Operating Instruction Manual

Generic DTM no PROFIsafe for YOKOGAWA PROFINET IO-Devices

Configuration of YOKOGAWA PROFINET IO-Devices

www.hilscher.com

Table of Contents

1 Introduction

1.1 About this Manual

This manual provides information on how to set up YOKOGAWA PROFINET IO-Devices described with GSDML files. These devices can be configured by the YOKOGAWA Generic PROFINET IO-Device DTM noPROFIsafe within an FDT Framework.

"YOKOGAWA" means Yokogawa Electric Corporation.

Dialog Panes

The table below gives an overview for the individual dialog panes descriptions:

Section	Subsection	Page
Configuration	*Overview Configuration*	18
	General	20
	Modules	21
Description	*Overview Description*	25
	Device Info	26
	Module Info	27
	GSDML Viewer	28

Table 1: Descriptions Dialog Panes

1.1.1 List of Revisions

Index	Date	Version	Component	Chapter	Revisions
1	2018-12-04	1.2010	Yokogawa PROFINET IO Generic Device DTM noPROFIsafe	All	Created

1.1.2 Conventions in this Manual

Notes, operation instructions and results of operation steps are marked as follows:

Notes

Important: <important note you must follow to avoid malfunction>

Note: <general note>

<note, where to find further information>

Operation Instructions

1. <instruction>
2. <instruction>

or

➢ <instruction>

Results

✏ <result>

Note: The PROFINET IO specification defines the designations "Controller" instead of "Master" and "Device" instead of "Slave". In this manual "Controller" and "Device" are used with the PROFINET IO-Device or the DTM. In connection with general questions about the Master or the Slave functionality, the terms "Master" and "Slave" are used, as in the network configuration on the Master bus line or the „Stand-Alone-Slave".

Terminology used:

YOKOGAWA PROFINET IO-Device: "PROFINET IO-Device"

YOKOGAWA generic PROFINET IO-Device DTM: "Generic PROFINET IO-Device"

1.2 Documentation Overview

The following table lists the documents for SYCON.net-SLP/YOKO for YOKOGAWA generic PROFINET IO-Device DTM for YOKOGAWA PROFINET IO-Devices:

Content	Document Name
General description of netFrame: Description of the output window, menus and toolbars.	SYCONnet netFrame YOKOGAWA A2LP131 OI 01 EN.pdf
General description of netDevice. Graphical network view, device catalog and the project tree. Description of • menus, • context menus, • insert device, cut/copy/paste device, additional functions (print), delete device, • symbolic name, • network menu, • network toolbar. Getting started/Configuration steps. How to add a device description. Working with bus lines.	SYCONnet netDevice YOKOGAWA A2LP131 OI 01 EN.pdf
Description of the configuration dialogs to configure the PROFINET IO Controller. Getting started/Configuration steps. Configuration of the master • controller network settings, • device table, • IP address table, • process data, • stations timing, • address table, • FSU-/port-settings, • controller settings	PROFINET IO Controller YOKOGAWA A2LP131 DTM OI 01 EN.pdf
Description of the configuration dialogs to configure the PROFINET IO slave. Getting started/Configuration steps. Configuration of the slave • general, • modules and parameters.	YOKOGAWA PROFINET IO Generic Device DTM noPROFIsafe IO 01 EN.pdf

Table 2: Documentation Overview

1.3 Legal Notes

Copyright

Important notes

Liability disclaimer

flawlessness of the hardware and/or software under all application conditions and scenarios and the work results achieved by the user when using the hardware and/or software. Liability for any damage that may have occurred as a result of using the hardware and/or software or the corresponding documents shall be limited to an event involving willful intent or a grossly negligent violation of a fundamental contractual obligation. However, the right to assert damages due to a violation of a fundamental contractual obligation shall be limited to contract-typical foreseeable damage.

It is hereby expressly agreed upon in particular that any use or utilization of the hardware and/or software in connection with

- Flight control systems in aviation and aerospace;

- Nuclear fusion processes in nuclear power plants;

- Medical devices used for life support and

- Vehicle control systems used in passenger transport

shall be excluded. Use of the hardware and/or software in any of the following areas is strictly prohibited:

- For military purposes or in weaponry;

- For designing, engineering, maintaining or operating nuclear systems;

- In flight safety systems, aviation and flight telecommunications systems;

- In life-support systems;

- In systems in which any malfunction in the hardware and/or software may result in physical injuries or fatalities.

You are hereby made aware that the hardware and/or software was not created for use in hazardous environments, which require fail-safe control mechanisms. Use of the hardware and/or software in this kind of environment shall be at your own risk; any liability for damage or loss due to impermissible use shall be excluded.

