display.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YDisplay = yoctolib.YDisplay;
php	require_once('yocto_display.php');
cpp	#include "yocto_display.h"
m	#import "yocto_display.h"
pas	uses yocto_display;
vb	yocto_display.vb
cs	yocto_display.cs
java	import com.yoctopuce.YoctoAPI.YDisplay;
py	from yocto_display import *

YDisplayLayer methods

displaylayer→clear()

Erases the whole content of the layer (makes it fully transparent).

displaylayer→clearConsole()

Blanks the console area within console margins, and resets the console pointer to the upper left corner of the console.

displaylayer→consoleOut(text)

Outputs a message in the console area, and advances the console pointer accordingly.

displaylayer→drawBar(x1, y1, x2, y2)

Draws a filled rectangular bar at a specified position.

displaylayer→drawBitmap(x, y, w, bitmap, bgcol)

Draws a bitmap at the specified position.

displaylayer→drawCircle(x, y, r)

Draws an empty circle at a specified position.

displaylayer→drawDisc(x, y, r)

Draws a filled disc at a given position.

displaylayer→drawImage(x, y, imagename)

Draws a GIF image at the specified position.

displaylayer→drawPixel(x, y)

Draws a single pixel at the specified position.

displaylayer→drawRect(x1, y1, x2, y2)

Draws an empty rectangle at a specified position.

displaylayer→drawText(x, y, anchor, text)

Draws a text string at the specified position.

displaylayer→get_display()

Gets parent YDisplay.

displaylayer→get_displayHeight()

Returns the display height, in pixels.

displaylayer→get_displayWidth()

Returns the display width, in pixels.

3. Reference

displaylayer→get_layerHeight()

Returns the height of the layers to draw on, in pixels.

displaylayer→get_layerWidth()

Returns the width of the layers to draw on, in pixels.

displaylayer→hide()

Hides the layer.

displaylayer→lineTo(x, y)

Draws a line from current drawing pointer position to the specified position.

displaylayer→moveTo(x, y)

Moves the drawing pointer of this layer to the specified position.

displaylayer→reset()

Reverts the layer to its initial state (fully transparent, default settings).

displaylayer→selectColorPen(color)

Selects the pen color for all subsequent drawing functions, including text drawing.

displaylayer→selectEraser()

Selects an eraser instead of a pen for all subsequent drawing functions, except for text drawing and bitmap copy functions.

displaylayer→selectFont(fontname)

Selects a font to use for the next text drawing functions, by providing the name of the font file.

displaylayer→selectGrayPen(graylevel)

Selects the pen gray level for all subsequent drawing functions, including text drawing.

displaylayer→setAntialiasingMode(mode)

Enables or disables anti-aliasing for drawing oblique lines and circles.

displaylayer→setConsoleBackground(bgcol)

Sets up the background color used by the `clearConsole` function and by the console scrolling feature.

displaylayer→setConsoleMargins(x1, y1, x2, y2)

Sets up display margins for the `consoleOut` function.

displaylayer→setConsoleWordWrap(wordwrap)

Sets up the wrapping behaviour used by the `consoleOut` function.

displaylayer→setLayerPosition(x, y, scrollTime)

Sets the position of the layer relative to the display upper left corner.

displaylayer→unhide()

Shows the layer.

displaylayer→clear()**displaylayer.clear()**

YDisplayLayer

Erases the whole content of the layer (makes it fully transparent).

```
js function clear( )
nodejs function clear( )
php function clear( )
cpp int clear( )
m -(int) clear
pas function clear( ): LongInt
vb function clear( ) As Integer
cs int clear( )
java int clear( )
py def clear( )
cmd YDisplay target [-layer layerId] clear
```

This method does not change any other attribute of the layer. To reinitialize the layer attributes to defaults settings, use the method `reset()` instead.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→clearConsole()
displaylayer.clearConsole()**YDisplayLayer**

Blanks the console area within console margins, and resets the console pointer to the upper left corner of the console.

js	function clearConsole()
nodejs	function clearConsole()
php	function clearConsole()
cpp	int clearConsole()
m	- (int) clearConsole
pas	function clearConsole(): LongInt
vb	function clearConsole() As Integer
cs	int clearConsole()
java	int clearConsole()
py	def clearConsole()
cmd	YDisplay target [-layer layerId] clearConsole

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→consoleOut()displaylayer.consoleOut()**YDisplayLayer**

Outputs a message in the console area, and advances the console pointer accordingly.

js	function consoleOut(text)
node.js	function consoleOut(text)
php	function consoleOut(\$text)
cpp	int consoleOut(string text)
m	- (int) consoleOut : (NSString*) text
pas	function consoleOut(text: string): LongInt
vb	function consoleOut() As Integer
cs	int consoleOut(string text)
java	int consoleOut(String text)
py	def consoleOut(text)
cmd	YDisplay target [-layer layerId] consoleOut text

The console pointer position is automatically moved to the beginning of the next line when a newline character is met, or when the right margin is hit. When the new text to display extends below the lower margin, the console area is automatically scrolled up.

Parameters :

text the message to display

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→drawBar()displaylayer.drawBar()**YDisplayLayer**

Draws a filled rectangular bar at a specified position.

```

js function drawBar( x1, y1, x2, y2)
nodejs function drawBar( x1, y1, x2, y2)
php function drawBar( $x1, $y1, $x2, $y2)
cpp int drawBar( int x1, int y1, int x2, int y2)
m -(int) drawBar : (int) x1
           : (int) y1
           : (int) x2
           : (int) y2
pas function drawBar( x1: LongInt,
                      y1: LongInt,
                      x2: LongInt,
                      y2: LongInt): LongInt
vb function drawBar( ) As Integer
cs int drawBar( int x1, int y1, int x2, int y2)
java int drawBar( int x1, int y1, int x2, int y2)
py def drawBar( x1, y1, x2, y2)
cmd YDisplay target [-layer layerId] drawBar x1 y1 x2 y2

```

Parameters :

x1 the distance from left of layer to the left border of the rectangle, in pixels
y1 the distance from top of layer to the top border of the rectangle, in pixels
x2 the distance from left of layer to the right border of the rectangle, in pixels
y2 the distance from top of layer to the bottom border of the rectangle, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→drawBitmap() displaylayer.drawBitmap()

YDisplayLayer

Draws a bitmap at the specified position.

```

js   function drawBitmap( x, y, w, bitmap, bgcol)
nodejs function drawBitmap( x, y, w, bitmap, bgcol)
php  function drawBitmap( $x, $y, $w, $bitmap, $bgcol)
cpp   int drawBitmap( int x, int y, int w, string bitmap, int bgcol)
m    -(int) drawBitmap : (int) x
      : (int) y
      : (int) w
      : (NSData*) bitmap
      : (int) bgcol

pas  function drawBitmap( x: LongInt,
                        y: LongInt,
                        w: LongInt,
                        bitmap: TByteArray,
                        bgcol: LongInt): LongInt

vb   procedure drawBitmap( )
cs    int drawBitmap( int x, int y, int w, int bgcol)
java  int drawBitmap( int x, int y, int w, int bgcol)
py    def drawBitmap( x, y, w, bitmap, bgcol)
cmd   YDisplay target [-layer layerId] drawBitmap x y w bitmap bgcol

```

The bitmap is provided as a binary object, where each pixel maps to a bit, from left to right and from top to bottom. The most significant bit of each byte maps to the leftmost pixel, and the least significant bit maps to the rightmost pixel. Bits set to 1 are drawn using the layer selected pen color. Bits set to 0 are drawn using the specified background gray level, unless -1 is specified, in which case they are not drawn at all (as if transparent).

Parameters :

- x** the distance from left of layer to the left of the bitmap, in pixels
- y** the distance from top of layer to the top of the bitmap, in pixels
- w** the width of the bitmap, in pixels
- bitmap** a binary object
- bgcol** the background gray level to use for zero bits (0 = black, 255 = white), or -1 to leave the pixels unchanged

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→drawCircle()displaylayer.drawCircle()**YDisplayLayer**

Draws an empty circle at a specified position.

```
js function drawCircle( x, y, r)
nodejs function drawCircle( x, y, r)
php function drawCircle( $x, $y, $r)
cpp int drawCircle( int x, int y, int r)
m -(int) drawCircle : (int) x
      : (int) y
      : (int) r

pas function drawCircle( x: LongInt, y: LongInt, r: LongInt): LongInt
vb function drawCircle( ) As Integer
cs int drawCircle( int x, int y, int r)
java int drawCircle( int x, int y, int r)
py def drawCircle( x, y, r)
cmd YDisplay target [-layer layerId] drawCircle x y r
```

Parameters :

- x** the distance from left of layer to the center of the circle, in pixels
- y** the distance from top of layer to the center of the circle, in pixels
- r** the radius of the circle, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→drawDisc()displaylayer.drawDisc()**YDisplayLayer**

Draws a filled disc at a given position.

js	function drawDisc(x, y, r)
nodejs	function drawDisc(x, y, r)
php	function drawDisc(\$x, \$y, \$r)
cpp	int drawDisc(int x, int y, int r)
m	- (int) drawDisc : (int) x : (int) y : (int) r
pas	function drawDisc(x: LongInt, y: LongInt, r: LongInt): LongInt
vb	function drawDisc() As Integer
cs	int drawDisc(int x, int y, int r)
java	int drawDisc(int x, int y, int r)
py	def drawDisc(x, y, r)
cmd	YDisplay target [-layer layerId] drawDisc x y r

Parameters :

- x** the distance from left of layer to the center of the disc, in pixels
- y** the distance from top of layer to the center of the disc, in pixels
- r** the radius of the disc, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→drawImage()displaylayer.drawImage()**YDisplayLayer**

Draws a GIF image at the specified position.

```

js function drawImage( x, y, imagename)
nodejs function drawImage( x, y, imagename)
php function drawImage( $x, $y, $imagename)
cpp int drawImage( int x, int y, string imagename)
m -(int) drawImage : (int) x
: (int) y
: (NSString*) imagename

pas function drawImage( x: LongInt, y: LongInt, imagename: string): LongInt
vb function drawImage( ) As Integer
cs int drawImage( int x, int y, string imagename)
java int drawImage( int x, int y, String imagename)
py def drawImage( x, y, imagename)
cmd YDisplay target [-layer layerId] drawImage x y imagename

```

The GIF image must have been previously uploaded to the device built-in memory. If you experience problems using an image file, check the device logs for any error message such as missing image file or bad image file format.

Parameters :

x the distance from left of layer to the left of the image, in pixels
y the distance from top of layer to the top of the image, in pixels
imagename the GIF file name

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

**displaylayer→drawPixel()
displaylayer.drawPixel()****YDisplayLayer**

Draws a single pixel at the specified position.

```
js function drawPixel( x, y)
nodejs function drawPixel( x, y)
php function drawPixel( $x, $y)
cpp int drawPixel( int x, int y)
m -(int) drawPixel : (int) x
                  : (int) y
pas function drawPixel( x: LongInt, y: LongInt): LongInt
vb function drawPixel( ) As Integer
cs int drawPixel( int x, int y)
java int drawPixel( int x, int y)
py def drawPixel( x, y)
cmd YDisplay target [-layer layerId] drawPixel x y
```

Parameters :

x the distance from left of layer, in pixels
y the distance from top of layer, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→drawRect()displaylayer.drawRect()**YDisplayLayer**

Draws an empty rectangle at a specified position.

```

js function drawRect( x1, y1, x2, y2)
nodejs function drawRect( x1, y1, x2, y2)
php function drawRect( $x1, $y1, $x2, $y2)
cpp int drawRect( int x1, int y1, int x2, int y2)
m -(int) drawRect : (int) x1
           : (int) y1
           : (int) x2
           : (int) y2
pas function drawRect( x1: LongInt,
                      y1: LongInt,
                      x2: LongInt,
                      y2: LongInt): LongInt
vb function drawRect( ) As Integer
cs int drawRect( int x1, int y1, int x2, int y2)
java int drawRect( int x1, int y1, int x2, int y2)
py def drawRect( x1, y1, x2, y2)
cmd YDisplay target [-layer layerId] drawRect x1 y1 x2 y2

```

Parameters :

x1 the distance from left of layer to the left border of the rectangle, in pixels
y1 the distance from top of layer to the top border of the rectangle, in pixels
x2 the distance from left of layer to the right border of the rectangle, in pixels
y2 the distance from top of layer to the bottom border of the rectangle, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→drawText()displaylayer.drawText()**YDisplayLayer**

Draws a text string at the specified position.

```

js   function drawText( x, y, anchor, text)
node.js function drawText( x, y, anchor, text)
php  function drawText( $x, $y, $anchor, $text)
cpp   int drawText( int x, int y, Y_ALIGN anchor, string text)
m     -(int) drawText : (int) x
          : (int) y
          : (Y_ALIGN) anchor
          : (NSString*) text

pas  function drawText( x: LongInt,
                      y: LongInt,
                      anchor: TYALIGN,
                      text: string): LongInt

vb   function drawText( ) As Integer
cs    int drawText( int x, int y, ALIGN anchor, string text)
java   int drawText( int x, int y, ALIGN anchor, String text)
py     def drawText( x, y, anchor, text)
cmd   YDisplay target [-layer layerId] drawText x y anchor text

```

The point of the text that is aligned to the specified pixel position is called the anchor point, and can be chosen among several options. Text is rendered from left to right, without implicit wrapping.

Parameters :

x the distance from left of layer to the text anchor point, in pixels
y the distance from top of layer to the text anchor point, in pixels
anchor the text anchor point, chosen among the Y_ALIGN enumeration: Y_ALIGN_TOP_LEFT, Y_ALIGN_CENTER_LEFT, Y_ALIGN_BASELINE_LEFT, Y_ALIGN_BOTTOM_LEFT, Y_ALIGN_TOP_CENTER, Y_ALIGN_CENTER, Y_ALIGN_BASELINE_CENTER, Y_ALIGN_BOTTOM_CENTER, Y_ALIGN_TOP_DECIMAL, Y_ALIGN_CENTER_DECIMAL, Y_ALIGN_BASELINE_DECIMAL, Y_ALIGN_BOTTOM_DECIMAL, Y_ALIGN_TOP_RIGHT, Y_ALIGN_CENTER_RIGHT, Y_ALIGN_BASELINE_RIGHT, Y_ALIGN_BOTTOM_RIGHT.
text the text string to draw

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→get_display()**YDisplayLayer****displaylayer→display()displaylayer.get_display()**

Gets parent YDisplay.

```
js function get_display( )
node.js function get_display( )
php function get_display( )
cpp YDisplay* get_display( )
m -(YDisplay*) display
pas function get_display( ): TYDisplay
vb function get_display( ) As YDisplay
cs YDisplay get_display( )
java YDisplay get_display( )
py def get_display( )
```

Returns the parent YDisplay object of the current YDisplayLayer.

Returns :

an YDisplay object

displaylayer→get_displayHeight()
displaylayer→displayHeight()
displaylayer.get_displayHeight()

YDisplayLayer

Returns the display height, in pixels.

js	function get_displayHeight()
node.js	function get_displayHeight()
php	function get_displayHeight()
cpp	int get_displayHeight()
m	-(int) displayHeight
pas	function get_displayHeight() : LongInt
vb	function get_displayHeight() As Integer
cs	int get_displayHeight()
java	int get_displayHeight()
py	def get_displayHeight()
cmd	YDisplay target [-layer layerId] get_displayHeight

Returns :

an integer corresponding to the display height, in pixels On failure, throws an exception or returns Y_DISPLAYHEIGHT_INVALID.

**displaylayer→get_displayWidth()
displaylayer→displayWidth()
displaylayer.get_displayWidth()****YDisplayLayer**

Returns the display width, in pixels.

js	function get_displayWidth()
nodejs	function get_displayWidth()
php	function get_displayWidth()
cpp	int get_displayWidth()
m	-(int) displayWidth
pas	function get_displayWidth() : LongInt
vb	function get_displayWidth() As Integer
cs	int get_displayWidth()
java	int get_displayWidth()
py	def get_displayWidth()
cmd	YDisplay target [-layer layerId] get_displayWidth

Returns :

an integer corresponding to the display width, in pixels On failure, throws an exception or returns Y_DISPLAYWIDTH_INVALID.

displaylayer→get_layerHeight()
displaylayer→layerHeight()
displaylayer.get_layerHeight()**YDisplayLayer**

Returns the height of the layers to draw on, in pixels.

js	function get_layerHeight()
node.js	function get_layerHeight()
php	function get_layerHeight()
cpp	int get_layerHeight()
m	-(int) layerHeight
pas	function get_layerHeight() : LongInt
vb	function get_layerHeight() As Integer
cs	int get_layerHeight()
java	int get_layerHeight()
py	def get_layerHeight()
cmd	YDisplay target [-layer layerId] get_layerHeight

Returns :

an integer corresponding to the height of the layers to draw on, in pixels

On failure, throws an exception or returns Y_LAYERHEIGHT_INVALID.

**displaylayer→get_layerWidth()
displaylayer→layerWidth()
displaylayer.get_layerWidth()****YDisplayLayer**

Returns the width of the layers to draw on, in pixels.

```
js function get_layerWidth( )  
nodejs function get_layerWidth( )  
php function get_layerWidth( )  
cpp int get_layerWidth( )  
m -(int) layerWidth  
pas function get_layerWidth( ): LongInt  
vb function get_layerWidth( ) As Integer  
cs int get_layerWidth( )  
java int get_layerWidth( )  
py def get_layerWidth( )  
cmd YDisplay target [-layer layerId] get_layerWidth
```

Returns :

an integer corresponding to the width of the layers to draw on, in pixels

On failure, throws an exception or returns Y_LAYERWIDTH_INVALID.

displaylayer→hide()displaylayer.hide()**YDisplayLayer**

Hides the layer.

```
js function hide( )
node.js function hide( )
php function hide( )
cpp int hide( )
m -(int) hide
pas function hide( ): LongInt
vb function hide( ) As Integer
cs int hide( )
java int hide( )
py def hide( )
cmd YDisplay target [-layer layerId] hide
```

The state of the layer is preserved but the layer is not displayed on the screen until the next call to `unhide()`. Hiding the layer can positively affect the drawing speed, since it postpones the rendering until all operations are completed (double-buffering).

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→lineTo()displaylayer.lineTo()

YDisplayLayer

Draws a line from current drawing pointer position to the specified position.

```
js function lineTo( x, y)
nodejs function lineTo( x, y)
php function lineTo( $x, $y)
cpp int lineTo( int x, int y)
m -(int) lineTo : (int) x
: (int) y
pas function lineTo( x: LongInt, y: LongInt): LongInt
vb function lineTo( ) As Integer
cs int lineTo( int x, int y)
java int lineTo( int x, int y)
py def lineTo( x, y)
cmd YDisplay target [-layer layerId] lineTo x y
```

The specified destination pixel is included in the line. The pointer position is then moved to the end point of the line.

Parameters :

x the distance from left of layer to the end point of the line, in pixels
y the distance from top of layer to the end point of the line, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→moveTo()displaylayer.moveTo()

YDisplayLayer

Moves the drawing pointer of this layer to the specified position.

```
js function moveTo( x, y)
nodejs function moveTo( x, y)
php function moveTo( $x, $y)
cpp int moveTo( int x, int y)
m -(int) moveTo : (int) x
: (int) y
pas function moveTo( x: LongInt, y: LongInt): LongInt
vb function moveTo( ) As Integer
cs int moveTo( int x, int y)
java int moveTo( int x, int y)
py def moveTo( x, y)
cmd YDisplay target [-layer layerId] moveTo x y
```

Parameters :

x the distance from left of layer, in pixels
y the distance from top of layer, in pixels

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→reset()displaylayer.reset()**YDisplayLayer**

Reverts the layer to its initial state (fully transparent, default settings).

```
js function reset( )  
nodejs function reset( )  
php function reset( )  
cpp int reset( )  
m -(int) reset  
pas function reset( ): LongInt  
vb function reset( ) As Integer  
cs int reset( )  
java int reset( )  
py def reset( )  
cmd YDisplay target [-layer layerId] reset
```

Reinitializes the drawing pointer to the upper left position, and selects the most visible pen color. If you only want to erase the layer content, use the method `clear()` instead.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→selectColorPen()
displaylayer.selectColorPen()**YDisplayLayer**

Selects the pen color for all subsequent drawing functions, including text drawing.

js	function selectColorPen(color)
node.js	function selectColorPen(color)
php	function selectColorPen(\$color)
cpp	int selectColorPen(int color)
m	- (int) selectColorPen : (int) color
pas	function selectColorPen(color: LongInt): LongInt
vb	function selectColorPen() As Integer
cs	int selectColorPen(int color)
java	int selectColorPen(int color)
py	def selectColorPen(color)
cmd	YDisplay target [-layer layerId] selectColorPen color

The pen color is provided as an RGB value. For grayscale or monochrome displays, the value is automatically converted to the proper range.

Parameters :

color the desired pen color, as a 24-bit RGB value

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→selectEraser()
displaylayer.selectEraser()**YDisplayLayer**

Selects an eraser instead of a pen for all subsequent drawing functions, except for text drawing and bitmap copy functions.

```
js function selectEraser( )  
nodejs function selectEraser( )  
php function selectEraser( )  
cpp int selectEraser( )  
m -(int) selectEraser  
pas function selectEraser( ): LongInt  
vb function selectEraser( ) As Integer  
cs int selectEraser( )  
java int selectEraser( )  
py def selectEraser( )  
cmd YDisplay target [-layer layerId] selectEraser
```

Any point drawn using the eraser becomes transparent (as when the layer is empty), showing the other layers beneath it.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→selectFont()displaylayer.selectFont()**YDisplayLayer**

Selects a font to use for the next text drawing functions, by providing the name of the font file.

```
js function selectFont( fontname)
nodejs function selectFont( fontname)
php function selectFont( $fontname)
cpp int selectFont( string fontname)
m -(int) selectFont : (NSString*) fontname
pas function selectFont( fontname: string): LongInt
vb function selectFont( ) As Integer
cs int selectFont( string fontname)
java int selectFont( String fontname)
py def selectFont( fontname)
cmd YDisplay target [-layer layerId] selectFont fontname
```

You can use a built-in font as well as a font file that you have previously uploaded to the device built-in memory. If you experience problems selecting a font file, check the device logs for any error message such as missing font file or bad font file format.

Parameters :

fontname the font file name

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→selectGrayPen()
displaylayer.selectGrayPen()**YDisplayLayer**

Selects the pen gray level for all subsequent drawing functions, including text drawing.

```
js function selectGrayPen( graylevel)
node.js function selectGrayPen( graylevel)
php function selectGrayPen( $graylevel)
cpp int selectGrayPen( int graylevel)
m -(int) selectGrayPen : (int) graylevel
pas function selectGrayPen( graylevel: LongInt): LongInt
vb function selectGrayPen( ) As Integer
cs int selectGrayPen( int graylevel)
java int selectGrayPen( int graylevel)
py def selectGrayPen( graylevel)
cmd YDisplay target [-layer layerId] selectGrayPen graylevel
```

The gray level is provided as a number between 0 (black) and 255 (white, or whichever the highest color is). For monochrome displays (without gray levels), any value lower than 128 is rendered as black, and any value equal or above to 128 is non-black.

Parameters :

graylevel the desired gray level, from 0 to 255

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→setAntialiasingMode() displaylayer.setAntialiasingMode()

YDisplayLayer

Enables or disables anti-aliasing for drawing oblique lines and circles.

js	function setAntialiasingMode(mode)
node.js	function setAntialiasingMode(mode)
php	function setAntialiasingMode(\$mode)
cpp	int setAntialiasingMode(bool mode)
m	-(int) setAntialiasingMode : (bool) mode
pas	function setAntialiasingMode(mode: boolean): LongInt
vb	function setAntialiasingMode() As Integer
cs	int setAntialiasingMode(bool mode)
java	int setAntialiasingMode(boolean mode)
py	def setAntialiasingMode(mode)
cmd	YDisplay target [-layer layerId] setAntialiasingMode mode

Anti-aliasing provides a smoother aspect when looked from far enough, but it can add fuzziness when the display is looked from very close. At the end of the day, it is your personal choice. Anti-aliasing is enabled by default on grayscale and color displays, but you can disable it if you prefer. This setting has no effect on monochrome displays.

Parameters :

mode true to enable antialiasing, false to disable it.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→setConsoleBackground()
displaylayer.setConsoleBackground()**YDisplayLayer**

Sets up the background color used by the `clearConsole` function and by the console scrolling feature.

```
js   function setConsoleBackground( bgcol)
nodejs function setConsoleBackground( bgcol)
php  function setConsoleBackground( $bgcol)
cpp   int setConsoleBackground( int bgcol)
m    -(int) setConsoleBackground : (int) bgcol
pas   function setConsoleBackground( bgcol: LongInt): LongInt
vb    function setConsoleBackground( ) As Integer
cs    int setConsoleBackground( int bgcol)
java  int setConsoleBackground( int bgcol)
py    def setConsoleBackground( bgcol)
cmd   YDisplay target [-layer layerId] setConsoleBackground bgcol
```

Parameters :

bgcol the background gray level to use when scrolling (0 = black, 255 = white), or -1 for transparent

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→setConsoleMargins() displaylayer.setConsoleMargins()

YDisplayLayer

Sets up display margins for the `consoleOut` function.

```

js   function setConsoleMargins( x1, y1, x2, y2)
nodejs function setConsoleMargins( x1, y1, x2, y2)
php  function setConsoleMargins( $x1, $y1, $x2, $y2)
cpp   int setConsoleMargins( int x1, int y1, int x2, int y2)
m    -(int) setConsoleMargins : (int) x1
           : (int) y1
           : (int) x2
           : (int) y2
pas   function setConsoleMargins( x1: LongInt,
                                  y1: LongInt,
                                  x2: LongInt,
                                  y2: LongInt): LongInt
vb    function setConsoleMargins( ) As Integer
cs    int setConsoleMargins( int x1, int y1, int x2, int y2)
java  int setConsoleMargins( int x1, int y1, int x2, int y2)
py    def setConsoleMargins( x1, y1, x2, y2)
cmd   YDisplay target [-layer layerId] setConsoleMargins x1 y1 x2 y2

```

Parameters :

x1 the distance from left of layer to the left margin, in pixels
y1 the distance from top of layer to the top margin, in pixels
x2 the distance from left of layer to the right margin, in pixels
y2 the distance from top of layer to the bottom margin, in pixels

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→setConsoleWordWrap()
displaylayer.setConsoleWordWrap()**YDisplayLayer**

Sets up the wrapping behaviour used by the `consoleOut` function.

```
js   function setConsoleWordWrap( wordwrap)
node.js function setConsoleWordWrap( wordwrap)
php  function setConsoleWordWrap( $wordwrap)
cpp   int setConsoleWordWrap( bool wordwrap)
m    -(int) setConsoleWordWrap : (bool) wordwrap
pas   function setConsoleWordWrap( wordwrap: boolean): LongInt
vb    function setConsoleWordWrap( ) As Integer
cs    int setConsoleWordWrap( bool wordwrap)
java  int setConsoleWordWrap( boolean wordwrap)
py    def setConsoleWordWrap( wordwrap)
cmd   YDisplay target [-layer layerId] setConsoleWordWrap wordwrap
```

Parameters :

wordwrap true to wrap only between words, false to wrap on the last column anyway.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→setLayerPosition() displaylayer.setLayerPosition()

YDisplayLayer

Sets the position of the layer relative to the display upper left corner.

```

js   function setLayerPosition( x, y, scrollTime)
nodejs function setLayerPosition( x, y, scrollTime)
php  function setLayerPosition( $x, $y, $scrollTime)
cpp   int setLayerPosition( int x, int y, int scrollTime)
m     -(int) setLayerPosition : (int) x
          : (int) y
          : (int) scrollTime
pas   function setLayerPosition( x: LongInt,
                                y: LongInt,
                                scrollTime: LongInt): LongInt
vb    function setLayerPosition( ) As Integer
cs    int setLayerPosition( int x, int y, int scrollTime)
java  int setLayerPosition( int x, int y, int scrollTime)
py    def setLayerPosition( x, y, scrollTime)
cmd   YDisplay target [-layer layerId] setLayerPosition x y scrollTime

```

When smooth scrolling is used, the display offset of the layer is automatically updated during the next milliseconds to animate the move of the layer.

Parameters :

x the distance from left of display to the upper left corner of the layer
y the distance from top of display to the upper left corner of the layer
scrollTime number of milliseconds to use for smooth scrolling, or 0 if the scrolling should be immediate.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

displaylayer→unhide()displaylayer.unhide()**YDisplayLayer**

Shows the layer.

```
js function unhide( )
nodejs function unhide( )
php function unhide( )
cpp int unhide( )
m -(int) unhide
pas function unhide( ): LongInt
vb function unhide( ) As Integer
cs int unhide( )
java int unhide( )
py def unhide( )
cmd YDisplay target [-layer layerId] unhide
```

Shows the layer again after a hide command.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

3.15. External power supply control interface

Yoctopuce application programming interface allows you to control the power source to use for module functions that require high current. The module can also automatically disconnect the external power when a voltage drop is observed on the external power source (external battery running out of power).

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_dualpower.js'></script>
node.js	var yoctolib = require('yoctolib');
php	var YDualPower = yoctolib.YDualPower;
require_once('yocto_dualpower.php');	
cpp	#include "yocto_dualpower.h"
m	#import "yocto_dualpower.h"
pas	uses yocto_dualpower;
vb	yocto_dualpower.vb
cs	yocto_dualpower.cs
java	import com.yoctopuce.YoctoAPI.YDualPower;
py	from yocto_dualpower import *

Global functions

yFindDualPower(func)

Retrieves a dual power control for a given identifier.

yFirstDualPower()

Starts the enumeration of dual power controls currently accessible.

YDualPower methods

dualpower→describe()

Returns a short text that describes unambiguously the instance of the power control in the form TYPE (NAME)=SERIAL.FUNCTIONID.

dualpower→get_advertisedValue()

Returns the current value of the power control (no more than 6 characters).

dualpower→get_errorMessage()

Returns the error message of the latest error with the power control.

dualpower→get_errorType()

Returns the numerical error code of the latest error with the power control.

dualpower→get_extVoltage()

Returns the measured voltage on the external power source, in millivolts.

dualpower→get_friendlyName()

Returns a global identifier of the power control in the format MODULE_NAME . FUNCTION_NAME.

dualpower→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

dualpower→get_functionId()

Returns the hardware identifier of the power control, without reference to the module.

dualpower→get_hardwareId()

Returns the unique hardware identifier of the power control in the form SERIAL.FUNCTIONID.

dualpower→get_logicalName()

Returns the logical name of the power control.

dualpower→get_module()

Gets the YModule object for the device on which the function is located.

dualpower→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

dualpower→get_powerControl()

Returns the selected power source for module functions that require lots of current.

dualpower→get_powerState()

Returns the current power source for module functions that require lots of current.

dualpower→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

dualpower→isOnline()

Checks if the power control is currently reachable, without raising any error.

dualpower→isOnline_async(callback, context)

Checks if the power control is currently reachable, without raising any error (asynchronous version).

dualpower→load(msValidity)

Preloads the power control cache with a specified validity duration.

dualpower→load_async(msValidity, callback, context)

Preloads the power control cache with a specified validity duration (asynchronous version).

dualpower→nextDualPower()

Continues the enumeration of dual power controls started using yFirstDualPower().

dualpower→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

dualpower→set_logicalName(newval)

Changes the logical name of the power control.

dualpower→set_powerControl(newval)

Changes the selected power source for module functions that require lots of current.

dualpower→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

dualpower→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YDualPower.FindDualPower() yFindDualPower()yFindDualPower()

YDualPower

Retrieves a dual power control for a given identifier.

js	function yFindDualPower(func)
nodejs	function FindDualPower(func)
php	function yFindDualPower(\$func)
cpp	YDualPower* yFindDualPower(const string& func)
m	YDualPower* yFindDualPower(NSString* func)
pas	function yFindDualPower(func: string): TYDualPower
vb	function yFindDualPower(ByVal func As String) As YDualPower
cs	YDualPower FindDualPower(string func)
java	YDualPower FindDualPower(String func)
py	def FindDualPower(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the power control is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YDualPower.isOnline()` to test if the power control is indeed online at a given time. In case of ambiguity when looking for a dual power control by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the power control

Returns :

a `YDualPower` object allowing you to drive the power control.

YDualPower.FirstDualPower() yFirstDualPower()yFirstDualPower()

YDualPower

Starts the enumeration of dual power controls currently accessible.

js	function yFirstDualPower()
node.js	function FirstDualPower()
php	function yFirstDualPower()
cpp	YDualPower* yFirstDualPower()
m	YDualPower* yFirstDualPower()
pas	function yFirstDualPower() : TYDualPower
vb	function yFirstDualPower() As YDualPower
cs	YDualPower FirstDualPower()
java	YDualPower FirstDualPower()
py	def FirstDualPower()

Use the method `YDualPower.nextDualPower()` to iterate on next dual power controls.

Returns :

a pointer to a `YDualPower` object, corresponding to the first dual power control currently online, or a null pointer if there are none.

dualpower→describe()dualpower.describe()**YDualPower**

Returns a short text that describes unambiguously the instance of the power control in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the power control (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

dualpower→get_advertisedValue()
dualpower→advertisedValue()
dualpower.get_advertisedValue()

YDualPower

Returns the current value of the power control (no more than 6 characters).

```
js function get_advertisedValue( )  
nodejs function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YDualPower target get_advertisedValue
```

Returns :

a string corresponding to the current value of the power control (no more than 6 characters). On failure, throws an exception or returns **Y_ADVERTISEDVALUE_INVALID**.

dualpower→getErrorMessage()
dualpower→errorMessage()
dualpower.getErrorMessage()**YDualPower**

Returns the error message of the latest error with the power control.

js	function getErrorMessage()
node.js	function getErrorMessage()
php	function getErrorMessage()
cpp	string getErrorMessage()
m	-(NSString*) errorMessage
pas	function getErrorMessage() : string
vb	function getErrorMessage() As String
cs	string getErrorMessage()
java	String getErrorMessage()
py	def getErrorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the power control object

dualpower→get_errorType()**YDualPower****dualpower→errorType()dualpower.get_errorType()**

Returns the numerical error code of the latest error with the power control.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the power control object

dualpower→get_extVoltage()**YDualPower****dualpower→extVoltage()dualpower.get_extVoltage()**

Returns the measured voltage on the external power source, in millivolts.

js	function get_extVoltage()
nodejs	function get_extVoltage()
php	function get_extVoltage()
cpp	int get_extVoltage()
m	-(int) extVoltage
pas	function get_extVoltage() : LongInt
vb	function get_extVoltage() As Integer
cs	int get_extVoltage()
java	int get_extVoltage()
py	def get_extVoltage()
cmd	YDualPower target get_extVoltage

Returns :

an integer corresponding to the measured voltage on the external power source, in millivolts

On failure, throws an exception or returns Y_EXTVOLTAGE_INVALID.

dualpower→get_friendlyName()
dualpower→friendlyName()**YDualPower**

Returns a global identifier of the power control in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the power control if they are defined, otherwise the serial number of the module and the hardware identifier of the power control (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the power control using logical names (ex: MyCustomName.relay1)

On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

dualpower→get_functionDescriptor()
dualpower→functionDescriptor()
dualpower.get_functionDescriptor()

YDualPower

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

dualpower→get_functionId()
dualpower→functionId()**YDualPower**

Returns the hardware identifier of the power control, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the power control (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

dualpower→get_hardwareId()
dualpower→hardwareId()**YDualPower**

Returns the unique hardware identifier of the power control in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the power control. (for example RELAY01-123456.relay1)

Returns :

a string that uniquely identifies the power control (ex: RELAY01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

dualpower→get_logicalName()
dualpower→logicalName()
dualpower.get_logicalName()

YDualPower

Returns the logical name of the power control.

```
js function get_logicalName( )  
nodejs function get_logicalName( )  
php function get_logicalName( )  
cpp string get_logicalName( )  
m -(NSString*) logicalName  
pas function get_logicalName( ): string  
vb function get_logicalName( ) As String  
cs string get_logicalName( )  
java String get_logicalName( )  
py def get_logicalName( )  
cmd YDualPower target get_logicalName
```

Returns :

a string corresponding to the logical name of the power control. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

dualpower→get_module()**YDualPower****dualpower→module()dualpower.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

dualpower→get_module_async()
dualpower→module_async()**YDualPower**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

`js` `function get_module_async(callback, context)`
`node.js` `function get_module_async(callback, context)`

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

dualpower→get_powerControl()
dualpower→powerControl()
dualpower.get_powerControl()**YDualPower**

Returns the selected power source for module functions that require lots of current.

js	function get_powerControl()
nodejs	function get_powerControl()
php	function get_powerControl()
cpp	Y_POWERCONTROL_enum get_powerControl()
m	-(Y_POWERCONTROL_enum) powerControl
pas	function get_powerControl(): Integer
vb	function get_powerControl() As Integer
cs	int get_powerControl()
java	int get_powerControl()
py	def get_powerControl()
cmd	YDualPower target get_powerControl

Returns :

a value among Y_POWERCONTROL_AUTO, Y_POWERCONTROL_FROM_USB, Y_POWERCONTROL_FROM_EXT and Y_POWERCONTROL_OFF corresponding to the selected power source for module functions that require lots of current

On failure, throws an exception or returns Y_POWERCONTROL_INVALID.

dualpower→get_powerState()
dualpower→powerState()
dualpower.get_powerState()**YDualPower**

Returns the current power source for module functions that require lots of current.

js	function get_powerState()
nodejs	function get_powerState()
php	function get_powerState()
cpp	Y_POWERSTATE_enum get_powerState()
m	-(Y_POWERSTATE_enum) powerState
pas	function get_powerState() : Integer
vb	function get_powerState() As Integer
cs	int get_powerState()
java	int get_powerState()
py	def get_powerState()
cmd	YDualPower target get_powerState

Returns :

a value among Y_POWERSTATE_OFF, Y_POWERSTATE_FROM_USB and Y_POWERSTATE_FROM_EXT corresponding to the current power source for module functions that require lots of current

On failure, throws an exception or returns Y_POWERSTATE_INVALID.

dualpower→get(userData)**dualpower→userData()dualpower.get(userData())****YDualPower**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

dualpower→isOnline()dualpower.isOnline()**YDualPower**

Checks if the power control is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	- (BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the power control in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the power control.

Returns :

true if the power control can be reached, and false otherwise

dualpower→isOnline_async()**YDualPower**

Checks if the power control is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the power control in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

dualpower→load()dualpower.load()**YDualPower**

Preloads the power control cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

dualpower→load_async()

YDualPower

Preloads the power control cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

dualpower→nextDualPower()
dualpower.nextDualPower()**YDualPower**

Continues the enumeration of dual power controls started using `yFirstDualPower()`.

js	function nextDualPower()
node.js	function nextDualPower()
php	function nextDualPower()
cpp	YDualPower * nextDualPower()
m	- (YDualPower*) nextDualPower
pas	function nextDualPower() : TYDualPower
vb	function nextDualPower() As YDualPower
cs	YDualPower nextDualPower()
java	YDualPower nextDualPower()
py	def nextDualPower()

Returns :

a pointer to a `YDualPower` object, corresponding to a dual power control currently online, or a null pointer if there are no more dual power controls to enumerate.

**dualpower→registerValueCallback()
dualpower.registerValueCallback()****YDualPower**

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback)
nodejs function registerValueCallback( callback)
php  function registerValueCallback( $callback)
cpp   int registerValueCallback( YDualPowerValueCallback callback)
m    -(int) registerValueCallback : (YDualPowerValueCallback) callback
pas   function registerValueCallback( callback: TYDualPowerValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs   int registerValueCallback( ValueCallback callback)
java  int registerValueCallback( UpdateCallback callback)
py    def registerValueCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

dualpower→set_logicalName()
dualpower→setLogicalName()
dualpower.set_logicalName()

YDualPower

Changes the logical name of the power control.

```
js function set_logicalName( newval)
nodejs function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YDualPower target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the power control.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

dualpower→set_powerControl()
dualpower→setPowerControl()
dualpower.set_powerControl()

YDualPower

Changes the selected power source for module functions that require lots of current.

js	function set_powerControl(newval)
nodejs	function set_powerControl(newval)
php	function set_powerControl(\$newval)
cpp	int set_powerControl(Y_POWERCONTROL_enum newval)
m	-(int) setPowerControl : (Y_POWERCONTROL_enum) newval
pas	function set_powerControl(newval: Integer): integer
vb	function set_powerControl(ByVal newval As Integer) As Integer
cs	int set_powerControl(int newval)
java	int set_powerControl(int newval)
py	def set_powerControl(newval)
cmd	YDualPower target set_powerControl newval

Parameters :

newval a value among `Y_POWERCONTROL_AUTO`, `Y_POWERCONTROL_FROM_USB`, `Y_POWERCONTROL_FROM_EXT` and `Y_POWERCONTROL_OFF` corresponding to the selected power source for module functions that require lots of current

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

dualpower→set(userData)**YDualPower****dualpower→setUserData()dualpower.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

```
js   function setUserData( data)
node.js function setUserData( data)
php  function setUserData( $data)
cpp   void setUserData( void* data)
m    -(void) setUserData : (void*) data
pas   procedure setUserData( data: Tobject)
vb    procedure setUserData( ByVal data As Object)
cs    void setUserData( object data)
java  void setUserData( Object data)
py    def setUserData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

dualpower→wait_async()

YDualPower

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

`js` `function wait_async(callback, context)`

`nodejs` `function wait_async(callback, context)`

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.16. Files function interface

The filesystem interface makes it possible to store files on some devices, for instance to design a custom web UI (for networked devices) or to add fonts (on display devices).

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_files.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YFiles = yoctolib.YFiles;
php	require_once('yocto_files.php');
cpp	#include "yocto_files.h"
m	#import "yocto_files.h"
pas	uses yocto_files;
vb	yocto_files.vb
cs	yocto_files.cs
java	import com.yoctopuce.YoctoAPI.YFiles;
py	from yocto_files import *

Global functions

yFindFiles(func)

Retrieves a filesystem for a given identifier.

yFirstFiles()

Starts the enumeration of filesystems currently accessible.

YFiles methods

files→describe()

Returns a short text that describes unambiguously the instance of the filesystem in the form TYPE (NAME)=SERIAL .FUNCTIONID.

files→download(pathname)

Downloads the requested file and returns a binary buffer with its content.

files→download_async(pathname, callback, context)

Downloads the requested file and returns a binary buffer with its content.

files→format_fs()

Reinitializes the filesystem to its clean, unfragmented, empty state.

files→get_advertisedValue()

Returns the current value of the filesystem (no more than 6 characters).

files→get_errorMessage()

Returns the error message of the latest error with the filesystem.

files→get_errorType()

Returns the numerical error code of the latest error with the filesystem.

files→get_filesCount()

Returns the number of files currently loaded in the filesystem.

files→get_freeSpace()

Returns the free space for uploading new files to the filesystem, in bytes.

files→get_friendlyName()

Returns a global identifier of the filesystem in the format MODULE_NAME .FUNCTION_NAME.

files→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

files→get_functionId()

Returns the hardware identifier of the filesystem, without reference to the module.

files→get_hardwareId()

Returns the unique hardware identifier of the filesystem in the form SERIAL.FUNCTIONID.

files→get_list(pattern)

Returns a list of YFileRecord objects that describe files currently loaded in the filesystem.

files→get_logicalName()

Returns the logical name of the filesystem.

files→get_module()

Gets the YModule object for the device on which the function is located.

files→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

files→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

files→isOnline()

Checks if the filesystem is currently reachable, without raising any error.

files→isOnline_async(callback, context)

Checks if the filesystem is currently reachable, without raising any error (asynchronous version).

files→load(msValidity)

Preloads the filesystem cache with a specified validity duration.

files→load_async(msValidity, callback, context)

Preloads the filesystem cache with a specified validity duration (asynchronous version).

files→nextFiles()

Continues the enumeration of filesystems started using yFirstFiles().

files→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

files→remove(pathname)

Deletes a file, given by its full path name, from the filesystem.

files→set_logicalName(newval)

Changes the logical name of the filesystem.

files→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

files→upload(pathname, content)

Uploads a file to the filesystem, to the specified full path name.

files→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YFiles.FindFiles() yFindFiles()yFindFiles()

YFiles

Retrieves a filesystem for a given identifier.

js	function yFindFiles(func)
node.js	function FindFiles(func)
php	function yFindFiles(\$func)
cpp	YFiles* yFindFiles(string func)
m	+(YFiles*) yFindFiles : (NSString*) func
pas	function yFindFiles(func: string): TYFiles
vb	function yFindFiles(ByVal func As String) As YFiles
cs	YFiles FindFiles(string func)
java	YFiles FindFiles(String func)
py	def FindFiles(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the filesystem is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YFiles.isOnline()` to test if the filesystem is indeed online at a given time. In case of ambiguity when looking for a filesystem by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the filesystem

Returns :

a `Yfiles` object allowing you to drive the filesystem.

YFiles.FirstFiles()

yFirstFiles()yFirstFiles()

YFiles

Starts the enumeration of filesystems currently accessible.

js	function yFirstFiles()
nodejs	function FirstFiles()
php	function yFirstFiles()
cpp	YFiles* yFirstFiles()
m	YFiles* yFirstFiles()
pas	function yFirstFiles() : TYFiles
vb	function yFirstFiles() As YFiles
cs	YFiles FirstFiles()
java	YFiles FirstFiles()
py	def FirstFiles()

Use the method `Yfiles.nextFiles()` to iterate on next filesystems.

Returns :

a pointer to a `Yfiles` object, corresponding to the first filesystem currently online, or a `null` pointer if there are none.

files→describe(files.describe())**YFiles**

Returns a short text that describes unambiguously the instance of the filesystem in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the filesystem (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

files→download()files.download()

YFiles

Downloads the requested file and returns a binary buffer with its content.

js	function download(pathname)
node.js	function download(pathname)
php	function download(\$pathname)
cpp	string download(string pathname)
m	-NSData* download : (NSString*) pathname
pas	function download(pathname: string): TByteArray
vb	function download() As Byte
py	def download(pathname)
cmd	YFiles target download pathname

Parameters :

pathname path and name of the file to download

Returns :

a binary buffer with the file content

On failure, throws an exception or returns an empty content.

files→download_async()**YFiles**

Downloads the requested file and returns a binary buffer with its content.

```
js function download_async( pathname, callback, context)
nodejs function download_async( pathname, callback, context)
```

This is the asynchronous version that uses a callback to pass the result when the download is completed.

Parameters :

pathname path and name of the new file to load

callback callback function that is invoked when the download is completed. The callback function receives three arguments: - the user-specific context object - the YFiles object whose download_async was invoked - a binary buffer with the file content

context user-specific object that is passed as-is to the callback function

Returns :

nothing.

files→format_fs()files.format_fs()

YFiles

Reinitializes the filesystem to its clean, unfragmented, empty state.

js	function format_fs()
node.js	function format_fs()
php	function format_fs()
cpp	int format_fs()
m	- (int) format_fs
pas	function format_fs(): LongInt
vb	function format_fs() As Integer
cs	int format_fs()
java	int format_fs()
py	def format_fs()
cmd	YFiles target format_fs

All files previously uploaded are permanently lost.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

files→get_advertisedValue() YFiles
files→advertisedValue()files.get_advertisedValue()

Returns the current value of the filesystem (no more than 6 characters).

```
js function get_advertisedValue( )
node.js function get_advertisedValue( )
php function get_advertisedValue( )
cpp string get_advertisedValue( )
m -(NSString*) advertisedValue
pas function get_advertisedValue( ): string
vb function get_advertisedValue( ) As String
cs string get_advertisedValue( )
java String get_advertisedValue( )
py def get_advertisedValue( )
cmd YFiles target get_advertisedValue
```

Returns :

a string corresponding to the current value of the filesystem (no more than 6 characters). On failure, throws an exception or returns `Y_ADVERTISEDVALUE_INVALID`.

files→get_errorMessage()
files→errorMessage()files.get_errorMessage()**YFiles**

Returns the error message of the latest error with the filesystem.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage() : string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the filesystem object

files→get_errorType()
files→errorType()files.get_errorType()**YFiles**

Returns the numerical error code of the latest error with the filesystem.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the filesystem object

files→get_filesCount()**YFiles****files→filesCount()files.get_filesCount()**

Returns the number of files currently loaded in the filesystem.

js	function get_filesCount()
nodejs	function get_filesCount()
php	function get_filesCount()
cpp	int get_filesCount()
m	-(int) filesCount
pas	function get_filesCount(): LongInt
vb	function get_filesCount() As Integer
cs	int get_filesCount()
java	int get_filesCount()
py	def get_filesCount()
cmd	YFiles target get_filesCount

Returns :

an integer corresponding to the number of files currently loaded in the filesystem

On failure, throws an exception or returns **Y_FILESCOUNT_INVALID**.

files→get_freeSpace() YFiles
files→freeSpace()files.get_freeSpace()

Returns the free space for uploading new files to the filesystem, in bytes.

```
js function get_freeSpace( )
node.js function get_freeSpace( )
php function get_freeSpace( )
cpp int get_freeSpace( )
m -(int) freeSpace
pas function get_freeSpace( ): LongInt
vb function get_freeSpace( ) As Integer
cs int get_freeSpace( )
java int get_freeSpace( )
py def get_freeSpace( )
cmd YFiles target get_freeSpace
```

Returns :

an integer corresponding to the free space for uploading new files to the filesystem, in bytes

On failure, throws an exception or returns Y_FREESPACE_INVALID.

files→get_friendlyName()
files→friendlyName()**YFiles**

Returns a global identifier of the filesystem in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the filesystem if they are defined, otherwise the serial number of the module and the hardware identifier of the filesystem (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the filesystem using logical names (ex: MyCustomName . relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

files→get_functionDescriptor()
files→functionDescriptor()
files.get_functionDescriptor()

YFiles

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**files→get_functionId()
files→functionId()****YFiles**

Returns the hardware identifier of the filesystem, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the filesystem (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

files→get_hardwareId()
files→hardwareId()**YFiles**

Returns the unique hardware identifier of the filesystem in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the filesystem. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the filesystem (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

files→get_list()**YFiles****files→list()files.get_list()**

Returns a list of YFileRecord objects that describe files currently loaded in the filesystem.

js	<code>function get_list(pattern)</code>
node.js	<code>function get_list(pattern)</code>
php	<code>function get_list(\$pattern)</code>
cpp	<code>vector<YFileRecord> get_list(string pattern)</code>
m	<code>-(NSMutableArray*) list : (NSString*) pattern</code>
pas	<code>function get_list(pattern: string): TYFileRecordArray</code>
vb	<code>function get_list() As List</code>
cs	<code>List<YFileRecord> get_list(string pattern)</code>
java	<code>ArrayList<YFileRecord> get_list(String pattern)</code>
py	<code>def get_list(pattern)</code>
cmd	<code>YFiles target get_list pattern</code>

Parameters :

pattern an optional filter pattern, using star and question marks as wildcards. When an empty pattern is provided, all file records are returned.

Returns :

a list of YFileRecord objects, containing the file path and name, byte size and 32-bit CRC of the file content.

On failure, throws an exception or returns an empty list.

files→get_logicalName()
files→logicalName()files.get_logicalName()**YFiles**

Returns the logical name of the filesystem.

js	function get_logicalName()
node.js	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	- (NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YFiles target get_logicalName

Returns :

a string corresponding to the logical name of the filesystem. On failure, throws an exception or returns **Y_LOGICALNAME_INVALID**.

files→get_module()**YFiles****files→module()files.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

files→get_module_async()
files→module_async()**YFiles**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

`js` `function get_module_async(callback, context)`
`node.js` `function get_module_async(callback, context)`

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

files→get(userData)**YFiles****files→userData(files.get(userData))**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

files→isOnline(files.isOnline())**YFiles**

Checks if the filesystem is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the filesystem in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the filesystem.

Returns :

true if the filesystem can be reached, and false otherwise

files→isOnline_async()**YFiles**

Checks if the filesystem is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the filesystem in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

files→load()files.load()**YFiles**

Preloads the filesystem cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

files→load_async()

YFiles

Preloads the filesystem cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

files→nextFiles()files.nextFiles()**YFiles**

Continues the enumeration of filesystems started using `yFirstFiles()`.

js	function nextFiles()
nodejs	function nextFiles()
php	function nextFiles()
cpp	YFiles * nextFiles()
m	-(YFiles*) nextFiles
pas	function nextFiles() : TYFiles
vb	function nextFiles() As YFiles
cs	YFiles nextFiles()
java	YFiles nextFiles()
py	def nextFiles()

Returns :

a pointer to a `YFiles` object, corresponding to a filesystem currently online, or a `null` pointer if there are no more filesystems to enumerate.

files→registerValueCallback() files.registerValueCallback()

YFiles

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback)
nodejs function registerValueCallback( callback)
php  function registerValueCallback( $callback)
cpp   int registerValueCallback( YFilesValueCallback callback)
m    -(int) registerValueCallback : (YFilesValueCallback) callback
pas   function registerValueCallback( callback: TYFilesValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs   int registerValueCallback( ValueCallback callback)
java  int registerValueCallback( UpdateCallback callback)
py    def registerValueCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

files→remove()files.remove()

YFiles

Deletes a file, given by its full path name, from the filesystem.

```
js function remove( pathname)
nodejs function remove( pathname)
php function remove( $pathname)
cpp int remove( string pathname)
m -(int) remove : (NSString*) pathname
pas function remove( pathname: string): LongInt
vb function remove( ) As Integer
cs int remove( string pathname)
java int remove( String pathname)
py def remove( pathname)
cmd YFiles target remove pathname
```

Because of filesystem fragmentation, deleting a file may not always free up the whole space used by the file. However, rewriting a file with the same path name will always reuse any space not freed previously. If you need to ensure that no space is taken by previously deleted files, you can use `format_fs` to fully reinitialize the filesystem.

Parameters :

pathname path and name of the file to remove.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

files→set_logicalName() files→setLogicalName()files.set_logicalName()

YFiles

Changes the logical name of the filesystem.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YFiles target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the filesystem.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

files→set(userData)**YFiles****files→setUserData(files.set(userData))**

Stores a user context provided as argument in the userData attribute of the function.

```
js   function set(userData) {  
node.js function set(userData) {  
php  function set(userData) {  
cpp   void set(userData) {  
m     -(void) setUserData : (void*) userData  
pas   procedure set(userData: Tobject);  
vb    procedure set(userData: ByVal data As Object);  
cs    void set(userData: object data);  
java  void set(userData: Object data);  
py    def set(userData: data);
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

files→upload()files.upload()**YFiles**

Uploads a file to the filesystem, to the specified full path name.

js	<code>function upload(pathname, content)</code>
node.js	<code>function upload(pathname, content)</code>
php	<code>function upload(\$pathname, \$content)</code>
cpp	<code>int upload(string pathname, string content)</code>
m	<code>- (int) upload : (NSString*) pathname : (NSData*) content</code>
pas	<code>function upload(pathname: string, content: TByteArray): LongInt</code>
vb	<code>procedure upload()</code>
cs	<code>int upload(string pathname)</code>
java	<code>int upload(String pathname)</code>
py	<code>def upload(pathname, content)</code>
cmd	<code>YFiles target upload pathname content</code>

If a file already exists with the same path name, its content is overwritten.

Parameters :

pathname path and name of the new file to create
content binary buffer with the content to set

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

files→wait_async()**YFiles**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.17. GenericSensor function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_geneticsensor.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YGenericSensor = yoctolib.YGenericSensor;
php	require_once('yocto_geneticsensor.php');
cpp	#include "yocto_geneticsensor.h"
m	#import "yocto_geneticsensor.h"
pas	uses yocto_geneticsensor;
vb	yocto_geneticsensor.vb
cs	yocto_geneticsensor.cs
java	import com.yoctopuce.YoctoAPI.YGenericSensor;
py	from yocto_geneticsensor import *

Global functions

yFindGenericSensor(func)

Retrieves a generic sensor for a given identifier.

yFirstGenericSensor()

Starts the enumeration of generic sensors currently accessible.

YGenericSensor methods

geneticsensor→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

geneticsensor→describe()

Returns a short text that describes unambiguously the instance of the generic sensor in the form TYPE (NAME)=SERIAL . FUNCTIONID.

geneticsensor→get_advertisedValue()

Returns the current value of the generic sensor (no more than 6 characters).

geneticsensor→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

geneticsensor→get_currentValue()

Returns the current measured value.

geneticsensor→get_errorMessage()

Returns the error message of the latest error with the generic sensor.

geneticsensor→get_errorType()

Returns the numerical error code of the latest error with the generic sensor.

geneticsensor→get_friendlyName()

Returns a global identifier of the generic sensor in the format MODULE_NAME . FUNCTION_NAME.

geneticsensor→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

geneticsensor→get_functionId()

Returns the hardware identifier of the generic sensor, without reference to the module.

geneticsensor→get_hardwareId()

Returns the unique hardware identifier of the generic sensor in the form SERIAL . FUNCTIONID.

genericsensor→get_highestValue()	Returns the maximal value observed for the measure since the device was started.
genericsensor→get_logFrequency()	Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.
genericsensor→get_logicalName()	Returns the logical name of the generic sensor.
genericsensor→get_lowestValue()	Returns the minimal value observed for the measure since the device was started.
genericsensor→get_module()	Gets the YModule object for the device on which the function is located.
genericsensor→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located (asynchronous version).
genericsensor→get_recordedData(startTime, endTime)	Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.
genericsensor→get_reportFrequency()	Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.
genericsensor→get_resolution()	Returns the resolution of the measured values.
genericsensor→get_signalRange()	Returns the electric signal range used by the sensor.
genericsensor→get_signalUnit()	Returns the measuring unit of the electrical signal used by the sensor.
genericsensor→get_signalValue()	Returns the measured value of the electrical signal used by the sensor.
genericsensor→get_unit()	Returns the measuring unit for the measure.
genericsensor→get(userData)	Returns the value of the userData attribute, as previously stored using method set(userData).
genericsensor→get_valueRange()	Returns the physical value range measured by the sensor.
genericsensor→isOnline()	Checks if the generic sensor is currently reachable, without raising any error.
genericsensor→isOnline_async(callback, context)	Checks if the generic sensor is currently reachable, without raising any error (asynchronous version).
genericsensor→load(msValidity)	Preloads the generic sensor cache with a specified validity duration.
genericsensor→loadCalibrationPoints(rawValues, refValues)	Retrieves error correction data points previously entered using the method calibrateFromPoints.
genericsensor→load_async(msValidity, callback, context)	Preloads the generic sensor cache with a specified validity duration (asynchronous version).
genericsensor→nextGenericSensor()	Continues the enumeration of generic sensors started using yFirstGenericSensor().
genericsensor→registerTimedReportCallback(callback)	Registers the callback function that is invoked on every periodic timed notification.

genericsensor→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

genericsensor→set_highestValue(newval)

Changes the recorded maximal value observed.

genericsensor→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

genericsensor→set_logicalName(newval)

Changes the logical name of the generic sensor.

genericsensor→set_lowestValue(newval)

Changes the recorded minimal value observed.

genericsensor→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

genericsensor→set_resolution(newval)

Changes the resolution of the measured physical values.

genericsensor→set_signalRange(newval)

Changes the electric signal range used by the sensor.

genericsensor→set_unit(newval)

Changes the measuring unit for the measured value.

genericsensor→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

genericsensor→set_valueRange(newval)

Changes the physical value range measured by the sensor.

genericsensor→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YGenericSensor.FindGenericSensor() yFindGenericSensor()yFindGenericSensor()

YGenericSensor

Retrieves a generic sensor for a given identifier.

js	function yFindGenericSensor(func)
node.js	function FindGenericSensor(func)
php	function yFindGenericSensor(\$func)
cpp	YGenericSensor* yFindGenericSensor(const string& func)
m	YGenericSensor* yFindGenericSensor(NSString* func)
pas	function yFindGenericSensor(func: string): TYGenericSensor
vb	function yFindGenericSensor(ByVal func As String) As YGenericSensor
cs	YGenericSensor FindGenericSensor(string func)
java	YGenericSensor FindGenericSensor(String func)
py	def FindGenericSensor(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the generic sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YGenericSensor.isOnline()` to test if the generic sensor is indeed online at a given time. In case of ambiguity when looking for a generic sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the generic sensor

Returns :

a `YGenericSensor` object allowing you to drive the generic sensor.

YGenericSensor.FirstGenericSensor() yFirstGenericSensor()yFirstGenericSensor()

YGenericSensor

Starts the enumeration of generic sensors currently accessible.

```
js function yFirstGenericSensor( )
nodejs function FirstGenericSensor( )
php function yFirstGenericSensor( )
cpp YGenericSensor* yFirstGenericSensor( )
m YGenericSensor* yFirstGenericSensor( )
pas function yFirstGenericSensor( ): TYGenericSensor
vb function yFirstGenericSensor( ) As YGenericSensor
cs YGenericSensor FirstGenericSensor( )
java YGenericSensor FirstGenericSensor( )
py def FirstGenericSensor( )
```

Use the method `YGenericSensor.nextGenericSensor()` to iterate on next generic sensors.

Returns :

a pointer to a `YGenericSensor` object, corresponding to the first generic sensor currently online, or a null pointer if there are none.

genericsensor→calibrateFromPoints() genericsensor.calibrateFromPoints()

YGenericSensor

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php   function calibrateFromPoints( $rawValues, $refValues)
cpp   int calibrateFromPoints( vector<double> rawValues,
                           vector<double> refValues)
m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues
pas  function calibrateFromPoints( rawValues: TDoubleArray,
                           refValues: TDoubleArray): LongInt
vb   procedure calibrateFromPoints( )
cs   int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)
java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)
py   def calibrateFromPoints( rawValues, refValues)
cmd  YGenericSensor target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→describe()genericsensor.describe()**YGenericSensor**

Returns a short text that describes unambiguously the instance of the generic sensor in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the generic sensor (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

genericsensor→get_advertisedValue()
genericsensor→advertisedValue()
genericsensor.get_advertisedValue()

YGenericSensor

Returns the current value of the generic sensor (no more than 6 characters).

```
js function get_advertisedValue( )  
nodejs function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YGenericSensor target get_advertisedValue
```

Returns :

a string corresponding to the current value of the generic sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

genericsensor→get_currentRawValue()
genericsensor→currentRawValue()
genericsensor.get_currentRawValue()

YGenericSensor

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue()
node.js	function get_currentRawValue()
php	function get_currentRawValue()
cpp	double get_currentRawValue()
m	-(double) currentRawValue
pas	function get_currentRawValue(): double
vb	function get_currentRawValue() As Double
cs	double get_currentRawValue()
java	double get_currentRawValue()
py	def get_currentRawValue()
cmd	YGenericSensor target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

genericsensor→get_currentValue()
genericsensor→currentValue()
genericsensor.get_currentValue()

YGenericSensor

Returns the current measured value.

```
js function get_currentValue( )  
nodejs function get_currentValue( )  
php function get_currentValue( )  
cpp double get_currentValue( )  
m -(double) currentValue  
pas function get_currentValue( ): double  
vb function get_currentValue( ) As Double  
cs double get_currentValue( )  
java double get_currentValue( )  
py def get_currentValue( )  
cmd YGenericSensor target get_currentValue
```

Returns :

a floating point number corresponding to the current measured value

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

genericsensor→getErrorMessage()
genericsensor→errorMessage()
genericsensor.getErrorMessage()

YGenericSensor

Returns the error message of the latest error with the generic sensor.

js	function getErrorMessage()
node.js	function getErrorMessage()
php	function getErrorMessage()
cpp	string getErrorMessage()
m	-(NSString*) errorMessage
pas	function getErrorMessage() : string
vb	function getErrorMessage() As String
cs	string getErrorMessage()
java	String getErrorMessage()
py	def getErrorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the generic sensor object

genericsensor→get_errorType()
genericsensor→errorType()
genericsensor.get_errorType()

YGenericSensor

Returns the numerical error code of the latest error with the generic sensor.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the generic sensor object

**genericsensor→get_friendlyName()
genericsensor→friendlyName()****YGenericSensor**

Returns a global identifier of the generic sensor in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the generic sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the generic sensor (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the generic sensor using logical names (ex: MyCustomName . relay1)

On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

genericsensor→get_functionDescriptor()
genericsensor→functionDescriptor()
genericsensor.get_functionDescriptor()

YGenericSensor

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**genericsensor→get_functionId()
genericsensor→functionId()****YGenericSensor**

Returns the hardware identifier of the generic sensor, without reference to the module.

js	function get_functionId()
nodejs	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the generic sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

genericsensor→get_hardwareId()
genericsensor→hardwareId()**YGenericSensor**

Returns the unique hardware identifier of the generic sensor in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the generic sensor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the generic sensor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

genericsensor→get_highestValue()
genericsensor→highestValue()
genericsensor.get_highestValue()

YGenericSensor

Returns the maximal value observed for the measure since the device was started.

js	function get_highestValue()
node.js	function get_highestValue()
php	function get_highestValue()
cpp	double get_highestValue()
m	-(double) highestValue
pas	function get_highestValue() : double
vb	function get_highestValue() As Double
cs	double get_highestValue()
java	double get_highestValue()
py	def get_highestValue()
cmd	YGenericSensor target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the measure since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

genericsensor→get_logFrequency()
genericsensor→logFrequency()
genericsensor.get_logFrequency()

YGenericSensor

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

```
js   function get_logFrequency( )  
nodejs function get_logFrequency( )  
php  function get_logFrequency( )  
cpp   string get_logFrequency( )  
m    -(NSString*) logFrequency  
pas   function get_logFrequency( ): string  
vb    function get_logFrequency( ) As String  
cs    string get_logFrequency( )  
java  String get_logFrequency( )  
py    def get_logFrequency( )  
cmd   YGenericSensor target get_logFrequency
```

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns `Y_LOGFREQUENCY_INVALID`.

genericsensor→get_logicalName()
genericsensor→logicalName()
genericsensor.get_logicalName()

YGenericSensor

Returns the logical name of the generic sensor.

js	function get_logicalName()
nodejs	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName() : string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YGenericSensor target get_logicalName

Returns :

a string corresponding to the logical name of the generic sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

genericsensor→get_lowestValue()
genericsensor→lowestValue()
genericsensor.get_lowestValue()

YGenericSensor

Returns the minimal value observed for the measure since the device was started.

js function **get_lowestValue()**
nodejs function **get_lowestValue()**
php function **get_lowestValue()**
cpp double **get_lowestValue()**
m -(double) lowestValue
pas function **get_lowestValue()**: double
vb function **get_lowestValue()** As Double
cs double **get_lowestValue()**
java double **get_lowestValue()**
py def **get_lowestValue()**
cmd YGenericSensor **target get_lowestValue**

Returns :

a floating point number corresponding to the minimal value observed for the measure since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

genericsensor→get_module()
genericsensor→module()
genericsensor.get_module()

YGenericSensor

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as on-line.

Returns :

an instance of YModule

genericsensor→get_module_async()
genericsensor→module_async()**YGenericSensor**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

genericsensor→get_recordedData()
genericsensor→recordedData()
genericsensor.get_recordedData()

YGenericSensor

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData(startTime, endTime)
node.js	function get_recordedData(startTime, endTime)
php	function get_recordedData(\$startTime, \$endTime)
cpp	YDataSet get_recordedData(s64 startTime, s64 endTime)
m	- (YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData(startTime: int64, endTime: int64): TYDataSet
vb	function get_recordedData() As YDataSet
cs	YDataSet get_recordedData(long startTime, long endTime)
java	YDataSet get_recordedData(long startTime, long endTime)
py	def get_recordedData(startTime, endTime)
cmd	YGenericSensor target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

genericsensor→get_reportFrequency()
genericsensor→reportFrequency()
genericsensor.get_reportFrequency()

YGenericSensor

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js   function get_reportFrequency( )  
nodejs function get_reportFrequency( )  
php  function get_reportFrequency( )  
cpp   string get_reportFrequency( )  
m    -(NSString*) reportFrequency  
pas   function get_reportFrequency( ): string  
vb    function get_reportFrequency( ) As String  
cs    string get_reportFrequency( )  
java  String get_reportFrequency( )  
py    def get_reportFrequency( )  
cmd   YGenericSensor target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns `Y_REPORTFREQUENCY_INVALID`.

genericsensor→get_resolution()
genericsensor→resolution()
genericsensor.get_resolution()

YGenericSensor

Returns the resolution of the measured values.

js	function get_resolution()
nodejs	function get_resolution()
php	function get_resolution()
cpp	double get_resolution()
m	-(double) resolution
pas	function get_resolution(): double
vb	function get_resolution() As Double
cs	double get_resolution()
java	double get_resolution()
py	def get_resolution()
cmd	YGenericSensor target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

genericsensor→get_signalRange()
genericsensor→signalRange()
genericsensor.get_signalRange()

YGenericSensor

Returns the electric signal range used by the sensor.

js	function get_signalRange()
nodejs	function get_signalRange()
php	function get_signalRange()
cpp	string get_signalRange()
m	-(NSString*) signalRange
pas	function get_signalRange() : string
vb	function get_signalRange() As String
cs	string get_signalRange()
java	String get_signalRange()
py	def get_signalRange()
cmd	YGenericSensor target get_signalRange

Returns :

a string corresponding to the electric signal range used by the sensor

On failure, throws an exception or returns Y_SIGNALRANGE_INVALID.

genericsensor→get_signalUnit()
genericsensor→signalUnit()
genericsensor.get_signalUnit()

YGenericSensor

Returns the measuring unit of the electrical signal used by the sensor.

js	function get_signalUnit()
nodejs	function get_signalUnit()
php	function get_signalUnit()
cpp	string get_signalUnit()
m	-(NSString*) signalUnit
pas	function get_signalUnit(): string
vb	function get_signalUnit() As String
cs	string get_signalUnit()
java	String get_signalUnit()
py	def get_signalUnit()
cmd	YGenericSensor target get_signalUnit

Returns :

a string corresponding to the measuring unit of the electrical signal used by the sensor

On failure, throws an exception or returns Y_SIGNALUNIT_INVALID.

genericsensor→get_signalValue()
genericsensor→signalValue()
genericsensor.get_signalValue()

YGenericSensor

Returns the measured value of the electrical signal used by the sensor.

js	function get_signalValue()
nodejs	function get_signalValue()
php	function get_signalValue()
cpp	double get_signalValue()
m	-(double) signalValue
pas	function get_signalValue() : double
vb	function get_signalValue() As Double
cs	double get_signalValue()
java	double get_signalValue()
py	def get_signalValue()
cmd	YGenericSensor target get_signalValue

Returns :

a floating point number corresponding to the measured value of the electrical signal used by the sensor

On failure, throws an exception or returns Y_SIGNALVALUE_INVALID.

genericsensor→get_unit()**YGenericSensor****genericsensor→unit()genericsensor.get_unit()**

Returns the measuring unit for the measure.

js	function get_unit()
nodejs	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YGenericSensor target get_unit

Returns :

a string corresponding to the measuring unit for the measure

On failure, throws an exception or returns **Y_UNIT_INVALID**.

genericsensor→get(userData)
genericsensor→userData()
genericsensor.get(userData)

YGenericSensor

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	function get(userData) { }
nodejs	function get(userData) { }
php	function get(userData) { }
cpp	void * get(userData) { }
m	- (void*) userData
pas	function get(userData) : Tobject { }
vb	function get(userData) As Object { }
cs	object get(userData) { }
java	Object get(userData) { }
py	def get(userData) { }

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

genericsensor→get_valueRange()
genericsensor→valueRange()
genericsensor.get_valueRange()

YGenericSensor

Returns the physical value range measured by the sensor.

js	function get_valueRange()
nodejs	function get_valueRange()
php	function get_valueRange()
cpp	string get_valueRange()
m	-(NSString*) valueRange
pas	function get_valueRange() : string
vb	function get_valueRange() As String
cs	string get_valueRange()
java	String get_valueRange()
py	def get_valueRange()
cmd	YGenericSensor target get_valueRange

Returns :

a string corresponding to the physical value range measured by the sensor

On failure, throws an exception or returns Y_VALUERANGE_INVALID.

genericsensor→isOnline()genericsensor.isOnline()**YGenericSensor**

Checks if the generic sensor is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the generic sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the generic sensor.

Returns :

true if the generic sensor can be reached, and false otherwise

genericsensor→isOnline_async()

YGenericSensor

Checks if the generic sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the generic sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

genericsensor→load()genericsensor.load()**YGenericSensor**

Preloads the generic sensor cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

genericsensor→loadCalibrationPoints() genericsensor.loadCalibrationPoints()

YGenericSensor

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php  function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt

vb   procedure loadCalibrationPoints( )

cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def loadCalibrationPoints( rawValues, refValues)

cmd  YGenericSensor target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→load_async()**YGenericSensor**

Preloads the generic sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

genericsensor→nextGenericSensor()
genericsensor.nextGenericSensor()**YGenericSensor**

Continues the enumeration of generic sensors started using `yFirstGenericSensor()`.

<code>js</code>	<code>function nextGenericSensor()</code>
<code>nodejs</code>	<code>function nextGenericSensor()</code>
<code>php</code>	<code>function nextGenericSensor()</code>
<code>cpp</code>	<code>YGenericSensor * nextGenericSensor()</code>
<code>m</code>	<code>-(YGenericSensor*) nextGenericSensor</code>
<code>pas</code>	<code>function nextGenericSensor(): TYGenericSensor</code>
<code>vb</code>	<code>function nextGenericSensor() As YGenericSensor</code>
<code>cs</code>	<code>YGenericSensor nextGenericSensor()</code>
<code>java</code>	<code>YGenericSensor nextGenericSensor()</code>
<code>py</code>	<code>def nextGenericSensor()</code>

Returns :

a pointer to a `YGenericSensor` object, corresponding to a generic sensor currently online, or a null pointer if there are no more generic sensors to enumerate.

genericsensor→registerTimedReportCallback()
genericsensor.registerTimedReportCallback()**YGenericSensor**

Registers the callback function that is invoked on every periodic timed notification.

```
js   function registerTimedReportCallback( callback)
node.js function registerTimedReportCallback( callback)
php  function registerTimedReportCallback( $callback)
cpp   int registerTimedReportCallback( YGenericSensorTimedReportCallback callback)
m     -(int) registerTimedReportCallback : (YGenericSensorTimedReportCallback) callback
pas   function registerTimedReportCallback( callback: TYGenericSensorTimedReportCallback): LongInt
vb    function registerTimedReportCallback( ) As Integer
cs    int registerTimedReportCallback( TimedReportCallback callback)
java  int registerTimedReportCallback( TimedReportCallback callback)
py    def registerTimedReportCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

genericsensor→registerValueCallback()
genericsensor.registerValueCallback()**YGenericSensor**

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback)
nodejs function registerValueCallback( callback)
php  function registerValueCallback( $callback)
cpp   int registerValueCallback( YGenericSensorValueCallback callback)
m    -(int) registerValueCallback : (YGenericSensorValueCallback) callback
pas   function registerValueCallback( callback: TYGenericSensorValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs   int registerValueCallback( ValueCallback callback)
java  int registerValueCallback( UpdateCallback callback)
py    def registerValueCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

genericsensor→set_highestValue()
genericsensor→setHighestValue()
genericsensor.set_highestValue()

YGenericSensor

Changes the recorded maximal value observed.

```
js function set_highestValue( newval)
nodejs function set_highestValue( newval)
php function set_highestValue( $newval)
cpp int set_highestValue( double newval)
m -(int) setHighestValue : (double) newval
pas function set_highestValue( newval: double): integer
vb function set_highestValue( ByVal newval As Double) As Integer
cs int set_highestValue( double newval)
java int set_highestValue( double newval)
py def set_highestValue( newval)
cmd YGenericSensor target set_highestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_logFrequency()
genericsensor→setLogFrequency()
genericsensor.set_logFrequency()

YGenericSensor

Changes the datalogger recording frequency for this function.

js	function set_logFrequency(newval)
nodejs	function set_logFrequency(newval)
php	function set_logFrequency(\$newval)
cpp	int set_logFrequency(const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency(newval: string): integer
vb	function set_logFrequency(ByVal newval As String) As Integer
cs	int set_logFrequency(string newval)
java	int set_logFrequency(String newval)
py	def set_logFrequency(newval)
cmd	YGenericSensor target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_logicalName()
genericsensor→setLogicalName()
genericsensor.set_logicalName()

YGenericSensor

Changes the logical name of the generic sensor.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YGenericSensor target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the generic sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

genericsensor→set_lowestValue()
genericsensor→setLowestValue()
genericsensor.set_lowestValue()

YGenericSensor

Changes the recorded minimal value observed.

```
js function set_lowestValue( newval)
nodejs function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YGenericSensor target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_reportFrequency()
genericsensor→setReportFrequency()
genericsensor.set_reportFrequency()

YGenericSensor

Changes the timed value notification frequency for this function.

js	function set_reportFrequency(newval)
nodejs	function set_reportFrequency(newval)
php	function set_reportFrequency(\$newval)
cpp	int set_reportFrequency(const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency(newval: string): integer
vb	function set_reportFrequency(ByVal newval As String) As Integer
cs	int set_reportFrequency(string newval)
java	int set_reportFrequency(String newval)
py	def set_reportFrequency(newval)
cmd	YGenericSensor target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_resolution()
genericsensor→setResolution()
genericsensor.set_resolution()

YGenericSensor

Changes the resolution of the measured physical values.

js	function set_resolution(newval)
nodejs	function set_resolution(newval)
php	function set_resolution(\$newval)
cpp	int set_resolution(double newval)
m	- (int) setResolution : (double) newval
pas	function set_resolution(newval: double): integer
vb	function set_resolution(ByVal newval As Double) As Integer
cs	int set_resolution(double newval)
java	int set_resolution(double newval)
py	def set_resolution(newval)
cmd	YGenericSensor target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_signalRange()
genericsensor→setSignalRange()
genericsensor.set_signalRange()

YGenericSensor

Changes the electric signal range used by the sensor.

```
js function set_signalRange( newval)
nodejs function set_signalRange( newval)
php function set_signalRange( $newval)
cpp int set_signalRange( const string& newval)
m -(int) setSignalRange : (NSString*) newval
pas function set_signalRange( newval: string): integer
vb function set_signalRange( ByVal newval As String) As Integer
cs int set_signalRange( string newval)
java int set_signalRange( String newval)
py def set_signalRange( newval)
cmd YGenericSensor target set_signalRange newval
```

Parameters :

newval a string corresponding to the electric signal range used by the sensor

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set_unit() genericsensor→setUnit()genericsensor.set_unit()

YGenericSensor

Changes the measuring unit for the measured value.

js	function set_unit(newval)
nodejs	function set_unit(newval)
php	function set_unit(\$newval)
cpp	int set_unit(const string& newval)
m	-(int) setUnit : (NSString*) newval
pas	function set_unit(newval: string): integer
vb	function set_unit(ByVal newval As String) As Integer
cs	int set_unit(string newval)
java	int set_unit(String newval)
py	def set_unit(newval)
cmd	YGenericSensor target set_unit newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the measuring unit for the measured value

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→set(userData)
genericsensor→setUserData()
genericsensor.set(userData)

YGenericSensor

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
nodejs	function set(userData)
php	function set(userData)
cpp	void set(userData) void* data
m	-(void) set(userData : (void*) data
pas	procedure set(userData) data : Tobject
vb	procedure set(userData) ByVal data As Object
cs	void set(userData) object data
java	void set(userData) Object data
py	def set(userData) data

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

genericsensor→set_valueRange()
genericsensor→setValueRange()
genericsensor.set_valueRange()

YGenericSensor

Changes the physical value range measured by the sensor.

```
js   function set_valueRange( newval)
nodejs function set_valueRange( newval)
php  function set_valueRange( $newval)
cpp  int set_valueRange( const string& newval)
m    -(int) setValueRange : (NSString*) newval
pas   function set_valueRange( newval: string): integer
vb   function set_valueRange( ByVal newval As String) As Integer
cs   int set_valueRange( string newval)
java  int set_valueRange( String newval)
py   def set_valueRange( newval)
cmd  YGenericSensor target set_valueRange newval
```

The range change may have a side effect on the display resolution, as it may be adapted automatically.

Parameters :

newval a string corresponding to the physical value range measured by the sensor

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

genericsensor→wait_async()

YGenericSensor

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.18. Gyroscope function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_gyro.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YGyro = yoctolib.YGyro;
php	require_once('yocto_gyro.php');
cpp	#include "yocto_gyro.h"
m	#import "yocto_gyro.h"
pas	uses yocto_gyro;
vb	yocto_gyro.vb
cs	yocto_gyro.cs
java	import com.yoctopuce.YoctoAPI.YGyro;
py	from yocto_gyro import *

Global functions

yocto_gyro(func)

Retrieves a gyroscope for a given identifier.

yFirstGyro()

Starts the enumeration of gyroscopes currently accessible.

YGyro methods

gyro->calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

gyro->describe()

Returns a short text that describes unambiguously the instance of the gyroscope in the form TYPE (NAME)=SERIAL . FUNCTIONID.

gyro->get_advertisedValue()

Returns the current value of the gyroscope (no more than 6 characters).

gyro->get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

gyro->get_currentValue()

Returns the current value of the angular velocity.

gyro->get_errorMessage()

Returns the error message of the latest error with the gyroscope.

gyro->get_errorType()

Returns the numerical error code of the latest error with the gyroscope.

gyro->get_friendlyName()

Returns a global identifier of the gyroscope in the format MODULE_NAME . FUNCTION_NAME.

gyro->get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

gyro->get_functionId()

Returns the hardware identifier of the gyroscope, without reference to the module.

gyro->get_hardwareId()

Returns the unique hardware identifier of the gyroscope in the form SERIAL . FUNCTIONID.

gyro→get_heading()	Returns the estimated heading angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.
gyro→get_highestValue()	Returns the maximal value observed for the angular velocity since the device was started.
gyro→get_logFrequency()	Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.
gyro→get_logicalName()	Returns the logical name of the gyroscope.
gyro→get_lowestValue()	Returns the minimal value observed for the angular velocity since the device was started.
gyro→get_module()	Gets the YModule object for the device on which the function is located.
gyro→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located (asynchronous version).
gyro→get_pitch()	Returns the estimated pitch angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.
gyro→get_quaternionW()	Returns the w component (real part) of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.
gyro→get_quaternionX()	Returns the x component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.
gyro→get_quaternionY()	Returns the y component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.
gyro→get_quaternionZ()	Returns the z component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.
gyro→get_recordedData(startTime, endTime)	Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.
gyro→get_reportFrequency()	Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.
gyro→get_resolution()	Returns the resolution of the measured values.
gyro→get_roll()	Returns the estimated roll angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.
gyro→get_unit()	Returns the measuring unit for the angular velocity.
gyro→get_userData()	Returns the value of the userData attribute, as previously stored using method set(userData).
gyro→get_xValue()	Returns the angular velocity around the X axis of the device, as a floating point number.
gyro→get_yValue()	

Returns the angular velocity around the Y axis of the device, as a floating point number.

gyro→get_zValue()

Returns the angular velocity around the Z axis of the device, as a floating point number.

gyro→isOnline()

Checks if the gyroscope is currently reachable, without raising any error.

gyro→isOnline_async(callback, context)

Checks if the gyroscope is currently reachable, without raising any error (asynchronous version).

gyro→load(msValidity)

Preloads the gyroscope cache with a specified validity duration.

gyro→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

gyro→load_async(msValidity, callback, context)

Preloads the gyroscope cache with a specified validity duration (asynchronous version).

gyro→nextGyro()

Continues the enumeration of gyroscopes started using yFirstGyro().

gyro→registerAnglesCallback(callback)

Registers a callback function that will be invoked each time that the estimated device orientation has changed.

gyro→registerQuaternionCallback(callback)

Registers a callback function that will be invoked each time that the estimated device orientation has changed.

gyro→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

gyro→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

gyro→set_highestValue(newval)

Changes the recorded maximal value observed.

gyro→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

gyro→set_logicalName(newval)

Changes the logical name of the gyroscope.

gyro→set_lowestValue(newval)

Changes the recorded minimal value observed.

gyro→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

gyro→set_resolution(newval)

Changes the resolution of the measured physical values.

gyro→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

gyro→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YGyro.FindGyro() yFindGyro()yFindGyro()

YGyro

Retrieves a gyroscope for a given identifier.

```
js function yFindGyro( func)
node.js function FindGyro( func)
php function yFindGyro( $func)
cpp YGyro* yFindGyro( string func)
m +(YGyro*) yFindGyro : (NSString*) func
pas function yFindGyro( func: string): TYGyro
vb function yFindGyro( ByVal func As String) As YGyro
cs YGyro FindGyro( string func)
java YGyro FindGyro( String func)
def FindGyro( func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the gyroscope is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YGyro.isOnline()` to test if the gyroscope is indeed online at a given time. In case of ambiguity when looking for a gyroscope by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the gyroscope

Returns :

a `YGyro` object allowing you to drive the gyroscope.

YGyro.FirstGyro() yFirstGyro()yFirstGyro()

YGyro

Starts the enumeration of gyroscopes currently accessible.

