

WAGO-I/O-PRO CAA Library

# WagoLibHttp\_02.lib

This library provide function blocks to exchange data with a remote webserver via HTTP protocol. Function blocks available for method POST and GET.



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# WagoLibHttp\_02.lib

# HTTP\_GET

nction block X Program  lib, WagoLibBase64_01.lib, roller except 750-842  mments: Address or hostname of web server, g.: .220.143.234 or www.to-pass.com rtNumber of webserver.  ifault: 80		
lib, WagoLibBase64_01.lib, roller except 750-842  mments: Address or hostname of web server, J.: .220.143.234 or www.to-pass.com rtNumber of webserver. Ifault: 80		
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fault: 80		
me of user for "BasicAuthentication"		
ssword for "BasicAuthentication"		
The HTTP-GET-Request, e.g.: http://192.168.1.7/MyDb/GetDetails.php?id=4711'		
ngth of HTTP-GET-Request		
WatchDogTime, operation aborted after time is elapsed. Default: t#30s		
omments:		
Send HTTP-GET-Request on rising edge. Internally reset when response received or "tTimeOut" elapsed.		
Comments:		
Fror code of last transmission. See section Function description' for details		
Textual description of current state		
extual description of current state		
The HTTP response		
ŀ		



#### WAGO-I/O-PRO Library elements

#### **Graphic display:**

```
OHttpGet

HTTP_GET

'127.0.0.1'- sServerName diError
80- wServerPort sStatus sStatus
'user'- sUserName abContentData abResponse
'user'- sPassword uiContentLength uiResponse
ADR(sUrl)- pabUrlData
LEN(sUrl)- uiUrlLength
- tTimeOut
xHttpSend- xSend ▷
```

#### **Function description:**

This function block send a HTTP 1.0 GET request to the given URL and return the response data.

Request parameters are omitted as part of the URL.

The maximum length of URL is limited.

When user and passwort is set, the HTTP-GET-Request is send together with "Basic Access Authentication".

The function block send any HTTP-GET-Request to the given server:

```
sUrl : STRING(250):= 'http://192.168.1.7/MyDb/GetDetails.php?id=4711'
sUrl : STRING(250):= 'http://gateway.sms77.de/balance.php?u=<usr>&p=<pwd>'
sUrl : STRING(250):= '/webserv/GetExample01.html'
```

The Server/Script answer with the HTTP-GET-Response e.g:

#### RetVal dwError:

```
16#80000000: 'SUCCESS'

16#80001001: TCP-ERROR: DNS-Request failed, could not retrieve servers IP address'

16#80001002: TCP-ERROR: Could not convert servers IP address into dotted format'

16#80002001: HTTP-ERROR: Server returns "xyz" instead of "200 - OK"' (http://en.wikipedia.org/wiki/List_of_HTTP_status_codes)

16#80002002: HTTP-ERROR: "Content-Length" not found in response header'

16#80002003: HTTP-ERROR: Begin of data area [CR;LF;CR;LF] not found in response header'

16#80002004: HTTP-ERROR: 'Invalid HTTP Responsecode'

16#80004001: TIMEOUT: <actual processed step in state machine>'
```

#### Remark:

The string operation CONCAT on series 750 is limited to maximum of 250 characters.



## HTTP\_POST

•	WA	GO-I/O- <i>PRO</i>	Library elements			
Category:		Communication	unication			
Name:		HTTP_POST				
Type:		Function	Function block X Program			
Library name:		WagoLibHttp_0	2.lib			
Used Librarys		WagoLibEthernet_01.lib, WagoLibBase64_01.lib,				
Applicable to:		WAGO Ethernet Controller except 750-842				
			•			
Inputparameters:	Da	Data type: Comments:				
sServerName	S1	RING	IP-Address or hostname of web server, e.g.: 85.220.143.234 or www.to-pass.com			
wServerPort	W	ORD	PortNumber of webserver. Default: 80			
sUserName	Sī	RING(30)	Name of user for "BasicAuthentication"			
sPassword	Sī	RING(30)	Password for "BasicAuthentication"			
sScript	ST	RING(200)	URL of ressource to call, e.g.: http://192.168.1.7/MyDb/GetDetails.php'			
pabReqData	POINTER TO ARRAY [0 MAX_RECEIVE _TCP_CLIENT] OF BYTE;		Pointer to HTTP-POST request- parameters , e.g.: 'id=4711'			
uiReqDataCount	UI	NT	Length of HTTP-POST params			
tTimeOut	TIME		WatchDogTime, operation aborted after time is elapsed. Default: t#30s			
In-/Out parameters:	Da	ata type:	Comments:			
xSend	+	DOL	Send HTTP-POST request on rising edge. Internally reset when response received or "tTimeOut" elapsed.			
Outputparameters:	D:	ata type:	Comments:			
diError	_	NT	Error code of last transmission. See section 'Function description' for details			
sStatus	Sī	RING(255)	Textual description of current state			
abContentData	AF M	RRAY [0 AX_RECEIVE CP_CLIENT] F BYTE;	The HTTP response			
uiContentLength	UI	NT	Length of HTTP response in byte			



### WAGO-I/O-PRO Library elements

#### **Graphic display:**

```
OHttpPost

HTTP_POST

'192.168.1.7' - sServerName diError
- wServerPort sStatus -- sUserName abContentData -- sPassword uiContentLength sMyScript - sScript

ADR (sReqData) - pabReqData
LEN (sReqData) - uiRegDataCount
- tTimeOut
xDoIt - xSend >
```

#### **Function description:**

This function block send a HTTP 1.0 POST request to the given URL and return the response data.