Warranty

Hilscher Gesellschaft für Systemautomation mbH hereby guarantees that the software shall run without errors in accordance with the requirements listed in the specifications and that there were no defects on the date of acceptance. The warranty period shall be 12 months commencing as of the date of acceptance or purchase (with express declaration or implied, by customer's conclusive behavior, e.g. putting into operation permanently).

The warranty obligation for equipment (hardware) we produce is 36 months, calculated as of the date of delivery ex works. The aforementioned provisions shall not apply if longer warranty periods are mandatory by law pursuant to Section 438 (1.2) BGB, Section 479 (1) BGB and Section 634a (1) BGB [Bürgerliches Gesetzbuch; German Civil Code] If, despite of all due care taken, the delivered product should have a defect, which already existed at the time of the transfer of risk, it shall be at our discretion to either repair the product or to deliver a replacement product, subject to timely notification of defect.

The warranty obligation shall not apply if the notification of defect is not asserted promptly, if the purchaser or third party has tampered with the products, if the defect is the result of natural wear, was caused by unfavorable operating conditions or is due to violations against our

operating regulations or against rules of good electrical engineering practice, or if our request to return the defective object is not promptly complied with.

Please refer to the **Hilscher Software License Agreement** provided in printed form!

Costs of support, maintenance, customization and product care

Please be advised that any subsequent improvement shall only be free of charge if a defect is found. Any form of technical support, maintenance and customization is not a warranty service, but instead shall be charged extra.

Additional guarantees

Although the hardware and software was developed and tested in-depth with greatest care, Hilscher Gesellschaft für Systemautomation mbH shall not assume any guarantee for the suitability thereof for any purpose that was not confirmed in writing. No guarantee can be granted whereby the hardware and software satisfies your requirements, or the use of the hardware and/or software is uninterruptable or the hardware and/or software is fault-free.

It cannot be guaranteed that patents and/or ownership privileges have not been infringed upon or violated or that the products are free from third-party influence. No additional guarantees or promises shall be made as to whether the product is market current, free from deficiency in title, or can be integrated or is usable for specific purposes, unless such guarantees or promises are required under existing law and cannot be restricted.

Confidentiality

The customer hereby expressly acknowledges that this document contains trade secrets, information protected by copyright and other patent and ownership privileges as well as any related rights of Hilscher Gesellschaft für Systemautomation mbH. The customer agrees to treat as confidential all of the information made available to customer by Hilscher Gesellschaft für Systemautomation mbH and rights, which were disclosed by Hilscher Gesellschaft für Systemautomation mbH and that were made accessible as well as the terms and conditions of this agreement itself.

The parties hereby agree to one another that the information that each party receives from the other party respectively is and shall remain the intellectual property of said other party, unless provided for otherwise in a contractual agreement.

The customer must not allow any third party to become knowledgeable of this expertise and shall only provide knowledge thereof to authorized users as appropriate and necessary. Companies associated with the customer shall not be deemed third parties. The customer must obligate authorized users to confidentiality. The customer should only use the confidential information in connection with the performances specified in this agreement.

The customer must not use this confidential information to his own advantage or for his own purposes or rather to the advantage or for the purpose of a third party, nor must it be used for commercial purposes and this confidential information must only be used to the extent provided for in this agreement or otherwise to the extent as expressly authorized by the disclosing party in written form. The customer has the right, subject to the

obligation to confidentiality, to disclose the terms and conditions of this agreement directly to his legal and financial consultants as would be required for the customer's normal business operation.

Export provisions

The delivered product (including technical data) is subject to the legal export and/or import laws as well as any associated regulations of various countries, especially such laws applicable in Germany and in the United States. The products / hardware / software must not be exported into such countries for which export is prohibited under US American export control laws and its supplementary provisions. You hereby agree to strictly follow the regulations and to yourself be responsible for observing them. You are hereby made aware that you may be required to obtain governmental approval to export, reexport or import the product.

1.4   Software License Agreement

Please refer to the **Hilscher Software License Agreement** provided in printed form!

1.5   Registered Trademarks

Windows® 7, Windows® 10, Windows® Server 2008, and Windows® Server 2016 are registered trademarks of Microsoft Corporation.

PROFINET® is a registered trademark of PROFIBUS & PROFINET International (PI), Karlsruhe.

All other mentioned trademarks are property of their respective legal owners.

1.6 About YOKOGAWA Generic PROFINET IO-Device DTM noPROFIsafe

You can use the YOKOGAWA generic PROFINET IO-Device DTM to configure the PROFINET IO-Devices described with GSDML files within a FDT Framework.

The information necessary for the configuration of the PROFINET IO-Devices is stored within the PROFINET IO-Controller when using the generic PROFINET IO-Devices DTM and thus the PROFINET IO-Controller is configured.