```
js function yFirstGyro( )
nodejs function FirstGyro( )
php function yFirstGyro( )
cpp YGyro* yFirstGyro( )
m YGyro* yFirstGyro( )
pas function yFirstGyro( ): TYGyro
vb function yFirstGyro( ) As YGyro
cs YGyro FirstGyro( )
java YGyro FirstGyro( )
py def FirstGyro( )
```

Use the method `YGyro.nextGyro()` to iterate on next gyroscopes.

Returns :

a pointer to a `YGyro` object, corresponding to the first gyro currently online, or a `null` pointer if there are none.

gyro→calibrateFromPoints() gyro.calibrateFromPoints()

YGyro

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php   function calibrateFromPoints( $rawValues, $refValues)
cpp    int calibrateFromPoints( vector<double> rawValues,
                               vector<double> refValues)

m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                : (NSMutableArray*) refValues

pas   function calibrateFromPoints( rawValues: TDoubleArray,
                                   refValues: TDoubleArray): LongInt

vb    procedure calibrateFromPoints( )

cs    int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java   int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py    def calibrateFromPoints( rawValues, refValues)
cmd   YGyro target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→describe()gyro.describe()**YGyro**

Returns a short text that describes unambiguously the instance of the gyroscope in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the gyroscope (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

gyro→get_advertisedValue() YGyro
gyro→advertisedValue()gyro.get_advertisedValue()

Returns the current value of the gyroscope (no more than 6 characters).

```
js function get_advertisedValue( )  
node.js function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YGyro target get_advertisedValue
```

Returns :

a string corresponding to the current value of the gyroscope (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

gyro→get_currentRawValue()**YGyro****gyro→currentRawValue()gyro.get_currentRawValue()**

Returns the uncalibrated, unrounded raw value returned by the sensor.

```
js function get_currentRawValue( )
nodejs function get_currentRawValue( )
php function get_currentRawValue( )
cpp double get_currentRawValue( )
m -(double) currentRawValue
pas function get_currentRawValue( ): double
vb function get_currentRawValue( ) As Double
cs double get_currentRawValue( )
java double get_currentRawValue( )
py def get_currentRawValue( )
cmd YGyro target get_currentRawValue
```

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

gyro→get_currentValue()
gyro→currentValue()gyro.get_currentValue()**YGyro**

Returns the current value of the angular velocity.

```
js function get_currentValue( )
node.js function get_currentValue( )
php function get_currentValue( )
cpp double get_currentValue( )
m -(double) currentValue
pas function get_currentValue( ): double
vb function get_currentValue( ) As Double
cs double get_currentValue( )
java double get_currentValue( )
py def get_currentValue( )
cmd YGyro target get_currentValue
```

Returns :

a floating point number corresponding to the current value of the angular velocity

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

gyro→get_errorMessage() gyro→errorMessage()gyro.get_errorMessage()

YGYro

Returns the error message of the latest error with the gyroscope.

```
js   function get_errorMessage( )  
nodejs function get_errorMessage( )  
php  function get_errorMessage( )  
cpp   string get_errorMessage( )  
m    -(NSString*) errorMessage  
pas   function get_errorMessage( ): string  
vb    function get_errorMessage( ) As String  
cs   string get_errorMessage( )  
java  String get_errorMessage( )  
py   def get_errorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the gyroscope object

gyro→get_errorType()
gyro→errorType()gyro.get_errorType()**YGyro**

Returns the numerical error code of the latest error with the gyroscope.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the gyroscope object

gyro→get_friendlyName()
gyro→friendlyName()**YGyro**

Returns a global identifier of the gyroscope in the format MODULE_NAME . FUNCTION_NAME.

```
js function get_friendlyName( )  
nodejs function get_friendlyName( )  
php function get_friendlyName( )  
cpp string get_friendlyName( )  
m -(NSString*) friendlyName  
cs string get_friendlyName( )  
java String get_friendlyName( )  
py def get_friendlyName( )
```

The returned string uses the logical names of the module and of the gyroscope if they are defined, otherwise the serial number of the module and the hardware identifier of the gyroscope (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the gyroscope using logical names (ex: MyCustomName . relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

gyro→get_functionDescriptor()
gyro→functionDescriptor()
gyro.get_functionDescriptor()

YGyro

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**gyro→get_functionId()
gyro→functionId()****YGyro**

Returns the hardware identifier of the gyroscope, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the gyroscope (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

gyro→get_hardwareId()
gyro→hardwareId()**YGyro**

Returns the unique hardware identifier of the gyroscope in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the gyroscope. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the gyroscope (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

gyro→get_heading()**YGyro****gyro→heading()gyro.get_heading()**

Returns the estimated heading angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

```
js function get_heading( )
nodejs function get_heading( )
php function get_heading( )
cpp double get_heading( )
m -(double) heading
pas function get_heading( ): double
vb function get_heading( ) As Double
cs double get_heading( )
java double get_heading( )
py def get_heading( )
```

The axis corresponding to the heading can be mapped to any of the device X, Y or Z physical directions using methods of the class `YRefFrame`.

Returns :

a floating-point number corresponding to heading in degrees, between 0 and 360.

gyro→get_highestValue() YGyro
gyro→highestValue()gyro.get_highestValue()

Returns the maximal value observed for the angular velocity since the device was started.

```
js function get_highestValue( )  
node.js function get_highestValue( )  
php function get_highestValue( )  
cpp double get_highestValue( )  
m -(double) highestValue  
pas function get_highestValue( ): double  
vb function get_highestValue( ) As Double  
cs double get_highestValue( )  
java double get_highestValue( )  
py def get_highestValue( )  
cmd YGyro target get_highestValue
```

Returns :

a floating point number corresponding to the maximal value observed for the angular velocity since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

gyro→get_logFrequency()**YGyro****gyro→logFrequency()gyro.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YGyro target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

gyro→get_logicalName()
gyro→logicalName()gyro.get_logicalName()**YGyro**

Returns the logical name of the gyroscope.

js	function get_logicalName()
node.js	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YGyro target get_logicalName

Returns :

a string corresponding to the logical name of the gyroscope. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

gyro→get_lowestValue()**YGyro****gyro→lowestValue()gyro.get_lowestValue()**

Returns the minimal value observed for the angular velocity since the device was started.

```
js   function get_lowestValue( )  
nodejs function get_lowestValue( )  
php  function get_lowestValue( )  
cpp   double get_lowestValue( )  
m    -(double) lowestValue  
pas   function get_lowestValue( ): double  
vb    function get_lowestValue( ) As Double  
cs    double get_lowestValue( )  
java  double get_lowestValue( )  
py    def get_lowestValue( )  
cmd   YGyro target get_lowestValue
```

Returns :

a floating point number corresponding to the minimal value observed for the angular velocity since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

gyro→get_module()
gyro→module()gyro.get_module()**YGyro**

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
node.js	function get_module()
php	function get_module()
cpp	<code>YModule * get_module()</code>
m	<code>-(YModule*) module</code>
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	<code>YModule get_module()</code>
java	<code>YModule get_module()</code>
py	<code>def get_module()</code>

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

gyro→get_module_async() gyro→module_async()

YGyro

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

gyro→get_pitch()
gyro→pitch()gyro.get_pitch()**YGyro**

Returns the estimated pitch angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

```
js function get_pitch( )
nodejs function get_pitch( )
php function get_pitch( )
cpp double get_pitch( )
m -(double) pitch
pas function get_pitch( ): double
vb function get_pitch( ) As Double
cs double get_pitch( )
java double get_pitch( )
py def get_pitch( )
```

The axis corresponding to the pitch angle can be mapped to any of the device X, Y or Z physical directions using methods of the class `YRefFrame`.

Returns :

a floating-point number corresponding to pitch angle in degrees, between -90 and +90.

gyro→get_quaternionW()**YGyro****gyro→quaternionW()gyro.get_quaternionW()**

Returns the w component (real part) of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

```
js function get_quaternionW( )
nodejs function get_quaternionW( )
php function get_quaternionW( )
cpp double get_quaternionW( )
m -(double) quaternionW
pas function get_quaternionW( ): double
vb function get_quaternionW( ) As Double
cs double get_quaternionW( )
java double get_quaternionW( )
py def get_quaternionW( )
```

Returns :

a floating-point number corresponding to the w component of the quaternion.

gyro→get_quaternionX()
gyro→quaternionX()gyro.get_quaternionX()**YGyro**

Returns the x component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

js	function get_quaternionX()
nodejs	function get_quaternionX()
php	function get_quaternionX()
cpp	double get_quaternionX()
m	-(double) quaternionX
pas	function get_quaternionX(): double
vb	function get_quaternionX() As Double
cs	double get_quaternionX()
java	double get_quaternionX()
py	def get_quaternionX()

The x component is mostly correlated with rotations on the roll axis.

Returns :

a floating-point number corresponding to the x component of the quaternion.

gyro→get_quaternionY()**YGyro****gyro→quaternionY()gyro.get_quaternionY()**

Returns the *y* component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

```
js function get_quaternionY( )
nodejs function get_quaternionY( )
php function get_quaternionY( )
cpp double get_quaternionY( )
m -(double) quaternionY
pas function get_quaternionY( ): double
vb function get_quaternionY( ) As Double
cs double get_quaternionY( )
java double get_quaternionY( )
py def get_quaternionY( )
```

The *y* component is mostly correlated with rotations on the pitch axis.

Returns :

a floating-point number corresponding to the *y* component of the quaternion.

gyro→get_quaternionZ()
gyro→quaternionZ()gyro.get_quaternionZ()**YGyro**

Returns the x component of the quaternion describing the device estimated orientation, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

```
js function get_quaternionZ( )
nodejs function get_quaternionZ( )
php function get_quaternionZ( )
cpp double get_quaternionZ( )
m -(double) quaternionZ
pas function get_quaternionZ( ): double
vb function get_quaternionZ( ) As Double
cs double get_quaternionZ( )
java double get_quaternionZ( )
py def get_quaternionZ( )
```

The x component is mostly correlated with changes of heading.

Returns :

a floating-point number corresponding to the z component of the quaternion.

gyro→get_recordedData() gyro→recordedData()gyro.get_recordedData()

YGyro

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

```

js   function get_recordedData( startTime, endTime)
nodejs function get_recordedData( startTime, endTime)
php  function get_recordedData( $startTime, $endTime)
cpp   YDataSet get_recordedData( s64 startTime, s64 endTime)
m     -(YDataSet*) recordedData : (s64) startTime
          : (s64) endTime

pas   function get_recordedData( startTime: int64, endTime: int64): TYDataSet
vb    function get_recordedData( ) As YDataSet
cs    YDataSet get_recordedData( long startTime, long endTime)
java   YDataSet get_recordedData( long startTime, long endTime)
py    def get_recordedData( startTime, endTime)
cmd   YGyro target get_recordedData startTime endTime

```

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

gyro→get_reportFrequency() gyro→reportFrequency()gyro.get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js  function get_reportFrequency( )  
nodejs function get_reportFrequency( )  
php  function get_reportFrequency( )  
cpp   string get_reportFrequency( )  
m    -(NSString*) reportFrequency  
pas   function get_reportFrequency( ): string  
vb    function get_reportFrequency( ) As String  
cs    string get_reportFrequency( )  
java  String get_reportFrequency( )  
py    def get_reportFrequency( )  
cmd  YGyro target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

gyro→get_resolution() gyro→resolution()gyro.get_resolution()

YGYro

Returns the resolution of the measured values.

```
js function get_resolution( )
nodejs function get_resolution( )
php function get_resolution( )
cpp double get_resolution( )
m -(double) resolution
pas function get_resolution( ): double
vb function get_resolution( ) As Double
cs double get_resolution( )
java double get_resolution( )
py def get_resolution( )
cmd YGYro target get_resolution
```

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

gyro→get_roll()**YGyro****gyro→roll()gyro.get_roll()**

Returns the estimated roll angle, based on the integration of gyroscopic measures combined with acceleration and magnetic field measurements.

```
js function get_roll( )
nodejs function get_roll( )
php function get_roll( )
cpp double get_roll( )
m -(double) roll
pas function get_roll( ): double
vb function get_roll( ) As Double
cs double get_roll( )
java double get_roll( )
py def get_roll( )
```

The axis corresponding to the roll angle can be mapped to any of the device X, Y or Z physical directions using methods of the class `YRefFrame`.

Returns :

a floating-point number corresponding to roll angle in degrees, between -180 and +180.

gyro→get_unit()**YGyro****gyro→unit()gyro.get_unit()**

Returns the measuring unit for the angular velocity.

js	function get_unit()
node.js	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YGyro target get_unit

Returns :

a string corresponding to the measuring unit for the angular velocity

On failure, throws an exception or returns Y_UNIT_INVALID.

gyro→get(userData)
gyro→userData()gyro.get(userData)**YGyro**

Returns the value of the userData attribute, as previously stored using method set(userData).

```
js function get(userData) 
node.js function get(userData) 
php function get(userData) 
cpp void * get(userData) 
m -(void*) userData 
pas function get(userData): Tobject 
vb function get(userData) As Object 
cs object get(userData) 
java Object get(userData) 
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

gyro→get_xValue() gyro→xValue()gyro.get_xValue()

YGyro

Returns the angular velocity around the X axis of the device, as a floating point number.

js	function get_xValue()
node.js	function get_xValue()
php	function get_xValue()
cpp	double get_xValue()
m	-(double) xValue
pas	function get_xValue() : double
vb	function get_xValue() As Double
cs	double get_xValue()
java	double get_xValue()
py	def get_xValue()

Returns :

a floating point number corresponding to the angular velocity around the X axis of the device, as a floating point number

On failure, throws an exception or returns Y_XVALUE_INVALID.

gyro→get_yValue()**YGyro****gyro→yValue()gyro.get_yValue()**

Returns the angular velocity around the Y axis of the device, as a floating point number.

js	function get_yValue()
node.js	function get_yValue()
php	function get_yValue()
cpp	double get_yValue()
m	-{double} yValue
pas	function get_yValue() : double
vb	function get_yValue() As Double
cs	double get_yValue()
java	double get_yValue()
py	def get_yValue()

Returns :

a floating point number corresponding to the angular velocity around the Y axis of the device, as a floating point number

On failure, throws an exception or returns Y_YVALUE_INVALID.

gyro→get_zValue()**YGyro****gyro→zValue()gyro.get_zValue()**

Returns the angular velocity around the Z axis of the device, as a floating point number.

js function **get_zValue()****nodejs** function **get_zValue()****php** function **get_zValue()****cpp** double **get_zValue()****m** -(double) zValue**pas** function **get_zValue(): double****vb** function **get_zValue() As Double****cs** double **get_zValue()****java** double **get_zValue()****py** def **get_zValue()****Returns :**

a floating point number corresponding to the angular velocity around the Z axis of the device, as a floating point number

On failure, throws an exception or returns **Y_ZVALUE_INVALID**.

gyro→isOnline()gyro.isOnline()**YGyro**

Checks if the gyroscope is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the gyroscope in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the gyroscope.

Returns :

true if the gyroscope can be reached, and false otherwise

gyro→isOnline_async()

YGyro

Checks if the gyroscope is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the gyroscope in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

gyro→load()gyro.load()**YGyro**

Preloads the gyroscope cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

gyro→loadCalibrationPoints() gyro.loadCalibrationPoints()

YGyro

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php  function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt

vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def loadCalibrationPoints( rawValues, refValues)
cmd  YGyro target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→load_async()**YGyro**

Preloads the gyroscope cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

gyro→nextGyro()gyro.nextGyro()**YGYro**

Continues the enumeration of gyroscopes started using `yFirstGyro()`.

js	function nextGyro()
nodejs	function nextGyro()
php	function nextGyro()
cpp	YGYro * nextGyro()
m	-(YGYro*) nextGyro
pas	function nextGyro() : TGYro
vb	function nextGyro() As YGYro
cs	YGYro nextGyro()
java	YGYro nextGyro()
py	def nextGyro()

Returns :

a pointer to a `YGYro` object, corresponding to a gyroscope currently online, or a `null` pointer if there are no more gyroscopes to enumerate.

**gyro→registerAnglesCallback()
gyro.registerAnglesCallback()****YGyro**

Registers a callback function that will be invoked each time that the estimated device orientation has changed.

```
js  function registerAnglesCallback( callback)
nodejs function registerAnglesCallback( callback)
php  function registerAnglesCallback( $callback)
cpp   int registerAnglesCallback( YAnglesCallback callback)
m    -(int) registerAnglesCallback : (YAnglesCallback) callback
pas   function registerAnglesCallback( callback: TYAnglesCallback): LongInt
vb    function registerAnglesCallback( ) As Integer
cs   int registerAnglesCallback( YAnglesCallback callback)
java  int registerAnglesCallback( YAnglesCallback callback)
py   def registerAnglesCallback( callback)
```

The call frequency is typically around 95Hz during a move. The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to invoke, or a null pointer. The callback function should take four arguments: the YGyro object of the turning device, and the floating point values of the three angles roll, pitch and heading in degrees (as floating-point numbers).

gyro→registerQuaternionCallback() gyro.registerQuaternionCallback()

YGyro

Registers a callback function that will be invoked each time that the estimated device orientation has changed.

```

js   function registerQuaternionCallback( callback)
nodejs function registerQuaternionCallback( callback)
php  function registerQuaternionCallback( $callback)
cpp   int registerQuaternionCallback( YQuatCallback callback)
m    -(int) registerQuaternionCallback : (YQuatCallback) callback
pas   function registerQuaternionCallback( callback: TYQuatCallback): LongInt
vb    function registerQuaternionCallback( ) As Integer
cs   int registerQuaternionCallback( YQuatCallback callback)
java  int registerQuaternionCallback( YQuatCallback callback)
py    def registerQuaternionCallback( callback)

```

The call frequency is typically around 95Hz during a move. The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to invoke, or a null pointer. The callback function should take five arguments: the YGyro object of the turning device, and the floating point values of the four components w, x, y and z (as floating-point numbers).

gyro→registerTimedReportCallback() gyro.registerTimedReportCallback()

YGyro

Registers the callback function that is invoked on every periodic timed notification.

```
js   function registerTimedReportCallback( callback )
node.js function registerTimedReportCallback( callback )
php  function registerTimedReportCallback( $callback )
cpp   int registerTimedReportCallback( YGyroTimedReportCallback callback )
m    -(int) registerTimedReportCallback : (YGyroTimedReportCallback) callback
pas   function registerTimedReportCallback( callback: TYGyroTimedReportCallback): LongInt
vb    function registerTimedReportCallback( ) As Integer
cs    int registerTimedReportCallback( TimedReportCallback callback )
java  int registerTimedReportCallback( TimedReportCallback callback )
py    def registerTimedReportCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

gyro→registerValueCallback() gyro.registerValueCallback()

YGYro

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback)
nodejs function registerValueCallback( callback)
php  function registerValueCallback( $callback)
cpp   int registerValueCallback( YGyroValueCallback callback)
m    -(int) registerValueCallback : (YGyroValueCallback) callback
pas   function registerValueCallback( callback: TYGYroValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs   int registerValueCallback( ValueCallback callback)
java  int registerValueCallback( UpdateCallback callback)
py    def registerValueCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

gyro→set_highestValue() gyro→setHighestValue()gyro.set_highestValue()

YGYro

Changes the recorded maximal value observed.

```
js function set_highestValue( newval)
node.js function set_highestValue( newval)
php function set_highestValue( $newval)
cpp int set_highestValue( double newval)
m -(int) setHighestValue : (double) newval
pas function set_highestValue( newval: double): integer
vb function set_highestValue( ByVal newval As Double) As Integer
cs int set_highestValue( double newval)
java int set_highestValue( double newval)
py def set_highestValue( newval)
cmd YGYro target set_highestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→set_logFrequency()**YGyro****gyro→setLogFrequency()gyro.set_logFrequency()**

Changes the datalogger recording frequency for this function.

```
js   function set_logFrequency( newval)
nodejs function set_logFrequency( newval)
php  function set_logFrequency( $newval)
cpp   int set_logFrequency( const string& newval)
m    -(int) setLogFrequency : (NSString*) newval
pas   function set_logFrequency( newval: string): integer
vb    function set_logFrequency( ByVal newval As String) As Integer
cs    int set_logFrequency( string newval)
java  int set_logFrequency( String newval)
py    def set_logFrequency( newval)
cmd   YGyro target set_logFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→set_logicalName()YGyro

Changes the logical name of the gyroscope.

```
js function set_logicalName( newval)
node.js function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YGyro target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the gyroscope.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

gyro→set_lowestValue() gyro→setLowestValue()gyro.set_lowestValue()

YGYro

Changes the recorded minimal value observed.

```
js function set_lowestValue( newval)
nodejs function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YGYro target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→set_reportFrequency()	YGyro
gyro→setReportFrequency()	
gyro.set_reportFrequency()	

Changes the timed value notification frequency for this function.

```
js    function set_reportFrequency( newval)
nodejs function set_reportFrequency( newval)
php   function set_reportFrequency( $newval)
cpp   int set_reportFrequency( const string& newval)
m     -(int) setReportFrequency : (NSString*) newval
pas   function set_reportFrequency( newval: string): integer
vb    function set_reportFrequency( ByVal newval As String) As Integer
cs    int set_reportFrequency( string newval)
java  int set_reportFrequency( String newval)
py    def set_reportFrequency( newval)
cmd   YGyro target set_reportFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→set_resolution()**YGyro****gyro→setResolution()gyro.set_resolution()**

Changes the resolution of the measured physical values.

```
js   function set_resolution( newval)
nodejs function set_resolution( newval)
php  function set_resolution( $newval)
cpp   int set_resolution( double newval)
m    -(int) setResolution : (double) newval
pas   function set_resolution( newval: double): integer
vb    function set_resolution( ByVal newval As Double) As Integer
cs   int set_resolution( double newval)
java  int set_resolution( double newval)
py    def set_resolution( newval)
cmd  YGyro target set_resolution newval
```

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

gyro→set(userData)
gyro→setUserData()gyro.set(userData)**YGyro**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData)
cpp	void set(userData)
m	-(void) setUserData : (void*) data
pas	procedure set(userData) (data : Tobject)
vb	procedure set(userData) ByVal data As Object)
cs	void set(userData) (object data)
java	void set(userData) (Object data)
py	def set(userData) (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

gyro→wait_async()

YGyro

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context )
nodejs function wait_async( callback, context )
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.19. Yocto-hub port interface

YHubPort objects provide control over the power supply for every YoctoHub port and provide information about the device connected to it. The logical name of a YHubPort is always automatically set to the unique serial number of the Yoctopuce device connected to it.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_hubport.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YHubPort = yoctolib.YHubPort;
php	require_once('yocto_hubport.php');
cpp	#include "yocto_hubport.h"
m	#import "yocto_hubport.h"
pas	uses yocto_hubport;
vb	yocto_hubport.vb
cs	yocto_hubport.cs
java	import com.yoctopuce.YoctoAPI.YHubPort;
py	from yocto_hubport import *

Global functions

yFindHubPort(func)

Retrieves a Yocto-hub port for a given identifier.

yFirstHubPort()

Starts the enumeration of Yocto-hub ports currently accessible.

YHubPort methods

hubport→describe()

Returns a short text that describes unambiguously the instance of the Yocto-hub port in the form TYPE (NAME)=SERIAL . FUNCTIONID.

hubport→get_advertisedValue()

Returns the current value of the Yocto-hub port (no more than 6 characters).

hubport→get_baudRate()

Returns the current baud rate used by this Yocto-hub port, in kbps.

hubport→get_enabled()

Returns true if the Yocto-hub port is powered, false otherwise.

hubport→get_errorMessage()

Returns the error message of the latest error with the Yocto-hub port.

hubport→get_errorType()

Returns the numerical error code of the latest error with the Yocto-hub port.

hubport→get_friendlyName()

Returns a global identifier of the Yocto-hub port in the format MODULE_NAME . FUNCTION_NAME.

hubport→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

hubport→get_functionId()

Returns the hardware identifier of the Yocto-hub port, without reference to the module.

hubport→get_hardwareId()

Returns the unique hardware identifier of the Yocto-hub port in the form SERIAL . FUNCTIONID.

hubport→get_logicalName()

Returns the logical name of the Yocto-hub port.

hubport→get_module()	Gets the YModule object for the device on which the function is located.
hubport→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located (asynchronous version).
hubport→get_portState()	Returns the current state of the Yocto-hub port.
hubport→get_userData()	Returns the value of the userData attribute, as previously stored using method set(userData).
hubport→isOnline()	Checks if the Yocto-hub port is currently reachable, without raising any error.
hubport→isOnline_async(callback, context)	Checks if the Yocto-hub port is currently reachable, without raising any error (asynchronous version).
hubport→load(msValidity)	Preloads the Yocto-hub port cache with a specified validity duration.
hubport→load_async(msValidity, callback, context)	Preloads the Yocto-hub port cache with a specified validity duration (asynchronous version).
hubport→nextHubPort()	Continues the enumeration of Yocto-hub ports started using yFirstHubPort().
hubport→registerValueCallback(callback)	Registers the callback function that is invoked on every change of advertised value.
hubport→set_enabled(newval)	Changes the activation of the Yocto-hub port.
hubport→set_logicalName(newval)	Changes the logical name of the Yocto-hub port.
hubport→set_userData(data)	Stores a user context provided as argument in the userData attribute of the function.
hubport→wait_async(callback, context)	Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YHubPort.FindHubPort() yFindHubPort()yFindHubPort()

YHubPort

Retrieves a Yocto-hub port for a given identifier.

```
js function yFindHubPort( func)
node.js function FindHubPort( func)
php function yFindHubPort( $func)
cpp YHubPort* yFindHubPort( const string& func)
m YHubPort* yFindHubPort( NSString* func)
pas function yFindHubPort( func: string): TYHubPort
vb function yFindHubPort( ByVal func As String) As YHubPort
cs YHubPort FindHubPort( string func)
java YHubPort FindHubPort( String func)
def FindHubPort( func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the Yocto-hub port is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YHubPort.isOnline()` to test if the Yocto-hub port is indeed online at a given time. In case of ambiguity when looking for a Yocto-hub port by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the Yocto-hub port

Returns :

a `YHubPort` object allowing you to drive the Yocto-hub port.

YHubPort.FirstHubPort()**yFirstHubPort()yFirstHubPort()****YHubPort**

Starts the enumeration of Yocto-hub ports currently accessible.

js	function yFirstHubPort()
nodejs	function FirstHubPort()
php	function yFirstHubPort()
cpp	YHubPort* yFirstHubPort()
m	YHubPort* yFirstHubPort()
pas	function yFirstHubPort(): TYHubPort
vb	function yFirstHubPort() As YHubPort
cs	YHubPort FirstHubPort()
java	YHubPort FirstHubPort()
py	def FirstHubPort()

Use the method `YHubPort.nextHubPort()` to iterate on next Yocto-hub ports.

Returns :

a pointer to a `YHubPort` object, corresponding to the first Yocto-hub port currently online, or a `null` pointer if there are none.

hubport→describe()hubport.describe()**YHubPort**

Returns a short text that describes unambiguously the instance of the Yocto-hub port in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	- (NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the Yocto-hub port (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

hubport→get_advertisedValue()
hubport→advertisedValue()
hubport.get_advertisedValue()

YHubPort

Returns the current value of the Yocto-hub port (no more than 6 characters).

js	function get_advertisedValue()
node.js	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YHubPort target get_advertisedValue

Returns :

a string corresponding to the current value of the Yocto-hub port (no more than 6 characters). On failure, throws an exception or returns **Y_ADVERTISEDVALUE_INVALID**.

hubport→get_baudRate() hubport→baudRate()hubport.get_baudRate()

Returns the current baud rate used by this Yocto-hub port, in kbps.

js	function get_baudRate()
node.js	function get_baudRate()
php	function get_baudRate()
cpp	int get_baudRate()
m	-(int) baudRate
pas	function get_baudRate() : LongInt
vb	function get_baudRate() As Integer
cs	int get_baudRate()
java	int get_baudRate()
py	def get_baudRate()
cmd	YHubPort target get_baudRate

The default value is 1000 kbps, but a slower rate may be used if communication problems are encountered.

Returns :

an integer corresponding to the current baud rate used by this Yocto-hub port, in kbps

On failure, throws an exception or returns Y_BAUDRATE_INVALID.

hubport→get_enabled()**YHubPort****hubport→enabled()hubport.get_enabled()**

Returns true if the Yocto-hub port is powered, false otherwise.

js	function get_enabled()
nodejs	function get_enabled()
php	function get_enabled()
cpp	Y_ENABLED_enum get_enabled()
m	-(Y_ENABLED_enum) enabled
pas	function get_enabled() : Integer
vb	function get_enabled() As Integer
cs	int get_enabled()
java	int get_enabled()
py	def get_enabled()
cmd	YHubPort target get_enabled

Returns :

either Y_ENABLED_FALSE or Y_ENABLED_TRUE, according to true if the Yocto-hub port is powered, false otherwise

On failure, throws an exception or returns Y_ENABLED_INVALID.

hubport→get_errorMessage()**YHubPort****hubport→errorMessage()hubport.get_errorMessage()**

Returns the error message of the latest error with the Yocto-hub port.

js	function get_errorMessage()
node.js	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage() : string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the Yocto-hub port object

hubport→get_errorType() hubport→errorType()hubport.get_errorType()

YHubPort

Returns the numerical error code of the latest error with the Yocto-hub port.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the Yocto-hub port object

hubport→get_friendlyName()
hubport→friendlyName()**YHubPort**

Returns a global identifier of the Yocto-hub port in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the Yocto-hub port if they are defined, otherwise the serial number of the module and the hardware identifier of the Yocto-hub port (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the Yocto-hub port using logical names (ex: MyCustomName.relay1)

On failure, throws an exception or returns `Y_FRIENDLYNAME_INVALID`.

hubport→get_functionDescriptor()
hubport→functionDescriptor()
hubport.get_functionDescriptor()

YHubPort

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

hubport→get_functionId()
hubport→functionId()**YHubPort**

Returns the hardware identifier of the Yocto-hub port, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	- (NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the Yocto-hub port (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

hubport→get_hardwareId()**YHubPort****hubport→hardwareId()**

Returns the unique hardware identifier of the Yocto-hub port in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the Yocto-hub port. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the Yocto-hub port (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

hubport→get_logicalName()**YHubPort****hubport→logicalName()hubport.get_logicalName()**

Returns the logical name of the Yocto-hub port.

js	function get_logicalName()
node.js	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	- (NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YHubPort target get_logicalName

Returns :

a string corresponding to the logical name of the Yocto-hub port. On failure, throws an exception or returns **Y_LOGICALNAME_INVALID**.

hubport→get_module()**YHubPort****hubport→module()hubport.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

hubport→get_module_async()
hubport→module_async()**YHubPort**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

hubport→get_portState()**YHubPort****hubport→portState()hubport.get_portState()**

Returns the current state of the Yocto-hub port.

js	function get_portState()
nodejs	function get_portState()
php	function get_portState()
cpp	Y_PORTSTATE_enum get_portState()
m	-(Y_PORTSTATE_enum) portState
pas	function get_portState() : Integer
vb	function get_portState() As Integer
cs	int get_portState()
java	int get_portState()
py	def get_portState()
cmd	YHubPort target get_portState

Returns :

a value among Y_PORTSTATE_OFF, Y_PORTSTATE_OVRLD, Y_PORTSTATE_ON, Y_PORTSTATE_RUN and Y_PORTSTATE_PROG corresponding to the current state of the Yocto-hub port

On failure, throws an exception or returns Y_PORTSTATE_INVALID.

hubport→get(userData)**YHubPort****hubport→userData()hubport.get(userData)**

Returns the value of the userData attribute, as previously stored using method set(userData).

```
js function get(userData) 
node.js function get(userData) 
php function get(userData) 
cpp void * get(userData) 
m -(void*) userData 
pas function get(userData): Tobject 
vb function get(userData) As Object 
cs object get(userData) 
java Object get(userData) 
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

hubport→isOnline()hubport.isOnline()**YHubPort**

Checks if the Yocto-hub port is currently reachable, without raising any error.

js	function isOnline ()
node.js	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the Yocto-hub port in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the Yocto-hub port.

Returns :

true if the Yocto-hub port can be reached, and false otherwise

hubport→isOnline_async()

YHubPort

Checks if the Yocto-hub port is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the Yocto-hub port in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

hubport→load()hubport.load()**YHubPort**

Preloads the Yocto-hub port cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>node.js</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

hubport→load_async()

YHubPort

Preloads the Yocto-hub port cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

hubport→nextHubPort()hubport.nextHubPort()**YHubPort**

Continues the enumeration of Yocto-hub ports started using `yFirstHubPort()`.

<code>js</code>	<code>function nextHubPort()</code>
<code>nodejs</code>	<code>function nextHubPort()</code>
<code>php</code>	<code>function nextHubPort()</code>
<code>cpp</code>	<code>YHubPort * nextHubPort()</code>
<code>m</code>	<code>-(YHubPort*) nextHubPort</code>
<code>pas</code>	<code>function nextHubPort(): TYHubPort</code>
<code>vb</code>	<code>function nextHubPort() As YHubPort</code>
<code>cs</code>	<code>YHubPort nextHubPort()</code>
<code>java</code>	<code>YHubPort nextHubPort()</code>
<code>py</code>	<code>def nextHubPort()</code>

Returns :

a pointer to a `YHubPort` object, corresponding to a Yocto-hub port currently online, or a `null` pointer if there are no more Yocto-hub ports to enumerate.

hubport→registerValueCallback() hubport.registerValueCallback()

YHubPort

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YHubPortValueCallback callback )
m    -(int) registerValueCallback : (YHubPortValueCallback) callback
pas   function registerValueCallback( callback: TYHubPortValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

hubport→set_enabled()

YHubPort

Changes the activation of the Yocto-hub port.

<code>js</code>	<code>function set_enabled(newval)</code>
<code>nodejs</code>	<code>function set_enabled(newval)</code>
<code>php</code>	<code>function set_enabled(\$newval)</code>
<code>cpp</code>	<code>int set_enabled(Y_ENABLED_enum newval)</code>
<code>m</code>	<code>-(int) setEnabled : (Y_ENABLED_enum) newval</code>
<code>pas</code>	<code>function set_enabled(newval: Integer): integer</code>
<code>vb</code>	<code>function set_enabled(ByVal newval As Integer) As Integer</code>
<code>cs</code>	<code>int set_enabled(int newval)</code>
<code>java</code>	<code>int set_enabled(int newval)</code>
<code>py</code>	<code>def set_enabled(newval)</code>
<code>cmd</code>	<code>YHubPort target set_enabled newval</code>

If the port is enabled, the connected module is powered. Otherwise, port power is shut down.

Parameters :

newval either `Y_ENABLED_FALSE` or `Y_ENABLED_TRUE`, according to the activation of the Yocto-hub port

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

hubport→set_logicalName()
hubport→setLogicalName()
hubport.set_logicalName()

YHubPort

Changes the logical name of the Yocto-hub port.

```
js function set_logicalName( newval)
nodejs function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YHubPort target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the Yocto-hub port.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

hubport→set(userData)**YHubPort****hubport→setUserData()hubport.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData)
cpp	void set(userData) (void* data)
m	-(void) set(userData : (void*) data
pas	procedure set(userData : Tobject)
vb	procedure set(userData : ByVal data As Object)
cs	void set(userData : object data)
java	void set(userData : Object data)
py	def set(userData : data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

hubport→wait_async()

YHubPort

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.20. Humidity function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_humidity.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YHumidity = yoctolib.YHumidity;
php	require_once('yocto_humidity.php');
cpp	#include "yocto_humidity.h"
m	#import "yocto_humidity.h"
pas	uses yocto_humidity;
vb	yocto_humidity.vb
cs	yocto_humidity.cs
java	import com.yoctopuce.YoctoAPI.YHumidity;
py	from yocto_humidity import *

Global functions

yFindHumidity(func)

Retrieves a humidity sensor for a given identifier.

yFirstHumidity()

Starts the enumeration of humidity sensors currently accessible.

YHumidity methods

humidity→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

humidity→describe()

Returns a short text that describes unambiguously the instance of the humidity sensor in the form TYPE (NAME)=SERIAL . FUNCTIONID.

humidity→get_advertisedValue()

Returns the current value of the humidity sensor (no more than 6 characters).

humidity→get_currentRawValue()

Returns the unrounded and uncalibrated raw value returned by the sensor.

humidity→get_currentValue()

Returns the current measure for the humidity.

humidity→get_errorMessage()

Returns the error message of the latest error with the humidity sensor.

humidity→get_errorType()

Returns the numerical error code of the latest error with the humidity sensor.

humidity→get_friendlyName()

Returns a global identifier of the humidity sensor in the format MODULE_NAME . FUNCTION_NAME.

humidity→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

humidity→get_functionId()

Returns the hardware identifier of the humidity sensor, without reference to the module.

humidity→get_hardwareId()

Returns the unique hardware identifier of the humidity sensor in the form SERIAL . FUNCTIONID.

humidity→get_highestValue()	Returns the maximal value observed for the humidity.
humidity→get_logFrequency()	Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.
humidity→get_logicalName()	Returns the logical name of the humidity sensor.
humidity→get_lowestValue()	Returns the minimal value observed for the humidity.
humidity→get_module()	Gets the YModule object for the device on which the function is located.
humidity→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located (asynchronous version).
humidity→get_recordedData(startTime, endTime)	Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.
humidity→get_reportFrequency()	Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.
humidity→get_resolution()	Returns the resolution of the measured values.
humidity→get_unit()	Returns the measuring unit for the humidity.
humidity→get(userData)	Returns the value of the userData attribute, as previously stored using method set(userData).
humidity→isOnline()	Checks if the humidity sensor is currently reachable, without raising any error.
humidity→isOnline_async(callback, context)	Checks if the humidity sensor is currently reachable, without raising any error (asynchronous version).
humidity→load(msValidity)	Preloads the humidity sensor cache with a specified validity duration.
humidity→loadCalibrationPoints(rawValues, refValues)	Retrieves error correction data points previously entered using the method calibrateFromPoints.
humidity→load_async(msValidity, callback, context)	Preloads the humidity sensor cache with a specified validity duration (asynchronous version).
humidity→nextHumidity()	Continues the enumeration of humidity sensors started using yFirstHumidity().
humidity→registerTimedReportCallback(callback)	Registers the callback function that is invoked on every periodic timed notification.
humidity→registerValueCallback(callback)	Registers the callback function that is invoked on every change of advertised value.
humidity→set_highestValue(newval)	Changes the recorded maximal value observed for the humidity.
humidity→set_logFrequency(newval)	Changes the datalogger recording frequency for this function.
humidity→set_logicalName(newval)	Changes the logical name of the humidity sensor.

humidity→set_lowestValue(newval)

Changes the recorded minimal value observed for the humidity.

humidity→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

humidity→set_resolution(newval)

Changes the resolution of the measured physical values.

humidity→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

humidity→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YHumidity.FindHumidity() yFindHumidity()yFindHumidity()

YHumidity

Retrieves a humidity sensor for a given identifier.

```
js function yFindHumidity( func)
node.js function FindHumidity( func)
php function yFindHumidity( $func)
cpp YHumidity* yFindHumidity( const string& func)
m YHumidity* yFindHumidity( NSString* func)
pas function yFindHumidity( func: string): TYHumidity
vb function yFindHumidity( ByVal func As String) As YHumidity
cs YHumidity FindHumidity( string func)
java YHumidity FindHumidity( String func)
def FindHumidity( func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the humidity sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YHumidity.isOnline()` to test if the humidity sensor is indeed online at a given time. In case of ambiguity when looking for a humidity sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the humidity sensor

Returns :

a `YHumidity` object allowing you to drive the humidity sensor.

YHumidity.FirstHumidity() yFirstHumidity()yFirstHumidity()

YHumidity

Starts the enumeration of humidity sensors currently accessible.

js	function yFirstHumidity()
nodejs	function FirstHumidity()
php	function yFirstHumidity()
cpp	YHumidity* yFirstHumidity()
m	YHumidity* yFirstHumidity()
pas	function yFirstHumidity() : TYHumidity
vb	function yFirstHumidity() As YHumidity
cs	YHumidity FirstHumidity()
java	YHumidity FirstHumidity()
py	def FirstHumidity()

Use the method `YHumidity.nextHumidity()` to iterate on next humidity sensors.

Returns :

a pointer to a `YHumidity` object, corresponding to the first humidity sensor currently online, or a `null` pointer if there are none.

humidity→calibrateFromPoints() humidity.calibrateFromPoints()

YHumidity

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php   function calibrateFromPoints( $rawValues, $refValues)
cpp    int calibrateFromPoints( vector<double> rawValues,
                               vector<double> refValues)
m     -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues
pas   function calibrateFromPoints( rawValues: TDoubleArray,
                           refValues: TDoubleArray): LongInt
vb    procedure calibrateFromPoints( )
cs    int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)
java  int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)
py    def calibrateFromPoints( rawValues, refValues)
cmd   YHumidity target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→describe()humidity.describe()**YHumidity**

Returns a short text that describes unambiguously the instance of the humidity sensor in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the humidity sensor (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

humidity→get_advertisedValue()**YHumidity****humidity→advertisedValue()****humidity.get_advertisedValue()**

Returns the current value of the humidity sensor (no more than 6 characters).

```
js function get_advertisedValue( )  
nodejs function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YHumidity target get_advertisedValue
```

Returns :

a string corresponding to the current value of the humidity sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

humidity→get_currentRawValue()
humidity→currentRawValue()
humidity.get_currentRawValue()**YHumidity**

Returns the unrounded and uncalibrated raw value returned by the sensor.

js	function get_currentRawValue()
node.js	function get_currentRawValue()
php	function get_currentRawValue()
cpp	double get_currentRawValue()
m	-(double) currentRawValue
pas	function get_currentRawValue(): double
vb	function get_currentRawValue() As Double
cs	double get_currentRawValue()
java	double get_currentRawValue()
py	def get_currentRawValue()
cmd	YHumidity target get_currentRawValue

Returns :

a floating point number corresponding to the unrounded and uncalibrated raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

humidity→get_currentValue()**YHumidity****humidity→currentValue()humidity.get_currentValue()**

Returns the current measure for the humidity.

```
js function get_currentValue( )
node.js function get_currentValue( )
php function get_currentValue( )
cpp double get_currentValue( )
m -(double) currentValue
pas function get_currentValue( ): double
vb function get_currentValue( ) As Double
cs double get_currentValue( )
java double get_currentValue( )
py def get_currentValue( )
cmd YHumidity target get_currentValue
```

Returns :

a floating point number corresponding to the current measure for the humidity

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

humidity→getErrorMessage()
humidity→errorMessage()
humidity.getErrorMessage()**YHumidity**

Returns the error message of the latest error with the humidity sensor.

js	function getErrorMessage()
node.js	function getErrorMessage()
php	function getErrorMessage()
cpp	string getErrorMessage()
m	-(NSString*) errorMessage
pas	function getErrorMessage(): string
vb	function getErrorMessage() As String
cs	string getErrorMessage()
java	String getErrorMessage()
py	def getErrorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the humidity sensor object

humidity→get_errorType()**YHumidity****humidity→errorType()humidity.get_errorType()**

Returns the numerical error code of the latest error with the humidity sensor.

```
js   function get_errorType( )  
node.js function get_errorType( )  
php  function get_errorType( )  
cpp   YRETCODE get_errorType( )  
pas   function get_errorType( ): YRETCODE  
vb    function get_errorType( ) As YRETCODE  
cs    YRETCODE get_errorType( )  
java  int get_errorType( )  
py    def get_errorType( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the humidity sensor object

humidity→get_friendlyName()
humidity→friendlyName()**YHumidity**

Returns a global identifier of the humidity sensor in the format MODULE_NAME . FUNCTION_NAME.

```
js function get_friendlyName( )  
nodejs function get_friendlyName( )  
php function get_friendlyName( )  
cpp string get_friendlyName( )  
m -(NSString*) friendlyName  
cs string get_friendlyName( )  
java String get_friendlyName( )  
py def get_friendlyName( )
```

The returned string uses the logical names of the module and of the humidity sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the humidity sensor (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the humidity sensor using logical names (ex: MyCustomName . relay1)

On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

**humidity→get_functionDescriptor()
humidity→functionDescriptor()
humidity.get_functionDescriptor()****YHumidity**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

humidity→get_functionId()**YHumidity****humidity→functionId()**

Returns the hardware identifier of the humidity sensor, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the humidity sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

humidity→get.hardwareId()
humidity→hardwareId()**YHumidity**

Returns the unique hardware identifier of the humidity sensor in the form SERIAL.FUNCTIONID.

js	function get.hardwareId()
node.js	function get.hardwareId()
php	function get.hardwareId()
cpp	string get.hardwareId()
m	-(NSString*) hardwareId
vb	function get.hardwareId() As String
cs	string get.hardwareId()
java	String get.hardwareId()
py	def get.hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the humidity sensor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the humidity sensor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

humidity→get_highestValue()
humidity→highestValue()
humidity.get_highestValue()

YHumidity

Returns the maximal value observed for the humidity.

<code>js</code>	function get_highestValue()
<code>node.js</code>	function get_highestValue()
<code>php</code>	function get_highestValue()
<code>cpp</code>	double get_highestValue()
<code>m</code>	-(double) highestValue
<code>pas</code>	function get_highestValue() : double
<code>vb</code>	function get_highestValue() As Double
<code>cs</code>	double get_highestValue()
<code>java</code>	double get_highestValue()
<code>py</code>	def get_highestValue()
<code>cmd</code>	YHumidity target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the humidity

On failure, throws an exception or returns **Y_HIGHESTVALUE_INVALID**.

humidity→get_logFrequency()
humidity→logFrequency()
humidity.get_logFrequency()**YHumidity**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency(): string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YHumidity target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

humidity→get_logicalName()**YHumidity****humidity→logicalName()humidity.get_logicalName()**

Returns the logical name of the humidity sensor.

```
js   function get_logicalName( )  
nodejs function get_logicalName( )  
php  function get_logicalName( )  
cpp   string get_logicalName( )  
m    -(NSString*) logicalName  
pas   function get_logicalName( ): string  
vb    function get_logicalName( ) As String  
cs    string get_logicalName( )  
java  String get_logicalName( )  
py    def get_logicalName( )  
cmd   YHumidity target get_logicalName
```

Returns :

a string corresponding to the logical name of the humidity sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

humidity→get_lowestValue()**YHumidity****humidity→lowestValue()humidity.get_lowestValue()**

Returns the minimal value observed for the humidity.

```
js function get_lowestValue( )  
node.js function get_lowestValue( )  
php function get_lowestValue( )  
cpp double get_lowestValue( )  
m -(double) lowestValue  
pas function get_lowestValue( ): double  
vb function get_lowestValue( ) As Double  
cs double get_lowestValue( )  
java double get_lowestValue( )  
py def get_lowestValue( )  
cmd YHumidity target get_lowestValue
```

Returns :

a floating point number corresponding to the minimal value observed for the humidity

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

humidity→get_module()**YHumidity****humidity→module()humidity.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

humidity→get_module_async()**YHumidity****humidity→module_async()**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

humidity→`get_recordedData()`
humidity→`recordedData()`
humidity.get_recordedData()

YHumidity

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the `DataSet` class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without ending limit.

Returns :

an instance of `YDataSet`, providing access to historical data. Past measures can be loaded progressively using methods from the `YDataSet` object.

humidity→get_reportFrequency()
humidity→reportFrequency()
humidity.get_reportFrequency()**YHumidity**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency()
nodejs	function get_reportFrequency()
php	function get_reportFrequency()
cpp	string get_reportFrequency()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency(): string
vb	function get_reportFrequency() As String
cs	string get_reportFrequency()
java	String get_reportFrequency()
py	def get_reportFrequency()
cmd	YHumidity target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

humidity→get_resolution()**YHumidity****humidity→resolution()humidity.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution()
nodejs	function get_resolution()
php	function get_resolution()
cpp	double get_resolution()
m	-(double) resolution
pas	function get_resolution(): double
vb	function get_resolution() As Double
cs	double get_resolution()
java	double get_resolution()
py	def get_resolution()
cmd	YHumidity target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns **Y_RESOLUTION_INVALID**.

humidity→get_unit()**YHumidity****humidity→unit()humidity.get_unit()**

Returns the measuring unit for the humidity.

js	function get_unit()
node.js	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit(): string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YHumidity target get_unit

Returns :

a string corresponding to the measuring unit for the humidity

On failure, throws an exception or returns Y_UNIT_INVALID.

humidity→get(userData)**YHumidity****humidity→userData()humidity.get(userData())**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

humidity→isOnline()humidity.isOnline()****

YHumidity

Checks if the humidity sensor is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the humidity sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the humidity sensor.

Returns :

true if the humidity sensor can be reached, and false otherwise

humidity→isOnline_async()

YHumidity

Checks if the humidity sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the humidity sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

humidity→load()**humidity.load()**

YHumidity

Preloads the humidity sensor cache with a specified validity duration.

```
js   function load( msValidity)
nodejs function load( msValidity)
php  function load( $msValidity)
cpp   YRETCODE load( int msValidity)
m    -(YRETCODE) load : (int) msValidity
pas   function load( msValidity: integer): YRETCODE
vb    function load( ByVal msValidity As Integer) As YRETCODE
cs    YRETCODE load( int msValidity)
java  int load( long msValidity)
py    def load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

humidity→loadCalibrationPoints() humidity.loadCalibrationPoints()

YHumidity

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php  function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt

vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def loadCalibrationPoints( rawValues, refValues)
cmd  YHumidity target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→load_async()

YHumidity

Preloads the humidity sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

humidity→nextHumidity()humidity.nextHumidity()**YHumidity**

Continues the enumeration of humidity sensors started using `yFirstHumidity()`.

<code>js</code>	<code>function nextHumidity()</code>
<code>nodejs</code>	<code>function nextHumidity()</code>
<code>php</code>	<code>function nextHumidity()</code>
<code>cpp</code>	<code>YHumidity * nextHumidity()</code>
<code>m</code>	<code>-(YHumidity*) nextHumidity</code>
<code>pas</code>	<code>function nextHumidity(): TYHumidity</code>
<code>vb</code>	<code>function nextHumidity() As YHumidity</code>
<code>cs</code>	<code>YHumidity nextHumidity()</code>
<code>java</code>	<code>YHumidity nextHumidity()</code>
<code>py</code>	<code>def nextHumidity()</code>

Returns :

a pointer to a `YHumidity` object, corresponding to a humidity sensor currently online, or a `null` pointer if there are no more humidity sensors to enumerate.

humidity→registerTimedReportCallback() humidity.registerTimedReportCallback()

YHumidity

Registers the callback function that is invoked on every periodic timed notification.

```
js   function registerTimedReportCallback( callback)
node.js function registerTimedReportCallback( callback)
php  function registerTimedReportCallback( $callback)
cpp   int registerTimedReportCallback( YHumidityTimedReportCallback callback)
m    -(int) registerTimedReportCallback : (YHumidityTimedReportCallback) callback
pas   function registerTimedReportCallback( callback: TYHumidityTimedReportCallback): LongInt
vb    function registerTimedReportCallback( ) As Integer
cs    int registerTimedReportCallback( TimedReportCallback callback)
java  int registerTimedReportCallback( TimedReportCallback callback)
py    def registerTimedReportCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

humidity→registerValueCallback() humidity.registerValueCallback()

YHumidity

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback(callback)
node.js	function registerValueCallback(callback)
php	function registerValueCallback(\$callback)
cpp	int registerValueCallback(YHumidityValueCallback callback)
m	-(int) registerValueCallback : (YHumidityValueCallback) callback
pas	function registerValueCallback(callback : TYHumidityValueCallback): LongInt
vb	function registerValueCallback() As Integer
cs	int registerValueCallback(ValueCallback callback)
java	int registerValueCallback(UpdateCallback callback)
py	def registerValueCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

humidity→set_highestValue()
humidity→setHighestValue()
humidity.set_highestValue()**YHumidity**

Changes the recorded maximal value observed for the humidity.

js	function set_highestValue(newval)
nodejs	function set_highestValue(newval)
php	function set_highestValue(\$newval)
cpp	int set_highestValue(double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue(newval: double): integer
vb	function set_highestValue(ByVal newval As Double) As Integer
cs	int set_highestValue(double newval)
java	int set_highestValue(double newval)
py	def set_highestValue(newval)
cmd	YHumidity target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed for the humidity

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→set_logFrequency()
humidity→setLogFrequency()
humidity.set_logFrequency()

YHumidity

Changes the datalogger recording frequency for this function.

js	function set_logFrequency(newval)
node.js	function set_logFrequency(newval)
php	function set_logFrequency(\$newval)
cpp	int set_logFrequency(const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency(newval: string): integer
vb	function set_logFrequency(ByVal newval As String) As Integer
cs	int set_logFrequency(string newval)
java	int set_logFrequency(String newval)
py	def set_logFrequency(newval)
cmd	YHumidity target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→set_logicalName()
humidity→setLogicalName()
humidity.set_logicalName()**YHumidity**

Changes the logical name of the humidity sensor.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YHumidity target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the humidity sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

humidity→set_lowestValue()
humidity→setLowestValue()
humidity.set_lowestValue()

YHumidity

Changes the recorded minimal value observed for the humidity.

<code>js</code>	function set_lowestValue(newval)
<code>nodejs</code>	function set_lowestValue(newval)
<code>php</code>	function set_lowestValue(\$newval)
<code>cpp</code>	int set_lowestValue(double newval)
<code>m</code>	- (int) setLowestValue : (double) newval
<code>pas</code>	function set_lowestValue(newval: double): integer
<code>vb</code>	function set_lowestValue(ByVal newval As Double) As Integer
<code>cs</code>	int set_lowestValue(double newval)
<code>java</code>	int set_lowestValue(double newval)
<code>py</code>	def set_lowestValue(newval)
<code>cmd</code>	YHumidity target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed for the humidity

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→set_reportFrequency()	YHumidity
humidity→setReportFrequency()	
humidity.set_reportFrequency()	

Changes the timed value notification frequency for this function.

```
js   function set_reportFrequency( newval)
nodejs function set_reportFrequency( newval)
php  function set_reportFrequency( $newval)
cpp   int set_reportFrequency( const string& newval)
m    -(int) setReportFrequency : (NSString*) newval
pas   function set_reportFrequency( newval: string): integer
vb    function set_reportFrequency( ByVal newval As String) As Integer
cs    int set_reportFrequency( string newval)
java  int set_reportFrequency( String newval)
py    def set_reportFrequency( newval)
cmd   YHumidity target set_reportFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→set_resolution()**YHumidity****humidity→setResolution()humidity.set_resolution()**

Changes the resolution of the measured physical values.

```
js   function set_resolution( newval)
nodejs function set_resolution( newval)
php  function set_resolution( $newval)
cpp   int set_resolution( double newval)
m    -(int) setResolution : (double) newval
pas   function set_resolution( newval: double): integer
vb    function set_resolution( ByVal newval As Double) As Integer
cs   int set_resolution( double newval)
java  int set_resolution( double newval)
py    def set_resolution( newval)
cmd   YHumidity target set_resolution newval
```

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

humidity→set(userData)**YHumidity****humidity→setUserData()humidity.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

```
js   function setUserData( data)
node.js function setUserData( data)
php  function setUserData( $data)
cpp   void setUserData( void* data)
m    -(void) setUserData : (void*) data
pas   procedure setUserData( data: Tobject)
vb    procedure setUserData( ByVal data As Object)
cs    void setUserData( object data)
java  void setUserData( Object data)
py    def setUserData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

humidity→wait_async()

YHumidity

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context )
nodejs function wait_async( callback, context )
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.21. Led function interface

Yoctopuce application programming interface allows you not only to drive the intensity of the led, but also to have it blink at various preset frequencies.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_led.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YLed = yoctolib.YLed;
php	require_once('yocto_led.php');
cpp	#include "yocto_led.h"
m	#import "yocto_led.h"
pas	uses yocto_led;
vb	yocto_led.vb
cs	yocto_led.cs
java	import com.yoctopuce.YoctoAPI.YLed;
py	from yocto_led import *

Global functions

yFindLed(func)

Retrieves a led for a given identifier.

yFirstLed()

Starts the enumeration of leds currently accessible.

YLed methods

led->describe()

Returns a short text that describes unambiguously the instance of the led in the form TYPE(NAME)=SERIAL.FUNCTIONID.

led->get_advertisedValue()

Returns the current value of the led (no more than 6 characters).

led->get_blinking()

Returns the current led signaling mode.

led->get_errorMessage()

Returns the error message of the latest error with the led.

led->get_errorType()

Returns the numerical error code of the latest error with the led.

led->get_friendlyName()

Returns a global identifier of the led in the format MODULE_NAME . FUNCTION_NAME.

led->get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

led->get_functionId()

Returns the hardware identifier of the led, without reference to the module.

led->get_hardwareId()

Returns the unique hardware identifier of the led in the form SERIAL.FUNCTIONID.

led->get_logicalName()

Returns the logical name of the led.

led->get_luminosity()

Returns the current led intensity (in per cent).

led->get_module()

Gets the YModule object for the device on which the function is located.

led->get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

led->get_power()

Returns the current led state.

led->get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

led->isOnline()

Checks if the led is currently reachable, without raising any error.

led->isOnline_async(callback, context)

Checks if the led is currently reachable, without raising any error (asynchronous version).

led->load(msValidity)

Preloads the led cache with a specified validity duration.

led->load_async(msValidity, callback, context)

Preloads the led cache with a specified validity duration (asynchronous version).

led->nextLed()

Continues the enumeration of leds started using yFirstLed().

led->registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

led->set_blinking(newval)

Changes the current led signaling mode.

led->set_logicalName(newval)

Changes the logical name of the led.

led->set_luminosity(newval)

Changes the current led intensity (in per cent).

led->set_power(newval)

Changes the state of the led.

led->set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

led->wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YLed.FindLed() yFindLed()yFindLed()

YLed

Retrieves a led for a given identifier.

```
js function yFindLed( func)
node.js function FindLed( func)
php function yFindLed( $func)
cpp YLed* yFindLed( const string& func)
m YLed* yFindLed( NSString* func)
pas function yFindLed( func: string): TYLed
vb function yFindLed( ByVal func As String) As YLed
cs YLed FindLed( string func)
java YLed FindLed( String func)
py def FindLed( func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the led is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YLed.isOnline()` to test if the led is indeed online at a given time. In case of ambiguity when looking for a led by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the led

Returns :

a `YLed` object allowing you to drive the led.

YLed.FirstLed()**YLed****yFirstLed()yFirstLed()**

Starts the enumeration of leds currently accessible.

js	function yFirstLed()
nodejs	function FirstLed()
php	function yFirstLed()
cpp	YLed* yFirstLed()
m	YLed* yFirstLed()
pas	function yFirstLed() : TYLed
vb	function yFirstLed() As YLed
cs	YLed FirstLed()
java	YLed FirstLed()
py	def FirstLed()

Use the method `YLed.nextLed()` to iterate on next leds.

Returns :

a pointer to a `YLed` object, corresponding to the first led currently online, or a `null` pointer if there are none.

led→describe()led.describe()

YLed

Returns a short text that describes unambiguously the instance of the led in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the led (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

led→get_advertisedValue()**YLed****led→advertisedValue()led.get_advertisedValue()**

Returns the current value of the led (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YLed target get_advertisedValue

Returns :

a string corresponding to the current value of the led (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

led->get_blinking()
led->blinking()led.get_blinking()

YLed

Returns the current led signaling mode.

js	function get_blinking()
node.js	function get_blinking()
php	function get_blinking()
cpp	Y_BLINKING_enum get_blinking()
m	-(Y_BLINKING_enum) blinking
pas	function get_blinking() : Integer
vb	function get_blinking() As Integer
cs	int get_blinking()
java	int get_blinking()
py	def get_blinking()
cmd	YLed target get_blinking

Returns :

a value among Y_BLINKING_STILL, Y_BLINKING_RELAX, Y_BLINKING_AWARE, Y_BLINKING_RUN, Y_BLINKING_CALL and Y_BLINKING_PANIC corresponding to the current led signaling mode

On failure, throws an exception or returns Y_BLINKING_INVALID.

led→get_errorMessage()

YLed

led→errorMessage()led.get_errorMessage()

Returns the error message of the latest error with the led.

js	function get_errorMessage()
node.js	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage() : string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the led object

led->get_errorType()

YLed

led->errorType()led.get_errorType()

Returns the numerical error code of the latest error with the led.

```
js   function get_errorType( )  
node.js function get_errorType( )  
php  function get_errorType( )  
cpp   YRETCODE get_errorType( )  
pas   function get_errorType( ): YRETCODE  
vb    function get_errorType( ) As YRETCODE  
cs    YRETCODE get_errorType( )  
java  int get_errorType( )  
py    def get_errorType( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the led object

led→get_friendlyName()
led→friendlyName()**YLed**

Returns a global identifier of the led in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the led if they are defined, otherwise the serial number of the module and the hardware identifier of the led (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the led using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

led->get_functionDescriptor()
led->functionDescriptor()
led.get_functionDescriptor()

YLed

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

led→get_functionId()**YLed****led→functionId()**

Returns the hardware identifier of the led, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the led (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

led→get_hardwareId()
led→hardwareId()

YLed

Returns the unique hardware identifier of the led in the form SERIAL.FUNCTIONID.

```
js function get_hardwareId( )  
node.js function get_hardwareId( )  
php function get_hardwareId( )  
cpp string get_hardwareId( )  
m -(NSString*) hardwareId  
vb function get_hardwareId( ) As String  
cs string get_hardwareId( )  
java String get_hardwareId( )  
py def get_hardwareId( )
```

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the led. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the led (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

led→get_logicalName()**YLed****led→logicalName()led.get_logicalName()**

Returns the logical name of the led.

```
js   function get_logicalName( )  
nodejs function get_logicalName( )  
php  function get_logicalName( )  
cpp   string get_logicalName( )  
m    -(NSString*) logicalName  
pas   function get_logicalName( ): string  
vb    function get_logicalName( ) As String  
cs    string get_logicalName( )  
java  String get_logicalName( )  
py    def get_logicalName( )  
cmd   YLed target get_logicalName
```

Returns :

a string corresponding to the logical name of the led. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

led→get_luminosity() led→luminosity()led.get_luminosity()

YLed

Returns the current led intensity (in per cent).

```
js function get_luminosity( )
node.js function get_luminosity( )
php function get_luminosity( )
cpp int get_luminosity( )
m -(int) luminosity
pas function get_luminosity( ): LongInt
vb function get_luminosity( ) As Integer
cs int get_luminosity( )
java int get_luminosity( )
py def get_luminosity( )
cmd YLed target get_luminosity
```

Returns :

an integer corresponding to the current led intensity (in per cent)

On failure, throws an exception or returns Y_LUMINOSITY_INVALID.

led->get_module()**YLed****led->module()led.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

led→get_module_async() led→module_async()

YLed

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

led->get_power()**YLed****led->power()led.get_power()**

Returns the current led state.

js	function get_power()
nodejs	function get_power()
php	function get_power()
cpp	Y_POWER_enum get_power()
m	-(Y_POWER_enum) power
pas	function get_power() : Integer
vb	function get_power() As Integer
cs	int get_power()
java	int get_power()
py	def get_power()
cmd	YLed target get_power

Returns :

either Y_POWER_OFF or Y_POWER_ON, according to the current led state

On failure, throws an exception or returns Y_POWER_INVALID.

led→get(userData)

YLed

led→userData()led.get(userData())

Returns the value of the userData attribute, as previously stored using method set(userData).

```
js function get(userData) 
node.js function get(userData) 
php function get(userData) 
cpp void * get(userData) 
m -(void*) userData 
pas function get(userData): Tobject 
vb function get(userData) As Object 
cs object get(userData) 
java Object get(userData) 
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

led→isOnline()|led.isOnline()**YLed**

Checks if the led is currently reachable, without raising any error.

js	function isOnline ()
node.js	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the led in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the led.

Returns :

`true` if the led can be reached, and `false` otherwise

led→isOnline_async()

YLed

Checks if the led is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the led in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

led→load()led.load()**YLed**

Preloads the led cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>node.js</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

led→load_async()

YLed

Preloads the led cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

led->nextLed()|led.nextLed()**YLed**

Continues the enumeration of leds started using `yFirstLed()`.

<code>js</code>	<code>function nextLed()</code>
<code>node.js</code>	<code>function nextLed()</code>
<code>php</code>	<code>function nextLed()</code>
<code>cpp</code>	<code>YLed * nextLed()</code>
<code>m</code>	<code>-(YLed*) nextLed</code>
<code>pas</code>	<code>function nextLed(): TYLed</code>
<code>vb</code>	<code>function nextLed() As YLed</code>
<code>cs</code>	<code>YLed nextLed()</code>
<code>java</code>	<code>YLed nextLed()</code>
<code>py</code>	<code>def nextLed()</code>

Returns :

a pointer to a `YLed` object, corresponding to a led currently online, or a `null` pointer if there are no more leds to enumerate.

led→registerValueCallback() led.registerValueCallback()

YLed

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YLedValueCallback callback )
m    -(int) registerValueCallback : (YLedValueCallback) callback
pas   function registerValueCallback( callback: TYLedValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

led->set_blinking() led->setBlinking()led.set_blinking()

YLed

Changes the current led signaling mode.

<code>js</code>	<code>function set_blinking(newval)</code>
<code>nodejs</code>	<code>function set_blinking(newval)</code>
<code>php</code>	<code>function set_blinking(\$newval)</code>
<code>cpp</code>	<code>int set_blinking(Y_BLINKING_enum newval)</code>
<code>m</code>	<code>-(int) setBlinking : (Y_BLINKING_enum) newval</code>
<code>pas</code>	<code>function set_blinking(newval: Integer): integer</code>
<code>vb</code>	<code>function set_blinking(ByVal newval As Integer) As Integer</code>
<code>cs</code>	<code>int set_blinking(int newval)</code>
<code>java</code>	<code>int set_blinking(int newval)</code>
<code>py</code>	<code>def set_blinking(newval)</code>
<code>cmd</code>	<code>YLed target set_blinking newval</code>

Parameters :

newval a value among Y_BLINKING_STILL, Y_BLINKING_RELAX, Y_BLINKING_AWARE, Y_BLINKING_RUN, Y_BLINKING_CALL and Y_BLINKING_PANIC corresponding to the current led signaling mode

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

led->set_logicalName()
led->setLogicalName()led.set_logicalName()

YLed

Changes the logical name of the led.

```
js function set_logicalName( newval)
node.js function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YLed target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the led.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

led->set_luminosity()

YLed

led->setLuminosity()|led.set_luminosity()

Changes the current led intensity (in per cent).

```
js function set_luminosity( newval)
nodejs function set_luminosity( newval)
php function set_luminosity( $newval)
cpp int set_luminosity( int newval)
m -(int) setLuminosity : (int) newval
pas function set_luminosity( newval: LongInt): integer
vb function set_luminosity( ByVal newval As Integer) As Integer
cs int set_luminosity( int newval)
java int set_luminosity( int newval)
py def set_luminosity( newval)
cmd YLed target set_luminosity newval
```

Parameters :

newval an integer corresponding to the current led intensity (in per cent)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

led->set_power()
led->setPower()led.set_power()

YLed

Changes the state of the led.

```
js function set_power( newval)
node.js function set_power( newval)
php function set_power( $newval)
cpp int set_power( Y_POWER_enum newval)
m -(int) setPower : (Y_POWER_enum) newval
pas function set_power( newval: Integer): integer
vb function set_power( ByVal newval As Integer) As Integer
cs int set_power( int newval)
java int set_power( int newval)
py def set_power( newval)
cmd YLed target set_power newval
```

Parameters :

newval either Y_POWER_OFF or Y_POWER_ON, according to the state of the led

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

led→set(userData)**YLed****led→setUserData()|led.set(userData())**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	-(void) setUserData : (void*) data
pas	procedure set(userData data: Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

led→wait_async()

YLed

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.22. LightSensor function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_lightsensor.js'></script>
node.js	var yoctolib = require('yoctolib');
php	var YLightSensor = yoctolib.YLightSensor;
cpp	require_once('yocto_lightsensor.php');
m	#include "yocto_lightsensor.h"
pas	#import "yocto_lightsensor.h"
vb	uses yocto_lightsensor;
cs	yocto_lightsensor.vb
java	yocto_lightsensor.cs
py	import com.yoctopuce.YoctoAPI.YLightSensor;
	from yocto_lightsensor import *

Global functions

yFindLightSensor(func)

Retrieves a light sensor for a given identifier.

yFirstLightSensor()

Starts the enumeration of light sensors currently accessible.

YLightSensor methods

lightsensor→calibrate(calibratedVal)

Changes the sensor-specific calibration parameter so that the current value matches a desired target (linear scaling).

lightsensor→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

lightsensor→describe()

Returns a short text that describes unambiguously the instance of the light sensor in the form TYPE (NAME) = SERIAL.FUNCTIONID.

lightsensor→get_advertisedValue()

Returns the current value of the light sensor (no more than 6 characters).

lightsensor→get_currentRawValue()

Returns the unrounded and uncalibrated raw value returned by the sensor.

lightsensor→get_currentValue()

Returns the current measure for the ambient light.

lightsensor→get_errorMessage()

Returns the error message of the latest error with the light sensor.

lightsensor→get_errorType()

Returns the numerical error code of the latest error with the light sensor.

lightsensor→get_friendlyName()

Returns a global identifier of the light sensor in the format MODULE_NAME . FUNCTION_NAME.

lightsensor→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

lightsensor→get_functionId()

Returns the hardware identifier of the light sensor, without reference to the module.
lightsensor→get_hardwareId()
Returns the unique hardware identifier of the light sensor in the form SERIAL.FUNCTIONID.
lightsensor→get_highestValue()
Returns the maximal value observed for the ambient light.
lightsensor→get_logFrequency()
Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.
lightsensor→get_logicalName()
Returns the logical name of the light sensor.
lightsensor→get_lowestValue()
Returns the minimal value observed for the ambient light.
lightsensor→get_module()
Gets the YModule object for the device on which the function is located.
lightsensor→get_module_async(callback, context)
Gets the YModule object for the device on which the function is located (asynchronous version).
lightsensor→get_recordedData(startTime, endTime)
Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.
lightsensor→get_reportFrequency()
Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.
lightsensor→get_resolution()
Returns the resolution of the measured values.
lightsensor→get_unit()
Returns the measuring unit for the ambient light.
lightsensor→get(userData)
Returns the value of the userData attribute, as previously stored using method set(userData).
lightsensor→isOnline()
Checks if the light sensor is currently reachable, without raising any error.
lightsensor→isOnline_async(callback, context)
Checks if the light sensor is currently reachable, without raising any error (asynchronous version).
lightsensor→load(msValidity)
Preloads the light sensor cache with a specified validity duration.
lightsensor→loadCalibrationPoints(rawValues, refValues)
Retrieves error correction data points previously entered using the method calibrateFromPoints.
lightsensor→load_async(msValidity, callback, context)
Preloads the light sensor cache with a specified validity duration (asynchronous version).
lightsensor→nextLightSensor()
Continues the enumeration of light sensors started using yFirstLightSensor().
lightsensor→registerTimedReportCallback(callback)
Registers the callback function that is invoked on every periodic timed notification.
lightsensor→registerValueCallback(callback)
Registers the callback function that is invoked on every change of advertised value.
lightsensor→set_highestValue(newval)
Changes the recorded maximal value observed for the ambient light.
lightsensor→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

lightsensor→set_logicalName(newval)

Changes the logical name of the light sensor.

lightsensor→set_lowestValue(newval)

Changes the recorded minimal value observed for the ambient light.

lightsensor→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

lightsensor→set_resolution(newval)

Changes the resolution of the measured physical values.

lightsensor→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

lightsensor→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YLightSensor.FindLightSensor() yFindLightSensor()yFindLightSensor()

YLightSensor

Retrieves a light sensor for a given identifier.

js	function yFindLightSensor(func)
node.js	function FindLightSensor(func)
php	function yFindLightSensor(\$func)
cpp	YLightSensor* yFindLightSensor(const string& func)
m	YLightSensor* yFindLightSensor(NSString* func)
pas	function yFindLightSensor(func: string): TYLightSensor
vb	function yFindLightSensor(ByVal func As String) As YLightSensor
cs	YLightSensor FindLightSensor(string func)
java	YLightSensor FindLightSensor(String func)
py	def FindLightSensor(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the light sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YLightSensor.isOnline()` to test if the light sensor is indeed online at a given time. In case of ambiguity when looking for a light sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the light sensor

Returns :

a `YLightSensor` object allowing you to drive the light sensor.

YLightSensor.FirstLightSensor()**yFirstLightSensor()yFirstLightSensor()****YLightSensor**

Starts the enumeration of light sensors currently accessible.

js	function yFirstLightSensor()
nodejs	function FirstLightSensor()
php	function yFirstLightSensor()
cpp	YLightSensor* yFirstLightSensor()
m	YLightSensor* yFirstLightSensor()
pas	function yFirstLightSensor(): TYLightSensor
vb	function yFirstLightSensor() As YLightSensor
cs	YLightSensor FirstLightSensor()
java	YLightSensor FirstLightSensor()
py	def FirstLightSensor()

Use the method `YLightSensor.nextLightSensor()` to iterate on next light sensors.

Returns :

a pointer to a `YLightSensor` object, corresponding to the first light sensor currently online, or a `null` pointer if there are none.

lightsensor→calibrate(lightsensor.calibrate())**YLightSensor**

Changes the sensor-specific calibration parameter so that the current value matches a desired target (linear scaling).

js	function calibrate(calibratedVal)
nodejs	function calibrate(calibratedVal)
php	function calibrate(\$calibratedVal)
cpp	int calibrate(double calibratedVal)
m	-(int) calibrate : (double) calibratedVal
pas	function calibrate(calibratedVal: double): integer
vb	function calibrate(ByVal calibratedVal As Double) As Integer
cs	int calibrate(double calibratedVal)
java	int calibrate(double calibratedVal)
py	def calibrate(calibratedVal)
cmd	YLightSensor target calibrate calibratedVal

Parameters :

calibratedVal the desired target value.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→calibrateFromPoints() lightsensor.calibrateFromPoints()

YLightSensor

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php  function calibrateFromPoints( $rawValues, $refValues)
cpp   int calibrateFromPoints( vector<double> rawValues,
                             vector<double> refValues)

m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                  : (NSMutableArray*) refValues

pas  function calibrateFromPoints( rawValues: TDoubleArray,
                                 refValues: TDoubleArray): LongInt

vb   procedure calibrateFromPoints( )

cs   int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def calibrateFromPoints( rawValues, refValues)

cmd  YLightSensor target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.
refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→describe()lightsensor.describe()**YLightSensor**

Returns a short text that describes unambiguously the instance of the light sensor in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the light sensor (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

lightsensor→get_advertisedValue()
lightsensor→advertisedValue()
lightsensor.get_advertisedValue()**YLightSensor**

Returns the current value of the light sensor (no more than 6 characters).

<code>js</code>	<code>function get_advertisedValue()</code>
<code>node.js</code>	<code>function get_advertisedValue()</code>
<code>php</code>	<code>function get_advertisedValue()</code>
<code>cpp</code>	<code>string get_advertisedValue()</code>
<code>m</code>	<code>-(NSString*) advertisedValue</code>
<code>pas</code>	<code>function get_advertisedValue(): string</code>
<code>vb</code>	<code>function get_advertisedValue() As String</code>
<code>cs</code>	<code>string get_advertisedValue()</code>
<code>java</code>	<code>String get_advertisedValue()</code>
<code>py</code>	<code>def get_advertisedValue()</code>
<code>cmd</code>	<code>YLightSensor target get_advertisedValue</code>

Returns :

a string corresponding to the current value of the light sensor (no more than 6 characters). On failure, throws an exception or returns `Y_ADVERTISEDVALUE_INVALID`.

lightsensor→get_currentRawValue()
lightsensor→currentRawValue()
lightsensor.get_currentRawValue()**YLightSensor**

Returns the unrounded and uncalibrated raw value returned by the sensor.

js function **get_currentRawValue()**
nodejs function **get_currentRawValue()**
php function **get_currentRawValue()**
cpp double **get_currentRawValue()**
m -(double) currentRawValue
pas function **get_currentRawValue(): double**
vb function **get_currentRawValue() As Double**
cs double **get_currentRawValue()**
java double **get_currentRawValue()**
py def **get_currentRawValue()**
cmd YLightSensor target **get_currentRawValue**

Returns :

a floating point number corresponding to the unrounded and uncalibrated raw value returned by the sensor

On failure, throws an exception or returns **Y_CURRENTRAWVALUE_INVALID**.

lightsensor→get_currentValue()
lightsensor→currentValue()
lightsensor.get_currentValue()

YLightSensor

Returns the current measure for the ambient light.

js	function get_currentValue()
nodejs	function get_currentValue()
php	function get_currentValue()
cpp	double get_currentValue()
m	-(double) currentValue
pas	function get_currentValue() : double
vb	function get_currentValue() As Double
cs	double get_currentValue()
java	double get_currentValue()
py	def get_currentValue()
cmd	YLightSensor target get_currentValue

Returns :

a floating point number corresponding to the current measure for the ambient light

On failure, throws an exception or returns **Y_CURRENTVALUE_INVALID**.

lightsensor→get_errorMessage()
lightsensor→errorMessage()
lightsensor.get_errorMessage()**YLightSensor**

Returns the error message of the latest error with the light sensor.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the light sensor object

lightsensor→get_errorType()**YLightSensor****lightsensor→errorType()lightsensor.get_errorType()**

Returns the numerical error code of the latest error with the light sensor.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the light sensor object

lightsensor→get_friendlyName()
lightsensor→friendlyName()**YLightSensor**

Returns a global identifier of the light sensor in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the light sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the light sensor (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the light sensor using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

lightsensor→get_functionDescriptor()**YLightSensor****lightsensor→functionDescriptor()****lightsensor.get_functionDescriptor()**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

lightsensor→get_functionId()
lightsensor→functionId()**YLightSensor**

Returns the hardware identifier of the light sensor, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the light sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

lightsensor→get_hardwareId()
lightsensor→hardwareId()**YLightSensor**

Returns the unique hardware identifier of the light sensor in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the light sensor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the light sensor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

lightsensor→get_highestValue()
lightsensor→highestValue()
lightsensor.get_highestValue()

YLightSensor

Returns the maximal value observed for the ambient light.

```
js function get_highestValue( )  
nodejs function get_highestValue( )  
php function get_highestValue( )  
cpp double get_highestValue( )  
m -(double) highestValue  
pas function get_highestValue( ): double  
vb function get_highestValue( ) As Double  
cs double get_highestValue( )  
java double get_highestValue( )  
py def get_highestValue( )  
cmd YLightSensor target get_highestValue
```

Returns :

a floating point number corresponding to the maximal value observed for the ambient light

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

lightsensor→get_logFrequency()
lightsensor→logFrequency()
lightsensor.get_logFrequency()**YLightSensor**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YLightSensor target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns **Y_LOGFREQUENCY_INVALID**.

lightsensor→get_logicalName()
lightsensor→logicalName()
lightsensor.get_logicalName()

YLightSensor

Returns the logical name of the light sensor.

```
js function get_logicalName( )
nodejs function get_logicalName( )
php function get_logicalName( )
cpp string get_logicalName( )
m -(NSString*) logicalName
pas function get_logicalName( ): string
vb function get_logicalName( ) As String
cs string get_logicalName( )
java String get_logicalName( )
py def get_logicalName( )
cmd YLightSensor target get_logicalName
```

Returns :

a string corresponding to the logical name of the light sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

lightsensor→get_lowestValue()
lightsensor→lowestValue()
lightsensor.get_lowestValue()

YLightSensor

Returns the minimal value observed for the ambient light.

js	function get_lowestValue()
node.js	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue(): double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YLightSensor target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the ambient light

On failure, throws an exception or returns **Y_LOWESTVALUE_INVALID**.

lightsensor→get_module()**YLightSensor****lightsensor→module()lightsensor.get_module()**

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
node.js	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

lightsensor→get_module_async() lightsensor→module_async()

YLightSensor

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

`lightsensor→get_recordedData()`
`lightsensor→recordedData()`
`lightsensor.get_recordedData()`

YLightSensor

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the `DataSet` class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without ending limit.

Returns :

an instance of `YDataSet`, providing access to historical data. Past measures can be loaded progressively using methods from the `YDataSet` object.

lightsensor→get_reportFrequency()
lightsensor→reportFrequency()
lightsensor.get_reportFrequency()**YLightSensor**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js    function get_reportFrequency( )  
nodejs function get_reportFrequency( )  
php   function get_reportFrequency( )  
cpp   string get_reportFrequency( )  
m     -(NSString*) reportFrequency  
pas   function get_reportFrequency( ): string  
vb    function get_reportFrequency( ) As String  
cs    string get_reportFrequency( )  
java  String get_reportFrequency( )  
py    def get_reportFrequency( )  
cmd   YLightSensor target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns `Y_REPORTFREQUENCY_INVALID`.

lightsensor→get_resolution()**YLightSensor****lightsensor→resolution()lightsensor.get_resolution()**

Returns the resolution of the measured values.

```
js function get_resolution( )
node.js function get_resolution( )
php function get_resolution( )
cpp double get_resolution( )
m -(double) resolution
pas function get_resolution( ): double
vb function get_resolution( ) As Double
cs double get_resolution( )
java double get_resolution( )
py def get_resolution( )
cmd YLightSensor target get_resolution
```

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

lightsensor→get_unit()**YLightSensor****lightsensor→unit()lightsensor.get_unit()**

Returns the measuring unit for the ambient light.

js	function get_unit()
nodejs	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YLightSensor target get_unit

Returns :

a string corresponding to the measuring unit for the ambient light

On failure, throws an exception or returns Y_UNIT_INVALID.

lightsensor→get(userData)**YLightSensor****lightsensor→userData()lightsensor.get(userData)**

Returns the value of the userData attribute, as previously stored using method set(userData).

```
js function get(userData) 
node.js function get(userData) 
php function get(userData) 
cpp void * get(userData) 
m -(void*) userData 
pas function get(userData): Tobject 
vb function get(userData) As Object 
cs object get(userData) 
java Object get(userData) 
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

lightsensor→isOnline()lightsensor.isOnline()**YLightSensor**

Checks if the light sensor is currently reachable, without raising any error.

js	function isOnline ()
node.js	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the light sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the light sensor.

Returns :

true if the light sensor can be reached, and false otherwise

lightsensor→isOnline_async()

YLightSensor

Checks if the light sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the light sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

lightsensor→load()lightsensor.load()**YLightSensor**

Preloads the light sensor cache with a specified validity duration.

js	<code>function load(msValidity)</code>
node.js	<code>function load(msValidity)</code>
php	<code>function load(\$msValidity)</code>
cpp	<code>YRETCODE load(int msValidity)</code>
m	<code>-(YRETCODE) load : (int) msValidity</code>
pas	<code>function load(msValidity: integer): YRETCODE</code>
vb	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
cs	<code>YRETCODE load(int msValidity)</code>
java	<code>int load(long msValidity)</code>
py	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

lightsensor→loadCalibrationPoints()

YLightSensor

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php   function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)
m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues
pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt
vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)
java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)
py   def loadCalibrationPoints( rawValues, refValues)
cmd  YLightSensor target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→load_async()

YLightSensor

Preloads the light sensor cache with a specified validity duration (asynchronous version).

```
js   function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

lightsensor→nextLightSensor()
lightsensor.nextLightSensor()**YLightSensor**

Continues the enumeration of light sensors started using `yFirstLightSensor()`.

`js` **function nextLightSensor()**
`node.js` **function nextLightSensor()**
`php` **function nextLightSensor()**
`cpp` **YLightSensor * nextLightSensor()**
`m` **-(YLightSensor*) nextLightSensor**
`pas` **function nextLightSensor(): TYLightSensor**
`vb` **function nextLightSensor() As YLightSensor**
`cs` **YLightSensor nextLightSensor()**
`java` **YLightSensor nextLightSensor()**
`py` **def nextLightSensor()**

Returns :

a pointer to a `YLightSensor` object, corresponding to a light sensor currently online, or a null pointer if there are no more light sensors to enumerate.

lightsensor→registerTimedReportCallback() lightsensor.registerTimedReportCallback()

YLightSensor

Registers the callback function that is invoked on every periodic timed notification.

<code>js</code>	<code>function registerTimedReportCallback(callback)</code>
<code>node.js</code>	<code>function registerTimedReportCallback(callback)</code>
<code>php</code>	<code>function registerTimedReportCallback(\$callback)</code>
<code>cpp</code>	<code>int registerTimedReportCallback(YLightSensorTimedReportCallback callback)</code>
<code>m</code>	<code>-(int) registerTimedReportCallback : (YLightSensorTimedReportCallback) callback</code>
<code>pas</code>	<code>function registerTimedReportCallback(callback: TYLightSensorTimedReportCallback): LongInt</code>
<code>vb</code>	<code>function registerTimedReportCallback() As Integer</code>
<code>cs</code>	<code>int registerTimedReportCallback(TimedReportCallback callback)</code>
<code>java</code>	<code>int registerTimedReportCallback(TimedReportCallback callback)</code>
<code>py</code>	<code>def registerTimedReportCallback(callback)</code>

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

lightsensor→registerValueCallback() lightsensor.registerValueCallback()

YLightSensor

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YLightSensorValueCallback callback )
m    -(int) registerValueCallback : (YLightSensorValueCallback) callback
pas   function registerValueCallback( callback: TYLightSensorValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

lightsensor→set_highestValue()
lightsensor→setHighestValue()
lightsensor.set_highestValue()**YLightSensor**

Changes the recorded maximal value observed for the ambiant light.

js	function set_highestValue(newval)
nodejs	function set_highestValue(newval)
php	function set_highestValue(\$newval)
cpp	int set_highestValue(double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue(newval: double): integer
vb	function set_highestValue(ByVal newval As Double) As Integer
cs	int set_highestValue(double newval)
java	int set_highestValue(double newval)
py	def set_highestValue(newval)
cmd	YLightSensor target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed for the ambiant light

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→set_logFrequency()
lightsensor→setLogFrequency()
lightsensor.set_logFrequency()

YLightSensor

Changes the datalogger recording frequency for this function.

```
js   function set_logFrequency( newval)
nodejs function set_logFrequency( newval)
php  function set_logFrequency( $newval)
cpp   int set_logFrequency( const string& newval)
m    -(int) setLogFrequency : (NSString*) newval
pas   function set_logFrequency( newval: string): integer
vb    function set_logFrequency( ByVal newval As String) As Integer
cs    int set_logFrequency( string newval)
java  int set_logFrequency( String newval)
py    def set_logFrequency( newval)
cmd   YLightSensor target set_logFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→set_logicalName()
lightsensor→setLogicalName()
lightsensor.set_logicalName()

YLightSensor

Changes the logical name of the light sensor.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YLightSensor target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the light sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

lightsensor→set_lowestValue()
lightsensor→setLowestValue()
lightsensor.set_lowestValue()

YLightSensor

Changes the recorded minimal value observed for the ambient light.

