3622-WebInterface-01-0110 Firmware Version 5.0.5

Using the application program

Product family: Communication
Product type: Gateways
Manufacturer: IPAS GmbH

Name: 3622-WebInterface-01-0110
Order number: 3622-141-08

Functions

The ComBridge Web Communication Interface (WCI) is a KNXnet/IP gateway with integrated web server for the control and monitoring of KNX systems. A standard web browser on a PC or a mobile device (PDA mobile phone) can be used for this purpose.

In addition to the web server, the WCI offers a KNXnet/IP tunnelling connection as well as a further object server connection that can be used in parallel.

This results in a number of application possibilities:

- Clear and concise visualisation of up to 40 functions via the integrated web server
- Commissioning, configuration and diagnosis of KNX installations via Ethernet with ETS 3
- Connection of all software products based on KNXnet/IP to the KNX installation, e.g. IPAS DaliControl Service and Commissioning Wizard
- Connection to the ComBridge Studio visualisation systems

Brief description of the function modules

Web based visualisation:
A web server is integrated in the ComBridge Web Communication Interface. This means the connected KNX installation can be controlled and monitored via a standard browser from any PC or mobile device (mobile phone, PDA). Up to 40 KNX functions can be displayed on the operating pages. Up to 80 communication objects are available for the functions. The functions are clearly displayed on up to 5 display pages. The communication objects are set and assigned to group addresses as usual via ETS. A web configuration page is available to individually modify the display.

KNXnet/IP tunnelling connection:
Client software products such as ETS 3 that are based on the KNXnet/IP tunnelling protocol can connect to the WCI. This means that KNX installations can easily be commissioned and configured via an IP network.

Connection to the ComBridge Studio visualisation system:
When used as an object server the gateway is administered by a central software component - the ComBridge Studio Core Service. (See ComBridge Studio software documentation).
This service makes the information transmitted by the gateway available at various interfaces, e.g.:

- Web-Visualisation Service (Visual Director)
- Database + Alarm Services
- Scene + Event Services
- Schedule Services
- Logic Services
- e-Mail Services
- OPC Services

For more information, please see the ComBridge Studio documentation: www.ipas-products.com .

Configuring the device

The device is configured using ETS where the data types of the 40 available functions are defined and the network parameters for communication with the connected IP network are set. All other layout and design settings are performed directly on the device via a browser.

For ETS settings the following functions are available:

- Not Assigned
- Switch with Feedback
- Switch without Feedback
- 1 Bit Feedback
- Presence
- Dimming
- Shutter
- Relative Value (0..100%)
- 1 Byte Value (0..255)
- 2 Byte Float (EIS 5)
- 4 Byte Float (EIS 9)
- 2 Byte Counter (EIS10)
- 4 Byte Counter (EIS11)
- Scene Call/Program 1 Bit
- Scene Call/Program 8 Bit

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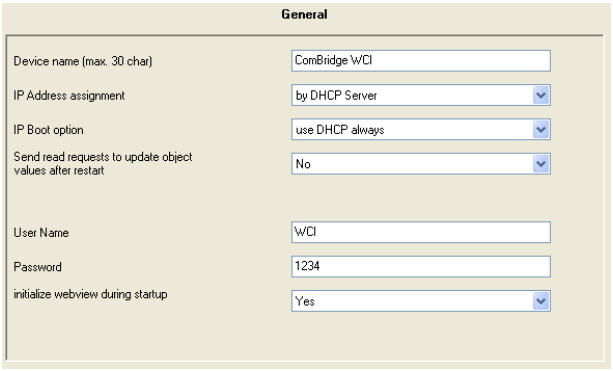
Overview of the ETS configuration

A specific device name is assigned on the “General“ page in the ETS configuration. Other general information about the device can also be entered.



The latter includes the type of identification and assignment of an IP address.
By default the IP address is obtained from a DHCP server. If this option is de-activated, the device is initialised with a configured IP address and subnet mask. In this case a standard gateway or router can also be defined, which makes it possible to reach other users on the Internet or a different network.