1.6.1   Requirements

System Requirements

- PC with 1 GHz processor or higher

- Windows® 7 (32 bit und 64-Bit) SP1,
  Windows® 10 (32-Bit und 64-Bit),
  Windows® Server 2008, or
  Windows® Server 2016

- Administrator privilege required for installation

- Internet Explorer 5.5 or higher

- RAM: min. 512 MByte, recommended 1024 MByte

- Graphic resolution: min. 1024 x 768 pixel

- Keyboard and Mouse

- Restriction: Touch screen is not supported.

Note: If the project file is used on another PC,

- the other PC must also comply to these system requirements,

- the device description files of the devices used in the project must be imported to the configuration software SYCON.net on the other PC,

- respectively the DTMs of the devices used in the project must be installed on the other PC.

Requirements Generic PROFINET IO-Device DTM

The requirements for working with the generic PROFINET IO-Device DTM are:

- Installed FDT/DTM V 1.2 compliant frame application

- GSDML file of the devices to be configured

- The user needs to reload the Device Catalog

Loading GSDML files

To add devices to the **netDevice** device catalog, you must import the GSDML file of the used device via **netDevice** menu **Network > Import Device Descriptions ….** into the GSDML folder of the DTM. Then the Device Catalogue must be reloaded. The folder GSDML inclusively Windows® XP is located in the application data directory (All Users) of the configuration software (or from with Windows® 7 on in the *C:\ProgramData\ SYCONnet* directory).

For further information refer to section *Configuration Steps* on page 17 , under step 1 and 2.

1.7   Dialog Structure of the YOKOGAWA Generic PROFINET IO-Device DTM noPROFIsafe

The graphical user interface of the DTM is composed of different areas and elements listed hereafter:

1. A header area containing the **General Device Information**,

2. The **Navigation Area** (area on the left side),

3. The **Dialog Pane** (main area on the right side),

4. **OK**, **Cancel**, **Apply**, **Help**,

5. The **Status Line** containing information about the DTM.

Figure 1: Dialog Structure of the PROFINET IO-Device DTM

1.7.1   General Device Information

Parameter	Meaning
IO Device	Name of the device
Vendor	Vendor name of the device
Device ID	Identification number of the device
Vendor ID	Identification number of the vendor

Table 3: General Device Information

1.7.2   Navigation Area

The **Navigation Area** contains folders and subfolders to open the dialog panes of the DTM.

Figure 2: Navigation Area

➢ Select the required folder and subfolder.

✎ The corresponding Dialog pane is displayed.

Hide / display Navigation

	Hiding the navigation area (above right side).
Show navigation area	**Opening** the navigation area (below left side).

1.7.3   Dialog Panes

At the dialog pane, the **Configuration** or **Description** panes are opened via the corresponding folder in the navigation area.

Configuration	
General	On the pane General PROFINET IO-Device information is displayed. For further information, refer to section *General* on page 20.
Modules	On the Modules pane modules, submodules and parameters can be selected or configured, which are read from the GSDML file. For further information, refer to section *Modules* on page *21*.
Description	
Device	The Device Info pane contains the manufacturer information about the device. For further information, refer to section *Device Info* on page 26.
Module Info	The Module Info pane shows information for the available modules of this device. For further information, refer to section *Module Info* on page 27.
GSDML	By use of the GSDML-Viewer a GSDML file can be viewed and searched through. For further information, refer to section *GSDML Viewer* on page 28.

Table 4: Overview Dialog Panes

1.7.4 OK, Cancel, Apply and Help

OK, **Cancel**, **Apply** and **Help** you can use as described hereafter.

	Meaning
OK	To confirm your latest settings, click **OK**. All changed values will be applied on the frame application database. *The dialog then closes.*
Cancel	To cancel your latest changes, click **Cancel**. Answer to the safety query **Configuration data has been changed. Do you want to save the data?** by **Yes**, **No** or **Cancel**. **Yes**: The changes are saved or the changed values are applied on the frame application database. *The dialog then closes.* **No**: The changes are not saved or the changed values are not applied on the frame application database. *The dialog then closes.* **Cancel**: *Back to the DTM.*
Apply	To confirm your latest settings, click **Apply**. All changed values will be applied on the frame application database. *The dialog remains opened.*
Help	Please read separate PDF manual (this manual).

Table 5: OK, Cancel, Apply and Help

1.7.5 Status Bar

The **Status Bar** displays information about the current state of the DTM. The current activity, is signaled graphically via icons in the status bar.

Figure 3: Status Bar

Icon / Meaning	
Data Source States	
🗄	**Data set**: The displayed data are read out from the instance data set (database).
🗄	**Device**: The displayed data are read out from the device.
States of the instance Date Set	
✏	**Valid Modified**: Parameter is changed (not equal to data source).