```
js function set_lowestValue( newval)
nodejs function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YLightSensor target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed for the ambient light

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→set_reportFrequency()
lightsensor→setReportFrequency()
lightsensor.set_reportFrequency()

YLightSensor

Changes the timed value notification frequency for this function.

js	function set_reportFrequency(newval)
nodejs	function set_reportFrequency(newval)
php	function set_reportFrequency(\$newval)
cpp	int set_reportFrequency(const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency(newval: string): integer
vb	function set_reportFrequency(ByVal newval As String) As Integer
cs	int set_reportFrequency(string newval)
java	int set_reportFrequency(String newval)
py	def set_reportFrequency(newval)
cmd	YLightSensor target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→set_resolution()
lightsensor→setResolution()
lightsensor.set_resolution()**YLightSensor**

Changes the resolution of the measured physical values.

js	function set_resolution(newval)
nodejs	function set_resolution(newval)
php	function set_resolution(\$newval)
cpp	int set_resolution(double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution(newval: double): integer
vb	function set_resolution(ByVal newval As Double) As Integer
cs	int set_resolution(double newval)
java	int set_resolution(double newval)
py	def set_resolution(newval)
cmd	YLightSensor target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

lightsensor→set(userData)
lightsensor→setUserData()
lightsensor.set(userData)

YLightSensor

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	-(void) setUserData : (void*) data
pas	procedure set(userData Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

lightsensor→wait_async()

YLightSensor

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.23. Magnetometer function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_magnetometer.js'></script>
nodejs	var yoctolib = require('yoctolib');
php	var YMagnetometer = yoctolib.YMagnetometer;
cpp	require_once('yocto_magnetometer.php');
m	#include "yocto_magnetometer.h"
pas	#import "yocto_magnetometer.h"
vb	uses yocto_magnetometer;
cs	yocto_magnetometer.vb
java	yocto_magnetometer.cs
py	import com.yoctopuce.YoctoAPI.YMagnetometer;
	from yocto_magnetometer import *

Global functions

yFindMagnetometer(func)

Retrieves a magnetometer for a given identifier.

yFirstMagnetometer()

Starts the enumeration of magnetometers currently accessible.

YMagnetometer methods

magnetometer→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

magnetometer→describe()

Returns a short text that describes unambiguously the instance of the magnetometer in the form TYPE (NAME) = SERIAL . FUNCTIONID.

magnetometer→get_advertisedValue()

Returns the current value of the magnetometer (no more than 6 characters).

magnetometer→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

magnetometer→get_currentValue()

Returns the current value of the magnetic field.

magnetometer→get_errorMessage()

Returns the error message of the latest error with the magnetometer.

magnetometer→get_errorType()

Returns the numerical error code of the latest error with the magnetometer.

magnetometer→get_friendlyName()

Returns a global identifier of the magnetometer in the format MODULE_NAME . FUNCTION_NAME.

magnetometer→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

magnetometer→get_functionId()

Returns the hardware identifier of the magnetometer, without reference to the module.

magnetometer→get_hardwareId()

Returns the unique hardware identifier of the magnetometer in the form SERIAL . FUNCTIONID.

magnetometer→get_highestValue()	Returns the maximal value observed for the magnetic field since the device was started.
magnetometer→get_logFrequency()	Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.
magnetometer→get_logicalName()	Returns the logical name of the magnetometer.
magnetometer→get_lowestValue()	Returns the minimal value observed for the magnetic field since the device was started.
magnetometer→get_module()	Gets the YModule object for the device on which the function is located.
magnetometer→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located (asynchronous version).
magnetometer→get_recordedData(startTime, endTime)	Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.
magnetometer→get_reportFrequency()	Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.
magnetometer→get_resolution()	Returns the resolution of the measured values.
magnetometer→get_unit()	Returns the measuring unit for the magnetic field.
magnetometer→get_userData()	Returns the value of the userData attribute, as previously stored using method set(userData).
magnetometer→get_xValue()	Returns the X component of the magnetic field, as a floating point number.
magnetometer→get_yValue()	Returns the Y component of the magnetic field, as a floating point number.
magnetometer→get_zValue()	Returns the Z component of the magnetic field, as a floating point number.
magnetometer→isOnline()	Checks if the magnetometer is currently reachable, without raising any error.
magnetometer→isOnline_async(callback, context)	Checks if the magnetometer is currently reachable, without raising any error (asynchronous version).
magnetometer→load(msValidity)	Preloads the magnetometer cache with a specified validity duration.
magnetometer→loadCalibrationPoints(rawValues, refValues)	Retrieves error correction data points previously entered using the method calibrateFromPoints.
magnetometer→load_async(msValidity, callback, context)	Preloads the magnetometer cache with a specified validity duration (asynchronous version).
magnetometer→nextMagnetometer()	Continues the enumeration of magnetometers started using yFirstMagnetometer().
magnetometer→registerTimedReportCallback(callback)	Registers the callback function that is invoked on every periodic timed notification.
magnetometer→registerValueCallback(callback)	Registers the callback function that is invoked on every change of advertised value.

magnetometer→set_highestValue(newval)

Changes the recorded maximal value observed.

magnetometer→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

magnetometer→set_logicalName(newval)

Changes the logical name of the magnetometer.

magnetometer→set_lowestValue(newval)

Changes the recorded minimal value observed.

magnetometer→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

magnetometer→set_resolution(newval)

Changes the resolution of the measured physical values.

magnetometer→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

magnetometer→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

Y Magnetometer.FindMagnetometer() yFindMagnetometer()yFindMagnetometer()

Y Magnetometer

Retrieves a magnetometer for a given identifier.

js	function yFindMagnetometer(func)
node.js	function FindMagnetometer(func)
php	function yFindMagnetometer(\$func)
cpp	Y Magnetometer* yFindMagnetometer(const string& func)
m	Y Magnetometer* yFindMagnetometer(NSString* func)
pas	function yFindMagnetometer(func: string): TYMagnetometer
vb	function yFindMagnetometer(ByVal func As String) As YMagnetometer
cs	Y Magnetometer FindMagnetometer(string func)
java	Y Magnetometer FindMagnetometer(String func)
py	def FindMagnetometer(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the magnetometer is online at the time it is invoked. The returned object is nevertheless valid. Use the method `Y Magnetometer.isOnline()` to test if the magnetometer is indeed online at a given time. In case of ambiguity when looking for a magnetometer by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the magnetometer

Returns :

a `Y Magnetometer` object allowing you to drive the magnetometer.

Y Magnetometer.FirstMagnetometer()**Y Magnetometer****yFirstMagnetometer()yFirstMagnetometer()**

Starts the enumeration of magnetometers currently accessible.

js	function yFirstMagnetometer()
nodejs	function FirstMagnetometer()
php	function yFirstMagnetometer()
cpp	Y Magnetometer* yFirstMagnetometer()
m	Y Magnetometer* yFirstMagnetometer()
pas	function yFirstMagnetometer(): TYMagnetometer
vb	function yFirstMagnetometer() As YMagnetometer
cs	Y Magnetometer FirstMagnetometer()
java	Y Magnetometer FirstMagnetometer()
py	def FirstMagnetometer()

Use the method `Y Magnetometer.nextMagnetometer()` to iterate on next magnetometers.

Returns :

a pointer to a `Y Magnetometer` object, corresponding to the first magnetometer currently online, or a null pointer if there are none.

magnetometer→calibrateFromPoints() magnetometer.calibrateFromPoints()

YMagnetometer

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php   function calibrateFromPoints( $rawValues, $refValues)
cpp   int calibrateFromPoints( vector<double> rawValues,
                           vector<double> refValues)
m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues
pas  function calibrateFromPoints( rawValues: TDoubleArray,
                           refValues: TDoubleArray): LongInt
vb   procedure calibrateFromPoints( )
cs   int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)
java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)
py   def calibrateFromPoints( rawValues, refValues)
cmd YMagnetometer target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→describe()magnetometer.describe()**YMagnetometer**

Returns a short text that describes unambiguously the instance of the magnetometer in the form
 TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the magnetometer (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

magnetometer→get_advertisedValue()
magnetometer→advertisedValue()
magnetometer.get_advertisedValue()

YMagnetometer

Returns the current value of the magnetometer (no more than 6 characters).

```
js function get_advertisedValue( )  
nodejs function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YMagnetometer target get_advertisedValue
```

Returns :

a string corresponding to the current value of the magnetometer (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

magnetometer→get_currentRawValue()
magnetometer→currentRawValue()
magnetometer.get_currentRawValue()

YMagnetometer

Returns the uncalibrated, unrounded raw value returned by the sensor.

js	function get_currentRawValue()
nodejs	function get_currentRawValue()
php	function get_currentRawValue()
cpp	double get_currentRawValue()
m	-(double) currentRawValue
pas	function get_currentRawValue(): double
vb	function get_currentRawValue() As Double
cs	double get_currentRawValue()
java	double get_currentRawValue()
py	def get_currentRawValue()
cmd	Y Magnetometer target get_currentRawValue

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns **Y_CURRENTRAWVALUE_INVALID**.

magnetometer→get_currentValue()
magnetometer→currentValue()
magnetometer.get_currentValue()

YMagnetometer

Returns the current value of the magnetic field.

```
js function get_currentValue( )  
nodejs function get_currentValue( )  
php function get_currentValue( )  
cpp double get_currentValue( )  
m -(double) currentValue  
pas function get_currentValue( ): double  
vb function get_currentValue( ) As Double  
cs double get_currentValue( )  
java double get_currentValue( )  
py def get_currentValue( )  
cmd YMagnetometer target get_currentValue
```

Returns :

a floating point number corresponding to the current value of the magnetic field

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

magnetometer→getErrorMessage()
magnetometer→errorMessage()
magnetometer.getErrorMessage()

YMagnetometer

Returns the error message of the latest error with the magnetometer.

js	function getErrorMessage()
node.js	function getErrorMessage()
php	function getErrorMessage()
cpp	string getErrorMessage()
m	-(NSString*) errorMessage
pas	function getErrorMessage() : string
vb	function getErrorMessage() As String
cs	string getErrorMessage()
java	String getErrorMessage()
py	def getErrorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the magnetometer object

magnetometer→get_errorType()
magnetometer→errorType()
magnetometer.get_errorType()**YMagnetometer**

Returns the numerical error code of the latest error with the magnetometer.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the magnetometer object

magnetometer→get_friendlyName()
magnetometer→friendlyName()**YMagnetometer**

Returns a global identifier of the magnetometer in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the magnetometer if they are defined, otherwise the serial number of the module and the hardware identifier of the magnetometer (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the magnetometer using logical names (ex: MyCustomName . relay1)

On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

magnetometer→get_functionDescriptor()
magnetometer→functionDescriptor()
magnetometer.get_functionDescriptor()**YMagnetometer**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

magnetometer→get_functionId()
magnetometer→functionId()**YMagnetometer**

Returns the hardware identifier of the magnetometer, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the magnetometer (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

magnetometer→get_hardwareId()
magnetometer→hardwareId()**YMagnetometer**

Returns the unique hardware identifier of the magnetometer in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the magnetometer. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the magnetometer (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

magnetometer→get_highestValue()
magnetometer→highestValue()
magnetometer.get_highestValue()

YMagnetometer

Returns the maximal value observed for the magnetic field since the device was started.

js	function get_highestValue()
node.js	function get_highestValue()
php	function get_highestValue()
cpp	double get_highestValue()
m	-(double) highestValue
pas	function get_highestValue() : double
vb	function get_highestValue() As Double
cs	double get_highestValue()
java	double get_highestValue()
py	def get_highestValue()
cmd	Y Magnetometer target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the magnetic field since the device was started

On failure, throws an exception or returns **Y_HIGHESTVALUE_INVALID**.

magnetometer→get_logFrequency()
magnetometer→logFrequency()
magnetometer.get_logFrequency()**YMagnetometer**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

```
js   function get_logFrequency( )  
nodejs function get_logFrequency( )  
php  function get_logFrequency( )  
cpp   string get_logFrequency( )  
m    -(NSString*) logFrequency  
pas   function get_logFrequency( ):string  
vb    function get_logFrequency( ) As String  
cs    string get_logFrequency( )  
java  String get_logFrequency( )  
py    def get_logFrequency( )  
cmd   YMagnetometer target get_logFrequency
```

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

magnetometer→get_logicalName()
magnetometer→logicalName()
magnetometer.get_logicalName()

YMagnetometer

Returns the logical name of the magnetometer.

```
js   function get_logicalName( )  
nodejs function get_logicalName( )  
php  function get_logicalName( )  
cpp   string get_logicalName( )  
m    -(NSString*) logicalName  
pas   function get_logicalName( ): string  
vb    function get_logicalName( ) As String  
cs    string get_logicalName( )  
java  String get_logicalName( )  
py    def get_logicalName( )  
cmd   YMagnetometer target get_logicalName
```

Returns :

a string corresponding to the logical name of the magnetometer. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

magnetometer→get_lowestValue()
magnetometer→lowestValue()
magnetometer.get_lowestValue()

YMagnetometer

Returns the minimal value observed for the magnetic field since the device was started.

```
js function get_lowestValue( )  
nodejs function get_lowestValue( )  
php function get_lowestValue( )  
cpp double get_lowestValue( )  
m -(double) lowestValue  
pas function get_lowestValue( ): double  
vb function get_lowestValue( ) As Double  
cs double get_lowestValue( )  
java double get_lowestValue( )  
py def get_lowestValue( )  
cmd YMagnetometer target get_lowestValue
```

Returns :

a floating point number corresponding to the minimal value observed for the magnetic field since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

magnetometer→get_module()
magnetometer→module()
magnetometer.get_module()

YMagnetometer

Gets the **YModule** object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of **YModule** is not shown as on-line.

Returns :

an instance of **YModule**

magnetometer→get_module_async()
magnetometer→module_async()**YMagnetometer**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

magnetometer→get_recordedData()
magnetometer→recordedData()
magnetometer.get_recordedData()

YMagnetometer

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

<code>js</code>	function get_recordedData(startTime, endTime)
<code>node.js</code>	function get_recordedData(startTime, endTime)
<code>php</code>	function get_recordedData(\$startTime, \$endTime)
<code>cpp</code>	YDataSet get_recordedData(s64 startTime, s64 endTime)
<code>m</code>	-(YDataSet*) recordedData : (s64) startTime : (s64) endTime
<code>pas</code>	function get_recordedData(startTime: int64, endTime: int64): TYDataSet
<code>vb</code>	function get_recordedData() As YDataSet
<code>cs</code>	YDataSet get_recordedData(long startTime, long endTime)
<code>java</code>	YDataSet get_recordedData(long startTime, long endTime)
<code>py</code>	def get_recordedData(startTime, endTime)
<code>cmd</code>	YMagnetometer target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

magnetometer→get_reportFrequency()
magnetometer→reportFrequency()
magnetometer.get_reportFrequency()**YMagnetometer**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js function get_reportFrequency( )
nodejs function get_reportFrequency( )
php function get_reportFrequency( )
cpp string get_reportFrequency( )
m -(NSString*) reportFrequency
pas function get_reportFrequency( ): string
vb function get_reportFrequency( ) As String
cs string get_reportFrequency( )
java String get_reportFrequency( )
py def get_reportFrequency( )
cmd YMagnetometer target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

magnetometer→get_resolution()
magnetometer→resolution()
magnetometer.get_resolution()

YMagnetometer

Returns the resolution of the measured values.

```
js   function get_resolution( )  
nodejs function get_resolution( )  
php  function get_resolution( )  
cpp   double get_resolution( )  
m    -(double) resolution  
pas   function get_resolution( ): double  
vb    function get_resolution( ) As Double  
cs    double get_resolution( )  
java  double get_resolution( )  
py    def get_resolution( )  
cmd   YMagnetometer target get_resolution
```

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

magnetometer→get_unit()**YMagnetometer****magnetometer→unit()magnetometer.get_unit()**

Returns the measuring unit for the magnetic field.

js	function get_unit()
node.js	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	Y Magnetometer target get_unit

Returns :

a string corresponding to the measuring unit for the magnetic field

On failure, throws an exception or returns Y_UNIT_INVALID.

magnetometer→get(userData)
magnetometer→userData()
magnetometer.get(userData())

YMagnetometer

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	function get(userData)
node.js	function get(userData)
php	function get(userData)
cpp	void * get(userData)
m	-(void*) userData
pas	function get(userData) : Tobject
vb	function get(userData) As Object
cs	object get(userData)
java	Object get(userData)
py	def get(userData)

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

magnetometer→get_xValue()**YMagnetometer****magnetometer→xValue()magnetometer.get_xValue()**

Returns the X component of the magnetic field, as a floating point number.

```
js function get_xValue( )
node.js function get_xValue( )
php function get_xValue( )
cpp double get_xValue( )
m -(double) xValue
pas function get_xValue( ): double
vb function get_xValue( ) As Double
cs double get_xValue( )
java double get_xValue( )
py def get_xValue( )
cmd YMagnetometer target get_xValue
```

Returns :

a floating point number corresponding to the X component of the magnetic field, as a floating point number

On failure, throws an exception or returns Y_XVALUE_INVALID.

magnetometer→get_yValue()**YMagnetometer****magnetometer→yValue()magnetometer.get_yValue()**

Returns the Y component of the magnetic field, as a floating point number.

```
js function get_yValue( )
nodejs function get_yValue( )
php function get_yValue( )
cpp double get_yValue( )
m -(double) yValue
pas function get_yValue( ): double
vb function get_yValue( ) As Double
cs double get_yValue( )
java double get_yValue( )
py def get_yValue( )
cmd YMagnetometer target get_yValue
```

Returns :

a floating point number corresponding to the Y component of the magnetic field, as a floating point number

On failure, throws an exception or returns `Y_YVALUE_INVALID`.

magnetometer→get_zValue()**YMagnetometer****magnetometer→zValue()magnetometer.get_zValue()**

Returns the Z component of the magnetic field, as a floating point number.

```
js function get_zValue( )  
node.js function get_zValue( )  
php function get_zValue( )  
cpp double get_zValue( )  
m -(double) zValue  
pas function get_zValue( ): double  
vb function get_zValue( ) As Double  
cs double get_zValue( )  
java double get_zValue( )  
py def get_zValue( )  
cmd YMagnetometer target get_zValue
```

Returns :

a floating point number corresponding to the Z component of the magnetic field, as a floating point number

On failure, throws an exception or returns Y_ZVALUE_INVALID.

magnetometer→isOnline()magnetometer.isOnline()**YMagnetometer**

Checks if the magnetometer is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the magnetometer in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the magnetometer.

Returns :

`true` if the magnetometer can be reached, and `false` otherwise

magnetometer→isOnline_async()**YMagnetometer**

Checks if the magnetometer is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the magnetometer in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

magnetometer→load()magnetometer.load()**YMagnetometer**

Preloads the magnetometer cache with a specified validity duration.

js	<code>function load(msValidity)</code>
node.js	<code>function load(msValidity)</code>
php	<code>function load(\$msValidity)</code>
cpp	<code>YRETCODE load(int msValidity)</code>
m	<code>-(YRETCODE) load : (int) msValidity</code>
pas	<code>function load(msValidity: integer): YRETCODE</code>
vb	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
cs	<code>YRETCODE load(int msValidity)</code>
java	<code>int load(long msValidity)</code>
py	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

magnetometer→loadCalibrationPoints() magnetometer.loadCalibrationPoints()

YMagnetometer

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php  function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)
m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues
pas   function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt
vb    procedure loadCalibrationPoints( )
cs    int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)
java  int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)
py    def loadCalibrationPoints( rawValues, refValues)
cmd   YMagnetometer target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→load_async()

YMagnetometer

Preloads the magnetometer cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

magnetometer→nextMagnetometer()
magnetometer.nextMagnetometer()**YMagnetometer**

Continues the enumeration of magnetometers started using `yFirstMagnetometer()`.

<code>js</code>	<code>function nextMagnetometer()</code>
<code>node.js</code>	<code>function nextMagnetometer()</code>
<code>php</code>	<code>function nextMagnetometer()</code>
<code>cpp</code>	<code>YMagnetometer * nextMagnetometer()</code>
<code>m</code>	<code>-(YMagnetometer*) nextMagnetometer</code>
<code>pas</code>	<code>function nextMagnetometer(): TYMagnetometer</code>
<code>vb</code>	<code>function nextMagnetometer() As YMagnetometer</code>
<code>cs</code>	<code>YMagnetometer nextMagnetometer()</code>
<code>java</code>	<code>YMagnetometer nextMagnetometer()</code>
<code>py</code>	<code>def nextMagnetometer()</code>

Returns :

a pointer to a `YMagnetometer` object, corresponding to a magnetometer currently online, or a null pointer if there are no more magnetometers to enumerate.

magnetometer→registerTimedReportCallback() magnetometer.registerTimedReportCallback()

YMagnetometer

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback(callback)
node.js	function registerTimedReportCallback(callback)
php	function registerTimedReportCallback(\$callback)
cpp	int registerTimedReportCallback(YMagnetometerTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YMagnetometerTimedReportCallback) callback
pas	function registerTimedReportCallback(callback : TYMagnetometerTimedReportCallback): LongInt
vb	function registerTimedReportCallback() As Integer
cs	int registerTimedReportCallback(TimedReportCallback callback)
java	int registerTimedReportCallback(TimedReportCallback callback)
py	def registerTimedReportCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

magnetometer→registerValueCallback() magnetometer.registerValueCallback()

YMagnetometer

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YMagnetometerValueCallback callback )
m    -(int) registerValueCallback : (YMagnetometerValueCallback) callback
pas   function registerValueCallback( callback: TYMagnetometerValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

magnetometer→set_highestValue()
magnetometer→setHighestValue()
magnetometer.set_highestValue()

YMagnetometer

Changes the recorded maximal value observed.

```
js function set_highestValue( newval)
nodejs function set_highestValue( newval)
php function set_highestValue( $newval)
cpp int set_highestValue( double newval)
m -(int) setHighestValue : (double) newval
pas function set_highestValue( newval: double): integer
vb function set_highestValue( ByVal newval As Double) As Integer
cs int set_highestValue( double newval)
java int set_highestValue( double newval)
py def set_highestValue( newval)
cmd YMagnetometer target set_highestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→set_logFrequency()
magnetometer→setLogFrequency()
magnetometer.set_logFrequency()

YMagnetometer

Changes the datalogger recording frequency for this function.

```
js  function set_logFrequency( newval)
nodejs function set_logFrequency( newval)
php  function set_logFrequency( $newval)
cpp  int set_logFrequency( const string& newval)
m   -(int) setLogFrequency : (NSString*) newval
pas  function set_logFrequency( newval: string): integer
vb   function set_logFrequency( ByVal newval As String) As Integer
cs   int set_logFrequency( string newval)
java int set_logFrequency( String newval)
py   def set_logFrequency( newval)
cmd  YMagnetometer target set_logFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→set_logicalName()
magnetometer→setLogicalName()
magnetometer.set_logicalName()

YMagnetometer

Changes the logical name of the magnetometer.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YMagnetometer target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the magnetometer.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

magnetometer→set_lowestValue()
magnetometer→setLowestValue()
magnetometer.set_lowestValue()

YMagnetometer

Changes the recorded minimal value observed.

```
js function set_lowestValue( newval)
nodejs function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YMagnetometer target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→set_reportFrequency()
magnetometer→setReportFrequency()
magnetometer.set_reportFrequency()

YMagnetometer

Changes the timed value notification frequency for this function.

js	function set_reportFrequency(newval)
nodejs	function set_reportFrequency(newval)
php	function set_reportFrequency(\$newval)
cpp	int set_reportFrequency(const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency(newval: string): integer
vb	function set_reportFrequency(ByVal newval As String) As Integer
cs	int set_reportFrequency(string newval)
java	int set_reportFrequency(String newval)
py	def set_reportFrequency(newval)
cmd	YMagnetometer target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→set_resolution()
magnetometer→setResolution()
magnetometer.set_resolution()

YMagnetometer

Changes the resolution of the measured physical values.

```
js function set_resolution( newval)
nodejs function set_resolution( newval)
php function set_resolution( $newval)
cpp int set_resolution( double newval)
m -(int) setResolution : (double) newval
pas function set_resolution( newval: double): integer
vb function set_resolution( ByVal newval As Double) As Integer
cs int set_resolution( double newval)
java int set_resolution( double newval)
py def set_resolution( newval)
cmd YMagnetometer target set_resolution newval
```

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

magnetometer→set(userData)
magnetometer→setUserData()
magnetometer.set(userData)

YMagnetometer

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	-(void) set(userData : (void*) data)
pas	procedure set(userData data: Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

magnetometer→wait_async()

YMagnetometer

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.24. Measured value

YMeasure objects are used within the API to represent a value measured at a specified time. These objects are used in particular in conjunction with the YDataSet class.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_api.js'></script>
node.js	var yoctolib = require('yoctolib');
	var YAPI = yoctolib.YAPI;
	var YModule = yoctolib.YModule;
php	require_once('yocto_api.php');
cpp	#include "yocto_api.h"
m	#import "yocto_api.h"
pas	uses yocto_api;
vb	yocto_api.vb
cs	yocto_api.cs
java	import com.yoctopuce.YoctoAPI.YModule;
py	from yocto_api import *

YMeasure methods

measure→get_averageValue()

Returns the average value observed during the time interval covered by this measure.

measure→get_endTimeUTC()

Returns the end time of the measure, relative to the Jan 1, 1970 UTC (Unix timestamp).

measure→get_maxValue()

Returns the largest value observed during the time interval covered by this measure.

measure→get_minValue()

Returns the smallest value observed during the time interval covered by this measure.

measure→get_startTimeUTC()

Returns the start time of the measure, relative to the Jan 1, 1970 UTC (Unix timestamp).

measure→get_averageValue()
measure→averageValue()
measure.get_averageValue()

YMeasure

Returns the average value observed during the time interval covered by this measure.

js function **get_averageValue()**
nodejs function **get_averageValue()**
php function **get_averageValue()**
cpp double **get_averageValue()**
m -(double) **averageValue**
pas function **get_averageValue()**: double
vb function **get_averageValue()** As Double
cs double **get_averageValue()**
java double **get_averageValue()**
py def **get_averageValue()**

Returns :

a floating-point number corresponding to the average value observed.

measure→get_endTimeUTC()**YMeasure****measure→endTimeUTC()measure.get_endTimeUTC()**

Returns the end time of the measure, relative to the Jan 1, 1970 UTC (Unix timestamp).

```
js function get_endTimeUTC( )  
nodejs function get_endTimeUTC( )  
php function get_endTimeUTC( )  
cpp double get_endTimeUTC( )  
m -(double) endTimeUTC  
pas function get_endTimeUTC( ): double  
vb function get_endTimeUTC( ) As Double  
cs double get_endTimeUTC( )  
java double get_endTimeUTC( )  
py def get_endTimeUTC( )
```

When the recording rate is higher than 1 sample per second, the timestamp may have a fractional part.

Returns :

an floating point number corresponding to the number of seconds between the Jan 1, 1970 UTC and the end of this measure.

measure→get_maxValue()**YMeasure****measure→maxValue()measure.get_maxValue()**

Returns the largest value observed during the time interval covered by this measure.

js	function get_maxValue()
node.js	function get_maxValue()
php	function get_maxValue()
cpp	double get_maxValue()
m	-(double) maxValue
pas	function get_maxValue() : double
vb	function get_maxValue() As Double
cs	double get_maxValue()
java	double get_maxValue()
py	def get_maxValue()

Returns :

a floating-point number corresponding to the largest value observed.

measure→get_minValue()**YMeasure****measure→minValue()measure.get_minValue()**

Returns the smallest value observed during the time interval covered by this measure.

js	function get_minValue()
nodejs	function get_minValue()
php	function get_minValue()
cpp	double get_minValue()
m	-(double) minValue
pas	function get_minValue(): double
vb	function get_minValue() As Double
cs	double get_minValue()
java	double get_minValue()
py	def get_minValue()

Returns :

a floating-point number corresponding to the smallest value observed.

measure→getStartTimeUTC()
measure→startTimeUTC()
measure.getStartTimeUTC()**YMeasure**

Returns the start time of the measure, relative to the Jan 1, 1970 UTC (Unix timestamp).

js function **getStartTimeUTC()**
nodejs function **getStartTimeUTC()**
php function **getStartTimeUTC()**
cpp double **getStartTimeUTC()**
m -(double) startTimeUTC
pas function **getStartTimeUTC(): double**
vb function **getStartTimeUTC() As Double**
cs double **getStartTimeUTC()**
java double **getStartTimeUTC()**
py def **getStartTimeUTC()**

When the recording rate is higher than 1 sample per second, the timestamp may have a fractional part.

Returns :

an floating point number corresponding to the number of seconds between the Jan 1, 1970 UTC and the beginning of this measure.

3.25. Module control interface

This interface is identical for all Yoctopuce USB modules. It can be used to control the module global parameters, and to enumerate the functions provided by each module.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_api.js'></script>
node.js	var yoctolib = require('yoctolib');
	var YAPI = yoctolib.YAPI;
	var YModule = yoctolib.YModule;
php	require_once('yocto_api.php');
cpp	#include "yocto_api.h"
m	#import "yocto_api.h"
pas	uses yocto_api;
vb	yocto_api.vb
cs	yocto_api.cs
java	import com.yoctopuce.YoctoAPI.YModule;
py	from yocto_api import *

Global functions

yFindModule(func)

Allows you to find a module from its serial number or from its logical name.

yFirstModule()

Starts the enumeration of modules currently accessible.

YModule methods

module→describe()

Returns a descriptive text that identifies the module.

module→download(pathname)

Downloads the specified built-in file and returns a binary buffer with its content.

module→functionCount()

Returns the number of functions (beside the "module" interface) available on the module.

module→functionId(functionIndex)

Retrieves the hardware identifier of the *n*th function on the module.

module→functionName(functionIndex)

Retrieves the logical name of the *n*th function on the module.

module→functionValue(functionIndex)

Retrieves the advertised value of the *n*th function on the module.

module→get_beacon()

Returns the state of the localization beacon.

module→get_errorMessage()

Returns the error message of the latest error with this module object.

module→get_errorType()

Returns the numerical error code of the latest error with this module object.

module→get_firmwareRelease()

Returns the version of the firmware embedded in the module.

module→get_hardwareId()

Returns the unique hardware identifier of the module.

module→get_icon2d()

3. Reference

Returns the icon of the module.
module→get_lastLogs() Returns a string with last logs of the module.
module→get_logicalName() Returns the logical name of the module.
module→get_luminosity() Returns the luminosity of the module informative leds (from 0 to 100).
module→get_persistentSettings() Returns the current state of persistent module settings.
module→get_productId() Returns the USB device identifier of the module.
module→get_productName() Returns the commercial name of the module, as set by the factory.
module→get_productRelease() Returns the hardware release version of the module.
module→get_rebootCountdown() Returns the remaining number of seconds before the module restarts, or zero when no reboot has been scheduled.
module→get_serialNumber() Returns the serial number of the module, as set by the factory.
module→get_upTime() Returns the number of milliseconds spent since the module was powered on.
module→get_usbBandwidth() Returns the number of USB interfaces used by the module.
module→get_usbCurrent() Returns the current consumed by the module on the USB bus, in milli-amps.
module→get(userData) Returns the value of the userData attribute, as previously stored using method <code>set(userData)</code> .
module→isOnline() Checks if the module is currently reachable, without raising any error.
module→isOnline_async(callback, context) Checks if the module is currently reachable, without raising any error.
module→load(msValidity) Preloads the module cache with a specified validity duration.
module→load_async(msValidity, callback, context) Preloads the module cache with a specified validity duration (asynchronous version).
module→nextModule() Continues the module enumeration started using <code>yFirstModule()</code> .
module→reboot(secBeforeReboot) Schedules a simple module reboot after the given number of seconds.
module→registerLogCallback(callback) todo
module→revertFromFlash() Reloads the settings stored in the nonvolatile memory, as when the module is powered on.
module→saveToFlash() Saves current settings in the nonvolatile memory of the module.

module→set_beacon(newval)

Turns on or off the module localization beacon.

module→set_logicalName(newval)

Changes the logical name of the module.

module→set_luminosity(newval)

Changes the luminosity of the module informative leds.

module→set_usbBandwidth(newval)

Changes the number of USB interfaces used by the module.

module→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

module→triggerFirmwareUpdate(secBeforeReboot)

Schedules a module reboot into special firmware update mode.

module→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YModule.FindModule() yFindModule()yFindModule()

YModule

Allows you to find a module from its serial number or from its logical name.

```
js function yFindModule( func)
node.js function FindModule( func)
php function yFindModule( $func)
cpp YModule* yFindModule( string func)
m +(YModule*) yFindModule : (NSString*) func
pas function yFindModule( func: string): TYModule
vb function yFindModule( ByVal func As String) As YModule
cs YModule FindModule( string func)
java YModule FindModule( String func)
py def FindModule( func)
```

This function does not require that the module is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YModule.isOnline()` to test if the module is indeed online at a given time. In case of ambiguity when looking for a module by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string containing either the serial number or the logical name of the desired module

Returns :

a `YModule` object allowing you to drive the module or get additional information on the module.

YModule.FirstModule() yFirstModule()yFirstModule()

YModule

Starts the enumeration of modules currently accessible.

```
js function yFirstModule( )
nodejs function FirstModule( )
php function yFirstModule( )
cpp YModule* yFirstModule( )
m YModule* yFirstModule( )
pas function yFirstModule( ): TYModule
vb function yFirstModule( ) As YModule
cs YModule FirstModule( )
java YModule FirstModule( )
py def FirstModule( )
```

Use the method `YModule.nextModule()` to iterate on the next modules.

Returns :

a pointer to a `YModule` object, corresponding to the first module currently online, or a `null` pointer if there are none.

module→describe()module.describe()**YModule**

Returns a descriptive text that identifies the module.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	- (NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

The text may include either the logical name or the serial number of the module.

Returns :

a string that describes the module

module→download()module.download()**YModule**

Downloads the specified built-in file and returns a binary buffer with its content.

js	function download(pathname)
node.js	function download(pathname)
php	function download(\$pathname)
cpp	string download(string pathname)
m	-NSData* download : (NSString*) pathname
pas	function download(pathname: string): TByteArray
vb	function download() As Byte
py	def download(pathname)
cmd	YModule target download pathname

Parameters :

pathname name of the new file to load

Returns :

a binary buffer with the file content

On failure, throws an exception or returns an empty content.

module→functionCount()module.functionCount()**YModule**

Returns the number of functions (beside the "module" interface) available on the module.

js	function functionCount()
nodejs	function functionCount()
php	function functionCount()
cpp	int functionCount()
m	- (int) functionCount
pas	function functionCount() : integer
vb	function functionCount() As Integer
cs	int functionCount()
py	def functionCount()

Returns :

the number of functions on the module

On failure, throws an exception or returns a negative error code.

module→functionId()module.functionId()**YModule**

Retrieves the hardware identifier of the *n*th function on the module.

js	function functionId(functionIndex)
node.js	function functionId(functionIndex)
php	function functionId(\$functionIndex)
cpp	string functionId(int functionIndex)
m	-(NSString*) functionId : (int) functionIndex
pas	function functionId(functionIndex: integer): string
vb	function functionId(ByVal functionIndex As Integer) As String
cs	string functionId(int functionIndex)
py	def functionId(functionIndex)

Parameters :

functionIndex the index of the function for which the information is desired, starting at 0 for the first function.

Returns :

a string corresponding to the unambiguous hardware identifier of the requested module function

On failure, throws an exception or returns an empty string.

module→functionName()module.functionName()**YModule**

Retrieves the logical name of the *n*th function on the module.

```
js  function functionName( functionIndex)
nodejs function functionName( functionIndex)
php  function functionName( $functionIndex)
cpp   string functionName( int functionIndex)
m    -(NSString*) functionName : (int) functionIndex
pas   function functionName( functionIndex: integer): string
vb    function functionName( ByVal functionIndex As Integer) As String
cs    string functionName( int functionIndex)
py    def functionName( functionIndex)
```

Parameters :

functionIndex the index of the function for which the information is desired, starting at 0 for the first function.

Returns :

a string corresponding to the logical name of the requested module function

On failure, throws an exception or returns an empty string.

module→functionValue()module.functionValue()**YModule**

Retrieves the advertised value of the *n*th function on the module.

js	function functionValue(functionIndex)
node.js	function functionValue(functionIndex)
php	function functionValue(\$functionIndex)
cpp	string functionValue(int functionIndex)
m	-NSString* functionValue : (int) functionIndex
pas	function functionValue(functionIndex: integer): string
vb	function functionValue(ByVal functionIndex As Integer) As String
cs	string functionValue(int functionIndex)
py	def functionValue(functionIndex)

Parameters :

functionIndex the index of the function for which the information is desired, starting at 0 for the first function.

Returns :

a short string (up to 6 characters) corresponding to the advertised value of the requested module function

On failure, throws an exception or returns an empty string.

module→get_beacon()
module→beacon()module.get_beacon()**YModule**

Returns the state of the localization beacon.

js	function get_beacon()
node.js	function get_beacon()
php	function get_beacon()
cpp	Y_BEACON_enum get_beacon()
m	-(Y_BEACON_enum) beacon
pas	function get_beacon() : Integer
vb	function get_beacon() As Integer
cs	int get_beacon()
java	int get_beacon()
py	def get_beacon()
cmd	YModule target get_beacon

Returns :

either Y_BEACON_OFF or Y_BEACON_ON, according to the state of the localization beacon

On failure, throws an exception or returns Y_BEACON_INVALID.

module→getErrorMessage() **YModule**
module→errorMessage()module.getErrorMessage()

Returns the error message of the latest error with this module object.

js	function getErrorMessage()
node.js	function getErrorMessage()
php	function getErrorMessage()
cpp	string getErrorMessage()
m	-(NSString*) errorMessage
pas	function getErrorMessage() : string
vb	function getErrorMessage() As String
cs	string getErrorMessage()
java	String getErrorMessage()
py	def getErrorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using this module object

**module→get_errorType()
module→errorType()module.get_errorType()****YModule**

Returns the numerical error code of the latest error with this module object.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using this module object

module→get_firmwareRelease()
module→firmwareRelease()
module.get_firmwareRelease()

YModule

Returns the version of the firmware embedded in the module.

js	function get_firmwareRelease()
nodejs	function get_firmwareRelease()
php	function get_firmwareRelease()
cpp	string get_firmwareRelease()
m	-(NSString*) firmwareRelease
pas	function get_firmwareRelease() : string
vb	function get_firmwareRelease() As String
cs	string get_firmwareRelease()
java	String get_firmwareRelease()
py	def get_firmwareRelease()
cmd	YModule target get_firmwareRelease

Returns :

a string corresponding to the version of the firmware embedded in the module

On failure, throws an exception or returns **Y_FIRMWARERELEASE_INVALID**.

**module→get_hardwareId()
module→hardwareId()****YModule**

Returns the unique hardware identifier of the module.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	- (NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is made of the device serial number followed by string ".module".

Returns :
a string that uniquely identifies the module

module→get_icon2d()
module→icon2d()module.get_icon2d()**YModule**

Returns the icon of the module.

js	function get_icon2d()
node.js	function get_icon2d()
php	function get_icon2d()
cpp	string get_icon2d()
m	-(NSData*) icon2d
pas	function get_icon2d(): TByteArray
vb	function get_icon2d() As Byte
py	def get_icon2d()
cmd	YModule target get_icon2d

The icon is a PNG image and does not exceeds 1536 bytes.

Returns :

a binary buffer with module icon, in png format.

**module→get_lastLogs()
module→lastLogs()module.get_lastLogs()****YModule**

Returns a string with last logs of the module.

```
js function get_lastLogs( )  
node.js function get_lastLogs( )  
php function get_lastLogs( )  
cpp string get_lastLogs( )  
m -(NSString*) lastLogs  
pas function get_lastLogs( ): string  
vb function get_lastLogs( ) As String  
cs string get_lastLogs( )  
java String get_lastLogs( )  
py def get_lastLogs( )  
cmd YModule target get_lastLogs
```

This method return only logs that are still in the module.

Returns :

a string with last logs of the module.

module→get_logicalName()	YModule
module→logicalName()module.get_logicalName()	

Returns the logical name of the module.

```
js   function get_logicalName( )
nodejs function get_logicalName( )
php  function get_logicalName( )
cpp   string get_logicalName( )
m    -(NSString*) logicalName
pas   function get_logicalName( ): string
vb    function get_logicalName( ) As String
cs   string get_logicalName( )
java  String get_logicalName( )
py    def get_logicalName( )
cmd   YModule target get_logicalName
```

Returns :

a string corresponding to the logical name of the module

On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

module→get_luminosity() **YModule**
module→luminosity()module.get_luminosity()

Returns the luminosity of the module informative leds (from 0 to 100).

```
js function get_luminosity( )
node.js function get_luminosity( )
php function get_luminosity( )
cpp int get_luminosity( )
m -(int) luminosity
pas function get_luminosity( ): LongInt
vb function get_luminosity( ) As Integer
cs int get_luminosity( )
java int get_luminosity( )
py def get_luminosity( )
cmd YModule target get_luminosity
```

Returns :

an integer corresponding to the luminosity of the module informative leds (from 0 to 100)

On failure, throws an exception or returns `Y_LUMINOSITY_INVALID`.

module→get_persistentSettings()
module→persistentSettings()
module.get_persistentSettings()

YModule

Returns the current state of persistent module settings.

js	function get_persistentSettings()
nodejs	function get_persistentSettings()
php	function get_persistentSettings()
cpp	Y_PERSISTENTSETTINGS_enum get_persistentSettings()
m	-(Y_PERSISTENTSETTINGS_enum) persistentSettings
pas	function get_persistentSettings() : Integer
vb	function get_persistentSettings() As Integer
cs	int get_persistentSettings()
java	int get_persistentSettings()
py	def get_persistentSettings()
cmd	YModule target get_persistentSettings

Returns :

a value among Y_PERSISTENTSETTINGS_LOADED, Y_PERSISTENTSETTINGS_SAVED and Y_PERSISTENTSETTINGS_MODIFIED corresponding to the current state of persistent module settings

On failure, throws an exception or returns Y_PERSISTENTSETTINGS_INVALID.

module→get_productId() **YModule**
module→productId()module.get_productId()

Returns the USB device identifier of the module.

js	function get_productId()
node.js	function get_productId()
php	function get_productId()
cpp	int get_productId()
m	-(int) productId
pas	function get_productId() : LongInt
vb	function get_productId() As Integer
cs	int get_productId()
java	int get_productId()
py	def get_productId()
cmd	YModule target get_productId

Returns :

an integer corresponding to the USB device identifier of the module

On failure, throws an exception or returns Y_PRODUCTID_INVALID.

module→get_productName()**YModule****module→productName()module.get_productName()**

Returns the commercial name of the module, as set by the factory.

js	function get_productName()
nodejs	function get_productName()
php	function get_productName()
cpp	string get_productName()
m	-(NSString*) productName
pas	function get_productName(): string
vb	function get_productName() As String
cs	string get_productName()
java	String get_productName()
py	def get_productName()
cmd	YModule target get_productName

Returns :

a string corresponding to the commercial name of the module, as set by the factory

On failure, throws an exception or returns Y_PRODUCTNAME_INVALID.

module→get_productRelease()
module→productRelease()
module.get_productRelease()

YModule

Returns the hardware release version of the module.

```
js function get_productRelease( )  
nodejs function get_productRelease( )  
php function get_productRelease( )  
cpp int get_productRelease( )  
m -(int) productRelease  
pas function get_productRelease( ): LongInt  
vb function get_productRelease( ) As Integer  
cs int get_productRelease( )  
java int get_productRelease( )  
py def get_productRelease( )  
cmd YModule target get_productRelease
```

Returns :

an integer corresponding to the hardware release version of the module

On failure, throws an exception or returns Y_PRODUCTRELEASE_INVALID.

module→get_rebootCountdown()
module→rebootCountdown()
module.get_rebootCountdown()

YModule

Returns the remaining number of seconds before the module restarts, or zero when no reboot has been scheduled.

js	function get_rebootCountdown()
nodejs	function get_rebootCountdown()
php	function get_rebootCountdown()
cpp	int get_rebootCountdown()
m	-(int) rebootCountdown
pas	function get_rebootCountdown(): LongInt
vb	function get_rebootCountdown() As Integer
cs	int get_rebootCountdown()
java	int get_rebootCountdown()
py	def get_rebootCountdown()
cmd	YModule target get_rebootCountdown

Returns :

an integer corresponding to the remaining number of seconds before the module restarts, or zero when no reboot has been scheduled

On failure, throws an exception or returns **Y_REBOOTCOUNTDOWN_INVALID**.

module→get_serialNumber() **YModule**
module→serialNumber()module.get_serialNumber()

Returns the serial number of the module, as set by the factory.

js	function get_serialNumber()
node.js	function get_serialNumber()
php	function get_serialNumber()
cpp	string get_serialNumber()
m	-(NSString*) serialNumber
pas	function get_serialNumber(): string
vb	function get_serialNumber() As String
cs	string get_serialNumber()
java	String get_serialNumber()
py	def get_serialNumber()
cmd	YModule target get_serialNumber

Returns :

a string corresponding to the serial number of the module, as set by the factory

On failure, throws an exception or returns **Y_SERIALNUMBER_INVALID**.

module→get_upTime() **YModule**

Returns the number of milliseconds spent since the module was powered on.

js	function get_upTime()
nodejs	function get_upTime()
php	function get_upTime()
cpp	s64 get_upTime()
m	-(s64) upTime
pas	function get_upTime(): int64
vb	function get_upTime() As Long
cs	long get_upTime()
java	long get_upTime()
py	def get_upTime()
cmd	YModule target get_upTime

Returns :

an integer corresponding to the number of milliseconds spent since the module was powered on

On failure, throws an exception or returns **Y_UPTIME_INVALID**.

module→get_usbBandwidth()
module→usbBandwidth()
module.get_usbBandwidth()

YModule

Returns the number of USB interfaces used by the module.

```
js function get_usbBandwidth( )
nodejs function get_usbBandwidth( )
php function get_usbBandwidth( )
cpp Y_USBWIDTH_enum get_usbBandwidth( )
m -(Y_USBWIDTH_enum) usbBandwidth
pas function get_usbBandwidth( ): Integer
vb function get_usbBandwidth( ) As Integer
cs int get_usbBandwidth( )
java int get_usbBandwidth( )
py def get_usbBandwidth( )
cmd YModule target get_usbBandwidth
```

Returns :

either Y_USBWIDTH_SIMPLE or Y_USBWIDTH_DOUBLE, according to the number of USB interfaces used by the module

On failure, throws an exception or returns Y_USBWIDTH_INVALID.

module→get_usbCurrent()	YModule
module→usbCurrent() module.get_usbCurrent()	

Returns the current consumed by the module on the USB bus, in milli-amps.

js	function get_usbCurrent()
nodejs	function get_usbCurrent()
php	function get_usbCurrent()
cpp	int get_usbCurrent()
m	-(int) usbCurrent
pas	function get_usbCurrent() : LongInt
vb	function get_usbCurrent() As Integer
cs	int get_usbCurrent()
java	int get_usbCurrent()
py	def get_usbCurrent()
cmd	YModule target get_usbCurrent

Returns :

an integer corresponding to the current consumed by the module on the USB bus, in milli-amps

On failure, throws an exception or returns **Y_USBCURRENT_INVALID**.

module→get(userData)
module→userData()module.get(userData)**YModule**

Returns the value of the userData attribute, as previously stored using method set(userData).

js	function get(userData)
node.js	function get(userData)
php	function get(userData)
cpp	void * get(userData)
m	-(void*) userData
pas	function get(userData) : TObject
vb	function get(userData) As Object
cs	object get(userData)
java	Object get(userData)
py	def get(userData)

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

module→isOnline()|module.isOnline()**YModule**

Checks if the module is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there are valid cached values for the module, that have not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the requested module.

Returns :

`true` if the module can be reached, and `false` otherwise

module→isOnline_async()**YModule**

Checks if the module is currently reachable, without raising any error.

```
js  function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there are valid cached values for the module, that have not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the requested module.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox Javascript VM that does not implement context switching during blocking I/O calls.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving module object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

module→load()module.load()**YModule**

Preloads the module cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>node.js</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all module attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded module parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

module→load_async()

YModule

Preloads the module cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all module attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

msValidity an integer corresponding to the validity of the loaded module parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving module object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

module→nextModule()|module.nextModule()**YModule**

Continues the module enumeration started using `yFirstModule()`.

js	function nextModule()
node.js	function nextModule()
php	function nextModule()
cpp	YModule * nextModule()
m	-(YModule *) nextModule
pas	function nextModule() : TYModule
vb	function nextModule() As YModule
cs	YModule nextModule()
java	YModule nextModule()
py	def nextModule()

Returns :

a pointer to a `YModule` object, corresponding to the next module found, or a `null` pointer if there are no more modules to enumerate.

module→reboot()module.reboot()**YModule**

Schedules a simple module reboot after the given number of seconds.

```
js function reboot( secBeforeReboot)
nodejs function reboot( secBeforeReboot)
php function reboot( $secBeforeReboot)
cpp int reboot( int secBeforeReboot)
m -(int) reboot : (int) secBeforeReboot
pas function reboot( secBeforeReboot: LongInt): LongInt
vb function reboot( ) As Integer
cs int reboot( int secBeforeReboot)
java int reboot( int secBeforeReboot)
py def reboot( secBeforeReboot)
cmd YModule target reboot secBeforeReboot
```

Parameters :

secBeforeReboot number of seconds before rebooting

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

module→registerLogCallback()**YModule**

todo

cpp	void registerLogCallback(YModuleLogCallback callback)
m	-(void) registerLogCallback : (YModuleLogCallback) callback
vb	function registerLogCallback(ByVal callback As YModuleLogCallback) As Integer
cs	int registerLogCallback(LogCallback callback)
py	def registerLogCallback(callback)

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments:
the function object of which the value has changed, and the character string describing the new
advertised value.

module→revertFromFlash()
module.revertFromFlash()**YModule**

Reloads the settings stored in the nonvolatile memory, as when the module is powered on.

js	function revertFromFlash()
node.js	function revertFromFlash()
php	function revertFromFlash()
cpp	int revertFromFlash()
m	-(int) revertFromFlash
pas	function revertFromFlash(): LongInt
vb	function revertFromFlash() As Integer
cs	int revertFromFlash()
java	int revertFromFlash()
py	def revertFromFlash()
cmd	YModule target revertFromFlash

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

module→saveToFlash()module.saveToFlash()**YModule**

Saves current settings in the nonvolatile memory of the module.

js	function saveToFlash()
node.js	function saveToFlash()
php	function saveToFlash()
cpp	int saveToFlash()
m	-(int) saveToFlash
pas	function saveToFlash() : LongInt
vb	function saveToFlash() As Integer
cs	int saveToFlash()
java	int saveToFlash()
py	def saveToFlash()
cmd	YModule target saveToFlash

Warning: the number of allowed save operations during a module life is limited (about 100000 cycles). Do not call this function within a loop.

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

module→set_beacon() YModule
module→setBeacon()module.set_beacon()

Turns on or off the module localization beacon.

js	function set_beacon(newval)
node.js	function set_beacon(newval)
php	function set_beacon(\$newval)
cpp	int set_beacon(Y_BEACON_enum newval)
m	-(int) setBeacon : (Y_BEACON_enum) newval
pas	function set_beacon(newval: Integer): integer
vb	function set_beacon(ByVal newval As Integer) As Integer
cs	int set_beacon(int newval)
java	int set_beacon(int newval)
py	def set_beacon(newval)
cmd	YModule target set_beacon newval

Parameters :

newval either Y_BEACON_OFF or Y_BEACON_ON

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

module->set_logicalName()	YModule
module->setLogicalName()module.set_logicalName()	

Changes the logical name of the module.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YModule target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

`newval` a string corresponding to the logical name of the module

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

module→set_luminosity() YModule
module→setLuminosity()module.set_luminosity()

Changes the luminosity of the module informative leds.

js	function set_luminosity(newval)
node.js	function set_luminosity(newval)
php	function set_luminosity(\$newval)
cpp	int set_luminosity(int newval)
m	-(int) setLuminosity : (int) newval
pas	function set_luminosity(newval: LongInt): integer
vb	function set_luminosity(ByVal newval As Integer) As Integer
cs	int set_luminosity(int newval)
java	int set_luminosity(int newval)
py	def set_luminosity(newval)
cmd	YModule target set_luminosity newval

The parameter is a value between 0 and 100. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval an integer corresponding to the luminosity of the module informative leds

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

module→set_usbBandwidth()
module→setUsbBandwidth()
module.set_usbBandwidth()

YModule

Changes the number of USB interfaces used by the module.

js	function set_usbBandwidth(newval)
nodejs	function set_usbBandwidth(newval)
php	function set_usbBandwidth(\$newval)
cpp	int set_usbBandwidth(Y_USBBANDWIDTH_enum newval)
m	-(int) setUsbBandwidth : (Y_USBBANDWIDTH_enum) newval
pas	function set_usbBandwidth(newval: Integer): integer
vb	function set_usbBandwidth(ByVal newval As Integer) As Integer
cs	int set_usbBandwidth(int newval)
java	int set_usbBandwidth(int newval)
py	def set_usbBandwidth(newval)
cmd	YModule target set_usbBandwidth newval

You must reboot the module after changing this setting.

Parameters :

newval either **Y_USBBANDWIDTH_SIMPLE** or **Y_USBBANDWIDTH_DOUBLE**, according to the number of USB interfaces used by the module

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

module→set(userData) **YModule**
module→setUserData()module.set(userData)

Stores a user context provided as argument in the userData attribute of the function.

```
js   function set(userData) data
node.js function set(userData) data
php  function set(userData) $data
cpp   void set(userData void* data)
m    -(void) setUserData : (void*) data
pas   procedure set(userData data: Tobject)
vb    procedure set(userData ByVal data As Object)
cs    void set(userData object data)
java  void set(userData Object data)
py    def set(userData data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

**module→triggerFirmwareUpdate()
module.triggerFirmwareUpdate()****YModule**

Schedules a module reboot into special firmware update mode.

```
js function triggerFirmwareUpdate( secBeforeReboot)
nodejs function triggerFirmwareUpdate( secBeforeReboot)
php function triggerFirmwareUpdate( $secBeforeReboot)
cpp int triggerFirmwareUpdate( int secBeforeReboot)
m -(int) triggerFirmwareUpdate : (int) secBeforeReboot
pas function triggerFirmwareUpdate( secBeforeReboot: LongInt): LongInt
vb function triggerFirmwareUpdate( ) As Integer
cs int triggerFirmwareUpdate( int secBeforeReboot)
java int triggerFirmwareUpdate( int secBeforeReboot)
py def triggerFirmwareUpdate( secBeforeReboot)
cmd YModule target triggerFirmwareUpdate secBeforeReboot
```

Parameters :

secBeforeReboot number of seconds before rebooting

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

module→wait_async()

YModule

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.26. Network function interface

YNetwork objects provide access to TCP/IP parameters of Yoctopuce modules that include a built-in network interface.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_network.js'></script>
node.js	var yoctolib = require('yoctolib');
	var YNetwork = yoctolib.YNetwork;
php	require_once('yocto_network.php');
cpp	#include "yocto_network.h"
m	#import "yocto_network.h"
pas	uses yocto_network;
vb	yocto_network.vb
cs	yocto_network.cs
java	import com.yoctopuce.YoctoAPI.YNetwork;
py	from yocto_network import *

Global functions

yFindNetwork(func)

Retrieves a network interface for a given identifier.

yFirstNetwork()

Starts the enumeration of network interfaces currently accessible.

YNetwork methods

network→callbackLogin(username, password)

Connects to the notification callback and saves the credentials required to log into it.

network→describe()

Returns a short text that describes unambiguously the instance of the network interface in the form TYPE (NAME) = SERIAL . FUNCTIONID.

network→get_adminPassword()

Returns a hash string if a password has been set for user "admin", or an empty string otherwise.

network→get_advertisedValue()

Returns the current value of the network interface (no more than 6 characters).

network→get_callbackCredentials()

Returns a hashed version of the notification callback credentials if set, or an empty string otherwise.

network→get_callbackEncoding()

Returns the encoding standard to use for representing notification values.

network→get_callbackMaxDelay()

Returns the maximum waiting time between two callback notifications, in seconds.

network→get_callbackMethod()

Returns the HTTP method used to notify callbacks for significant state changes.

network→get_callbackMinDelay()

Returns the minimum waiting time between two callback notifications, in seconds.

network→get_callbackUrl()

Returns the callback URL to notify of significant state changes.

network→get_discoverable()

Returns the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

3. Reference

network→get_errorMessage()	Returns the error message of the latest error with the network interface.
network→get_errorType()	Returns the numerical error code of the latest error with the network interface.
network→get_friendlyName()	Returns a global identifier of the network interface in the format MODULE_NAME . FUNCTION_NAME.
network→get_functionDescriptor()	Returns a unique identifier of type YFUN_DESCR corresponding to the function.
network→get_functionId()	Returns the hardware identifier of the network interface, without reference to the module.
network→get_hardwareId()	Returns the unique hardware identifier of the network interface in the form SERIAL . FUNCTIONID.
network→get_ipAddress()	Returns the IP address currently in use by the device.
network→get_logicalName()	Returns the logical name of the network interface.
network→get_macAddress()	Returns the MAC address of the network interface.
network→get_module()	Gets the YModule object for the device on which the function is located.
network→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located (asynchronous version).
network→get_poeCurrent()	Returns the current consumed by the module from Power-over-Ethernet (PoE), in milli-amps.
network→get_primaryDNS()	Returns the IP address of the primary name server to be used by the module.
network→get_readiness()	Returns the current established working mode of the network interface.
network→get_router()	Returns the IP address of the router on the device subnet (default gateway).
network→get_secondaryDNS()	Returns the IP address of the secondary name server to be used by the module.
network→get_subnetMask()	Returns the subnet mask currently used by the device.
network→get_userData()	Returns the value of the userData attribute, as previously stored using method set(userData).
network→get_userPassword()	Returns a hash string if a password has been set for "user" user, or an empty string otherwise.
network→get_wwwWatchdogDelay()	Returns the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.
network→isOnline()	Checks if the network interface is currently reachable, without raising any error.
network→isOnline_async(callback, context)	Checks if the network interface is currently reachable, without raising any error (asynchronous version).

network→load(msValidity)

Preloads the network interface cache with a specified validity duration.

network→load_async(msValidity, callback, context)

Preloads the network interface cache with a specified validity duration (asynchronous version).

network→nextNetwork()

Continues the enumeration of network interfaces started using `yFirstNetwork()`.

network→ping(host)

Pings `str_host` to test the network connectivity.

network→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

network→set_adminPassword(newval)

Changes the password for the "admin" user.

network→set_callbackCredentials(newval)

Changes the credentials required to connect to the callback address.

network→set_callbackEncoding(newval)

Changes the encoding standard to use for representing notification values.

network→set_callbackMaxDelay(newval)

Changes the maximum waiting time between two callback notifications, in seconds.

network→set_callbackMethod(newval)

Changes the HTTP method used to notify callbacks for significant state changes.

network→set_callbackMinDelay(newval)

Changes the minimum waiting time between two callback notifications, in seconds.

network→set_callbackUrl(newval)

Changes the callback URL to notify significant state changes.

network→set_discoverable(newval)

Changes the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

network→set_logicalName(newval)

Changes the logical name of the network interface.

network→set_primaryDNS(newval)

Changes the IP address of the primary name server to be used by the module.

network→set_secondaryDNS(newval)

Changes the IP address of the secondary name server to be used by the module.

network→set_userData(data)

Stores a user context provided as argument in the `userData` attribute of the function.

network→set_userPassword(newval)

Changes the password for the "user" user.

network→set_wwwWatchdogDelay(newval)

Changes the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

network→useDHCP(fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)

Changes the configuration of the network interface to enable the use of an IP address received from a DHCP server.

network→useStaticIP(ipAddress, subnetMaskLen, router)

Changes the configuration of the network interface to use a static IP address.

network→wait_async(callback, context)

3. Reference

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YNetwork.FindNetwork() yFindNetwork()yFindNetwork()

YNetwork

Retrieves a network interface for a given identifier.

<code>js</code>	<code>function yFindNetwork(func)</code>
<code>nodejs</code>	<code>function FindNetwork(func)</code>
<code>php</code>	<code>function yFindNetwork(\$func)</code>
<code>cpp</code>	<code>YNetwork* yFindNetwork(const string& func)</code>
<code>m</code>	<code>YNetwork* yFindNetwork(NSString* func)</code>
<code>pas</code>	<code>function yFindNetwork(func: string): TYNetwork</code>
<code>vb</code>	<code>function yFindNetwork(ByVal func As String) As YNetwork</code>
<code>cs</code>	<code>YNetwork FindNetwork(string func)</code>
<code>java</code>	<code>YNetwork FindNetwork(String func)</code>
<code>py</code>	<code>def FindNetwork(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the network interface is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YNetwork.isOnline()` to test if the network interface is indeed online at a given time. In case of ambiguity when looking for a network interface by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the network interface

Returns :

a `YNetwork` object allowing you to drive the network interface.

YNetwork.FirstNetwork() yFirstNetwork()yFirstNetwork()

YNetwork

Starts the enumeration of network interfaces currently accessible.

```
js function yFirstNetwork( )
node.js function FirstNetwork( )
php function yFirstNetwork( )
cpp YNetwork* yFirstNetwork( )
m YNetwork* yFirstNetwork( )
pas function yFirstNetwork( ): TYNetwork
vb function yFirstNetwork( ) As YNetwork
cs YNetwork FirstNetwork( )
java YNetwork FirstNetwork( )
py def FirstNetwork( )
```

Use the method `YNetwork.nextNetwork()` to iterate on next network interfaces.

Returns :

a pointer to a `YNetwork` object, corresponding to the first network interface currently online, or a null pointer if there are none.

network→callbackLogin()network.callbackLogin()**YNetwork**

Connects to the notification callback and saves the credentials required to log into it.

```

js   function callbackLogin( username, password)
node.js function callbackLogin( username, password)
php  function callbackLogin( $username, $password)
cpp   int callbackLogin( string username, string password)
m    -(int) callbackLogin : (NSString*) username : (NSString*) password
pas   function callbackLogin( username: string, password: string): integer
vb    function callbackLogin( ByVal username As String,
                           ByVal password As String) As Integer
cs    int callbackLogin( string username, string password)
java  int callbackLogin( String username, String password)
py    def callbackLogin( username, password)
cmd   YNetwork target callbackLogin username password

```

The password is not stored into the module, only a hashed copy of the credentials are saved. Remember to call the saveToFlash() method of the module if the modification must be kept.

Parameters :

username username required to log to the callback
password password required to log to the callback

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→describe()network.describe()**YNetwork**

Returns a short text that describes unambiguously the instance of the network interface in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the network interface (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

network→get_adminPassword()
network→adminPassword()
network.get_adminPassword()

YNetwork

Returns a hash string if a password has been set for user "admin", or an empty string otherwise.

<code>js</code>	function get_adminPassword()
<code>nodejs</code>	function get_adminPassword()
<code>php</code>	function get_adminPassword()
<code>cpp</code>	string get_adminPassword()
<code>m</code>	-(NSString*) adminPassword
<code>pas</code>	function get_adminPassword() : string
<code>vb</code>	function get_adminPassword() As String
<code>cs</code>	string get_adminPassword()
<code>java</code>	String get_adminPassword()
<code>py</code>	def get_adminPassword()
<code>cmd</code>	YNetwork target get_adminPassword

Returns :

a string corresponding to a hash string if a password has been set for user "admin", or an empty string otherwise

On failure, throws an exception or returns `Y_ADMINPASSWORD_INVALID`.

network→get_advertisedValue()
network→advertisedValue()
network.get_advertisedValue()**YNetwork**

Returns the current value of the network interface (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue(): string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YNetwork target get_advertisedValue

Returns :

a string corresponding to the current value of the network interface (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

network→get_callbackCredentials()
network→callbackCredentials()
network.get_callbackCredentials()

YNetwork

Returns a hashed version of the notification callback credentials if set, or an empty string otherwise.

<code>js</code>	function get_callbackCredentials()
<code>node.js</code>	function get_callbackCredentials()
<code>php</code>	function get_callbackCredentials()
<code>cpp</code>	string get_callbackCredentials()
<code>m</code>	-(NSString*) callbackCredentials
<code>pas</code>	function get_callbackCredentials() : string
<code>vb</code>	function get_callbackCredentials() As String
<code>cs</code>	string get_callbackCredentials()
<code>java</code>	String get_callbackCredentials()
<code>py</code>	def get_callbackCredentials()
<code>cmd</code>	YNetwork target get_callbackCredentials

Returns :

a string corresponding to a hashed version of the notification callback credentials if set, or an empty string otherwise

On failure, throws an exception or returns `Y_CALLBACKCREDENTIALS_INVALID`.

network→get_callbackEncoding()
network→callbackEncoding()
network.get_callbackEncoding()

YNetwork

Returns the encoding standard to use for representing notification values.

```
js function get_callbackEncoding( )  
nodejs function get_callbackEncoding( )  
php function get_callbackEncoding( )  
cpp Y_CALLBACKENCODING_enum get_callbackEncoding( )  
m -(Y_CALLBACKENCODING_enum) callbackEncoding  
pas function get_callbackEncoding( ): Integer  
vb function get_callbackEncoding( ) As Integer  
cs int get_callbackEncoding( )  
java int get_callbackEncoding( )  
py def get_callbackEncoding( )  
cmd YNetwork target get_callbackEncoding
```

Returns :

a value among Y_CALLBACKENCODING_FORM, Y_CALLBACKENCODING_JSON, Y_CALLBACKENCODING_JSON_ARRAY, Y_CALLBACKENCODING_CSV and Y_CALLBACKENCODING_YOCTO_API corresponding to the encoding standard to use for representing notification values

On failure, throws an exception or returns Y_CALLBACKENCODING_INVALID.

network→get_callbackMaxDelay()
network→callbackMaxDelay()
network.get_callbackMaxDelay()

YNetwork

Returns the maximum waiting time between two callback notifications, in seconds.

js	function get_callbackMaxDelay()
node.js	function get_callbackMaxDelay()
php	function get_callbackMaxDelay()
cpp	int get_callbackMaxDelay()
m	-(int) callbackMaxDelay
pas	function get_callbackMaxDelay() : LongInt
vb	function get_callbackMaxDelay() As Integer
cs	int get_callbackMaxDelay()
java	int get_callbackMaxDelay()
py	def get_callbackMaxDelay()
cmd	YNetwork target get_callbackMaxDelay

Returns :

an integer corresponding to the maximum waiting time between two callback notifications, in seconds

On failure, throws an exception or returns **Y_CALLBACKMAXDELAY_INVALID**.

**network→get_callbackMethod()
network→callbackMethod()
network.get_callbackMethod()****YNetwork**

Returns the HTTP method used to notify callbacks for significant state changes.

js	function get_callbackMethod()
nodejs	function get_callbackMethod()
php	function get_callbackMethod()
cpp	Y_CALLBACKMETHOD_enum get_callbackMethod()
m	-(Y_CALLBACKMETHOD_enum) callbackMethod
pas	function get_callbackMethod(): Integer
vb	function get_callbackMethod() As Integer
cs	int get_callbackMethod()
java	int get_callbackMethod()
py	def get_callbackMethod()
cmd	YNetwork target get_callbackMethod

Returns :

a value among Y_CALLBACKMETHOD_POST, Y_CALLBACKMETHOD_GET and Y_CALLBACKMETHOD_PUT corresponding to the HTTP method used to notify callbacks for significant state changes

On failure, throws an exception or returns Y_CALLBACKMETHOD_INVALID.

network→get_callbackMinDelay()
network→callbackMinDelay()
network.get_callbackMinDelay()

YNetwork

Returns the minimum waiting time between two callback notifications, in seconds.

<code>js</code>	<code>function get_callbackMinDelay()</code>
<code>node.js</code>	<code>function get_callbackMinDelay()</code>
<code>php</code>	<code>function get_callbackMinDelay()</code>
<code>cpp</code>	<code>int get_callbackMinDelay()</code>
<code>m</code>	<code>-(int) callbackMinDelay</code>
<code>pas</code>	<code>function get_callbackMinDelay(): LongInt</code>
<code>vb</code>	<code>function get_callbackMinDelay() As Integer</code>
<code>cs</code>	<code>int get_callbackMinDelay()</code>
<code>java</code>	<code>int get_callbackMinDelay()</code>
<code>py</code>	<code>def get_callbackMinDelay()</code>
<code>cmd</code>	<code>YNetwork target get_callbackMinDelay</code>

Returns :

an integer corresponding to the minimum waiting time between two callback notifications, in seconds

On failure, throws an exception or returns `Y_CALLBACKMINDELAY_INVALID`.

network→get_callbackUrl()**YNetwork****network→callbackUrl()network.get_callbackUrl()**

Returns the callback URL to notify of significant state changes.

js	function get_callbackUrl()
node.js	function get_callbackUrl()
php	function get_callbackUrl()
cpp	string get_callbackUrl()
m	-(NSString*) callbackUrl
pas	function get_callbackUrl() : string
vb	function get_callbackUrl() As String
cs	string get_callbackUrl()
java	String get_callbackUrl()
py	def get_callbackUrl()
cmd	YNetwork target get_callbackUrl

Returns :

a string corresponding to the callback URL to notify of significant state changes

On failure, throws an exception or returns Y_CALLBACKURL_INVALID.

network→get_discoverable()**YNetwork****network→discoverable()network.get_discoverable()**

Returns the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

js	function get_discoverable()
node.js	function get_discoverable()
php	function get_discoverable()
cpp	Y_DISCOVERABLE_enum get_discoverable()
m	-(Y_DISCOVERABLE_enum) discoverable
pas	function get_discoverable() : Integer
vb	function get_discoverable() As Integer
cs	int get_discoverable()
java	int get_discoverable()
py	def get_discoverable()
cmd	YNetwork target get_discoverable

Returns :

either Y_DISCOVERABLE_FALSE or Y_DISCOVERABLE_TRUE, according to the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol)

On failure, throws an exception or returns Y_DISCOVERABLE_INVALID.

network→get_errorMessage()
network→errorMessage()
network.get_errorMessage()**YNetwork**

Returns the error message of the latest error with the network interface.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the network interface object

network→get_errorType()**YNetwork****network→errorType()network.get_errorType()**

Returns the numerical error code of the latest error with the network interface.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the network interface object

network→get_friendlyName()
network→friendlyName()**YNetwork**

Returns a global identifier of the network interface in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the network interface if they are defined, otherwise the serial number of the module and the hardware identifier of the network interface (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the network interface using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

network→get_functionDescriptor()
network→functionDescriptor()
network.get_functionDescriptor()

YNetwork

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**network→get_functionId()
network→functionId()****YNetwork**

Returns the hardware identifier of the network interface, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the network interface (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

network→get_hardwareId()**YNetwork****network→hardwareId()**

Returns the unique hardware identifier of the network interface in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the network interface. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the network interface (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

network→get_ipAddress()**YNetwork****network→ipAddress()network.get_ipAddress()**

Returns the IP address currently in use by the device.

```
js function get_ipAddress( )
node.js function get_ipAddress( )
php function get_ipAddress( )
cpp string get_ipAddress( )
m -(NSString*) ipAddress
pas function get_ipAddress( ): string
vb function get_ipAddress( ) As String
cs string get_ipAddress( )
java String get_ipAddress( )
py def get_ipAddress( )
cmd YNetwork target get_ipAddress
```

The address may have been configured statically, or provided by a DHCP server.

Returns :

a string corresponding to the IP address currently in use by the device

On failure, throws an exception or returns Y_IPADDRESS_INVALID.

network→get_logicalName()**YNetwork****network→logicalName()network.get_logicalName()**

Returns the logical name of the network interface.

js	function get_logicalName()
nodejs	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YNetwork target get_logicalName

Returns :

a string corresponding to the logical name of the network interface. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

network→get_macAddress()
network→macAddress()network.get_macAddress()**YNetwork**

Returns the MAC address of the network interface.

```
js function get_macAddress( )
node.js function get_macAddress( )
php function get_macAddress( )
cpp string get_macAddress( )
m -(NSString*) macAddress
pas function get_macAddress( ): string
vb function get_macAddress( ) As String
cs string get_macAddress( )
java String get_macAddress( )
py def get_macAddress( )
cmd YNetwork target get_macAddress
```

The MAC address is also available on a sticker on the module, in both numeric and barcode forms.

Returns :

a string corresponding to the MAC address of the network interface

On failure, throws an exception or returns Y_MACADDRESS_INVALID.

network→get_module()**YNetwork****network→module()network.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

network→get_module_async()
network→module_async()**YNetwork**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

network→get_poeCurrent()**YNetwork****network→poeCurrent()network.get_poeCurrent()**

Returns the current consumed by the module from Power-over-Ethernet (PoE), in milli-amps.

```
js function get_poeCurrent( )
nodejs function get_poeCurrent( )
php function get_poeCurrent( )
cpp int get_poeCurrent( )
m -(int) poeCurrent
pas function get_poeCurrent( ): LongInt
vb function get_poeCurrent( ) As Integer
cs int get_poeCurrent( )
java int get_poeCurrent( )
py def get_poeCurrent( )
cmd YNetwork target get_poeCurrent
```

The current consumption is measured after converting PoE source to 5 Volt, and should never exceed 1800 mA.

Returns :

an integer corresponding to the current consumed by the module from Power-over-Ethernet (PoE), in milli-amps

On failure, throws an exception or returns `Y_POECURRENT_INVALID`.

network→get_primaryDNS()**YNetwork****network→primaryDNS()network.get_primaryDNS()**

Returns the IP address of the primary name server to be used by the module.

js	function get_primaryDNS()
node.js	function get_primaryDNS()
php	function get_primaryDNS()
cpp	string get_primaryDNS()
m	- (NSString*) primaryDNS
pas	function get_primaryDNS(): string
vb	function get_primaryDNS() As String
cs	string get_primaryDNS()
java	String get_primaryDNS()
py	def get_primaryDNS()
cmd	YNetwork target get_primaryDNS

Returns :

a string corresponding to the IP address of the primary name server to be used by the module

On failure, throws an exception or returns **Y_PRIMARYDNS_INVALID**.

network→get_readiness() network→readiness()network.get_readiness()

YNetwork

Returns the current established working mode of the network interface.

js	function get_readiness()
nodejs	function get_readiness()
php	function get_readiness()
cpp	Y_READINESS_enum get_readiness()
m	-(Y_READINESS_enum) readiness
pas	function get_readiness() : Integer
vb	function get_readiness() As Integer
cs	int get_readiness()
java	int getReadiness()
py	def get_readiness()
cmd	YNetwork target get_readiness

Level zero (DOWN_0) means that no hardware link has been detected. Either there is no signal on the network cable, or the selected wireless access point cannot be detected. Level 1 (LIVE_1) is reached when the network is detected, but is not yet connected. For a wireless network, this shows that the requested SSID is present. Level 2 (LINK_2) is reached when the hardware connection is established. For a wired network connection, level 2 means that the cable is attached at both ends. For a connection to a wireless access point, it shows that the security parameters are properly configured. For an ad-hoc wireless connection, it means that there is at least one other device connected on the ad-hoc network. Level 3 (DHCP_3) is reached when an IP address has been obtained using DHCP. Level 4 (DNS_4) is reached when the DNS server is reachable on the network. Level 5 (WWW_5) is reached when global connectivity is demonstrated by properly loading the current time from an NTP server.

Returns :

a value among Y_READINESS_DOWN, Y_READINESS_EXISTS, Y_READINESS_LINKED, Y_READINESS_LAN_OK and Y_READINESS_WWW_OK corresponding to the current established working mode of the network interface

On failure, throws an exception or returns Y_READINESS_INVALID.

network→get_router()
network→router()network.get_router()**YNetwork**

Returns the IP address of the router on the device subnet (default gateway).

js	function get_router()
node.js	function get_router()
php	function get_router()
cpp	string get_router()
m	-(NSString*) router
pas	function get_router(): string
vb	function get_router() As String
cs	string get_router()
java	String get_router()
py	def get_router()
cmd	YNetwork target get_router

Returns :

a string corresponding to the IP address of the router on the device subnet (default gateway)

On failure, throws an exception or returns Y_ROUTER_INVALID.

network→get_secondaryDNS()
network→secondaryDNS()
network.get_secondaryDNS()**YNetwork**

Returns the IP address of the secondary name server to be used by the module.

<code>js</code>	function get_secondaryDNS()
<code>nodejs</code>	function get_secondaryDNS()
<code>php</code>	function get_secondaryDNS()
<code>cpp</code>	string get_secondaryDNS()
<code>m</code>	-(NSString*) secondaryDNS
<code>pas</code>	function get_secondaryDNS() : string
<code>vb</code>	function get_secondaryDNS() As String
<code>cs</code>	string get_secondaryDNS()
<code>java</code>	String get_secondaryDNS()
<code>py</code>	def get_secondaryDNS()
<code>cmd</code>	YNetwork target get_secondaryDNS

Returns :

a string corresponding to the IP address of the secondary name server to be used by the module

On failure, throws an exception or returns `Y_SECONDARYDNS_INVALID`.

network→get_subnetMask()**YNetwork****network→subnetMask()network.get_subnetMask()**

Returns the subnet mask currently used by the device.

```
js function get_subnetMask( )  
node.js function get_subnetMask( )  
php function get_subnetMask( )  
cpp string get_subnetMask( )  
m -(NSString*) subnetMask  
pas function get_subnetMask( ): string  
vb function get_subnetMask( ) As String  
cs string get_subnetMask( )  
java String get_subnetMask( )  
py def get_subnetMask( )  
cmd YNetwork target get_subnetMask
```

Returns :

a string corresponding to the subnet mask currently used by the device

On failure, throws an exception or returns Y_SUBNETMASK_INVALID.

network→get(userData)**YNetwork****network→userData()network.get(userData)**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

network→get_userPassword()
network→userPassword()
network.get_userPassword()**YNetwork**

Returns a hash string if a password has been set for "user" user, or an empty string otherwise.

js	function get_userPassword()
nodejs	function get_userPassword()
php	function get_userPassword()
cpp	string get_userPassword()
m	-(NSString*) userPassword
pas	function get_userPassword(): string
vb	function get_userPassword() As String
cs	string get_userPassword()
java	String get_userPassword()
py	def get_userPassword()
cmd	YNetwork target get_userPassword

Returns :

a string corresponding to a hash string if a password has been set for "user" user, or an empty string otherwise

On failure, throws an exception or returns Y_USERPASSWORD_INVALID.

network→get_wwwWatchdogDelay()
network→wwwWatchdogDelay()
network.get_wwwWatchdogDelay()

YNetwork

Returns the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

js	function get_wwwWatchdogDelay()
nodejs	function get_wwwWatchdogDelay()
php	function get_wwwWatchdogDelay()
cpp	int get_wwwWatchdogDelay()
m	-(int) wwwWatchdogDelay
pas	function get_wwwWatchdogDelay(): LongInt
vb	function get_wwwWatchdogDelay() As Integer
cs	int get_wwwWatchdogDelay()
java	int get_wwwWatchdogDelay()
py	def get_wwwWatchdogDelay()
cmd	YNetwork target get_wwwWatchdogDelay

A zero value disables automated reboot in case of Internet connectivity loss.

Returns :

an integer corresponding to the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity

On failure, throws an exception or returns **Y_WWWWATCHDOGDELAY_INVALID**.

network→isOnline()network.isOnline()**YNetwork**

Checks if the network interface is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	- (BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the network interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the network interface.

Returns :

true if the network interface can be reached, and false otherwise

network→isOnline_async()

YNetwork

Checks if the network interface is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the network interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

network→load()|network.load()

YNetwork

Preloads the network interface cache with a specified validity duration.

```
js function load( msValidity)
nodejs function load( msValidity)
php function load( $msValidity)
cpp YRETCODE load( int msValidity)
m -(YRETCODE) load : (int) msValidity
pas function load( msValidity: integer): YRETCODE
vb function load( ByVal msValidity As Integer) As YRETCODE
cs YRETCODE load( int msValidity)
java int load( long msValidity)
py def load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

network→load_async()

YNetwork

Preloads the network interface cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

network→nextNetwork()network.nextNetwork()**YNetwork**

Continues the enumeration of network interfaces started using `yFirstNetwork()`.

js	function nextNetwork()
nodejs	function nextNetwork()
php	function nextNetwork()
cpp	YNetwork * nextNetwork()
m	-(YNetwork*) nextNetwork
pas	function nextNetwork() : TYNetwork
vb	function nextNetwork() As YNetwork
cs	YNetwork nextNetwork()
java	YNetwork nextNetwork()
py	def nextNetwork()

Returns :

a pointer to a `YNetwork` object, corresponding to a network interface currently online, or a `null` pointer if there are no more network interfaces to enumerate.

network→ping()network.ping()

YNetwork

Pings str_host to test the network connectivity.

```
js function ping( host)
nodejs function ping( host)
php function ping( $host)
cpp string ping( string host)
m -(NSString*) ping : (NSString*) host
pas function ping( host: string): string
vb function ping( ) As String
cs string ping( string host)
java String ping( String host)
py def ping( host)
cmd YNetwork target ping host
```

Sends four ICMP ECHO_REQUEST requests from the module to the target str_host. This method returns a string with the result of the 4 ICMP ECHO_REQUEST requests.

Parameters :

host the hostname or the IP address of the target

Returns :

a string with the result of the ping.