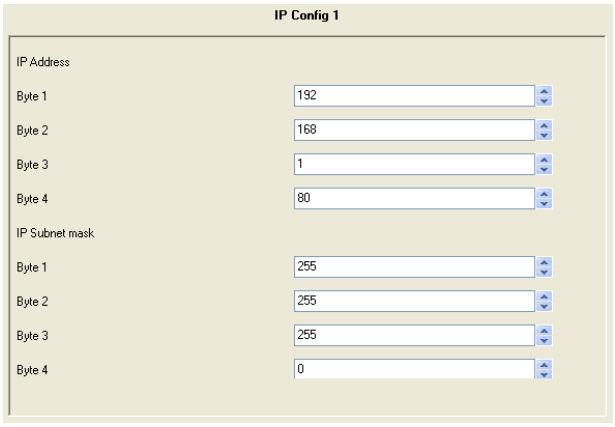
When used as a visualisation server, we recommend a fixed IP address as the server on the gateway can then always be accessed via this address.

A user name and password can be defined to prevent unauthorised access to the web pages.

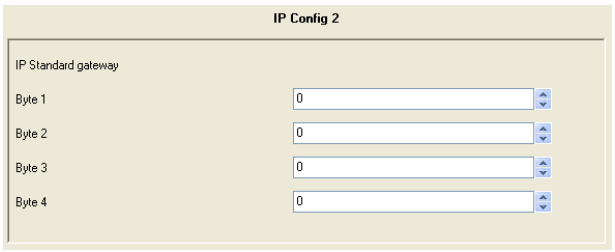
The user can decide via an additional parameter whether the user-defined settings, which are performed directly on the web pages, are to be initialized or retained.

If a fixed IP address is used for the address assignment, the address, IP subnet mask and the IP standard gateway can be set on the pages IP Config 1 and IP Config 2.

The four Bytes of each parameter are displayed individually. The value range for each Byte is 0..255.



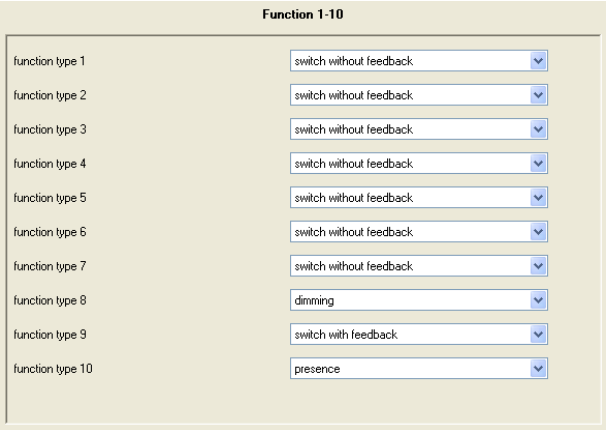
In case of manual address assignment, the IP standard gateway can be set on the IP Config 2 page. The standard gateway is used to transmit IP telegrams that are addressed to a PC outside the local network. If the device is to be used only in the internal network without a standard gateway, use the pre-set (invalid) address 0.0.0.0.



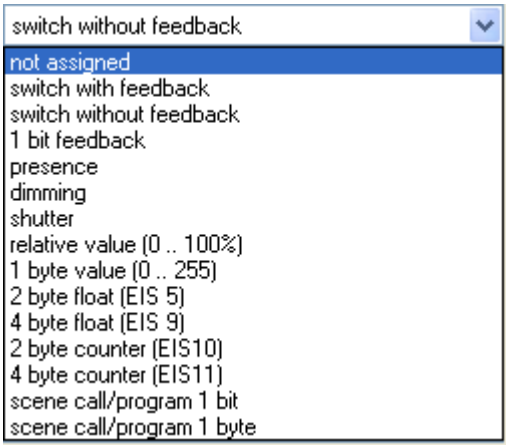
Use the Details page to enter communication timeouts.

The default settings should only be changed on explicit instructions by the network administrator.

Use the 4 function configuration pages to select the required function types



The function types are selected via a scroll-down menu.



The 40 functions available offer up to 80 communication objects for connection to the group addresses. For example, the user function “Blinds/Slats“ offers 2 communication objects according to EIS definition.