Table 6: Status Icons

1.7.6   Table View and Handling

Table elements

Table data can be static or editable or can be filled to special fields (e. g. for an IP address). Table rows can be displayed or hidden on the plus and minus symbols.

- Static: The table data is static.

- Editable: The table data can be edited using an integrated editor.

- Input fields for specific data (eg. as the IP address)

- Plus (+) / minus (-): Display / hide table rows

- Drop-down list (selection list): To click or select an item

Display / hide table rows

		Slot	Sub Slot	!	Module
▶	⊟	0		𝄐	SIMOCODE pro V PN [3UF7 011-1A*00-0]

Figure 4: Hidden table rows

- ➢ Click on the + sign or press the spacebar.

- ✎ Additional table rows are displayed.

		Slot	Sub Slot	!	Module
▶	⊟	0		𝄐	SIMOCODE pro V PN [3UF7 011-1A*00-0]
			1	𝄐	0x00000001
			32768	𝄐	PN-IO
			32769	𝄐	Port 1
			32770	𝄐	Port 2

Figure 5: Additional table rows displayed

Drop-down list

- ➢ To select an entry from the drop-down list, click the appropriate field in the interactive table and select the required entry.

2 Getting started and Instructions Step by Step

2.1 Configuration Steps

The following table describes the steps to configure a PROFINET IO-Device with the generic PROFINET IO-Device DTM as it is typical for many cases. At this time it is presupposed that the PROFINET IO-Controller DTM installation was already done.

#	Step	Short Description	For detailed information see section	Page
1	Add PROFINET IO-Device in the Device Catalog	Add the Device in the Device Catalog by importing the device description file to the Device Catalog. Depending of the FDT Container. For netDevice: - **Network > Import Device Descriptions**.	*(See Operating Instruction Manual netDevice and netProject)*	-
2	Load device catalog	Depending of the FDT Container: For netDevice: - select **Network > Device Catalog**, - select button **Reload Catalog**.	*(See Operating Instruction Manual netDevice and netProject)*	-
3	Insert Device(s) into the configuration	- In the Device Catalog click to the Slave. - Insert the device via drag and drop **to the Master bus line** in the network view. - Add more slaves, if needed.	*(See Operating Instruction Manual netDevice and netProject)*	-
4	Configure Device	Configure the Device. - Double click to the device icon of the Device. - The Generic Device DTM configuration dialog is displayed. In the Generic Device DTM configuration dialog: - Select **Configuration > Modules**. - Configure the PROFINET IO-Device modules. **Note:** Isochronous submodules are not supported. They are to be removed from the configuration! - Close the Generic Device DTM configuration dialog via the button **OK**.	*Configuring Device Parameters* *Modules*	19 21
5	Configuration Steps Controller device	Configure the Controller device via PROFINET IO-Controller DTM. Important: Enter the Name of station and the IP settings of the PROFINET IO-Device station.	*(See Operating Instruction Manual DTM for PROFINET IO-Controller devices)*	-
6	Save project	Depending of the frame application. For the configuration software: - select **File > Save**.	*(See Operating Instruction Manual of the Frame Application)*	-

Table 7: Getting started - Configuration Steps

3 Configuration

3.1 Overview Configuration

Dialog Panes "Configuration"

The table below gives an overview about the available **Configuration** dialog panes descriptions:

PROFINET IO-generic Device DTM	Folder Name / Section	Subsection	Page
Navigation area Configuration → General Modules *Navigation Area - Configuration*	*Configuration*	*General*	*20*
		Modules	*21*

Table 8: Descriptions of the Dialog Panes Configuration

Notice the descriptions in the section *Configuring Device Parameters* on page 19 .

3.2 Configuring Device Parameters

The following steps are needed to configure the device parameters using the YOKOGAWA generic PROFINET IO-Device DTM:

Station Name and IP Settings PROFINET IO-Device Station

1. In the PROFINET IO-Controller DTM enter the Name of station and the IP settings of the PROFINET IO-Device station.

Modules

2. Configure the modules of the PROFINET IO-Device.

Therefore you can add either modules or submodules to the configuration or you can change modules. Furthermore you can assign or change slot numbers.

Note: Isochronous submodules are not supported. They are to be removed from the configuration!

Close Generic Device DTM Configuration Dialog

3. Click **OK** in order to close the Generic Device configuration dialog and to store your configuration.

Further Information

For more information refer to the Operating Instruction Manual *DTM for PROFINET IO-Controller devices* or to section *Modules* on page 21.

3.3 General

The **General** dialog pane shows the **Name of station** of the PROFINET IO-Device and its IP settings. These values are set in the PROFINET IO-Controller.