Request parameters will transmittet in a separate section then the URL.

When user and passwort is set, the HTTP-POST-Request is send together with "Basic Access Authentication".

The function block send any HTTP-POST-Request to the given script:

```
sScript : STRING(200):= 'http://192.168.1.7/MyDb/GetDetails.php
sReqData : STRING(250) := 'id=4711'
pabReqData := ADR(sReqData);

sScript : STRING(200):= 'http://gateway.sms77.de/balance.php'
sReqData : STRING(250) := 'u=<usr>&p=<pwd>
pabReqData := ADR(sReqData);

sScript : STRING(200):= '/webserv/GetExample01.html';
pabReqData := 0; (* When no request params needed *)
```

The Server/Script answer with the HTTP response e.g.

#### RetVal dwError:

```
16#80001001: TCP-ERROR: DNS-Request failed, could not retrieve servers IP address'
16#80001002: TCP-ERROR: Could not convert servers IP address into dotted format'
16#80002001: HTTP-ERROR: Server returns "xyz" instead of "200 - OK"' (http://en.wikipedia.org/wiki/List_of_HTTP_status_codes)
16#80002002: HTTP-ERROR: "Content-Length" not found in response header'
16#80002003: HTTP-ERROR: Begin of data area [CR:LF:CR:LF] not found in response header'
16#80002004: HTTP-ERROR: 'Invalid HTTP Responsecode'
16#80004001: TIMEOUT: <actual processed step in state machine>'
```



### HTTP\_FindBlock

WAGO-I/O-PRO Library elements			
Communication	Communication		
HTTP_FindBloc	HTTP_FindBlock		
Function X	Function block	Program	
WagoLibHttp_0	WagoLibHttp_02.lib		
WagoLibEthern	WagoLibEthernet_01.lib, WagoLibBase64_01.lib,		
WAGO Etherne	WAGO Ethernet Controller except 750-842		
	Communication HTTP_FindBloc Function X WagoLibHttp_0 WagoLibEthern	Communication  HTTP_FindBlock  Function X Function block  WagoLibHttp_02.lib  WagoLibEthernet_01.lib, WagoLibBa	

Inputparameters:	Data type:	Comments:
pMemoryBlockA	DWORD	address of MemoryBlockA
uiLengthBlockA	DWORD	length of MemoryBlockA in byte
pMemoryBlockB	DWORD	address of MemoryBlockB"
uiLengthBlockB	DWORD	length of MemoryBlockA in byte

Return parameters:	Data type:	Comments:
	UINT	Position of block B in block A

#### **Graphic display:**

```
HTTP_FindBlock

- pMemoryBlockA HTTP_FindBlock -
uiLengthBlockA
- pMemoryBlockB
- uiLengthBlockB
```

#### **Function description:**

uiPos will equal to 7

Function look for the first appearance of "MemoryBlockB" in "MemoryBlockA" Function return 0 if "MemoryBlockB" is not found. Otherwise the function return the position of the first appearance.

#### Example:

```
abyMemoryBlockA : ARRAY[0..9] OF BYTE :=
      0,1,2,3,4,5,6,7,8,9;
abyMemoryBlockB : ARRAY[0..2] OF BYTE :=
      6,7,8;

uiPos := MEM_FindBlock(
      ADR(abyMemoryBlockA),
      10,
      ADR(abyMemoryBlockB),
      3);
```



# HTTP\_StripSpace

WAGO-I/O- <i>PRO</i> Library elements					
Category:	egory: Communication				
Name:	HTTP_StripSpac		се		
Type:		Function X		Function block	Program
Library name:		WagoLibHttp_02	WagoLibHttp_02.lib		
Used Librarys		WagoLibEtherne	et_	01.lib, WagoLibBase	e64_01.lib,
Applicable to:		WAGO Ethernet	С	ontroller except 750-	·842
Inputparameters:	Da	ata type:	Comments:		
sRaw	S	TRING	String to be processed		d
Return parameters:	Da	ata type:	Comments:		
	STRING		Processed string		
Graphic display:					
	HTTP_StripSpace				
sRaw HTTP StripSpace					
Function description:					
Returns a string in which [Space] is replaced with '%20' URL safe character					
Trotaino a otting in which [opace] is replaced with 7020 Orte said character					

#### Appendix A - Additional Libraries

### HTTP\_UrlEncode

Category:		Communication	)		
Name:		HTTP_UrlEnco	de		
Type:		Function X	Function block	Program	
Library name:		WagoLibHttp_0	2.lib	1	
Used Librarys		WagoLibEthern	et_01.lib, WagoLibBase64_01.lib,		
Applicable to:		WAGO Etherne	et Controller except 75	t Controller except 750-842	
,					
Inputparameters:	Da	ata type:	Comments:		
sRaw	STRING		String to be processed		
Return parameters:	Data type:		Comments:		
	UINT		URL safe string		
Graphic display:					
HTTP UrlEncode					
sRaw HTTP UrlEncode					

#### **Function description:**

Returns an URL safe string in which all special characters are replaced with a percent '%' sign followed by two hex digits.

[space]	%20
"	%22
#	%23
\$	%24
%	%25
&	%26
+	%2B
[comma]	%2C
/	%2F
• •	%3A
,	%3B
<b>'</b>	%3C
err	%3D
>	%3E
?	%3F
@	%40

Example: HTTP\_UrlEncode('Hello world'); will provide 'Hello%20world'