**network→registerValueCallback()
network.registerValueCallback()****YNetwork**

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YNetworkValueCallback callback )
m    -(int) registerValueCallback : (YNetworkValueCallback) callback
pas   function registerValueCallback( callback: TYNetworkValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

network→set_adminPassword()
network→setAdminPassword()
network.set_adminPassword()

YNetwork

Changes the password for the "admin" user.

```
js function set_adminPassword( newval)
nodejs function set_adminPassword( newval)
php function set_adminPassword( $newval)
cpp int set_adminPassword( const string& newval)
m -(int) setAdminPassword : (NSString*) newval
pas function set_adminPassword( newval: string): integer
vb function set_adminPassword( ByVal newval As String) As Integer
cs int set_adminPassword( string newval)
java int set_adminPassword( String newval)
py def set_adminPassword( newval)
cmd YNetwork target set_adminPassword newval
```

This password becomes instantly required to perform any change of the module state. If the specified value is an empty string, a password is not required anymore. Remember to call the saveToFlash() method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the password for the "admin" user

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackCredentials()
network→setCallbackCredentials()
network.set_callbackCredentials()

YNetwork

Changes the credentials required to connect to the callback address.

js	function set_callbackCredentials(newval)
nodejs	function set_callbackCredentials(newval)
php	function set_callbackCredentials(\$newval)
cpp	int set_callbackCredentials(const string& newval)
m	- (int) setCallbackCredentials : (NSString*) newval
pas	function set_callbackCredentials(newval: string): integer
vb	function set_callbackCredentials(ByVal newval As String) As Integer
cs	int set_callbackCredentials(string newval)
java	int set_callbackCredentials(String newval)
py	def set_callbackCredentials(newval)
cmd	YNetwork target set_callbackCredentials newval

The credentials must be provided as returned by function `get_callbackCredentials`, in the form `username:hash`. The method used to compute the hash varies according to the authentication scheme implemented by the callback. For Basic authentication, the hash is the MD5 of the string `username:password`. For Digest authentication, the hash is the MD5 of the string `username:realm:password`. For a simpler way to configure callback credentials, use function `callbackLogin` instead. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the credentials required to connect to the callback address

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackEncoding()
network→setCallbackEncoding()
network.set_callbackEncoding()

YNetwork

Changes the encoding standard to use for representing notification values.

js	function set_callbackEncoding(newval)
nodejs	function set_callbackEncoding(newval)
php	function set_callbackEncoding(\$newval)
cpp	int set_callbackEncoding(Y_CALLBACKENCODING_enum newval)
m	-(int) setCallbackEncoding : (Y_CALLBACKENCODING_enum) newval
pas	function set_callbackEncoding(newval: Integer): integer
vb	function set_callbackEncoding(ByVal newval As Integer) As Integer
cs	int set_callbackEncoding(int newval)
java	int set_callbackEncoding(int newval)
py	def set_callbackEncoding(newval)
cmd	YNetwork target set_callbackEncoding newval

Parameters :

newval a value among `Y_CALLBACKENCODING_FORM`, `Y_CALLBACKENCODING_JSON`, `Y_CALLBACKENCODING_JSON_ARRAY`, `Y_CALLBACKENCODING_CSV` and `Y_CALLBACKENCODING_YOCOTO_API` corresponding to the encoding standard to use for representing notification values

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackMaxDelay()
network→setCallbackMaxDelay()
network.set_callbackMaxDelay()

YNetwork

Changes the maximum waiting time between two callback notifications, in seconds.

```
js function set_callbackMaxDelay( newval)
nodejs function set_callbackMaxDelay( newval)
php function set_callbackMaxDelay( $newval)
cpp int set_callbackMaxDelay( int newval)
m -(int) setCallbackMaxDelay : (int) newval
pas function set_callbackMaxDelay( newval: LongInt): integer
vb function set_callbackMaxDelay( ByVal newval As Integer) As Integer
cs int set_callbackMaxDelay( int newval)
java int set_callbackMaxDelay( int newval)
py def set_callbackMaxDelay( newval)
cmd YNetwork target set_callbackMaxDelay newval
```

Parameters :

newval an integer corresponding to the maximum waiting time between two callback notifications, in seconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackMethod()
network→setCallbackMethod()
network.set_callbackMethod()

YNetwork

Changes the HTTP method used to notify callbacks for significant state changes.

js	function set_callbackMethod(newval)
nodejs	function set_callbackMethod(newval)
php	function set_callbackMethod(\$newval)
cpp	int set_callbackMethod(Y_CALLBACKMETHOD_enum newval)
m	-(int) setCallbackMethod : (Y_CALLBACKMETHOD_enum) newval
pas	function set_callbackMethod(newval: Integer): integer
vb	function set_callbackMethod(ByVal newval As Integer) As Integer
cs	int set_callbackMethod(int newval)
java	int set_callbackMethod(int newval)
py	def set_callbackMethod(newval)
cmd	YNetwork target set_callbackMethod newval

Parameters :

newval a value among `Y_CALLBACKMETHOD_POST`, `Y_CALLBACKMETHOD_GET` and `Y_CALLBACKMETHOD_PUT` corresponding to the HTTP method used to notify callbacks for significant state changes

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackMinDelay()
network→setCallbackMinDelay()
network.set_callbackMinDelay()

YNetwork

Changes the minimum waiting time between two callback notifications, in seconds.

```
js function set_callbackMinDelay( newval)
nodejs function set_callbackMinDelay( newval)
php function set_callbackMinDelay( $newval)
cpp int set_callbackMinDelay( int newval)
m -(int) setCallbackMinDelay : (int) newval
pas function set_callbackMinDelay( newval: LongInt): integer
vb function set_callbackMinDelay( ByVal newval As Integer) As Integer
cs int set_callbackMinDelay( int newval)
java int set_callbackMinDelay( int newval)
py def set_callbackMinDelay( newval)
cmd YNetwork target set_callbackMinDelay newval
```

Parameters :

newval an integer corresponding to the minimum waiting time between two callback notifications, in seconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_callbackUrl()**YNetwork****network→setCallbackUrl()network.set_callbackUrl()**

Changes the callback URL to notify significant state changes.

js	function set_callbackUrl(newval)
nodejs	function set_callbackUrl(newval)
php	function set_callbackUrl(\$newval)
cpp	int set_callbackUrl(const string& newval)
m	-(int) setCallbackUrl : (NSString*) newval
pas	function set_callbackUrl(newval: string): integer
vb	function set_callbackUrl(ByVal newval As String) As Integer
cs	int set_callbackUrl(string newval)
java	int set_callbackUrl(String newval)
py	def set_callbackUrl(newval)
cmd	YNetwork target set_callbackUrl newval

Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the callback URL to notify significant state changes

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_discoverable()
network→setDiscoverable()
network.set_discoverable()

YNetwork

Changes the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol).

```
js function set_discoverable( newval)
nodejs function set_discoverable( newval)
php function set_discoverable( $newval)
cpp int set_discoverable( Y_DISCOVERABLE_enum newval)
m -(int) setDiscoverable : (Y_DISCOVERABLE_enum) newval
pas function set_discoverable( newval: Integer): integer
vb function set_discoverable( ByVal newval As Integer) As Integer
cs int set_discoverable( int newval)
java int set_discoverable( int newval)
py def set_discoverable( newval)
cmd YNetwork target set_discoverable newval
```

Parameters :

newval either `Y_DISCOVERABLE_FALSE` or `Y_DISCOVERABLE_TRUE`, according to the activation state of the multicast announce protocols to allow easy discovery of the module in the network neighborhood (uPnP/Bonjour protocol)

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_logicalName()
network→setLogicalName()
network.set_logicalName()

YNetwork

Changes the logical name of the network interface.

js	function set_logicalName(newval)
node.js	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YNetwork target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the network interface.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

network→set_primaryDNS()**YNetwork****network→setPrimaryDNS()network.set_primaryDNS()**

Changes the IP address of the primary name server to be used by the module.

js	function set_primaryDNS(newval)
node.js	function set_primaryDNS(newval)
php	function set_primaryDNS(\$newval)
cpp	int set_primaryDNS(const string& newval)
m	- (int) setPrimaryDNS : (NSString*) newval
pas	function set_primaryDNS(newval: string): integer
vb	function set_primaryDNS(ByVal newval As String) As Integer
cs	int set_primaryDNS(string newval)
java	int set_primaryDNS(String newval)
py	def set_primaryDNS(newval)
cmd	YNetwork target set_primaryDNS newval

When using DHCP, if a value is specified, it overrides the value received from the DHCP server. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

newval a string corresponding to the IP address of the primary name server to be used by the module

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_secondaryDNS()
network→setSecondaryDNS()
network.set_secondaryDNS()

YNetwork

Changes the IP address of the secondary name server to be used by the module.

js	function set_secondaryDNS(newval)
node.js	function set_secondaryDNS(newval)
php	function set_secondaryDNS(\$newval)
cpp	int set_secondaryDNS(const string& newval)
m	-(int) setSecondaryDNS : (NSString*) newval
pas	function set_secondaryDNS(newval: string): integer
vb	function set_secondaryDNS(ByVal newval As String) As Integer
cs	int set_secondaryDNS(string newval)
java	int set_secondaryDNS(String newval)
py	def set_secondaryDNS(newval)
cmd	YNetwork target set_secondaryDNS newval

When using DHCP, if a value is specified, it overrides the value received from the DHCP server. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

newval a string corresponding to the IP address of the secondary name server to be used by the module

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set(userData)**YNetwork****network→setUserData()network.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

```
js   function setUserData( data)
node.js function setUserData( data)
php  function setUserData( $data)
cpp   void setUserData( void* data)
m    -(void) setUserData : (void*) data
pas   procedure setUserData( data: Tobject)
vb    procedure setUserData( ByVal data As Object)
cs    void setUserData( object data)
java  void setUserData( Object data)
py    def setUserData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

network→set_userPassword()
network→setUserPassword()
network.set_userPassword()

YNetwork

Changes the password for the "user" user.

js	function set_userPassword(newval)
node.js	function set_userPassword(newval)
php	function set_userPassword(\$newval)
cpp	int set_userPassword(const string& newval)
m	- (int) setPassword : (NSString*) newval
pas	function set_userPassword(newval: string): integer
vb	function set_userPassword(ByVal newval As String) As Integer
cs	int set_userPassword(string newval)
java	int set_userPassword(String newval)
py	def setPassword(newval)
cmd	YNetwork target set_userPassword newval

This password becomes instantly required to perform any use of the module. If the specified value is an empty string, a password is not required anymore. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the password for the "user" user

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→set_wwwWatchdogDelay()
network→setWwwWatchdogDelay()
network.set_wwwWatchdogDelay()

YNetwork

Changes the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity.

```
js function set_wwwWatchdogDelay( newval)
nodejs function set_wwwWatchdogDelay( newval)
php function set_wwwWatchdogDelay( $newval)
cpp int set_wwwWatchdogDelay( int newval)
m -(int) setWwwWatchdogDelay : (int) newval
pas function set_wwwWatchdogDelay( newval: LongInt): integer
vb function set_wwwWatchdogDelay( ByVal newval As Integer) As Integer
cs int set_wwwWatchdogDelay( int newval)
java int set_wwwWatchdogDelay( int newval)
py def set_wwwWatchdogDelay( newval)
cmd YNetwork target set_wwwWatchdogDelay newval
```

A zero value disables automated reboot in case of Internet connectivity loss. The smallest valid non-zero timeout is 90 seconds.

Parameters :

newval an integer corresponding to the allowed downtime of the WWW link (in seconds) before triggering an automated reboot to try to recover Internet connectivity

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→useDHCP()network.useDHCP()**YNetwork**

Changes the configuration of the network interface to enable the use of an IP address received from a DHCP server.

```

js function useDHCP( fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)
nodejs function useDHCP( fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)
php function useDHCP( $fallbackIpAddr, $fallbackSubnetMaskLen, $fallbackRouter)
cpp int useDHCP( string fallbackIpAddr,
                  int fallbackSubnetMaskLen,
                  string fallbackRouter)

m -(int) useDHCP : (NSString*) fallbackIpAddr
                  : (int) fallbackSubnetMaskLen
                  : (NSString*) fallbackRouter

pas function useDHCP( fallbackIpAddr: string,
                      fallbackSubnetMaskLen: LongInt,
                      fallbackRouter: string): integer

vb function useDHCP( ByVal fallbackIpAddr As String,
                     ByVal fallbackSubnetMaskLen As Integer,
                     ByVal fallbackRouter As String) As Integer

cs int useDHCP( string fallbackIpAddr,
                 int fallbackSubnetMaskLen,
                 string fallbackRouter)

java int useDHCP( String fallbackIpAddr,
                  int fallbackSubnetMaskLen,
                  String fallbackRouter)

py def useDHCP( fallbackIpAddr, fallbackSubnetMaskLen, fallbackRouter)
cmd YNetwork target useDHCP fallbackIpAddr fallbackSubnetMaskLen fallbackRouter

```

Until an address is received from a DHCP server, the module uses the IP parameters specified to this function. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

fallbackIpAddr fallback IP address, to be used when no DHCP reply is received
fallbackSubnetMaskLen fallback subnet mask length when no DHCP reply is received, as an integer (eg. 24 means 255.255.255.0)
fallbackRouter fallback router IP address, to be used when no DHCP reply is received

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→useStaticIP()network.useStaticIP()

YNetwork

Changes the configuration of the network interface to use a static IP address.

```

js function useStaticIP( ipAddress, subnetMaskLen, router)
nodejs function useStaticIP( ipAddress, subnetMaskLen, router)
php function useStaticIP( $ipAddress, $subnetMaskLen, $router)
cpp int useStaticIP( string ipAddress,
                     int subnetMaskLen,
                     string router)
m -(int) useStaticIP : (NSString*) ipAddress
                      : (int) subnetMaskLen
                      : (NSString*) router
pas function useStaticIP( ipAddress: string,
                           subnetMaskLen: LongInt,
                           router: string): integer
vb function useStaticIP( ByVal ipAddress As String,
                        ByVal subnetMaskLen As Integer,
                        ByVal router As String) As Integer
cs int useStaticIP( string ipAddress,
                    int subnetMaskLen,
                    string router)
java int useStaticIP( String ipAddress,
                      int subnetMaskLen,
                      String router)
py def useStaticIP( ipAddress, subnetMaskLen, router)
cmd YNetwork target useStaticIP ipAddress subnetMaskLen router

```

Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

ipAddress device IP address
subnetMaskLen subnet mask length, as an integer (eg. 24 means 255.255.255.0)
router router IP address (default gateway)

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

network→wait_async()

YNetwork

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context )
nodejs function wait_async( callback, context )
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.27. OS control

The OScontrol object allows some control over the operating system running a VirtualHub. OsControl is available on the VirtualHub software only. This feature must be activated at the VirtualHub start up with -o option.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_oscontrol.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YOsControl = yoctolib.YOsControl;
php	require_once('yocto_oscontrol.php');
cpp	#include "yocto_oscontrol.h"
m	#import "yocto_oscontrol.h"
pas	uses yocto_oscontrol;
vb	yocto_oscontrol.vb
cs	yocto_oscontrol.cs
java	import com.yoctopuce.YoctoAPI.YOsControl;
py	from yocto_oscontrol import *

Global functions

yFindOsControl(func)

Retrieves OS control for a given identifier.

yFirstOsControl()

Starts the enumeration of OS control currently accessible.

YOsControl methods

oscontrol→describe()

Returns a short text that describes unambiguously the instance of the OS control in the form TYPE (NAME)=SERIAL . FUNCTIONID.

oscontrol→get_advertisedValue()

Returns the current value of the OS control (no more than 6 characters).

oscontrol→get_errorMessage()

Returns the error message of the latest error with the OS control.

oscontrol→get_errorType()

Returns the numerical error code of the latest error with the OS control.

oscontrol→get_friendlyName()

Returns a global identifier of the OS control in the format MODULE_NAME . FUNCTION_NAME.

oscontrol→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

oscontrol→get_functionId()

Returns the hardware identifier of the OS control, without reference to the module.

oscontrol→get_hardwareId()

Returns the unique hardware identifier of the OS control in the form SERIAL . FUNCTIONID.

oscontrol→get_logicalName()

Returns the logical name of the OS control.

oscontrol→get_module()

Gets the YModule object for the device on which the function is located.

oscontrol→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

oscontrol->get_shutdownCountdown()

Returns the remaining number of seconds before the OS shutdown, or zero when no shutdown has been scheduled.

oscontrol->get(userData)

Returns the value of the userData attribute, as previously stored using method set(userData).

oscontrol->isOnline()

Checks if the OS control is currently reachable, without raising any error.

oscontrol->isOnline_async(callback, context)

Checks if the OS control is currently reachable, without raising any error (asynchronous version).

oscontrol->load(msValidity)

Preloads the OS control cache with a specified validity duration.

oscontrol->load_async(msValidity, callback, context)

Preloads the OS control cache with a specified validity duration (asynchronous version).

oscontrol->nextOsControl()

Continues the enumeration of OS control started using yFirstOsControl().

oscontrol->registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

oscontrol->set_logicalName(newval)

Changes the logical name of the OS control.

oscontrol->set(userData)

Stores a user context provided as argument in the userData attribute of the function.

oscontrol->shutdown(secBeforeShutDown)

Schedules an OS shutdown after a given number of seconds.

oscontrol->wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YOsControl.FindOsControl() yFindOsControl()yFindOsControl()

YOsControl

Retrieves OS control for a given identifier.

```
js function yFindOsControl( func)
node.js function FindOsControl( func)
php function yFindOsControl( $func)
cpp YOsControl* yFindOsControl( const string& func)
m YOsControl* yFindOsControl( NSString* func)
pas function yFindOsControl( func: string): TYOsControl
vb function yFindOsControl( ByVal func As String) As YOsControl
cs YOsControl FindOsControl( string func)
java YOsControl FindOsControl( String func)
def FindOsControl( func)
py
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the OS control is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YOsControl.isOnline()` to test if the OS control is indeed online at a given time. In case of ambiguity when looking for OS control by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the OS control

Returns :

a `YOsControl` object allowing you to drive the OS control.

YOsControl.FirstOsControl() yFirstOsControl()yFirstOsControl()

YOsControl

Starts the enumeration of OS control currently accessible.

```
js function yFirstOsControl( )
nodejs function FirstOsControl( )
php function yFirstOsControl( )
cpp YOsControl* yFirstOsControl( )
m YOsControl* yFirstOsControl( )
pas function yFirstOsControl( ): TYOsControl
vb function yFirstOsControl( ) As YOsControl
cs YOsControl FirstOsControl( )
java YOsControl FirstOsControl( )
py def FirstOsControl( )
```

Use the method `YOsControl.nextOsControl()` to iterate on next OS control.

Returns :

a pointer to a `YOsControl` object, corresponding to the first OS control currently online, or a null pointer if there are none.

oscontrol→describe()oscontrol.describe()**YOsControl**

Returns a short text that describes unambiguously the instance of the OS control in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the OS control (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

oscontrol→get_advertisedValue()
oscontrol→advertisedValue()
oscontrol.get_advertisedValue()**YOsControl**

Returns the current value of the OS control (no more than 6 characters).

js	function get_advertisedValue()
node.js	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YOsControl target get_advertisedValue

Returns :

a string corresponding to the current value of the OS control (no more than 6 characters). On failure, throws an exception or returns **Y_ADVERTISEDVALUE_INVALID**.

oscontrol→get_errorMessage()
oscontrol→errorMessage()
oscontrol.get_errorMessage()

YOsControl

Returns the error message of the latest error with the OS control.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the OS control object

oscontrol→get_errorType()**YOsControl****oscontrol→errorType()oscontrol.get_errorType()**

Returns the numerical error code of the latest error with the OS control.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the OS control object

oscontrol→get_friendlyName()
oscontrol→friendlyName()**YOsControl**

Returns a global identifier of the OS control in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the OS control if they are defined, otherwise the serial number of the module and the hardware identifier of the OS control (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the OS control using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

oscontrol→get_functionDescriptor()
oscontrol→functionDescriptor()
oscontrol.get_functionDescriptor()**YOsControl**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**oscontrol→get_functionId()
oscontrol→functionId()****YOsControl**

Returns the hardware identifier of the OS control, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the OS control (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

oscontrol→get_hardwareId()
oscontrol→hardwareId()**YOsControl**

Returns the unique hardware identifier of the OS control in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the OS control. (for example RELAY01-123456.relay1)

Returns :

a string that uniquely identifies the OS control (ex: RELAY01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

oscontrol→get_logicalName()
oscontrol→logicalName()
oscontrol.get_logicalName()**YOsControl**

Returns the logical name of the OS control.

js	function get_logicalName()
nodejs	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YOsControl target get_logicalName

Returns :

a string corresponding to the logical name of the OS control. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

oscontrol→get_module()**YOsControl****oscontrol→module()oscontrol.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

oscontrol→get_module_async()
oscontrol→module_async()**YOsControl**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

oscontrol→get_shutdownCountdown()
oscontrol→shutdownCountdown()
oscontrol.get_shutdownCountdown()**YOsControl**

Returns the remaining number of seconds before the OS shutdown, or zero when no shutdown has been scheduled.

```
js function get_shutdownCountdown( )
nodejs function get_shutdownCountdown( )
php function get_shutdownCountdown( )
cpp int get_shutdownCountdown( )
m -(int) shutdownCountdown
pas function get_shutdownCountdown( ): LongInt
vb function get_shutdownCountdown( ) As Integer
cs int get_shutdownCountdown( )
java int get_shutdownCountdown( )
py def get_shutdownCountdown( )
cmd YOsControl target get_shutdownCountdown
```

Returns :

an integer corresponding to the remaining number of seconds before the OS shutdown, or zero when no shutdown has been scheduled

On failure, throws an exception or returns `Y_SHUTDOWNCOUNTDOWN_INVALID`.

oscontrol→get(userData)**YOsControl****oscontrol→userData()oscontrol.get(userData)**

Returns the value of the userData attribute, as previously stored using method set(userData).

js	function get(userData)
node.js	function get(userData)
php	function get(userData)
cpp	void * get(userData)
m	-(void*) userData
pas	function get(userData) : Tobject
vb	function get(userData) As Object
cs	object get(userData)
java	Object get(userData)
py	def get(userData)

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

oscontrol→isOnline()oscontrol.isOnline()**YOsControl**

Checks if the OS control is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the OS control in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the OS control.

Returns :

`true` if the OS control can be reached, and `false` otherwise

oscontrol→isOnline_async()

YOsControl

Checks if the OS control is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the OS control in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

oscontrol→load()oscontrol.load()**YOsControl**

Preloads the OS control cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>node.js</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

`YAPI_SUCCESS` when the call succeeds. On failure, throws an exception or returns a negative error code.

oscontrol→load_async()**YOsControl**

Preloads the OS control cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

oscontrol→nextOsControl()**YOsControl****oscontrol.nextOsControl()**

Continues the enumeration of OS control started using `yFirstOsControl()`.

js	<code>function nextOsControl()</code>
nodejs	<code>function nextOsControl()</code>
php	<code>function nextOsControl()</code>
cpp	<code>YOsControl * nextOsControl()</code>
m	<code>-(YOsControl*) nextOsControl</code>
pas	<code>function nextOsControl(): TYOsControl</code>
vb	<code>function nextOsControl() As YOsControl</code>
cs	<code>YOsControl nextOsControl()</code>
java	<code>YOsControl nextOsControl()</code>
py	<code>def nextOsControl()</code>

Returns :

a pointer to a `YOsControl` object, corresponding to OS control currently online, or a null pointer if there are no more OS control to enumerate.

**oscontrol→registerValueCallback()
oscontrol.registerValueCallback()****YOsControl**

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YOsControlValueCallback callback )
m    -(int) registerValueCallback : (YOsControlValueCallback) callback
pas   function registerValueCallback( callback: TYOsControlValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

oscontrol→set_logicalName()
oscontrol→setLogicalName()
oscontrol.set_logicalName()

YOsControl

Changes the logical name of the OS control.

js	function set_logicalName(newval)
node.js	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YOsControl target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the OS control.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

oscontrol→set(userData)**YOsControl****oscontrol→setUserData()oscontrol.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

```
js   function setUserData( data)
node.js function setUserData( data)
php  function setUserData( $data)
cpp   void setUserData( void* data)
m    -(void) setUserData : (void*) data
pas   procedure setUserData( data: Tobject)
vb    procedure setUserData( ByVal data As Object)
cs    void setUserData( object data)
java  void setUserData( Object data)
py    def setUserData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

oscontrol→shutdown()oscontrol.shutdown()**YOsControl**

Schedules an OS shutdown after a given number of seconds.

```
js function shutdown( secBeforeShutDown)
nodejs function shutdown( secBeforeShutDown)
php function shutdown( $secBeforeShutDown)
cpp int shutdown( int secBeforeShutDown)
m -(int) shutdown : (int) secBeforeShutDown
pas function shutdown( secBeforeShutDown: LongInt): LongInt
vb function shutdown( ) As Integer
cs int shutdown( int secBeforeShutDown)
java int shutdown( int secBeforeShutDown)
py def shutdown( secBeforeShutDown)
cmd YOsControl target shutdown secBeforeShutDown
```

Parameters :

secBeforeShutDown number of seconds before shutdown

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

oscontrol→wait_async()

YOsControl

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.28. Power function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_power.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YPower = yoctolib.YPower;
php	require_once('yocto_power.php');
cpp	#include "yocto_power.h"
m	#import "yocto_power.h"
pas	uses yocto_power;
vb	yocto_power.vb
cs	yocto_power.cs
java	import com.yoctopuce.YoctoAPI.YPower;
py	from yocto_power import *

Global functions

yFindPower(func)

Retrieves a electrical power sensor for a given identifier.

yFirstPower()

Starts the enumeration of electrical power sensors currently accessible.

YPower methods

power→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

power→describe()

Returns a short text that describes unambiguously the instance of the electrical power sensor in the form TYPE (NAME)=SERIAL.FUNCTIONID.

power→get_advertisedValue()

Returns the current value of the electrical power sensor (no more than 6 characters).

power→get_cosPhi()

Returns the power factor (the ratio between the real power consumed, measured in W, and the apparent power provided, measured in VA).

power→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

power→get_currentValue()

Returns the current measure for the electrical power.

power→get_errorMessage()

Returns the error message of the latest error with the electrical power sensor.

power→get_errorType()

Returns the numerical error code of the latest error with the electrical power sensor.

power→get_friendlyName()

Returns a global identifier of the electrical power sensor in the format MODULE_NAME.FUNCTION_NAME.

power→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

power→get_functionId()

3. Reference

Returns the hardware identifier of the electrical power sensor, without reference to the module.
power→get_hardwareId()
Returns the unique hardware identifier of the electrical power sensor in the form SERIAL.FUNCTIONID.
power→get_highestValue()
Returns the maximal value observed for the electrical power.
power→get_logFrequency()
Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.
power→get_logicalName()
Returns the logical name of the electrical power sensor.
power→get_lowestValue()
Returns the minimal value observed for the electrical power.
power→get_meter()
Returns the energy counter, maintained by the wattmeter by integrating the power consumption over time.
power→get_meterTimer()
Returns the elapsed time since last energy counter reset, in seconds.
power→get_module()
Gets the YModule object for the device on which the function is located.
power→get_module_async(callback, context)
Gets the YModule object for the device on which the function is located (asynchronous version).
power→get_recordedData(startTime, endTime)
Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.
power→get_reportFrequency()
Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.
power→get_resolution()
Returns the resolution of the measured values.
power→get_unit()
Returns the measuring unit for the electrical power.
power→get(userData)
Returns the value of the userData attribute, as previously stored using method set(userData).
power→isOnline()
Checks if the electrical power sensor is currently reachable, without raising any error.
power→isOnline_async(callback, context)
Checks if the electrical power sensor is currently reachable, without raising any error (asynchronous version).
power→load(msValidity)
Preloads the electrical power sensor cache with a specified validity duration.
power→loadCalibrationPoints(rawValues, refValues)
Retrieves error correction data points previously entered using the method calibrateFromPoints.
power→load_async(msValidity, callback, context)
Preloads the electrical power sensor cache with a specified validity duration (asynchronous version).
power→nextPower()
Continues the enumeration of electrical power sensors started using yFirstPower().
power→registerTimedReportCallback(callback)
Registers the callback function that is invoked on every periodic timed notification.
power→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

power→reset()

Resets the energy counter.

power→set_highestValue(newval)

Changes the recorded maximal value observed pour the electrical power.

power→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

power→set_logicalName(newval)

Changes the logical name of the electrical power sensor.

power→set_lowestValue(newval)

Changes the recorded minimal value observed pour the electrical power.

power→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

power→set_resolution(newval)

Changes the resolution of the measured values.

power→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

power→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YPower.FindPower() yFindPower()yFindPower()

YPower

Retrieves a electrical power sensor for a given identifier.

js	function yFindPower(func)
node.js	function FindPower(func)
php	function yFindPower(\$func)
cpp	YPower* yFindPower(const string& func)
m	YPower* yFindPower(NSString* func)
pas	function yFindPower(func: string): TYPower
vb	function yFindPower(ByVal func As String) As YPower
cs	YPower FindPower(string func)
java	YPower FindPower(String func)
py	def FindPower(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the electrical power sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YPower.isOnline()` to test if the electrical power sensor is indeed online at a given time. In case of ambiguity when looking for a electrical power sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the electrical power sensor

Returns :

a `YPower` object allowing you to drive the electrical power sensor.

YPower.FirstPower() yFirstPower()yFirstPower()

YPower

Starts the enumeration of electrical power sensors currently accessible.

```
js function yFirstPower( )
nodejs function FirstPower( )
php function yFirstPower( )
cpp YPower* yFirstPower( )
m YPower* yFirstPower( )
pas function yFirstPower( ): TYPower
vb function yFirstPower( ) As YPower
cs YPower FirstPower( )
java YPower FirstPower( )
py def FirstPower( )
```

Use the method `YPower.nextPower()` to iterate on next electrical power sensors.

Returns :

a pointer to a `YPower` object, corresponding to the first electrical power sensor currently online, or a `null` pointer if there are none.

power→calibrateFromPoints() power.calibrateFromPoints()

YPower

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php   function calibrateFromPoints( $rawValues, $refValues)
cpp    int calibrateFromPoints( vector<double> rawValues,
                               vector<double> refValues)

m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                : (NSMutableArray*) refValues

pas   function calibrateFromPoints( rawValues: TDoubleArray,
                                   refValues: TDoubleArray): LongInt

vb    procedure calibrateFromPoints( )

cs    int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java   int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py    def calibrateFromPoints( rawValues, refValues)
cmd   YPower target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→describe()power.describe()**YPower**

Returns a short text that describes unambiguously the instance of the electrical power sensor in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

```
a string that describes the electrical power sensor (ex:  
Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)
```

power→get_advertisedValue()
power→advertisedValue()
power.get_advertisedValue()

YPower

Returns the current value of the electrical power sensor (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue(): string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YPower target get_advertisedValue

Returns :

a string corresponding to the current value of the electrical power sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

power→get_cosPhi()**YPower****power→cosPhi()power.get_cosPhi()**

Returns the power factor (the ratio between the real power consumed, measured in W, and the apparent power provided, measured in VA).

js	function get_cosPhi()
nodejs	function get_cosPhi()
php	function get_cosPhi()
cpp	double get_cosPhi()
m	-(double) cosPhi
pas	function get_cosPhi(): double
vb	function get_cosPhi() As Double
cs	double get_cosPhi()
java	double get_cosPhi()
py	def get_cosPhi()
cmd	YPower target get_cosPhi

Returns :

a floating point number corresponding to the power factor (the ratio between the real power consumed, measured in W, and the apparent power provided, measured in VA)

On failure, throws an exception or returns Y_COSPHI_INVALID.

power→get_currentRawValue()
power→currentRawValue()
power.get_currentRawValue()

YPower

Returns the uncalibrated, unrounded raw value returned by the sensor.

js function **get_currentRawValue()**
nodejs function **get_currentRawValue()**
php function **get_currentRawValue()**
cpp double **get_currentRawValue()**
m -(double) currentRawValue
pas function **get_currentRawValue()**: double
vb function **get_currentRawValue()** As Double
cs double **get_currentRawValue()**
java double **get_currentRawValue()**
py def **get_currentRawValue()**
cmd YPower **target get_currentRawValue**

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

power→get_currentValue()**YPower****power→currentValue()power.get_currentValue()**

Returns the current measure for the electrical power.

```
js function get_currentValue( )  
nodejs function get_currentValue( )  
php function get_currentValue( )  
cpp double get_currentValue( )  
m -(double) currentValue  
pas function get_currentValue( ): double  
vb function get_currentValue( ) As Double  
cs double get_currentValue( )  
java double get_currentValue( )  
py def get_currentValue( )  
cmd YPower target get_currentValue
```

Returns :

a floating point number corresponding to the current measure for the electrical power

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

power→getErrorMessage()

YPower

power→errorMessage()power.getErrorMessage()

Returns the error message of the latest error with the electrical power sensor.

```
js function getErrorMessage( )
node.js function getErrorMessage( )
php function getErrorMessage( )
cpp string getErrorMessage( )
m -(NSString*) errorMessage
pas function getErrorMessage( ): string
vb function getErrorMessage( ) As String
cs string getErrorMessage( )
java String getErrorMessage( )
py def getErrorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the electrical power sensor object

power→get_errorType() power→errorType()power.get_errorType()

YPower

Returns the numerical error code of the latest error with the electrical power sensor.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the electrical power sensor object

power→get_friendlyName()
power→friendlyName()**YPower**

Returns a global identifier of the electrical power sensor in the format MODULE_NAME.FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the electrical power sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the electrical power sensor (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the electrical power sensor using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

power→get_functionDescriptor()
power→functionDescriptor()
power.get_functionDescriptor()**YPower**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**power→get_functionId()
power→functionId()****YPower**

Returns the hardware identifier of the electrical power sensor, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	- (NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the electrical power sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

power→get_hardwareId()
power→hardwareId()**YPower**

Returns the unique hardware identifier of the electrical power sensor in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the electrical power sensor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the electrical power sensor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

power→get_highestValue()

YPower

power→highestValue()power.get_highestValue()

Returns the maximal value observed for the electrical power.

js function **get_highestValue()****node.js** function **get_highestValue()****php** function **get_highestValue()****cpp** double **get_highestValue()****m** -(double) highestValue**pas** function **get_highestValue(): double****vb** function **get_highestValue() As Double****cs** double **get_highestValue()****java** double **get_highestValue()****py** def **get_highestValue()****cmd** YPower target **get_highestValue****Returns :**

a floating point number corresponding to the maximal value observed for the electrical power

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

power→get_logFrequency()**YPower****power→logFrequency()power.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency() ()
nodejs	function get_logFrequency() ()
php	function get_logFrequency() ()
cpp	string get_logFrequency() ()
m	-(NSString*) logFrequency
pas	function get_logFrequency() (): string
vb	function get_logFrequency() () As String
cs	string get_logFrequency() ()
java	String get_logFrequency() ()
py	def get_logFrequency() ()
cmd	YPower target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

power→get_logicalName()

YPower

power→logicalName()power.get_logicalName()

Returns the logical name of the electrical power sensor.

js	function get_logicalName()
node.js	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	- (NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YPower target get_logicalName

Returns :

a string corresponding to the logical name of the electrical power sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

power→get_lowestValue()**YPower****power→lowestValue()power.get_lowestValue()**

Returns the minimal value observed for the electrical power.

```
js   function get_lowestValue( )  
nodejs function get_lowestValue( )  
php  function get_lowestValue( )  
cpp   double get_lowestValue( )  
m    -(double) lowestValue  
pas   function get_lowestValue( ): double  
vb    function get_lowestValue( ) As Double  
cs    double get_lowestValue( )  
java  double get_lowestValue( )  
py    def get_lowestValue( )  
cmd   YPower target get_lowestValue
```

Returns :

a floating point number corresponding to the minimal value observed for the electrical power

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

power→get_meter()
power→meter()power.get_meter()**YPower**

Returns the energy counter, maintained by the wattmeter by integrating the power consumption over time.

js	function get_meter()
nodejs	function get_meter()
php	function get_meter()
cpp	double get_meter()
m	-(double) meter
pas	function get_meter(): double
vb	function get_meter() As Double
cs	double get_meter()
java	double get_meter()
py	def get_meter()
cmd	YPower target get_meter

Note that this counter is reset at each start of the device.

Returns :

a floating point number corresponding to the energy counter, maintained by the wattmeter by integrating the power consumption over time

On failure, throws an exception or returns **Y_METER_INVALID**.

power→get_meterTimer() power→meterTimer()power.get_meterTimer()

YPower

Returns the elapsed time since last energy counter reset, in seconds.

js	function get_meterTimer()
nodejs	function get_meterTimer()
php	function get_meterTimer()
cpp	int get_meterTimer()
m	-(int) meterTimer
pas	function get_meterTimer() : LongInt
vb	function get_meterTimer() As Integer
cs	int get_meterTimer()
java	int get_meterTimer()
py	def get_meterTimer()
cmd	YPower target get_meterTimer

Returns :

an integer corresponding to the elapsed time since last energy counter reset, in seconds

On failure, throws an exception or returns Y_METERTIMER_INVALID.

**power→get_module()
power→module()power.get_module()****YPower**

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
node.js	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

power→get_module_async() power→module_async()

YPower

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

`power→get_recordedData()`

YPower

`power→recordedData()``power.get_recordedData()`

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the `DataSet` class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without ending limit.

Returns :

an instance of `YDataSet`, providing access to historical data. Past measures can be loaded progressively using methods from the `YDataSet` object.

power→get_reportFrequency()
power→reportFrequency()
power.get_reportFrequency()

YPower

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency()
nodejs	function get_reportFrequency()
php	function get_reportFrequency()
cpp	string get_reportFrequency()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency() : string
vb	function get_reportFrequency() As String
cs	string get_reportFrequency()
java	String get_reportFrequency()
py	def get_reportFrequency()
cmd	YPower target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

**power→get_resolution()
power→resolution()power.get_resolution()****YPower**

Returns the resolution of the measured values.

js	function get_resolution()
node.js	function get_resolution()
php	function get_resolution()
cpp	double get_resolution()
m	-(double) resolution
pas	function get_resolution() : double
vb	function get_resolution() As Double
cs	double get_resolution()
java	double get_resolution()
py	def get_resolution()
cmd	YPower target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

power→get_unit()**YPower****power→unit()power.get_unit()**

Returns the measuring unit for the electrical power.

js	function get_unit()
nodejs	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YPower target get_unit

Returns :

a string corresponding to the measuring unit for the electrical power

On failure, throws an exception or returns Y_UNIT_INVALID.

power→get(userData)
power→userData()power.get(userData())

YPower

Returns the value of the userData attribute, as previously stored using method set(userData).

```
js function get(userData) 
node.js function get(userData) 
php function get(userData) 
cpp void * get(userData) 
m -(void*) userData 
pas function get(userData): TObject 
vb function get(userData) As Object 
cs object get(userData) 
java Object get(userData) 
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

power→isOnline()power.isOnline()**YPower**

Checks if the electrical power sensor is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the electrical power sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the electrical power sensor.

Returns :

true if the electrical power sensor can be reached, and false otherwise

power→isOnline_async()

YPower

Checks if the electrical power sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the electrical power sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

power→load()|power.load()

YPower

Preloads the electrical power sensor cache with a specified validity duration.

js	function load(msValidity)
node.js	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

power→loadCalibrationPoints() power.loadCalibrationPoints()

YPower

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php   function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)
m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues
pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt
vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)
java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)
py   def loadCalibrationPoints( rawValues, refValues)
cmd  YPower target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→load_async()

YPower

Preloads the electrical power sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

power→nextPower()power.nextPower()******YPower**

Continues the enumeration of electrical power sensors started using `yFirstPower()`.

js	function nextPower()
nodejs	function nextPower()
php	function nextPower()
cpp	YPower * nextPower()
m	-(YPower*) nextPower
pas	function nextPower() : TYPower
vb	function nextPower() As YPower
cs	YPower nextPower()
java	YPower nextPower()
py	def nextPower()

Returns :

a pointer to a `YPower` object, corresponding to a electrical power sensor currently online, or a null pointer if there are no more electrical power sensors to enumerate.

power→registerTimedReportCallback() power.registerTimedReportCallback()

YPower

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback(callback)
node.js	function registerTimedReportCallback(callback)
php	function registerTimedReportCallback(\$callback)
cpp	int registerTimedReportCallback(YPowerTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YPowerTimedReportCallback) callback
pas	function registerTimedReportCallback(callback : TYPowerTimedReportCallback): LongInt
vb	function registerTimedReportCallback() As Integer
cs	int registerTimedReportCallback(TimedReportCallback callback)
java	int registerTimedReportCallback(TimedReportCallback callback)
py	def registerTimedReportCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

power→registerValueCallback() power.registerValueCallback()

YPower

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YPowerValueCallback callback )
m    -(int) registerValueCallback : (YPowerValueCallback) callback
pas   function registerValueCallback( callback: TYPowerValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

power→reset()power.reset()

YPower

Resets the energy counter.

js	function reset()
nodejs	function reset()
php	function reset()
cpp	int reset()
m	- (int) reset
pas	function reset(): LongInt
vb	function reset() As Integer
cs	int reset()
java	int reset()
py	def reset()
cmd	YPower target reset

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→set_highestValue() power→setHighestValue()power.set_highestValue()

Changes the recorded maximal value observed pour the electrical power.

```
js function set_highestValue( newval)
node.js function set_highestValue( newval)
php function set_highestValue( $newval)
cpp int set_highestValue( double newval)
m -(int) setHighestValue : (double) newval
pas function set_highestValue( newval: double): integer
vb function set_highestValue( ByVal newval As Double) As Integer
cs int set_highestValue( double newval)
java int set_highestValue( double newval)
py def set_highestValue( newval)
cmd YPower target set_highestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded maximal value observed pour the electrical power

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→set_logFrequency()

YPower

power→setLogFrequency()power.set_logFrequency()

Changes the datalogger recording frequency for this function.

<code>js</code>	<code>function set_logFrequency(newval)</code>
<code>nodejs</code>	<code>function set_logFrequency(newval)</code>
<code>php</code>	<code>function set_logFrequency(\$newval)</code>
<code>cpp</code>	<code>int set_logFrequency(const string& newval)</code>
<code>m</code>	<code>-(int) setLogFrequency : (NSString*) newval</code>
<code>pas</code>	<code>function set_logFrequency(newval: string): integer</code>
<code>vb</code>	<code>function set_logFrequency(ByVal newval As String) As Integer</code>
<code>cs</code>	<code>int set_logFrequency(string newval)</code>
<code>java</code>	<code>int set_logFrequency(String newval)</code>
<code>py</code>	<code>def set_logFrequency(newval)</code>
<code>cmd</code>	<code>YPower target set_logFrequency newval</code>

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→set_logicalName() power→setLogicalName()power.set_logicalName()

Changes the logical name of the electrical power sensor.

```
js function set_logicalName( newval)
node.js function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YPower target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the electrical power sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

power→set_lowestValue()**YPower****power→setLowestValue()power.set_lowestValue()**

Changes the recorded minimal value observed pour the electrical power.

<code>js</code>	<code>function set_lowestValue(newval)</code>
<code>nodejs</code>	<code>function set_lowestValue(newval)</code>
<code>php</code>	<code>function set_lowestValue(\$newval)</code>
<code>cpp</code>	<code>int set_lowestValue(double newval)</code>
<code>m</code>	<code>-(int) setLowestValue : (double) newval</code>
<code>pas</code>	<code>function set_lowestValue(newval: double): integer</code>
<code>vb</code>	<code>function set_lowestValue(ByVal newval As Double) As Integer</code>
<code>cs</code>	<code>int set_lowestValue(double newval)</code>
<code>java</code>	<code>int set_lowestValue(double newval)</code>
<code>py</code>	<code>def set_lowestValue(newval)</code>
<code>cmd</code>	<code>YPower target set_lowestValue newval</code>

Parameters :

newval a floating point number corresponding to the recorded minimal value observed pour the electrical power

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→set_reportFrequency()
power→setReportFrequency()
power.set_reportFrequency()

YPower

Changes the timed value notification frequency for this function.

```
js    function set_reportFrequency( newval)
nodejs function set_reportFrequency( newval)
php   function set_reportFrequency( $newval)
cpp   int set_reportFrequency( const string& newval)
m     -(int) setReportFrequency : (NSString*) newval
pas   function set_reportFrequency( newval: string): integer
vb    function set_reportFrequency( ByVal newval As String) As Integer
cs    int set_reportFrequency( string newval)
java  int set_reportFrequency( String newval)
py    def set_reportFrequency( newval)
cmd   YPower target set_reportFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→set_resolution() power→setResolution()power.set_resolution()

YPower

Changes the resolution of the measured values.

js	function set_resolution(newval)
nodejs	function set_resolution(newval)
php	function set_resolution(\$newval)
cpp	int set_resolution(double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution(newval: double): integer
vb	function set_resolution(ByVal newval As Double) As Integer
cs	int set_resolution(double newval)
java	int set_resolution(double newval)
py	def set_resolution(newval)
cmd	YPower target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

power→set(userData)

YPower

power→setUserData()power.set(userData)

Stores a user context provided as argument in the userData attribute of the function.

```
js   function setUserData( data)
node.js function setUserData( data)
php  function setUserData( $data)
cpp   void setUserData( void* data)
m    -(void) setUserData : (void*) data
pas   procedure setUserData( data: Tobject)
vb    procedure setUserData( ByVal data As Object)
cs    void setUserData( object data)
java  void setUserData( Object data)
py    def setUserData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

power→wait_async()

YPower

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context )
nodejs function wait_async( callback, context )
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.29. Pressure function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_pressure.js'></script>
nodejs var yoctolib = require('yoctolib');
var YPressure = yoctolib.YPressure;
php require_once('yocto_pressure.php');
cpp #include "yocto_pressure.h"
m #import "yocto_pressure.h"
pas uses yocto_pressure;
vb yocto_pressure.vb
cs yocto_pressure.cs
java import com.yoctopuce.YoctoAPI.YPressure;
py from yocto_pressure import *

```

Global functions

yFindPressure(func)

Retrieves a pressure sensor for a given identifier.

yFirstPressure()

Starts the enumeration of pressure sensors currently accessible.

YPressure methods

pressure→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

pressure→describe()

Returns a short text that describes unambiguously the instance of the pressure sensor in the form TYPE (NAME) = SERIAL . FUNCTIONID.

pressure→get_advertisedValue()

Returns the current value of the pressure sensor (no more than 6 characters).

pressure→get_currentRawValue()

Returns the unrounded and uncalibrated raw value returned by the sensor.

pressure→get_currentValue()

Returns the current measure for the pressure.

pressure→get_errorMessage()

Returns the error message of the latest error with the pressure sensor.

pressure→get_errorType()

Returns the numerical error code of the latest error with the pressure sensor.

pressure→get_friendlyName()

Returns a global identifier of the pressure sensor in the format MODULE_NAME . FUNCTION_NAME.

pressure→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

pressure→get_functionId()

Returns the hardware identifier of the pressure sensor, without reference to the module.

pressure→get_hardwareId()

Returns the unique hardware identifier of the pressure sensor in the form SERIAL . FUNCTIONID.

pressure→get_highestValue()

Returns the maximal value observed for the pressure.

pressure→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

pressure→get_logicalName()

Returns the logical name of the pressure sensor.

pressure→get_lowestValue()

Returns the minimal value observed for the pressure.

pressure→get_module()

Gets the YModule object for the device on which the function is located.

pressure→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

pressure→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

pressure→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

pressure→get_resolution()

Returns the resolution of the measured values.

pressure→get_unit()

Returns the measuring unit for the pressure.

pressure→get(userData)

Returns the value of the userData attribute, as previously stored using method set(userData).

pressure→isOnline()

Checks if the pressure sensor is currently reachable, without raising any error.

pressure→isOnline_async(callback, context)

Checks if the pressure sensor is currently reachable, without raising any error (asynchronous version).

pressure→load(msValidity)

Preloads the pressure sensor cache with a specified validity duration.

pressure→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

pressure→load_async(msValidity, callback, context)

Preloads the pressure sensor cache with a specified validity duration (asynchronous version).

pressure→nextPressure()

Continues the enumeration of pressure sensors started using yFirstPressure().

pressure→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

pressure→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

pressure→set_highestValue(newval)

Changes the recorded maximal value observed for the pressure.

pressure→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

pressure→set_logicalName(newval)

Changes the logical name of the pressure sensor.

3. Reference

pressure→set_lowestValue(newval)

Changes the recorded minimal value observed for the pressure.

pressure→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

pressure→set_resolution(newval)

Changes the resolution of the measured physical values.

pressure→set(userData)

Stores a user context provided as argument in the userData attribute of the function.

pressure→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YPressure.FindPressure() yFindPressure()yFindPressure()

YPressure

Retrieves a pressure sensor for a given identifier.

js	function yFindPressure(func)
node.js	function FindPressure(func)
php	function yFindPressure(\$func)
cpp	YPressure* yFindPressure(const string& func)
m	YPressure* yFindPressure(NSString* func)
pas	function yFindPressure(func: string): TYPressure
vb	function yFindPressure(ByVal func As String) As YPressure
cs	YPressure FindPressure(string func)
java	YPressure FindPressure(String func)
py	def FindPressure(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the pressure sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YPressure.isOnline()` to test if the pressure sensor is indeed online at a given time. In case of ambiguity when looking for a pressure sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the pressure sensor

Returns :

a YPressure object allowing you to drive the pressure sensor.

YPressure.FirstPressure() yFirstPressure()yFirstPressure()

YPressure

Starts the enumeration of pressure sensors currently accessible.

js	function yFirstPressure()
node.js	function FirstPressure()
php	function yFirstPressure()
cpp	YPressure* yFirstPressure()
m	YPressure* yFirstPressure()
pas	function yFirstPressure() : TYPressure
vb	function yFirstPressure() As YPressure
cs	YPressure FirstPressure()
java	YPressure FirstPressure()
py	def FirstPressure()

Use the method `YPressure.nextPressure()` to iterate on next pressure sensors.

Returns :

a pointer to a `YPressure` object, corresponding to the first pressure sensor currently online, or a null pointer if there are none.

pressure→calibrateFromPoints() pressure.calibrateFromPoints()

YPressure

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php  function calibrateFromPoints( $rawValues, $refValues)
cpp   int calibrateFromPoints( vector<double> rawValues,
                           vector<double> refValues)

m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
      : (NSMutableArray*) refValues

pas  function calibrateFromPoints( rawValues: TDoubleArray,
                                   refValues: TDoubleArray): LongInt

vb   procedure calibrateFromPoints( )

cs   int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def calibrateFromPoints( rawValues, refValues)
cmd  YPressure target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.
refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→describe()pressure.describe()**YPressure**

Returns a short text that describes unambiguously the instance of the pressure sensor in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the pressure sensor (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

pressure→get_advertisedValue()
pressure→advertisedValue()
pressure.get_advertisedValue()

YPressure

Returns the current value of the pressure sensor (no more than 6 characters).

js	function get_advertisedValue()
node.js	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YPressure target get_advertisedValue

Returns :

a string corresponding to the current value of the pressure sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

pressure→get_currentRawValue()
pressure→currentRawValue()
pressure.get_currentRawValue()

YPressure

Returns the unrounded and uncalibrated raw value returned by the sensor.

js function **get_currentRawValue()**
nodejs function **get_currentRawValue()**
php function **get_currentRawValue()**
cpp double **get_currentRawValue()**
m -(double) currentRawValue
pas function **get_currentRawValue(): double**
vb function **get_currentRawValue() As Double**
cs double **get_currentRawValue()**
java double **get_currentRawValue()**
py def **get_currentRawValue()**
cmd YPressure target **get_currentRawValue**

Returns :

a floating point number corresponding to the unrounded and uncalibrated raw value returned by the sensor

On failure, throws an exception or returns **Y_CURRENTRAWVALUE_INVALID**.

pressure→get_currentValue()**YPressure****pressure→currentValue()pressure.get_currentValue()**

Returns the current measure for the pressure.

js	function get_currentValue()
nodejs	function get_currentValue()
php	function get_currentValue()
cpp	double get_currentValue()
m	-(double) currentValue
pas	function get_currentValue() : double
vb	function get_currentValue() As Double
cs	double get_currentValue()
java	double get_currentValue()
py	def get_currentValue()
cmd	YPressure target get_currentValue

Returns :

a floating point number corresponding to the current measure for the pressure

On failure, throws an exception or returns **Y_CURRENTVALUE_INVALID**.

pressure→get_errorMessage()
pressure→errorMessage()
pressure.get_errorMessage()**YPressure**

Returns the error message of the latest error with the pressure sensor.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the pressure sensor object

pressure→get_errorType()**YPressure****pressure→errorType()pressure.get_errorType()**

Returns the numerical error code of the latest error with the pressure sensor.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the pressure sensor object

pressure→get_friendlyName()
pressure→friendlyName()**YPressure**

Returns a global identifier of the pressure sensor in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the pressure sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the pressure sensor (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the pressure sensor using logical names (ex: MyCustomName.relay1)

On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

pressure→get_functionDescriptor()
pressure→functionDescriptor()
pressure.get_functionDescriptor()

YPressure

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

pressure→get_functionId()
pressure→functionId()**YPressure**

Returns the hardware identifier of the pressure sensor, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the pressure sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

pressure→get_hardwareId()
pressure→hardwareId()**YPressure**

Returns the unique hardware identifier of the pressure sensor in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the pressure sensor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the pressure sensor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

pressure→get_highestValue()
pressure→highestValue()
pressure.get_highestValue()

YPressure

Returns the maximal value observed for the pressure.

```
js function get_highestValue( )  
nodejs function get_highestValue( )  
php function get_highestValue( )  
cpp double get_highestValue( )  
m -(double) highestValue  
pas function get_highestValue( ): double  
vb function get_highestValue( ) As Double  
cs double get_highestValue( )  
java double get_highestValue( )  
py def get_highestValue( )  
cmd YPressure target get_highestValue
```

Returns :

a floating point number corresponding to the maximal value observed for the pressure

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

pressure→get_logFrequency()
pressure→logFrequency()
pressure.get_logFrequency()

YPressure

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

```
js   function get_logFrequency( )  
nodejs function get_logFrequency( )  
php  function get_logFrequency( )  
cpp   string get_logFrequency( )  
m    -(NSString*) logFrequency  
pas   function get_logFrequency( ): string  
vb    function get_logFrequency( ) As String  
cs   string get_logFrequency( )  
java  String get_logFrequency( )  
py    def get_logFrequency()  
cmd   YPressure target get_logFrequency
```

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

pressure→get_logicalName()**YPressure****pressure→logicalName()pressure.get_logicalName()**

Returns the logical name of the pressure sensor.

js	function get_logicalName()
node.js	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YPressure target get_logicalName

Returns :

a string corresponding to the logical name of the pressure sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

pressure→get_lowestValue()**YPressure****pressure→lowestValue()pressure.get_lowestValue()**

Returns the minimal value observed for the pressure.

```
js function get_lowestValue( )  
nodejs function get_lowestValue( )  
php function get_lowestValue( )  
cpp double get_lowestValue( )  
m -(double) lowestValue  
pas function get_lowestValue( ): double  
vb function get_lowestValue( ) As Double  
cs double get_lowestValue( )  
java double get_lowestValue( )  
py def get_lowestValue( )  
cmd YPressure target get_lowestValue
```

Returns :

a floating point number corresponding to the minimal value observed for the pressure

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

pressure→get_module()
pressure→module()pressure.get_module()**YPressure**

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
node.js	function get_module()
php	function get_module()
cpp	<code>YModule * get_module()</code>
m	<code>-(YModule*) module</code>
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	<code>YModule get_module()</code>
java	<code>YModule get_module()</code>
py	<code>def get_module()</code>

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

pressure→get_module_async()
pressure→module_async()**YPressure**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

```
pressure->get_recordedData()  
pressure->recordedData()  
pressure.get_recordedData()
```

YPressure

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the `DataSet` class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without ending limit.

Returns :

an instance of `YDataSet`, providing access to historical data. Past measures can be loaded progressively using methods from the `YDataSet` object.

pressure→get_reportFrequency()
pressure→reportFrequency()
pressure.get_reportFrequency()

YPressure

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js   function get_reportFrequency( )  
nodejs function get_reportFrequency( )  
php  function get_reportFrequency( )  
cpp   string get_reportFrequency( )  
m    -(NSString*) reportFrequency  
pas   function get_reportFrequency( ): string  
vb    function get_reportFrequency( ) As String  
cs    string get_reportFrequency( )  
java  String get_reportFrequency( )  
py    def get_reportFrequency( )  
cmd   YPressure target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns `Y_REPORTFREQUENCY_INVALID`.

pressure→get_resolution() YPressure
pressure→resolution()pressure.get_resolution()

Returns the resolution of the measured values.

```
js function get_resolution( )
node.js function get_resolution( )
php function get_resolution( )
cpp double get_resolution( )
m -(double) resolution
pas function get_resolution( ): double
vb function get_resolution( ) As Double
cs double get_resolution( )
java double get_resolution( )
py def get_resolution( )
cmd YPressure target get_resolution
```

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

pressure→get_unit()**YPressure****pressure→unit()pressure.get_unit()**

Returns the measuring unit for the pressure.

js	function get_unit()
nodejs	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YPressure target get_unit

Returns :

a string corresponding to the measuring unit for the pressure

On failure, throws an exception or returns Y_UNIT_INVALID.

pressure→get(userData)**YPressure****pressure→userData()pressure.get(userData())**

Returns the value of the userData attribute, as previously stored using method set(userData).

```
js function get(userData) 
node.js function get(userData) 
php function get(userData) 
cpp void * get(userData) 
m -(void*) userData 
pas function get(userData): Tobject 
vb function get(userData) As Object 
cs object get(userData) 
java Object get(userData) 
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

pressure→isOnline()pressure.isOnline()**YPressure**

Checks if the pressure sensor is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	-(BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the pressure sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the pressure sensor.

Returns :

true if the pressure sensor can be reached, and false otherwise

pressure→isOnline_async()

YPressure

Checks if the pressure sensor is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the pressure sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pressure→load()pressure.load()

YPressure

Preloads the pressure sensor cache with a specified validity duration.

```
js function load( msValidity)
nodejs function load( msValidity)
php function load( $msValidity)
cpp YRETCODE load( int msValidity)
m -(YRETCODE) load : (int) msValidity
pas function load( msValidity: integer): YRETCODE
vb function load( ByVal msValidity As Integer) As YRETCODE
cs YRETCODE load( int msValidity)
java int load( long msValidity)
py def load( msValidity)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

pressure→loadCalibrationPoints() pressure.loadCalibrationPoints()

YPressure

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php   function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)
m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues
pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt
vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)
java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)
py   def loadCalibrationPoints( rawValues, refValues)
cmd  YPressure target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→load_async()

YPressure

Preloads the pressure sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pressure→nextPressure()pressure.nextPressure()**YPressure**

Continues the enumeration of pressure sensors started using `yFirstPressure()`.

js	function nextPressure()
nodejs	function nextPressure()
php	function nextPressure()
cpp	YPressure * nextPressure()
m	-(YPressure*) nextPressure
pas	function nextPressure() : TYPressure
vb	function nextPressure() As YPressure
cs	YPressure nextPressure()
java	YPressure nextPressure()
py	def nextPressure()

Returns :

a pointer to a `YPressure` object, corresponding to a pressure sensor currently online, or a `null` pointer if there are no more pressure sensors to enumerate.

pressure→registerTimedReportCallback() pressure.registerTimedReportCallback()

YPressure

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback(callback)
node.js	function registerTimedReportCallback(callback)
php	function registerTimedReportCallback(\$callback)
cpp	int registerTimedReportCallback(YPressureTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YPressureTimedReportCallback) callback
pas	function registerTimedReportCallback(callback : TYPressureTimedReportCallback): LongInt
vb	function registerTimedReportCallback() As Integer
cs	int registerTimedReportCallback(TimedReportCallback callback)
java	int registerTimedReportCallback(TimedReportCallback callback)
py	def registerTimedReportCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

**pressure→registerValueCallback()
pressure.registerValueCallback()****YPressure**

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YPressureValueCallback callback )
m    -(int) registerValueCallback : (YPressureValueCallback) callback
pas   function registerValueCallback( callback: TYPressureValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

pressure→set_highestValue()
pressure→setHighestValue()
pressure.set_highestValue()

YPressure

Changes the recorded maximal value observed for the pressure.

js	function set_highestValue(newval)
nodejs	function set_highestValue(newval)
php	function set_highestValue(\$newval)
cpp	int set_highestValue(double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue(newval: double): integer
vb	function set_highestValue(ByVal newval As Double) As Integer
cs	int set_highestValue(double newval)
java	int set_highestValue(double newval)
py	def set_highestValue(newval)
cmd	YPressure target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed for the pressure

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→set_logFrequency()
pressure→setLogFrequency()
pressure.set_logFrequency()

YPressure

Changes the datalogger recording frequency for this function.

```
js   function set_logFrequency( newval)
nodejs function set_logFrequency( newval)
php  function set_logFrequency( $newval)
cpp   int set_logFrequency( const string& newval)
m    -(int) setLogFrequency : (NSString*) newval
pas   function set_logFrequency( newval: string): integer
vb    function set_logFrequency( ByVal newval As String) As Integer
cs    int set_logFrequency( string newval)
java  int set_logFrequency( String newval)
py    def set_logFrequency( newval)
cmd   YPressure target set_logFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→set_logicalName()
pressure→setLogicalName()
pressure.set_logicalName()

YPressure

Changes the logical name of the pressure sensor.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YPressure target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the pressure sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

pressure→set_lowestValue()
pressure→setLowestValue()
pressure.set_lowestValue()

YPressure

Changes the recorded minimal value observed for the pressure.

```
js function set_lowestValue( newval)
nodejs function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YPressure target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed for the pressure

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→set_reportFrequency()
pressure→setReportFrequency()
pressure.set_reportFrequency()

YPressure

Changes the timed value notification frequency for this function.

js	function set_reportFrequency(newval)
node.js	function set_reportFrequency(newval)
php	function set_reportFrequency(\$newval)
cpp	int set_reportFrequency(const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency(newval: string): integer
vb	function set_reportFrequency(ByVal newval As String) As Integer
cs	int set_reportFrequency(string newval)
java	int set_reportFrequency(String newval)
py	def set_reportFrequency(newval)
cmd	YPressure target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→set_resolution() pressure→setResolution()pressure.set_resolution()

YPressure

Changes the resolution of the measured physical values.

```
js function set_resolution( newval)
node.js function set_resolution( newval)
php function set_resolution( $newval)
cpp int set_resolution( double newval)
m -(int) setResolution : (double) newval
pas function set_resolution( newval: double): integer
vb function set_resolution( ByVal newval As Double) As Integer
cs int set_resolution( double newval)
java int set_resolution( double newval)
py def set_resolution( newval)
cmd YPressure target set_resolution newval
```

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pressure→set(userData)**YPressure****pressure→setUserData()|pressure.set(userData())**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	-(void) setUserData : (void*) data
pas	procedure set(userData Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

pressure→wait_async()

YPressure

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.30. Pwm function interface

The Yoctopuce application programming interface allows you to configure, start, and stop the PWM.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_pwmoutput.js'></script>
node.js	var yoctolib = require('yoctolib');
	var YPwmOutput = yoctolib.YPwmOutput;
php	require_once('yocto_pwmoutput.php');
cpp	#include "yocto_pwmoutput.h"
m	#import "yocto_pwmoutput.h"
pas	uses yocto_pwmoutput;
vb	yocto_pwmoutput.vb
cs	yocto_pwmoutput.cs
java	import com.yoctopuce.YoctoAPI.YPwmOutput;
py	from yocto_pwmoutput import *

Global functions

yFindPwmOutput(func)

Retrieves a PWM for a given identifier.

yFirstPwmOutput()

Starts the enumeration of PWMs currently accessible.

YPwmOutput methods

pwmoutput→describe()

Returns a short text that describes unambiguously the instance of the PWM in the form TYPE (NAME)=SERIAL .FUNCTIONID.

pwmoutput→dutyCycleMove(target, ms_duration)

Performs a smooth change of the pulse duration toward a given value.

pwmoutput→get_advertisedValue()

Returns the current value of the PWM (no more than 6 characters).

pwmoutput→get_dutyCycle()

Returns the PWMs duty cyle as a floating point number between 0 an 1.

pwmoutput→get_dutyCycleAtPowerOn()

Returns the PWMs duty cycle at device power up as a floating point number between 0.0 and 100.

pwmoutput→get_enabled()

Returns the state of the PWMs.

pwmoutput→get_enabledAtPowerOn()

Returns the state of the PWMs at device power up.

pwmoutput→get_errorMessage()

Returns the error message of the latest error with the PWM.

pwmoutput→get_errorType()

Returns the numerical error code of the latest error with the PWM.

pwmoutput→get_frequency()

Returns the PWM frequency in Hz.

pwmoutput→get_friendlyName()

Returns a global identifier of the PWM in the format MODULE_NAME . FUNCTION_NAME.

pwmoutput→get_functionDescriptor()

3. Reference

Returns a unique identifier of type YFUN_DESCR corresponding to the function.
pwmoutput->get_functionId() Returns the hardware identifier of the PWM, without reference to the module.
pwmoutput->get_hardwareId() Returns the unique hardware identifier of the PWM in the form SERIAL.FUNCTIONID.
pwmoutput->get_logicalName() Returns the logical name of the PWM.
pwmoutput->get_module() Gets the YModule object for the device on which the function is located.
pwmoutput->get_module_async(callback, context) Gets the YModule object for the device on which the function is located (asynchronous version).
pwmoutput->get_period() Returns the PWM period in nanoseconds.
pwmoutput->get_pulseDuration() Returns the PWM pulse length in milliseconds.
pwmoutput->get_userData() Returns the value of the userData attribute, as previously stored using method set(userData).
pwmoutput->isOnline() Checks if the PWM is currently reachable, without raising any error.
pwmoutput->isOnline_async(callback, context) Checks if the PWM is currently reachable, without raising any error (asynchronous version).
pwmoutput->load(msValidity) Preloads the PWM cache with a specified validity duration.
pwmoutput->load_async(msValidity, callback, context) Preloads the PWM cache with a specified validity duration (asynchronous version).
pwmoutput->nextPwmOutput() Continues the enumeration of PWMs started using yFirstPwmOutput().
pwmoutput->pulseDurationMove(ms_target, ms_duration) Performs a smooth change of the pulse duration toward a given value.
pwmoutput->registerValueCallback(callback) Registers the callback function that is invoked on every change of advertised value.
pwmoutput->set_dutyCycle(newval) Configures the PWMs duty cycle.
pwmoutput->set_dutyCycleAtPowerOn(newval) Configures the PWMs duty cycle at device power up.
pwmoutput->set_enabled(newval) Stops or starts the PWM.
pwmoutput->set_enabledAtPowerOn(newval) Configures the state of PWM at device power up.
pwmoutput->set_frequency(newval) Configures the PWM frequency.
pwmoutput->set_logicalName(newval) Changes the logical name of the PWM.
pwmoutput->set_period(newval) Configures the PWM period.

pwmoutput→set_pulseDuration(newval)

Configures the PWM pulses length.

pwmoutput→set(userData)

Stores a user context provided as argument in the userData attribute of the function.

pwmoutput→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YPwmOutput.FindPwmOutput() yFindPwmOutput()yFindPwmOutput()

YPwmOutput

Retrieves a PWM for a given identifier.

js	function yFindPwmOutput(func)
node.js	function FindPwmOutput(func)
php	function yFindPwmOutput(\$func)
cpp	YPwmOutput* yFindPwmOutput(const string& func)
m	YPwmOutput* yFindPwmOutput(NSString* func)
pas	function yFindPwmOutput(func: string): TYPwmOutput
vb	function yFindPwmOutput(ByVal func As String) As YPwmOutput
cs	YPwmOutput FindPwmOutput(string func)
java	YPwmOutput FindPwmOutput(String func)
py	def FindPwmOutput(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the PWM is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YPwmOutput.isOnline()` to test if the PWM is indeed online at a given time. In case of ambiguity when looking for a PWM by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the PWM

Returns :

a `YPwmOutput` object allowing you to drive the PWM.

YPwmOutput.FirstPwmOutput() yFirstPwmOutput()yFirstPwmOutput()

YPwmOutput

Starts the enumeration of PWMs currently accessible.

js	function yFirstPwmOutput()
node.js	function FirstPwmOutput()
php	function yFirstPwmOutput()
cpp	YPwmOutput* yFirstPwmOutput()
m	YPwmOutput* yFirstPwmOutput()
pas	function yFirstPwmOutput(): TYPwmOutput
vb	function yFirstPwmOutput() As YPwmOutput
cs	YPwmOutput FirstPwmOutput()
java	YPwmOutput FirstPwmOutput()
py	def FirstPwmOutput()

Use the method `YPwmOutput.nextPwmOutput()` to iterate on next PWMs.

Returns :

a pointer to a `YPwmOutput` object, corresponding to the first PWM currently online, or a `null` pointer if there are none.

pwmoutput→describe()pwmoutput.describe()**YPwmOutput**

Returns a short text that describes unambiguously the instance of the PWM in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the PWM (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

pwmoutput→dutyCycleMove() pwmoutput.dutyCycleMove()

YPwmOutput

Performs a smooth change of the pulse duration toward a given value.

js	function dutyCycleMove(target, ms_duration)
nodejs	function dutyCycleMove(target, ms_duration)
php	function dutyCycleMove(\$target, \$ms_duration)
cpp	int dutyCycleMove(double target, int ms_duration)
m	-(int) dutyCycleMove : (double) target : (int) ms_duration
pas	function dutyCycleMove(target: double, ms_duration: LongInt): LongInt
vb	function dutyCycleMove() As Integer
cs	int dutyCycleMove(double target, int ms_duration)
java	int dutyCycleMove(double target, int ms_duration)
py	def dutyCycleMove(target, ms_duration)
cmd	YPwmOutput target dutyCycleMove target ms_duration

Parameters :

target new duty cycle at the end of the transition (floating-point number, between 0 and 1)

ms_duration total duration of the transition, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

pwmoutput→get_advertisedValue()
pwmoutput→advertisedValue()
pwmoutput.get_advertisedValue()**YPwmOutput**

Returns the current value of the PWM (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue(): string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YPwmOutput target get_advertisedValue

Returns :

a string corresponding to the current value of the PWM (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

pwmoutput→get_dutyCycle()**YPwmOutput****pwmoutput→dutyCycle()pwmoutput.get_dutyCycle()**

Returns the PWMs dutty cyle as a floating point number between 0 an 1.

js	function get_dutyCycle()
nodejs	function get_dutyCycle()
php	function get_dutyCycle()
cpp	double get_dutyCycle()
m	-(double) dutyCycle
pas	function get_dutyCycle(): double
vb	function get_dutyCycle() As Double
cs	double get_dutyCycle()
java	double get_dutyCycle()
py	def get_dutyCycle()
cmd	YPwmOutput target get_dutyCycle

Returns :

a floating point number corresponding to the PWMs dutty cyle as a floating point number between 0 an 1

On failure, throws an exception or returns **Y_DUTYCYCLE_INVALID**.

`pwmoutput->get_dutyCycleAtPowerOn()`
`pwmoutput->dutyCycleAtPowerOn()`
`pwmoutput.get_dutyCycleAtPowerOn()`

YPwmOutput

Returns the PWMs duty cycle at device power up as a floating point number between 0.0 and 100.

`js` `function get_dutyCycleAtPowerOn()`
`nodejs` `function get_dutyCycleAtPowerOn()`
`php` `function get_dutyCycleAtPowerOn()`
`cpp` `double get_dutyCycleAtPowerOn()`
`m` `-(double) dutyCycleAtPowerOn`
`pas` `function get_dutyCycleAtPowerOn(): double`
`vb` `function get_dutyCycleAtPowerOn() As Double`
`cs` `double get_dutyCycleAtPowerOn()`
`java` `double get_dutyCycleAtPowerOn()`
`py` `def get_dutyCycleAtPowerOn()`
`cmd` `YPwmOutput target get_dutyCycleAtPowerOn`

0%

Returns :

a floating point number corresponding to the PWMs duty cycle at device power up as a floating point number between 0.0 and 100

On failure, throws an exception or returns Y_DUTYCYCLEATPOWERON_INVALID.

pwmoutput→get_enabled()**YPwmOutput****pwmoutput→enabled()pwmoutput.get_enabled()**

Returns the state of the PWMs.

js	function get_enabled()
nodejs	function get_enabled()
php	function get_enabled()
cpp	Y_ENABLED_enum get_enabled()
m	-(Y_ENABLED_enum) enabled
pas	function get_enabled() : Integer
vb	function get_enabled() As Integer
cs	int get_enabled()
java	int get_enabled()
py	def get_enabled()
cmd	YPwmOutput target get_enabled

Returns :

either Y_ENABLED_FALSE or Y_ENABLED_TRUE, according to the state of the PWMs

On failure, throws an exception or returns Y_ENABLED_INVALID.

pwmoutput→get_enabledAtPowerOn()
pwmoutput→enabledAtPowerOn()
pwmoutput.get_enabledAtPowerOn()

YPwmOutput

Returns the state of the PWMs at device power up.

```
js function get_enabledAtPowerOn( )
nodejs function get_enabledAtPowerOn( )
php function get_enabledAtPowerOn( )
cpp Y_ENABLEDATPOWERON_enum get_enabledAtPowerOn( )
m -(Y_ENABLEDATPOWERON_enum) enabledAtPowerOn
pas function get_enabledAtPowerOn( ): Integer
vb function get_enabledAtPowerOn( ) As Integer
cs int get_enabledAtPowerOn( )
java int get_enabledAtPowerOn( )
py def get_enabledAtPowerOn( )
cmd YPwmOutput target get_enabledAtPowerOn
```

Returns :

either Y_ENABLEDATPOWERON_FALSE or Y_ENABLEDATPOWERON_TRUE, according to the state of the PWMs at device power up

On failure, throws an exception or returns Y_ENABLEDATPOWERON_INVALID.

pwmoutput→get_errorMessage()
pwmoutput→errorMessage()
pwmoutput.get_errorMessage()**YPwmOutput**

Returns the error message of the latest error with the PWM.

js	function get_errorMessage()
node.js	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage() : string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the PWM object

pwmoutput→get_errorType()**YPwmOutput****pwmoutput→errorType()pwmoutput.get_errorType()**

Returns the numerical error code of the latest error with the PWM.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the PWM object

pwmoutput→get_frequency() pwmoutput→frequency()pwmoutput.get_frequency()

Returns the PWM frequency in Hz.

js	function get_frequency()
nodejs	function get_frequency()
php	function get_frequency()
cpp	int get_frequency()
m	-(int) frequency
pas	function get_frequency(): LongInt
vb	function get_frequency() As Integer
cs	int get_frequency()
java	int get_frequency()
py	def get_frequency()
cmd	YPwmOutput target get_frequency

Returns :

an integer corresponding to the PWM frequency in Hz

On failure, throws an exception or returns **Y_FREQUENCY_INVALID**.

pwmoutput→get_friendlyName()
pwmoutput→friendlyName()**YPwmOutput**

Returns a global identifier of the PWM in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the PWM if they are defined, otherwise the serial number of the module and the hardware identifier of the PWM (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the PWM using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

**pwmoutput→get_functionDescriptor()
pwmoutput→functionDescriptor()
pwmoutput.get_functionDescriptor()****YPwmOutput**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

pwmoutput→get_functionId()
pwmoutput→functionId()**YPwmOutput**

Returns the hardware identifier of the PWM, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the PWM (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

**pwmoutput→get_hardwareId()
pwmoutput→hardwareId()****YPwmOutput**

Returns the unique hardware identifier of the PWM in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the PWM. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the PWM (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

pwmoutput→get_logicalName()
pwmoutput→logicalName()
pwmoutput.get_logicalName()

YPwmOutput

Returns the logical name of the PWM.

js	function get_logicalName()
nodejs	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName() : string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YPwmOutput target get_logicalName

Returns :

a string corresponding to the logical name of the PWM. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

pwmoutput→get_module()**YPwmOutput****pwmoutput→module()pwmoutput.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

pwmoutput→get_module_async()
pwmoutput→module_async()**YPwmOutput**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

`js` `function get_module_async(callback, context)`
`node.js` `function get_module_async(callback, context)`

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmoutput→get_period() pwmoutput→period()pwmoutput.get_period()

YPwmOutput

Returns the PWM period in nonaseconde.

js	function get_period()
node.js	function get_period()
php	function get_period()
cpp	double get_period()
m	-(double) period
pas	function get_period(): double
vb	function get_period() As Double
cs	double get_period()
java	double get_period()
py	def get_period()
cmd	YPwmOutput target get_period

Returns :

a floating point number corresponding to the PWM period in nonaseconde

On failure, throws an exception or returns Y_PERIOD_INVALID.

pwmoutput→get_pulseDuration()
pwmoutput→pulseDuration()
pwmoutput.get_pulseDuration()**YPwmOutput**

Returns the PWM pulse length in milliseconds.

js	function get_pulseDuration()
nodejs	function get_pulseDuration()
php	function get_pulseDuration()
cpp	double get_pulseDuration()
m	-(double) pulseDuration
pas	function get_pulseDuration(): double
vb	function get_pulseDuration() As Double
cs	double get_pulseDuration()
java	double get_pulseDuration()
py	def get_pulseDuration()
cmd	YPwmOutput target get_pulseDuration

Returns :

a floating point number corresponding to the PWM pulse length in milliseconds

On failure, throws an exception or returns Y_PULSE_DURATION_INVALID.

pwmoutput→get(userData)**YPwmOutput****pwmoutput→userData()pwmoutput.get(userData)**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

pwmoutput→isOnline()pwmoutput.isOnline()**YPwmOutput**

Checks if the PWM is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the PWM in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the PWM.

Returns :

true if the PWM can be reached, and false otherwise

pwmoutput→isOnline_async()

YPwmOutput

Checks if the PWM is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the PWM in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmoutput→load()pwmoutput.load()

YPwmOutput

Preloads the PWM cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

pwmoutput→load_async()

YPwmOutput

Preloads the PWM cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmoutput→nextPwmOutput()
pwmoutput.nextPwmOutput()**YPwmOutput**

Continues the enumeration of PWMs started using `yFirstPwmOutput()`.

js	function nextPwmOutput()
node.js	function nextPwmOutput()
php	function nextPwmOutput()
cpp	YPwmOutput * nextPwmOutput()
m	-(YPwmOutput*) nextPwmOutput
pas	function nextPwmOutput() : TYPwmOutput
vb	function nextPwmOutput() As YPwmOutput
cs	YPwmOutput nextPwmOutput()
java	YPwmOutput nextPwmOutput()
py	def nextPwmOutput()

Returns :

a pointer to a `YPwmOutput` object, corresponding to a PWM currently online, or a null pointer if there are no more PWMs to enumerate.

pwmoutput→pulseDurationMove() pwmoutput.pulseDurationMove()

YPwmOutput

Performs a smooth change of the pulse duration toward a given value.

js	function pulseDurationMove(ms_target, ms_duration)
nodejs	function pulseDurationMove(ms_target, ms_duration)
php	function pulseDurationMove(\$ms_target, \$ms_duration)
cpp	int pulseDurationMove(double ms_target, int ms_duration)
m	-(int) pulseDurationMove : (double) ms_target : (int) ms_duration
pas	function pulseDurationMove(ms_target: double, ms_duration: LongInt): LongInt
vb	function pulseDurationMove() As Integer
cs	int pulseDurationMove(double ms_target, int ms_duration)
java	int pulseDurationMove(double ms_target, int ms_duration)
py	def pulseDurationMove(ms_target, ms_duration)
cmd	YPwmOutput target pulseDurationMove ms_target ms_duration

Parameters :

ms_target new pulse duration at the end of the transition (floating-point number, representing the pulse duration in milliseconds)
ms_duration total duration of the transition, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

pwmoutput→registerValueCallback() pwmoutput.registerValueCallback()

YPwmOutput

Registers the callback function that is invoked on every change of advertised value.

```
js function registerValueCallback( callback)
node.js function registerValueCallback( callback)
php function registerValueCallback( $callback)
cpp int registerValueCallback( YPwmOutputValueCallback callback)
m -(int) registerValueCallback : (YPwmOutputValueCallback) callback
pas function registerValueCallback( callback: TYPwmOutputValueCallback): LongInt
vb function registerValueCallback( ) As Integer
cs int registerValueCallback( ValueCallback callback)
java int registerValueCallback( UpdateCallback callback)
py def registerValueCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

pwmoutput→set_dutyCycle()
pwmoutput→setDutyCycle()
pwmoutput.set_dutyCycle()

YPwmOutput

Configures the PWMs duty cycle.

js	function set_dutyCycle(newval)
nodejs	function set_dutyCycle(newval)
php	function set_dutyCycle(\$newval)
cpp	int set_dutyCycle(double newval)
m	-(int) setDutyCycle : (double) newval
pas	function set_dutyCycle(newval: double): integer
vb	function set_dutyCycle(ByVal newval As Double) As Integer
cs	int set_dutyCycle(double newval)
java	int set_dutyCycle(double newval)
py	def set_dutyCycle(newval)
cmd	YPwmOutput target set_dutyCycle newval

Parameters :

newval a floating point number

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_dutyCycleAtPowerOn()
pwmoutput→setDutyCycleAtPowerOn()
pwmoutput.set_dutyCycleAtPowerOn()

YPwmOutput

Configures the PWMs duty cycle at device power up.

```
js function set_dutyCycleAtPowerOn( newval)
nodejs function set_dutyCycleAtPowerOn( newval)
php function set_dutyCycleAtPowerOn( $newval)
cpp int set_dutyCycleAtPowerOn( double newval)
m -(int) setDutyCycleAtPowerOn : (double) newval
pas function set_dutyCycleAtPowerOn( newval: double): integer
vb function set_dutyCycleAtPowerOn( ByVal newval As Double) As Integer
cs int set_dutyCycleAtPowerOn( double newval)
java int set_dutyCycleAtPowerOn( double newval)
py def set_dutyCycleAtPowerOn( newval)
cmd YPwmOutput target set_dutyCycleAtPowerOn newval
```

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval a floating point number

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_enabled()**YPwmOutput**

Stops or starts the PWM.

js	function set_enabled(newval)
nodejs	function set_enabled(newval)
php	function set_enabled(\$newval)
cpp	int set_enabled(Y_ENABLED_enum newval)
m	-(int) setEnabled : (Y_ENABLED_enum) newval
pas	function set_enabled(newval: Integer): integer
vb	function set_enabled(ByVal newval As Integer) As Integer
cs	int set_enabled(int newval)
java	int set_enabled(int newval)
py	def set_enabled(newval)
cmd	YPwmOutput target set_enabled newval

Parameters :

newval either Y_ENABLED_FALSE or Y_ENABLED_TRUE

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_enabledAtPowerOn()
pwmoutput→setEnabledAtPowerOn()
pwmoutput.set_enabledAtPowerOn()

YPwmOutput

Configures the state of PWM at device power up.

```
js function set_enabledAtPowerOn( newval)
nodejs function set_enabledAtPowerOn( newval)
php function set_enabledAtPowerOn( $newval)
cpp int set_enabledAtPowerOn( Y_ENABLEDATPOWERON_enum newval)
m -(int) setEnabledAtPowerOn : (Y_ENABLEDATPOWERON_enum) newval
pas function set_enabledAtPowerOn( newval: Integer): integer
vb function set_enabledAtPowerOn( ByVal newval As Integer) As Integer
cs int set_enabledAtPowerOn( int newval)
java int set_enabledAtPowerOn( int newval)
py def set_enabledAtPowerOn( newval)
cmd YPwmOutput target set_enabledAtPowerOn newval
```

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval either `Y_ENABLEDATPOWERON_FALSE` or `Y_ENABLEDATPOWERON_TRUE`

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_frequency()
pwmoutput→setFrequency()
pwmoutput.set_frequency()

YPwmOutput

Configures the PWM frequency.

js	function set_frequency(newval)
node.js	function set_frequency(newval)
php	function set_frequency(\$newval)
cpp	int set_frequency(int newval)
m	-(int) setFrequency : (int) newval
pas	function set_frequency(newval: LongInt): integer
vb	function set_frequency(ByVal newval As Integer) As Integer
cs	int set_frequency(int newval)
java	int set_frequency(int newval)
py	def set_frequency(newval)
cmd	YPwmOutput target set_frequency newval

The duty cycle is kept unchanged thanks to an automatic pulse width change.

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_logicalName()
pwmoutput→setLogicalName()
pwmoutput.set_logicalName()

YPwmOutput

Changes the logical name of the PWM.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YPwmOutput target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the PWM.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

pwmoutput→set_period()**YPwmOutput****pwmoutput→setPeriod()pwmoutput.set_period()**

Configures the PWM period.

js	function set_period(newval)
node.js	function set_period(newval)
php	function set_period(\$newval)
cpp	int set_period(double newval)
m	-(int) setPeriod : (double) newval
pas	function set_period(newval: double): integer
vb	function set_period(ByVal newval As Double) As Integer
cs	int set_period(double newval)
java	int set_period(double newval)
py	def set_period(newval)
cmd	YPwmOutput target set_period newval

Parameters :

newval a floating point number

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set_pulseDuration()
pwmoutput→setPulseDuration()
pwmoutput.set_pulseDuration()

YPwmOutput

Configures the PWM pulses length.

```
js function set_pulseDuration( newval)
nodejs function set_pulseDuration( newval)
php function set_pulseDuration( $newval)
cpp int set_pulseDuration( double newval)
m -(int) setPulseDuration : (double) newval
pas function set_pulseDuration( newval: double): integer
vb function set_pulseDuration( ByVal newval As Double) As Integer
cs int set_pulseDuration( double newval)
java int set_pulseDuration( double newval)
py def set_pulseDuration( newval)
cmd YPwmOutput target set_pulseDuration newval
```

A pulse length cannot be longer than period, otherwise it is truncated.

Parameters :

newval a floating point number

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmoutput→set(userData)
pwmoutput→setUserData()
pwmoutput.set(userData)

YPwmOutput

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	- (void) set(userData : (void*) data)
pas	procedure set(userData data: Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

pwmoutput→wait_async()

YPwmOutput

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js   function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.31. PwmPowerSource function interface

The Yoctopuce application programming interface allows you to configure the voltage source used by all PWM on the same device.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_pwmpowersource.js'></script>
nodejs var yoctolib = require('yoctolib');
var YPwmPowerSource = yoctolib.YPwmPowerSource;
php require_once('yocto_pwmpowersource.php');
cpp #include "yocto_pwmpowersource.h"
m #import "yocto_pwmpowersource.h"
pas uses yocto_pwmpowersource;
vb yocto_pwmpowersource.vb
cs yocto_pwmpowersource.cs
java import com.yoctopuce.YoctoAPI.YPwmPowerSource;
py from yocto_pwmpowersource import *

```

Global functions

yFindPwmPowerSource(func)

Retrieves a voltage source for a given identifier.

yFirstPwmPowerSource()

Starts the enumeration of Voltage sources currently accessible.

YPwmPowerSource methods

pwmpowersource→describe()

Returns a short text that describes unambiguously the instance of the voltage source in the form
TYPE (NAME) = SERIAL . FUNCTIONID.

pwmpowersource→get_advertisedValue()

Returns the current value of the voltage source (no more than 6 characters).

pwmpowersource→get_errorMessage()

Returns the error message of the latest error with the voltage source.

pwmpowersource→get_errorType()

Returns the numerical error code of the latest error with the voltage source.

pwmpowersource→get_friendlyName()

Returns a global identifier of the voltage source in the format MODULE_NAME . FUNCTION_NAME.

pwmpowersource→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

pwmpowersource→get_functionId()

Returns the hardware identifier of the voltage source, without reference to the module.

pwmpowersource→get_hardwareId()

Returns the unique hardware identifier of the voltage source in the form SERIAL . FUNCTIONID.

pwmpowersource→get_logicalName()

Returns the logical name of the voltage source.

pwmpowersource→get_module()

Gets the YModule object for the device on which the function is located.

pwmpowersource→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

3. Reference

pwmpowersource→get_powerMode()

Returns the selected power source for the PWM on the same device

pwmpowersource→get(userData)

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

pwmpowersource→isOnline()

Checks if the voltage source is currently reachable, without raising any error.

pwmpowersource→isOnline_async(callback, context)

Checks if the voltage source is currently reachable, without raising any error (asynchronous version).

pwmpowersource→load(msValidity)

Preloads the voltage source cache with a specified validity duration.

pwmpowersource→load_async(msValidity, callback, context)

Preloads the voltage source cache with a specified validity duration (asynchronous version).

pwmpowersource→nextPwmPowerSource()

Continues the enumeration of Voltage sources started using `yFirstPwmPowerSource()`.

pwmpowersource→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

pwmpowersource→set_logicalName(newval)

Changes the logical name of the voltage source.

pwmpowersource→set_powerMode(newval)

Changes the PWM power source.

pwmpowersource→set(userData)

Stores a user context provided as argument in the userData attribute of the function.

pwmpowersource→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YPwmPowerSource.FindPwmPowerSource()**yFindPwmPowerSource()yFindPwmPowerSource()****YPwmPowerSource**

Retrieves a voltage source for a given identifier.