To access to the **General** dialog pane:

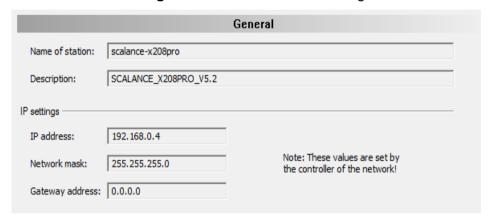> ➢ Select **Configuration > General** in the navigation area.

Figure 6: Configuration > General

Parameter	Meaning	Range of Value / Default Value
Name of station	Network name of the PROFINET IO-Device station. (1 - 240 characters).

The Name of station is set in the PROFINET IO-Controller DTM. Here it is only displayed. The PROFINET IO-Controller uses the Name of station to identify the PROFINET IO-Device via the PROFINET network and to build up communication.

The Name of station displayed here must match with the Name of station set in the PROFINET IO-Device.

The Name of station must be explicit in the PROFINET network.

For information on the approved marks, see section *Name encoding* on page 29. | 1 - 240 characters |
| Description | Symbolic Name of the PROFINET IO-Device station. | |
| **IP Settings of the PROFINET IO-Device station** | | |
| IP Address | The IP address of the PROFINET IO-Device station is set in the PROFINET IO-Controller DTM. Here it is only displayed.

The PROFINET IO-Controller device transmits the IP address of the PROFINET IO-Device during startup via the PROFINET network to the PROFINET IO-Device and thereby configures the PROFINET IO-Device. | valid IP Address |
| Network Mask | The Network mask of the PROFINET IO-Device station is set in the PROFINET IO-Controller DTM. Here it is only displayed.

The PROFINET IO-Controller device transmits the Network mask of the PROFINET IO-Device during startup via the PROFINET network to the PROFINET IO-Device and thereby configures the PROFINET IO-Device. | valid Network Mask |
| Gateway Address | The Gateway address of the PROFINET IO-Device station is set in the PROFINET IO-Controller DTM. Here it is only displayed.

The PROFINET IO-Controller device transmits the Gateway address of the PROFINET IO-Device during startup via the PROFINET network to the PROFINET IO-Device and thereby configures the PROFINET IO-Device. | valid Gateway Address |

Table 9: General Pane Parameters

3.4   Modules

On the **Modules** pane the configured modules of a PROFINET IO-Device are displayed. To configure the modules:

➢ Select **Configuration > Modules** in the navigation area.

	Slot	Sub Slot	!	Module
⊟	2		🖈	**R0S2.3 [6ES7 318-3EL01-0AB0]**
		1000	🖈	1O
▶		1001	🖈	1I
		33280	🖈	Interface
		33281	🖈	Port 1
		33282	🖈	Port 2

Add Module   Add Submodule   Remove   ☐ Alpha-sorted module selection

Use of slots: 1/1

State of data length: Input 6/1440 Octets, Output 6/1440 Octets, In-Output 12/2880 Octets

Submodule details

Dataset: I/O data ▼   Display mode: Decimal ▼

Direction	Consistence	Data type	Text ID	Length
▶ INPUT	–	OctetString	1I	1

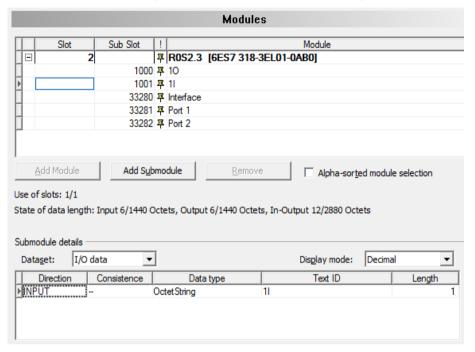*Figure 7: Configuration > Modules Pane*

3.4.1 Modules Table

The modules table allows to configure the modules of a PROFINET IO-Device. I. e., modules or submodules can be added, changed or removed, depending by the GSDML file used.
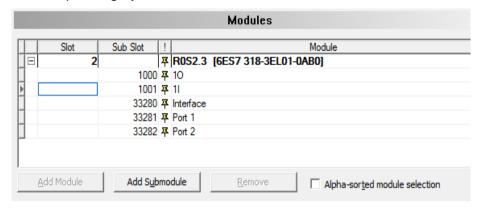