Communication objects

83 group addresses can be assigned to the 80 communication objects via 83 associations.

The following communication objects can be selected:

Possible function types Function 1 - 40
The function and type are defined in the ETS configuration.

Obj	Function	Object name	Type	Flags
Switch with Feedback				
0	Function Nr.	Switch command	1 Bit	CWTU
1	Function Nr.	Switch command	1 Bit	CRWTU
Switch without Feedback				
0	Function Nr.	Switch command	1 Bit	CRWTU
1 Bit feedback				
0	Function Nr.	Feedback	1 Bit	CRWTU
Presence				
0	Function Nr.	Presence	1 Bit	CRWTU
Dimming				
0	Function Nr.	Dimming On/Off	4 Bit	CWT
1	Function Nr.	Dimming	4 Bit	CWT
Shutter				
0	Function Nr.	Blind	1 Bit	CWT
1	Function Nr.	Shutters	1 Bit	CWT
Relative Value (0..100%)				
0	Function Nr.	Value relative (0..100%)	1 Byte	CRWTU

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1 Byte value (0..255)				
0	Function Nr.	Value (0..255)	1 Byte	CRWTU

2 Byte float (EIS 5)				
0	Function Nr.	2 Byte float	2 Byte	CRWTU

4 Byte float (EIS 9)				
0	Function Nr.	4 Byte float	4 Byte	CRWTU

2 Byte counter (EIS 10)				
0	Function Nr.	2 Byte counter	2 Byte	CRWTU

4 Byte counter (EIS 11)				
0	Function Nr.	4 Byte counter	4 Byte	CRWTU

Scene call/program 1 Bit				
0	Function Nr.	Scene call	1 Bit	CWT
1	Function Nr.	Scene program	1 Bit	CWT

Scene call/program 1 Bit				
0	Function Nr.	Scene call/program	1 Byte	CWT

Overview:

Number	Name	Object Function	Length	C	R	W	T	U	Priority
0	switch command	Function 1	1 bit	C	R	W	T	U	Low
1	feedback	Function 1	1 bit	C	R	W	T	U	Low
2	switch command	Function 2	1 bit	C	R	W	T	U	Low
4	feedback	Function 3	1 bit	C	R	W	T	U	Low
6	presence	Function 4	1 bit	C	R	W	T	U	Low
8	dimming On/Off	Function 5	1 bit	C	-	W	T	-	Low
9	dimming	Function 5	4 bit	C	-	W	T	-	Low
10	blind	Function 6	1 bit	C	-	W	T	-	Low
11	shutter	Function 6	1 bit	C	-	W	T	-	Low
12	value relative (0 .. 10...	Function 7	1 Byte	C	R	W	T	U	Low
14	value (0 .. 255)	Function 8	1 Byte	C	R	W	T	U	Low
16	2 byte float	Function 9	2 Byte	C	R	W	T	U	Low
18	4 byte float	Function 10	4 Byte	C	R	W	T	U	Low
20	2 byte counter	Function 11	2 Byte	C	R	W	T	U	Low
22	4 byte counter	Function 12	4 Byte	C	R	W	T	U	Low
24	scene call/program	Function 13	1 bit	C	-	W	T	-	Low
25	scene program	Function 13	1 bit	C	-	W	T	-	Low
26	scene call/program	Function 14	1 Byte	C	-	W	T	-	Low

Parameters

The following parameters are available in the application:

Parameter page General	
Parameter	Settings
Device name (max. 30 char)	**ComBridge WCI**
This sets the name of the device. The name is used to later identify the device in the visualisation.	
IP-Address assignment	Manual input **By DHCP**
The ComBridge WCI can either be assigned to a fixed IP address or to a dynamic address that is assigned by a DHCP server.	
IP Boot option	**Use DHCP always** Use fix IP, if DHCP server not available
This parameter only becomes visible if DHCP has been selected in the address assignment. In this mode there are further options to choose whether DHCP is to be used all the time or whether to resort to a fixed IP address after a certain time if DHCP is not available. This time period is described in full under the *Detail* flag. See below.	
Send read request to update object values after restart	Yes **No**
This determines whether the device is to request the object values of the 40 functions (80 objects) from the bus following a restart.	
User Name	**WCI**
The ComBridge WCI web pages can be protected by entering a user name.	
Password	**1234**
The ComBridge WCI web pages can be protected by entering a password.	
Initialize webview during start-up	yes **no**
The user-defined settings that have been performed via the web configuration pages can be initialised during the ETS Download.	