<code>js</code>	<code>function yFindPwmPowerSource(func)</code>
<code>node.js</code>	<code>function FindPwmPowerSource(func)</code>
<code>php</code>	<code>function yFindPwmPowerSource(\$func)</code>
<code>cpp</code>	<code>YPwmPowerSource* yFindPwmPowerSource(const string& func)</code>
<code>m</code>	<code>YPwmPowerSource* yFindPwmPowerSource(NSString* func)</code>
<code>pas</code>	<code>function yFindPwmPowerSource(func: string): TYPwmPowerSource</code>
<code>vb</code>	<code>function yFindPwmPowerSource(ByVal func As String) As YPwmPowerSource</code>
<code>cs</code>	<code>YPwmPowerSource FindPwmPowerSource(string func)</code>
<code>java</code>	<code>YPwmPowerSource FindPwmPowerSource(String func)</code>
<code>py</code>	<code>def FindPwmPowerSource(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the voltage source is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YPwmPowerSource.isOnline()` to test if the voltage source is indeed online at a given time. In case of ambiguity when looking for a voltage source by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the voltage source

Returns :

a `YPwmPowerSource` object allowing you to drive the voltage source.

YPwmPowerSource.FirstPwmPowerSource() yFirstPwmPowerSource()yFirstPwmPowerSource()

YPwmPowerSource

Starts the enumeration of Voltage sources currently accessible.

```
js function yFirstPwmPowerSource( )
node.js function FirstPwmPowerSource( )
php function yFirstPwmPowerSource( )
cpp YPwmPowerSource* yFirstPwmPowerSource( )
m YPwmPowerSource* yFirstPwmPowerSource( )
pas function yFirstPwmPowerSource( ): TYPwmPowerSource
vb function yFirstPwmPowerSource( ) As YPwmPowerSource
cs YPwmPowerSource FirstPwmPowerSource( )
java YPwmPowerSource FirstPwmPowerSource( )
py def FirstPwmPowerSource( )
```

Use the method `YPwmPowerSource.nextPwmPowerSource()` to iterate on next Voltage sources.

Returns :

a pointer to a `YPwmPowerSource` object, corresponding to the first source currently online, or a null pointer if there are none.

pwmpowersource→describe()
pwmpowersource.describe()**YPwmPowerSource**

Returns a short text that describes unambiguously the instance of the voltage source in the form TYPE (NAME) =SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	- (NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the voltage source (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

pwmpowersource→get_advertisedValue()
pwmpowersource→advertisedValue()
pwmpowersource.get_advertisedValue()

YPwmPowerSource

Returns the current value of the voltage source (no more than 6 characters).

```
js function get_advertisedValue( )  
nodejs function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YPwmPowerSource target get_advertisedValue
```

Returns :

a string corresponding to the current value of the voltage source (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

pwmpowersource→getErrorMessage()
pwmpowersource→errorMessage()
pwmpowersource.getErrorMessage()**YPwmPowerSource**

Returns the error message of the latest error with the voltage source.

js	function getErrorMessage()
node.js	function getErrorMessage()
php	function getErrorMessage()
cpp	string getErrorMessage()
m	-(NSString*) errorMessage
pas	function getErrorMessage() : string
vb	function getErrorMessage() As String
cs	string getErrorMessage()
java	String getErrorMessage()
py	def getErrorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the voltage source object

pwmpowersource→get_errorType()
pwmpowersource→errorType()
pwmpowersource.get_errorType()

YPwmPowerSource

Returns the numerical error code of the latest error with the voltage source.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the voltage source object

pwmpowersource→get_friendlyName()
pwmpowersource→friendlyName()**YPwmPowerSource**

Returns a global identifier of the voltage source in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the voltage source if they are defined, otherwise the serial number of the module and the hardware identifier of the voltage source (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the voltage source using logical names (ex: MyCustomName . relay1)

On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

pwmpowersource→get_functionDescriptor()
pwmpowersource→functionDescriptor()
pwmpowersource.get_functionDescriptor()

YPwmPowerSource

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

pwmpowersource→get_functionId()
pwmpowersource→functionId()**YPwmPowerSource**

Returns the hardware identifier of the voltage source, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the voltage source (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

pwmpowersource→get_hardwareId()
pwmpowersource→hardwareId()**YPwmPowerSource**

Returns the unique hardware identifier of the voltage source in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the voltage source. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the voltage source (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

pwmpowersource→get_logicalName()
pwmpowersource→logicalName()
pwmpowersource.get_logicalName()

YPwmPowerSource

Returns the logical name of the voltage source.

js	function get_logicalName()
nodejs	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName() : string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YPwmPowerSource target get_logicalName

Returns :

a string corresponding to the logical name of the voltage source. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

pwmpowersource→get_module()
pwmpowersource→module()
pwmpowersource.get_module()

YPwmPowerSource

Gets the **YModule** object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of **YModule** is not shown as online.

Returns :

an instance of **YModule**

pwmpowersource→get_module_async()
pwmpowersource→module_async()**YPwmPowerSource**

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmpowersource→get_powerMode()
pwmpowersource→powerMode()
pwmpowersource.get_powerMode()

YPwmPowerSource

Returns the selected power source for the PWM on the same device

js	function get_powerMode()
nodejs	function get_powerMode()
php	function get_powerMode()
cpp	Y_POWERMODE_enum get_powerMode()
m	-(Y_POWERMODE_enum) powerMode
pas	function get_powerMode() : Integer
vb	function get_powerMode() As Integer
cs	int get_powerMode()
java	int get_powerMode()
py	def get_powerMode()

Returns :

a value among Y_POWERMODE_USB_5V, Y_POWERMODE_USB_3V, Y_POWERMODE_EXT_V and Y_POWERMODE_OPNDRN corresponding to the selected power source for the PWM on the same device

On failure, throws an exception or returns Y_POWERMODE_INVALID.

pwmpowersource→get(userData)
pwmpowersource→userData()
pwmpowersource.get(userData())

YPwmPowerSource

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	function get(userData)
node.js	function get(userData)
php	function get(userData)
cpp	void * get(userData)
m	-(void*) userData
pas	function get(userData) : Tobject
vb	function get(userData) As Object
cs	object get(userData)
java	Object get(userData)
py	def get(userData)

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

pwmpowersource→isOnline()
pwmpowersource.isOnline()**YPwmPowerSource**

Checks if the voltage source is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	-BOOL isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the voltage source in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the voltage source.

Returns :

true if the voltage source can be reached, and false otherwise

pwmpowersource→isOnline_async()**YPwmPowerSource**

Checks if the voltage source is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the voltage source in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmpowersource→load()pwmpowersource.load()**YPwmPowerSource**

Preloads the voltage source cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

pwmpowersource→load_async()

YPwmPowerSource

Preloads the voltage source cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

pwmpowersource→nextPwmPowerSource()
pwmpowersource.nextPwmPowerSource()**YPwmPowerSource**

Continues the enumeration of Voltage sources started using `yFirstPwmPowerSource().`

<code>js</code>	<code>function nextPwmPowerSource()</code>
<code>node.js</code>	<code>function nextPwmPowerSource()</code>
<code>php</code>	<code>function nextPwmPowerSource()</code>
<code>cpp</code>	<code>YPwmPowerSource * nextPwmPowerSource()</code>
<code>m</code>	<code>-(YPwmPowerSource*) nextPwmPowerSource</code>
<code>pas</code>	<code>function nextPwmPowerSource(): TYPwmPowerSource</code>
<code>vb</code>	<code>function nextPwmPowerSource() As YPwmPowerSource</code>
<code>cs</code>	<code>YPwmPowerSource nextPwmPowerSource()</code>
<code>java</code>	<code>YPwmPowerSource nextPwmPowerSource()</code>
<code>py</code>	<code>def nextPwmPowerSource()</code>

Returns :

a pointer to a `YPwmPowerSource` object, corresponding to a voltage source currently online, or a null pointer if there are no more Voltage sources to enumerate.

pwmpowersource→registerValueCallback() pwmpowersource.registerValueCallback()

YPwmPowerSource

Registers the callback function that is invoked on every change of advertised value.

<code>js</code>	function registerValueCallback(<i>callback</i>)
<code>node.js</code>	function registerValueCallback(<i>callback</i>)
<code>php</code>	function registerValueCallback(\$callback)
<code>cpp</code>	int registerValueCallback(YPwmPowerSourceValueCallback <i>callback</i>)
<code>m</code>	-(int) registerValueCallback : (YPwmPowerSourceValueCallback) <i>callback</i>
<code>pas</code>	function registerValueCallback(<i>callback</i>: TYPwmPowerSourceValueCallback): LongInt
<code>vb</code>	function registerValueCallback() As Integer
<code>cs</code>	int registerValueCallback(ValueCallback <i>callback</i>)
<code>java</code>	int registerValueCallback(UpdateCallback <i>callback</i>)
<code>py</code>	def registerValueCallback(<i>callback</i>)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

pwmpowersource→set_logicalName()
pwmpowersource→setLogicalName()
pwmpowersource.set_logicalName()

YPwmPowerSource

Changes the logical name of the voltage source.

```
js function set_logicalName( newval)
nodejs function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YPwmPowerSource target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the voltage source.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

pwmpowersource→set_powerMode()
pwmpowersource→setPowerMode()
pwmpowersource.set_powerMode()

YPwmPowerSource

Changes the PWM power source.

js	function set_powerMode(newval)
node.js	function set_powerMode(newval)
php	function set_powerMode(\$newval)
cpp	int set_powerMode(Y_POWERMODE_enum newval)
m	-(int) setPowerMode : (Y_POWERMODE_enum) newval
pas	function set_powerMode(newval: Integer): integer
vb	function set_powerMode(ByVal newval As Integer) As Integer
cs	int set_powerMode(int newval)
java	int set_powerMode(int newval)
py	def set_powerMode(newval)
cmd	YPwmPowerSource target set_powerMode newval

PWM can use isolated 5V from USB, isolated 3V from USB or voltage from an external power source. The PWM can also work in open drain mode. In that mode, the PWM actively pulls the line down. Warning: this setting is common to all PWM on the same device. If you change that parameter, all PWM located on the same device are affected. If you want the change to be kept after a device reboot, make sure to call the matching module `saveToFlash()`.

Parameters :

newval a value among `Y_POWERMODE_USB_5V`, `Y_POWERMODE_USB_3V`, `Y_POWERMODE_EXT_V` and `Y_POWERMODE_OPNDRN` corresponding to the PWM power source

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

pwmpowersource→set(userData)
pwmpowersource→setUserData()
pwmpowersource.set(userData)

YPwmPowerSource

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
nodejs	function set(userData)
php	function set(userData)
cpp	void set(userData)
m	-(void) set(userData)
pas	procedure set(userData)
vb	procedure set(userData)
cs	void set(userData)
java	void set(userData)
py	def set(userData)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

pwmpowersource→wait_async()

YPwmPowerSource

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

`js` `function wait_async(callback, context)`

`nodejs` `function wait_async(callback, context)`

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.32. Quaternion interface

The Yoctopuce API YQt class provides direct access to the Yocto3D attitude estimation using a quaternion. It is usually not needed to use the YQt class directly, as the YGyro class provides a more convenient higher-level interface.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_gyro.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YGyro = yoctolib.YGyro;
php	require_once('yocto_gyro.php');
cpp	#include "yocto_gyro.h"
m	#import "yocto_gyro.h"
pas	uses yocto_gyro;
vb	yocto_gyro.vb
cs	yocto_gyro.cs
java	import com.yoctopuce.YoctoAPI.YGyro;
py	from yocto_gyro import *

Global functions

yFindQt(func)

Retrieves a quaternion component for a given identifier.

yFirstQt()

Starts the enumeration of quaternion components currently accessible.

YQt methods

qt→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

qt→describe()

Returns a short text that describes unambiguously the instance of the quaternion component in the form TYPE (NAME) = SERIAL . FUNCTIONID.

qt→get_advertisedValue()

Returns the current value of the quaternion component (no more than 6 characters).

qt→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

qt→get_currentValue()

Returns the current value of the value.

qt→get_errorMessage()

Returns the error message of the latest error with the quaternion component.

qt→get_errorType()

Returns the numerical error code of the latest error with the quaternion component.

qt→get_friendlyName()

Returns a global identifier of the quaternion component in the format MODULE_NAME . FUNCTION_NAME.

qt→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

qt→get_functionId()

Returns the hardware identifier of the quaternion component, without reference to the module.

qt→get_hardwareId()

Returns the unique hardware identifier of the quaternion component in the form SERIAL.FUNCTIONID.
qt→get_highestValue()
Returns the maximal value observed for the value since the device was started.
qt→get_logFrequency()
Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.
qt→get_logicalName()
Returns the logical name of the quaternion component.
qt→get_lowestValue()
Returns the minimal value observed for the value since the device was started.
qt→get_module()
Gets the YModule object for the device on which the function is located.
qt→get_module_async(callback, context)
Gets the YModule object for the device on which the function is located (asynchronous version).
qt→get_recordedData(startTime, endTime)
Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.
qt→get_reportFrequency()
Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.
qt→get_resolution()
Returns the resolution of the measured values.
qt→get_unit()
Returns the measuring unit for the value.
qt→get_userData()
Returns the value of the userData attribute, as previously stored using method set(userData).
qt→isOnline()
Checks if the quaternion component is currently reachable, without raising any error.
qt→isOnline_async(callback, context)
Checks if the quaternion component is currently reachable, without raising any error (asynchronous version).
qt→load(msValidity)
Preloads the quaternion component cache with a specified validity duration.
qt→loadCalibrationPoints(rawValues, refValues)
Retrieves error correction data points previously entered using the method calibrateFromPoints.
qt→load_async(msValidity, callback, context)
Preloads the quaternion component cache with a specified validity duration (asynchronous version).
qt→nextQt()
Continues the enumeration of quaternion components started using yFirstQt().
qt→registerTimedReportCallback(callback)
Registers the callback function that is invoked on every periodic timed notification.
qt→registerValueCallback(callback)
Registers the callback function that is invoked on every change of advertised value.
qt→set_highestValue(newval)
Changes the recorded maximal value observed.
qt→set_logFrequency(newval)
Changes the datalogger recording frequency for this function.
qt→set_logicalName(newval)

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Changes the logical name of the quaternion component.

qt→set_lowestValue(newval)

Changes the recorded minimal value observed.

qt→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

qt→set_resolution(newval)

Changes the resolution of the measured physical values.

qt→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

qt→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YQt.FindQt()**yFindQt()yFindQt()****YQt**

Retrieves a quaternion component for a given identifier.

<code>js</code>	<code>function yFindQt(func)</code>
<code>node.js</code>	<code>function FindQt(func)</code>
<code>php</code>	<code>function yFindQt(\$func)</code>
<code>cpp</code>	<code>YQt* yFindQt(string func)</code>
<code>m</code>	<code>+ (YQt*) yFindQt : (NSString*) func</code>
<code>pas</code>	<code>function yFindQt(func: string): TYQt</code>
<code>vb</code>	<code>function yFindQt(ByVal func As String) As YQt</code>
<code>cs</code>	<code>YQt FindQt(string func)</code>
<code>java</code>	<code>YQt FindQt(String func)</code>
<code>py</code>	<code>def FindQt(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the quaternion component is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YQt.isOnline()` to test if the quaternion component is indeed online at a given time. In case of ambiguity when looking for a quaternion component by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the quaternion component

Returns :

a `YQt` object allowing you to drive the quaternion component.

YQt.FirstQt() yFirstQt()yFirstQt()

YQt

Starts the enumeration of quaternion components currently accessible.

```
js function yFirstQt( )
node.js function FirstQt( )
php function yFirstQt( )
cpp YQt* yFirstQt( )
m YQt* yFirstQt( )
pas function yFirstQt( ): TYQt
vb function yFirstQt( ) As YQt
cs YQt FirstQt( )
java YQt FirstQt( )
def FirstQt( )
```

Use the method `YQt.nextQt()` to iterate on next quaternion components.

Returns :

a pointer to a `YQt` object, corresponding to the first quaternion component currently online, or a null pointer if there are none.

qt→calibrateFromPoints()qt.calibrateFromPoints()

YQt

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php function calibrateFromPoints( $rawValues, $refValues)
cpp int calibrateFromPoints( vector<double> rawValues,
                           vector<double> refValues)

m -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas function calibrateFromPoints( rawValues: TDoubleArray,
                                   refValues: TDoubleArray): LongInt

vb procedure calibrateFromPoints( )
cs int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py def calibrateFromPoints( rawValues, refValues)
cmd YSensor target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.
refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→describe()qt.describe()**YQt**

Returns a short text that describes unambiguously the instance of the quaternion component in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe(): string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the quaternion component (ex:
Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

qt→get_advertisedValue()
qt→advertisedValue()qt.get_advertisedValue()

YQt

Returns the current value of the quaternion component (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YSensor target get_advertisedValue

Returns :

a string corresponding to the current value of the quaternion component (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

qt→get_currentRawValue() YQt
qt→currentRawValue()qt.get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

```
js function get_currentRawValue( )  
node.js function get_currentRawValue( )  
php function get_currentRawValue( )  
cpp double get_currentRawValue( )  
m -(double) currentRawValue  
pas function get_currentRawValue( ): double  
vb function get_currentRawValue( ) As Double  
cs double get_currentRawValue( )  
java double get_currentRawValue( )  
py def get_currentRawValue( )  
cmd YSensor target get_currentRawValue
```

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

qt->get_currentValue() qt->currentValue()qt.get_currentValue()

YQt

Returns the current value of the value.

```
js function get_currentValue( )  
nodejs function get_currentValue( )  
php function get_currentValue( )  
cpp double get_currentValue( )  
m -(double) currentValue  
pas function get_currentValue( ): double  
vb function get_currentValue( ) As Double  
cs double get_currentValue( )  
java double get_currentValue( )  
py def get_currentValue( )  
cmd YSensor target get_currentValue
```

Returns :

a floating point number corresponding to the current value of the value

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

qt→get_errorMessage()
qt→errorMessage()qt.get_errorMessage()

YQt

Returns the error message of the latest error with the quaternion component.

```
js function get_errorMessage( )
node.js function get_errorMessage( )
php function get_errorMessage( )
cpp string get_errorMessage( )
m -(NSString*) errorMessage
pas function get_errorMessage( ): string
vb function get_errorMessage( ) As String
cs string get_errorMessage( )
java String get_errorMessage( )
py def get_errorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the quaternion component object

qt→get_errorType() qt→errorType()qt.get_errorType()

YQt

Returns the numerical error code of the latest error with the quaternion component.

```
js   function get_errorType( )  
nodejs function get_errorType( )  
php  function get_errorType( )  
cpp   YRETCODE get_errorType( )  
pas   function get_errorType( ): YRETCODE  
vb    function get_errorType( ) As YRETCODE  
cs    YRETCODE get_errorType( )  
java  int get_errorType( )  
py    def get_errorType( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the quaternion component object

qt→get_friendlyName()
qt→friendlyName()**YQt**

Returns a global identifier of the quaternion component in the format MODULE_NAME.FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the quaternion component if they are defined, otherwise the serial number of the module and the hardware identifier of the quaternion component (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the quaternion component using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

qt->get_functionDescriptor()

YQt

qt->functionDescriptor()qt.get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**qt→get_functionId()
qt→functionId()****YQt**

Returns the hardware identifier of the quaternion component, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the quaternion component (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

qt→get_hardwareId()**YQt****qt→hardwareId()**

Returns the unique hardware identifier of the quaternion component in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the quaternion component. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the quaternion component (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

qt→get_highestValue()
qt→highestValue()qt.get_highestValue()

YQt

Returns the maximal value observed for the value since the device was started.

```
js function get_highestValue( )  
node.js function get_highestValue( )  
php function get_highestValue( )  
cpp double get_highestValue( )  
m -(double) highestValue  
pas function get_highestValue( ): double  
vb function get_highestValue( ) As Double  
cs double get_highestValue( )  
java double get_highestValue( )  
py def get_highestValue( )  
cmd YSensor target get_highestValue
```

Returns :

a floating point number corresponding to the maximal value observed for the value since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

qt→get_logFrequency() qt→logFrequency()qt.get_logFrequency()

YQt

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YSensor target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

qt→get_logicalName()
qt→logicalName()qt.get_logicalName()

YQt

Returns the logical name of the quaternion component.

js function **get_logicalName()****node.js** function **get_logicalName()****php** function **get_logicalName()****cpp** string **get_logicalName()****m** -(NSString*) logicalName**pas** function **get_logicalName(): string****vb** function **get_logicalName() As String****cs** string **get_logicalName()****java** String **get_logicalName()****py** def **get_logicalName()****cmd** YSensor target **get_logicalName****Returns :**

a string corresponding to the logical name of the quaternion component. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

qt->get_lowestValue() qt->lowestValue()qt.get_lowestValue()

YQt

Returns the minimal value observed for the value since the device was started.

js	function get_lowestValue()
nodejs	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue(): double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YSensor target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the value since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

**qt→get_module()
qt→module()qt.get_module()****YQt**

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
node.js	function get_module()
php	function get_module()
cpp	<code>YModule * get_module()</code>
m	<code>-(YModule*) module</code>
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	<code>YModule get_module()</code>
java	<code>YModule get_module()</code>
py	<code>def get_module()</code>

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

qt→get_module_async() qt→module_async()

YQt

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

qt→get_recordedData() qt→recordedData()qt.get_recordedData()

YQt

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

js	function get_recordedData(startTime, endTime)
node.js	function get_recordedData(startTime, endTime)
php	function get_recordedData(\$startTime, \$endTime)
cpp	YDataSet get_recordedData(s64 startTime, s64 endTime)
m	- (YDataSet*) recordedData : (s64) startTime : (s64) endTime
pas	function get_recordedData(startTime: int64, endTime: int64): TYDataSet
vb	function get_recordedData() As YDataSet
cs	YDataSet get_recordedData(long startTime, long endTime)
java	YDataSet get_recordedData(long startTime, long endTime)
py	def get_recordedData(startTime, endTime)
cmd	YSensor target get_recordedData startTime endTime

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any meaasure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

qt→get_reportFrequency() qt→reportFrequency()qt.get_reportFrequency()

YQt

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js    function get_reportFrequency( )  
nodejs function get_reportFrequency( )  
php   function get_reportFrequency( )  
cpp   string get_reportFrequency( )  
m     -(NSString*) reportFrequency  
pas   function get_reportFrequency( ): string  
vb    function get_reportFrequency( ) As String  
cs    string get_reportFrequency( )  
java  String get_reportFrequency( )  
py    def get_reportFrequency( )  
cmd   YSensor target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

qt→get_resolution() qt→resolution()qt.get_resolution()

YQt

Returns the resolution of the measured values.

```
js function get_resolution( )
node.js function get_resolution( )
php function get_resolution( )
cpp double get_resolution( )
m -(double) resolution
pas function get_resolution( ): double
vb function get_resolution( ) As Double
cs double get_resolution( )
java double get_resolution( )
py def get_resolution( )
cmd YSensor target get_resolution
```

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

qt→get_unit() qt→unit()qt.get_unit()

YQt

Returns the measuring unit for the value.

js	function get_unit()
nodejs	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YSensor target get_unit

Returns :

a string corresponding to the measuring unit for the value

On failure, throws an exception or returns Y_UNIT_INVALID.

qt→get(userData)
qt→userData()qt.get(userData)

YQt

Returns the value of the userData attribute, as previously stored using method set(userData).

```
js function get(userData) 
node.js function get(userData) 
php function get(userData) 
cpp void * get(userData) 
m -(void*) userData 
pas function get(userData): Tobject 
vb function get(userData) As Object 
cs object get(userData) 
java Object get(userData) 
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

qt→isOnline()qt.isOnline()**YQt**

Checks if the quaternion component is currently reachable, without raising any error.

js	function isOnline ()
node.js	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the quaternion component in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the quaternion component.

Returns :

true if the quaternion component can be reached, and false otherwise

qt→isOnline_async()

YQt

Checks if the quaternion component is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the quaternion component in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

qt→load()qt.load()**YQt**

Preloads the quaternion component cache with a specified validity duration.

js	<code>function load(msValidity)</code>
node.js	<code>function load(msValidity)</code>
php	<code>function load(\$msValidity)</code>
cpp	<code>YRETCODE load(int msValidity)</code>
m	<code>-(YRETCODE) load : (int) msValidity</code>
pas	<code>function load(msValidity: integer): YRETCODE</code>
vb	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
cs	<code>YRETCODE load(int msValidity)</code>
java	<code>int load(long msValidity)</code>
py	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

qt→loadCalibrationPoints()|qt.loadCalibrationPoints()

YQt

Retrieves error correction data points previously entered using the method `calibrateFromPoints`.

```
js function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php function loadCalibrationPoints( &$rawValues, &$refValues)
cpp int loadCalibrationPoints( vector<double>& rawValues,
                               vector<double>& refValues)
m -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                               : (NSMutableArray*) refValues
pas function loadCalibrationPoints( var rawValues: TDoubleArray,
                                     var refValues: TDoubleArray): LongInt
vb procedure loadCalibrationPoints( )
cs int loadCalibrationPoints( List<double> rawValues,
                             List<double> refValues)
java int loadCalibrationPoints( ArrayList<Double> rawValues,
                                ArrayList<Double> refValues)
py def loadCalibrationPoints( rawValues, refValues)
cmd YSensor target loadCalibrationPoints rawValues refValues
```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→load_async()

YQt

Preloads the quaternion component cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

qt→nextQt()qt.nextQt()**YQt**

Continues the enumeration of quaternion components started using `yFirstQt()`.

js	function nextQt()
nodejs	function nextQt()
php	function nextQt()
cpp	YQt * nextQt()
m	-(YQt*) nextQt
pas	function nextQt() : TYQt
vb	function nextQt() As YQt
cs	YQt nextQt()
java	YQt nextQt()
py	def nextQt()

Returns :

a pointer to a `YQt` object, corresponding to a quaternion component currently online, or a `null` pointer if there are no more quaternion components to enumerate.

qt→registerTimedReportCallback() qt.registerTimedReportCallback()

YQt

Registers the callback function that is invoked on every periodic timed notification.

```
js   function registerTimedReportCallback( callback )
nodejs function registerTimedReportCallback( callback )
php  function registerTimedReportCallback( $callback )
cpp   int registerTimedReportCallback( YQtTimedReportCallback callback )
m     -(int) registerTimedReportCallback : (YQtTimedReportCallback) callback
pas   function registerTimedReportCallback( callback: TYQtTimedReportCallback): LongInt
vb    function registerTimedReportCallback( ) As Integer
cs    int registerTimedReportCallback( TimedReportCallback callback )
java  int registerTimedReportCallback( TimedReportCallback callback )
py    def registerTimedReportCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

qt→registerValueCallback() qt.registerValueCallback()

YQt

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback)
node.js function registerValueCallback( callback)
php  function registerValueCallback( $callback)
cpp   int registerValueCallback( YQtValueCallback callback)
m    -(int) registerValueCallback : (YQtValueCallback) callback
pas   function registerValueCallback( callback: TYQtValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback)
java  int registerValueCallback( UpdateCallback callback)
py    def registerValueCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

qt→set_highestValue() qt→setHighestValue()qt.set_highestValue()

YQt

Changes the recorded maximal value observed.

```
js function set_highestValue( newval)
nodejs function set_highestValue( newval)
php function set_highestValue( $newval)
cpp int set_highestValue( double newval)
m -(int) setHighestValue : (double) newval
pas function set_highestValue( newval: double): integer
vb function set_highestValue( ByVal newval As Double) As Integer
cs int set_highestValue( double newval)
java int set_highestValue( double newval)
py def set_highestValue( newval)
cmd YSensor target set_highestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→set_logFrequency() qt→setLogFrequency()qt.set_logFrequency()

YQt

Changes the datalogger recording frequency for this function.

```
js   function set_logFrequency( newval)
node.js function set_logFrequency( newval)
php  function set_logFrequency( $newval)
cpp   int set_logFrequency( const string& newval)
m    -(int) setLogFrequency : (NSString*) newval
pas   function set_logFrequency( newval: string): integer
vb    function set_logFrequency( ByVal newval As String) As Integer
cs    int set_logFrequency( string newval)
java  int set_logFrequency( String newval)
py    def set_logFrequency( newval)
cmd   YSensor target set_logFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→set_logicalName() qt→setLogicalName()qt.set_logicalName()

YQt

Changes the logical name of the quaternion component.

```
js function set_logicalName( newval)
nodejs function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YSensor target set_logicalName newval
```

You can use yCheckLogicalName() prior to this call to make sure that your parameter is valid. Remember to call the saveToFlash() method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the quaternion component.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

qt→set_lowestValue() qt→setLowestValue()qt.set_lowestValue()

YQt

Changes the recorded minimal value observed.

```
js function set_lowestValue( newval)
node.js function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YSensor target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→set_reportFrequency()

YQt

qt→setReportFrequency()qt.set_reportFrequency()

Changes the timed value notification frequency for this function.

```
js   function set_reportFrequency( newval)
nodejs function set_reportFrequency( newval)
php  function set_reportFrequency( $newval)
cpp   int set_reportFrequency( const string& newval)
m    -(int) setReportFrequency : (NSString*) newval
pas   function set_reportFrequency( newval: string): integer
vb    function set_reportFrequency( ByVal newval As String) As Integer
cs    int set_reportFrequency( string newval)
java  int set_reportFrequency( String newval)
py    def set_reportFrequency( newval)
cmd   YSensor target set_reportFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→set_resolution() qt→setResolution()qt.set_resolution()

YQt

Changes the resolution of the measured physical values.

```
js function set_resolution( newval)
node.js function set_resolution( newval)
php function set_resolution( $newval)
cpp int set_resolution( double newval)
m -(int) setResolution : (double) newval
pas function set_resolution( newval: double): integer
vb function set_resolution( ByVal newval As Double) As Integer
cs int set_resolution( double newval)
java int set_resolution( double newval)
py def set_resolution( newval)
cmd YSensor target set_resolution newval
```

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

qt→set(userData)
qt→setUserData()qt.set(userData)

YQt

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData(data)
nodejs	function set(userData(data)
php	function set(userData(\$data)
cpp	void set(userData(void* data)
m	-(void) setUserData : (void*) data
pas	procedure set(userData(data: Tobject)
vb	procedure set(userData(ByVal data As Object)
cs	void set(userData(object data)
java	void set(userData(Object data)
py	def set(userData(data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

qt→wait_async()

YQt

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.33. Real Time Clock function interface

The RealTimeClock function maintains and provides current date and time, even accross power cut lasting several days. It is the base for automated wake-up functions provided by the WakeUpScheduler. The current time may represent a local time as well as an UTC time, but no automatic time change will occur to account for daylight saving time.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_realtimedclock.js'></script>
node.js	var yoctolib = require('yoctolib');
	var YRealTimeClock = yoctolib.YRealTimeClock;
php	require_once('yocto_realtimedclock.php');
cpp	#include "yocto_realtimedclock.h"
m	#import "yocto_realtimedclock.h"
pas	uses yocto_realtimedclock;
vb	yocto_realtimedclock.vb
cs	yocto_realtimedclock.cs
java	import com.yoctopuce.YoctoAPI.YRealTimeClock;
py	from yocto_realtimedclock import *

Global functions

yFindRealTimeClock(func)

Retrieves a clock for a given identifier.

yFirstRealTimeClock()

Starts the enumeration of clocks currently accessible.

YRealTimeClock methods

realtimeclock→describe()

Returns a short text that describes unambiguously the instance of the clock in the form TYPE (NAME)=SERIAL . FUNCTIONID.

realtimeclock→get_advertisedValue()

Returns the current value of the clock (no more than 6 characters).

realtimeclock→get_dateTime()

Returns the current time in the form "YYYY/MM/DD hh:mm:ss"

realtimeclock→get_errorMessage()

Returns the error message of the latest error with the clock.

realtimeclock→get_errorType()

Returns the numerical error code of the latest error with the clock.

realtimeclock→get_friendlyName()

Returns a global identifier of the clock in the format MODULE_NAME . FUNCTION_NAME.

realtimeclock→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

realtimeclock→get_functionId()

Returns the hardware identifier of the clock, without reference to the module.

realtimeclock→get_hardwareId()

Returns the unique hardware identifier of the clock in the form SERIAL . FUNCTIONID.

realtimeclock→get_logicalName()

Returns the logical name of the clock.

realtimeclock→get_module()

3. Reference

Gets the YModule object for the device on which the function is located.

realtimeclock→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

realtimeclock→get_timeSet()

Returns true if the clock has been set, and false otherwise.

realtimeclock→get_unixTime()

Returns the current time in Unix format (number of elapsed seconds since Jan 1st, 1970).

realtimeclock→get_userData()

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

realtimeclock→get_utcOffset()

Returns the number of seconds between current time and UTC time (time zone).

realtimeclock→isOnline()

Checks if the clock is currently reachable, without raising any error.

realtimeclock→isOnline_async(callback, context)

Checks if the clock is currently reachable, without raising any error (asynchronous version).

realtimeclock→load(msValidity)

Preloads the clock cache with a specified validity duration.

realtimeclock→load_async(msValidity, callback, context)

Preloads the clock cache with a specified validity duration (asynchronous version).

realtimeclock→nextRealTimeClock()

Continues the enumeration of clocks started using `yFirstRealTimeClock()`.

realtimeclock→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

realtimeclock→set_logicalName(newval)

Changes the logical name of the clock.

realtimeclock→set_unixTime(newval)

Changes the current time.

realtimeclock→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

realtimeclock→set_utcOffset(newval)

Changes the number of seconds between current time and UTC time (time zone).

realtimeclock→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YRealTimeClock.FindRealTimeClock() yFindRealTimeClock()yFindRealTimeClock()

YRealTimeClock

Retrieves a clock for a given identifier.

js	function yFindRealTimeClock(func)
nodejs	function FindRealTimeClock(func)
php	function yFindRealTimeClock(\$func)
cpp	YRealTimeClock* yFindRealTimeClock(const string& func)
m	YRealTimeClock* yFindRealTimeClock(NSString* func)
pas	function yFindRealTimeClock(func: string): TYRealTimeClock
vb	function yFindRealTimeClock(ByVal func As String) As YRealTimeClock
cs	YRealTimeClock FindRealTimeClock(string func)
java	YRealTimeClock FindRealTimeClock(String func)
py	def FindRealTimeClock(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the clock is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YRealTimeClock.isOnline()` to test if the clock is indeed online at a given time. In case of ambiguity when looking for a clock by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the clock

Returns :

a `YRealTimeClock` object allowing you to drive the clock.

YRealTimeClock.FirstRealTimeClock() yFirstRealTimeClock()yFirstRealTimeClock()

YRealTimeClock

Starts the enumeration of clocks currently accessible.

```
js function yFirstRealTimeClock( )
node.js function FirstRealTimeClock( )
php function yFirstRealTimeClock( )
cpp YRealTimeClock* yFirstRealTimeClock( )
m YRealTimeClock* yFirstRealTimeClock( )
pas function yFirstRealTimeClock( ): TYRealTimeClock
vb function yFirstRealTimeClock( ) As YRealTimeClock
cs YRealTimeClock FirstRealTimeClock( )
java YRealTimeClock FirstRealTimeClock( )
py def FirstRealTimeClock( )
```

Use the method `YRealTimeClock.nextRealTimeClock()` to iterate on next clocks.

Returns :

a pointer to a `YRealTimeClock` object, corresponding to the first clock currently online, or a null pointer if there are none.

realtimeclock→describe()realtimeclock.describe()**YRealTimeClock**

Returns a short text that describes unambiguously the instance of the clock in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the clock (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

realtimeclock→get_advertisedValue()
realtimeclock→advertisedValue()
realtimeclock.get_advertisedValue()

YRealTimeClock

Returns the current value of the clock (no more than 6 characters).

```
js function get_advertisedValue( )  
nodejs function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YRealTimeClock target get_advertisedValue
```

Returns :

a string corresponding to the current value of the clock (no more than 6 characters). On failure, throws an exception or returns **Y_ADVERTISEDVALUE_INVALID**.

realtimeclock→get_dateTime()
realtimeclock→dateTime()
realtimeclock.get_dateTime()

YRealTimeClock

Returns the current time in the form "YYYY/MM/DD hh:mm:ss"

js	function get_dateTime()
nodejs	function get_dateTime()
php	function get_dateTime()
cpp	string get_dateTime()
m	-(NSString*) dateTime
pas	function get_dateTime() : string
vb	function get_dateTime() As String
cs	string get_dateTime()
java	String get_dateTime()
py	def get_dateTime()

Returns :

a string corresponding to the current time in the form "YYYY/MM/DD hh:mm:ss"

On failure, throws an exception or returns **Y_DATETIME_INVALID**.

realtimeclock→getErrorMessage()
realtimeclock→errorMessage()
realtimeclock.getErrorMessage()

YRealTimeClock

Returns the error message of the latest error with the clock.

```
js function getErrorMessage( )  
nodejs function getErrorMessage( )  
php function getErrorMessage( )  
cpp string getErrorMessage( )  
m -(NSString*) errorMessage  
pas function getErrorMessage( ): string  
vb function getErrorMessage( ) As String  
cs string getErrorMessage( )  
java String getErrorMessage( )  
py def getErrorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the clock object

realtimeclock→get_errorType()
realtimeclock→errorType()
realtimeclock.get_errorType()

YRealTimeClock

Returns the numerical error code of the latest error with the clock.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the clock object

realtimeclock→get_friendlyName()
realtimeclock→friendlyName()**YRealTimeClock**

Returns a global identifier of the clock in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the clock if they are defined, otherwise the serial number of the module and the hardware identifier of the clock (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the clock using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns **Y_FRIENDLYNAME_INVALID**.

realtimeclock→get_functionDescriptor()
realtimeclock→functionDescriptor()
realtimeclock.get_functionDescriptor()

YRealTimeClock

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

realtimeclock→get_functionId()
realtimeclock→functionId()**YRealTimeClock**

Returns the hardware identifier of the clock, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the clock (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

realtimeclock→get_hardwareId()
realtimeclock→hardwareId()**YRealTimeClock**

Returns the unique hardware identifier of the clock in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the clock. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the clock (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

realtimeclock→get_logicalName()
realtimeclock→logicalName()
realtimeclock.get_logicalName()

YRealTimeClock

Returns the logical name of the clock.

```
js function get_logicalName( )  
nodejs function get_logicalName( )  
php function get_logicalName( )  
cpp string get_logicalName( )  
m -(NSString*) logicalName  
pas function get_logicalName( ): string  
vb function get_logicalName( ) As String  
cs string get_logicalName( )  
java String get_logicalName( )  
py def get_logicalName( )  
cmd YRealTimeClock target get_logicalName
```

Returns :

a string corresponding to the logical name of the clock. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

realtimeclock→get_module()**YRealTimeClock****realtimeclock→module()realtimeclock.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

realtimeclock→get_module_async()
realtimeclock→module_async()**YRealTimeClock**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

realtimeclock→get_timeSet()**YRealTimeClock****realtimeclock→timeSet()realtimeclock.get_timeSet()**

Returns true if the clock has been set, and false otherwise.

```
js function get_timeSet( )
nodejs function get_timeSet( )
php function get_timeSet( )
cpp Y_TIMESET_enum get_timeSet( )
m -(Y_TIMESET_enum) timeSet
pas function get_timeSet( ): Integer
vb function get_timeSet( ) As Integer
cs int get_timeSet( )
java int get_timeSet( )
py def get_timeSet( )
cmd YRealTimeClock target get_timeSet
```

Returns :

either Y_TIMESET_FALSE or Y_TIMESET_TRUE, according to true if the clock has been set, and false otherwise

On failure, throws an exception or returns Y_TIMESET_INVALID.

realtimeclock→get_unixTime()
realtimeclock→unixTime()
realtimeclock.get_unixTime()**YRealTimeClock**

Returns the current time in Unix format (number of elapsed seconds since Jan 1st, 1970).

js	function get_unixTime()
nodejs	function get_unixTime()
php	function get_unixTime()
cpp	s64 get_unixTime()
m	-(s64) unixTime
pas	function get_unixTime() : int64
vb	function get_unixTime() As Long
cs	long get_unixTime()
java	long get_unixTime()
py	def get_unixTime()
cmd	YRealTimeClock target get_unixTime

Returns :

an integer corresponding to the current time in Unix format (number of elapsed seconds since Jan 1st, 1970)

On failure, throws an exception or returns Y_UNIXTIME_INVALID.

realtimeclock→get(userData)
realtimeclock→userData()
realtimeclock.get(userData)

YRealTimeClock

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	function get(userData)
nodejs	function get(userData)
php	function get(userData)
cpp	void * get(userData)
m	-(void*) userData
pas	function get(userData) : Tobject
vb	function get(userData) As Object
cs	object get(userData)
java	Object get(userData)
py	def get(userData)

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

realtimeclock→get_utcOffset()
realtimeclock→utcOffset()
realtimeclock.get_utcOffset()**YRealTimeClock**

Returns the number of seconds between current time and UTC time (time zone).

js function **get_utcOffset()**
nodejs function **get_utcOffset()**
php function **get_utcOffset()**
cpp int **get_utcOffset()**
m -(int) **utcOffset**
pas function **get_utcOffset()**: LongInt
vb function **get_utcOffset()** As Integer
cs int **get_utcOffset()**
java int **get_utcOffset()**
py def **get_utcOffset()**
cmd YRealTimeClock **target get_utcOffset**

Returns :

an integer corresponding to the number of seconds between current time and UTC time (time zone)

On failure, throws an exception or returns **Y_UTCOFFSET_INVALID**.

realtimeclock→isOnline()|realtimeclock.isOnline()**YRealTimeClock**

Checks if the clock is currently reachable, without raising any error.

js	function isOnline ()
node.js	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the clock in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the clock.

Returns :

true if the clock can be reached, and false otherwise

realtimeclock→isOnline_async()**YRealTimeClock**

Checks if the clock is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the clock in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

realtimeclock→load()realtimeclock.load()**YRealTimeClock**

Preloads the clock cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>node.js</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

realtimeclock→load_async()**YRealTimeClock**

Preloads the clock cache with a specified validity duration (asynchronous version).

```
js   function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

realtimeclock→nextRealTimeClock()
realtimeclock.nextRealTimeClock()**YRealTimeClock**

Continues the enumeration of clocks started using `yFirstRealTimeClock()`.

<code>js</code>	<code>function nextRealTimeClock()</code>
<code>nodejs</code>	<code>function nextRealTimeClock()</code>
<code>php</code>	<code>function nextRealTimeClock()</code>
<code>cpp</code>	<code>YRealTimeClock * nextRealTimeClock()</code>
<code>m</code>	<code>-(YRealTimeClock*) nextRealTimeClock</code>
<code>pas</code>	<code>function nextRealTimeClock(): TYRealTimeClock</code>
<code>vb</code>	<code>function nextRealTimeClock() As YRealTimeClock</code>
<code>cs</code>	<code>YRealTimeClock nextRealTimeClock()</code>
<code>java</code>	<code>YRealTimeClock nextRealTimeClock()</code>
<code>py</code>	<code>def nextRealTimeClock()</code>

Returns :

a pointer to a `YRealTimeClock` object, corresponding to a clock currently online, or a null pointer if there are no more clocks to enumerate.

**realtimeclock→registerValueCallback()
realtimeclock.registerValueCallback()****YRealTimeClock**

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback(callback)
node.js	function registerValueCallback(callback)
php	function registerValueCallback(\$callback)
cpp	int registerValueCallback(YRealTimeClockValueCallback callback)
m	-(int) registerValueCallback : (YRealTimeClockValueCallback) callback
pas	function registerValueCallback(callback : TYRealTimeClockValueCallback): LongInt
vb	function registerValueCallback() As Integer
cs	int registerValueCallback(ValueCallback callback)
java	int registerValueCallback(UpdateCallback callback)
py	def registerValueCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

realtimeclock→set_logicalName()
realtimeclock→setLogicalName()
realtimeclock.set_logicalName()

YRealTimeClock

Changes the logical name of the clock.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YRealTimeClock target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the clock.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

realtimeclock→set_unixTime()
realtimeclock→setUnixTime()
realtimeclock.set_unixTime()

YRealTimeClock

Changes the current time.

```
js function set_unixTime( newval)
nodejs function set_unixTime( newval)
php function set_unixTime( $newval)
cpp int set_unixTime( s64 newval)
m -(int) setUnixTime : (s64) newval
pas function set_unixTime( newval: int64): integer
vb function set_unixTime( ByVal newval As Long) As Integer
cs int set_unixTime( long newval)
java int set_unixTime( long newval)
py def set_unixTime( newval)
cmd YRealTimeClock target set_unixTime newval
```

Time is specified in Unix format (number of elapsed seconds since Jan 1st, 1970). If current UTC time is known, utcOffset will be automatically adjusted for the new specified time.

Parameters :

newval an integer corresponding to the current time

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

realtimeclock→set(userData)
realtimeclock→setUserData()
realtimeclock.set(userData)

YRealTimeClock

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	-(void) setUserData : (void*) data
pas	procedure set(userData data: Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

realtimeclock→set_utcOffset()
realtimeclock→setUtcOffset()
realtimeclock.set_utcOffset()

YRealTimeClock

Changes the number of seconds between current time and UTC time (time zone).

```
js function set_utcOffset( newval)
nodejs function set_utcOffset( newval)
php function set_utcOffset( $newval)
cpp int set_utcOffset( int newval)
m -(int) setUtcOffset : (int) newval
pas function set_utcOffset( newval: LongInt): integer
vb function set_utcOffset( ByVal newval As Integer) As Integer
cs int set_utcOffset( int newval)
java int set_utcOffset( int newval)
py def set_utcOffset( newval)
cmd YRealTimeClock target set_utcOffset newval
```

The timezone is automatically rounded to the nearest multiple of 15 minutes. If current UTC time is known, the current time will automatically be updated according to the selected time zone.

Parameters :

newval an integer corresponding to the number of seconds between current time and UTC time (time zone)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

realtimeclock→wait_async()**YRealTimeClock**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.34. Reference frame configuration

This class is used to setup the base orientation of the Yocto-3D, so that the orientation functions, relative to the earth surface plane, use the proper reference frame. The class also implements a tridimensional sensor calibration process, which can compensate for local variations of standard gravity and improve the precision of the tilt sensors.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_refframe.js'></script>
nodejs var yoctolib = require('yoctolib');
var YRefFrame = yoctolib.YRefFrame;
php require_once('yocto_refframe.php');
cpp #include "yocto_refframe.h"
m #import "yocto_refframe.h"
pas uses yocto_refframe;
vb yocto_refframe.vb
cs yocto_refframe.cs
java import com.yoctopuce.YoctoAPI.YRefFrame;
py from yocto_refframe import *

```

Global functions

yFindRefFrame(func)

Retrieves a reference frame for a given identifier.

yFirstRefFrame()

Starts the enumeration of reference frames currently accessible.

YRefFrame methods

refframe→cancel3DCalibration()

Aborts the sensors tridimensional calibration process et restores normal settings.

refframe→describe()

Returns a short text that describes unambiguously the instance of the reference frame in the form TYPE(NAME)=SERIAL.FUNCTIONID.

refframe→get_3DCalibrationHint()

Returns instructions to proceed to the tridimensional calibration initiated with method start3DCalibration.

refframe→get_3DCalibrationLogMsg()

Returns the latest log message from the calibration process.

refframe→get_3DCalibrationProgress()

Returns the global process indicator for the tridimensional calibration initiated with method start3DCalibration.

refframe→get_3DCalibrationStage()

Returns index of the current stage of the calibration initiated with method start3DCalibration.

refframe→get_3DCalibrationStageProgress()

Returns the process indicator for the current stage of the calibration initiated with method start3DCalibration.

refframe→get_advertisedValue()

Returns the current value of the reference frame (no more than 6 characters).

refframe→get_bearing()

Returns the reference bearing used by the compass.

refframe→get_errorMessage()

Returns the error message of the latest error with the reference frame.

refframe→get_errorType()

Returns the numerical error code of the latest error with the reference frame.

refframe→get_friendlyName()

Returns a global identifier of the reference frame in the format MODULE_NAME . FUNCTION_NAME.

refframe→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

refframe→get_functionId()

Returns the hardware identifier of the reference frame, without reference to the module.

refframe→get_hardwareId()

Returns the unique hardware identifier of the reference frame in the form SERIAL . FUNCTIONID.

refframe→get_logicalName()

Returns the logical name of the reference frame.

refframe→get_module()

Gets the YModule object for the device on which the function is located.

refframe→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

refframe→get_mountOrientation()

Returns the installation orientation of the device, as configured in order to define the reference frame for the compass and the pitch/roll tilt sensors.

refframe→get_mountPosition()

Returns the installation position of the device, as configured in order to define the reference frame for the compass and the pitch/roll tilt sensors.

refframe→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

refframe→isOnline()

Checks if the reference frame is currently reachable, without raising any error.

refframe→isOnline_async(callback, context)

Checks if the reference frame is currently reachable, without raising any error (asynchronous version).

refframe→load(msValidity)

Preloads the reference frame cache with a specified validity duration.

refframe→load_async(msValidity, callback, context)

Preloads the reference frame cache with a specified validity duration (asynchronous version).

refframe→more3DCalibration()

Continues the sensors tridimensional calibration process previously initiated using method start3DCalibration.

refframe→nextRefFrame()

Continues the enumeration of reference frames started using yFirstRefFrame().

refframe→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

refframe→save3DCalibration()

Applies the sensors tridimensional calibration parameters that have just been computed.

refframe→set_bearing(newval)

Changes the reference bearing used by the compass.

refframe→set_logicalName(newval)

3. Reference

Changes the logical name of the reference frame.

refframe→set_mountPosition(*position*, *orientation*)

Changes the compass and tilt sensor frame of reference.

refframe→set_userData(*data*)

Stores a user context provided as argument in the userData attribute of the function.

refframe→start3DCalibration()

Initiates the sensors tridimensional calibration process.

refframe→wait_async(*callback*, *context*)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YRefFrame.FindRefFrame() yFindRefFrame()yFindRefFrame()

YRefFrame

Retrieves a reference frame for a given identifier.

js	function yFindRefFrame(func)
nodejs	function FindRefFrame(func)
php	function yFindRefFrame(\$func)
cpp	YRefFrame* yFindRefFrame(const string& func)
m	YRefFrame* yFindRefFrame(NSString* func)
pas	function yFindRefFrame(func: string): TYRefFrame
vb	function yFindRefFrame(ByVal func As String) As YRefFrame
cs	YRefFrame FindRefFrame(string func)
java	YRefFrame FindRefFrame(String func)
py	def FindRefFrame(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the reference frame is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YRefFrame.isOnline()` to test if the reference frame is indeed online at a given time. In case of ambiguity when looking for a reference frame by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the reference frame

Returns :

a `YRefFrame` object allowing you to drive the reference frame.

YRefFrame.FirstRefFrame() yFirstRefFrame()yFirstRefFrame()

YRefFrame

Starts the enumeration of reference frames currently accessible.

js	function yFirstRefFrame()
node.js	function FirstRefFrame()
php	function yFirstRefFrame()
cpp	YRefFrame* yFirstRefFrame()
m	YRefFrame* yFirstRefFrame()
pas	function yFirstRefFrame(): TYRefFrame
vb	function yFirstRefFrame() As YRefFrame
cs	YRefFrame FirstRefFrame()
java	YRefFrame FirstRefFrame()
py	def FirstRefFrame()

Use the method `YRefFrame.nextRefFrame()` to iterate on next reference frames.

Returns :

a pointer to a `YRefFrame` object, corresponding to the first reference frame currently online, or a null pointer if there are none.

refframe→cancel3DCalibration()
refframe.cancel3DCalibration()**YRefFrame**

Aborts the sensors tridimensional calibration process et restores normal settings.

js	function cancel3DCalibration()
node.js	function cancel3DCalibration()
php	function cancel3DCalibration()
cpp	int cancel3DCalibration()
m	-(int) cancel3DCalibration
pas	function cancel3DCalibration(): LongInt
vb	function cancel3DCalibration() As Integer
cs	int cancel3DCalibration()
java	int cancel3DCalibration()
py	def cancel3DCalibration()
cmd	YRefFrame target cancel3DCalibration

On failure, throws an exception or returns a negative error code.

refframe→describe()refframe.describe()**YRefFrame**

Returns a short text that describes unambiguously the instance of the reference frame in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the reference frame (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

refframe→get_3DCalibrationHint()**YRefFrame****refframe→3DCalibrationHint()****refframe.get_3DCalibrationHint()**

Returns instructions to proceed to the tridimensional calibration initiated with method start3DCalibration.

```
js function get_3DCalibrationHint( )
nodejs function get_3DCalibrationHint( )
php function get_3DCalibrationHint( )
cpp string get_3DCalibrationHint( )
m -(NSString*) 3DCalibrationHint
pas function get_3DCalibrationHint( ): string
vb function get_3DCalibrationHint( ) As String
cs string get_3DCalibrationHint( )
java String get_3DCalibrationHint( )
py def get_3DCalibrationHint( )
cmd YRefFrame target get_3DCalibrationHint
```

Returns :

a character string.

`refframe→get_3DCalibrationLogMsg()`
`refframe→3DCalibrationLogMsg()`
`refframe.get_3DCalibrationLogMsg()`

YRefFrame

Returns the latest log message from the calibration process.

```
js function get_3DCalibrationLogMsg( )
nodejs function get_3DCalibrationLogMsg( )
php function get_3DCalibrationLogMsg( )
cpp string get_3DCalibrationLogMsg( )
m -(NSString*) 3DCalibrationLogMsg
pas function get_3DCalibrationLogMsg( ): string
vb function get_3DCalibrationLogMsg( ) As String
cs string get_3DCalibrationLogMsg( )
java String get_3DCalibrationLogMsg( )
py def get_3DCalibrationLogMsg( )
cmd YRefFrame target get_3DCalibrationLogMsg
```

When no new message is available, returns an empty string.

Returns :

a character string.

refframe→get_3DCalibrationProgress()
refframe→3DCalibrationProgress()
refframe.get_3DCalibrationProgress()

YRefFrame

Returns the global process indicator for the tridimensional calibration initiated with method start3DCalibration.

js	function get_3DCalibrationProgress()
node.js	function get_3DCalibrationProgress()
php	function get_3DCalibrationProgress()
cpp	int get_3DCalibrationProgress()
m	-(int) 3DCalibrationProgress
pas	function get_3DCalibrationProgress(): LongInt
vb	function get_3DCalibrationProgress() As Integer
cs	int get_3DCalibrationProgress()
java	int get_3DCalibrationProgress()
py	def get_3DCalibrationProgress()
cmd	YRefFrame target get_3DCalibrationProgress

Returns :

an integer between 0 (not started) and 100 (stage completed).

`refframe→get_3DCalibrationStage()`
`refframe→3DCalibrationStage()`
`refframe.get_3DCalibrationStage()`

YRefFrame

Returns index of the current stage of the calibration initiated with method `start3DCalibration`.

`js` `function get_3DCalibrationStage()`
`nodejs` `function get_3DCalibrationStage()`
`php` `function get_3DCalibrationStage()`
`cpp` `int get_3DCalibrationStage()`
`m` `-(int) 3DCalibrationStage`
`pas` `function get_3DCalibrationStage(): LongInt`
`vb` `function get_3DCalibrationStage() As Integer`
`cs` `int get_3DCalibrationStage()`
`java` `int get_3DCalibrationStage()`
`py` `def get_3DCalibrationStage()`
`cmd` `YRefFrame target get_3DCalibrationStage`

Returns :

an integer, growing each time a calibration stage is completed.

refframe→get_3DCalibrationStageProgress()
refframe→3DCalibrationStageProgress()
refframe.get_3DCalibrationStageProgress()

YRefFrame

Returns the process indicator for the current stage of the calibration initiated with method start3DCalibration.

```
js function get_3DCalibrationStageProgress( )
nodejs function get_3DCalibrationStageProgress( )
php function get_3DCalibrationStageProgress( )
cpp int get_3DCalibrationStageProgress( )
m -(int) 3DCalibrationStageProgress
pas function get_3DCalibrationStageProgress( ): LongInt
vb function get_3DCalibrationStageProgress( ) As Integer
cs int get_3DCalibrationStageProgress( )
java int get_3DCalibrationStageProgress( )
py def get_3DCalibrationStageProgress( )
cmd YRefFrame target get_3DCalibrationStageProgress
```

Returns :

an integer between 0 (not started) and 100 (stage completed).

refframe→get_advertisedValue()
refframe→advertisedValue()
refframe.get_advertisedValue()

YRefFrame

Returns the current value of the reference frame (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue(): string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YRefFrame target get_advertisedValue

Returns :

a string corresponding to the current value of the reference frame (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

refframe→get_bearing()
refframe→bearing()refframe.get_bearing()**YRefFrame**

Returns the reference bearing used by the compass.

js	function get_bearing()
nodejs	function get_bearing()
php	function get_bearing()
cpp	double get_bearing()
m	-(double) bearing
pas	function get_bearing(): double
vb	function get_bearing() As Double
cs	double get_bearing()
java	double get_bearing()
py	def get_bearing()
cmd	YRefFrame target get_bearing

The relative bearing indicated by the compass is the difference between the measured magnetic heading and the reference bearing indicated here.

Returns :

a floating point number corresponding to the reference bearing used by the compass

On failure, throws an exception or returns **Y_BEARING_INVALID**.

refframe→get_errorMessage()
refframe→errorMessage()
refframe.get_errorMessage()**YRefFrame**

Returns the error message of the latest error with the reference frame.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the reference frame object

refframe→get_errorType()**YRefFrame****refframe→errorType()refframe.get_errorType()**

Returns the numerical error code of the latest error with the reference frame.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the reference frame object

refframe→get_friendlyName()
refframe→friendlyName()**YRefFrame**

Returns a global identifier of the reference frame in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the reference frame if they are defined, otherwise the serial number of the module and the hardware identifier of the reference frame (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the reference frame using logical names (ex: MyCustomName.relay1)

On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

refframe→get_functionDescriptor()
refframe→functionDescriptor()
refframe.get_functionDescriptor()

YRefFrame

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

refframe→get_functionId()
refframe→functionId()**YRefFrame**

Returns the hardware identifier of the reference frame, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the reference frame (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

refframe→get_hardwareId()
refframe→hardwareId()**YRefFrame**

Returns the unique hardware identifier of the reference frame in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the reference frame. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the reference frame (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

refframe→get_logicalName()**YRefFrame****refframe→logicalName()refframe.get_logicalName()**

Returns the logical name of the reference frame.

js	function get_logicalName()
node.js	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	- (NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YRefFrame target get_logicalName

Returns :

a string corresponding to the logical name of the reference frame. On failure, throws an exception or returns **Y_LOGICALNAME_INVALID**.

refframe→get_module()**YRefFrame****refframe→module()refframe.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

refframe→get_module_async()**YRefFrame****refframe→module_async()**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

refframe→get_mountOrientation()
refframe→mountOrientation()
refframe.get_mountOrientation()

YRefFrame

Returns the installation orientation of the device, as configured in order to define the reference frame for the compass and the pitch/roll tilt sensors.

<code>js</code>	<code>function get_mountOrientation()</code>
<code>node.js</code>	<code>function get_mountOrientation()</code>
<code>php</code>	<code>function get_mountOrientation()</code>
<code>cpp</code>	<code>Y_MOUNTORIENTATION get_mountOrientation()</code>
<code>m</code>	<code>-(Y_MOUNTORIENTATION) mountOrientation</code>
<code>pas</code>	<code>function get_mountOrientation(): TYMOUNTORIENTATION</code>
<code>vb</code>	<code>function get_mountOrientation() As Y_MOUNTORIENTATION</code>
<code>cs</code>	<code>MOUNTORIENTATION get_mountOrientation()</code>
<code>java</code>	<code>MOUNTORIENTATION get_mountOrientation()</code>
<code>py</code>	<code>def get_mountOrientation()</code>
<code>cmd</code>	<code>YRefFrame target get_mountOrientation</code>

Returns :

a value among the enumeration `Y_MOUNTORIENTATION` (`Y_MOUNTORIENTATION_TWELVE`, `Y_MOUNTORIENTATION_THREE`, `Y_MOUNTORIENTATION_SIX`, `Y_MOUNTORIENTATION_NINE`) corresponding to the orientation of the "X" arrow on the device, as on a clock dial seen from an observer in the center of the box. On the bottom face, the 12H orientation points to the front, while on the top face, the 12H orientation points to the rear.

On failure, throws an exception or returns a negative error code.

refframe→get_mountPosition()**YRefFrame****refframe→mountPosition()****refframe.get_mountPosition()**

Returns the installation position of the device, as configured in order to define the reference frame for the compass and the pitch/roll tilt sensors.

```
js function get_mountPosition( )
nodejs function get_mountPosition( )
php function get_mountPosition( )
cpp Y_MOUNTPOSITION get_mountPosition( )
m -(Y_MOUNTPOSITION) mountPosition
pas function get_mountPosition( ): TYMOUNTPOSITION
vb function get_mountPosition( ) As Y_MOUNTPOSITION
cs MOUNTPOSITION get_mountPosition( )
java MOUNTPOSITION get_mountPosition( )
py def get_mountPosition( )
cmd YRefFrame target get_mountPosition
```

Returns :

a value among the `Y_MOUNTPOSITION` enumeration (`Y_MOUNTPOSITION_BOTTOM`, `Y_MOUNTPOSITION_TOP`, `Y_MOUNTPOSITION_FRONT`, `Y_MOUNTPOSITION_RIGHT`, `Y_MOUNTPOSITION_REAR`, `Y_MOUNTPOSITION_LEFT`), corresponding to the installation in a box, on one of the six faces.

On failure, throws an exception or returns a negative error code.

refframe→get(userData)**YRefFrame****refframe→userData()refframe.get(userData)**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

refframe→isOnline()refframe.isOnline()**YRefFrame**

Checks if the reference frame is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the reference frame in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the reference frame.

Returns :

true if the reference frame can be reached, and false otherwise

refframe→isOnline_async()**YRefFrame**

Checks if the reference frame is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the reference frame in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

refframe→load()refframe.load()**YRefFrame**

Preloads the reference frame cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

refframe→load_async()**YRefFrame**

Preloads the reference frame cache with a specified validity duration (asynchronous version).

```
js  function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

refframe→more3DCalibration()
refframe.more3DCalibration()**YRefFrame**

Continues the sensors tridimensional calibration process previously initiated using method `start3DCalibration`.

```
js   function more3DCalibration( )  
nodejs function more3DCalibration( )  
php  function more3DCalibration( )  
cpp   int more3DCalibration( )  
m    -(int) more3DCalibration  
pas   function more3DCalibration( ): LongInt  
vb    function more3DCalibration( ) As Integer  
cs    int more3DCalibration( )  
java  int more3DCalibration( )  
py    def more3DCalibration( )  
cmd   YRefFrame target more3DCalibration
```

This method should be called approximately 5 times per second, while positioning the device according to the instructions provided by method `get_3DCalibrationHint`. Note that the instructions change during the calibration process. On failure, throws an exception or returns a negative error code.

refframe→nextRefFrame()**YRefFrame**

Continues the enumeration of reference frames started using `yFirstRefFrame()`.

js	<code>function nextRefFrame()</code>
node.js	<code>function nextRefFrame()</code>
php	<code>function nextRefFrame()</code>
cpp	<code>YRefFrame * nextRefFrame()</code>
m	<code>-(YRefFrame*) nextRefFrame</code>
pas	<code>function nextRefFrame(): TYRefFrame</code>
vb	<code>function nextRefFrame() As YRefFrame</code>
cs	<code>YRefFrame nextRefFrame()</code>
java	<code>YRefFrame nextRefFrame()</code>
py	<code>def nextRefFrame()</code>

Returns :

a pointer to a `YRefFrame` object, corresponding to a reference frame currently online, or a `null` pointer if there are no more reference frames to enumerate.

**reframe→registerValueCallback()
reframe.registerValueCallback()****YRefFrame**

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YRefFrameValueCallback callback )
m    -(int) registerValueCallback : (YRefFrameValueCallback) callback
pas   function registerValueCallback( callback: TYRefFrameValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

refframe→save3DCalibration()
refframe.save3DCalibration()**YRefFrame**

Applies the sensors tridimensional calibration parameters that have just been computed.

js	function save3DCalibration()
node.js	function save3DCalibration()
php	function save3DCalibration()
cpp	int save3DCalibration()
m	-(int) save3DCalibration
pas	function save3DCalibration() : LongInt
vb	function save3DCalibration() As Integer
cs	int save3DCalibration()
java	int save3DCalibration()
py	def save3DCalibration()
cmd	YRefFrame target save3DCalibration

Remember to call the `saveToFlash()` method of the module if the changes must be kept when the device is restarted. On failure, throws an exception or returns a negative error code.

refframe→set_bearing() refframe→setBearing()refframe.set_bearing()

YRefFrame

Changes the reference bearing used by the compass.

js	function set_bearing(newval)
node.js	function set_bearing(newval)
php	function set_bearing(\$newval)
cpp	int set_bearing(double newval)
m	-(int) setBearing : (double) newval
pas	function set_bearing(newval: double): integer
vb	function set_bearing(ByVal newval As Double) As Integer
cs	int set_bearing(double newval)
java	int set_bearing(double newval)
py	def set_bearing(newval)
cmd	YRefFrame target set_bearing newval

The relative bearing indicated by the compass is the difference between the measured magnetic heading and the reference bearing indicated here. For instance, if you setup as reference bearing the value of the earth magnetic declination, the compass will provide the orientation relative to the geographic North. Similarly, when the sensor is not mounted along the standard directions because it has an additional yaw angle, you can set this angle in the reference bearing so that the compass provides the expected natural direction. Remember to call the saveToFlash() method of the module if the modification must be kept.

Parameters :

newval a floating point number corresponding to the reference bearing used by the compass

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

refframe→set_logicalName()
refframe→setLogicalName()
refframe.set_logicalName()

YRefFrame

Changes the logical name of the reference frame.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YRefFrame target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the reference frame.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

reframe→set_mountPosition()
reframe→setMountPosition()
reframe.set_mountPosition()

YRefFrame

Changes the compass and tilt sensor frame of reference.

```

js function set_mountPosition( position, orientation)
nodejs function set_mountPosition( position, orientation)
php function set_mountPosition( $position, $orientation)
cpp int set_mountPosition( Y_MOUNTPOSITION position,
                           Y_MOUNTORIENTATION orientation)
m -(int) setMountPosition : (Y_MOUNTPOSITION) position
                           : (Y_MOUNTORIENTATION) orientation
pas function set_mountPosition( position: TYMOUNTPOSITION,
                                 orientation: TYMOUNTORIENTATION): LongInt
vb function set_mountPosition( ) As Integer
cs int set_mountPosition( MOUNTPOSITION position,
                         MOUNTORIENTATION orientation)
java int set_mountPosition( MOUNTPOSITION position,
                           MOUNTORIENTATION orientation)
py def set_mountPosition( position, orientation)
cmd YRefFrame target set_mountPosition position orientation

```

The magnetic compass and the tilt sensors (pitch and roll) naturally work in the plane parallel to the earth surface. In case the device is not installed upright and horizontally, you must select its reference orientation (parallel to the earth surface) so that the measures are made relative to this position.

Parameters :

position a value among the Y_MOUNTPOSITION enumeration (Y_MOUNTPOSITION_BOTTOM, Y_MOUNTPOSITION_TOP, Y_MOUNTPOSITION_FRONT, Y_MOUNTPOSITION_RIGHT, Y_MOUNTPOSITION_REAR, Y_MOUNTPOSITION_LEFT), corresponding to the installation in a box, on one of the six faces.

orientation a value among the enumeration Y_MOUNTORIENTATION (Y_MOUNTORIENTATION_TWELVE, Y_MOUNTORIENTATION_THREE, Y_MOUNTORIENTATION_SIX, Y_MOUNTORIENTATION_NINE) corresponding to the orientation of the "X" arrow on the device, as on a clock dial seen from an observer in the center of the box. On the bottom face, the 12H orientation points to the front, while on the top face, the 12H orientation points to the rear. Remember to call the saveToFlash() method of the module if the modification must be kept.

refframe→set(userData)**YRefFrame****refframe→setUserData()|refframe.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	-(void) setUserData : (void*) data
pas	procedure set(userData Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

refframe→start3DCalibration()**YRefFrame**

Initiates the sensors tridimensional calibration process.

```
js function start3DCalibration( )
node.js function start3DCalibration( )
php function start3DCalibration( )
cpp int start3DCalibration( )
m -(int) start3DCalibration
pas function start3DCalibration( ): LongInt
vb function start3DCalibration( ) As Integer
cs int start3DCalibration( )
java int start3DCalibration( )
py def start3DCalibration( )
cmd YRefFrame target start3DCalibration
```

This calibration is used at low level for inertial position estimation and to enhance the precision of the tilt sensors. After calling this method, the device should be moved according to the instructions provided by method `get_3DCalibrationHint`, and `more3DCalibration` should be invoked about 5 times per second. The calibration procedure is completed when the method `get_3DCalibrationProgress` returns 100. At this point, the computed calibration parameters can be applied using method `save3DCalibration`. The calibration process can be canceled at any time using method `cancel3DCalibration`. On failure, throws an exception or returns a negative error code.

refframe→wait_async()**YRefFrame**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context )
nodejs function wait_async( callback, context )
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.35. Relay function interface

The Yoctopuce application programming interface allows you to switch the relay state. This change is not persistent: the relay will automatically return to its idle position whenever power is lost or if the module is restarted. The library can also generate automatically short pulses of determined duration. On devices with two output for each relay (double throw), the two outputs are named A and B, with output A corresponding to the idle position (at power off) and the output B corresponding to the active state. If you prefer the alternate default state, simply switch your cables on the board.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_relay.js'></script>
node.js	var yoctolib = require('yoctolib');
	var YRelay = yoctolib.YRelay;
php	require_once('yocto_relay.php');
cpp	#include "yocto_relay.h"
m	#import "yocto_relay.h"
pas	uses yocto_relay;
vb	yocto_relay.vb
cs	yocto_relay.cs
java	import com.yoctopuce.YoctoAPI.YRelay;
py	from yocto_relay import *

Global functions

yFindRelay(func)

Retrieves a relay for a given identifier.

yFirstRelay()

Starts the enumeration of relays currently accessible.

YRelay methods

relay->delayedPulse(ms_delay, ms_duration)

Schedules a pulse.

relay->describe()

Returns a short text that describes unambiguously the instance of the relay in the form TYPE (NAME)=SERIAL.FUNCTIONID.

relay->get_advertisedValue()

Returns the current value of the relay (no more than 6 characters).

relay->get_countdown()

Returns the number of milliseconds remaining before a pulse (delayedPulse() call). When there is no scheduled pulse, returns zero.

relay->get_errorMessage()

Returns the error message of the latest error with the relay.

relay->get_errorType()

Returns the numerical error code of the latest error with the relay.

relay->get_friendlyName()

Returns a global identifier of the relay in the format MODULE_NAME . FUNCTION_NAME.

relay->get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

relay->get_functionId()

Returns the hardware identifier of the relay, without reference to the module.

relay->get_hardwareId()

Returns the unique hardware identifier of the relay in the form SERIAL.FUNCTIONID.

relay→get_logicalName()

Returns the logical name of the relay.

relay→get_maxTimeOnStateA()

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

relay→get_maxTimeOnStateB()

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

relay→get_module()

Gets the YModule object for the device on which the function is located.

relay→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

relay→get_output()

Returns the output state of the relays, when used as a simple switch (single throw).

relay→get_pulseTimer()

Returns the number of milliseconds remaining before the relays is returned to idle position (state A), during a measured pulse generation.

relay→get_state()

Returns the state of the relays (A for the idle position, B for the active position).

relay→get_stateAtPowerOn()

Returns the state of the relays at device startup (A for the idle position, B for the active position, UNCHANGED for no change).

relay→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

relay→isOnline()

Checks if the relay is currently reachable, without raising any error.

relay→isOnline_async(callback, context)

Checks if the relay is currently reachable, without raising any error (asynchronous version).

relay→load(msValidity)

Preloads the relay cache with a specified validity duration.

relay→load_async(msValidity, callback, context)

Preloads the relay cache with a specified validity duration (asynchronous version).

relay→nextRelay()

Continues the enumeration of relays started using yFirstRelay().

relay→pulse(ms_duration)

Sets the relay to output B (active) for a specified duration, then brings it automatically back to output A (idle state).

relay→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

relay→set_logicalName(newval)

Changes the logical name of the relay.

relay→set_maxTimeOnStateA(newval)

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

relay→set_maxTimeOnStateB(newval)

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Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

relay→set_output(newval)

Changes the output state of the relays, when used as a simple switch (single throw).

relay→set_state(newval)

Changes the state of the relays (A for the idle position, B for the active position).

relay→set_stateAtPowerOn(newval)

Preset the state of the relays at device startup (A for the idle position, B for the active position, UNCHANGED for no modification).

relay→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

relay→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YRelay.FindRelay() yFindRelay()yFindRelay()

YRelay

Retrieves a relay for a given identifier.

js	function yFindRelay(func)
nodejs	function FindRelay(func)
php	function yFindRelay(\$func)
cpp	YRelay* yFindRelay(const string& func)
m	YRelay* yFindRelay(NSString* func)
pas	function yFindRelay(func: string): TYRelay
vb	function yFindRelay(ByVal func As String) As YRelay
cs	YRelay FindRelay(string func)
java	YRelay FindRelay(String func)
py	def FindRelay(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the relay is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YRelay.isOnline()` to test if the relay is indeed online at a given time. In case of ambiguity when looking for a relay by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the relay

Returns :

a `YRelay` object allowing you to drive the relay.

YRelay.FirstRelay() yFirstRelay()yFirstRelay()

YRelay

Starts the enumeration of relays currently accessible.

```
js function yFirstRelay( )
node.js function FirstRelay( )
php function yFirstRelay( )
cpp YRelay* yFirstRelay( )
m YRelay* yFirstRelay( )
pas function yFirstRelay( ): TYRelay
vb function yFirstRelay( ) As YRelay
cs YRelay FirstRelay( )
java YRelay FirstRelay( )
def FirstRelay( )
```

Use the method `YRelay.nextRelay()` to iterate on next relays.

Returns :

a pointer to a `YRelay` object, corresponding to the first relay currently online, or a `null` pointer if there are none.

relay→delayedPulse()`relay.delayedPulse()`

YRelay

Schedules a pulse.

```
js function delayedPulse( ms_delay, ms_duration)
node.js function delayedPulse( ms_delay, ms_duration)
php function delayedPulse( $ms_delay, $ms_duration)
cpp int delayedPulse( int ms_delay, int ms_duration)
m -(int) delayedPulse : (int) ms_delay : (int) ms_duration
pas function delayedPulse( ms_delay: LongInt, ms_duration: LongInt): integer
vb function delayedPulse( ByVal ms_delay As Integer,
                           ByVal ms_duration As Integer) As Integer
cs int delayedPulse( int ms_delay, int ms_duration)
java int delayedPulse( int ms_delay, int ms_duration)
py def delayedPulse( ms_delay, ms_duration)
cmd YRelay target delayedPulse ms_delay ms_duration
```

Parameters :

ms_delay waiting time before the pulse, in millisecondes

ms_duration pulse duration, in millisecondes

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→describe()relay.describe()**YRelay**

Returns a short text that describes unambiguously the instance of the relay in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	- (NSString*) describe
pas	function describe(): string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the relay (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

relay→get_advertisedValue()**YRelay****relay→advertisedValue()relay.get_advertisedValue()**

Returns the current value of the relay (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YRelay target get_advertisedValue

Returns :

a string corresponding to the current value of the relay (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

relay→get_countdown()

YRelay

relay→countdown()relay.get_countdown()

Returns the number of milliseconds remaining before a pulse (delayedPulse() call) When there is no scheduled pulse, returns zero.

js	function get_countdown()
nodejs	function get_countdown()
php	function get_countdown()
cpp	s64 get_countdown()
m	-(s64) countdown
pas	function get_countdown() : int64
vb	function get_countdown() As Long
cs	long get_countdown()
java	long get_countdown()
py	def get_countdown()
cmd	YRelay target get_countdown

Returns :

an integer corresponding to the number of milliseconds remaining before a pulse (delayedPulse() call) When there is no scheduled pulse, returns zero

On failure, throws an exception or returns Y_COUNTDOWN_INVALID.

relay→get_errorMessage() relay→errorMessage()relay.get_errorMessage()

YRelay

Returns the error message of the latest error with the relay.

```
js function get_errorMessage( )
nodejs function get_errorMessage( )
php function get_errorMessage( )
cpp string get_errorMessage( )
m -(NSString*) errorMessage
pas function get_errorMessage( ): string
vb function get_errorMessage( ) As String
cs string get_errorMessage( )
java String get_errorMessage( )
py def get_errorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the relay object

relay->get_errorType()
relay->errorType()relay.get_errorType()**YRelay**

Returns the numerical error code of the latest error with the relay.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the relay object

**relay→get_friendlyName()
relay→friendlyName()****YRelay**

Returns a global identifier of the relay in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the relay if they are defined, otherwise the serial number of the module and the hardware identifier of the relay (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the relay using logical names (ex: MyCustomName . relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

relay→get_functionDescriptor()
relay→functionDescriptor()
relay.get_functionDescriptor()

YRelay

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**relay→get_functionId()
relay→functionId()****YRelay**

Returns the hardware identifier of the relay, without reference to the module.

js	function get_functionId()
nodejs	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the relay (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

relay→get_hardwareId()
relay→hardwareId()**YRelay**

Returns the unique hardware identifier of the relay in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the relay. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the relay (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

relay→get_logicalName()**YRelay****relay→logicalName()relay.get_logicalName()**

Returns the logical name of the relay.

```
js function get_logicalName( )
nodejs function get_logicalName( )
php function get_logicalName( )
cpp string get_logicalName( )
m -(NSString*) logicalName
pas function get_logicalName( ): string
vb function get_logicalName( ) As String
cs string get_logicalName( )
java String get_logicalName( )
py def get_logicalName( )
cmd YRelay target get_logicalName
```

Returns :

a string corresponding to the logical name of the relay. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

`relay->get_maxTimeOnStateA()`
`relay->maxTimeOnStateA()`
`relay.get_maxTimeOnStateA()`

YRelay

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

```
js function get_maxTimeOnStateA( )
nodejs function get_maxTimeOnStateA( )
php function get_maxTimeOnStateA( )
cpp s64 get_maxTimeOnStateA( )
m -(s64) maxTimeOnStateA
pas function get_maxTimeOnStateA( ): int64
vb function get_maxTimeOnStateA( ) As Long
cs long get_maxTimeOnStateA( )
java long get_maxTimeOnStateA( )
py def get_maxTimeOnStateA( )
cmd YRelay target get_maxTimeOnStateA
```

Zero means no maximum time.

Returns :

an integer

On failure, throws an exception or returns Y_MAXTIMEONSTATEA_INVALID.

relay→get_maxTimeOnStateB()
relay→maxTimeOnStateB()
relay.get_maxTimeOnStateB()

YRelay

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

```
js function get_maxTimeOnStateB( )
nodejs function get_maxTimeOnStateB( )
php function get_maxTimeOnStateB( )
cpp s64 get_maxTimeOnStateB( )
m -(s64) maxTimeOnStateB
pas function get_maxTimeOnStateB( ): int64
vb function get_maxTimeOnStateB( ) As Long
cs long get_maxTimeOnStateB( )
java long get_maxTimeOnStateB( )
py def get_maxTimeOnStateB( )
cmd YRelay target get_maxTimeOnStateB
```

Zero means no maximum time.

Returns :

an integer

On failure, throws an exception or returns Y_MAXTIMEONSTATEB_INVALID.

relay->get_module()**YRelay****relay->module()relay.get_module()**

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
node.js	function get_module()
php	function get_module()
cpp	<code>YModule * get_module()</code>
m	<code>-(YModule*) module</code>
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	<code>YModule get_module()</code>
java	<code>YModule get_module()</code>
py	<code>def get_module()</code>

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

relay→get_module_async() relay→module_async()

YRelay

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

relay→get_output()**YRelay****relay→output()relay.get_output()**

Returns the output state of the relays, when used as a simple switch (single throw).

js	function get_output()
node.js	function get_output()
php	function get_output()
cpp	Y_OUTPUT_enum get_output()
m	-(Y_OUTPUT_enum) output
pas	function get_output() : Integer
vb	function get_output() As Integer
cs	int get_output()
java	int get_output()
py	def get_output()
cmd	YRelay target get_output

Returns :

either Y_OUTPUT_OFF or Y_OUTPUT_ON, according to the output state of the relays, when used as a simple switch (single throw)

On failure, throws an exception or returns Y_OUTPUT_INVALID.

relay→get_pulseTimer()**YRelay****relay→pulseTimer()relay.get_pulseTimer()**

Returns the number of milliseconds remaining before the relays is returned to idle position (state A), during a measured pulse generation.

js	function get_pulseTimer()
nodejs	function get_pulseTimer()
php	function get_pulseTimer()
cpp	s64 get_pulseTimer()
m	-(s64) pulseTimer
pas	function get_pulseTimer(): int64
vb	function get_pulseTimer() As Long
cs	long get_pulseTimer()
java	long get_pulseTimer()
py	def get_pulseTimer()
cmd	YRelay target get_pulseTimer

When there is no ongoing pulse, returns zero.

Returns :

an integer corresponding to the number of milliseconds remaining before the relays is returned to idle position (state A), during a measured pulse generation

On failure, throws an exception or returns Y_PULSE_TIMER_INVALID.

relay->get_state()
relay->state()relay.get_state()**YRelay**

Returns the state of the relays (A for the idle position, B for the active position).

js	function get_state()
node.js	function get_state()
php	function get_state()
cpp	Y_STATE_enum get_state()
m	-(Y_STATE_enum) state
pas	function get_state(): Integer
vb	function get_state() As Integer
cs	int get_state()
java	int get_state()
py	def get_state()
cmd	YRelay target get_state

Returns :

either Y_STATE_A or Y_STATE_B, according to the state of the relays (A for the idle position, B for the active position)

On failure, throws an exception or returns Y_STATE_INVALID.

relay→get_stateAtPowerOn()**YRelay****relay→stateAtPowerOn()relay.get_stateAtPowerOn()**

Returns the state of the relays at device startup (A for the idle position, B for the active position, UNCHANGED for no change).

js	function get_stateAtPowerOn()
nodejs	function get_stateAtPowerOn()
php	function get_stateAtPowerOn()
cpp	Y_STATEATPOWERON_enum get_stateAtPowerOn()
m	-(Y_STATEATPOWERON_enum) stateAtPowerOn
pas	function get_stateAtPowerOn() : Integer
vb	function get_stateAtPowerOn() As Integer
cs	int get_stateAtPowerOn()
java	int get_stateAtPowerOn()
py	def get_stateAtPowerOn()
cmd	YRelay target get_stateAtPowerOn

Returns :

a value among Y_STATEATPOWERON_UNCHANGED, Y_STATEATPOWERON_A and Y_STATEATPOWERON_B corresponding to the state of the relays at device startup (A for the idle position, B for the active position, UNCHANGED for no change)

On failure, throws an exception or returns Y_STATEATPOWERON_INVALID.

relay→get(userData)
relay→userData()relay.get(userData)

YRelay

Returns the value of the userData attribute, as previously stored using method set(userData).

```
js function get(userData) 
node.js function get(userData) 
php function get(userData) 
cpp void * get(userData) 
m -(void*) userData 
pas function get(userData): Tobject 
vb function get(userData) As Object 
cs object get(userData) 
java Object get(userData) 
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

relay→isOnline()relay.isOnline()

YRelay

Checks if the relay is currently reachable, without raising any error.

js	function isOnline ()
node.js	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-(BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the relay in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the relay.

Returns :

true if the relay can be reached, and false otherwise

relay→isOnline_async()

YRelay

Checks if the relay is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the relay in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

relay→load()relay.load()**YRelay**

Preloads the relay cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>node.js</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

relay→load_async()

YRelay

Preloads the relay cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

relay→nextRelay()relay.nextRelay()******YRelay**

Continues the enumeration of relays started using `yFirstRelay()`.

js	<code>function nextRelay()</code>
nodejs	<code>function nextRelay()</code>
php	<code>function nextRelay()</code>
cpp	<code>YRelay * nextRelay()</code>
m	<code>-(YRelay*) nextRelay</code>
pas	<code>function nextRelay(): TYRelay</code>
vb	<code>function nextRelay() As YRelay</code>
cs	<code>YRelay nextRelay()</code>
java	<code>YRelay nextRelay()</code>
py	<code>def nextRelay()</code>

Returns :

a pointer to a `YRelay` object, corresponding to a relay currently online, or a `null` pointer if there are no more relays to enumerate.

relay→pulse()relay.pulse()****

YRelay

Sets the relay to output B (active) for a specified duration, then brings it automatically back to output A (idle state).

js	function pulse(ms_duration)
nodejs	function pulse(ms_duration)
php	function pulse(\$ms_duration)
cpp	int pulse(int ms_duration)
m	-(int) pulse : (int) ms_duration
pas	function pulse(ms_duration: LongInt): integer
vb	function pulse(ByVal ms_duration As Integer) As Integer
cs	int pulse(int ms_duration)
java	int pulse(int ms_duration)
py	def pulse(ms_duration)
cmd	YRelay target pulse ms_duration

Parameters :

ms_duration pulse duration, in millisecondes

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→registerValueCallback() relay.registerValueCallback()

YRelay

Registers the callback function that is invoked on every change of advertised value.

js	function registerValueCallback(callback)
node.js	function registerValueCallback(callback)
php	function registerValueCallback(\$callback)
cpp	int registerValueCallback(YRelayValueCallback callback)
m	-(int) registerValueCallback : (YRelayValueCallback) callback
pas	function registerValueCallback(callback : TYRelayValueCallback): LongInt
vb	function registerValueCallback() As Integer
cs	int registerValueCallback(ValueCallback callback)
java	int registerValueCallback(UpdateCallback callback)
py	def registerValueCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

relay→set_logicalName()YRelay

Changes the logical name of the relay.