Figure 8: Configuration > Modules Table

Parameter	Meaning
Slot	Shows the current **Slot** number assigned to a module. When clicking the slot field, the automatically updated drop-down list of the free and allowed **Slot** numbers is displayed. By changing the slot number, the sequence of the modules can be changed.
Sub Slot	Shows the current **Sub Slot** assigned to a submodule. When clicking the sub slot field, the automatically updated drop-down list of the free and allowed **Sub Slot** numbers is displayed. By changing the slot number, the sequence of the modules can be changed.
!	Slot icon tag: indicates the usage of the (sub-)module. 🎔 : Slot number, subslot number and module name are <u>not</u> changeable. no icon: Slot number, subslot number and module name are changeable.
Module	Module name as defined in the GSDML file.
▶	The arrow symbol shows the current line in the table. This line is the reference for **Add Module**, **Add Submodule** and **Remove**.
'Add Module' *	Use **Add Module** to add a module to the device configuration below the current line ▶.
'Add Submodule' *	Use **Add Submodule** to add a submodule to the selected module of the device configuration below the current line ▶.
'Remove'	Use **Remove** to remove the selected (sub-)module from the configuration below the current line ▶.
Alpha-sorted module selection	

Table 10: Modules Pane Parameters

*Isochronous submodules are not supported! When adding a module with an isochronous submodule or adding an isochronous submodule to a module, at saving the changes (via **OK**, **Apply**) the following error message will be displayed:

"Device [NameOfStation] has configured isochronous submodule(s) not supported by A2LP131!"

Note: Isochronous submodules are to be removed from the configuration!

3.4.2 Configuration Info

Use of slots: 3/256
State of data length: Input 8/1440 Octets, Output 6/1440 Octets, In-Output 14/2880 Octets

Figure 9: Configuration > Modules - Configuration Info

The configuration is validated regarding the maximum number of input/output bytes and modules.

Parameter	Meaning
Use of slots:	Number of configured modules / max. allowed modules.
State of date length:	Indicates state of data. Input: Current number of input data / max. allowed number of input data. Output: Current number of output data / max. allowed number of output data. In-/Output: Current number of input/output data / max. allowed number of input/output data.

Table 11: Modules Pane Parameters - Configuration Info

3.4.3   Submodules Details

The **Submodule details** table displays the details of the current selected module.

➢ To display the submodule details data, set the cursor in the Modules table to the table row subordinated to the module the submodule details you intend to display.
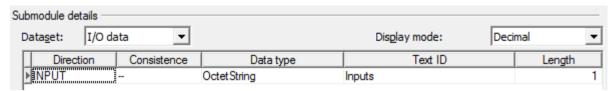

Figure 10: Configuration > Modules - Submodules Details > Dataset: I/O data

➢ Via **Dataset** you can switch from **I/O data** set to **Parameter** data set.
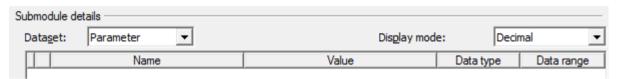

Figure 11: Configuration > Modules - Submodules Details > Dataset: Parameter

Parameter	Meaning
Dataset	Displayed dataset: I/O data or Parameter
Display mode	Under **Display Mode** the display mode of the module configuration data is predefined decimally or hex decimally.
Dataset: I/O data	
Direction	Input/output direction of the PROFINET IO-Data
Consistence	Specifies the input characteristics of a submodule. By default the data are transmitted coherently. [2]
Data type	Defines the data type of the data signal. [2]
Text ID	Text ID of the submodule from the GSDML file.
Length	Length of IO-Data.
Dataset: Parameter	
Name	Defines the name of the parameter.
Value	Indicates the value of the parameter.
Datatype	Defines the data type of the parameter.
Data range	Defines the range of the parameter value.

Table 12: Modules Pane Parameters - Submodules Details

4 Description

4.1 Overview Description

Description Dialog Panes

The table below gives an overview for the individual **Description** dialog panes descriptions:

PROFINET IO-generic Device DTM	Folder Name / Section	Page
Navigation area Configuration Description ➡ Device Info Module Info GSDML Viewer *Navigation Area - Description*	*Device Info*	26
	Module Info	27
	GSDML Viewer	28

Table 13: Descriptions of the Description Panes

4.2 Device Info

The **Device Info** pane displays manufacturer information about the device, which is defined in the GSDML file.