Parameter page IP Config 1	
Parameter	Settings
IP-Address / Byte 1	**0**
IP-Address / Byte 2	**0**
IP-Address / Byte 3	**0**
IP-Address / Byte 4	**0**
The standard IP address of the ComBridge WCI is preset here. If DHCP mode is selected, the address assigned by the DHCP server permanently overwrites this address. The IP address 0.0.0.0 is invalid and only makes sense when the DHCP server is activated.	
IP Subnet mask / Byte 1	**255**
IP Subnet mask / Byte 2	**255**
IP Subnet mask / Byte 3	**255**
IP Subnet mask / Byte 4	**255**
The standard IP subnet mask of the ComBridge WCI is preset here. If DHCP mode is selected, the address assigned by the DHCP server permanently overwrites this mask. If the device is configured without DHCP server, (setting *fixed IP address*) the device needs to have the correct subnet mask in order to function properly.	

Parameter page IP Config 2	
Parameter	Settings
IP Standard gateway / Byte 1	**0**
IP Standard gateway / Byte 2	**0**
IP Standard gateway / Byte 3	**0**
IP Standard gateway / Byte 4	**0**
The standard router is used to send UDP telegrams that are addressed to a PC outside the local network. If DHCP mode has been selected, the DHCP server permanently overwrites this address. If the DHCP server does not transmit an address for a router, it is assumed that no router is to be used. If you would like to configure the device without standard router, use the preset (invalid) address (**0.0.0.0**).	

Parameter page Function 1..10	
Parameter	Settings
Function type	Not Assigned Switch with Feedback Switch without Feedback 1 Bit Feedback Presence Dimming Shutter Relative Value (0..100%) 1 Byte Value (0..255) 2 Byte Float (EIS 5) 4 Byte Float (EIS 9) 2 Byte Counter (EIS10) 4 Byte Counter (EIS11) Scene Call/Program 1 Bit Scene Call/Program 8 Bit
This sets the data and function type of the communications object. This configuration is possible for all 40 functions.	

Parameter page IP Details	
Parameter	Settings
Communication Timeout	1 sec 5 sec 10 sec **20 sec** 30 sec 60 sec
This parameter defines the timeout during an IP communication, i.e. if the client does not respond to a request within this time period, the connection will be terminated.	
DHCP Timeout	5 sec 30 sec **1 min** 2 min
This sets the time following which a fixed IP address is to be used if no DHCP server is available.	

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Using the KNX functions

After the device has been loaded with ETS, all defined functions are shown in the pre-set status.
The display can be changed via a web configuration page.

The visualisation pages are then loaded automatically and presented to the user as follows:

The web pages can be accessed via the IP address that has been assigned in the ETS configuration.
http://<ip-address>, e.g. http://192.168.1.80

Once the WCI web page has been loaded via the corresponding IP address, the Log-In screen appears:

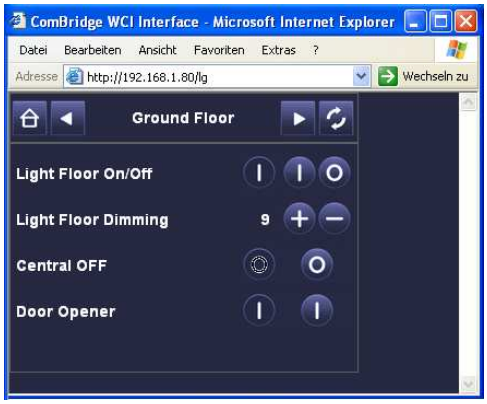
The web pages are protected through a user name and password. Enter the access details that have been configured in ETS (an empty space is also possible) in order to either load the visualisation or the configuration view via the buttons at the bottom of the web page:

Loads the configuration page

Loads the visualisation page

Loading the visualisation page brings up the menu page with an overview of all configured pages:

By clicking on the page description (Labels) you can then navigate to the required page:



The 40 available KNX functions can be distributed across the 5 pages in any way.