```
js function set_logicalName( newval)
node.js function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YRelay target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the relay.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

relay→set_maxTimeOnStateA()
relay→setMaxTimeOnStateA()
relay.set_maxTimeOnStateA()

YRelay

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

js	function set_maxTimeOnStateA(newval)
node.js	function setMaxTimeOnStateA(newval)
php	function set_maxTimeOnStateA(\$newval)
cpp	int set_maxTimeOnStateA(s64 newval)
m	-(int) setMaxTimeOnStateA : (s64) newval
pas	function set_maxTimeOnStateA(newval: int64): integer
vb	function set_maxTimeOnStateA(ByVal newval As Long) As Integer
cs	int set_maxTimeOnStateA(long newval)
java	int set_maxTimeOnStateA(long newval)
py	def set_maxTimeOnStateA(newval)
cmd	YRelay target set_maxTimeOnStateA newval

Use zero for no maximum time.

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

`relay->set_maxTimeOnStateB()`
`relay->setMaxTimeOnStateB()`
`relay.set_maxTimeOnStateB()`

YRelay

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

<code>js</code>	<code>function set_maxTimeOnStateB(newval)</code>
<code>nodejs</code>	<code>function set_maxTimeOnStateB(newval)</code>
<code>php</code>	<code>function set_maxTimeOnStateB(\$newval)</code>
<code>cpp</code>	<code>int set_maxTimeOnStateB(s64 newval)</code>
<code>m</code>	<code>-(int) setMaxTimeOnStateB : (s64) newval</code>
<code>pas</code>	<code>function set_maxTimeOnStateB(newval: int64): integer</code>
<code>vb</code>	<code>function set_maxTimeOnStateB(ByVal newval As Long) As Integer</code>
<code>cs</code>	<code>int set_maxTimeOnStateB(long newval)</code>
<code>java</code>	<code>int set_maxTimeOnStateB(long newval)</code>
<code>py</code>	<code>def set_maxTimeOnStateB(newval)</code>
<code>cmd</code>	<code>YRelay target set_maxTimeOnStateB newval</code>

Use zero for no maximum time.

Parameters :

`newval` an integer

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay->set_output()**YRelay****relay->setOutput()relay.set_output()**

Changes the output state of the relays, when used as a simple switch (single throw).

<code>js</code>	<code>function set_output(newval)</code>
<code>nodejs</code>	<code>function set_output(newval)</code>
<code>php</code>	<code>function set_output(\$newval)</code>
<code>cpp</code>	<code>int set_output(Y_OUTPUT_enum newval)</code>
<code>m</code>	<code>-(int) setOutput : (Y_OUTPUT_enum) newval</code>
<code>pas</code>	<code>function set_output(newval: Integer): integer</code>
<code>vb</code>	<code>function set_output(ByVal newval As Integer) As Integer</code>
<code>cs</code>	<code>int set_output(int newval)</code>
<code>java</code>	<code>int set_output(int newval)</code>
<code>py</code>	<code>def set_output(newval)</code>
<code>cmd</code>	<code>YRelay target set_output newval</code>

Parameters :

newval either Y_OUTPUT_OFF or Y_OUTPUT_ON, according to the output state of the relays, when used as a simple switch (single throw)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→set_state()**YRelay****relay→setState()relay.set_state()**

Changes the state of the relays (A for the idle position, B for the active position).

js	function set_state(newval)
node.js	function set_state(newval)
php	function set_state(\$newval)
cpp	int set_state(Y_STATE_enum newval)
m	-(int) setState : (Y_STATE_enum) newval
pas	function set_state(newval: Integer): integer
vb	function set_state(ByVal newval As Integer) As Integer
cs	int set_state(int newval)
java	int set_state(int newval)
py	def set_state(newval)
cmd	YRelay target set_state newval

Parameters :

newval either Y_STATE_A or Y_STATE_B, according to the state of the relays (A for the idle position, B for the active position)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→set_stateAtPowerOn()
relay→setStateAtPowerOn()
relay.set_stateAtPowerOn()

YRelay

Preset the state of the relays at device startup (A for the idle position, B for the active position, UNCHANGED for no modification).

js	function set_stateAtPowerOn(newval)
nodejs	function set_stateAtPowerOn(newval)
php	function set_stateAtPowerOn(\$newval)
cpp	int set_stateAtPowerOn(Y_STATEATPOWERON_enum newval)
m	-(int) setStateAtPowerOn : (Y_STATEATPOWERON_enum) newval
pas	function set_stateAtPowerOn(newval: Integer): integer
vb	function set_stateAtPowerOn(ByVal newval As Integer) As Integer
cs	int set_stateAtPowerOn(int newval)
java	int set_stateAtPowerOn(int newval)
py	def set_stateAtPowerOn(newval)
cmd	YRelay target set_stateAtPowerOn newval

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval a value among `Y_STATEATPOWERON_UNCHANGED`, `Y_STATEATPOWERON_A` and `Y_STATEATPOWERON_B`

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

relay→set(userData)
relay→setUserData()relay.set(userData)

YRelay

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData)
cpp	void set(userData)
m	-(void) setUserData : (void*) data
pas	procedure set(userData) (data : Tobject)
vb	procedure set(userData) ByVal data As Object)
cs	void set(userData) (object data)
java	void set(userData) (Object data)
py	def set(userData) (data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

relay→wait_async()

YRelay

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context )
nodejs function wait_async( callback, context )
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.36. Sensor function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_api.js'></script>
nodejs var yoctolib = require('yoctolib');
var YAPI = yoctolib.YAPI;
var YModule = yoctolib.YModule;
php require_once('yocto_api.php');
cpp #include "yocto_api.h"
m #import "yocto_api.h"
pas uses yocto_api;
vb yocto_api.vb
cs yocto_api.cs
java import com.yoctopuce.YoctoAPI.YModule;
py from yocto_api import *

```

Global functions

yFindSensor(func)

Retrieves a sensor for a given identifier.

yFirstSensor()

Starts the enumeration of sensors currently accessible.

YSensor methods

sensor->calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

sensor->describe()

Returns a short text that describes unambiguously the instance of the sensor in the form TYPE(NAME)=SERIAL.FUNCTIONID.

sensor->get_advertisedValue()

Returns the current value of the sensor (no more than 6 characters).

sensor->get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

sensor->get_currentValue()

Returns the current value of the measure.

sensor->get_errorMessage()

Returns the error message of the latest error with the sensor.

sensor->get_errorType()

Returns the numerical error code of the latest error with the sensor.

sensor->get_friendlyName()

Returns a global identifier of the sensor in the format MODULE_NAME . FUNCTION_NAME.

sensor->get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

sensor->get_functionId()

Returns the hardware identifier of the sensor, without reference to the module.

sensor->get_hardwareId()

Returns the unique hardware identifier of the sensor in the form SERIAL.FUNCTIONID.

sensor→get_highestValue()

Returns the maximal value observed for the measure since the device was started.

sensor→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

sensor→get_logicalName()

Returns the logical name of the sensor.

sensor→get_lowestValue()

Returns the minimal value observed for the measure since the device was started.

sensor→get_module()

Gets the YModule object for the device on which the function is located.

sensor→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

sensor→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

sensor→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

sensor→get_resolution()

Returns the resolution of the measured values.

sensor→get_unit()

Returns the measuring unit for the measure.

sensor→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

sensor→isOnline()

Checks if the sensor is currently reachable, without raising any error.

sensor→isOnline_async(callback, context)

Checks if the sensor is currently reachable, without raising any error (asynchronous version).

sensor→load(msValidity)

Preloads the sensor cache with a specified validity duration.

sensor→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

sensor→load_async(msValidity, callback, context)

Preloads the sensor cache with a specified validity duration (asynchronous version).

sensor→nextSensor()

Continues the enumeration of sensors started using yFirstSensor().

sensor→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

sensor→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

sensor→set_highestValue(newval)

Changes the recorded maximal value observed.

sensor→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

sensor→set_logicalName(newval)

3. Reference

Changes the logical name of the sensor.

sensor→set_lowestValue(newval)

Changes the recorded minimal value observed.

sensor→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

sensor→set_resolution(newval)

Changes the resolution of the measured physical values.

sensor→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

sensor→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YSensor.FindSensor() yFindSensor()yFindSensor()

YSensor

Retrieves a sensor for a given identifier.

js	function yFindSensor(func)
nodejs	function FindSensor(func)
php	function yFindSensor(\$func)
cpp	YSensor* yFindSensor(string func)
m	+ (YSensor*) yFindSensor : (NSString*) func
pas	function yFindSensor(func: string): TYSensor
vb	function yFindSensor(ByVal func As String) As YSensor
cs	YSensor FindSensor(string func)
java	YSensor FindSensor(String func)
py	def FindSensor(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YSensor.isOnline()` to test if the sensor is indeed online at a given time. In case of ambiguity when looking for a sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the sensor

Returns :

a `YSensor` object allowing you to drive the sensor.

YSensor.FirstSensor() yFirstSensor()yFirstSensor()

YSensor

Starts the enumeration of sensors currently accessible.

js	function yFirstSensor()
node.js	function FirstSensor()
php	function yFirstSensor()
cpp	YSensor* yFirstSensor()
m	YSensor* yFirstSensor()
pas	function yFirstSensor() : TYSensor
vb	function yFirstSensor() As YSensor
cs	YSensor FirstSensor()
java	YSensor FirstSensor()
py	def FirstSensor()

Use the method `YSensor.nextSensor()` to iterate on next sensors.

Returns :

a pointer to a `YSensor` object, corresponding to the first sensor currently online, or a null pointer if there are none.

sensor→calibrateFromPoints() sensor.calibrateFromPoints()

YSensor

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php  function calibrateFromPoints( $rawValues, $refValues)
cpp   int calibrateFromPoints( vector<double> rawValues,
                             vector<double> refValues)

m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                  : (NSMutableArray*) refValues

pas  function calibrateFromPoints( rawValues: TDoubleArray,
                                 refValues: TDoubleArray): LongInt

vb   procedure calibrateFromPoints( )

cs   int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def calibrateFromPoints( rawValues, refValues)
cmd  YSensor target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.
refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→describe()sensor.describe()**YSensor**

Returns a short text that describes unambiguously the instance of the sensor in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	- (NSString*) describe
pas	function describe(): string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the sensor (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

sensor→get_advertisedValue()
sensor→advertisedValue()
sensor.get_advertisedValue()

YSensor

Returns the current value of the sensor (no more than 6 characters).

<code>js</code>	function get_advertisedValue()
<code>node.js</code>	function get_advertisedValue()
<code>php</code>	function get_advertisedValue()
<code>cpp</code>	string get_advertisedValue()
<code>m</code>	-(NSString*) advertisedValue
<code>pas</code>	function get_advertisedValue() : string
<code>vb</code>	function get_advertisedValue() As String
<code>cs</code>	string get_advertisedValue()
<code>java</code>	String get_advertisedValue()
<code>py</code>	def get_advertisedValue()
<code>cmd</code>	YSensor target get_advertisedValue

Returns :

a string corresponding to the current value of the sensor (no more than 6 characters). On failure, throws an exception or returns `Y_ADVERTISEDVALUE_INVALID`.

sensor→get_currentRawValue()
sensor→currentRawValue()
sensor.get_currentRawValue()

YSensor

Returns the uncalibrated, unrounded raw value returned by the sensor.

js function **get_currentRawValue()**
nodejs function **get_currentRawValue()**
php function **get_currentRawValue()**
cpp double **get_currentRawValue()**
m -(double) currentRawValue
pas function **get_currentRawValue(): double**
vb function **get_currentRawValue() As Double**
cs double **get_currentRawValue()**
java double **get_currentRawValue()**
py def **get_currentRawValue()**
cmd YSensor **target get_currentRawValue**

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns **Y_CURRENTRAWVALUE_INVALID**.

sensor→get_currentValue()
sensor→currentValue()sensor.get_currentValue()**YSensor**

Returns the current value of the measure.

js	function get_currentValue()
nodejs	function get_currentValue()
php	function get_currentValue()
cpp	double get_currentValue()
m	-(double) currentValue
pas	function get_currentValue(): double
vb	function get_currentValue() As Double
cs	double get_currentValue()
java	double get_currentValue()
py	def get_currentValue()
cmd	YSensor target get_currentValue

Returns :

a floating point number corresponding to the current value of the measure

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

sensor→get_errorMessage() YSensor
sensor→errorMessage()sensor.get_errorMessage()

Returns the error message of the latest error with the sensor.

```
js function get_errorMessage( )
node.js function get_errorMessage( )
php function get_errorMessage( )
cpp string get_errorMessage( )
m -(NSString*) errorMessage
pas function get_errorMessage( ): string
vb function get_errorMessage( ) As String
cs string get_errorMessage( )
java String get_errorMessage( )
py def get_errorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the sensor object

sensor→get_errorType()
sensor→errorType()sensor.get_errorType()**YSensor**

Returns the numerical error code of the latest error with the sensor.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the sensor object

sensor→get_friendlyName()
sensor→friendlyName()**YSensor**

Returns a global identifier of the sensor in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the sensor (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the sensor using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

sensor→get_functionDescriptor()
sensor→functionDescriptor()
sensor.get_functionDescriptor()

YSensor

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

sensor→get_functionId()
sensor→functionId()**YSensor**

Returns the hardware identifier of the sensor, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

sensor→get_hardwareId()
sensor→hardwareId()**YSensor**

Returns the unique hardware identifier of the sensor in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the sensor. (for example RELAY01-123456.relay1)

Returns :

a string that uniquely identifies the sensor (ex: RELAY01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

sensor→get_highestValue() **YSensor**
sensor→highestValue()**sensor.get_highestValue()**

Returns the maximal value observed for the measure since the device was started.

js	function get_highestValue()
node.js	function get_highestValue()
php	function get_highestValue()
cpp	double get_highestValue()
m	-(double) highestValue
pas	function get_highestValue(): double
vb	function get_highestValue() As Double
cs	double get_highestValue()
java	double get_highestValue()
py	def get_highestValue()
cmd	YSensor target get_highestValue

Returns :

a floating point number corresponding to the maximal value observed for the measure since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

sensor→get_logFrequency()**YSensor****sensor→logFrequency()sensor.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YSensor target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns **Y_LOGFREQUENCY_INVALID**.

sensor→get_logicalName()
sensor→logicalName()sensor.get_logicalName()

YSensor

Returns the logical name of the sensor.

```
js function get_logicalName( )
node.js function get_logicalName( )
php function get_logicalName( )
cpp string get_logicalName( )
m -(NSString*) logicalName
pas function get_logicalName( ): string
vb function get_logicalName( ) As String
cs string get_logicalName( )
java String get_logicalName( )
py def get_logicalName( )
cmd YSensor target get_logicalName
```

Returns :

a string corresponding to the logical name of the sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

sensor→get_lowestValue()**YSensor****sensor→lowestValue()sensor.get_lowestValue()**

Returns the minimal value observed for the measure since the device was started.

js	function get_lowestValue()
nodejs	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue(): double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YSensor target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the measure since the device was started

On failure, throws an exception or returns **Y_LOWESTVALUE_INVALID**.

sensor→get_module()
sensor→module()sensor.get_module()**YSensor**

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
node.js	function get_module()
php	function get_module()
cpp	<code>YModule * get_module()</code>
m	<code>-(YModule*) module</code>
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	<code>YModule get_module()</code>
java	<code>YModule get_module()</code>
py	<code>def get_module()</code>

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

sensor→get_module_async()
sensor→module_async()**YSensor**

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

sensor→get_recordedData()

YSensor

sensor→recordedData() sensor.get_recordedData()

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the `DataSet` class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without ending limit.

Returns :

an instance of `YDataSet`, providing access to historical data. Past measures can be loaded progressively using methods from the `YDataSet` object.

sensor→get_reportFrequency()
sensor→reportFrequency()
sensor.get_reportFrequency()

YSensor

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js   function get_reportFrequency( )
nodejs function get_reportFrequency( )
php  function get_reportFrequency( )
cpp   string get_reportFrequency( )
m    -(NSString*) reportFrequency
pas   function get_reportFrequency( ): string
vb    function get_reportFrequency( ) As String
cs    string get_reportFrequency( )
java  String get_reportFrequency( )
py    def get_reportFrequency( )
cmd   YSensor target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns `Y_REPORTFREQUENCY_INVALID`.

sensor→get_resolution() YSensor
sensor→resolution()sensor.get_resolution()

Returns the resolution of the measured values.

```
js function get_resolution( )
node.js function get_resolution( )
php function get_resolution( )
cpp double get_resolution( )
m -(double) resolution
pas function get_resolution( ): double
vb function get_resolution( ) As Double
cs double get_resolution( )
java double get_resolution( )
py def get_resolution( )
cmd YSensor target get_resolution
```

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

sensor→get_unit()
sensor→unit()sensor.get_unit()**YSensor**

Returns the measuring unit for the measure.

js	function get_unit()
nodejs	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YSensor target get_unit

Returns :

a string corresponding to the measuring unit for the measure

On failure, throws an exception or returns Y_UNIT_INVALID.

sensor→get(userData)
sensor→userData()sensor.get(userData())**YSensor**

Returns the value of the userData attribute, as previously stored using method set(userData).

js	function get(userData)
node.js	function get(userData)
php	function get(userData)
cpp	void * get(userData)
m	-(void*) userData
pas	function get(userData): Tobject
vb	function get(userData) As Object
cs	object get(userData)
java	Object get(userData)
py	def get(userData)

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

sensor→isOnline()sensor.isOnline()**YSensor**

Checks if the sensor is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the sensor.

Returns :

`true` if the sensor can be reached, and `false` otherwise

sensor→isOnline_async()

YSensor

Checks if the sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

sensor→load()|sensor.load()**YSensor**

Preloads the sensor cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

sensor→loadCalibrationPoints() sensor.loadCalibrationPoints()

YSensor

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php  function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt

vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def loadCalibrationPoints( rawValues, refValues)
cmd  YSensor target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→load_async()

YSensor

Preloads the sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

sensor→nextSensor()sensor.nextSensor()**YSensor**

Continues the enumeration of sensors started using `yFirstSensor()`.

js	function nextSensor()
nodejs	function nextSensor()
php	function nextSensor()
cpp	YSensor * nextSensor()
m	-(YSensor*) nextSensor
pas	function nextSensor() : TYSensor
vb	function nextSensor() As YSensor
cs	YSensor nextSensor()
java	YSensor nextSensor()
py	def nextSensor()

Returns :

a pointer to a `YSensor` object, corresponding to a sensor currently online, or a `null` pointer if there are no more sensors to enumerate.

sensor→registerTimedReportCallback() sensor.registerTimedReportCallback()

YSensor

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback(callback)
node.js	function registerTimedReportCallback(callback)
php	function registerTimedReportCallback(\$callback)
cpp	int registerTimedReportCallback(YSensorTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YSensorTimedReportCallback) callback
pas	function registerTimedReportCallback(callback : TYSensorTimedReportCallback): LongInt
vb	function registerTimedReportCallback() As Integer
cs	int registerTimedReportCallback(TimedReportCallback callback)
java	int registerTimedReportCallback(TimedReportCallback callback)
py	def registerTimedReportCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

**sensor→registerValueCallback()
sensor.registerValueCallback()****YSensor**

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YSensorValueCallback callback )
m    -(int) registerValueCallback : (YSensorValueCallback) callback
pas   function registerValueCallback( callback: TYSensorValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

sensor→set_highestValue()
sensor→setHighestValue()sensor.set_highestValue()**YSensor**

Changes the recorded maximal value observed.

js	function set_highestValue(newval)
nodejs	function set_highestValue(newval)
php	function set_highestValue(\$newval)
cpp	int set_highestValue(double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue(newval: double): integer
vb	function set_highestValue(ByVal newval As Double) As Integer
cs	int set_highestValue(double newval)
java	int set_highestValue(double newval)
py	def set_highestValue(newval)
cmd	YSensor target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→set_logFrequency()
sensor→setLogFrequency()
sensor.set_logFrequency()

YSensor

Changes the datalogger recording frequency for this function.

```
js  function set_logFrequency( newval)
nodejs function set_logFrequency( newval)
php  function set_logFrequency( $newval)
cpp  int set_logFrequency( const string& newval)
m    -(int) setLogFrequency : (NSString*) newval
pas   function set_logFrequency( newval: string): integer
vb    function set_logFrequency( ByVal newval As String) As Integer
cs    int set_logFrequency( string newval)
java  int set_logFrequency( String newval)
py    def set_logFrequency( newval)
cmd   YSensor target set_logFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→set_logicalName()	YSensor
sensor→setLogicalName()sensor.set_logicalName()	

Changes the logical name of the sensor.

<code>js</code>	function set_logicalName(newval)
<code>nodejs</code>	function set_logicalName(newval)
<code>php</code>	function set_logicalName(\$newval)
<code>cpp</code>	int set_logicalName(const string& newval)
<code>m</code>	-(int) setLogicalName : (NSString*) newval
<code>pas</code>	function set_logicalName(newval: string): integer
<code>vb</code>	function set_logicalName(ByVal newval As String) As Integer
<code>cs</code>	int set_logicalName(string newval)
<code>java</code>	int set_logicalName(String newval)
<code>py</code>	def set_logicalName(newval)
<code>cmd</code>	YSensor target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

`newval` a string corresponding to the logical name of the sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

sensor→set_lowestValue() **YSensor**
sensor→setLowestValue()sensor.set_lowestValue()

Changes the recorded minimal value observed.

```
js function set_lowestValue( newval)
node.js function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YSensor target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→set_reportFrequency()
sensor→setReportFrequency()
sensor.set_reportFrequency()

YSensor

Changes the timed value notification frequency for this function.

js	function set_reportFrequency(newval)
nodejs	function set_reportFrequency(newval)
php	function set_reportFrequency(\$newval)
cpp	int set_reportFrequency(const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency(newval: string): integer
vb	function set_reportFrequency(ByVal newval As String) As Integer
cs	int set_reportFrequency(string newval)
java	int set_reportFrequency(String newval)
py	def set_reportFrequency(newval)
cmd	YSensor target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→set_resolution() sensor→setResolution()sensor.set_resolution()

YSensor

Changes the resolution of the measured physical values.

```
js function set_resolution( newval)
node.js function set_resolution( newval)
php function set_resolution( $newval)
cpp int set_resolution( double newval)
m -(int) setResolution : (double) newval
pas function set_resolution( newval: double): integer
vb function set_resolution( ByVal newval As Double) As Integer
cs int set_resolution( double newval)
java int set_resolution( double newval)
py def set_resolution( newval)
cmd YSensor target set_resolution newval
```

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

sensor→set(userData)**YSensor****sensor→setUserData()sensor.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData) \$data
cpp	void set(userData) void* data
m	-(void) setUserData : (void*) data
pas	procedure set(userData) Tobject data
vb	procedure set(userData) ByVal data As Object
cs	void set(userData) object data
java	void set(userData) Object data
py	def set(userData) data

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

sensor→wait_async()

YSensor

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.37. Servo function interface

Yoctopuce application programming interface allows you not only to move a servo to a given position, but also to specify the time interval in which the move should be performed. This makes it possible to synchronize two servos involved in a same move.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_servo.js'></script>
node.js	var yoctolib = require('yoctolib');
	var YServo = yoctolib.YServo;
php	require_once('yocto_servo.php');
cpp	#include "yocto_servo.h"
m	#import "yocto_servo.h"
pas	uses yocto_servo;
vb	yocto_servo.vb
cs	yocto_servo.cs
java	import com.yoctopuce.YoctoAPI.YServo;
py	from yocto_servo import *

Global functions

yFindServo(func)

Retrieves a servo for a given identifier.

yFirstServo()

Starts the enumeration of servos currently accessible.

YServo methods

servo->describe()

Returns a short text that describes unambiguously the instance of the servo in the form TYPE (NAME)=SERIAL.FUNCTIONID.

servo->get_advertisedValue()

Returns the current value of the servo (no more than 6 characters).

servo->get_enabled()

Returns the state of the servos.

servo->get_enabledAtPowerOn()

Returns the servo signal generator state at power up.

servo->get_errorMessage()

Returns the error message of the latest error with the servo.

servo->get_errorType()

Returns the numerical error code of the latest error with the servo.

servo->get_friendlyName()

Returns a global identifier of the servo in the format MODULE_NAME . FUNCTION_NAME.

servo->get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

servo->get_functionId()

Returns the hardware identifier of the servo, without reference to the module.

servo->get_hardwareId()

Returns the unique hardware identifier of the servo in the form SERIAL . FUNCTIONID.

servo->get_logicalName()

Returns the logical name of the servo.

3. Reference

servo→get_module()

Gets the YModule object for the device on which the function is located.

servo→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

servo→get_neutral()

Returns the duration in microseconds of a neutral pulse for the servo.

servo→get_position()

Returns the current servo position.

servo→get_positionAtPowerOn()

Returns the servo position at device power up.

servo→get_range()

Returns the current range of use of the servo.

servo→get_userData()

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

servo→isOnline()

Checks if the servo is currently reachable, without raising any error.

servo→isOnline_async(callback, context)

Checks if the servo is currently reachable, without raising any error (asynchronous version).

servo→load(msValidity)

Preloads the servo cache with a specified validity duration.

servo→load_async(msValidity, callback, context)

Preloads the servo cache with a specified validity duration (asynchronous version).

servo→move(target, ms_duration)

Performs a smooth move at constant speed toward a given position.

servo→nextServo()

Continues the enumeration of servos started using `yFirstServo()`.

servo→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

servo→set_enabled(newval)

Stops or starts the servo.

servo→set_enabledAtPowerOn(newval)

Configure the servo signal generator state at power up.

servo→set_logicalName(newval)

Changes the logical name of the servo.

servo→set_neutral(newval)

Changes the duration of the pulse corresponding to the neutral position of the servo.

servo→set_position(newval)

Changes immediately the servo driving position.

servo→set_positionAtPowerOn(newval)

Configure the servo position at device power up.

servo→set_range(newval)

Changes the range of use of the servo, specified in per cents.

servo→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

servo→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YServo.FindServo() yFindServo()yFindServo()

YServo

Retrieves a servo for a given identifier.

```
js function yFindServo( func)
node.js function FindServo( func)
php function yFindServo( $func)
cpp YServo* yFindServo( const string& func)
m YServo* yFindServo( NSString* func)
pas function yFindServo( func: string): TYServo
vb function yFindServo( ByVal func As String) As YServo
cs YServo FindServo( string func)
java YServo FindServo( String func)
py def FindServo( func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the servo is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YServo.isOnline()` to test if the servo is indeed online at a given time. In case of ambiguity when looking for a servo by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the servo

Returns :

a `YServo` object allowing you to drive the servo.

YServo.FirstServo() yFirstServo()yFirstServo()

YServo

Starts the enumeration of servos currently accessible.

```
js function yFirstServo( )
nodejs function FirstServo( )
php function yFirstServo( )
cpp YServo* yFirstServo( )
m YServo* yFirstServo( )
pas function yFirstServo( ): TYServo
vb function yFirstServo( ) As YServo
cs YServo FirstServo( )
java YServo FirstServo( )
py def FirstServo( )
```

Use the method `YServo.nextServo()` to iterate on next servos.

Returns :

a pointer to a `YServo` object, corresponding to the first servo currently online, or a `null` pointer if there are none.

servo→describe()servo.describe()**YServo**

Returns a short text that describes unambiguously the instance of the servo in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	- (NSString*) describe
pas	function describe(): string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the servo (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

servo→get_advertisedValue()**YServo****servo→advertisedValue()servo.get_advertisedValue()**

Returns the current value of the servo (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YServo target get_advertisedValue

Returns :

a string corresponding to the current value of the servo (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

servo→get_enabled()
servo→enabled()servo.get_enabled()**YServo**

Returns the state of the servos.

```
js function get_enabled( )
node.js function get_enabled( )
php function get_enabled( )
cpp Y_ENABLED_enum get_enabled( )
m -(Y_ENABLED_enum) enabled
pas function get_enabled( ): Integer
vb function get_enabled( ) As Integer
cs int get_enabled( )
java int get_enabled( )
py def get_enabled( )
cmd YServo target get_enabled
```

Returns :

either Y_ENABLED_FALSE or Y_ENABLED_TRUE, according to the state of the servos

On failure, throws an exception or returns Y_ENABLED_INVALID.

servo→get_enabledAtPowerOn()
servo→enabledAtPowerOn()
servo.get_enabledAtPowerOn()

YServo

Returns the servo signal generator state at power up.

```
js   function get_enabledAtPowerOn( )  
node.js function get_enabledAtPowerOn( )  
php  function get_enabledAtPowerOn( )  
cpp   Y_ENABLEDATPOWERON_enum get_enabledAtPowerOn( )  
m    -(Y_ENABLEDATPOWERON_enum) enabledAtPowerOn  
pas   function get_enabledAtPowerOn( ): Integer  
vb    function get_enabledAtPowerOn( ) As Integer  
cs    int get_enabledAtPowerOn( )  
java  int get_enabledAtPowerOn( )  
py    def get_enabledAtPowerOn( )  
cmd   YServo target get_enabledAtPowerOn
```

Returns :

either Y_ENABLEDATPOWERON_FALSE or Y_ENABLEDATPOWERON_TRUE, according to the servo signal generator state at power up

On failure, throws an exception or returns Y_ENABLEDATPOWERON_INVALID.

servo→getErrorMessage()**servo→errorMessage()servo.getErrorMessage()****YServo**

Returns the error message of the latest error with the servo.

```
js function getErrorMessage( )
node.js function getErrorMessage( )
php function getErrorMessage( )
cpp string getErrorMessage( )
m -(NSString*) errorMessage
pas function getErrorMessage( ): string
vb function getErrorMessage( ) As String
cs string getErrorMessage( )
java String getErrorMessage( )
py def getErrorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the servo object

servo→get_errorType()**YServo****servo→errorType()servo.get_errorType()**

Returns the numerical error code of the latest error with the servo.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the servo object

servo→get_friendlyName()
servo→friendlyName()**YServo**

Returns a global identifier of the servo in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the servo if they are defined, otherwise the serial number of the module and the hardware identifier of the servo (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the servo using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

servo→get_functionDescriptor()
servo→functionDescriptor()
servo.get_functionDescriptor()

YServo

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**servo→get_functionId()
servo→functionId()****YServo**

Returns the hardware identifier of the servo, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the servo (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

servo→get_hardwareId()
servo→hardwareId()**YServo**

Returns the unique hardware identifier of the servo in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the servo. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the servo (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

servo→get_logicalName()**servo→logicalName()servo.get_logicalName()****YServo**

Returns the logical name of the servo.

js	function get_logicalName()
node.js	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	- (NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YServo target get_logicalName

Returns :

a string corresponding to the logical name of the servo. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

servo→get_module()**YServo****servo→module()servo.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

servo→get_module_async()
servo→module_async()**YServo**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

servo→get_neutral()
servo→neutral()servo.get_neutral()**YServo**

Returns the duration in microseconds of a neutral pulse for the servo.

js	function get_neutral()
nodejs	function get_neutral()
php	function get_neutral()
cpp	int get_neutral()
m	-(int) neutral
pas	function get_neutral() : LongInt
vb	function get_neutral() As Integer
cs	int get_neutral()
java	int get_neutral()
py	def get_neutral()
cmd	YServo target get_neutral

Returns :

an integer corresponding to the duration in microseconds of a neutral pulse for the servo

On failure, throws an exception or returns **Y_NEUTRAL_INVALID**.

**servo→get_position()
servo→position()servo.get_position()****YServo**

Returns the current servo position.

js	function get_position()
node.js	function get_position()
php	function get_position()
cpp	int get_position()
m	-(int) position
pas	function get_position(): LongInt
vb	function get_position() As Integer
cs	int get_position()
java	int get_position()
py	def get_position()
cmd	YServo target get_position

Returns :

an integer corresponding to the current servo position

On failure, throws an exception or returns Y_POSITION_INVALID.

servo→get_positionAtPowerOn()
servo→positionAtPowerOn()
servo.get_positionAtPowerOn()

YServo

Returns the servo position at device power up.

```
js   function get_positionAtPowerOn( )  
node.js function get_positionAtPowerOn( )  
php  function get_positionAtPowerOn( )  
cpp   int get_positionAtPowerOn( )  
m    -(int) positionAtPowerOn  
pas   function get_positionAtPowerOn( ): LongInt  
vb    function get_positionAtPowerOn( ) As Integer  
cs    int get_positionAtPowerOn( )  
java  int get_positionAtPowerOn( )  
py    def get_positionAtPowerOn( )  
cmd   YServo target get_positionAtPowerOn
```

Returns :

an integer corresponding to the servo position at device power up

On failure, throws an exception or returns Y_POSITIONATPOWERON_INVALID.

servo→get_range()**servo→range()servo.get_range()****YServo**

Returns the current range of use of the servo.

js	function get_range()
node.js	function get_range()
php	function get_range()
cpp	int get_range()
m	-(int) range
pas	function get_range() : LongInt
vb	function get_range() As Integer
cs	int get_range()
java	int get_range()
py	def get_range()
cmd	YServo target get_range

Returns :

an integer corresponding to the current range of use of the servo

On failure, throws an exception or returns Y_RANGE_INVALID.

servo→get(userData)
servo→userData()servo.get(userData)**YServo**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

servo→isOnline()servo.isOnline()**YServo**

Checks if the servo is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the servo in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the servo.

Returns :

true if the servo can be reached, and false otherwise

servo→isOnline_async()

YServo

Checks if the servo is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the servo in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

servo→load()servo.load()**YServo**

Preloads the servo cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

servo→load_async()

YServo

Preloads the servo cache with a specified validity duration (asynchronous version).

```
js   function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

servo→move()servo.move()

YServo

Performs a smooth move at constant speed toward a given position.

```
js function move( target, ms_duration)
nodejs function move( target, ms_duration)
php function move( $target, $ms_duration)
cpp int move( int target, int ms_duration)
m -(int) move : (int) target : (int) ms_duration
pas function move( target: LongInt, ms_duration: LongInt): integer
vb function move( ByVal target As Integer,
                  ByVal ms_duration As Integer) As Integer
cs int move( int target, int ms_duration)
java int move( int target, int ms_duration)
py def move( target, ms_duration)
cmd YServo target move target ms_duration
```

Parameters :

target new position at the end of the move

ms_duration total duration of the move, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→nextServo()servo.nextServo()**YServo**

Continues the enumeration of servos started using `yFirstServo()`.

js	function nextServo()
node.js	function nextServo()
php	function nextServo()
cpp	YServo * nextServo()
m	-(YServo*) nextServo
pas	function nextServo() : TYServo
vb	function nextServo() As YServo
cs	YServo nextServo()
java	YServo nextServo()
py	def nextServo()

Returns :

a pointer to a `YServo` object, corresponding to a servo currently online, or a `null` pointer if there are no more servos to enumerate.

**servo→registerValueCallback()
servo.registerValueCallback()****YServo**

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YServoValueCallback callback )
m    -(int) registerValueCallback : (YServoValueCallback) callback
pas   function registerValueCallback( callback: TYServoValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

servo→set_enabled()
servo→setEnabled()servo.set_enabled()**YServo**

Stops or starts the servo.

js	function set_enabled(newval)
nodejs	function set_enabled(newval)
php	function set_enabled(\$newval)
cpp	int set_enabled(Y_ENABLED_enum newval)
m	-(int) setEnabled : (Y_ENABLED_enum) newval
pas	function set_enabled(newval: Integer): integer
vb	function set_enabled(ByVal newval As Integer) As Integer
cs	int set_enabled(int newval)
java	int set_enabled(int newval)
py	def set_enabled(newval)
cmd	YServo target set_enabled newval

Parameters :

newval either Y_ENABLED_FALSE or Y_ENABLED_TRUE

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→set_enabledAtPowerOn()
servo→setEnabledAtPowerOn()
servo.set_enabledAtPowerOn()

YServo

Configure the servo signal generator state at power up.

```
js function set_enabledAtPowerOn( newval)
nodejs function set_enabledAtPowerOn( newval)
php function set_enabledAtPowerOn( $newval)
cpp int set_enabledAtPowerOn( Y_ENABLEDATPOWERON_enum newval)
m -(int) setEnabledAtPowerOn : (Y_ENABLEDATPOWERON_enum) newval
pas function set_enabledAtPowerOn( newval: Integer): integer
vb function set_enabledAtPowerOn( ByVal newval As Integer) As Integer
cs int set_enabledAtPowerOn( int newval)
java int set_enabledAtPowerOn( int newval)
py def set_enabledAtPowerOn( newval)
cmd YServo target set_enabledAtPowerOn newval
```

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval either `Y_ENABLEDATPOWERON_FALSE` or `Y_ENABLEDATPOWERON_TRUE`

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→set_logicalName()**YServo****servo→setLogicalName()servo.set_logicalName()**

Changes the logical name of the servo.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YServo target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the servo.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

**servo→set_neutral()
servo→setNeutral()servo.set_neutral()****YServo**

Changes the duration of the pulse corresponding to the neutral position of the servo.

js	function set_neutral(newval)
node.js	function set_neutral(newval)
php	function set_neutral(\$newval)
cpp	int set_neutral(int newval)
m	-(int) setNeutral : (int) newval
pas	function set_neutral(newval: LongInt): integer
vb	function set_neutral(ByVal newval As Integer) As Integer
cs	int set_neutral(int newval)
java	int set_neutral(int newval)
py	def set_neutral(newval)
cmd	YServo target set_neutral newval

The duration is specified in microseconds, and the standard value is 1500 [us]. This setting makes it possible to shift the range of use of the servo. Be aware that using a range higher than what is supported by the servo is likely to damage the servo.

Parameters :

newval an integer corresponding to the duration of the pulse corresponding to the neutral position of the servo

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→set_position()

YServo

servo→setPosition()servo.set_position()

Changes immediately the servo driving position.

js	function set_position(newval)
nodejs	function set_position(newval)
php	function set_position(\$newval)
cpp	int set_position(int newval)
m	-(int) setPosition : (int) newval
pas	function set_position(newval: LongInt): integer
vb	function set_position(ByVal newval As Integer) As Integer
cs	int set_position(int newval)
java	int set_position(int newval)
py	def set_position(newval)
cmd	YServo target set_position newval

Parameters :

newval an integer corresponding to immediately the servo driving position

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→set_positionAtPowerOn()
servo→setPositionAtPowerOn()
servo.set_positionAtPowerOn()

YServo

Configure the servo position at device power up.

```
js function set_positionAtPowerOn( newval)
nodejs function set_positionAtPowerOn( newval)
php function set_positionAtPowerOn( $newval)
cpp int set_positionAtPowerOn( int newval)
m -(int) setPositionAtPowerOn : (int) newval
pas function set_positionAtPowerOn( newval: LongInt): integer
vb function set_positionAtPowerOn( ByVal newval As Integer) As Integer
cs int set_positionAtPowerOn( int newval)
java int set_positionAtPowerOn( int newval)
py def set_positionAtPowerOn( newval)
cmd YServo target set_positionAtPowerOn newval
```

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval an integer

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→set_range()

servo→setRange()servo.set_range()

YServo

Changes the range of use of the servo, specified in per cents.

js	function set_range(newval)
nodejs	function set_range(newval)
php	function set_range(\$newval)
cpp	int set_range(int newval)
m	-(int) setRange : (int) newval
pas	function set_range(newval: LongInt): integer
vb	function set_range(ByVal newval As Integer) As Integer
cs	int set_range(int newval)
java	int set_range(int newval)
py	def set_range(newval)
cmd	YServo target set_range newval

A range of 100% corresponds to a standard control signal, that varies from 1 [ms] to 2 [ms]. When using a servo that supports a double range, from 0.5 [ms] to 2.5 [ms], you can select a range of 200%. Be aware that using a range higher than what is supported by the servo is likely to damage the servo.

Parameters :

newval an integer corresponding to the range of use of the servo, specified in per cents

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

servo→set(userData())
servo→setUserData()servo.set(userData())**YServo**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	-(void) setUserData : (void*) data
pas	procedure set(userData data: Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

servo→wait_async()**YServo**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.38. Temperature function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_temperature.js'></script>
nodejs var yoctolib = require('yoctolib');
var YTemperature = yoctolib.YTemperature;
php require_once('yocto_temperature.php');
cpp #include "yocto_temperature.h"
m #import "yocto_temperature.h"
pas uses yocto_temperature;
vb yocto_temperature.vb
cs yocto_temperature.cs
java import com.yoctopuce.YoctoAPI.YTemperature;
py from yocto_temperature import *

```

Global functions

yFindTemperature(func)

Retrieves a temperature sensor for a given identifier.

yFirstTemperature()

Starts the enumeration of temperature sensors currently accessible.

YTemperature methods

temperature→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

temperature→describe()

Returns a short text that describes unambiguously the instance of the temperature sensor in the form TYPE (NAME) = SERIAL . FUNCTIONID.

temperature→get_advertisedValue()

Returns the current value of the temperature sensor (no more than 6 characters).

temperature→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

temperature→get_currentValue()

Returns the current value of the temperature.

temperature→get_errorMessage()

Returns the error message of the latest error with the temperature sensor.

temperature→get_errorType()

Returns the numerical error code of the latest error with the temperature sensor.

temperature→get_friendlyName()

Returns a global identifier of the temperature sensor in the format MODULE_NAME . FUNCTION_NAME.

temperature→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

temperature→get_functionId()

Returns the hardware identifier of the temperature sensor, without reference to the module.

temperature→get_hardwareId()

Returns the unique hardware identifier of the temperature sensor in the form SERIAL . FUNCTIONID.

temperature→get_highestValue()

Returns the maximal value observed for the temperature since the device was started.

temperature→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

temperature→get_logicalName()

Returns the logical name of the temperature sensor.

temperature→get_lowestValue()

Returns the minimal value observed for the temperature since the device was started.

temperature→get_module()

Gets the YModule object for the device on which the function is located.

temperature→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

temperature→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

temperature→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

temperature→get_resolution()

Returns the resolution of the measured values.

temperature→get_sensorType()

Returns the temperature sensor type.

temperature→get_unit()

Returns the measuring unit for the temperature.

temperature→get(userData)

Returns the value of the userData attribute, as previously stored using method set(userData).

temperature→isOnline()

Checks if the temperature sensor is currently reachable, without raising any error.

temperature→isOnline_async(callback, context)

Checks if the temperature sensor is currently reachable, without raising any error (asynchronous version).

temperature→load(msValidity)

Preloads the temperature sensor cache with a specified validity duration.

temperature→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

temperature→load_async(msValidity, callback, context)

Preloads the temperature sensor cache with a specified validity duration (asynchronous version).

temperature→nextTemperature()

Continues the enumeration of temperature sensors started using yFirstTemperature().

temperature→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

temperature→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

temperature→set_highestValue(newval)

Changes the recorded maximal value observed.

temperature→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

3. Reference

temperature→set_logicalName(newval)

Changes the logical name of the temperature sensor.

temperature→set_lowestValue(newval)

Changes the recorded minimal value observed.

temperature→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

temperature→set_resolution(newval)

Changes the resolution of the measured physical values.

temperature→set_sensorType(newval)

Modify the temperature sensor type.

temperature→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

temperature→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YTemperature.FindTemperature() yFindTemperature()yFindTemperature()

YTemperature

Retrieves a temperature sensor for a given identifier.

<code>js</code>	<code>function yFindTemperature(func)</code>
<code>node.js</code>	<code>function FindTemperature(func)</code>
<code>php</code>	<code>function yFindTemperature(\$func)</code>
<code>cpp</code>	<code>YTemperature* yFindTemperature(const string& func)</code>
<code>m</code>	<code>YTemperature* yFindTemperature(NSString* func)</code>
<code>pas</code>	<code>function yFindTemperature(func: string): TYTemperature</code>
<code>vb</code>	<code>function yFindTemperature(ByVal func As String) As YTemperature</code>
<code>cs</code>	<code>YTemperature FindTemperature(string func)</code>
<code>java</code>	<code>YTemperature FindTemperature(String func)</code>
<code>py</code>	<code>def FindTemperature(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the temperature sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YTemperature.isOnline()` to test if the temperature sensor is indeed online at a given time. In case of ambiguity when looking for a temperature sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the temperature sensor

Returns :

a `YTemperature` object allowing you to drive the temperature sensor.

YTemperature.FirstTemperature() yFirstTemperature()yFirstTemperature()

YTemperature

Starts the enumeration of temperature sensors currently accessible.

js	function yFirstTemperature()
node.js	function FirstTemperature()
php	function yFirstTemperature()
cpp	YTemperature* yFirstTemperature()
m	YTemperature* yFirstTemperature()
pas	function yFirstTemperature(): TYTemperature
vb	function yFirstTemperature() As YTemperature
cs	YTemperature FirstTemperature()
java	YTemperature FirstTemperature()
py	def FirstTemperature()

Use the method `YTemperature.nextTemperature()` to iterate on next temperature sensors.

Returns :

a pointer to a `YTemperature` object, corresponding to the first temperature sensor currently online, or a null pointer if there are none.

temperature→calibrateFromPoints() temperature.calibrateFromPoints()

YTemperature

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
node.js function calibrateFromPoints( rawValues, refValues)
php  function calibrateFromPoints( $rawValues, $refValues)
cpp   int calibrateFromPoints( vector<double> rawValues,
                               vector<double> refValues)

m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function calibrateFromPoints( rawValues: TDoubleArray,
                                   refValues: TDoubleArray): LongInt

vb   procedure calibrateFromPoints( )
cs    int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def calibrateFromPoints( rawValues, refValues)
cmd  YTemperature target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.
refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→describe()temperature.describe()**YTemperature**

Returns a short text that describes unambiguously the instance of the temperature sensor in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	- (NSString*) describe
pas	function describe(): string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the temperature sensor (ex:
Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

temperature→get_advertisedValue()	YTemperature
temperature→advertisedValue()	
temperature.get_advertisedValue()	

Returns the current value of the temperature sensor (no more than 6 characters).

```
js    function get_advertisedValue( )  
node.js function get_advertisedValue( )  
php   function get_advertisedValue( )  
cpp   string get_advertisedValue( )  
m     -(NSString*) advertisedValue  
pas   function get_advertisedValue( ): string  
vb    function get_advertisedValue( ) As String  
cs    string get_advertisedValue( )  
java  String get_advertisedValue( )  
py    def get_advertisedValue( )  
cmd   YTemperature target get_advertisedValue
```

Returns :

a string corresponding to the current value of the temperature sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

temperature→get_currentRawValue()
temperature→currentRawValue()
temperature.get_currentRawValue()

YTemperature

Returns the uncalibrated, unrounded raw value returned by the sensor.

```
js function get_currentRawValue( )
nodejs function get_currentRawValue( )
php function get_currentRawValue( )
cpp double get_currentRawValue( )
m -(double) currentRawValue
pas function get_currentRawValue( ): double
vb function get_currentRawValue( ) As Double
cs double get_currentRawValue( )
java double get_currentRawValue( )
py def get_currentRawValue( )
cmd YTemperature target get_currentRawValue
```

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

temperature→get_currentValue()
temperature→currentValue()
temperature.get_currentValue()

YTemperature

Returns the current value of the temperature.

```
js function get_currentValue( )  
nodejs function get_currentValue( )  
php function get_currentValue( )  
cpp double get_currentValue( )  
m -(double) currentValue  
pas function get_currentValue( ): double  
vb function get_currentValue( ) As Double  
cs double get_currentValue( )  
java double get_currentValue( )  
py def get_currentValue( )  
cmd YTemperature target get_currentValue
```

Returns :

a floating point number corresponding to the current value of the temperature

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

temperature→getErrorMessage()
temperature→errorMessage()
temperature.getErrorMessage()

YTemperature

Returns the error message of the latest error with the temperature sensor.

```
js function getErrorMessage( )  
nodejs function getErrorMessage( )  
php function getErrorMessage( )  
cpp string getErrorMessage( )  
m -(NSString*) errorMessage  
pas function getErrorMessage( ): string  
vb function getErrorMessage( ) As String  
cs string getErrorMessage( )  
java String getErrorMessage( )  
py def getErrorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the temperature sensor object

**temperature→get_errorType()
temperature→errorType()
temperature.get_errorType()****YTemperature**

Returns the numerical error code of the latest error with the temperature sensor.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the temperature sensor object

temperature→get_friendlyName()
temperature→friendlyName()**YTemperature**

Returns a global identifier of the temperature sensor in the format MODULE_NAME.FUNCTION_NAME.

```
js function get_friendlyName( )  
nodejs function get_friendlyName( )  
php function get_friendlyName( )  
cpp string get_friendlyName( )  
m -(NSString*) friendlyName  
cs string get_friendlyName( )  
java String get_friendlyName( )  
py def get_friendlyName( )
```

The returned string uses the logical names of the module and of the temperature sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the temperature sensor (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the temperature sensor using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

temperature→get_functionDescriptor()
temperature→functionDescriptor()
temperature.get_functionDescriptor()

YTemperature

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

temperature→get_functionId()
temperature→functionId()**YTemperature**

Returns the hardware identifier of the temperature sensor, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the temperature sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

temperature→get_hardwareId()
temperature→hardwareId()**YTemperature**

Returns the unique hardware identifier of the temperature sensor in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the temperature sensor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the temperature sensor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

temperature→get_highestValue()
temperature→highestValue()
temperature.get_highestValue()

YTemperature

Returns the maximal value observed for the temperature since the device was started.

```
js function get_highestValue( )  
nodejs function get_highestValue( )  
php function get_highestValue( )  
cpp double get_highestValue( )  
m -(double) highestValue  
pas function get_highestValue( ): double  
vb function get_highestValue( ) As Double  
cs double get_highestValue( )  
java double get_highestValue( )  
py def get_highestValue( )  
cmd YTemperature target get_highestValue
```

Returns :

a floating point number corresponding to the maximal value observed for the temperature since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

temperature→get_logFrequency()
temperature→logFrequency()
temperature.get_logFrequency()

YTemperature

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

```
js   function get_logFrequency( )  
nodejs function get_logFrequency( )  
php  function get_logFrequency( )  
cpp   string get_logFrequency( )  
m    -(NSString*) logFrequency  
pas   function get_logFrequency( ): string  
vb    function get_logFrequency( ) As String  
cs   string get_logFrequency( )  
java  String get_logFrequency( )  
py    def get_logFrequency()  
cmd   YTemperature target get_logFrequency
```

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns `Y_LOGFREQUENCY_INVALID`.

temperature→get_logicalName()
temperature→logicalName()
temperature.get_logicalName()

YTemperature

Returns the logical name of the temperature sensor.

js	function get_logicalName()
nodejs	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YTemperature target get_logicalName

Returns :

a string corresponding to the logical name of the temperature sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

temperature→get_lowestValue()
temperature→lowestValue()
temperature.get_lowestValue()

YTemperature

Returns the minimal value observed for the temperature since the device was started.

js	function get_lowestValue()
node.js	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue(): double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YTemperature target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the temperature since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

temperature→get_module() **YTemperature**
temperature→module()temperature.get_module()

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
node.js	function get_module()
php	function get_module()
cpp	<code>YModule * get_module()</code>
m	<code>-(YModule*) module</code>
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	<code>YModule get_module()</code>
java	<code>YModule get_module()</code>
py	<code>def get_module()</code>

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

temperature→get_module_async()
temperature→module_async()**YTemperature**

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

temperature → `get_recordedData()`
temperature → `recordedData()`
temperature.`get_recordedData()`

YTemperature

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the `DataSet` class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without ending limit.

Returns :

an instance of `YDataSet`, providing access to historical data. Past measures can be loaded progressively using methods from the `YDataSet` object.

temperature→get_reportFrequency()
temperature→reportFrequency()
temperature.get_reportFrequency()

YTemperature

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js   function get_reportFrequency( )  
nodejs function get_reportFrequency( )  
php  function get_reportFrequency( )  
cpp   string get_reportFrequency( )  
m    -(NSString*) reportFrequency  
pas   function get_reportFrequency( ): string  
vb    function get_reportFrequency( ) As String  
cs    string get_reportFrequency( )  
java  String get_reportFrequency( )  
py    def get_reportFrequency( )  
cmd   YTemperature target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns `Y_REPORTFREQUENCY_INVALID`.

temperature→get_resolution()
temperature→resolution()
temperature.get_resolution()

YTemperature

Returns the resolution of the measured values.

```
js function get_resolution( )
nodejs function get_resolution( )
php function get_resolution( )
cpp double get_resolution( )
m -(double) resolution
pas function get_resolution( ): double
vb function get_resolution( ) As Double
cs double get_resolution( )
java double get_resolution( )
py def get_resolution( )
cmd YTemperature target get_resolution
```

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

temperature→get_sensorType()
temperature→sensorType()
temperature.get_sensorType()

YTemperature

Returns the temperature sensor type.

```
js   function get_sensorType( )  
nodejs function get_sensorType( )  
php  function get_sensorType( )  
cpp  Y_SENSORTYPE_enum get_sensorType( )  
m    -(Y_SENSORTYPE_enum) sensorType  
pas   function get_sensorType( ): Integer  
vb    function get_sensorType( ) As Integer  
cs    int get_sensorType( )  
java  int get_sensorType( )  
py    def get_sensorType( )  
cmd   YTemperature target get_sensorType
```

Returns :

a value among Y_SENSORTYPE_DIGITAL, Y_SENSORTYPE_TYPE_K,
Y_SENSORTYPE_TYPE_E, Y_SENSORTYPE_TYPE_J, Y_SENSORTYPE_TYPE_N,
Y_SENSORTYPE_TYPE_R, Y_SENSORTYPE_TYPE_S, Y_SENSORTYPE_TYPE_T,
Y_SENSORTYPE_PT100_4WIRES, Y_SENSORTYPE_PT100_3WIRES and
Y_SENSORTYPE_PT100_2WIRES corresponding to the temperature sensor type

On failure, throws an exception or returns Y_SENSORTYPE_INVALID.

temperature→get_unit()
temperature→unit()temperature.get_unit()**YTemperature**

Returns the measuring unit for the temperature.

js	function get_unit()
node.js	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YTemperature target get_unit

Returns :

a string corresponding to the measuring unit for the temperature

On failure, throws an exception or returns Y_UNIT_INVALID.

temperature→get(userData)**YTemperature****temperature→userData()temperature.get(userData)**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

temperature→isOnline()temperature.isOnline()**YTemperature**

Checks if the temperature sensor is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the temperature sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the temperature sensor.

Returns :

true if the temperature sensor can be reached, and false otherwise

temperature→isOnline_async()**YTemperature**

Checks if the temperature sensor is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the temperature sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

temperature→load()temperature.load()**YTemperature**

Preloads the temperature sensor cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

temperature→loadCalibrationPoints() temperature.loadCalibrationPoints()

YTemperature

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
node.js function loadCalibrationPoints( rawValues, refValues)
php  function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt

vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def loadCalibrationPoints( rawValues, refValues)
cmd  YTemperature target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→load_async()**YTemperature**

Preloads the temperature sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

temperature→nextTemperature()
temperature.nextTemperature()**YTemperature**Continues the enumeration of temperature sensors started using `yFirstTemperature()`.

<code>js</code>	<code>function nextTemperature()</code>
<code>nodejs</code>	<code>function nextTemperature()</code>
<code>php</code>	<code>function nextTemperature()</code>
<code>cpp</code>	<code>YTemperature * nextTemperature()</code>
<code>m</code>	<code>-(YTemperature*) nextTemperature</code>
<code>pas</code>	<code>function nextTemperature(): TYTemperature</code>
<code>vb</code>	<code>function nextTemperature() As YTemperature</code>
<code>cs</code>	<code>YTemperature nextTemperature()</code>
<code>java</code>	<code>YTemperature nextTemperature()</code>
<code>py</code>	<code>def nextTemperature()</code>

Returns :

a pointer to a `YTemperature` object, corresponding to a temperature sensor currently online, or a null pointer if there are no more temperature sensors to enumerate.

**temperature→registerTimedReportCallback()
temperature.registerTimedReportCallback()****YTemperature**

Registers the callback function that is invoked on every periodic timed notification.

```
js   function registerTimedReportCallback( callback )
node.js function registerTimedReportCallback( callback )
php  function registerTimedReportCallback( $callback )
cpp   int registerTimedReportCallback( YTemperatureTimedReportCallback callback )
m     -(int) registerTimedReportCallback : (YTemperatureTimedReportCallback) callback
pas   function registerTimedReportCallback( callback: TYTemperatureTimedReportCallback): LongInt
vb    function registerTimedReportCallback( ) As Integer
cs    int registerTimedReportCallback( TimedReportCallback callback )
java  int registerTimedReportCallback( TimedReportCallback callback )
py    def registerTimedReportCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

temperature→registerValueCallback() temperature.registerValueCallback()

YTemperature

Registers the callback function that is invoked on every change of advertised value.

<code>js</code>	<code>function registerValueCallback(callback)</code>
<code>node.js</code>	<code>function registerValueCallback(callback)</code>
<code>php</code>	<code>function registerValueCallback(\$callback)</code>
<code>cpp</code>	<code>int registerValueCallback(YTemperatureValueCallback callback)</code>
<code>m</code>	<code>-(int) registerValueCallback : (YTemperatureValueCallback) callback</code>
<code>pas</code>	<code>function registerValueCallback(callback: TYTemperatureValueCallback): LongInt</code>
<code>vb</code>	<code>function registerValueCallback() As Integer</code>
<code>cs</code>	<code>int registerValueCallback(ValueCallback callback)</code>
<code>java</code>	<code>int registerValueCallback(UpdateCallback callback)</code>
<code>py</code>	<code>def registerValueCallback(callback)</code>

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

temperature→set_highestValue()
temperature→setHighestValue()
temperature.set_highestValue()

YTemperature

Changes the recorded maximal value observed.

```
js function set_highestValue( newval)
nodejs function set_highestValue( newval)
php function set_highestValue( $newval)
cpp int set_highestValue( double newval)
m -(int) setHighestValue : (double) newval
pas function set_highestValue( newval: double): integer
vb function set_highestValue( ByVal newval As Double) As Integer
cs int set_highestValue( double newval)
java int set_highestValue( double newval)
py def set_highestValue( newval)
cmd YTemperature target set_highestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→set_logFrequency()
temperature→setLogFrequency()
temperature.set_logFrequency()

YTemperature

Changes the datalogger recording frequency for this function.

js	function set_logFrequency(newval)
node.js	function set_logFrequency(newval)
php	function set_logFrequency(\$newval)
cpp	int set_logFrequency(const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency(newval: string): integer
vb	function set_logFrequency(ByVal newval As String) As Integer
cs	int set_logFrequency(string newval)
java	int set_logFrequency(String newval)
py	def set_logFrequency(newval)
cmd	YTemperature target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→set_logicalName()
temperature→setLogicalName()
temperature.set_logicalName()

YTemperature

Changes the logical name of the temperature sensor.

```
js function set_logicalName( newval)
nodejs function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YTemperature target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the temperature sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

temperature→set_lowestValue()
temperature→setLowestValue()
temperature.set_lowestValue()

YTemperature

Changes the recorded minimal value observed.

```
js function set_lowestValue( newval)
nodejs function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YTemperature target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→set_reportFrequency()
temperature→setReportFrequency()
temperature.set_reportFrequency()

YTemperature

Changes the timed value notification frequency for this function.

```
js   function set_reportFrequency( newval)
nodejs function set_reportFrequency( newval)
php  function set_reportFrequency( $newval)
cpp   int set_reportFrequency( const string& newval)
m    -(int) setReportFrequency : (NSString*) newval
pas   function set_reportFrequency( newval: string): integer
vb    function set_reportFrequency( ByVal newval As String) As Integer
cs    int set_reportFrequency( string newval)
java  int set_reportFrequency( String newval)
py    def set_reportFrequency( newval)
cmd   YTemperature target set_reportFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→set_resolution()
temperature→setResolution()
temperature.set_resolution()

YTemperature

Changes the resolution of the measured physical values.

js	function set_resolution(newval)
node.js	function set_resolution(newval)
php	function set_resolution(\$newval)
cpp	int set_resolution(double newval)
m	-(int) setResolution : (double) newval
pas	function set_resolution(newval: double): integer
vb	function set_resolution(ByVal newval As Double) As Integer
cs	int set_resolution(double newval)
java	int set_resolution(double newval)
py	def set_resolution(newval)
cmd	YTemperature target set_resolution newval

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→set_sensorType()
temperature→setSensorType()
temperature.set_sensorType()

YTemperature

Modify the temperature sensor type.

```

js function set_sensorType( newval)
nodejs function set_sensorType( newval)
php function set_sensorType( $newval)
cpp int set_sensorType( Y_SENSORTYPE_enum newval)
m -(int) setSensorType : (Y_SENSORTYPE_enum) newval
pas function set_sensorType( newval: Integer): integer
vb function set_sensorType( ByVal newval As Integer) As Integer
cs int set_sensorType( int newval)
java int set_sensorType( int newval)
py def set_sensorType( newval)
cmd YTemperature target set_sensorType newval

```

This function is used to define the type of thermocouple (K,E...) used with the device. This will have no effect if module is using a digital sensor. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a value among `Y_SENSORTYPE_DIGITAL`, `Y_SENSORTYPE_TYPE_K`,
`Y_SENSORTYPE_TYPE_E`, `Y_SENSORTYPE_TYPE_J`, `Y_SENSORTYPE_TYPE_N`,
`Y_SENSORTYPE_TYPE_R`, `Y_SENSORTYPE_TYPE_S`, `Y_SENSORTYPE_TYPE_T`,
`Y_SENSORTYPE_PT100_4WIRES`, `Y_SENSORTYPE_PT100_3WIRES` and
`Y_SENSORTYPE_PT100_2WIRES`

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

temperature→set(userData)
temperature→setUserData()
temperature.set(userData)

YTemperature

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	-(void) setUserData : (void*) data
pas	procedure set(userData data: Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

temperature→wait_async()**YTemperature**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.39. Tilt function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_tilt.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YTilt = yoctolib.YTilt;
php	require_once('yocto_tilt.php');
cpp	#include "yocto_tilt.h"
m	#import "yocto_tilt.h"
pas	uses yocto_tilt;
vb	yocto_tilt.vb
cs	yocto_tilt.cs
java	import com.yoctopuce.YoctoAPI.YTilt;
py	from yocto_tilt import *

Global functions

yFindTilt(func)

Retrieves a tilt sensor for a given identifier.

yFirstTilt()

Starts the enumeration of tilt sensors currently accessible.

YTilt methods

tilt→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

tilt→describe()

Returns a short text that describes unambiguously the instance of the tilt sensor in the form TYPE (NAME)=SERIAL . FUNCTIONID.

tilt→get_advertisedValue()

Returns the current value of the tilt sensor (no more than 6 characters).

tilt→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

tilt→get_currentValue()

Returns the current value of the inclination.

tilt→get_errorMessage()

Returns the error message of the latest error with the tilt sensor.

tilt→get_errorType()

Returns the numerical error code of the latest error with the tilt sensor.

tilt→get_friendlyName()

Returns a global identifier of the tilt sensor in the format MODULE_NAME . FUNCTION_NAME.

tilt→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

tilt→get_functionId()

Returns the hardware identifier of the tilt sensor, without reference to the module.

tilt→get_hardwareId()

Returns the unique hardware identifier of the tilt sensor in the form SERIAL . FUNCTIONID.

tilt→get_highestValue()	Returns the maximal value observed for the inclination since the device was started.
tilt→get_logFrequency()	Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.
tilt→get_logicalName()	Returns the logical name of the tilt sensor.
tilt→get_lowestValue()	Returns the minimal value observed for the inclination since the device was started.
tilt→get_module()	Gets the YModule object for the device on which the function is located.
tilt→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located (asynchronous version).
tilt→get_recordedData(startTime, endTime)	Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.
tilt→get_reportFrequency()	Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.
tilt→get_resolution()	Returns the resolution of the measured values.
tilt→get_unit()	Returns the measuring unit for the inclination.
tilt→get(userData)	Returns the value of the userData attribute, as previously stored using method set(userData).
tilt→isOnline()	Checks if the tilt sensor is currently reachable, without raising any error.
tilt→isOnline_async(callback, context)	Checks if the tilt sensor is currently reachable, without raising any error (asynchronous version).
tilt→load(msValidity)	Preloads the tilt sensor cache with a specified validity duration.
tilt→loadCalibrationPoints(rawValues, refValues)	Retrieves error correction data points previously entered using the method calibrateFromPoints.
tilt→load_async(msValidity, callback, context)	Preloads the tilt sensor cache with a specified validity duration (asynchronous version).
tilt→nextTilt()	Continues the enumeration of tilt sensors started using yFirstTilt().
tilt→registerTimedReportCallback(callback)	Registers the callback function that is invoked on every periodic timed notification.
tilt→registerValueCallback(callback)	Registers the callback function that is invoked on every change of advertised value.
tilt→set_highestValue(newval)	Changes the recorded maximal value observed.
tilt→set_logFrequency(newval)	Changes the datalogger recording frequency for this function.
tilt→set_logicalName(newval)	Changes the logical name of the tilt sensor.

tilt→set_lowestValue(newval)

Changes the recorded minimal value observed.

tilt→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

tilt→set_resolution(newval)

Changes the resolution of the measured physical values.

tilt→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

tilt→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YTilt.FindTilt() yFindTilt()yFindTilt()

YTilt

Retrieves a tilt sensor for a given identifier.

```
js function yFindTilt( func)
node.js function FindTilt( func)
php function yFindTilt( $func)
cpp YTilt* yFindTilt( const string& func)
m YTilt* yFindTilt( NSString* func)
pas function yFindTilt( func: string): TYTilt
vb function yFindTilt( ByVal func As String) As YTilt
cs YTilt FindTilt( string func)
java YTilt FindTilt( String func)
def FindTilt( func)
```

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the tilt sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YTilt.isOnline()` to test if the tilt sensor is indeed online at a given time. In case of ambiguity when looking for a tilt sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the tilt sensor

Returns :

a `YTilt` object allowing you to drive the tilt sensor.

YTilt.FirstTilt()

yFirstTilt()yFirstTilt()

YTilt

Starts the enumeration of tilt sensors currently accessible.

```
js function yFirstTilt( )  
nodejs function FirstTilt( )  
php function yFirstTilt( )  
cpp YTilt* yFirstTilt( )  
m YTilt* yFirstTilt( )  
pas function yFirstTilt( ): TYTilt  
vb function yFirstTilt( ) As YTilt  
cs YTilt FirstTilt( )  
java YTilt FirstTilt( )  
py def FirstTilt( )
```

Use the method `YTilt.nextTilt()` to iterate on next tilt sensors.

Returns :

a pointer to a `YTilt` object, corresponding to the first tilt sensor currently online, or a `null` pointer if there are none.

tilt→calibrateFromPoints()tilt.calibrateFromPoints()

YTilt

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php  function calibrateFromPoints( $rawValues, $refValues)
cpp   int calibrateFromPoints( vector<double> rawValues,
                           vector<double> refValues)

m   -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function calibrateFromPoints( rawValues: TDoubleArray,
                           refValues: TDoubleArray): LongInt

vb   procedure calibrateFromPoints( )

cs   int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def calibrateFromPoints( rawValues, refValues)
cmd  YTilt target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→describe()tilt.describe()**YTilt**

Returns a short text that describes unambiguously the instance of the tilt sensor in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the tilt sensor (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

tilt→get_advertisedValue() YTilt
tilt→advertisedValue()tilt.get_advertisedValue()

Returns the current value of the tilt sensor (no more than 6 characters).

```
js function get_advertisedValue( )  
node.js function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YTilt target get_advertisedValue
```

Returns :

a string corresponding to the current value of the tilt sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

tilt→get_currentRawValue()

YTilt

tilt→currentRawValue()tilt.get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

```
js function get_currentRawValue( )
nodejs function get_currentRawValue( )
php function get_currentRawValue( )
cpp double get_currentRawValue( )
m -(double) currentRawValue
pas function get_currentRawValue( ): double
vb function get_currentRawValue( ) As Double
cs double get_currentRawValue( )
java double get_currentRawValue( )
py def get_currentRawValue( )
cmd YTilt target get_currentRawValue
```

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

tilt→get_currentValue()
tilt→currentValue()tilt.get_currentValue()

YTilt

Returns the current value of the inclination.

```
js function get_currentValue( )
node.js function get_currentValue( )
php function get_currentValue( )
cpp double get_currentValue( )
m -(double) currentValue
pas function get_currentValue( ): double
vb function get_currentValue( ) As Double
cs double get_currentValue( )
java double get_currentValue( )
py def get_currentValue( )
cmd YTilt target get_currentValue
```

Returns :

a floating point number corresponding to the current value of the inclination

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

tilt→get_errorMessage()

YTilt

tilt→errorMessage()tilt.get_errorMessage()

Returns the error message of the latest error with the tilt sensor.

```
js   function get_errorMessage( )  
nodejs function get_errorMessage( )  
php  function get_errorMessage( )  
cpp   string get_errorMessage( )  
m    -(NSString*) errorMessage  
pas   function get_errorMessage( ): string  
vb    function get_errorMessage( ) As String  
cs    string get_errorMessage( )  
java  String get_errorMessage( )  
py    def get_errorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the tilt sensor object

tilt→get_errorType() tilt→errorType()tilt.get_errorType()

YTilt

Returns the numerical error code of the latest error with the tilt sensor.

```
js function get_errorType( )  
node.js function get_errorType( )  
php function get_errorType( )  
cpp YRETCODE get_errorType( )  
pas function get_errorType( ): YRETCODE  
vb function get_errorType( ) As YRETCODE  
cs YRETCODE get_errorType( )  
java int get_errorType( )  
py def get_errorType( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the tilt sensor object

tilt→get_friendlyName()**YTilt****tilt→friendlyName()**

Returns a global identifier of the tilt sensor in the format MODULE_NAME . FUNCTION_NAME.

```
js function get_friendlyName( )  
nodejs function get_friendlyName( )  
php function get_friendlyName( )  
cpp string get_friendlyName( )  
m -(NSString*) friendlyName  
cs string get_friendlyName( )  
java String get_friendlyName( )  
py def get_friendlyName( )
```

The returned string uses the logical names of the module and of the tilt sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the tilt sensor (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the tilt sensor using logical names (ex: MyCustomName . relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

tilt→get_functionDescriptor() tilt→functionDescriptor()tilt.get_functionDescriptor()

YTilt

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

```
js   function get_functionDescriptor( )
node.js function get_functionDescriptor( )
php  function get_functionDescriptor( )
cpp   YFUN_DESCR get_functionDescriptor( )
m    -(YFUN_DESCR) functionDescriptor
pas   function get_functionDescriptor( ): YFUN_DESCR
vb    function get_functionDescriptor( ) As YFUN_DESCR
cs    YFUN_DESCR get_functionDescriptor( )
java  String get_functionDescriptor( )
py    def get_functionDescriptor( )
```

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

tilt→get_functionId() tilt→functionId()

YTilt

Returns the hardware identifier of the tilt sensor, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the tilt sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

tilt→get_hardwareId()
tilt→hardwareId()**YTilt**

Returns the unique hardware identifier of the tilt sensor in the form SERIAL.FUNCTIONID.

```
js function get_hardwareId( )  
node.js function get_hardwareId( )  
php function get_hardwareId( )  
cpp string get_hardwareId( )  
m -(NSString*) hardwareId  
vb function get_hardwareId( ) As String  
cs string get_hardwareId( )  
java String get_hardwareId( )  
py def get_hardwareId( )
```

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the tilt sensor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the tilt sensor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

tilt→get_highestValue()

YTilt

tilt→highestValue()tilt.get_highestValue()

Returns the maximal value observed for the inclination since the device was started.

```
js   function get_highestValue( )  
nodejs function get_highestValue( )  
php  function get_highestValue( )  
cpp   double get_highestValue( )  
m    -(double) highestValue  
pas   function get_highestValue( ): double  
vb    function get_highestValue( ) As Double  
cs    double get_highestValue( )  
java  double get_highestValue( )  
py    def get_highestValue( )  
cmd   YTilt target get_highestValue
```

Returns :

a floating point number corresponding to the maximal value observed for the inclination since the device was started

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

tilt→get_logFrequency() YTilt
tilt→logFrequency()tilt.get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

```
js  function get_logFrequency( )  
nodejs function get_logFrequency( )  
php  function get_logFrequency( )  
cpp   string get_logFrequency( )  
m    -(NSString*) logFrequency  
pas   function get_logFrequency( ):string  
vb    function get_logFrequency( ) As String  
cs    string get_logFrequency( )  
java  String get_logFrequency( )  
py    def get_logFrequency( )  
cmd  YTilt target get_logFrequency
```

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

tilt→get_logicalName() tilt→logicalName()tilt.get_logicalName()

YTilt

Returns the logical name of the tilt sensor.

```
js function get_logicalName( )
nodejs function get_logicalName( )
php function get_logicalName( )
cpp string get_logicalName( )
m -(NSString*) logicalName
pas function get_logicalName( ): string
vb function get_logicalName( ) As String
cs string get_logicalName( )
java String get_logicalName( )
py def get_logicalName( )
cmd YTilt target get_logicalName
```

Returns :

a string corresponding to the logical name of the tilt sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

tilt→get_lowestValue() tilt→lowestValue()tilt.get_lowestValue()

YTilt

Returns the minimal value observed for the inclination since the device was started.

```
js function get_lowestValue( )  
node.js function get_lowestValue( )  
php function get_lowestValue( )  
cpp double get_lowestValue( )  
m -(double) lowestValue  
pas function get_lowestValue( ): double  
vb function get_lowestValue( ) As Double  
cs double get_lowestValue( )  
java double get_lowestValue( )  
py def get_lowestValue( )  
cmd YTilt target get_lowestValue
```

Returns :

a floating point number corresponding to the minimal value observed for the inclination since the device was started

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

tilt→get_module()

YTilt

tilt→module()tilt.get_module()

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

tilt→get_module_async() tilt→module_async()

YTilt

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

tilt→get_recordedData()

YTilt

tilt→recordedData(tilt.get_recordedData())

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

```

js   function get_recordedData( startTime, endTime)
nodejs function get_recordedData( startTime, endTime)
php  function get_recordedData( $startTime, $endTime)
cpp   YDataSet get_recordedData( s64 startTime, s64 endTime)
m     -(YDataSet*) recordedData : (s64) startTime
          : (s64) endTime

pas  function get_recordedData( startTime: int64, endTime: int64): TYDataSet
vb   function get_recordedData( ) As YDataSet
cs   YDataSet get_recordedData( long startTime, long endTime)
java  YDataSet get_recordedData( long startTime, long endTime)
py    def get_recordedData( startTime, endTime)
cmd   YTilt target get_recordedData startTime endTime

```

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

tilt→get_reportFrequency() tilt→reportFrequency()tilt.get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

```
js  function get_reportFrequency( )  
nodejs function get_reportFrequency( )  
php  function get_reportFrequency( )  
cpp   string get_reportFrequency( )  
m    -(NSString*) reportFrequency  
pas   function get_reportFrequency( ): string  
vb    function get_reportFrequency( ) As String  
cs    string get_reportFrequency( )  
java  String get_reportFrequency( )  
py    def get_reportFrequency( )  
cmd   YTilt target get_reportFrequency
```

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

tilt→get_resolution()

YTilt

tilt→resolution()tilt.get_resolution()

Returns the resolution of the measured values.

```
js function get_resolution( )
nodejs function get_resolution( )
php function get_resolution( )
cpp double get_resolution( )
m -(double) resolution
pas function get_resolution( ): double
vb function get_resolution( ) As Double
cs double get_resolution( )
java double get_resolution( )
py def get_resolution( )
cmd YTilt target get_resolution
```

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

**tilt→get_unit()
tilt→unit()tilt.get_unit()****YTilt**

Returns the measuring unit for the inclination.

js	function get_unit()
node.js	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YTilt target get_unit

Returns :

a string corresponding to the measuring unit for the inclination

On failure, throws an exception or returns Y_UNIT_INVALID.

tilt→get(userData)

YTilt

tilt→userData()tilt.get(userData)

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData</code>
pas	<code>function get(userData): Tobject</code>
vb	<code>function get(userData) As Object</code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

tilt→isOnline()tilt.isOnline()

YTilt

Checks if the tilt sensor is currently reachable, without raising any error.

```
js function isOnline( )  
nodejs function isOnline( )  
php function isOnline( )  
cpp bool isOnline( )  
m -(BOOL) isOnline  
pas function isOnline( ): boolean  
vb function isOnline( ) As Boolean  
cs bool isOnline( )  
java boolean isOnline( )  
py def isOnline( )
```

If there is a cached value for the tilt sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the tilt sensor.

Returns :

true if the tilt sensor can be reached, and false otherwise

tilt→isOnline_async()

YTilt

Checks if the tilt sensor is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the tilt sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

tilt→load()tilt.load()

YTilt

Preloads the tilt sensor cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

tilt→loadCalibrationPoints() tilt.loadCalibrationPoints()

YTilt

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php  function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues

pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt

vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py   def loadCalibrationPoints( rawValues, refValues)
cmd  YTilt target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→load_async()

YTilt

Preloads the tilt sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

tilt→nextTilt()tilt.nextTilt()**YTilt**

Continues the enumeration of tilt sensors started using `yFirstTilt()`.

js	<code>function nextTilt()</code>
nodejs	<code>function nextTilt()</code>
php	<code>function nextTilt()</code>
cpp	<code>YTilt * nextTilt()</code>
m	<code>-(YTilt*) nextTilt</code>
pas	<code>function nextTilt(): TYTilt</code>
vb	<code>function nextTilt() As YTilt</code>
cs	<code>YTilt nextTilt()</code>
java	<code>YTilt nextTilt()</code>
py	<code>def nextTilt()</code>

Returns :

a pointer to a `YTilt` object, corresponding to a tilt sensor currently online, or a `null` pointer if there are no more tilt sensors to enumerate.

tilt→registerTimedReportCallback() tilt.registerTimedReportCallback()

YTilt

Registers the callback function that is invoked on every periodic timed notification.

```
js   function registerTimedReportCallback( callback )
node.js function registerTimedReportCallback( callback )
php  function registerTimedReportCallback( $callback )
cpp   int registerTimedReportCallback( YTiltTimedReportCallback callback )
m     -(int) registerTimedReportCallback : (YTiltTimedReportCallback) callback
pas   function registerTimedReportCallback( callback: YTiltTimedReportCallback): LongInt
vb    function registerTimedReportCallback( ) As Integer
cs    int registerTimedReportCallback( TimedReportCallback callback )
java  int registerTimedReportCallback( TimedReportCallback callback )
py    def registerTimedReportCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

tilt→registerValueCallback() tilt.registerValueCallback()

YTilt

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback)
nodejs function registerValueCallback( callback)
php  function registerValueCallback( $callback)
cpp   int registerValueCallback( YTiltValueCallback callback)
m    -(int) registerValueCallback : (YTiltValueCallback) callback
pas   function registerValueCallback( callback: TYTiltValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs   int registerValueCallback( ValueCallback callback)
java  int registerValueCallback( UpdateCallback callback)
py    def registerValueCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

**tilt→set_highestValue()
tilt→setHighestValue()tilt.set_highestValue()**

YTilt

Changes the recorded maximal value observed.

```
js function set_highestValue( newval)
node.js function set_highestValue( newval)
php function set_highestValue( $newval)
cpp int set_highestValue( double newval)
m -(int) setHighestValue : (double) newval
pas function set_highestValue( newval: double): integer
vb function set_highestValue( ByVal newval As Double) As Integer
cs int set_highestValue( double newval)
java int set_highestValue( double newval)
py def set_highestValue( newval)
cmd YTilt target set_highestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded maximal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→set_logFrequency() tilt→setLogFrequency()tilt.set_logFrequency()

YTilt

Changes the datalogger recording frequency for this function.

```
js   function set_logFrequency( newval)
nodejs function set_logFrequency( newval)
php  function set_logFrequency( $newval)
cpp   int set_logFrequency( const string& newval)
m    -(int) setLogFrequency : (NSString*) newval
pas   function set_logFrequency( newval: string): integer
vb    function set_logFrequency( ByVal newval As String) As Integer
cs    int set_logFrequency( string newval)
java  int set_logFrequency( String newval)
py    def set_logFrequency( newval)
cmd   YTilt target set_logFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→set_logicalName() tilt→setLogicalName()tilt.set_logicalName()

YTilt

Changes the logical name of the tilt sensor.

```
js function set_logicalName( newval)
node.js function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YTilt target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the tilt sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

tilt→set_lowestValue()

YTilt

tilt→setLowestValue()tilt.set_lowestValue()

Changes the recorded minimal value observed.

```
js function set_lowestValue( newval)
nodejs function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YTilt target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→set_reportFrequency() tilt→setReportFrequency()tilt.set_reportFrequency()

YTilt

Changes the timed value notification frequency for this function.

```
js   function set_reportFrequency( newval)
node.js function set_reportFrequency( newval)
php  function set_reportFrequency( $newval)
cpp   int set_reportFrequency( const string& newval)
m    -(int) setReportFrequency : (NSString*) newval
pas   function set_reportFrequency( newval: string): integer
vb    function set_reportFrequency( ByVal newval As String) As Integer
cs    int set_reportFrequency( string newval)
java  int set_reportFrequency( String newval)
py    def set_reportFrequency( newval)
cmd   YTilt target set_reportFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→set_resolution() tilt→setResolution()tilt.set_resolution()

YTilt

Changes the resolution of the measured physical values.

```
js function set_resolution( newval)
nodejs function set_resolution( newval)
php function set_resolution( $newval)
cpp int set_resolution( double newval)
m -(int) setResolution : (double) newval
pas function set_resolution( newval: double): integer
vb function set_resolution( ByVal newval As Double) As Integer
cs int set_resolution( double newval)
java int set_resolution( double newval)
py def set_resolution( newval)
cmd YTilt target set_resolution newval
```

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

tilt→set(userData)
tilt→setUserData()tilt.set(userData)

YTilt

Stores a user context provided as argument in the userData attribute of the function.

```
js   function setUserData( data)
node.js function setUserData( data)
php  function setUserData( $data)
cpp   void setUserData( void* data)
m    -(void) setUserData : (void*) data
pas   procedure setUserData( data: Tobject)
vb    procedure setUserData( ByVal data As Object)
cs    void setUserData( object data)
java  void setUserData( Object data)
py    def setUserData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

tilt→wait_async()

YTilt

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context )
nodejs function wait_async( callback, context )
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.40. Voc function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_voc.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YVoc = yoctolib.YVoc;
php	require_once('yocto_voc.php');
cpp	#include "yocto_voc.h"
m	#import "yocto_voc.h"
pas	uses yocto_voc;
vb	yocto_voc.vb
cs	yocto_voc.cs
java	import com.yoctopuce.YoctoAPI.YVoc;
py	from yocto_voc import *

Global functions

yFindVoc(func)

Retrieves a Volatile Organic Compound sensor for a given identifier.

yFirstVoc()

Starts the enumeration of Volatile Organic Compound sensors currently accessible.

YVoc methods

voc→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

voc→describe()

Returns a short text that describes unambiguously the instance of the Volatile Organic Compound sensor in the form TYPE (NAME)=SERIAL . FUNCTIONID.

voc→get_advertisedValue()

Returns the current value of the Volatile Organic Compound sensor (no more than 6 characters).

voc→get_currentRawValue()

Returns the unrounded and uncalibrated raw value returned by the sensor.

voc→get_currentValue()

Returns the current measure for the estimated VOC concentration.

voc→get_errorMessage()

Returns the error message of the latest error with the Volatile Organic Compound sensor.

voc→get_errorType()

Returns the numerical error code of the latest error with the Volatile Organic Compound sensor.

voc→get_friendlyName()

Returns a global identifier of the Volatile Organic Compound sensor in the format MODULE_NAME . FUNCTION_NAME.

voc→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

voc→get_functionId()

Returns the hardware identifier of the Volatile Organic Compound sensor, without reference to the module.

voc→get_hardwareId()

Returns the unique hardware identifier of the Volatile Organic Compound sensor in the form SERIAL.FUNCTIONID.

voc→get_highestValue()

Returns the maximal value observed for the estimated VOC concentration.

voc→get_logFrequency()

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

voc→get_logicalName()

Returns the logical name of the Volatile Organic Compound sensor.

voc→get_lowestValue()

Returns the minimal value observed for the estimated VOC concentration.

voc→get_module()

Gets the YModule object for the device on which the function is located.

voc→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

voc→get_recordedData(startTime, endTime)

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

voc→get_reportFrequency()

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

voc→get_resolution()

Returns the resolution of the measured values.

voc→get_unit()

Returns the measuring unit for the estimated VOC concentration.

voc→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

voc→isOnline()

Checks if the Volatile Organic Compound sensor is currently reachable, without raising any error.

voc→isOnline_async(callback, context)

Checks if the Volatile Organic Compound sensor is currently reachable, without raising any error (asynchronous version).

voc→load(msValidity)

Preloads the Volatile Organic Compound sensor cache with a specified validity duration.

voc→loadCalibrationPoints(rawValues, refValues)

Retrieves error correction data points previously entered using the method calibrateFromPoints.

voc→load_async(msValidity, callback, context)

Preloads the Volatile Organic Compound sensor cache with a specified validity duration (asynchronous version).

voc→nextVoc()

Continues the enumeration of Volatile Organic Compound sensors started using yFirstVoc().

voc→registerTimedReportCallback(callback)

Registers the callback function that is invoked on every periodic timed notification.

voc→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

voc→set_highestValue(newval)

Changes the recorded maximal value observed for the estimated VOC concentration.

3. Reference

voc→set_logFrequency(newval)

Changes the datalogger recording frequency for this function.

voc→set_logicalName(newval)

Changes the logical name of the Volatile Organic Compound sensor.

voc→set_lowestValue(newval)

Changes the recorded minimal value observed for the estimated VOC concentration.

voc→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

voc→set_resolution(newval)

Changes the resolution of the measured physical values.

voc→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

voc→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YVoc.FindVoc() yFindVoc()yFindVoc()

YVoc

Retrieves a Volatile Organic Compound sensor for a given identifier.

js	function yFindVoc(func)
node.js	function FindVoc(func)
php	function yFindVoc(\$func)
cpp	YVoc* yFindVoc(const string& func)
m	YVoc* yFindVoc(NSString* func)
pas	function yFindVoc(func: string): TYVoc
vb	function yFindVoc(ByVal func As String) As YVoc
cs	YVoc FindVoc(string func)
java	YVoc FindVoc(String func)
py	def FindVoc(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the Volatile Organic Compound sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YVoc.isOnline()` to test if the Volatile Organic Compound sensor is indeed online at a given time. In case of ambiguity when looking for a Volatile Organic Compound sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the Volatile Organic Compound sensor

Returns :

a `YVoc` object allowing you to drive the Volatile Organic Compound sensor.

YVoc.FirstVoc() yFirstVoc()yFirstVoc()

YVoc

Starts the enumeration of Volatile Organic Compound sensors currently accessible.

js	function yFirstVoc()
node.js	function FirstVoc()
php	function yFirstVoc()
cpp	YVoc* yFirstVoc()
m	YVoc* yFirstVoc()
pas	function yFirstVoc() : TYVoc
vb	function yFirstVoc() As YVoc
cs	YVoc FirstVoc()
java	YVoc FirstVoc()
py	def FirstVoc()

Use the method `YVoc.nextVoc()` to iterate on next Volatile Organic Compound sensors.

Returns :

a pointer to a `YVoc` object, corresponding to the first Volatile Organic Compound sensor currently online, or a null pointer if there are none.

voc→calibrateFromPoints()|voc.calibrateFromPoints()**YVoc**

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php function calibrateFromPoints( $rawValues, $refValues)
cpp int calibrateFromPoints( vector<double> rawValues,
                           vector<double> refValues)
m -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues
pas function calibrateFromPoints( rawValues: TDoubleArray,
                                   refValues: TDoubleArray): LongInt
vb procedure calibrateFromPoints( )
cs int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)
java int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)
py def calibrateFromPoints( rawValues, refValues)
cmd YVoc target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.
refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→describe()voc.describe()**YVoc**

Returns a short text that describes unambiguously the instance of the Volatile Organic Compound sensor in the form TYPE (NAME)=SERIAL . FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	- (NSString*) describe
pas	function describe(): string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the Volatile Organic Compound sensor (ex:
Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

voc→get_advertisedValue()**YVoc****voc→advertisedValue()voc.get_advertisedValue()**

Returns the current value of the Volatile Organic Compound sensor (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YVoc target get_advertisedValue

Returns :

a string corresponding to the current value of the Volatile Organic Compound sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

voc→get_currentRawValue()
voc→currentRawValue()voc.get_currentRawValue()**YVoc**

Returns the unrounded and uncalibrated raw value returned by the sensor.