Name	Value
Main family	Attribute of the GSDML family element. It contains the assignment of the device to a function class.
	One of the following values are allowed: General Drives, Switching devices, I/O, Valves, Controllers, HMI, Encoders, NC/RC, Gateway, Programmable Logic Controllers, Ident systems, PROFIBUS PA Profile, Network Components Sensors.
Product family	Attribute of the GSDML family element. It contains the vendor specific assignment of the device to a product family. In addition to the main family a device can be assigned to a vendor specific product family.
DAP vendor name	Attribute of the GSDML ModuleInfo/VendorName element. The VendorName element contains the name of the device vendor.
	The device access point (DAP) is a module of the GSDML to describe the device parameters device specific. The device access point object contains most of the device related keywords.
DAP hardware release	Attribute of the GSDML ModuleInfo/HardwareRelease element. The HardwareRelease element contains the hardware release of the DAP.
DAP software release	Attribute of the GSDML ModuleInfo/SoftwareRelease element. element The SoftwareRelease element contains the software release of the DAP.
Extended address assignment	Attribute of the GSDML DeviceAccessPointItem element. It depends from the protocol for the assignment of the IP addresses supported by the DAP. Default: "false", for the Discovery and Configuration (DCP), "true" for the Dynamic Host Configuration Protocol (DHCP)
Physical slots	Attribute of the GSDML DeviceAccessPointItem element. This list describes which slots are supported by the DAP. The Slot number of the DAP itself shall be part of the list.
Max. IO data length	Attribute of the GSDML DeviceAccessPointItem IOConfigData element. It contains the maximum length of the output and input data in octets. MaxDataLength shall not be less than the highest value of MaxInputLength or MaxOutputLength. It shall not be greater than the sum of MaxInputLength and MaxOutputLength. If this keyword is not provided, the maximum length is the sum of MaxInputLength and MaxOutputLength.
Max. input data length	Attribute of the GSDML DeviceAccessPointItem IOConfigData element. It contains the maximum length of the data in octets which can be transferred from the IO Device to the IO Controller. This length is defined by the sum of the input data of all used submodules, the corresponding IO producer status and the IO consumer status of the used output submodules.
Max. output data length	Attribute of the GSDML DeviceAccessPointItem IOConfigData element. It contains the maximum length of the data in octets which can be transferred from the IO Controller to the IO Device. This length is defined by the sum of the output data of all used submodules, the corresponding IO producer status and the IO consumer status of the used input submodules.
Info text	GSDML ModuleInfo/InfoText element. This element contains human readable additional text information about the device.

Table 14: Device Info

4.3   Module Info

On the **Module Info** pane the **Select module** drop-down list displays all available modules described in the GSDML file.

In the table below the corresponding information for the current selection (Vendor ID, Main family, …) is displayed.

Control	Meaning
Select module	Drop-down list, displays all available modules described in the GSDML file. In the table below the corresponding information for the current selection is displayed.

Name	Value
Vendor ID	Identification number of the vendor.
Main family	Attribute of the GSDML family element. It contains the assignment of the device to a function class. One of the following values are allowed: General Drives, Switching devices, I/O, Valves, Controllers, HMI, Encoders, NC/RC, Gateway, Programmable Logic Controllers, Ident systems, PROFIBUS PA Profile, Network Components Sensors.
Product family	Attribute of the GSDML family element. It contains the vendor specific assignment of the device to a product family. In addition to the main family a device can be assigned to a vendor specific product family.
Modules identifier	Identification number of the module.
Order number	GSDML ModuleInfo/OrderNumber element. It contains the order number of a module.
Hardware release	GSDML ModuleInfo/HardwareRelease element. It contains the hardware release of a module.
Software release	GSDML ModuleInfo/SoftwareRelease element. It contains the software release of a module.
Info text	GSDML ModuleInfo/InfoText element. This element contains human readable additional text information about the module.

Table 15: Module Information

4.4   GSDML Viewer

The **GSDML Viewer** displays the content of the GSDML file of the device in HTML style in a text view.

Under **Filename** the absolute file directory path and the file name of the displayed GSDML file is displayed. **Find what** offers a search feature to search for text contents within the text of the GSDML file.

In the GSDML Viewer window the entries show the GSDML file in text format.

Parameter	Meaning
Filename	File directory path and the file name of the displayed GSDML file.
Find what	Search feature to search for text contents within the text of the GSDML file.
Match case	Search option
Match whole word	Search option

Table 16: Device Description – GSDML Viewer

5   Appendix

5.1   User Rights

User-rights are set within the FDT-container.

Note: Administrator rights are always used.

5.2   Name encoding

The name is an OctetString with 1 to 240 octets. A name can contain one or more labels separated by a dot [.].

The definition of IETF RFC 5890 and the following syntax applies:

- 1 or more labels, separated by [.]

- Total length is 1 to 240

- Label length is 1 to 63

- Labels consist of [a-z0-9-]

- Labels do not start with [-]

- Labels do not end with [-]

- Labels do not use multiple concatenated [-] except for IETF RFC 5890

- The first label does not have the form "port-xyz" or "port-xyz-abcde" with a, b, c, d, e, x, y, z = 0..9, to avoid wrong similarity with the field AliasNameValue

- Station names do not have the form a.b.c.d with a, b, c, d = 0...999

5.3   References

[1]   Device Type Manager (DTM) Style Guide, Version 1.0 ; FDT-JIG - Order No. <0001-0008-000>

[2]   GSDML Specification for PROFINET IO, Version 2.10 August 2006, Order No: 2.352, PROFIBUS Nutzerorganisation e.V., Karlsruhe

[3]   Application Layer protocol for decentralized periphery and distributed automation, Technical Specification for PROFINET, Version 2.3Ed2MU2, February 2015, Order No: 2.722, PROFIBUS Nutzerorganisation e.V., Karlsruhe

5.4   List of Figures

5.5   List of Tables

5.6 Glossary

DCP

Discovery and Configuration Protocol.