Each function consists of a label field on the left-hand side, a button field with one or two buttons on the right-hand side and potentially a status acknowledgement to the left of the buttons:

Clicking on a button leads to the corresponding function being carried out. The status acknowledgement provides immediate feedback.
Pure status functions have no buttons and only serve to display value or status.

To navigate to neighbouring pages, use the arrow buttons in the page header:

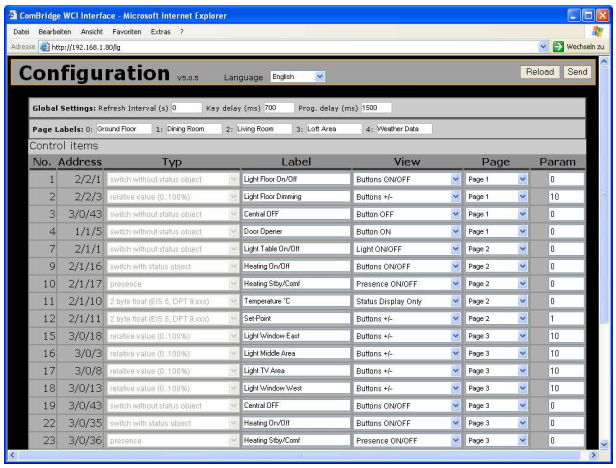
Alternatively use the Home button in the left-hand corner of the header to return to the menu page.

The Refresh button in the right-hand corner up-dates the page and every displayed value and status on the browser.

Configuring the KNX functions

The display and allocation of functions to the individual flags are set on a configuration page. To load the configuration page use the corresponding button on the log-in screen.

The configuration page is displayed in the browser window as follows:



The configuration page header contains information about the current firmware version:

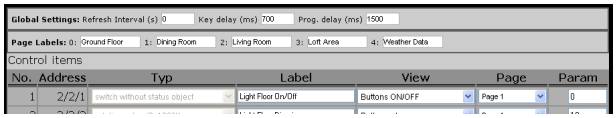
Use the drop-down menu in the middle to set the language that is to be used on the configuration page. The following languages are available:

- English
- German
- Spanish
- French
- Greek
- Italian
- Dutch
- Portuguese
- Turkish
- Chinese

Changes in the language setting only become effective when the language selected from the drop-down menu is loaded onto the device by pressing the “Send“ button and when the page has been “refreshed“ in the browser.

Use the two command buttons on the right-hand side of the header to export and import the set configuration from and to the device.
Press the “Reload“ button to export the configuration from the device and display it on the page. Use the “Send“ button to import the displayed and possibly modified configuration into the device.

The global settings are defined in the upper part of the configuration page. Page labels as well as the parameters of the individual functions (control elements) are set in the central area of the page:



The following global settings are possible:

Refresh Interval
If you would like to define an automatic refresh interval, use the first entry field. The minimum refresh time is 2 seconds.

Key delay (ms)
Defines the length of time of a long key press (dimming and blind function).

Programming delay
Defines the time for recognising a programming process (scene programming).

Use the line below to enter the names of the 5 operating pages. A maximum of 16 characters is available for each entry.

The central area displays all functions that have been linked with a group address in ETS. The functions are displayed in table format with the following information:

Number (from ETS, cannot be changed on the browser)
Communications object number

Address (from ETS, cannot be changed on the browser)
Group address that has been linked with the communications object in ETS.

Type (from ETS, cannot be changed on the browser)
Function type configured in ETS.

Label (Parameter, can be changed on the browser)
Label text of the function. A maximum of 20 characters can be entered. The text may be wrapped and displayed in two lines.

View (Parameter, can be changed on the browser)
The way the function is displayed, see configuration details below.