```
js function get_currentRawValue( )
node.js function get_currentRawValue( )
php function get_currentRawValue( )
cpp double get_currentRawValue( )
m -(double) currentRawValue
pas function get_currentRawValue( ): double
vb function get_currentRawValue( ) As Double
cs double get_currentRawValue( )
java double get_currentRawValue( )
py def get_currentRawValue( )
cmd YVoc target get_currentRawValue
```

Returns :

a floating point number corresponding to the unrounded and uncalibrated raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

voc→get_currentValue()**YVoc****voc→currentValue()voc.get_currentValue()**

Returns the current measure for the estimated VOC concentration.

js	function get_currentValue()
node.js	function get_currentValue()
php	function get_currentValue()
cpp	double get_currentValue()
m	-(double) currentValue
pas	function get_currentValue(): double
vb	function get_currentValue() As Double
cs	double get_currentValue()
java	double get_currentValue()
py	def get_currentValue()
cmd	YVoc target get_currentValue

Returns :

a floating point number corresponding to the current measure for the estimated VOC concentration

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

voc→get_errorMessage()
voc→errorMessage()voc.get_errorMessage()**YVoc**

Returns the error message of the latest error with the Volatile Organic Compound sensor.

js	function get_errorMessage()
node.js	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	- (NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the Volatile Organic Compound sensor object

voc→get_errorType()**YVoc****voc→errorType()voc.get_errorType()**

Returns the numerical error code of the latest error with the Volatile Organic Compound sensor.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType() : YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the Volatile Organic Compound sensor object

voc→get_friendlyName()
voc→friendlyName()**YVoc**

Returns a global identifier of the Volatile Organic Compound sensor in the format MODULE_NAME.FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the Volatile Organic Compound sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the Volatile Organic Compound sensor (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the Volatile Organic Compound sensor using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

voc→get_functionDescriptor()
voc→functionDescriptor()
voc.get_functionDescriptor()

YVoc

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

voc→get_functionId()
voc→functionId()**YVoc**

Returns the hardware identifier of the Volatile Organic Compound sensor, without reference to the module.

js	function get_functionId()
nodejs	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the Volatile Organic Compound sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

voc→get_hardwareId()
voc→hardwareId()**YVoc**

Returns the unique hardware identifier of the Volatile Organic Compound sensor in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the Volatile Organic Compound sensor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the Volatile Organic Compound sensor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

voc→get_highestValue()**YVoc****voc→highestValue()voc.get_highestValue()**

Returns the maximal value observed for the estimated VOC concentration.

js function **get_highestValue()****node.js** function **get_highestValue()****php** function **get_highestValue()****cpp** double **get_highestValue()****m** -(double) highestValue**pas** function **get_highestValue(): double****vb** function **get_highestValue() As Double****cs** double **get_highestValue()****java** double **get_highestValue()****py** def **get_highestValue()****cmd** YVoc target **get_highestValue****Returns :**

a floating point number corresponding to the maximal value observed for the estimated VOC concentration

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

voc→get_logFrequency()**YVoc****voc→logFrequency()voc.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YVoc target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

voc→get_logicalName()
voc→logicalName()voc.get_logicalName()**YVoc**

Returns the logical name of the Volatile Organic Compound sensor.

js	function get_logicalName()
node.js	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YVoc target get_logicalName

Returns :

a string corresponding to the logical name of the Volatile Organic Compound sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

voc→get_lowestValue()**YVoc****voc→lowestValue()voc.get_lowestValue()**

Returns the minimal value observed for the estimated VOC concentration.

js	function get_lowestValue()
nodejs	function get_lowestValue()
php	function get_lowestValue()
cpp	double get_lowestValue()
m	-(double) lowestValue
pas	function get_lowestValue(): double
vb	function get_lowestValue() As Double
cs	double get_lowestValue()
java	double get_lowestValue()
py	def get_lowestValue()
cmd	YVoc target get_lowestValue

Returns :

a floating point number corresponding to the minimal value observed for the estimated VOC concentration

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

**voc→get_module()
voc→module()voc.get_module()****YVoc**

Gets the `YModule` object for the device on which the function is located.

js	<code>function get_module()</code>
node.js	<code>function get_module()</code>
php	<code>function get_module()</code>
cpp	<code>YModule * get_module()</code>
m	<code>-(YModule*) module</code>
pas	<code>function get_module(): TYModule</code>
vb	<code>function get_module() As YModule</code>
cs	<code>YModule get_module()</code>
java	<code>YModule get_module()</code>
py	<code>def get_module()</code>

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

voc→get_module_async()**YVoc****voc→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context )
nodejs function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voc→get_recordedData()

YYoc

voc→recordedData()|voc.get_recordedData()

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the `DataSet` class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measurement, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

voc→get_reportFrequency()**YVoc****voc→reportFrequency()voc.get_reportFrequency()**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency()
node.js	function get_reportFrequency()
php	function get_reportFrequency()
cpp	string get_reportFrequency()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency(): string
vb	function get_reportFrequency() As String
cs	string get_reportFrequency()
java	String get_reportFrequency()
py	def get_reportFrequency()
cmd	YVoc target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

voc→get_resolution()
voc→resolution()voc.get_resolution()**YVoc**

Returns the resolution of the measured values.

js	function get_resolution()
node.js	function get_resolution()
php	function get_resolution()
cpp	double get_resolution()
m	-(double) resolution
pas	function get_resolution() : double
vb	function get_resolution() As Double
cs	double get_resolution()
java	double get_resolution()
py	def get_resolution()
cmd	YVoc target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

voc→get_unit()**YVoc****voc→unit()voc.get_unit()**

Returns the measuring unit for the estimated VOC concentration.

js	function get_unit()
nodejs	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YVoc target get_unit

Returns :

a string corresponding to the measuring unit for the estimated VOC concentration

On failure, throws an exception or returns Y_UNIT_INVALID.

voc→get(userData)
voc→userData()voc.get(userData)**YVoc**

Returns the value of the userData attribute, as previously stored using method set(userData).

```
js function get(userData) 
node.js function get(userData) 
php function get(userData) 
cpp void * get(userData) 
m -(void*) userData 
pas function get(userData): Tobject 
vb function get(userData) As Object 
cs object get(userData) 
java Object get(userData) 
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

voc→isOnline()voc.isOnline()**YVoc**

Checks if the Volatile Organic Compound sensor is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the Volatile Organic Compound sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the Volatile Organic Compound sensor.

Returns :

`true` if the Volatile Organic Compound sensor can be reached, and `false` otherwise

voc→isOnline_async()**YVoc**

Checks if the Volatile Organic Compound sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the Volatile Organic Compound sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voc→load()|voc.load()**YVoc**

Preloads the Volatile Organic Compound sensor cache with a specified validity duration.

js	function load(msValidity)
node.js	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

voc→loadCalibrationPoints() voc.loadCalibrationPoints()

YVoc

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php   function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)
m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                           : (NSMutableArray*) refValues
pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                           var refValues: TDoubleArray): LongInt
vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                           List<double> refValues)
java int loadCalibrationPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)
py   def loadCalibrationPoints( rawValues, refValues)
cmd  YVoc target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→load_async()**YVoc**

Preloads the Volatile Organic Compound sensor cache with a specified validity duration (asynchronous version).

```
js   function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voc→nextVoc()voc.nextVoc()**YVoc**

Continues the enumeration of Volatile Organic Compound sensors started using `yFirstVoc()`.

js	function nextVoc()
nodejs	function nextVoc()
php	function nextVoc()
cpp	YVoc * nextVoc()
m	-(YVoc*) nextVoc
pas	function nextVoc() : TYVoc
vb	function nextVoc() As YVoc
cs	YVoc nextVoc()
java	YVoc nextVoc()
py	def nextVoc()

Returns :

a pointer to a `YVoc` object, corresponding to a Volatile Organic Compound sensor currently online, or a `null` pointer if there are no more Volatile Organic Compound sensors to enumerate.

voc→registerTimedReportCallback() voc.registerTimedReportCallback()

YVoc

Registers the callback function that is invoked on every periodic timed notification.

js	function registerTimedReportCallback(callback)
node.js	function registerTimedReportCallback(callback)
php	function registerTimedReportCallback(\$callback)
cpp	int registerTimedReportCallback(YVocTimedReportCallback callback)
m	-(int) registerTimedReportCallback : (YVocTimedReportCallback) callback
pas	function registerTimedReportCallback(callback : TYVocTimedReportCallback): LongInt
vb	function registerTimedReportCallback() As Integer
cs	int registerTimedReportCallback(TimedReportCallback callback)
java	int registerTimedReportCallback(TimedReportCallback callback)
py	def registerTimedReportCallback(callback)

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

voc→registerValueCallback() voc.registerValueCallback()

YVoc

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YVocValueCallback callback )
m    -(int) registerValueCallback : (YVocValueCallback) callback
pas   function registerValueCallback( callback: TYVocValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

voc→set_highestValue()**YVoc****voc→setHighestValue()voc.set_highestValue()**

Changes the recorded maximal value observed for the estimated VOC concentration.

js	function set_highestValue(newval)
nodejs	function set_highestValue(newval)
php	function set_highestValue(\$newval)
cpp	int set_highestValue(double newval)
m	-(int) setHighestValue : (double) newval
pas	function set_highestValue(newval: double): integer
vb	function set_highestValue(ByVal newval As Double) As Integer
cs	int set_highestValue(double newval)
java	int set_highestValue(double newval)
py	def set_highestValue(newval)
cmd	YVoc target set_highestValue newval

Parameters :

newval a floating point number corresponding to the recorded maximal value observed for the estimated VOC concentration

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→set_logFrequency()
voc→setLogFrequency()voc.set_logFrequency()**YVoc**

Changes the datalogger recording frequency for this function.

js	function set_logFrequency(newval)
node.js	function set_logFrequency(newval)
php	function set_logFrequency(\$newval)
cpp	int set_logFrequency(const string& newval)
m	- (int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency(newval: string): integer
vb	function set_logFrequency(ByVal newval As String) As Integer
cs	int set_logFrequency(string newval)
java	int set_logFrequency(String newval)
py	def set_logFrequency(newval)
cmd	YVoc target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→set_logicalName()**YVoc****voc→setLogicalName()voc.set_logicalName()**

Changes the logical name of the Volatile Organic Compound sensor.

js	<code>function set_logicalName(newval)</code>
nodejs	<code>function set_logicalName(newval)</code>
php	<code>function set_logicalName(\$newval)</code>
cpp	<code>int set_logicalName(const string& newval)</code>
m	<code>-(int) setLogicalName : (NSString*) newval</code>
pas	<code>function set_logicalName(newval: string): integer</code>
vb	<code>function set_logicalName(ByVal newval As String) As Integer</code>
cs	<code>int set_logicalName(string newval)</code>
java	<code>int set_logicalName(String newval)</code>
py	<code>def set_logicalName(newval)</code>
cmd	<code>YVoc target set_logicalName newval</code>

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the Volatile Organic Compound sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

voc→set_lowestValue() voc→setLowestValue()voc.set_lowestValue()

YVoc

Changes the recorded minimal value observed for the estimated VOC concentration.

```
js function set_lowestValue( newval)
node.js function set_lowestValue( newval)
php function set_lowestValue( $newval)
cpp int set_lowestValue( double newval)
m -(int) setLowestValue : (double) newval
pas function set_lowestValue( newval: double): integer
vb function set_lowestValue( ByVal newval As Double) As Integer
cs int set_lowestValue( double newval)
java int set_lowestValue( double newval)
py def set_lowestValue( newval)
cmd YVoc target set_lowestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded minimal value observed for the estimated VOC concentration

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→set_reportFrequency()
voc→setReportFrequency()
voc.set_reportFrequency()

YVoc

Changes the timed value notification frequency for this function.

js	function set_reportFrequency(newval)
node.js	function set_reportFrequency(newval)
php	function set_reportFrequency(\$newval)
cpp	int set_reportFrequency(const string& newval)
m	-(int) setReportFrequency : (NSString*) newval
pas	function set_reportFrequency(newval: string): integer
vb	function set_reportFrequency(ByVal newval As String) As Integer
cs	int set_reportFrequency(string newval)
java	int set_reportFrequency(String newval)
py	def set_reportFrequency(newval)
cmd	YVoc target set_reportFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc->set_resolution() voc->setResolution()voc.set_resolution()

YVoc

Changes the resolution of the measured physical values.

```
js function set_resolution( newval)
node.js function set_resolution( newval)
php function set_resolution( $newval)
cpp int set_resolution( double newval)
m -(int) setResolution : (double) newval
pas function set_resolution( newval: double): integer
vb function set_resolution( ByVal newval As Double) As Integer
cs int set_resolution( double newval)
java int set_resolution( double newval)
py def set_resolution( newval)
cmd YVoc target set_resolution newval
```

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured physical values

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voc→set(userData)
voc→setUserData()voc.set(userData)**YVoc**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData) \$data
cpp	void set(userData) void* data
m	-(void) set(userData) : (void*) data
pas	procedure set(userData) Tobject
vb	procedure set(userData) ByVal data As Object
cs	void set(userData) object data
java	void set(userData) Object data
py	def set(userData) data

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

voc→wait_async()**YVoc**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.41. Voltage function interface

The Yoctopuce application programming interface allows you to read an instant measure of the sensor, as well as the minimal and maximal values observed.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_voltage.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YVoltage = yoctolib.YVoltage;
php	require_once('yocto_voltage.php');
cpp	#include "yocto_voltage.h"
m	#import "yocto_voltage.h"
pas	uses yocto_voltage;
vb	yocto_voltage.vb
cs	yocto_voltage.cs
java	import com.yoctopuce.YoctoAPI.YVoltage;
py	from yocto_voltage import *

Global functions

yFindVoltage(func)

Retrieves a voltage sensor for a given identifier.

yFirstVoltage()

Starts the enumeration of voltage sensors currently accessible.

YVoltage methods

voltage→calibrateFromPoints(rawValues, refValues)

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

voltage→describe()

Returns a short text that describes unambiguously the instance of the voltage sensor in the form TYPE (NAME) = SERIAL . FUNCTIONID.

voltage→get_advertisedValue()

Returns the current value of the voltage sensor (no more than 6 characters).

voltage→get_currentRawValue()

Returns the uncalibrated, unrounded raw value returned by the sensor.

voltage→get_currentValue()

Returns the current measure for the voltage.

voltage→get_errorMessage()

Returns the error message of the latest error with the voltage sensor.

voltage→get_errorType()

Returns the numerical error code of the latest error with the voltage sensor.

voltage→get_friendlyName()

Returns a global identifier of the voltage sensor in the format MODULE_NAME . FUNCTION_NAME.

voltage→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

voltage→get_functionId()

Returns the hardware identifier of the voltage sensor, without reference to the module.

voltage→get_hardwareId()

Returns the unique hardware identifier of the voltage sensor in the form SERIAL . FUNCTIONID.

voltage→get_highestValue()	Returns the maximal value observed for the voltage.
voltage→get_logFrequency()	Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.
voltage→get_logicalName()	Returns the logical name of the voltage sensor.
voltage→get_lowestValue()	Returns the minimal value observed for the voltage.
voltage→get_module()	Gets the YModule object for the device on which the function is located.
voltage→get_module_async(callback, context)	Gets the YModule object for the device on which the function is located (asynchronous version).
voltage→get_recordedData(startTime, endTime)	Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.
voltage→get_reportFrequency()	Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.
voltage→get_resolution()	Returns the resolution of the measured values.
voltage→get_unit()	Returns the measuring unit for the voltage.
voltage→get(userData)	Returns the value of the userData attribute, as previously stored using method set(userData).
voltage→isOnline()	Checks if the voltage sensor is currently reachable, without raising any error.
voltage→isOnline_async(callback, context)	Checks if the voltage sensor is currently reachable, without raising any error (asynchronous version).
voltage→load(msValidity)	Preloads the voltage sensor cache with a specified validity duration.
voltage→loadCalibrationPoints(rawValues, refValues)	Retrieves error correction data points previously entered using the method calibrateFromPoints.
voltage→load_async(msValidity, callback, context)	Preloads the voltage sensor cache with a specified validity duration (asynchronous version).
voltage→nextVoltage()	Continues the enumeration of voltage sensors started using yFirstVoltage().
voltage→registerTimedReportCallback(callback)	Registers the callback function that is invoked on every periodic timed notification.
voltage→registerValueCallback(callback)	Registers the callback function that is invoked on every change of advertised value.
voltage→set_highestValue(newval)	Changes the recorded maximal value observed pour the voltage.
voltage→set_logFrequency(newval)	Changes the datalogger recording frequency for this function.
voltage→set_logicalName(newval)	Changes the logical name of the voltage sensor.

voltage→set_lowestValue(newval)

Changes the recorded minimal value observed pour the voltage.

voltage→set_reportFrequency(newval)

Changes the timed value notification frequency for this function.

voltage→set_resolution(newval)

Changes the resolution of the measured values.

voltage→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

voltage→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YVoltage.FindVoltage() yFindVoltage() yFindVoltage()

YVoltage

Retrieves a voltage sensor for a given identifier.

js	function yFindVoltage(func)
node.js	function FindVoltage(func)
php	function yFindVoltage(\$func)
cpp	YVoltage* yFindVoltage(const string& func)
m	YVoltage* yFindVoltage(NSString* func)
pas	function yFindVoltage(func: string): TYVoltage
vb	function yFindVoltage(ByVal func As String) As YVoltage
cs	YVoltage FindVoltage(string func)
java	YVoltage FindVoltage(String func)
py	def FindVoltage(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the voltage sensor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YVoltage.isOnline()` to test if the voltage sensor is indeed online at a given time. In case of ambiguity when looking for a voltage sensor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the voltage sensor

Returns :

a `YVoltage` object allowing you to drive the voltage sensor.

YVoltage.FirstVoltage()

YVoltage

yFirstVoltage()yFirstVoltage()

Starts the enumeration of voltage sensors currently accessible.

js	function yFirstVoltage()
nodejs	function FirstVoltage()
php	function yFirstVoltage()
cpp	YVoltage* yFirstVoltage()
m	YVoltage* yFirstVoltage()
pas	function yFirstVoltage(): TYVoltage
vb	function yFirstVoltage() As YVoltage
cs	YVoltage FirstVoltage()
java	YVoltage FirstVoltage()
py	def FirstVoltage()

Use the method `YVoltage.nextVoltage()` to iterate on next voltage sensors.

Returns :

a pointer to a `YVoltage` object, corresponding to the first voltage sensor currently online, or a `null` pointer if there are none.

voltage→calibrateFromPoints() voltage.calibrateFromPoints()

YVoltage

Configures error correction data points, in particular to compensate for a possible perturbation of the measure caused by an enclosure.

```

js   function calibrateFromPoints( rawValues, refValues)
nodejs function calibrateFromPoints( rawValues, refValues)
php   function calibrateFromPoints( $rawValues, $refValues)
cpp    int calibrateFromPoints( vector<double> rawValues,
                               vector<double> refValues)

m    -(int) calibrateFromPoints : (NSMutableArray*) rawValues
                : (NSMutableArray*) refValues

pas   function calibrateFromPoints( rawValues: TDoubleArray,
                                   refValues: TDoubleArray): LongInt

vb    procedure calibrateFromPoints( )

cs    int calibrateFromPoints( List<double> rawValues,
                           List<double> refValues)

java   int calibrateFromPoints( ArrayList<Double> rawValues,
                           ArrayList<Double> refValues)

py    def calibrateFromPoints( rawValues, refValues)
cmd   YVoltage target calibrateFromPoints rawValues refValues

```

It is possible to configure up to five correction points. Correction points must be provided in ascending order, and be in the range of the sensor. The device will automatically perform a linear interpolation of the error correction between specified points. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

For more information on advanced capabilities to refine the calibration of sensors, please contact support@yoctopuce.com.

Parameters :

rawValues array of floating point numbers, corresponding to the raw values returned by the sensor for the correction points.

refValues array of floating point numbers, corresponding to the corrected values for the correction points.

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→describe()voltage.describe()**YVoltage**

Returns a short text that describes unambiguously the instance of the voltage sensor in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-(NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the voltage sensor (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

voltage→get_advertisedValue()
voltage→advertisedValue()
voltage.get_advertisedValue()

YVoltage

Returns the current value of the voltage sensor (no more than 6 characters).

```
js function get_advertisedValue( )  
nodejs function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YVoltage target get_advertisedValue
```

Returns :

a string corresponding to the current value of the voltage sensor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

voltage→get_currentRawValue()
voltage→currentRawValue()
voltage.get_currentRawValue()

YVoltage

Returns the uncalibrated, unrounded raw value returned by the sensor.

```
js function get_currentRawValue( )  
node.js function get_currentRawValue( )  
php function get_currentRawValue( )  
cpp double get_currentRawValue( )  
m -(double) currentRawValue  
pas function get_currentRawValue( ): double  
vb function get_currentRawValue( ) As Double  
cs double get_currentRawValue( )  
java double get_currentRawValue( )  
py def get_currentRawValue( )  
cmd YVoltage target get_currentRawValue
```

Returns :

a floating point number corresponding to the uncalibrated, unrounded raw value returned by the sensor

On failure, throws an exception or returns Y_CURRENTRAWVALUE_INVALID.

voltage→get_currentValue()**YVoltage****voltage→currentValue()voltage.get_currentValue()**

Returns the current measure for the voltage.

```
js function get_currentValue( )
node.js function get_currentValue( )
php function get_currentValue( )
cpp double get_currentValue( )
m -(double) currentValue
pas function get_currentValue( ): double
vb function get_currentValue( ) As Double
cs double get_currentValue( )
java double get_currentValue( )
py def get_currentValue( )
cmd YVoltage target get_currentValue
```

Returns :

a floating point number corresponding to the current measure for the voltage

On failure, throws an exception or returns Y_CURRENTVALUE_INVALID.

voltage→getErrorMessage()**YVoltage****voltage→errorMessage()voltage.getErrorMessage()**

Returns the error message of the latest error with the voltage sensor.

js	function getErrorMessage()
nodejs	function getErrorMessage()
php	function getErrorMessage()
cpp	string getErrorMessage()
m	-(NSString*) errorMessage
pas	function getErrorMessage() : string
vb	function getErrorMessage() As String
cs	string getErrorMessage()
java	String getErrorMessage()
py	def getErrorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the voltage sensor object

voltage→get_errorType() voltage→errorType()voltage.get_errorType()

YVoltage

Returns the numerical error code of the latest error with the voltage sensor.

```
js function get_errorType( )  
node.js function get_errorType( )  
php function get_errorType( )  
cpp YRETCODE get_errorType( )  
pas function get_errorType( ): YRETCODE  
vb function get_errorType( ) As YRETCODE  
cs YRETCODE get_errorType( )  
java int get_errorType( )  
py def get_errorType( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the voltage sensor object

voltage→get_friendlyName()
voltage→friendlyName()**YVoltage**

Returns a global identifier of the voltage sensor in the format MODULE_NAME . FUNCTION_NAME.

```
js function get_friendlyName( )  
nodejs function get_friendlyName( )  
php function get_friendlyName( )  
cpp string get_friendlyName( )  
m -(NSString*) friendlyName  
cs string get_friendlyName( )  
java String get_friendlyName( )  
py def get_friendlyName( )
```

The returned string uses the logical names of the module and of the voltage sensor if they are defined, otherwise the serial number of the module and the hardware identifier of the voltage sensor (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the voltage sensor using logical names (ex: MyCustomName . relay1)

On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

voltage→get_functionDescriptor()
voltage→functionDescriptor()
voltage.get_functionDescriptor()**YVoltage**

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

voltage→get_functionId()
voltage→functionId()**YVoltage**

Returns the hardware identifier of the voltage sensor, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the voltage sensor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

voltage→get_hardwareId()
voltage→hardwareId()**YVoltage**

Returns the unique hardware identifier of the voltage sensor in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the voltage sensor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the voltage sensor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

voltage→get_highestValue()**YVoltage****voltage→highestValue()voltage.get_highestValue()**

Returns the maximal value observed for the voltage.

```
js function get_highestValue( )
nodejs function get_highestValue( )
php function get_highestValue( )
cpp double get_highestValue( )
m -(double) highestValue
pas function get_highestValue( ): double
vb function get_highestValue( ) As Double
cs double get_highestValue( )
java double get_highestValue( )
py def get_highestValue( )
cmd YVoltage target get_highestValue
```

Returns :

a floating point number corresponding to the maximal value observed for the voltage

On failure, throws an exception or returns Y_HIGHESTVALUE_INVALID.

voltage→get_logFrequency()**YVoltage****voltage→logFrequency()voltage.get_logFrequency()**

Returns the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory.

js	function get_logFrequency()
nodejs	function get_logFrequency()
php	function get_logFrequency()
cpp	string get_logFrequency()
m	-(NSString*) logFrequency
pas	function get_logFrequency() : string
vb	function get_logFrequency() As String
cs	string get_logFrequency()
java	String get_logFrequency()
py	def get_logFrequency()
cmd	YVoltage target get_logFrequency

Returns :

a string corresponding to the datalogger recording frequency for this function, or "OFF" when measures are not stored in the data logger flash memory

On failure, throws an exception or returns Y_LOGFREQUENCY_INVALID.

voltage→get_logicalName()**YVoltage****voltage→logicalName()voltage.get_logicalName()**

Returns the logical name of the voltage sensor.

```
js function get_logicalName( )
nodejs function get_logicalName( )
php function get_logicalName( )
cpp string get_logicalName( )
m -(NSString*) logicalName
pas function get_logicalName( ): string
vb function get_logicalName( ) As String
cs string get_logicalName( )
java String get_logicalName( )
py def get_logicalName( )
cmd YVoltage target get_logicalName
```

Returns :

a string corresponding to the logical name of the voltage sensor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

voltage→get_lowestValue()**YVoltage****voltage→lowestValue()voltage.get_lowestValue()**

Returns the minimal value observed for the voltage.

```
js function get_lowestValue( )  
node.js function get_lowestValue( )  
php function get_lowestValue( )  
cpp double get_lowestValue( )  
m -(double) lowestValue  
pas function get_lowestValue( ): double  
vb function get_lowestValue( ) As Double  
cs double get_lowestValue( )  
java double get_lowestValue( )  
py def get_lowestValue( )  
cmd YVoltage target get_lowestValue
```

Returns :

a floating point number corresponding to the minimal value observed for the voltage

On failure, throws an exception or returns Y_LOWESTVALUE_INVALID.

voltage→get_module()**YVoltage****voltage→module()voltage.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

voltage→get_module_async()
voltage→module_async()**YVoltage**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voltage→get_recordedData()**YVoltage****voltage→recordedData()voltage.get_recordedData()**

Retrieves a DataSet object holding historical data for this sensor, for a specified time interval.

<code>js</code>	<code>function get_recordedData(startTime, endTime)</code>
<code>node.js</code>	<code>function get_recordedData(startTime, endTime)</code>
<code>php</code>	<code>function get_recordedData(\$startTime, \$endTime)</code>
<code>cpp</code>	<code>YDataSet get_recordedData(s64 startTime, s64 endTime)</code>
<code>m</code>	<code>-(YDataSet*) recordedData : (s64) startTime : (s64) endTime</code>
<code>pas</code>	<code>function get_recordedData(startTime: int64, endTime: int64): TYDataSet</code>
<code>vb</code>	<code>function get_recordedData() As YDataSet</code>
<code>cs</code>	<code>YDataSet get_recordedData(long startTime, long endTime)</code>
<code>java</code>	<code>YDataSet get_recordedData(long startTime, long endTime)</code>
<code>py</code>	<code>def get_recordedData(startTime, endTime)</code>
<code>cmd</code>	<code>YVoltage target get_recordedData startTime endTime</code>

The measures will be retrieved from the data logger, which must have been turned on at the desired time. See the documentation of the DataSet class for information on how to get an overview of the recorded data, and how to load progressively a large set of measures from the data logger.

This function only works if the device uses a recent firmware, as DataSet objects are not supported by firmwares older than version 13000.

Parameters :

startTime the start of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without initial limit.

endTime the end of the desired measure time interval, as a Unix timestamp, i.e. the number of seconds since January 1, 1970 UTC. The special value 0 can be used to include any measure, without ending limit.

Returns :

an instance of YDataSet, providing access to historical data. Past measures can be loaded progressively using methods from the YDataSet object.

voltage→get_reportFrequency()
voltage→reportFrequency()
voltage.get_reportFrequency()**YVoltage**

Returns the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function.

js	function get_reportFrequency()
nodejs	function get_reportFrequency()
php	function get_reportFrequency()
cpp	string get_reportFrequency()
m	-(NSString*) reportFrequency
pas	function get_reportFrequency(): string
vb	function get_reportFrequency() As String
cs	string get_reportFrequency()
java	String get_reportFrequency()
py	def get_reportFrequency()
cmd	YVoltage target get_reportFrequency

Returns :

a string corresponding to the timed value notification frequency, or "OFF" if timed value notifications are disabled for this function

On failure, throws an exception or returns Y_REPORTFREQUENCY_INVALID.

voltage→get_resolution()**YVoltage****voltage→resolution()voltage.get_resolution()**

Returns the resolution of the measured values.

js	function get_resolution()
nodejs	function get_resolution()
php	function get_resolution()
cpp	double get_resolution()
m	-(double) resolution
pas	function get_resolution(): double
vb	function get_resolution() As Double
cs	double get_resolution()
java	double get_resolution()
py	def get_resolution()
cmd	YVoltage target get_resolution

The resolution corresponds to the numerical precision of the measures, which is not always the same as the actual precision of the sensor.

Returns :

a floating point number corresponding to the resolution of the measured values

On failure, throws an exception or returns Y_RESOLUTION_INVALID.

voltage→get_unit()
voltage→unit()voltage.get_unit()**YVoltage**

Returns the measuring unit for the voltage.

js	function get_unit()
node.js	function get_unit()
php	function get_unit()
cpp	string get_unit()
m	-(NSString*) unit
pas	function get_unit() : string
vb	function get_unit() As String
cs	string get_unit()
java	String get_unit()
py	def get_unit()
cmd	YVoltage target get_unit

Returns :

a string corresponding to the measuring unit for the voltage

On failure, throws an exception or returns Y_UNIT_INVALID.

voltage→get(userData)**YVoltage****voltage→userData()voltage.get(userData())**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData </code>
pas	<code>function get(userData): Tobject </code>
vb	<code>function get(userData) As Object </code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

voltage→isOnline()voltage.isOnline()**YVoltage**

Checks if the voltage sensor is currently reachable, without raising any error.

js	function isOnline ()
nodejs	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	- (BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the voltage sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the voltage sensor.

Returns :

true if the voltage sensor can be reached, and false otherwise

voltage→isOnline_async()**YVoltage**

Checks if the voltage sensor is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the voltage sensor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voltage→load()voltage.load()**YVoltage**

Preloads the voltage sensor cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

voltage→loadCalibrationPoints() voltage.loadCalibrationPoints()

YVoltage

Retrieves error correction data points previously entered using the method calibrateFromPoints.

```

js   function loadCalibrationPoints( rawValues, refValues)
nodejs function loadCalibrationPoints( rawValues, refValues)
php  function loadCalibrationPoints( &$rawValues, &$refValues)
cpp   int loadCalibrationPoints( vector<double>& rawValues,
                                vector<double>& refValues)

m    -(int) loadCalibrationPoints : (NSMutableArray*) rawValues
                  : (NSMutableArray*) refValues

pas  function loadCalibrationPoints( var rawValues: TDoubleArray,
                                      var refValues: TDoubleArray): LongInt

vb   procedure loadCalibrationPoints( )
cs   int loadCalibrationPoints( List<double> rawValues,
                               List<double> refValues)

java int loadCalibrationPoints( ArrayList<Double> rawValues,
                               ArrayList<Double> refValues)

py   def loadCalibrationPoints( rawValues, refValues)
cmd  YVoltage target loadCalibrationPoints rawValues refValues

```

Parameters :

rawValues array of floating point numbers, that will be filled by the function with the raw sensor values for the correction points.

refValues array of floating point numbers, that will be filled by the function with the desired values for the correction points.

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→load_async()

YVoltage

Preloads the voltage sensor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

voltage→nextVoltage()|voltage.nextVoltage()**YVoltage**

Continues the enumeration of voltage sensors started using `yFirstVoltage()`.

<code>js</code>	<code>function nextVoltage()</code>
<code>nodejs</code>	<code>function nextVoltage()</code>
<code>php</code>	<code>function nextVoltage()</code>
<code>cpp</code>	<code>YVoltage * nextVoltage()</code>
<code>m</code>	<code>-(YVoltage*) nextVoltage</code>
<code>pas</code>	<code>function nextVoltage(): TYVoltage</code>
<code>vb</code>	<code>function nextVoltage() As YVoltage</code>
<code>cs</code>	<code>YVoltage nextVoltage()</code>
<code>java</code>	<code>YVoltage nextVoltage()</code>
<code>py</code>	<code>def nextVoltage()</code>

Returns :

a pointer to a `YVoltage` object, corresponding to a voltage sensor currently online, or a `null` pointer if there are no more voltage sensors to enumerate.

voltage→registerTimedReportCallback() voltage.registerTimedReportCallback()

YVoltage

Registers the callback function that is invoked on every periodic timed notification.

```
js   function registerTimedReportCallback( callback)
node.js function registerTimedReportCallback( callback)
php  function registerTimedReportCallback( $callback)
cpp   int registerTimedReportCallback( YVoltageTimedReportCallback callback)
m    -(int) registerTimedReportCallback : (YVoltageTimedReportCallback) callback
pas   function registerTimedReportCallback( callback: TYVoltageTimedReportCallback): LongInt
vb    function registerTimedReportCallback( ) As Integer
cs    int registerTimedReportCallback( TimedReportCallback callback)
java  int registerTimedReportCallback( TimedReportCallback callback)
py    def registerTimedReportCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and an `YMeasure` object describing the new advertised value.

voltage→registerValueCallback() voltage.registerValueCallback()

YVoltage

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback)
nodejs function registerValueCallback( callback)
php  function registerValueCallback( $callback)
cpp   int registerValueCallback( YVoltageValueCallback callback)
m    -(int) registerValueCallback : (YVoltageValueCallback) callback
pas   function registerValueCallback( callback: TYVoltageValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs   int registerValueCallback( ValueCallback callback)
java  int registerValueCallback( UpdateCallback callback)
py    def registerValueCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

voltage→set_highestValue()
voltage→setHighestValue()
voltage.set_highestValue()

YVoltage

Changes the recorded maximal value observed pour the voltage.

```
js function set_highestValue( newval)
nodejs function set_highestValue( newval)
php function set_highestValue( $newval)
cpp int set_highestValue( double newval)
m -(int) setHighestValue : (double) newval
pas function set_highestValue( newval: double): integer
vb function set_highestValue( ByVal newval As Double) As Integer
cs int set_highestValue( double newval)
java int set_highestValue( double newval)
py def set_highestValue( newval)
cmd YVoltage target set_highestValue newval
```

Parameters :

newval a floating point number corresponding to the recorded maximal value observed pour the voltage

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→set_logFrequency()
voltage→setLogFrequency()
voltage.set_logFrequency()

YVoltage

Changes the datalogger recording frequency for this function.

js	function set_logFrequency(newval)
node.js	function set_logFrequency(newval)
php	function set_logFrequency(\$newval)
cpp	int set_logFrequency(const string& newval)
m	-(int) setLogFrequency : (NSString*) newval
pas	function set_logFrequency(newval: string): integer
vb	function set_logFrequency(ByVal newval As String) As Integer
cs	int set_logFrequency(string newval)
java	int set_logFrequency(String newval)
py	def set_logFrequency(newval)
cmd	YVoltage target set_logFrequency newval

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable recording for this function, use the value "OFF".

Parameters :

newval a string corresponding to the datalogger recording frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→set_logicalName() voltage→setLogicalName()voltage.set_logicalName()

YVoltage

Changes the logical name of the voltage sensor.

```
js function set_logicalName( newval)
node.js function set_logicalName( newval)
php function set_logicalName( $newval)
cpp int set_logicalName( const string& newval)
m -(int) setLogicalName : (NSString*) newval
pas function set_logicalName( newval: string): integer
vb function set_logicalName( ByVal newval As String) As Integer
cs int set_logicalName( string newval)
java int set_logicalName( String newval)
py def set_logicalName( newval)
cmd YVoltage target set_logicalName newval
```

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the voltage sensor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

voltage→set_lowestValue()**YVoltage****voltage→setLowestValue()voltage.set_lowestValue()**

Changes the recorded minimal value observed pour the voltage.

js	function set_lowestValue(newval)
nodejs	function set_lowestValue(newval)
php	function set_lowestValue(\$newval)
cpp	int set_lowestValue(double newval)
m	-(int) setLowestValue : (double) newval
pas	function set_lowestValue(newval: double): integer
vb	function set_lowestValue(ByVal newval As Double) As Integer
cs	int set_lowestValue(double newval)
java	int set_lowestValue(double newval)
py	def set_lowestValue(newval)
cmd	YVoltage target set_lowestValue newval

Parameters :

newval a floating point number corresponding to the recorded minimal value observed pour the voltage

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→set_reportFrequency()
voltage→setReportFrequency()
voltage.set_reportFrequency()**YVoltage**

Changes the timed value notification frequency for this function.

```
js   function set_reportFrequency( newval)
nodejs function set_reportFrequency( newval)
php  function set_reportFrequency( $newval)
cpp   int set_reportFrequency( const string& newval)
m    -(int) setReportFrequency : (NSString*) newval
pas   function set_reportFrequency( newval: string): integer
vb    function set_reportFrequency( ByVal newval As String) As Integer
cs    int set_reportFrequency( string newval)
java  int set_reportFrequency( String newval)
py    def set_reportFrequency( newval)
cmd   YVoltage target set_reportFrequency newval
```

The frequency can be specified as samples per second, as sample per minute (for instance "15/m") or in samples per hour (eg. "4/h"). To disable timed value notifications for this function, use the value "OFF".

Parameters :

newval a string corresponding to the timed value notification frequency for this function

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→set_resolution()**YVoltage****voltage→setResolution()voltage.set_resolution()**

Changes the resolution of the measured values.

<code>js</code>	<code>function set_resolution(newval)</code>
<code>nodejs</code>	<code>function set_resolution(newval)</code>
<code>php</code>	<code>function set_resolution(\$newval)</code>
<code>cpp</code>	<code>int set_resolution(double newval)</code>
<code>m</code>	<code>-(int) setResolution : (double) newval</code>
<code>pas</code>	<code>function set_resolution(newval: double): integer</code>
<code>vb</code>	<code>function set_resolution(ByVal newval As Double) As Integer</code>
<code>cs</code>	<code>int set_resolution(double newval)</code>
<code>java</code>	<code>int set_resolution(double newval)</code>
<code>py</code>	<code>def set_resolution(newval)</code>
<code>cmd</code>	<code>YVoltage target set_resolution newval</code>

The resolution corresponds to the numerical precision when displaying value. It does not change the precision of the measure itself.

Parameters :

newval a floating point number corresponding to the resolution of the measured values

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

voltage→set(userData)**YVoltage****voltage→setUserData()|voltage.set(userData())**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData)
cpp	void set(userData) void* data
m	-(void) set(userData) : (void*) data
pas	procedure set(userData) data : Tobject
vb	procedure set(userData) ByVal data As Object
cs	void set(userData) object data
java	void set(userData) Object data
py	def set(userData) data

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

voltage→wait_async()**YVoltage**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

`js` `function wait_async(callback, context)`

`nodejs` `function wait_async(callback, context)`

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.42. Voltage source function interface

Yoctopuce application programming interface allows you to control the module voltage output. You affect absolute output values or make transitions

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_vsource.js'></script>
php	require_once('yocto_vsource.php');
cpp	#include "yocto_vsource.h"
m	#import "yocto_vsource.h"
pas	uses yocto_vsource;
vb	yocto_vsource.vb
cs	yocto_vsource.cs
java	import com.yoctopuce.YoctoAPI.YVSource;
py	from yocto_vsource import *

Global functions	
yFindVSource(func)	Retrieves a voltage source for a given identifier.
yFirstVSource()	Starts the enumeration of voltage sources currently accessible.
YVSource methods	
vsource→describe()	Returns a short text that describes the function in the form TYPE (NAME) =SERIAL . FUNCTIONID.
vsource→get_advertisedValue()	Returns the current value of the voltage source (no more than 6 characters).
vsource→get_errorMessage()	Returns the error message of the latest error with this function.
vsource→get_errorType()	Returns the numerical error code of the latest error with this function.
vsource→get_extPowerFailure()	Returns true if external power supply voltage is too low.
vsource→get_failure()	Returns true if the module is in failure mode.
vsource→get_friendlyName()	Returns a global identifier of the function in the format MODULE_NAME . FUNCTION_NAME.
vsource→get_functionDescriptor()	Returns a unique identifier of type YFUN_DESCR corresponding to the function.
vsource→get_functionId()	Returns the hardware identifier of the function, without reference to the module.
vsource→get_hardwareId()	Returns the unique hardware identifier of the function in the form SERIAL . FUNCTIONID.
vsource→get_logicalName()	Returns the logical name of the voltage source.
vsource→get_module()	Gets the YModule object for the device on which the function is located.
vsource→get_module_async(callback, context)	

Gets the YModule object for the device on which the function is located (asynchronous version).

vsouce→get_overCurrent()

Returns true if the appliance connected to the device is too greedy .

vsouce→get_overHeat()

Returns TRUE if the module is overheating.

vsouce→get_overLoad()

Returns true if the device is not able to maintain the requested voltage output .

vsouce→get_regulationFailure()

Returns true if the voltage output is too high regarding the requested voltage .

vsouce→get_unit()

Returns the measuring unit for the voltage.

vsouce→get(userData)

Returns the value of the userData attribute, as previously stored using method set(userData).

vsouce→get_voltage()

Returns the voltage output command (mV)

vsouce→isOnline()

Checks if the function is currently reachable, without raising any error.

vsouce→isOnline_async(callback, context)

Checks if the function is currently reachable, without raising any error (asynchronous version).

vsouce→load(msValidity)

Preloads the function cache with a specified validity duration.

vsouce→load_async(msValidity, callback, context)

Preloads the function cache with a specified validity duration (asynchronous version).

vsouce→nextVSource()

Continues the enumeration of voltage sources started using yFirstVSource().

vsouce→pulse(voltage, ms_duration)

Sets device output to a specific volatage, for a specified duration, then brings it automatically to 0V.

vsouce→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

vsouce→set_logicalName(newval)

Changes the logical name of the voltage source.

vsouce→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

vsouce→set_voltage(newval)

Tunes the device output voltage (milliVolts).

vsouce→voltageMove(target, ms_duration)

Performs a smooth move at constant speed toward a given value.

vsouce→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

yFindVSource() — YVSource.FindVSource()yFindVSource()

YVSource

Retrieves a voltage source for a given identifier.

js	function yFindVSource(func)
php	function yFindVSource(\$func)
cpp	YVSource* yFindVSource(const string& func)
m	YVSource* yFindVSource(NSString* func)
pas	function yFindVSource(func: string): TYVSource
vb	function yFindVSource(ByVal func As String) As YVSource
cs	YVSource FindVSource(string func)
java	YVSource FindVSource(String func)
py	def FindVSource(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the voltage source is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YVSource.isOnline()` to test if the voltage source is indeed online at a given time. In case of ambiguity when looking for a voltage source by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the voltage source

Returns :

a YVSource object allowing you to drive the voltage source.

yFirstVSource() —**YVSource****YVSource.FirstVSource()yFirstVSource()**

Starts the enumeration of voltage sources currently accessible.

```
js   function yFirstVSource( )  
php  function yFirstVSource( )  
cpp  YVSource* yFirstVSource( )  
m    YVSource* yFirstVSource( )  
pas   function yFirstVSource( ): TYVSource  
vb    function yFirstVSource( ) As YVSource  
cs    YVSource FirstVSource( )  
java  YVSource FirstVSource( )  
py    def FirstVSource( )
```

Use the method `YVSource.nextVSource()` to iterate on next voltage sources.

Returns :

a pointer to a `YVSource` object, corresponding to the first voltage source currently online, or a null pointer if there are none.

vsources->describe()**YVSource**

Returns a short text that describes the function in the form TYPE (NAME)=SERIAL . FUNCTIONID.

js	function describe ()
php	function describe ()
cpp	string describe ()
m	- (NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()

More precisely, TYPE is the type of the function, NAME is the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the function (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

vsource→get_advertisedValue()
vsource→advertisedValue()
vsource.get_advertisedValue()

YVSource

Returns the current value of the voltage source (no more than 6 characters).

js	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YVSource target get_advertisedValue

Returns :

a string corresponding to the current value of the voltage source (no more than 6 characters)

On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

vsOURCE→get_errorMessage()
vsOURCE→errorMessage()
vsOURCE.get_errorMessage()**YVSource**

Returns the error message of the latest error with this function.

```
js  function get_errorMessage( )  
php function get_errorMessage( )  
cpp string get_errorMessage( )  
m -(NSString*) errorMessage  
pas function get_errorMessage( ):string  
vb function get_errorMessage( ) As String  
cs string get_errorMessage( )  
java String get_errorMessage( )  
py def get_errorMessage( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using this function object

vsource→get_errorType()**YVSource****vsource→errorType()vsource.get_errorType()**

Returns the numerical error code of the latest error with this function.

```
js  function get_errorType( )
php function get_errorType( )
cpp YRETCODE get_errorType( )
pas function get_errorType( ): YRETCODE
vb  function get_errorType( ) As YRETCODE
cs  YRETCODE get_errorType( )
java int get_errorType( )
py  def get_errorType( )
```

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using this function object

vsOURCE→get_extPowerFailure()
vsOURCE→extPowerFailure()
vsOURCE.get_extPowerFailure()

YVSource

Returns true if external power supply voltage is too low.

```
js function get_extPowerFailure( )
php function get_extPowerFailure( )
cpp Y_EXTPOWERFAILURE_enum get_extPowerFailure( )
m -(Y_EXTPOWERFAILURE_enum) extPowerFailure
pas function get_extPowerFailure( ): Integer
vb function get_extPowerFailure( ) As Integer
cs int get_extPowerFailure( )
java int get_extPowerFailure( )
py def get_extPowerFailure( )
cmd YVSource target get_extPowerFailure
```

Returns :

either Y_EXTPOWERFAILURE_FALSE or Y_EXTPOWERFAILURE_TRUE, according to true if external power supply voltage is too low

On failure, throws an exception or returns Y_EXTPOWERFAILURE_INVALID.

vsource→get_failure()
vsource→failure()vsource.get_failure()**YVSource**

Returns true if the module is in failure mode.

```
js function get_failure( )
php function get_failure( )
cpp Y_FAILURE_enum get_failure( )
m -(Y_FAILURE_enum) failure
pas function get_failure( ): Integer
vb function get_failure( ) As Integer
cs int get_failure( )
java int get_failure( )
py def get_failure( )
cmd YVSource target get_failure
```

More information can be obtained by testing get_overheat, get_overcurrent etc... When a error condition is met, the output voltage is set to zéro and cannot be changed until the reset() function is called.

Returns :

either Y_FAILURE_FALSE or Y_FAILURE_TRUE, according to true if the module is in failure mode

On failure, throws an exception or returns Y_FAILURE_INVALID.

vsOURCE→get_friendlyName()
vsOURCE→friendlyName()**YVSource**

Returns a global identifier of the function in the format MODULE_NAME . FUNCTION_NAME.

js **function get_friendlyName()**
php **function get_friendlyName()**
cpp **virtual string get_friendlyName()**
m **-NSString* friendlyName**
cs **override string get_friendlyName()**
java **String get_friendlyName()**

The returned string uses the logical names of the module and of the function if they are defined, otherwise the serial number of the module and the hardware identifier of the function (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the function using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

vsource→get_functionDescriptor()
vsource→functionDescriptor()
vsource.get_vsourceDescriptor()

YVSource

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

```
js  function get_functionDescriptor( )  
php function get_functionDescriptor( )  
cpp YFUN_DESCR get_functionDescriptor( )  
m -(YFUN_DESCR) functionDescriptor  
pas function get_functionDescriptor( ): YFUN_DESCR  
vb  function get_functionDescriptor( ) As YFUN_DESCR  
cs   YFUN_DESCR get_functionDescriptor( )  
java String get_functionDescriptor( )  
py   def get_functionDescriptor( )
```

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

vsource→get_functionId()
vsource→functionId()**YVSource**

Returns the hardware identifier of the function, without reference to the module.

```
js  function get_functionId( )  
php function get_functionId( )  
cpp string get_functionId( )  
m -(NSString*) functionId  
vb function get_functionId( ) As String  
cs string get_functionId( )  
java String get_functionId( )
```

For example `relay1`

Returns :

a string that identifies the function (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

vsource→get_hardwareId()
vsource→hardwareId()**YVSource**

Returns the unique hardware identifier of the function in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the function. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the function (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

vsource→get_logicalName()**YVSource****vsource→logicalName()vsource.get_logicalName()**

Returns the logical name of the voltage source.

```
js function get_logicalName( )
php function get_logicalName( )
cpp string get_logicalName( )
m -(NSString*) logicalName
pas function get_logicalName( ): string
vb function get_logicalName( ) As String
cs string get_logicalName( )
java String get_logicalName( )
py def get_logicalName( )
cmd YVSource target get_logicalName
```

Returns :

a string corresponding to the logical name of the voltage source

On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

vsource→get_module()**YVSource****vsource→module()vsource.get_module()**

Gets the YModule object for the device on which the function is located.

```
js   function get_module( )
php  function get_module( )
cpp  YModule * get_module( )
m    -(YModule*) module
pas   function get_module( ): TYModule
vb    function get_module( ) As YModule
cs    YModule get_module( )
java  YModule get_module( )
py    def get_module( )
```

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

vsource→get_module_async()
vsource→module_async()**YVSource**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

`js` **function get_module_async(callback, context)**

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

vsource→get_overCurrent()**YVSource****vsource→overCurrent()vsource.get_overCurrent()**

Returns true if the appliance connected to the device is too greedy .

```
js   function get_overCurrent( )  
php  function get_overCurrent( )  
cpp  Y_OVERCURRENT_enum get_overCurrent( )  
m    -(Y_OVERCURRENT_enum) overCurrent  
pas   function get_overCurrent( ): Integer  
vb    function get_overCurrent( ) As Integer  
cs    int get_overCurrent( )  
java  int get_overCurrent( )  
py    def get_overCurrent( )  
cmd   YVSource target get_overCurrent
```

Returns :

either Y_OVERCURRENT_FALSE or Y_OVERCURRENT_TRUE, according to true if the appliance connected to the device is too greedy

On failure, throws an exception or returns Y_OVERCURRENT_INVALID.

vsouce→get_overHeat()**YVSource****vsouce→overHeat()|vsouce.get_overHeat()**

Returns TRUE if the module is overheating.

```
js function get_overHeat( )  
php function get_overHeat( )  
cpp Y_OVERHEAT_enum get_overHeat( )  
m -(Y_OVERHEAT_enum) overHeat  
pas function get_overHeat( ): Integer  
vb function get_overHeat( ) As Integer  
cs int get_overHeat( )  
java int get_overHeat( )  
py def get_overHeat( )  
cmd YVSource target get_overHeat
```

Returns :

either Y_OVERHEAT_FALSE or Y_OVERHEAT_TRUE, according to TRUE if the module is overheating

On failure, throws an exception or returns Y_OVERHEAT_INVALID.

vsource→get_overLoad()**YVSource****vsource→overLoad()vsource.get_overLoad()**

Returns true if the device is not able to maintain the requested voltage output .

```
js   function get_overLoad( )  
php  function get_overLoad( )  
cpp  Y_OVERLOAD_enum get_overLoad( )  
m    -(Y_OVERLOAD_enum) overLoad  
pas   function get_overLoad( ): Integer  
vb    function get_overLoad( ) As Integer  
cs    int get_overLoad( )  
java  int get_overLoad( )  
py    def get_overLoad( )  
cmd   YVSource target get_overLoad
```

Returns :

either Y_OVERLOAD_FALSE or Y_OVERLOAD_TRUE, according to true if the device is not able to maintain the requested voltage output

On failure, throws an exception or returns Y_OVERLOAD_INVALID.

vsOURCE→get_regulationFailure()	YVSource
vsOURCE→regulationFailure()	
vsOURCE.get_regulationFailure()	

Returns true if the voltage output is too high regarding the requested voltage .

```
js function get_regulationFailure( )
php function get_regulationFailure( )
cpp Y_REGULATIONFAILURE_enum get_regulationFailure( )
m -(Y_REGULATIONFAILURE_enum) regulationFailure
pas function get_regulationFailure( ): Integer
vb function get_regulationFailure( ) As Integer
cs int get_regulationFailure( )
java int get_regulationFailure( )
py def get_regulationFailure( )
cmd YVSource target get_regulationFailure
```

Returns :

either Y_REGULATIONFAILURE_FALSE or Y_REGULATIONFAILURE_TRUE, according to true if the voltage output is too high regarding the requested voltage

On failure, throws an exception or returns Y_REGULATIONFAILURE_INVALID.

vsource→get_unit()**YVSource****vsource→unit()vsource.get_unit()**

Returns the measuring unit for the voltage.

```
js   function get_unit( )  
php  function get_unit( )  
cpp  string get_unit( )  
m    -(NSString*) unit  
pas  function get_unit( ): string  
vb   function get_unit( ) As String  
cs   string get_unit( )  
java String get_unit( )  
py   def get_unit( )  
cmd  YVSource target get_unit
```

Returns :

a string corresponding to the measuring unit for the voltage

On failure, throws an exception or returns Y_UNIT_INVALID.

vsouce→get(userData)**YVSource****vsouce→userData()|vsouce.get(userData)**

Returns the value of the userData attribute, as previously stored using method set(userData).

js	function get(userData)
php	function get(userData)
cpp	void * get(userData)
m	-(void*)(userData)
pas	function get(userData): Tobject
vb	function get(userData) As Object
cs	object get(userData)
java	Object get(userData)
py	def get(userData)

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

vsource→get_voltage()**YVSource****vsource→voltage()vsource.get_voltage()**

Returns the voltage output command (mV)

```
js   function get_voltage( )
php  function get_voltage( )
cpp  int get_voltage( )
m    -(int) voltage
pas  function get_voltage( ): LongInt
vb   function get_voltage( ) As Integer
cs   int get_voltage( )
java int get_voltage( )
py   def get_voltage( )
```

Returns :

an integer corresponding to the voltage output command (mV)

On failure, throws an exception or returns Y_VOLTAGE_INVALID.

vsource→isOnline()|vsource.isOnline()**YVSource**

Checks if the function is currently reachable, without raising any error.

js	function isOnline ()
php	function isOnline ()
cpp	bool isOnline ()
m	-BOOL) isOnline
pas	function isOnline (): boolean
vb	function isOnline () As Boolean
cs	bool isOnline ()
java	boolean isOnline ()
py	def isOnline ()

If there is a cached value for the function in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

Returns :

true if the function can be reached, and false otherwise

vsource→isOnline_async()**YVSource**

Checks if the function is currently reachable, without raising any error (asynchronous version).

```
js function isOnline_async( callback, context)
```

If there is a cached value for the function in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox Javascript VM that does not implement context switching during blocking I/O calls.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

vsources→load()|vsources.load()**YVSource**

Preloads the function cache with a specified validity duration.

js	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	-(YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

`YAPI_SUCCESS` when the call succeeds. On failure, throws an exception or returns a negative error code.

vsource→load_async()

YVSource

Preloads the function cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

vsource→nextVSource()vsource.nextVSource()**YVSource**

Continues the enumeration of voltage sources started using `yFirstVSource()`.

<code>js</code>	<code>function nextVSource()</code>
<code>php</code>	<code>function nextVSource()</code>
<code>cpp</code>	<code>YVSource * nextVSource()</code>
<code>m</code>	<code>-(YVSource*) nextVSource</code>
<code>pas</code>	<code>function nextVSource(): TYVSource</code>
<code>vb</code>	<code>function nextVSource() As YVSource</code>
<code>cs</code>	<code>YVSource nextVSource()</code>
<code>java</code>	<code>YVSource nextVSource()</code>
<code>py</code>	<code>def nextVSource()</code>

Returns :

a pointer to a `YVSource` object, corresponding to a voltage source currently online, or a `null` pointer if there are no more voltage sources to enumerate.

**vsource→pulse()
vsource.pulse()****YVSource**

Sets device output to a specific voltage, for a specified duration, then brings it automatically to 0V.

js	function pulse(voltage, ms_duration)
php	function pulse(\$voltage, \$ms_duration)
cpp	int pulse(int voltage, int ms_duration)
m	-(int) pulse : (int) voltage : (int) ms_duration
pas	function pulse(voltage: integer, ms_duration: integer): integer
vb	function pulse(ByVal voltage As Integer, ByVal ms_duration As Integer) As Integer
cs	int pulse(int voltage, int ms_duration)
java	int pulse(int voltage, int ms_duration)
py	def pulse(voltage, ms_duration)
cmd	YVSource target pulse voltage ms_duration

Parameters :

voltage pulse voltage, in millivolts
ms_duration pulse duration, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

**vsources→registerValueCallback()
vsources.registerValueCallback()****YVSource**

Registers the callback function that is invoked on every change of advertised value.

```
js function registerValueCallback( callback)
php function registerValueCallback( $callback)
cpp void registerValueCallback( YDisplayUpdateCallback callback)
pas procedure registerValueCallback( callback: TGenericUpdateCallback)
vb procedure registerValueCallback( ByVal callback As GenericUpdateCallback)
cs void registerValueCallback( UpdateCallback callback)
java void registerValueCallback( UpdateCallback callback)
py def registerValueCallback( callback)
m -(void) registerValueCallback : (YFunctionUpdateCallback) callback
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

vsource→set_logicalName()
vsource→setLogicalName()
vsource.set_logicalName()

YVSource

Changes the logical name of the voltage source.

js	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YVSource target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the voltage source

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

vsouce→set(userData)**YVSource****vsouce→setUserData()|vsouce.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

```
js function set(userData| userData)
php function set(userData| $data)
cpp void set(userData( void* data)
m -(void) setUserData : (void*) data
pas procedure set(userData( data: Tobject)
vb procedure set(userData( ByVal data As Object)
cs void set(userData( object data)
java void set(userData( Object data)
py def set(userData( data)
```

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

vsouce→set_voltage()**YVSource****vsouce→setVoltage()vsouce.set_voltage()**

Tunes the device output voltage (milliVolts).

```
js   function set_voltage( newval)
php  function set_voltage( $newval)
cpp  int set_voltage( int newval)
m    -(int) setVoltage : (int) newval
pas   function set_voltage( newval: LongInt): integer
vb    function set_voltage( ByVal newval As Integer) As Integer
cs    int set_voltage( int newval)
java  int set_voltage( int newval)
py    def set_voltage( newval)
cmd   YVSource target set_voltage newval
```

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

vsOURCE→voltageMove()vsOURCE.voltageMove()**YVSource**

Performs a smooth move at constant speed toward a given value.

```
js function voltageMove( target, ms_duration)
php function voltageMove( $target, $ms_duration)
cpp int voltageMove( int target, int ms_duration)
m -(int) voltageMove : (int) target : (int) ms_duration
pas function voltageMove( target: integer, ms_duration: integer): integer
vb function voltageMove( ByVal target As Integer,
                           ByVal ms_duration As Integer) As Integer
cs int voltageMove( int target, int ms_duration)
java int voltageMove( int target, int ms_duration)
py def voltageMove( target, ms_duration)
cmd YVSource target voltageMove target ms_duration
```

Parameters :

target new output value at end of transition, in millivolts.

ms_duration transition duration, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

vsource→wait_async()

YVSource

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing :

3.43. WakeUpMonitor function interface

The WakeUpMonitor function handles globally all wake-up sources, as well as automated sleep mode.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_wakeupmonitor.js'></script>
nodejs var yoctolib = require('yoctolib');
var YWakeUpMonitor = yoctolib.YWakeUpMonitor;
require_once('yocto_wakeupmonitor.php');
php #include "yocto_wakeupmonitor.h"
cpp #import "yocto_wakeupmonitor.h"
m uses yocto_wakeupmonitor;
pas yocto_wakeupmonitor.vb
cs yocto_wakeupmonitor.cs
java import com.yoctopuce.YoctoAPI.YWakeUpMonitor;
py from yocto_wakeupmonitor import *

```

Global functions

yFindWakeUpMonitor(func)

Retrieves a monitor for a given identifier.

yFirstWakeUpMonitor()

Starts the enumeration of monitors currently accessible.

YWakeUpMonitor methods

wakeupmonitor→describe()

Returns a short text that describes unambiguously the instance of the monitor in the form TYPE (NAME) = SERIAL . FUNCTIONID.

wakeupmonitor→get_advertisedValue()

Returns the current value of the monitor (no more than 6 characters).

wakeupmonitor→get_errorMessage()

Returns the error message of the latest error with the monitor.

wakeupmonitor→get_errorType()

Returns the numerical error code of the latest error with the monitor.

wakeupmonitor→get_friendlyName()

Returns a global identifier of the monitor in the format MODULE _ NAME . FUNCTION _ NAME.

wakeupmonitor→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

wakeupmonitor→get_functionId()

Returns the hardware identifier of the monitor, without reference to the module.

wakeupmonitor→get_hardwareId()

Returns the unique hardware identifier of the monitor in the form SERIAL . FUNCTIONID.

wakeupmonitor→get_logicalName()

Returns the logical name of the monitor.

wakeupmonitor→get_module()

Gets the YModule object for the device on which the function is located.

wakeupmonitor→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

wakeupmonitor→get_nextWakeUp()

Returns the next scheduled wake up date/time (UNIX format)
wakeupmonitor→get_powerDuration()
Returns the maximal wake up time (in seconds) before automatically going to sleep.
wakeupmonitor→get_sleepCountdown()
Returns the delay before the next sleep period.
wakeupmonitor→get_userData()
Returns the value of the userData attribute, as previously stored using method set(userData).
wakeupmonitor→get_wakeUpReason()
Returns the latest wake up reason.
wakeupmonitor→get_wakeUpState()
Returns the current state of the monitor
wakeupmonitor→isOnline()
Checks if the monitor is currently reachable, without raising any error.
wakeupmonitor→isOnline_async(callback, context)
Checks if the monitor is currently reachable, without raising any error (asynchronous version).
wakeupmonitor→load(msValidity)
Preloads the monitor cache with a specified validity duration.
wakeupmonitor→load_async(msValidity, callback, context)
Preloads the monitor cache with a specified validity duration (asynchronous version).
wakeupmonitor→nextWakeUpMonitor()
Continues the enumeration of monitors started using yFirstWakeUpMonitor().
wakeupmonitor→registerValueCallback(callback)
Registers the callback function that is invoked on every change of advertised value.
wakeupmonitor→resetSleepCountDown()
Resets the sleep countdown.
wakeupmonitor→set_logicalName(newval)
Changes the logical name of the monitor.
wakeupmonitor→set_nextWakeUp(newval)
Changes the days of the week when a wake up must take place.
wakeupmonitor→set_powerDuration(newval)
Changes the maximal wake up time (seconds) before automatically going to sleep.
wakeupmonitor→set_sleepCountdown(newval)
Changes the delay before the next sleep period.
wakeupmonitor→set_userData(data)
Stores a user context provided as argument in the userData attribute of the function.
wakeupmonitor→sleep(secBeforeSleep)
Goes to sleep until the next wake up condition is met, the RTC time must have been set before calling this function.
wakeupmonitor→sleepFor(secUntilWakeUp, secBeforeSleep)
Goes to sleep for a specific duration or until the next wake up condition is met, the RTC time must have been set before calling this function.
wakeupmonitor→sleepUntil(wakeUpTime, secBeforeSleep)
Go to sleep until a specific date is reached or until the next wake up condition is met, the RTC time must have been set before calling this function.
wakeupmonitor→wait_async(callback, context)

3. Reference

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

wakeupmonitor→wakeUp()

Forces a wake up.

YWakeUpMonitor.FindWakeUpMonitor() yFindWakeUpMonitor()yFindWakeUpMonitor()

YWakeUpMonitor

Retrieves a monitor for a given identifier.

<code>js</code>	<code>function yFindWakeUpMonitor(func)</code>
<code>node.js</code>	<code>function FindWakeUpMonitor(func)</code>
<code>php</code>	<code>function yFindWakeUpMonitor(\$func)</code>
<code>cpp</code>	<code>YWakeUpMonitor* yFindWakeUpMonitor(const string& func)</code>
<code>m</code>	<code>YWakeUpMonitor* yFindWakeUpMonitor(NSString* func)</code>
<code>pas</code>	<code>function yFindWakeUpMonitor(func: string): TYWakeUpMonitor</code>
<code>vb</code>	<code>function yFindWakeUpMonitor(ByVal func As String) As YWakeUpMonitor</code>
<code>cs</code>	<code>YWakeUpMonitor FindWakeUpMonitor(string func)</code>
<code>java</code>	<code>YWakeUpMonitor FindWakeUpMonitor(String func)</code>
<code>py</code>	<code>def FindWakeUpMonitor(func)</code>

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the monitor is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWakeUpMonitor.isOnline()` to test if the monitor is indeed online at a given time. In case of ambiguity when looking for a monitor by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

`func` a string that uniquely characterizes the monitor

Returns :

a `YWakeUpMonitor` object allowing you to drive the monitor.

YWakeUpMonitor.FirstWakeUpMonitor() yFirstWakeUpMonitor()yFirstWakeUpMonitor()

YWakeUpMonitor

Starts the enumeration of monitors currently accessible.

```
js function yFirstWakeUpMonitor( )
node.js function FirstWakeUpMonitor( )
php function yFirstWakeUpMonitor( )
cpp YWakeUpMonitor* yFirstWakeUpMonitor( )
m YWakeUpMonitor* yFirstWakeUpMonitor( )
pas function yFirstWakeUpMonitor( ): TYWakeUpMonitor
vb function yFirstWakeUpMonitor( ) As YWakeUpMonitor
cs YWakeUpMonitor FirstWakeUpMonitor()
java YWakeUpMonitor FirstWakeUpMonitor()
py def FirstWakeUpMonitor()
```

Use the method `YWakeUpMonitor.nextWakeUpMonitor()` to iterate on next monitors.

Returns :

a pointer to a `YWakeUpMonitor` object, corresponding to the first monitor currently online, or a null pointer if there are none.

wakeupmonitor→describe() wakeupmonitor.describe()

YWakeUpMonitor

Returns a short text that describes unambiguously the instance of the monitor in the form TYPE (NAME) =SERIAL.FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	-NSString* describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the monitor (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

wakeupmonitor→get_advertisedValue()
wakeupmonitor→advertisedValue()
wakeupmonitor.get_advertisedValue()

YWakeUpMonitor

Returns the current value of the monitor (no more than 6 characters).

```
js function get_advertisedValue( )  
nodejs function get_advertisedValue( )  
php function get_advertisedValue( )  
cpp string get_advertisedValue( )  
m -(NSString*) advertisedValue  
pas function get_advertisedValue( ): string  
vb function get_advertisedValue( ) As String  
cs string get_advertisedValue( )  
java String get_advertisedValue( )  
py def get_advertisedValue( )  
cmd YWakeUpMonitor target get_advertisedValue
```

Returns :

a string corresponding to the current value of the monitor (no more than 6 characters). On failure, throws an exception or returns Y_ADVERTISEDVALUE_INVALID.

**wakeupmonitor→getErrorMessage()
wakeupmonitor→errorMessage()
wakeupmonitor.getErrorMessage()****YWakeUpMonitor**

Returns the error message of the latest error with the monitor.

js	function getErrorMessage()
node.js	function getErrorMessage()
php	function getErrorMessage()
cpp	string getErrorMessage()
m	-(NSString*) errorMessage
pas	function getErrorMessage(): string
vb	function getErrorMessage() As String
cs	string getErrorMessage()
java	String getErrorMessage()
py	def getErrorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the monitor object

wakeupmonitor→get_errorType()
wakeupmonitor→errorType()
wakeupmonitor.get_errorType()**YWakeUpMonitor**

Returns the numerical error code of the latest error with the monitor.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the monitor object

wakeupmonitor→get_friendlyName()
wakeupmonitor→friendlyName()**YWakeUpMonitor**

Returns a global identifier of the monitor in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the monitor if they are defined, otherwise the serial number of the module and the hardware identifier of the monitor (for exemple: MyCustomName . relay1)

Returns :

a string that uniquely identifies the monitor using logical names (ex: MyCustomName . relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

wakeupmonitor→get_functionDescriptor()
wakeupmonitor→functionDescriptor()
wakeupmonitor.get_functionDescriptor()

YWakeUpMonitor

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
nodejs	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor(): YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

wakeupmonitor→get_functionId()
wakeupmonitor→functionId()**YWakeUpMonitor**

Returns the hardware identifier of the monitor, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the monitor (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

wakeupmonitor→get_hardwareId()
wakeupmonitor→hardwareId()**YWakeUpMonitor**

Returns the unique hardware identifier of the monitor in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
node.js	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the monitor. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the monitor (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

wakeupmonitor→get_logicalName()
wakeupmonitor→logicalName()
wakeupmonitor.get_logicalName()

YWakeUpMonitor

Returns the logical name of the monitor.

```
js function get_logicalName( )  
nodejs function get_logicalName( )  
php function get_logicalName( )  
cpp string get_logicalName( )  
m -(NSString*) logicalName  
pas function get_logicalName( ): string  
vb function get_logicalName( ) As String  
cs string get_logicalName( )  
java String get_logicalName( )  
py def get_logicalName( )  
cmd YWakeUpMonitor target get_logicalName
```

Returns :

a string corresponding to the logical name of the monitor. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

wakeupmonitor→get_module()**YWakeUpMonitor****wakeupmonitor→module()****wakeupmonitor.get_module()**

Gets the `YModule` object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	<code>YModule * get_module()</code>
m	<code>-(YModule*) module</code>
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	<code>YModule get_module()</code>
java	<code>YModule get_module()</code>
py	<code>def get_module()</code>

If the function cannot be located on any module, the returned instance of `YModule` is not shown as online.

Returns :

an instance of `YModule`

wakeupmonitor→get_module_async()**YWakeUpMonitor****wakeupmonitor→module_async()**

Gets the YModule object for the device on which the function is located (asynchronous version).

```
js   function get_module_async( callback, context)
nodejs function get_module_async( callback, context)
```

If the function cannot be located on any module, the returned YModule object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested YModule object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupmonitor→get_nextWakeUp()
wakeupmonitor→nextWakeUp()
wakeupmonitor.get_nextWakeUp()**YWakeUpMonitor**

Returns the next scheduled wake up date/time (UNIX format)

js	function get_nextWakeUp()
nodejs	function get_nextWakeUp()
php	function get_nextWakeUp()
cpp	s64 get_nextWakeUp()
m	-(s64) nextWakeUp
pas	function get_nextWakeUp(): int64
vb	function get_nextWakeUp() As Long
cs	long get_nextWakeUp()
java	long get_nextWakeUp()
py	def get_nextWakeUp()

Returns :

an integer corresponding to the next scheduled wake up date/time (UNIX format)

On failure, throws an exception or returns Y_NEXTWAKEUP_INVALID.

wakeupmonitor→get_powerDuration()
wakeupmonitor→powerDuration()
wakeupmonitor.get_powerDuration()**YWakeUpMonitor**

Returns the maximal wake up time (in seconds) before automatically going to sleep.

js	function get_powerDuration()
node.js	function get_powerDuration()
php	function get_powerDuration()
cpp	int get_powerDuration()
m	-(int) powerDuration
pas	function get_powerDuration() : LongInt
vb	function get_powerDuration() As Integer
cs	int get_powerDuration()
java	int get_powerDuration()
py	def get_powerDuration()
cmd	YWakeUpMonitor target get_powerDuration

Returns :

an integer corresponding to the maximal wake up time (in seconds) before automatically going to sleep

On failure, throws an exception or returns **Y_POWERDURATION_INVALID**.

wakeupmonitor→get_sleepCountdown()
wakeupmonitor→sleepCountdown()
wakeupmonitor.get_sleepCountdown()**YWakeUpMonitor**

Returns the delay before the next sleep period.

js	function get_sleepCountdown()
nodejs	function get_sleepCountdown()
php	function get_sleepCountdown()
cpp	int get_sleepCountdown()
m	-(int) sleepCountdown
pas	function get_sleepCountdown(): LongInt
vb	function get_sleepCountdown() As Integer
cs	int get_sleepCountdown()
java	int get_sleepCountdown()
py	def get_sleepCountdown()
cmd	YWakeUpMonitor target get_sleepCountdown

Returns :

an integer corresponding to the delay before the next sleep period

On failure, throws an exception or returns Y_SLEEPCOUNTDOWN_INVALID.

wakeupmonitor→get(userData())
wakeupmonitor→userData()
wakeupmonitor.get(userData())**YWakeUpMonitor**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	function get(userData)
nodejs	function get(userData)
php	function get(userData)
cpp	void * get(userData)
m	-(void*) userData
pas	function get(userData) : Tobject
vb	function get(userData) As Object
cs	object get(userData)
java	Object get(userData)
py	def get(userData)

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

wakeupmonitor→get_wakeUpReason()
wakeupmonitor→wakeUpReason()
wakeupmonitor.get_wakeUpReason()

YWakeUpMonitor

Returns the latest wake up reason.

js	function get_wakeUpReason()
nodejs	function get_wakeUpReason()
php	function get_wakeUpReason()
cpp	Y_WAKEUPREASON_enum get_wakeUpReason()
m	-(Y_WAKEUPREASON_enum) wakeUpReason
pas	function get_wakeUpReason(): Integer
vb	function get_wakeUpReason() As Integer
cs	int get_wakeUpReason()
java	int get_wakeUpReason()
py	def get_wakeUpReason()
cmd	YWakeUpMonitor target get_wakeUpReason

Returns :

a value among Y_WAKEUPREASON_USBPOWER, Y_WAKEUPREASON_EXTPOWER,
Y_WAKEUPREASON_ENDOFSLEEP, Y_WAKEUPREASON_EXTSIG1,
Y_WAKEUPREASON_EXTSIG2, Y_WAKEUPREASON_EXTSIG3,
Y_WAKEUPREASON_EXTSIG4, Y_WAKEUPREASON_SCHEDULE1,
Y_WAKEUPREASON_SCHEDULE2, Y_WAKEUPREASON_SCHEDULE3,
Y_WAKEUPREASON_SCHEDULE4, Y_WAKEUPREASON_SCHEDULE5 and
Y_WAKEUPREASON_SCHEDULE6 corresponding to the latest wake up reason

On failure, throws an exception or returns Y_WAKEUPREASON_INVALID.

wakeupmonitor→get_wakeUpState()
wakeupmonitor→wakeUpState()
wakeupmonitor.get_wakeUpState()

YWakeUpMonitor

Returns the current state of the monitor

js	function get_wakeUpState()
node.js	function get_wakeUpState()
php	function get_wakeUpState()
cpp	Y_WAKEUPSTATE_enum get_wakeUpState()
m	-(Y_WAKEUPSTATE_enum) wakeUpState
pas	function get_wakeUpState() : Integer
vb	function get_wakeUpState() As Integer
cs	int get_wakeUpState()
java	int get_wakeUpState()
py	def get_wakeUpState()

Returns :

either Y_WAKEUPSTATE_SLEEPING or Y_WAKEUPSTATE_AWAKE, according to the current state of the monitor

On failure, throws an exception or returns Y_WAKEUPSTATE_INVALID.

wakeupmonitor→isOnline()wakeupmonitor.isOnline()**YWakeUpMonitor**

Checks if the monitor is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the monitor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the monitor.

Returns :

true if the monitor can be reached, and false otherwise

wakeupmonitor→isOnline_async()**YWakeUpMonitor**

Checks if the monitor is currently reachable, without raising any error (asynchronous version).

js	function isOnline_async(callback, context)
node.js	function isOnline_async(callback, context)

If there is a cached value for the monitor in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupmonitor→load()wakeupmonitor.load()**YWakeUpMonitor**

Preloads the monitor cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→load_async()

YWakeUpMonitor

Preloads the monitor cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupmonitor→nextWakeUpMonitor()
wakeupmonitor.nextWakeUpMonitor()**YWakeUpMonitor**

Continues the enumeration of monitors started using `yFirstWakeUpMonitor()`.

<code>js</code>	<code>function nextWakeUpMonitor()</code>
<code>node.js</code>	<code>function nextWakeUpMonitor()</code>
<code>php</code>	<code>function nextWakeUpMonitor()</code>
<code>cpp</code>	<code>YWakeUpMonitor * nextWakeUpMonitor()</code>
<code>m</code>	<code>-(YWakeUpMonitor*) nextWakeUpMonitor</code>
<code>pas</code>	<code>function nextWakeUpMonitor(): TYWakeUpMonitor</code>
<code>vb</code>	<code>function nextWakeUpMonitor() As YWakeUpMonitor</code>
<code>cs</code>	<code>YWakeUpMonitor nextWakeUpMonitor()</code>
<code>java</code>	<code>YWakeUpMonitor nextWakeUpMonitor()</code>
<code>py</code>	<code>def nextWakeUpMonitor()</code>

Returns :

a pointer to a `YWakeUpMonitor` object, corresponding to a monitor currently online, or a null pointer if there are no more monitors to enumerate.

wakeupmonitor→registerValueCallback() wakeupmonitor.registerValueCallback()

YWakeUpMonitor

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback)
nodejs function registerValueCallback( callback)
php  function registerValueCallback( $callback)
cpp   int registerValueCallback( YWakeUpMonitorValueCallback callback)
m     -(int) registerValueCallback : (YWakeUpMonitorValueCallback) callback
pas   function registerValueCallback( callback: TYWakeUpMonitorValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs   int registerValueCallback( ValueCallback callback)
java  int registerValueCallback( UpdateCallback callback)
py    def registerValueCallback( callback)
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

wakeupmonitor→resetSleepCountDown()
wakeupmonitor.resetSleepCountDown()**YWakeUpMonitor**

Resets the sleep countdown.

js	function resetSleepCountDown()
node.js	function resetSleepCountDown()
php	function resetSleepCountDown()
cpp	int resetSleepCountDown()
m	- (int) resetSleepCountDown
pas	function resetSleepCountDown(): LongInt
vb	function resetSleepCountDown() As Integer
cs	int resetSleepCountDown()
java	int resetSleepCountDown()
py	def resetSleepCountDown()
cmd	YWakeUpMonitor target resetSleepCountDown

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_logicalName()
wakeupmonitor→setLogicalName()
wakeupmonitor.set_logicalName()

YWakeUpMonitor

Changes the logical name of the monitor.

js	function set_logicalName(newval)
node.js	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YWakeUpMonitor target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the monitor.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_nextWakeUp()
wakeupmonitor→setNextWakeUp()
wakeupmonitor.set_nextWakeUp()

YWakeUpMonitor

Changes the days of the week when a wake up must take place.

js	function set_nextWakeUp(newval)
nodejs	function set_nextWakeUp(newval)
php	function set_nextWakeUp(\$newval)
cpp	int set_nextWakeUp(s64 newval)
m	-(int) setNextWakeUp : (s64) newval
pas	function set_nextWakeUp(newval: int64): integer
vb	function set_nextWakeUp(ByVal newval As Long) As Integer
cs	int set_nextWakeUp(long newval)
java	int set_nextWakeUp(long newval)
py	def set_nextWakeUp(newval)
cmd	YWakeUpMonitor target set_nextWakeUp newval

Parameters :

newval an integer corresponding to the days of the week when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_powerDuration()
wakeupmonitor→setPowerDuration()
wakeupmonitor.set_powerDuration()

YWakeUpMonitor

Changes the maximal wake up time (seconds) before automatically going to sleep.

js	function set_powerDuration(newval)
nodejs	function set_powerDuration(newval)
php	function set_powerDuration(\$newval)
cpp	int set_powerDuration(int newval)
m	-(int) setPowerDuration : (int) newval
pas	function set_powerDuration(newval: LongInt): integer
vb	function set_powerDuration(ByVal newval As Integer) As Integer
cs	int set_powerDuration(int newval)
java	int set_powerDuration(int newval)
py	def set_powerDuration(newval)
cmd	YWakeUpMonitor target set_powerDuration newval

Parameters :

newval an integer corresponding to the maximal wake up time (seconds) before automatically going to sleep

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→set_sleepCountdown()
wakeupmonitor→setSleepCountdown()
wakeupmonitor.set_sleepCountdown()

YWakeUpMonitor

Changes the delay before the next sleep period.

```
js function set_sleepCountdown( newval)
nodejs function set_sleepCountdown( newval)
php function set_sleepCountdown( $newval)
cpp int set_sleepCountdown( int newval)
m -(int) setSleepCountdown : (int) newval
pas function set_sleepCountdown( newval: LongInt): integer
vb function set_sleepCountdown( ByVal newval As Integer) As Integer
cs int set_sleepCountdown( int newval)
java int set_sleepCountdown( int newval)
py def set_sleepCountdown( newval)
cmd YWakeUpMonitor target set_sleepCountdown newval
```

Parameters :

newval an integer corresponding to the delay before the next sleep period

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupmonitor→**set(userData)**
wakeupmonitor→**setUserData()**
wakeupmonitor.set(userData)

YWakeUpMonitor

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	-(void) setUserData : (void*) data
pas	procedure set(userData data: Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

wakeupmonitor→sleep()wakeupmonitor.sleep()**YWakeUpMonitor**

Goes to sleep until the next wake up condition is met, the RTC time must have been set before calling this function.

js	function sleep(secBeforeSleep)
nodejs	function sleep(secBeforeSleep)
php	function sleep(\$secBeforeSleep)
cpp	int sleep(int secBeforeSleep)
m	- (int) sleep : (int) secBeforeSleep
pas	function sleep(secBeforeSleep: LongInt): LongInt
vb	function sleep() As Integer
cs	int sleep(int secBeforeSleep)
java	int sleep(int secBeforeSleep)
py	def sleep(secBeforeSleep)
cmd	YWakeUpMonitor target sleep secBeforeSleep

Parameters :

secBeforeSleep number of seconds before going into sleep mode,

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→sleepFor() wakeupmonitor.sleepFor()

YWakeUpMonitor

Goes to sleep for a specific duration or until the next wake up condition is met, the RTC time must have been set before calling this function.