The Discovery and basic Configuration Protocol (DCP) is a protocol for identifying and configuring devices which is defined within the PROFINET specification.

DNS

Domain Name Service.

DTM

Device Type Manager.

The Device Type Manager (DTM) is a software module with graphical user interface for the configuration or for diagnosis of device.

Ethernet

A networking technology used both for office and industrial communication via electrical or optical connections. It has been developed and specified by the Intel, DEC and XEROX. It provides data transmission with collision control and allows various protocols. As Ethernet is not necessarily capable for real-time application, various real-time extensions have been developed (Industrial Ethernet, Real-Time Ethernet).

FDT

Field Device Tool

FDT specifies an interface, in order to be able to use DTM (Device Type Manager) in different applications of different manufacturers.

GSDML

GSDML = General Station Description Markup Language.

IP

Internet Protocol.

IP belongs to the TCP/IP family of protocols and is defined in RFC791. It is based on layer 3 of the ISO/OSI 7 layer model of networking.

It is a connectionless protocol, i.e. you do not need to open a connection to a computer before sending an IP data packet to it. Therefore IP is not able to guarantee that the IP data packets really arrive at the recipient. On IP level neither the correctness of data nor the consistence and completeness are checked.

IP defines special addressing mechanisms, see IP Address.

IP Address

An IP address is an address identifying a device or a computer within a network using the IP protocol. IP addresses are defined as a 32 bit number. Usually, for ease of notation the IP address is divided into four 8 bit numbers which are represented in decimal notation and separated by points:

a.b.c.d

where a.b.c.d are each integer values between 0 and 255.

Example: 192.168.30.15

However, not all combinations are allowed, some are reserved for special purposes.

The IP address 0.0.0.0 is defined as invalid.

MAC-ID

MAC = Media Access Control

A MAC-ID is on delivery a unique (physical) Ethernet address of the device.

MAC-IDs are defined as a 48 bit number. Usually, for ease of notation the MAC-ID address is divided into six 8 bit numbers which are represented in hexadecimal notation and separated by "minus"-signs (-):

A-B-C-D-E-F

where A-B-C-D-E-F are each integer values between 0 and 255.

Example: 00-02-A2-20-91-18

Module

Hardware or logical component of a physical device.

Name of station

The **Name of station** is defined by the DNS compatible device name in the GSDML file. It can be modified according to the DNS name specification. If the PROFINET IO-Device does use the name baptism the **Name of station** is set by the PROFINET IO-Device.

PROFINET

A communication system for Industrial Ethernet designed and developed by PROFIBUS & PROFINET International (PI). It uses some mechanisms similar to those of the PROFIBUS field bus.

PROFINET IO-Controller

A PROFINET control unit responsible for the defined run-up of an I/O subsystem and the cyclic or acyclic data exchange.

PROFINET IO-Device

A PROFINET field device that cyclically receives output data from its IO-Controller and responds with its input data.

Slot

Address of a structural unit within a PROFINET IO-Device.

Subslot

Subslot address of a structural unit within a slot.

Submodule

Hardware or logical component of a module

5.7 Contacts

YOKOGAWA ELECTRIC CORPORATION World Headquarters

9-32, Nakacho 2-chome, Musashino-shi

Tokyo 180-8750

Japan

www.yokogawa.com

YOKOGAWA CORPORATION OF AMERICA

2 Dart Road

Newnan GA 30265

USA

www.yokogawa.com/us

YOKOGAWA EUROPE BV

Euroweg 2

3825 HD AMERSFOORT

The Netherlands

www.yokogawa.com/eu

YOKOGAWA ELECTRIC ASIA Pte. LTD.

5 Bedok South Road

Singapore 469270

Singapore

www.yokogawa.com/sg

YOKOGAWA CHINA CO. LTD.

3F Tower D Cartelo Crocodile Building

No.568 West Tianshan Road Changing District

Shanghai, China

www.yokogawa.com/cn

YOKOGAWA MIDDLE EAST B.S.C.(c)

P.O. Box 10070, Manama

Building 577, Road 2516, Busaiteen 225

Muharraq, Bahrain

www.yokogawa.com/bh

Yokogawa has an extensive sales and distribution network.

Please refer to the European website (www.yokogawa.com/eu) to contact your nearest representative.