```

js   function sleepFor( secUntilWakeUp, secBeforeSleep)
nodejs function sleepFor( secUntilWakeUp, secBeforeSleep)
php  function sleepFor( $secUntilWakeUp, $secBeforeSleep)
cpp   int sleepFor( int secUntilWakeUp, int secBeforeSleep)
m    -(int) sleepFor : (int) secUntilWakeUp : (int) secBeforeSleep
pas   function sleepFor( secUntilWakeUp: LongInt,
                        secBeforeSleep: LongInt): LongInt

vb   function sleepFor( ) As Integer
cs   int sleepFor( int secUntilWakeUp, int secBeforeSleep)
java int sleepFor( int secUntilWakeUp, int secBeforeSleep)
py   def sleepFor( secUntilWakeUp, secBeforeSleep)
cmd  YWakeUpMonitor target sleepFor secUntilWakeUp secBeforeSleep

```

The count down before sleep can be canceled with resetSleepCountDown.

Parameters :

secUntilWakeUp sleep duration, in secondes
secBeforeSleep number of seconds before going into sleep mode

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→sleepUntil() wakeupmonitor.sleepUntil()

YWakeUpMonitor

Go to sleep until a specific date is reached or until the next wake up condition is met, the RTC time must have been set before calling this function.

```

js   function sleepUntil( wakeUpTime, secBeforeSleep)
nodejs function sleepUntil( wakeUpTime, secBeforeSleep)
php  function sleepUntil( $wakeUpTime, $secBeforeSleep)
cpp   int sleepUntil( int wakeUpTime, int secBeforeSleep)
m    -(int) sleepUntil : (int) wakeUpTime : (int) secBeforeSleep
pas   function sleepUntil( wakeUpTime: LongInt,
                           secBeforeSleep: LongInt): LongInt
vb    function sleepUntil( ) As Integer
cs    int sleepUntil( int wakeUpTime, int secBeforeSleep)
java  int sleepUntil( int wakeUpTime, int secBeforeSleep)
py    def sleepUntil( wakeUpTime, secBeforeSleep)
cmd   YWakeUpMonitor target sleepUntil wakeUpTime secBeforeSleep

```

The count down before sleep can be canceled with resetSleepCountDown.

Parameters :

wakeUpTime wake-up datetime (UNIX format)
secBeforeSleep number of seconds before going into sleep mode

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupmonitor→wait_async()

YWakeUpMonitor

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

wakeupmonitor→wakeUp()wakeupmonitor.wakeUp()**YWakeUpMonitor**

Forces a wake up.

js	function wakeUp()
nodejs	function wakeUp()
php	function wakeUp()
cpp	int wakeUp()
m	- (int) wakeUp
pas	function wakeUp(): LongInt
vb	function wakeUp() As Integer
cs	int wakeUp()
java	int wakeUp()
py	def wakeUp()
cmd	YWakeUpMonitor target wakeUp

3.44. WakeUpSchedule function interface

The WakeUpSchedule function implements a wake up condition. The wake up time is specified as a set of months and/or days and/or hours and/or minutes when the wake up should happen.

In order to use the functions described here, you should include:

js	<script type='text/javascript' src='yocto_wakeupschedule.js'></script>
nodejs	var yoctolib = require('yoctolib');
	var YWakeUpSchedule = yoctolib.YWakeUpSchedule;
php	require_once('yocto_wakeupschedule.php');
cpp	#include "yocto_wakeupschedule.h"
m	#import "yocto_wakeupschedule.h"
pas	uses yocto_wakeupschedule;
vb	yocto_wakeupschedule.vb
cs	yocto_wakeupschedule.cs
java	import com.yoctopuce.YoctoAPI.YWakeUpSchedule;
py	from yocto_wakeupschedule import *

Global functions

yFindWakeUpSchedule(func)

Retrieves a wake up schedule for a given identifier.

yFirstWakeUpSchedule()

Starts the enumeration of wake up schedules currently accessible.

YWakeUpSchedule methods

wakeupschedule→describe()

Returns a short text that describes unambiguously the instance of the wake up schedule in the form
TYPE (NAME) = SERIAL . FUNCTIONID.

wakeupschedule→get_advertisedValue()

Returns the current value of the wake up schedule (no more than 6 characters).

wakeupschedule→get_errorMessage()

Returns the error message of the latest error with the wake up schedule.

wakeupschedule→get_errorType()

Returns the numerical error code of the latest error with the wake up schedule.

wakeupschedule→get_friendlyName()

Returns a global identifier of the wake up schedule in the format MODULE_NAME . FUNCTION_NAME.

wakeupschedule→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

wakeupschedule→get_functionId()

Returns the hardware identifier of the wake up schedule, without reference to the module.

wakeupschedule→get_hardwareId()

Returns the unique hardware identifier of the wake up schedule in the form SERIAL . FUNCTIONID.

wakeupschedule→get_hours()

Returns the hours scheduled for wake up.

wakeupschedule→get_logicalName()

Returns the logical name of the wake up schedule.

wakeupschedule→get_minutes()

Returns all the minutes of each hour that are scheduled for wake up.

wakeupschedule→get_minutesA()

3. Reference

Returns the minutes in the 00-29 interval of each hour scheduled for wake up.

wakeupschedule→get_minutesB()

Returns the minutes in the 30-59 interval of each hour scheduled for wake up.

wakeupschedule→get_module()

Gets the YModule object for the device on which the function is located.

wakeupschedule→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

wakeupschedule→get_monthDays()

Returns the days of the month scheduled for wake up.

wakeupschedule→get_months()

Returns the months scheduled for wake up.

wakeupschedule→get_nextOccurrence()

Returns the date/time (seconds) of the next wake up occurrence

wakeupschedule→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

wakeupschedule→get_weekDays()

Returns the days of the week scheduled for wake up.

wakeupschedule→isOnline()

Checks if the wake up schedule is currently reachable, without raising any error.

wakeupschedule→isOnline_async(callback, context)

Checks if the wake up schedule is currently reachable, without raising any error (asynchronous version).

wakeupschedule→load(msValidity)

Preloads the wake up schedule cache with a specified validity duration.

wakeupschedule→load_async(msValidity, callback, context)

Preloads the wake up schedule cache with a specified validity duration (asynchronous version).

wakeupschedule→nextWakeUpSchedule()

Continues the enumeration of wake up schedules started using yFirstWakeUpSchedule().

wakeupschedule→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

wakeupschedule→set_hours(newval)

Changes the hours when a wake up must take place.

wakeupschedule→set_logicalName(newval)

Changes the logical name of the wake up schedule.

wakeupschedule→set_minutes(bitmap)

Changes all the minutes where a wake up must take place.

wakeupschedule→set_minutesA(newval)

Changes the minutes in the 00-29 interval when a wake up must take place.

wakeupschedule→set_minutesB(newval)

Changes the minutes in the 30-59 interval when a wake up must take place.

wakeupschedule→set_monthDays(newval)

Changes the days of the month when a wake up must take place.

wakeupschedule→set_months(newval)

Changes the months when a wake up must take place.

wakeupschedule→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

wakeupschedule→set_weekDays(newval)

Changes the days of the week when a wake up must take place.

wakeupschedule→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YWakeUpSchedule.FindWakeUpSchedule() yFindWakeUpSchedule()yFindWakeUpSchedule()

YWakeUpSchedule

Retrieves a wake up schedule for a given identifier.

js	function yFindWakeUpSchedule(func)
node.js	function FindWakeUpSchedule(func)
php	function yFindWakeUpSchedule(\$func)
cpp	YWakeUpSchedule* yFindWakeUpSchedule(const string& func)
m	YWakeUpSchedule* yFindWakeUpSchedule(NSString* func)
pas	function yFindWakeUpSchedule(func: string): TYWakeUpSchedule
vb	function yFindWakeUpSchedule(ByVal func As String) As YWakeUpSchedule
cs	YWakeUpSchedule FindWakeUpSchedule(string func)
java	YWakeUpSchedule FindWakeUpSchedule(String func)
py	def FindWakeUpSchedule(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the wake up schedule is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWakeUpSchedule.isOnline()` to test if the wake up schedule is indeed online at a given time. In case of ambiguity when looking for a wake up schedule by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the wake up schedule

Returns :

a `YWakeUpSchedule` object allowing you to drive the wake up schedule.

YWakeUpSchedule.FirstWakeUpSchedule()**yFirstWakeUpSchedule()yFirstWakeUpSchedule()****YWakeUpSchedule**

Starts the enumeration of wake up schedules currently accessible.

js	function yFirstWakeUpSchedule()
node.js	function FirstWakeUpSchedule()
php	function yFirstWakeUpSchedule()
cpp	YWakeUpSchedule* yFirstWakeUpSchedule()
m	YWakeUpSchedule* yFirstWakeUpSchedule()
pas	function yFirstWakeUpSchedule(): TYWakeUpSchedule
vb	function yFirstWakeUpSchedule() As YWakeUpSchedule
cs	YWakeUpSchedule FirstWakeUpSchedule()
java	YWakeUpSchedule FirstWakeUpSchedule()
py	def FirstWakeUpSchedule()

Use the method `YWakeUpSchedule.nextWakeUpSchedule()` to iterate on next wake up schedules.

Returns :

a pointer to a `YWakeUpSchedule` object, corresponding to the first wake up schedule currently online, or a `null` pointer if there are none.

wakeupschedule→describe() wakeupschedule.describe()

YWakeUpSchedule

Returns a short text that describes unambiguously the instance of the wake up schedule in the form
 TYPE (NAME)=SERIAL . FUNCTIONID.

js	function describe ()
nodejs	function describe ()
php	function describe ()
cpp	string describe ()
m	- (NSString*) describe
pas	function describe (): string
vb	function describe () As String
cs	string describe ()
java	String describe ()
py	def describe ()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the wake up schedule (ex:
 Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

wakeupschedule→get_advertisedValue()
wakeupschedule→advertisedValue()
wakeupschedule.get_advertisedValue()

YWakeUpSchedule

Returns the current value of the wake up schedule (no more than 6 characters).

js	function get_advertisedValue()
nodejs	function get_advertisedValue()
php	function get_advertisedValue()
cpp	string get_advertisedValue()
m	-(NSString*) advertisedValue
pas	function get_advertisedValue() : string
vb	function get_advertisedValue() As String
cs	string get_advertisedValue()
java	String get_advertisedValue()
py	def get_advertisedValue()
cmd	YWakeUpSchedule target get_advertisedValue

Returns :

a string corresponding to the current value of the wake up schedule (no more than 6 characters). On failure, throws an exception or returns **Y_ADVERTISEDVALUE_INVALID**.

wakeupschedule→get_errorMessage()
wakeupschedule→errorMessage()
wakeupschedule.get_errorMessage()**YWakeUpSchedule**

Returns the error message of the latest error with the wake up schedule.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the wake up schedule object

wakeupschedule→get_errorType()
wakeupschedule→errorType()
wakeupschedule.get_errorType()

YWakeUpSchedule

Returns the numerical error code of the latest error with the wake up schedule.

js	function get_errorType()
node.js	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the wake up schedule object

wakeupschedule→get_friendlyName()
wakeupschedule→friendlyName()**YWakeUpSchedule**

Returns a global identifier of the wake up schedule in the format MODULE_NAME.FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the wake up schedule if they are defined, otherwise the serial number of the module and the hardware identifier of the wake up schedule (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the wake up schedule using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

wakeupschedule→get_functionDescriptor()
wakeupschedule→functionDescriptor()
wakeupschedule.get_functionDescriptor()

YWakeUpSchedule

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

wakeupschedule→get_functionId()
wakeupschedule→functionId()**YWakeUpSchedule**

Returns the hardware identifier of the wake up schedule, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the wake up schedule (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

**wakeupschedule→get_hardwareId()
wakeupschedule→hardwareId()****YWakeUpSchedule**

Returns the unique hardware identifier of the wake up schedule in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the wake up schedule. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the wake up schedule (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

wakeupschedule→get_hours()
wakeupschedule→hours()
wakeupschedule.get_hours()**YWakeUpSchedule**

Returns the hours scheduled for wake up.

js	function get_hours()
nodejs	function get_hours()
php	function get_hours()
cpp	int get_hours()
m	-(int) hours
pas	function get_hours() : LongInt
vb	function get_hours() As Integer
cs	int get_hours()
java	int get_hours()
py	def get_hours()
cmd	YWakeUpSchedule target get_hours

Returns :

an integer corresponding to the hours scheduled for wake up

On failure, throws an exception or returns Y_HOURS_INVALID.

wakeupschedule→get_logicalName()
wakeupschedule→logicalName()
wakeupschedule.get_logicalName()

YWakeUpSchedule

Returns the logical name of the wake up schedule.

```
js function get_logicalName( )  
nodejs function get_logicalName( )  
php function get_logicalName( )  
cpp string get_logicalName( )  
m -(NSString*) logicalName  
pas function get_logicalName( ): string  
vb function get_logicalName( ) As String  
cs string get_logicalName( )  
java String get_logicalName( )  
py def get_logicalName( )  
cmd YWakeUpSchedule target get_logicalName
```

Returns :

a string corresponding to the logical name of the wake up schedule. On failure, throws an exception or returns `Y_LOGICALNAME_INVALID`.

wakeupschedule→get_minutes()
wakeupschedule→minutes()
wakeupschedule.get_minutes()

YWakeUpSchedule

Returns all the minutes of each hour that are scheduled for wake up.

```
js function get_minutes( )
nodejs function get_minutes( )
php function get_minutes( )
cpp s64 get_minutes( )
m -(s64) minutes
pas function get_minutes( ): int64
vb function get_minutes( ) As Long
cs long get_minutes( )
java long get_minutes( )
py def get_minutes( )
cmd YWakeUpSchedule target get_minutes
```

wakeupschedule→get_minutesA()
wakeupschedule→minutesA()
wakeupschedule.get_minutesA()

YWakeUpSchedule

Returns the minutes in the 00-29 interval of each hour scheduled for wake up.

js	function get_minutesA()
nodejs	function get_minutesA()
php	function get_minutesA()
cpp	int get_minutesA()
m	-(int) minutesA
pas	function get_minutesA(): LongInt
vb	function get_minutesA() As Integer
cs	int get_minutesA()
java	int get_minutesA()
py	def get_minutesA()
cmd	YWakeUpSchedule target get_minutesA

Returns :

an integer corresponding to the minutes in the 00-29 interval of each hour scheduled for wake up

On failure, throws an exception or returns Y_MINUTESA_INVALID.

wakeupschedule→get_minutesB()
wakeupschedule→minutesB()
wakeupschedule.get_minutesB()

YWakeUpSchedule

Returns the minutes in the 30-59 interval of each hour scheduled for wake up.

js	function get_minutesB()
nodejs	function get_minutesB()
php	function get_minutesB()
cpp	int get_minutesB()
m	-(int) minutesB
pas	function get_minutesB(): LongInt
vb	function get_minutesB() As Integer
cs	int get_minutesB()
java	int get_minutesB()
py	def get_minutesB()
cmd	YWakeUpSchedule target get_minutesB

Returns :

an integer corresponding to the minutes in the 30-59 interval of each hour scheduled for wake up

On failure, throws an exception or returns Y_MINUTESB_INVALID.

wakeupschedule→get_module()
wakeupschedule→module()
wakeupschedule.get_module()

YWakeUpSchedule

Gets the **YModule** object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of **YModule** is not shown as on-line.

Returns :

an instance of **YModule**

wakeupschedule→get_module_async()**YWakeUpSchedule****wakeupschedule→module_async()**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupschedule→get_monthDays()
wakeupschedule→monthDays()
wakeupschedule.get_monthDays()

YWakeUpSchedule

Returns the days of the month scheduled for wake up.

js	function get_monthDays()
node.js	function get_monthDays()
php	function get_monthDays()
cpp	int get_monthDays()
m	-(int) monthDays
pas	function get_monthDays(): LongInt
vb	function get_monthDays() As Integer
cs	int get_monthDays()
java	int get_monthDays()
py	def get_monthDays()
cmd	YWakeUpSchedule target get_monthDays

Returns :

an integer corresponding to the days of the month scheduled for wake up

On failure, throws an exception or returns Y_MONTHDAYS_INVALID.

wakeupschedule→get_months()
wakeupschedule→months()
wakeupschedule.get_months()**YWakeUpSchedule**

Returns the months scheduled for wake up.

js	function get_months()
nodejs	function get_months()
php	function get_months()
cpp	int get_months()
m	-(int) months
pas	function get_months() : LongInt
vb	function get_months() As Integer
cs	int get_months()
java	int get_months()
py	def get_months()
cmd	YWakeUpSchedule target get_months

Returns :

an integer corresponding to the months scheduled for wake up

On failure, throws an exception or returns Y_MONTHS_INVALID.

wakeupschedule→get_nextOccurence()
wakeupschedule→nextOccurence()
wakeupschedule.get_nextOccurence()

YWakeUpSchedule

Returns the date/time (seconds) of the next wake up occurence

js	function get_nextOccurence()
nodejs	function get_nextOccurence()
php	function get_nextOccurence()
cpp	s64 get_nextOccurence()
m	-(s64) nextOccurence
pas	function get_nextOccurence() : int64
vb	function get_nextOccurence() As Long
cs	long get_nextOccurence()
java	long get_nextOccurence()
py	def get_nextOccurence()

Returns :

an integer corresponding to the date/time (seconds) of the next wake up occurence

On failure, throws an exception or returns **Y_NEXTOCCURENCE_INVALID**.

wakeupschedule→get(userData)
wakeupschedule→userData()
wakeupschedule.get(userData)**YWakeUpSchedule**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	function get(userData) ()
nodejs	function get(userData) ()
php	function get(userData) ()
cpp	void * get(userData) ()
m	-(void*) userData
pas	function get(userData) (): TObject
vb	function get(userData) () As Object
cs	object get(userData) ()
java	Object get(userData) ()
py	def get(userData)()

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

wakeupschedule→get_weekDays()
wakeupschedule→weekDays()
wakeupschedule.get_weekDays()

YWakeUpSchedule

Returns the days of the week scheduled for wake up.

js	function get_weekDays()
nodejs	function get_weekDays()
php	function get_weekDays()
cpp	int get_weekDays()
m	-(int) weekDays
pas	function get_weekDays(): LongInt
vb	function get_weekDays() As Integer
cs	int get_weekDays()
java	int get_weekDays()
py	def get_weekDays()
cmd	YWakeUpSchedule target get_weekDays

Returns :

an integer corresponding to the days of the week scheduled for wake up

On failure, throws an exception or returns Y_WEEKDAYS_INVALID.

wakeupschedule→isOnline()
wakeupschedule.isOnline()**YWakeUpSchedule**

Checks if the wake up schedule is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	-BOOL isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the wake up schedule in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the wake up schedule.

Returns :

true if the wake up schedule can be reached, and false otherwise

wakeupschedule→isOnline_async()**YWakeUpSchedule**

Checks if the wake up schedule is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the wake up schedule in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupschedule→load()wakeupschedule.load()**YWakeUpSchedule**

Preloads the wake up schedule cache with a specified validity duration.

js	function load(msValidity)
nodejs	function load(msValidity)
php	function load(\$msValidity)
cpp	YRETCODE load(int msValidity)
m	- (YRETCODE) load : (int) msValidity
pas	function load(msValidity: integer): YRETCODE
vb	function load(ByVal msValidity As Integer) As YRETCODE
cs	YRETCODE load(int msValidity)
java	int load(long msValidity)
py	def load(msValidity)

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupschedule→load_async()**YWakeUpSchedule**

Preloads the wake up schedule cache with a specified validity duration (asynchronous version).

```
js  function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wakeupschedule→nextWakeUpSchedule()
wakeupschedule.nextWakeUpSchedule()**YWakeUpSchedule**

Continues the enumeration of wake up schedules started using `yFirstWakeUpSchedule()`.

<code>js</code>	<code>function nextWakeUpSchedule()</code>
<code>node.js</code>	<code>function nextWakeUpSchedule()</code>
<code>php</code>	<code>function nextWakeUpSchedule()</code>
<code>cpp</code>	<code>YWakeUpSchedule * nextWakeUpSchedule()</code>
<code>m</code>	<code>-(YWakeUpSchedule*) nextWakeUpSchedule</code>
<code>pas</code>	<code>function nextWakeUpSchedule(): TYWakeUpSchedule</code>
<code>vb</code>	<code>function nextWakeUpSchedule() As YWakeUpSchedule</code>
<code>cs</code>	<code>YWakeUpSchedule nextWakeUpSchedule()</code>
<code>java</code>	<code>YWakeUpSchedule nextWakeUpSchedule()</code>
<code>py</code>	<code>def nextWakeUpSchedule()</code>

Returns :

a pointer to a `YWakeUpSchedule` object, corresponding to a wake up schedule currently online, or a null pointer if there are no more wake up schedules to enumerate.

wakeupschedule→registerValueCallback() wakeupschedule.registerValueCallback()

YWakeUpSchedule

Registers the callback function that is invoked on every change of advertised value.

<code>js</code>	<code>function registerValueCallback(callback)</code>
<code>node.js</code>	<code>function registerValueCallback(callback)</code>
<code>php</code>	<code>function registerValueCallback(\$callback)</code>
<code>cpp</code>	<code>int registerValueCallback(YWakeUpScheduleValueCallback callback)</code>
<code>m</code>	<code>-(int) registerValueCallback : (YWakeUpScheduleValueCallback) callback</code>
<code>pas</code>	<code>function registerValueCallback(callback: TYWakeUpScheduleValueCallback): LongInt</code>
<code>vb</code>	<code>function registerValueCallback() As Integer</code>
<code>cs</code>	<code>int registerValueCallback(ValueCallback callback)</code>
<code>java</code>	<code>int registerValueCallback(UpdateCallback callback)</code>
<code>py</code>	<code>def registerValueCallback(callback)</code>

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

wakeupschedule→set_hours()
wakeupschedule→setHours()
wakeupschedule.set_hours()

YWakeUpSchedule

Changes the hours when a wake up must take place.

```
js function set_hours( newval)
nodejs function set_hours( newval)
php function set_hours( $newval)
cpp int set_hours( int newval)
m -(int) setHours : (int) newval
pas function set_hours( newval: LongInt): integer
vb function set_hours( ByVal newval As Integer) As Integer
cs int set_hours( int newval)
java int set_hours( int newval)
py def set_hours( newval)
cmd YWakeUpSchedule target set_hours newval
```

Parameters :

newval an integer corresponding to the hours when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_logicalName()
wakeupschedule→setLogicalName()
wakeupschedule.set_logicalName()

YWakeUpSchedule

Changes the logical name of the wake up schedule.

js	function set_logicalName(newval)
node.js	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YWakeUpSchedule target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the wake up schedule.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupschedule→set_minutes()
wakeupschedule→setMinutes()
wakeupschedule.set_minutes()

YWakeUpSchedule

Changes all the minutes where a wake up must take place.

```
js function set_minutes( bitmap)
nodejs function set_minutes( bitmap)
php function set_minutes( $bitmap)
cpp int set_minutes( s64 bitmap)
m -(int) setMinutes : (s64) bitmap
pas function set_minutes( bitmap: int64): LongInt
vb function set_minutes( ) As Integer
cs int set_minutes( long bitmap)
java int set_minutes( long bitmap)
py def set_minutes( bitmap)
cmd YWakeUpSchedule target set_minutes bitmap
```

Parameters :

bitmap Minutes 00-59 of each hour scheduled for wake up.

Returns :

YAPI_SUCCESS if the call succeeds. On failure, throws an exception or returns a negative error code.

wakeupschedule→set_minutesA()
wakeupschedule→setMinutesA()
wakeupschedule.set_minutesA()

YWakeUpSchedule

Changes the minutes in the 00-29 interval when a wake up must take place.

js	function set_minutesA(newval)
node.js	function set_minutesA(newval)
php	function set_minutesA(\$newval)
cpp	int set_minutesA(int newval)
m	-(int) setMinutesA : (int) newval
pas	function set_minutesA(newval: LongInt): integer
vb	function set_minutesA(ByVal newval As Integer) As Integer
cs	int set_minutesA(int newval)
java	int set_minutesA(int newval)
py	def set_minutesA(newval)
cmd	YWakeUpSchedule target set_minutesA newval

Parameters :

newval an integer corresponding to the minutes in the 00-29 interval when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_minutesB()
wakeupschedule→setMinutesB()
wakeupschedule.set_minutesB()

YWakeUpSchedule

Changes the minutes in the 30-59 interval when a wake up must take place.

js	function set_minutesB(newval)
nodejs	function set_minutesB(newval)
php	function set_minutesB(\$newval)
cpp	int set_minutesB(int newval)
m	-(int) setMinutesB : (int) newval
pas	function set_minutesB(newval: LongInt): integer
vb	function set_minutesB(ByVal newval As Integer) As Integer
cs	int set_minutesB(int newval)
java	int set_minutesB(int newval)
py	def set_minutesB(newval)
cmd	YWakeUpSchedule target set_minutesB newval

Parameters :

newval an integer corresponding to the minutes in the 30-59 interval when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→**set_monthDays()**
wakeupschedule→**setMonthDays()**
wakeupschedule.set_monthDays()

YWakeUpSchedule

Changes the days of the month when a wake up must take place.

js	function set_monthDays(newval)
nodejs	function set_monthDays(newval)
php	function set_monthDays(\$newval)
cpp	int set_monthDays(int newval)
m	-(int) setMonthDays : (int) newval
pas	function set_monthDays(newval: LongInt): integer
vb	function set_monthDays(ByVal newval As Integer) As Integer
cs	int set_monthDays(int newval)
java	int set_monthDays(int newval)
py	def set_monthDays(newval)
cmd	YWakeUpSchedule target set_monthDays newval

Parameters :

newval an integer corresponding to the days of the month when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set_months()
wakeupschedule→setMonths()
wakeupschedule.set_months()

YWakeUpSchedule

Changes the months when a wake up must take place.

```
js function set_months( newval)
nodejs function set_months( newval)
php function set_months( $newval)
cpp int set_months( int newval)
m -(int) setMonths : (int) newval
pas function set_months( newval: LongInt): integer
vb function set_months( ByVal newval As Integer) As Integer
cs int set_months( int newval)
java int set_months( int newval)
py def set_months( newval)
cmd YWakeUpSchedule target set_months newval
```

Parameters :

newval an integer corresponding to the months when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→set(userData)
wakeupschedule→setUserData()
wakeupschedule.set(userData)

YWakeUpSchedule

Stores a user context provided as argument in the userData attribute of the function.

js	function setUserData(data)
node.js	function setUserData(data)
php	function setUserData(\$data)
cpp	void setUserData(void* data)
m	-(void) setUserData : (void*) data
pas	procedure setUserData(data: Tobject)
vb	procedure setUserData(ByVal data As Object)
cs	void setUserData(object data)
java	void setUserData(Object data)
py	def setUserData(data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

wakeupschedule→set_weekDays()
wakeupschedule→setWeekDays()
wakeupschedule.set_weekDays()

YWakeUpSchedule

Changes the days of the week when a wake up must take place.

```
js function set_weekDays( newval)
nodejs function set_weekDays( newval)
php function set_weekDays( $newval)
cpp int set_weekDays( int newval)
m -(int) setWeekDays : (int) newval
pas function set_weekDays( newval: LongInt): integer
vb function set_weekDays( ByVal newval As Integer) As Integer
cs int set_weekDays( int newval)
java int set_weekDays( int newval)
py def set_weekDays( newval)
cmd YWakeUpSchedule target set_weekDays newval
```

Parameters :

newval an integer corresponding to the days of the week when a wake up must take place

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

wakeupschedule→wait_async()**YWakeUpSchedule**

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.45. Watchdog function interface

The watchdog function works like a relay and can cause a brief power cut to an appliance after a preset delay to force this appliance to reset. The Watchdog must be called from time to time to reset the timer and prevent the appliance reset. The watchdog can be driven directly with *pulse* and *delayedpulse* methods to switch off an appliance for a given duration.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_watchdog.js'></script>
nodejs var yoctolib = require('yoctolib');
var YWatchdog = yoctolib.YWatchdog;
php require_once('yocto_watchdog.php');
cpp #include "yocto_watchdog.h"
m #import "yocto_watchdog.h"
pas uses yocto_watchdog;
vb yocto_watchdog.vb
cs yocto_watchdog.cs
java import com.yoctopuce.YoctoAPI.YWatchdog;
py from yocto_watchdog import *

```

Global functions

yFindWatchdog(func)

Retrieves a watchdog for a given identifier.

yFirstWatchdog()

Starts the enumeration of watchdog currently accessible.

YWatchdog methods

watchdog→delayedPulse(ms_delay, ms_duration)

Schedules a pulse.

watchdog→describe()

Returns a short text that describes unambiguously the instance of the watchdog in the form TYPE(NAME)=SERIAL.FUNCTIONID.

watchdog→get_advertisedValue()

Returns the current value of the watchdog (no more than 6 characters).

watchdog→get_autoStart()

Returns the watchdog running state at module power up.

watchdog→get_countdown()

Returns the number of milliseconds remaining before a pulse (delayedPulse() call). When there is no scheduled pulse, returns zero.

watchdog→get_errorMessage()

Returns the error message of the latest error with the watchdog.

watchdog→get_errorType()

Returns the numerical error code of the latest error with the watchdog.

watchdog→get_friendlyName()

Returns a global identifier of the watchdog in the format MODULE_NAME.FUNCTION_NAME.

watchdog→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

watchdog→get_functionId()

Returns the hardware identifier of the watchdog, without reference to the module.

watchdog->get_hardwareId()

Returns the unique hardware identifier of the watchdog in the form SERIAL.FUNCTIONID.

watchdog->get_logicalName()

Returns the logical name of the watchdog.

watchdog->get_maxTimeOnStateA()

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

watchdog->get_maxTimeOnStateB()

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

watchdog->get_module()

Gets the YModule object for the device on which the function is located.

watchdog->get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

watchdog->get_output()

Returns the output state of the watchdog, when used as a simple switch (single throw).

watchdog->get_pulseTimer()

Returns the number of milliseconds remaining before the watchdog is returned to idle position (state A), during a measured pulse generation.

watchdog->get_running()

Returns the watchdog running state.

watchdog->get_state()

Returns the state of the watchdog (A for the idle position, B for the active position).

watchdog->get_stateAtPowerOn()

Returns the state of the watchdog at device startup (A for the idle position, B for the active position, UNCHANGED for no change).

watchdog->get_triggerDelay()

Returns the waiting duration before a reset is automatically triggered by the watchdog, in milliseconds.

watchdog->get_triggerDuration()

Returns the duration of resets caused by the watchdog, in milliseconds.

watchdog->get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

watchdog->isOnline()

Checks if the watchdog is currently reachable, without raising any error.

watchdog->isOnline_async(callback, context)

Checks if the watchdog is currently reachable, without raising any error (asynchronous version).

watchdog->load(msValidity)

Preloads the watchdog cache with a specified validity duration.

watchdog->load_async(msValidity, callback, context)

Preloads the watchdog cache with a specified validity duration (asynchronous version).

watchdog->nextWatchdog()

Continues the enumeration of watchdog started using yFirstWatchdog().

watchdog->pulse(ms_duration)

Sets the relay to output B (active) for a specified duration, then brings it automatically back to output A (idle state).

watchdog->registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

3. Reference

watchdog→resetWatchdog()

Resets the watchdog.

watchdog→set_autoStart(newval)

Changes the watchdog running state at module power up.

watchdog→set_logicalName(newval)

Changes the logical name of the watchdog.

watchdog→set_maxTimeOnStateA(newval)

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

watchdog→set_maxTimeOnStateB(newval)

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

watchdog→set_output(newval)

Changes the output state of the watchdog, when used as a simple switch (single throw).

watchdog→set_running(newval)

Changes the running state of the watchdog.

watchdog→set_state(newval)

Changes the state of the watchdog (A for the idle position, B for the active position).

watchdog→set_stateAtPowerOn(newval)

Preset the state of the watchdog at device startup (A for the idle position, B for the active position, UNCHANGED for no modification).

watchdog→set_triggerDelay(newval)

Changes the waiting delay before a reset is triggered by the watchdog, in milliseconds.

watchdog→set_triggerDuration(newval)

Changes the duration of resets caused by the watchdog, in milliseconds.

watchdog→set(userData,data)

Stores a user context provided as argument in the userData attribute of the function.

watchdog→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YWatchdog.FindWatchdog() yFindWatchdog()yFindWatchdog()

YWatchdog

Retrieves a watchdog for a given identifier.

js	function yFindWatchdog(func)
node.js	function FindWatchdog(func)
php	function yFindWatchdog(\$func)
cpp	YWatchdog* yFindWatchdog(const string& func)
m	YWatchdog* yFindWatchdog(NSString* func)
pas	function yFindWatchdog(func: string): TYWatchdog
vb	function yFindWatchdog(ByVal func As String) As YWatchdog
cs	YWatchdog FindWatchdog(string func)
java	YWatchdog FindWatchdog(String func)
py	def FindWatchdog(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the watchdog is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWatchdog.isOnline()` to test if the watchdog is indeed online at a given time. In case of ambiguity when looking for a watchdog by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the watchdog

Returns :

a `YWatchdog` object allowing you to drive the watchdog.

YWatchdog.FirstWatchdog() yFirstWatchdog()yFirstWatchdog()

YWatchdog

Starts the enumeration of watchdog currently accessible.

```
js function yFirstWatchdog( )
node.js function FirstWatchdog( )
php function yFirstWatchdog( )
cpp YWatchdog* yFirstWatchdog( )
m YWatchdog* yFirstWatchdog( )
pas function yFirstWatchdog( ): TYWatchdog
vb function yFirstWatchdog( ) As YWatchdog
cs YWatchdog FirstWatchdog()
java YWatchdog FirstWatchdog()
def FirstWatchdog( )
```

Use the method `YWatchdog.nextWatchdog()` to iterate on next watchdog.

Returns :

a pointer to a `YWatchdog` object, corresponding to the first watchdog currently online, or a `null` pointer if there are none.

watchdog→delayedPulse()watchdog.delayedPulse()

YWatchdog

Schedules a pulse.

```
js function delayedPulse( ms_delay, ms_duration)
node.js function delayedPulse( ms_delay, ms_duration)
php function delayedPulse( $ms_delay, $ms_duration)
cpp int delayedPulse( int ms_delay, int ms_duration)
m -(int) delayedPulse : (int) ms_delay : (int) ms_duration
pas function delayedPulse( ms_delay: LongInt, ms_duration: LongInt): integer
vb function delayedPulse( ByVal ms_delay As Integer,
                           ByVal ms_duration As Integer) As Integer
cs int delayedPulse( int ms_delay, int ms_duration)
java int delayedPulse( int ms_delay, int ms_duration)
py def delayedPulse( ms_delay, ms_duration)
cmd YWatchdog target delayedPulse ms_delay ms_duration
```

Parameters :

ms_delay waiting time before the pulse, in millisecondes

ms_duration pulse duration, in millisecondes

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→describe()watchdog.describe()**YWatchdog**

Returns a short text that describes unambiguously the instance of the watchdog in the form
TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	- (NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the watchdog (ex: Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

watchdog→get_advertisedValue()
watchdog→advertisedValue()
watchdog.get_advertisedValue()

YWatchdog

Returns the current value of the watchdog (no more than 6 characters).

```
js    function get_advertisedValue( )  
node.js function get_advertisedValue( )  
php   function get_advertisedValue( )  
cpp   string get_advertisedValue( )  
m     -(NSString*) advertisedValue  
pas   function get_advertisedValue( ): string  
vb    function get_advertisedValue( ) As String  
cs    string get_advertisedValue( )  
java  String get_advertisedValue( )  
py    def get_advertisedValue( )  
cmd   YWatchdog target get_advertisedValue
```

Returns :

a string corresponding to the current value of the watchdog (no more than 6 characters). On failure, throws an exception or returns `Y_ADVERTISEDVALUE_INVALID`.

watchdog→get_autoStart() YWatchdog
watchdog→autoStart()watchdog.get_autoStart()

Returns the watchdog runing state at module power up.

```
js function get_autoStart( )
node.js function get_autoStart( )
php function get_autoStart( )
cpp Y_AUTOSTART_enum get_autoStart( )
m -(Y_AUTOSTART_enum) autoStart
pas function get_autoStart( ): Integer
vb function get_autoStart( ) As Integer
cs int get_autoStart( )
java int get_autoStart( )
py def get_autoStart( )
cmd YWatchdog target get_autoStart
```

Returns :

either Y_AUTOSTART_OFF or Y_AUTOSTART_ON, according to the watchdog runing state at module power up

On failure, throws an exception or returns Y_AUTOSTART_INVALID.

watchdog→get_countdown()**YWatchdog****watchdog→countdown()watchdog.get_countdown()**

Returns the number of milliseconds remaining before a pulse (delayedPulse() call) When there is no scheduled pulse, returns zero.

js	function get_countdown()
nodejs	function get_countdown()
php	function get_countdown()
cpp	s64 get_countdown()
m	-(s64) countdown
pas	function get_countdown(): int64
vb	function get_countdown() As Long
cs	long get_countdown()
java	long get_countdown()
py	def get_countdown()
cmd	YWatchdog target get_countdown

Returns :

an integer corresponding to the number of milliseconds remaining before a pulse (delayedPulse() call) When there is no scheduled pulse, returns zero

On failure, throws an exception or returns Y_COUNTDOWN_INVALID.

watchdog→get_errorMessage()
watchdog→errorMessage()
watchdog.get_errorMessage()**YWatchdog**

Returns the error message of the latest error with the watchdog.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the watchdog object

watchdog→get_errorType()**YWatchdog****watchdog→errorType()watchdog.get_errorType()**

Returns the numerical error code of the latest error with the watchdog.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the watchdog object

watchdog→get_friendlyName()
watchdog→friendlyName()**YWatchdog**

Returns a global identifier of the watchdog in the format MODULE_NAME . FUNCTION_NAME.

js	function get_friendlyName()
node.js	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the watchdog if they are defined, otherwise the serial number of the module and the hardware identifier of the watchdog (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the watchdog using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

watchdog→get_functionDescriptor()
watchdog→functionDescriptor()
watchdog.get_functionDescriptor()

YWatchdog

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

**watchdog→get_functionId()
watchdog→functionId()****YWatchdog**

Returns the hardware identifier of the watchdog, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the watchdog (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

**watchdog→get_hardwareId()
watchdog→hardwareId()****YWatchdog**

Returns the unique hardware identifier of the watchdog in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the watchdog. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the watchdog (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

watchdog→get_logicalName()
watchdog→logicalName()
watchdog.get_logicalName()

YWatchdog

Returns the logical name of the watchdog.

```
js function get_logicalName( )  
nodejs function get_logicalName( )  
php function get_logicalName( )  
cpp string get_logicalName( )  
m -(NSString*) logicalName  
pas function get_logicalName( ): string  
vb function get_logicalName( ) As String  
cs string get_logicalName( )  
java String get_logicalName( )  
py def get_logicalName( )  
cmd YWatchdog target get_logicalName
```

Returns :

a string corresponding to the logical name of the watchdog. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

watchdog→get_maxTimeOnStateA()
watchdog→maxTimeOnStateA()
watchdog.get_maxTimeOnStateA()

YWatchdog

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

```
js function get_maxTimeOnStateA( )
nodejs function get_maxTimeOnStateA( )
php function get_maxTimeOnStateA( )
cpp s64 get_maxTimeOnStateA( )
m -(s64) maxTimeOnStateA
pas function get_maxTimeOnStateA( ): int64
vb function get_maxTimeOnStateA( ) As Long
cs long get_maxTimeOnStateA( )
java long get_maxTimeOnStateA( )
py def get_maxTimeOnStateA( )
cmd YWatchdog target get_maxTimeOnStateA
```

Zero means no maximum time.

Returns :
an integer

On failure, throws an exception or returns Y_MAXTIMEONSTATEA_INVALID.

watchdog→get_maxTimeOnStateB()
watchdog→maxTimeOnStateB()
watchdog.get_maxTimeOnStateB()

YWatchdog

Retourne the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

```
js function get_maxTimeOnStateB( )
nodejs function get_maxTimeOnStateB( )
php function get_maxTimeOnStateB( )
cpp s64 get_maxTimeOnStateB( )
m -(s64) maxTimeOnStateB
pas function get_maxTimeOnStateB( ): int64
vb function get_maxTimeOnStateB( ) As Long
cs long get_maxTimeOnStateB( )
java long get_maxTimeOnStateB( )
py def get_maxTimeOnStateB( )
cmd YWatchdog target get_maxTimeOnStateB
```

Zero means no maximum time.

Returns :

an integer

On failure, throws an exception or returns Y_MAXTIMEONSTATEB_INVALID.

watchdog→get_module()**YWatchdog****watchdog→module()watchdog.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module(): TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

watchdog→get_module_async()
watchdog→module_async()**YWatchdog**

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

watchdog→get_output()**YWatchdog****watchdog→output()watchdog.get_output()**

Returns the output state of the watchdog, when used as a simple switch (single throw).

js	function get_output()
nodejs	function get_output()
php	function get_output()
cpp	Y_OUTPUT_enum get_output()
m	-(Y_OUTPUT_enum) output
pas	function get_output(): Integer
vb	function get_output() As Integer
cs	int get_output()
java	int get_output()
py	def get_output()
cmd	YWatchdog target get_output

Returns :

either Y_OUTPUT_OFF or Y_OUTPUT_ON, according to the output state of the watchdog, when used as a simple switch (single throw)

On failure, throws an exception or returns Y_OUTPUT_INVALID.

watchdog→get_pulseTimer()**YWatchdog****watchdog→pulseTimer()watchdog.get_pulseTimer()**

Returns the number of milliseconds remaining before the watchdog is returned to idle position (state A), during a measured pulse generation.

js	function get_pulseTimer()
nodejs	function get_pulseTimer()
php	function get_pulseTimer()
cpp	s64 get_pulseTimer()
m	-(s64) pulseTimer
pas	function get_pulseTimer(): int64
vb	function get_pulseTimer() As Long
cs	long get_pulseTimer()
java	long get_pulseTimer()
py	def get_pulseTimer()
cmd	YWatchdog target get_pulseTimer

When there is no ongoing pulse, returns zero.

Returns :

an integer corresponding to the number of milliseconds remaining before the watchdog is returned to idle position (state A), during a measured pulse generation

On failure, throws an exception or returns **Y_PULSE_TIMER_INVALID**.

watchdog→get_running()**YWatchdog****watchdog→running()watchdog.get_running()**

Returns the watchdog running state.

```
js function get_running( )
nodejs function get_running( )
php function get_running( )
cpp Y_RUNNING_enum get_running( )
m -(Y_RUNNING_enum) running
pas function get_running( ): Integer
vb function get_running( ) As Integer
cs int get_running( )
java int get_running( )
py def get_running( )
cmd YWatchdog target get_running
```

Returns :

either Y_RUNNING_OFF or Y_RUNNING_ON, according to the watchdog running state

On failure, throws an exception or returns Y_RUNNING_INVALID.

watchdog→get_state()**YWatchdog****watchdog→state()watchdog.get_state()**

Returns the state of the watchdog (A for the idle position, B for the active position).

js	function get_state()
node.js	function get_state()
php	function get_state()
cpp	Y_STATE_enum get_state()
m	-(Y_STATE_enum) state
pas	function get_state(): Integer
vb	function get_state() As Integer
cs	int get_state()
java	int get_state()
py	def get_state()
cmd	YWatchdog target get_state

Returns :

either Y_STATE_A or Y_STATE_B, according to the state of the watchdog (A for the idle position, B for the active position)

On failure, throws an exception or returns Y_STATE_INVALID.

watchdog→get_stateAtPowerOn()
watchdog→stateAtPowerOn()
watchdog.get_stateAtPowerOn()

YWatchdog

Returns the state of the watchdog at device startup (A for the idle position, B for the active position, UNCHANGED for no change).

<code>js</code>	<code>function get_stateAtPowerOn()</code>
<code>node.js</code>	<code>function get_stateAtPowerOn()</code>
<code>php</code>	<code>function get_stateAtPowerOn()</code>
<code>cpp</code>	<code>Y_STATEATPOWERON_enum get_stateAtPowerOn()</code>
<code>m</code>	<code>-(Y_STATEATPOWERON_enum) stateAtPowerOn</code>
<code>pas</code>	<code>function get_stateAtPowerOn(): Integer</code>
<code>vb</code>	<code>function get_stateAtPowerOn() As Integer</code>
<code>cs</code>	<code>int get_stateAtPowerOn()</code>
<code>java</code>	<code>int get_stateAtPowerOn()</code>
<code>py</code>	<code>def get_stateAtPowerOn()</code>
<code>cmd</code>	<code>YWatchdog target get_stateAtPowerOn</code>

Returns :

a value among `Y_STATEATPOWERON_UNCHANGED`, `Y_STATEATPOWERON_A` and `Y_STATEATPOWERON_B` corresponding to the state of the watchdog at device startup (A for the idle position, B for the active position, UNCHANGED for no change)

On failure, throws an exception or returns `Y_STATEATPOWERON_INVALID`.

watchdog→get_triggerDelay()
watchdog→triggerDelay()
watchdog.get_triggerDelay()**YWatchdog**

Returns the waiting duration before a reset is automatically triggered by the watchdog, in milliseconds.

js	function get_triggerDelay()
nodejs	function get_triggerDelay()
php	function get_triggerDelay()
cpp	s64 get_triggerDelay()
m	-(s64) triggerDelay
pas	function get_triggerDelay(): int64
vb	function get_triggerDelay() As Long
cs	long get_triggerDelay()
java	long get_triggerDelay()
py	def get_triggerDelay()
cmd	YWatchdog target get_triggerDelay

Returns :

an integer corresponding to the waiting duration before a reset is automatically triggered by the watchdog, in milliseconds

On failure, throws an exception or returns Y_TRIGGERDELAY_INVALID.

watchdog→get_triggerDuration()
watchdog→triggerDuration()
watchdog.get_triggerDuration()**YWatchdog**

Returns the duration of resets caused by the watchdog, in milliseconds.

js	function get_triggerDuration()
node.js	function get_triggerDuration()
php	function get_triggerDuration()
cpp	s64 get_triggerDuration()
m	-(s64) triggerDuration
pas	function get_triggerDuration() : int64
vb	function get_triggerDuration() As Long
cs	long get_triggerDuration()
java	long get_triggerDuration()
py	def get_triggerDuration()
cmd	YWatchdog target get_triggerDuration

Returns :

an integer corresponding to the duration of resets caused by the watchdog, in milliseconds

On failure, throws an exception or returns Y_TRIGGERDURATION_INVALID.

watchdog→get(userData)**YWatchdog****watchdog→userData()watchdog.get(userData())**

Returns the value of the userData attribute, as previously stored using method set(userData).

```
js function get(userData) 
node.js function get(userData) 
php function get(userData) 
cpp void * get(userData) 
m -(void*) userData 
pas function get(userData): Tobject 
vb function get(userData) As Object 
cs object get(userData) 
java Object get(userData) 
py def get(userData)
```

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

watchdog→isOnline()watchdog.isOnline()**YWatchdog**

Checks if the watchdog is currently reachable, without raising any error.

js	function isOnline()
node.js	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the watchdog in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the watchdog.

Returns :

`true` if the watchdog can be reached, and `false` otherwise

watchdog→isOnline_async()

YWatchdog

Checks if the watchdog is currently reachable, without raising any error (asynchronous version).

```
js  function isOnline_async( callback, context )
nodejs function isOnline_async( callback, context )
```

If there is a cached value for the watchdog in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result
context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

watchdog→load()watchdog.load()**YWatchdog**

Preloads the watchdog cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>node.js</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

watchdog→load_async()

YWatchdog

Preloads the watchdog cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

watchdog→nextWatchdog()
watchdog.nextWatchdog()**YWatchdog**

Continues the enumeration of watchdog started using `yFirstWatchdog()`.

<code>js</code>	<code>function nextWatchdog()</code>
<code>nodejs</code>	<code>function nextWatchdog()</code>
<code>php</code>	<code>function nextWatchdog()</code>
<code>cpp</code>	<code>YWatchdog * nextWatchdog()</code>
<code>m</code>	<code>-(YWatchdog*) nextWatchdog</code>
<code>pas</code>	<code>function nextWatchdog(): TYWatchdog</code>
<code>vb</code>	<code>function nextWatchdog() As YWatchdog</code>
<code>cs</code>	<code>YWatchdog nextWatchdog()</code>
<code>java</code>	<code>YWatchdog nextWatchdog()</code>
<code>py</code>	<code>def nextWatchdog()</code>

Returns :

a pointer to a `YWatchdog` object, corresponding to a watchdog currently online, or a `null` pointer if there are no more watchdog to enumerate.

watchdog→pulse()watchdog.pulse()**YWatchdog**

Sets the relay to output B (active) for a specified duration, then brings it automatically back to output A (idle state).

js	function pulse(ms_duration)
nodejs	function pulse(ms_duration)
php	function pulse(\$ms_duration)
cpp	int pulse(int ms_duration)
m	- (int) pulse : (int) ms_duration
pas	function pulse(ms_duration: LongInt): integer
vb	function pulse(ByVal ms_duration As Integer) As Integer
cs	int pulse(int ms_duration)
java	int pulse(int ms_duration)
py	def pulse(ms_duration)
cmd	YWatchdog target pulse ms_duration

Parameters :**ms_duration** pulse duration, in millisecondes**Returns :**

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→registerValueCallback() watchdog.registerValueCallback()

YWatchdog

Registers the callback function that is invoked on every change of advertised value.

js	<code>function registerValueCallback(callback)</code>
node.js	<code>function registerValueCallback(callback)</code>
php	<code>function registerValueCallback(\$callback)</code>
cpp	<code>int registerValueCallback(YWatchdogValueCallback callback)</code>
m	<code>-(int) registerValueCallback : (YWatchdogValueCallback) callback</code>
pas	<code>function registerValueCallback(callback: TYWatchdogValueCallback): LongInt</code>
vb	<code>function registerValueCallback() As Integer</code>
cs	<code>int registerValueCallback(ValueCallback callback)</code>
java	<code>int registerValueCallback(UpdateCallback callback)</code>
py	<code>def registerValueCallback(callback)</code>

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

**watchdog→resetWatchdog()
watchdog.resetWatchdog()****YWatchdog**

Resets the watchdog.

js	function resetWatchdog()
node.js	function resetWatchdog()
php	function resetWatchdog()
cpp	int resetWatchdog()
m	- (int) resetWatchdog
pas	function resetWatchdog(): integer
vb	function resetWatchdog() As Integer
cs	int resetWatchdog()
java	int resetWatchdog()
py	def resetWatchdog()
cmd	YWatchdog target resetWatchdog

When the watchdog is running, this function must be called on a regular basis to prevent the watchdog to trigger

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_autoStart()**YWatchdog****watchdog→setAutoStart()watchdog.set_autoStart()**

Changes the watchdog runningstae at module power up.

js	<code>function set_autoStart(newval)</code>
nodejs	<code>function set_autoStart(newval)</code>
php	<code>function set_autoStart(\$newval)</code>
cpp	<code>int set_autoStart(Y_AUTOSTART_enum newval)</code>
m	<code>-(int) setAutoStart : (Y_AUTOSTART_enum) newval</code>
pas	<code>function set_autoStart(newval: Integer): integer</code>
vb	<code>function set_autoStart(ByVal newval As Integer) As Integer</code>
cs	<code>int set_autoStart(int newval)</code>
java	<code>int set_autoStart(int newval)</code>
py	<code>def set_autoStart(newval)</code>
cmd	<code>YWatchdog target set_autoStart newval</code>

Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

newval either `Y_AUTOSTART_OFF` or `Y_AUTOSTART_ON`, according to the watchdog runningstae at module power up

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_logicalName()
watchdog→setLogicalName()
watchdog.set_logicalName()

YWatchdog

Changes the logical name of the watchdog.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YWatchdog target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the watchdog.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

watchdog→set_maxTimeOnStateA()
watchdog→setMaxTimeOnStateA()
watchdog.set_maxTimeOnStateA()

YWatchdog

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state A before automatically switching back in to B state.

js	function set_maxTimeOnStateA(newval)
nodejs	function setMaxTimeOnStateA(newval)
php	function set_maxTimeOnStateA(\$newval)
cpp	int set_maxTimeOnStateA(s64 newval)
m	-(int) setMaxTimeOnStateA : (s64) newval
pas	function set_maxTimeOnStateA(newval: int64): integer
vb	function set_maxTimeOnStateA(ByVal newval As Long) As Integer
cs	int set_maxTimeOnStateA(long newval)
java	int set_maxTimeOnStateA(long newval)
py	def set_maxTimeOnStateA(newval)
cmd	YWatchdog target set_maxTimeOnStateA newval

Use zero for no maximum time.

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_maxTimeOnStateB()
watchdog→setMaxTimeOnStateB()
watchdog.set_maxTimeOnStateB()

YWatchdog

Sets the maximum time (ms) allowed for \$THEFUNCTIONS\$ to stay in state B before automatically switching back in to A state.

```
js function set_maxTimeOnStateB( newval)
nodejs function set_maxTimeOnStateB( newval)
php function set_maxTimeOnStateB( $newval)
cpp int set_maxTimeOnStateB( s64 newval)
m -(int) setMaxTimeOnStateB : (s64) newval
pas function set_maxTimeOnStateB( newval: int64): integer
vb function set_maxTimeOnStateB( ByVal newval As Long) As Integer
cs int set_maxTimeOnStateB( long newval)
java int set_maxTimeOnStateB( long newval)
py def set_maxTimeOnStateB( newval)
cmd YWatchdog target set_maxTimeOnStateB newval
```

Use zero for no maximum time.

Parameters :

newval an integer

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_output()**YWatchdog****watchdog→setOutput()watchdog.set_output()**

Changes the output state of the watchdog, when used as a simple switch (single throw).

js	function set_output(newval)
nodejs	function set_output(newval)
php	function set_output(\$newval)
cpp	int set_output(Y_OUTPUT_enum newval)
m	-(int) setOutput : (Y_OUTPUT_enum) newval
pas	function set_output(newval: Integer): integer
vb	function set_output(ByVal newval As Integer) As Integer
cs	int set_output(int newval)
java	int set_output(int newval)
py	def set_output(newval)
cmd	YWatchdog target set_output newval

Parameters :

newval either **Y_OUTPUT_OFF** or **Y_OUTPUT_ON**, according to the output state of the watchdog, when used as a simple switch (single throw)

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_running()**YWatchdog****watchdog→setRunning()watchdog.set_running()**

Changes the running state of the watchdog.

js	function set_running(newval)
node.js	function set_running(newval)
php	function set_running(\$newval)
cpp	int set_running(Y_RUNNING_enum newval)
m	-(int) setRunning : (Y_RUNNING_enum) newval
pas	function set_running(newval: Integer): integer
vb	function set_running(ByVal newval As Integer) As Integer
cs	int set_running(int newval)
java	int set_running(int newval)
py	def set_running(newval)
cmd	YWatchdog target set_running newval

Parameters :

newval either Y_RUNNING_OFF or Y_RUNNING_ON, according to the running state of the watchdog

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_state()**YWatchdog****watchdog→setState()watchdog.set_state()**

Changes the state of the watchdog (A for the idle position, B for the active position).

js	function set_state(newval)
nodejs	function set_state(newval)
php	function set_state(\$newval)
cpp	int set_state(Y_STATE_enum newval)
m	-(int) setState : (Y_STATE_enum) newval
pas	function set_state(newval: Integer): integer
vb	function set_state(ByVal newval As Integer) As Integer
cs	int set_state(int newval)
java	int set_state(int newval)
py	def set_state(newval)
cmd	YWatchdog target set_state newval

Parameters :

newval either `Y_STATE_A` or `Y_STATE_B`, according to the state of the watchdog (A for the idle position, B for the active position)

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set_stateAtPowerOn()
watchdog→setStateAtPowerOn()
watchdog.set_stateAtPowerOn()

YWatchdog

Preset the state of the watchdog at device startup (A for the idle position, B for the active position, UNCHANGED for no modification).

```
js function set_stateAtPowerOn( newval)
nodejs function set_stateAtPowerOn( newval)
php function set_stateAtPowerOn( $newval)
cpp int set_stateAtPowerOn( Y_STATEATPOWERON_enum newval)
m -(int) setStateAtPowerOn : (Y_STATEATPOWERON_enum) newval
pas function set_stateAtPowerOn( newval: Integer): integer
vb function set_stateAtPowerOn( ByVal newval As Integer) As Integer
cs int set_stateAtPowerOn( int newval)
java int set_stateAtPowerOn( int newval)
py def set_stateAtPowerOn( newval)
cmd YWatchdog target set_stateAtPowerOn newval
```

Remember to call the matching module `saveToFlash()` method, otherwise this call will have no effect.

Parameters :

newval a value among `Y_STATEATPOWERON_UNCHANGED`, `Y_STATEATPOWERON_A` and `Y_STATEATPOWERON_B`

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

**watchdog→set_triggerDelay()
watchdog→setTriggerDelay()
watchdog.set_triggerDelay()****YWatchdog**

Changes the waiting delay before a reset is triggered by the watchdog, in milliseconds.

js	function set_triggerDelay(newval)
nodejs	function set_triggerDelay(newval)
php	function set_triggerDelay(\$newval)
cpp	int set_triggerDelay(s64 newval)
m	-(int) setTriggerDelay : (s64) newval
pas	function set_triggerDelay(newval: int64): integer
vb	function set_triggerDelay(ByVal newval As Long) As Integer
cs	int set_triggerDelay(long newval)
java	int set_triggerDelay(long newval)
py	def set_triggerDelay(newval)
cmd	YWatchdog target set_triggerDelay newval

Parameters :

newval an integer corresponding to the waiting delay before a reset is triggered by the watchdog, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

**watchdog→set_triggerDuration()
watchdog→setTriggerDuration()
watchdog.set_triggerDuration()****YWatchdog**

Changes the duration of resets caused by the watchdog, in milliseconds.

```
js function set_triggerDuration( newval)
nodejs function set_triggerDuration( newval)
php function set_triggerDuration( $newval)
cpp int set_triggerDuration( s64 newval)
m -(int) setTriggerDuration : (s64) newval
pas function set_triggerDuration( newval: int64): integer
vb function set_triggerDuration( ByVal newval As Long) As Integer
cs int set_triggerDuration( long newval)
java int set_triggerDuration( long newval)
py def set_triggerDuration( newval)
cmd YWatchdog target set_triggerDuration newval
```

Parameters :

newval an integer corresponding to the duration of resets caused by the watchdog, in milliseconds

Returns :

YAPI_SUCCESS if the call succeeds.

On failure, throws an exception or returns a negative error code.

watchdog→set(userData)**YWatchdog****watchdog→setUserData()watchdog.set(userData)**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData \$data)
cpp	void set(userData void* data)
m	-(void) setUserData : (void*) data
pas	procedure set(userData Tobject)
vb	procedure set(userData ByVal data As Object)
cs	void set(userData object data)
java	void set(userData Object data)
py	def set(userData data)

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

watchdog→wait_async()

YWatchdog

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

3.46. Wireless function interface

YWireless functions provides control over wireless network parameters and status for devices that are wireless-enabled.

In order to use the functions described here, you should include:

```

js <script type='text/javascript' src='yocto_wireless.js'></script>
nodejs var yoctolib = require('yoctolib');
var YWireless = yoctolib.YWireless;
php require_once('yocto_wireless.php');
cpp #include "yocto_wireless.h"
m #import "yocto_wireless.h"
pas uses yocto_wireless;
vb yocto_wireless.vb
cs yocto_wireless.cs
java import com.yoctopuce.YoctoAPI.YWireless;
py from yocto_wireless import *

```

Global functions

yFindWireless(func)

Retrieves a wireless lan interface for a given identifier.

yFirstWireless()

Starts the enumeration of wireless lan interfaces currently accessible.

YWireless methods

wireless→adhocNetwork(ssid, securityKey)

Changes the configuration of the wireless lan interface to create an ad-hoc wireless network, without using an access point.

wireless→describe()

Returns a short text that describes unambiguously the instance of the wireless lan interface in the form TYPE (NAME)=SERIAL . FUNCTIONID.

wireless→get_advertisedValue()

Returns the current value of the wireless lan interface (no more than 6 characters).

wireless→get_channel()

Returns the 802.11 channel currently used, or 0 when the selected network has not been found.

wireless→get_detectedWlans()

Returns a list of YWlanRecord objects that describe detected Wireless networks.

wireless→get_errorMessage()

Returns the error message of the latest error with the wireless lan interface.

wireless→get_errorType()

Returns the numerical error code of the latest error with the wireless lan interface.

wireless→get_friendlyName()

Returns a global identifier of the wireless lan interface in the format MODULE_NAME . FUNCTION_NAME.

wireless→get_functionDescriptor()

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

wireless→get_functionId()

Returns the hardware identifier of the wireless lan interface, without reference to the module.

wireless→get_hardwareId()

Returns the unique hardware identifier of the wireless lan interface in the form SERIAL . FUNCTIONID.

3. Reference

wireless→get_linkQuality()

Returns the link quality, expressed in percent.

wireless→get_logicalName()

Returns the logical name of the wireless lan interface.

wireless→get_message()

Returns the latest status message from the wireless interface.

wireless→get_module()

Gets the YModule object for the device on which the function is located.

wireless→get_module_async(callback, context)

Gets the YModule object for the device on which the function is located (asynchronous version).

wireless→get_security()

Returns the security algorithm used by the selected wireless network.

wireless→get_ssid()

Returns the wireless network name (SSID).

wireless→get_userData()

Returns the value of the userData attribute, as previously stored using method set(userData).

wireless→isOnline()

Checks if the wireless lan interface is currently reachable, without raising any error.

wireless→isOnline_async(callback, context)

Checks if the wireless lan interface is currently reachable, without raising any error (asynchronous version).

wireless→joinNetwork(ssid, securityKey)

Changes the configuration of the wireless lan interface to connect to an existing access point (infrastructure mode).

wireless→load(msValidity)

Preloads the wireless lan interface cache with a specified validity duration.

wireless→load_async(msValidity, callback, context)

Preloads the wireless lan interface cache with a specified validity duration (asynchronous version).

wireless→nextWireless()

Continues the enumeration of wireless lan interfaces started using yFirstWireless().

wireless→registerValueCallback(callback)

Registers the callback function that is invoked on every change of advertised value.

wireless→set_logicalName(newval)

Changes the logical name of the wireless lan interface.

wireless→set_userData(data)

Stores a user context provided as argument in the userData attribute of the function.

wireless→wait_async(callback, context)

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

YWireless.FindWireless() yFindWireless()yFindWireless()

YWireless

Retrieves a wireless lan interface for a given identifier.

js	function yFindWireless(func)
nodejs	function FindWireless(func)
php	function yFindWireless(\$func)
cpp	YWireless* yFindWireless(string func)
m	+(YWireless*) yFindWireless : (NSString*) func
pas	function yFindWireless(func: string): TYWireless
vb	function yFindWireless(ByVal func As String) As YWireless
cs	YWireless FindWireless(string func)
java	YWireless FindWireless(String func)
py	def FindWireless(func)

The identifier can be specified using several formats:

- FunctionLogicalName
- ModuleSerialNumber.FunctionIdentifier
- ModuleSerialNumber.FunctionLogicalName
- ModuleLogicalName.FunctionIdentifier
- ModuleLogicalName.FunctionLogicalName

This function does not require that the wireless lan interface is online at the time it is invoked. The returned object is nevertheless valid. Use the method `YWireless.isOnline()` to test if the wireless lan interface is indeed online at a given time. In case of ambiguity when looking for a wireless lan interface by logical name, no error is notified: the first instance found is returned. The search is performed first by hardware name, then by logical name.

Parameters :

func a string that uniquely characterizes the wireless lan interface

Returns :

a `YWireless` object allowing you to drive the wireless lan interface.

YWireless.FirstWireless() yFirstWireless()yFirstWireless()

YWireless

Starts the enumeration of wireless lan interfaces currently accessible.

js	function yFirstWireless()
node.js	function FirstWireless()
php	function yFirstWireless()
cpp	YWireless* yFirstWireless()
m	YWireless* yFirstWireless()
pas	function yFirstWireless() : TYWireless
vb	function yFirstWireless() As YWireless
cs	YWireless FirstWireless()
java	YWireless FirstWireless()
py	def FirstWireless()

Use the method `YWireless.nextWireless()` to iterate on next wireless lan interfaces.

Returns :

a pointer to a `YWireless` object, corresponding to the first wireless lan interface currently online, or a null pointer if there are none.

wireless→adhocNetwork()wireless.adhocNetwork()**YWireless**

Changes the configuration of the wireless lan interface to create an ad-hoc wireless network, without using an access point.

```

js   function adhocNetwork( ssid, securityKey)
nodejs function adhocNetwork( ssid, securityKey)
php  function adhocNetwork( $ssid, $securityKey)
cpp   int adhocNetwork( string ssid, string securityKey)
m    -(int) adhocNetwork : (NSString*) ssid
      : (NSString*) securityKey
pas   function adhocNetwork( ssid: string, securityKey: string): integer
vb    function adhocNetwork( ByVal ssid As String,
                           ByVal securityKey As String) As Integer
cs    int adhocNetwork( string ssid, string securityKey)
java  int adhocNetwork( String ssid, String securityKey)
py    def adhocNetwork( ssid, securityKey)
cmd   YWireless target adhocNetwork ssid securityKey

```

If a security key is specified, the network is protected by WEP128, since WPA is not standardized for ad-hoc networks. Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

ssid the name of the network to connect to
securityKey the network key, as a character string

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

wireless→describe(wireless.describe())**YWireless**

Returns a short text that describes unambiguously the instance of the wireless lan interface in the form TYPE (NAME)=SERIAL.FUNCTIONID.

js	function describe()
nodejs	function describe()
php	function describe()
cpp	string describe()
m	-(NSString*) describe
pas	function describe() : string
vb	function describe() As String
cs	string describe()
java	String describe()
py	def describe()

More precisely, TYPE is the type of the function, NAME it the name used for the first access to the function, SERIAL is the serial number of the module if the module is connected or "unresolved", and FUNCTIONID is the hardware identifier of the function if the module is connected. For example, this method returns Relay(MyCustomName.relay1)=RELAYL01-123456.relay1 if the module is already connected or Relay(BadCustomeName.relay1)=unresolved if the module has not yet been connected. This method does not trigger any USB or TCP transaction and can therefore be used in a debugger.

Returns :

a string that describes the wireless lan interface (ex:
Relay(MyCustomName.relay1)=RELAYL01-123456.relay1)

wireless→get_advertisedValue()
wireless→advertisedValue()
wireless.get_advertisedValue()**YWireless**

Returns the current value of the wireless lan interface (no more than 6 characters).

<code>js</code>	function get_advertisedValue()
<code>nodejs</code>	function get_advertisedValue()
<code>php</code>	function get_advertisedValue()
<code>cpp</code>	string get_advertisedValue()
<code>m</code>	- <code>(NSString*) advertisedValue</code>
<code>pas</code>	function get_advertisedValue() : string
<code>vb</code>	function get_advertisedValue() As String
<code>cs</code>	string get_advertisedValue()
<code>java</code>	String get_advertisedValue()
<code>py</code>	def get_advertisedValue()
<code>cmd</code>	YWireless target get_advertisedValue

Returns :

a string corresponding to the current value of the wireless lan interface (no more than 6 characters). On failure, throws an exception or returns `Y_ADVERTISEDVALUE_INVALID`.

wireless→get_channel()**YWireless****wireless→channel()wireless.get_channel()**

Returns the 802.11 channel currently used, or 0 when the selected network has not been found.

js	function get_channel()
node.js	function get_channel()
php	function get_channel()
cpp	int get_channel()
m	-(int) channel
pas	function get_channel() : LongInt
vb	function get_channel() As Integer
cs	int get_channel()
java	int get_channel()
py	def get_channel()
cmd	YWireless target get_channel

Returns :

an integer corresponding to the 802.11 channel currently used, or 0 when the selected network has not been found

On failure, throws an exception or returns Y_CHANNEL_INVALID.

wireless→get_detectedWlans()
wireless→detectedWlans()
wireless.get_detectedWlans()**YWireless**

Returns a list of YWlanRecord objects that describe detected Wireless networks.

js	function get_detectedWlans()
node.js	function get_detectedWlans()
php	function get_detectedWlans()
cpp	vector<YWlanRecord> get_detectedWlans()
m	-(NSMutableArray*) detectedWlans
pas	function get_detectedWlans(): TYWlanRecordArray
vb	function get_detectedWlans() As List
cs	List<YWlanRecord> get_detectedWlans()
java	ArrayList<YWlanRecord> get_detectedWlans()
py	def get_detectedWlans()
cmd	YWireless target get_detectedWlans

This list is not updated when the module is already connected to an acces point (infrastructure mode). To force an update of this list, adhocNetwork() must be called to disconnect the module from the current network. The returned list must be unallocated by the caller.

Returns :

a list of YWlanRecord objects, containing the SSID, channel, link quality and the type of security of the wireless network.

On failure, throws an exception or returns an empty list.

wireless→get_errorMessage()
wireless→errorMessage()
wireless.get_errorMessage()**YWireless**

Returns the error message of the latest error with the wireless lan interface.

js	function get_errorMessage()
nodejs	function get_errorMessage()
php	function get_errorMessage()
cpp	string get_errorMessage()
m	-(NSString*) errorMessage
pas	function get_errorMessage(): string
vb	function get_errorMessage() As String
cs	string get_errorMessage()
java	String get_errorMessage()
py	def get_errorMessage()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a string corresponding to the latest error message that occurred while using the wireless lan interface object

wireless→get_errorType()**YWireless****wireless→errorType()wireless.get_errorType()**

Returns the numerical error code of the latest error with the wireless lan interface.

js	function get_errorType()
nodejs	function get_errorType()
php	function get_errorType()
cpp	YRETCODE get_errorType()
pas	function get_errorType(): YRETCODE
vb	function get_errorType() As YRETCODE
cs	YRETCODE get_errorType()
java	int get_errorType()
py	def get_errorType()

This method is mostly useful when using the Yoctopuce library with exceptions disabled.

Returns :

a number corresponding to the code of the latest error that occurred while using the wireless lan interface object

wireless→get_friendlyName()
wireless→friendlyName()**YWireless**

Returns a global identifier of the wireless lan interface in the format MODULE_NAME.FUNCTION_NAME.

js	function get_friendlyName()
nodejs	function get_friendlyName()
php	function get_friendlyName()
cpp	string get_friendlyName()
m	-(NSString*) friendlyName
cs	string get_friendlyName()
java	String get_friendlyName()
py	def get_friendlyName()

The returned string uses the logical names of the module and of the wireless lan interface if they are defined, otherwise the serial number of the module and the hardware identifier of the wireless lan interface (for exemple: MyCustomName.relay1)

Returns :

a string that uniquely identifies the wireless lan interface using logical names (ex: MyCustomName.relay1) On failure, throws an exception or returns Y_FRIENDLYNAME_INVALID.

wireless→get_functionDescriptor()
wireless→functionDescriptor()
wireless.get_functionDescriptor()

YWireless

Returns a unique identifier of type YFUN_DESCR corresponding to the function.

js	function get_functionDescriptor()
node.js	function get_functionDescriptor()
php	function get_functionDescriptor()
cpp	YFUN_DESCR get_functionDescriptor()
m	-(YFUN_DESCR) functionDescriptor
pas	function get_functionDescriptor() : YFUN_DESCR
vb	function get_functionDescriptor() As YFUN_DESCR
cs	YFUN_DESCR get_functionDescriptor()
java	String get_functionDescriptor()
py	def get_functionDescriptor()

This identifier can be used to test if two instances of YFunction reference the same physical function on the same physical device.

Returns :

an identifier of type YFUN_DESCR. If the function has never been contacted, the returned value is Y_FUNCTIONDESCRIPTOR_INVALID.

wireless→get_functionId()
wireless→functionId()**YWireless**

Returns the hardware identifier of the wireless lan interface, without reference to the module.

js	function get_functionId()
node.js	function get_functionId()
php	function get_functionId()
cpp	string get_functionId()
m	-(NSString*) functionId
vb	function get_functionId() As String
cs	string get_functionId()
java	String get_functionId()
py	def get_functionId()

For example `relay1`

Returns :

a string that identifies the wireless lan interface (ex: `relay1`) On failure, throws an exception or returns `Y_FUNCTIONID_INVALID`.

wireless→get_hardwareId()
wireless→hardwareId()**YWireless**

Returns the unique hardware identifier of the wireless lan interface in the form SERIAL.FUNCTIONID.

js	function get_hardwareId()
nodejs	function get_hardwareId()
php	function get_hardwareId()
cpp	string get_hardwareId()
m	-(NSString*) hardwareId
vb	function get_hardwareId() As String
cs	string get_hardwareId()
java	String get_hardwareId()
py	def get_hardwareId()

The unique hardware identifier is composed of the device serial number and of the hardware identifier of the wireless lan interface. (for example RELAYL01-123456.relay1)

Returns :

a string that uniquely identifies the wireless lan interface (ex: RELAYL01-123456.relay1) On failure, throws an exception or returns Y_HARDWAREID_INVALID.

wireless→get_linkQuality()**YWireless****wireless→linkQuality()wireless.get_linkQuality()**

Returns the link quality, expressed in percent.

```
js function get_linkQuality( )
node.js function get_linkQuality( )
php function get_linkQuality( )
cpp int get_linkQuality( )
m -(int) linkQuality
pas function get_linkQuality( ): LongInt
vb function get_linkQuality( ) As Integer
cs int get_linkQuality( )
java int get_linkQuality( )
py def get_linkQuality( )
cmd YWireless target get_linkQuality
```

Returns :

an integer corresponding to the link quality, expressed in percent

On failure, throws an exception or returns Y_LINKQUALITY_INVALID.

wireless→get_logicalName()**YWireless****wireless→logicalName()wireless.get_logicalName()**

Returns the logical name of the wireless lan interface.

js	function get_logicalName()
nodejs	function get_logicalName()
php	function get_logicalName()
cpp	string get_logicalName()
m	-(NSString*) logicalName
pas	function get_logicalName(): string
vb	function get_logicalName() As String
cs	string get_logicalName()
java	String get_logicalName()
py	def get_logicalName()
cmd	YWireless target get_logicalName

Returns :

a string corresponding to the logical name of the wireless lan interface. On failure, throws an exception or returns Y_LOGICALNAME_INVALID.

wireless→get_message()**YWireless****wireless→message()wireless.get_message()**

Returns the latest status message from the wireless interface.

js	function get_message()
node.js	function get_message()
php	function get_message()
cpp	string get_message()
m	-(NSString*) message
pas	function get_message() : string
vb	function get_message() As String
cs	string get_message()
java	String get_message()
py	def get_message()
cmd	YWireless target get_message

Returns :

a string corresponding to the latest status message from the wireless interface

On failure, throws an exception or returns Y_MESSAGE_INVALID.

wireless→get_module()**YWireless****wireless→module()wireless.get_module()**

Gets the YModule object for the device on which the function is located.

js	function get_module()
nodejs	function get_module()
php	function get_module()
cpp	YModule * get_module()
m	-(YModule*) module
pas	function get_module() : TYModule
vb	function get_module() As YModule
cs	YModule get_module()
java	YModule get_module()
py	def get_module()

If the function cannot be located on any module, the returned instance of YModule is not shown as online.

Returns :

an instance of YModule

wireless→get_module_async() wireless→module_async()

YWireless

Gets the `YModule` object for the device on which the function is located (asynchronous version).

```
js  function get_module_async( callback, context )
node.js function get_module_async( callback, context )
```

If the function cannot be located on any module, the returned `YModule` object does not show as online. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking Firefox javascript VM that does not implement context switching during blocking I/O calls. See the documentation section on asynchronous Javascript calls for more details.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the requested `YModule` object

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wireless→get_security()**YWireless****wireless→security()wireless.get_security()**

Returns the security algorithm used by the selected wireless network.

js	function get_security()
nodejs	function get_security()
php	function get_security()
cpp	Y_SECURITY_enum get_security()
m	-(Y_SECURITY_enum) security
pas	function get_security() : Integer
vb	function get_security() As Integer
cs	int get_security()
java	int get_security()
py	def get_security()
cmd	YWireless target get_security

Returns :

a value among Y_SECURITY_UNKNOWN, Y_SECURITY_OPEN, Y_SECURITY_WEP, Y_SECURITY_WPA and Y_SECURITY_WPA2 corresponding to the security algorithm used by the selected wireless network

On failure, throws an exception or returns Y_SECURITY_INVALID.

wireless→get_ssid()**YWireless****wireless→ssid()wireless.get_ssid()**

Returns the wireless network name (SSID).

```
js function get_ssid( )
node.js function get_ssid( )
php function get_ssid( )
cpp string get_ssid( )
m -(NSString*) ssid
pas function get_ssid( ): string
vb function get_ssid( ) As String
cs string get_ssid( )
java String get_ssid( )
py def get_ssid( )
cmd YWireless target get_ssid
```

Returns :

a string corresponding to the wireless network name (SSID)

On failure, throws an exception or returns Y_SSID_INVALID.

wireless→get(userData)**YWireless****wireless→userData()wireless.get(userData())**

Returns the value of the userData attribute, as previously stored using method `set(userData)`.

js	<code>function get(userData) </code>
nodejs	<code>function get(userData) </code>
php	<code>function get(userData) </code>
cpp	<code>void * get(userData) </code>
m	<code>-(void*) userData </code>
pas	<code>function get(userData): Tobject </code>
vb	<code>function get(userData) As Object </code>
cs	<code>object get(userData) </code>
java	<code>Object get(userData) </code>
py	<code>def get(userData) </code>

This attribute is never touched directly by the API, and is at disposal of the caller to store a context.

Returns :

the object stored previously by the caller.

wireless→isOnline()|wireless.isOnline()**YWireless**

Checks if the wireless lan interface is currently reachable, without raising any error.

js	function isOnline()
nodejs	function isOnline()
php	function isOnline()
cpp	bool isOnline()
m	- (BOOL) isOnline
pas	function isOnline() : boolean
vb	function isOnline() As Boolean
cs	bool isOnline()
java	boolean isOnline()
py	def isOnline()

If there is a cached value for the wireless lan interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the wireless lan interface.

Returns :

true if the wireless lan interface can be reached, and false otherwise

wireless→isOnline_async()

YWireless

Checks if the wireless lan interface is currently reachable, without raising any error (asynchronous version).

```
js   function isOnline_async( callback, context)
nodejs function isOnline_async( callback, context)
```

If there is a cached value for the wireless lan interface in cache, that has not yet expired, the device is considered reachable. No exception is raised if there is an error while trying to contact the device hosting the requested function.

This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the boolean result

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wireless→joinNetwork()wireless.joinNetwork()**YWireless**

Changes the configuration of the wireless lan interface to connect to an existing access point (infrastructure mode).

```

js   function joinNetwork( ssid, securityKey)
nodejs function joinNetwork( ssid, securityKey)
php  function joinNetwork( $ssid, $securityKey)
cpp   int joinNetwork( string ssid, string securityKey)
m    -(int) joinNetwork : (NSString*) ssid
           : (NSString*) securityKey
pas   function joinNetwork( ssid: string, securityKey: string): integer
vb    function joinNetwork( ByVal ssid As String,
                           ByVal securityKey As String) As Integer
cs    int joinNetwork( string ssid, string securityKey)
java  int joinNetwork( String ssid, String securityKey)
py    def joinNetwork( ssid, securityKey)
cmd   YWireless target joinNetwork ssid securityKey

```

Remember to call the `saveToFlash()` method and then to reboot the module to apply this setting.

Parameters :

ssid the name of the network to connect to
securityKey the network key, as a character string

Returns :

`YAPI_SUCCESS` if the call succeeds.

On failure, throws an exception or returns a negative error code.

wireless→load()wireless.load()**YWireless**

Preloads the wireless lan interface cache with a specified validity duration.

<code>js</code>	<code>function load(msValidity)</code>
<code>nodejs</code>	<code>function load(msValidity)</code>
<code>php</code>	<code>function load(\$msValidity)</code>
<code>cpp</code>	<code>YRETCODE load(int msValidity)</code>
<code>m</code>	<code>-(YRETCODE) load : (int) msValidity</code>
<code>pas</code>	<code>function load(msValidity: integer): YRETCODE</code>
<code>vb</code>	<code>function load(ByVal msValidity As Integer) As YRETCODE</code>
<code>cs</code>	<code>YRETCODE load(int msValidity)</code>
<code>java</code>	<code>int load(long msValidity)</code>
<code>py</code>	<code>def load(msValidity)</code>

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance.

Parameters :

msValidity an integer corresponding to the validity attributed to the loaded function parameters, in milliseconds

Returns :

YAPI_SUCCESS when the call succeeds. On failure, throws an exception or returns a negative error code.

wireless→load_async()

YWireless

Preloads the wireless lan interface cache with a specified validity duration (asynchronous version).

```
js function load_async( msValidity, callback, context)
nodejs function load_async( msValidity, callback, context)
```

By default, whenever accessing a device, all function attributes are kept in cache for the standard duration (5 ms). This method can be used to temporarily mark the cache as valid for a longer period, in order to reduce network traffic for instance. This asynchronous version exists only in Javascript. It uses a callback instead of a return value in order to avoid blocking the Javascript virtual machine.

Parameters :

msValidity an integer corresponding to the validity of the loaded function parameters, in milliseconds

callback callback function that is invoked when the result is known. The callback function receives three arguments: the caller-specific context object, the receiving function object and the error code (or YAPI_SUCCESS)

context caller-specific object that is passed as-is to the callback function

Returns :

nothing : the result is provided to the callback.

wireless→nextWireless()wireless.nextWireless()**YWireless**

Continues the enumeration of wireless lan interfaces started using `yFirstWireless()`.

<code>js</code>	<code>function nextWireless()</code>
<code>nodejs</code>	<code>function nextWireless()</code>
<code>php</code>	<code>function nextWireless()</code>
<code>cpp</code>	<code>YWireless * nextWireless()</code>
<code>m</code>	<code>-(YWireless*) nextWireless</code>
<code>pas</code>	<code>function nextWireless(): TYWireless</code>
<code>vb</code>	<code>function nextWireless() As YWireless</code>
<code>cs</code>	<code>YWireless nextWireless()</code>
<code>java</code>	<code>YWireless nextWireless()</code>
<code>py</code>	<code>def nextWireless()</code>

Returns :

a pointer to a `YWireless` object, corresponding to a wireless lan interface currently online, or a `null` pointer if there are no more wireless lan interfaces to enumerate.

wireless→registerValueCallback() wireless.registerValueCallback()

YWireless

Registers the callback function that is invoked on every change of advertised value.

```
js   function registerValueCallback( callback )
node.js function registerValueCallback( callback )
php  function registerValueCallback( $callback )
cpp   int registerValueCallback( YWirelessValueCallback callback )
m    -(int) registerValueCallback : (YWirelessValueCallback) callback
pas   function registerValueCallback( callback: TYWirelessValueCallback): LongInt
vb    function registerValueCallback( ) As Integer
cs    int registerValueCallback( ValueCallback callback )
java  int registerValueCallback( UpdateCallback callback )
py    def registerValueCallback( callback )
```

The callback is invoked only during the execution of `ySleep` or `yHandleEvents`. This provides control over the time when the callback is triggered. For good responsiveness, remember to call one of these two functions periodically. To unregister a callback, pass a null pointer as argument.

Parameters :

callback the callback function to call, or a null pointer. The callback function should take two arguments: the function object of which the value has changed, and the character string describing the new advertised value.

wireless→set_logicalName()
wireless→setLogicalName()
wireless.set_logicalName()

YWireless

Changes the logical name of the wireless lan interface.

js	function set_logicalName(newval)
nodejs	function set_logicalName(newval)
php	function set_logicalName(\$newval)
cpp	int set_logicalName(const string& newval)
m	-(int) setLogicalName : (NSString*) newval
pas	function set_logicalName(newval: string): integer
vb	function set_logicalName(ByVal newval As String) As Integer
cs	int set_logicalName(string newval)
java	int set_logicalName(String newval)
py	def set_logicalName(newval)
cmd	YWireless target set_logicalName newval

You can use `yCheckLogicalName()` prior to this call to make sure that your parameter is valid. Remember to call the `saveToFlash()` method of the module if the modification must be kept.

Parameters :

newval a string corresponding to the logical name of the wireless lan interface.

Returns :

`YAPI_SUCCESS` if the call succeeds. On failure, throws an exception or returns a negative error code.

wireless→set(userData)**YWireless****wireless→setUserData(wireless.set(userData))**

Stores a user context provided as argument in the userData attribute of the function.

js	function set(userData)
node.js	function set(userData)
php	function set(userData)
cpp	void set(userData) void* data
m	-(void) setUserData : (void*) data
pas	procedure set(userData) data : Tobject
vb	procedure set(userData) ByVal data As Object
cs	void set(userData) object data
java	void set(userData) Object data
py	def set(userData) data

This attribute is never touched by the API, and is at disposal of the caller to store a context.

Parameters :

data any kind of object to be stored

wireless→wait_async()

YWireless

Waits for all pending asynchronous commands on the module to complete, and invoke the user-provided callback function.

```
js  function wait_async( callback, context)
```

```
nodejs function wait_async( callback, context)
```

The callback function can therefore freely issue synchronous or asynchronous commands, without risking to block the Javascript VM.

Parameters :

callback callback function that is invoked when all pending commands on the module are completed. The callback function receives two arguments: the caller-specific context object and the receiving function object.

context caller-specific object that is passed as-is to the callback function

Returns :

nothing.

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