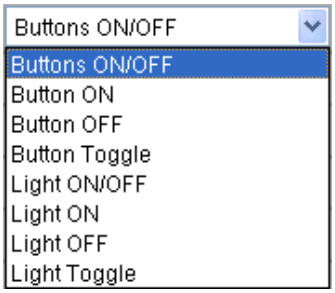
Page (Parameter, can be changed on the browser)
Assigns the page on which the function is displayed. All 40 functions can be displayed on one page. When there are more than 10 functions on a page a scroll down bar appears.

Parameter (Parameter, can be changed on the browser)
Any additional parameters for the function, see configuration details below.

Configuration details

Each basic data type (according to ETS configuration) can be displayed in a number of ways. Use the column “View“ to individually select the display type via a pull-down menu.

Function type: Switching with acknowledgement
Switching without acknowledgement



You can select whether you would like to use an ON/OFF button (two buttons) or only an ON, OFF, toggle button (one button).

For example, if you chose the ON/OFF button, the following design appears:

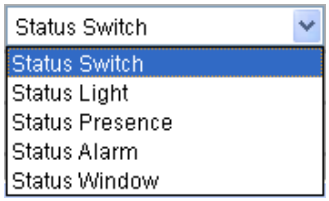
If you chose a one button function, e.g. “button ON“, the following display with one centralised button appears:

If you choose a view with light symbols, the 0 I symbol is replaced with a light ICON for buttons and acknowledgement, e.g. for light ON/OFF:

For this type of function, the parameter field on the configuration page has no function.

Function type: Acknowledgement

The following settings are possible for the 1 Bit function “Acknowledgement“:

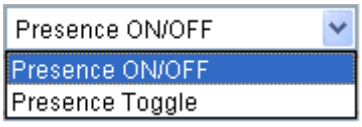


Depending on the selection different ICONS are displayed in the acknowledgement field.

For this type of function, the parameter field on the configuration page has no function.

Function type: Presence

The following settings are possible for the 1 Bit function “Presence“:



This determines whether the switch function is to be performed via two buttons (ON/OFF) or via a central button (toggle).

For this type of function, the parameter field on the configuration page has no function.

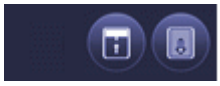
Function type: Dimming

For this type of function, the view and parameter field on the configuration page have no function.
The dim function is displayed in the following design:

When using the dim function, the lights are switched following a short key press and dimmed following a long key press. Always use the value 1 (0..100%) for dimming increments.

Function type: Blinds/slats

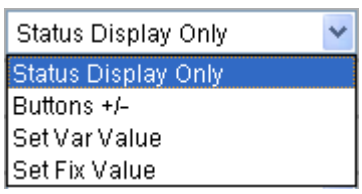
For this type of function, the view and parameter field on the configuration page have no function.
The blinds function is displayed in the following design:



When using the blinds function, the blinds are moved following a long key press and the slats changed following a short key press.

Function type: 1 Byte relative [0..100%]

Use this function to display 1 Byte values as status in the display format 0..100% or to send them to the bus. The following selection of settings is available:



If you choose “Status Display Only“, the function is used purely for the status display of a value from 0..100%. It is displayed as follows:

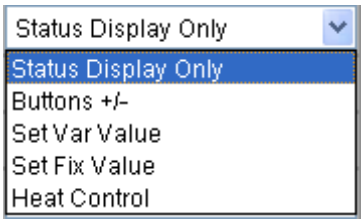
If you choose the setting “Buttons +/-“, the value can be changed in increments via the two buttons. The increment size is set in the parameter field on the configuration page, e.g. 10. The display is as follows:

If you choose the setting “Set Var Value“, you can click on and change the value in the display field. Once you press the button, the set value is sent to the bus. For this selection, the parameter field on the configuration page has no function.
The display is as follows:

If you choose the setting “Set Fix Value“, the fixed value that has been set in the parameter field of the configuration page, is sent to the bus when you press the button. The display is as follows:

Function type: 1 Byte Value [0..255]

Use this function to display 1 Byte values as status in the display format 0..255 or to send them to the bus. The following selection of settings is available:



The first four settings correspond to the ones for function type “1 Byte relative [0..100%]“ (see above). A further selection “heat control“ enables the setting of the operating mode for appropriate room temperature regulators. Use the buttons to change between the operating modes Comfort, Standby, Night reduction and Protection mode. Depending on the mode selected the corresponding 1 Byte value is sent in accordance with the following allocation:

Comfort mode	→ Value = 1
Standby mode	→ Value = 2
Night time mode	→ Value = 3
Protection mode	→ Value = 4

The operating mode is displayed as follows:

Comfort mode

Standby mode

Night time mode

Protection mode

Function type: 2 Byte floating point (EIS5)

Use this function to display 2 Byte values of data type EIS 5 [-670760..+670760] as status or to send them to the bus. The following selection of settings is available:

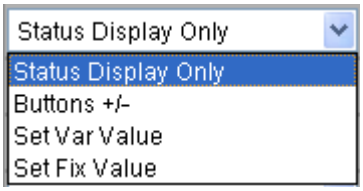
Principally, the settings and resulting displays correspond to those of Function type 1 Byte relative [0..100%], see above.
Please remember, however, that for the setting “Buttons +/-“, and “Set Value“ only integers can be entered in the parameter field (e.g. 1, 2, 5, 10). 0.5, for example, is not permitted.

Function type: 4 Byte floating point (EIS9)

Use this function for the status display of 4 Byte values of data type EIS 9 [-9.999.999...+9.999.999].
For this type of function, the view and parameter field on the configuration page have no function.

Function type: 2 Byte Counter (EIS10)

Use this function to display 2 Byte values of data type EIS 10 [0..65.535] as status or to send them to the bus. The following selection of settings is available:



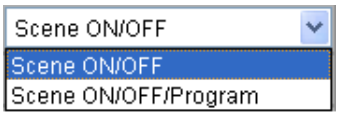
Principally, the settings and resulting displays correspond to those of Function type 1 Byte relative [0..100%], see above.
Please remember, however, that for the setting “Buttons +/-“, and “Set Value“ only integers can be entered in the parameter field (e.g. 1, 2, 5, 10). 0.5, for example, is not permitted.

Function type: 4 Byte Counter (EIS11)

Use this function to display 4 Byte values of data type EIS 11 [0..99.999.999] as status or to send them to the bus. The following selection of settings is available:

Principally, the settings and resulting displays correspond to those of Function type 1 Byte relative [0..100%], see above.
Please remember, however, that for the setting “Buttons +/-“, and “Set Value“ only integers can be entered in the parameter field (e.g. 1, 2, 5, 10). 0.5, for example, is not permitted.

Function type: Scene Call/Program 1 Bit



Use this function to define control elements to call and program scenes. You can set whether you would like to call 2 scenes via one1 Bit object or whether you would like to both call and program scenes via two 1 Bit objects.
If you select “Call scene 1/2“, the first key press sends the communications object with value 0 and thereby calls scene 1. The second key press sends the value 1 and calls scene 2.

If you select “Call/program scene 1/2“, a difference is made between a short and a long key press. A short key press sends the first communications object in order to call the corresponding scene. A long key press sends the second communications object either with value 0 or 1 depending on the button pressed.

Note: *The ComBridge WCI does not administer its own scenes. It is only used to program or load scenes that have been saved as separate scene elements.*

For both selections, the display is as follows:

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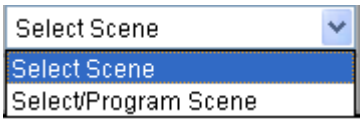
Function type: Scene Call/Program 8 Bit



This function enables the user to define a control element to either call scenes via an 8 Bit object or to call and also re-program them.
The scene number and the resulting object value are set in the function's parameter field on the configuration page.

If you choose "Select Scene", the communications object with the set value (e.g. = 0) is sent and the scene (e.g. scene 1) loaded.

If you choose "Select/program scene", a difference is made between a short and a long key press. A short key press sends the object value from the parameter field. A long key press also sets the top Bit. (e.g. short key press → 0, long key press → 128). This activates the programming function for scene elements and appropriate switch actuators.

Note: *The ComBridge WCI does not administer its own scenes. It is only used to program or load scenes that have been saved as separate scene elements.*

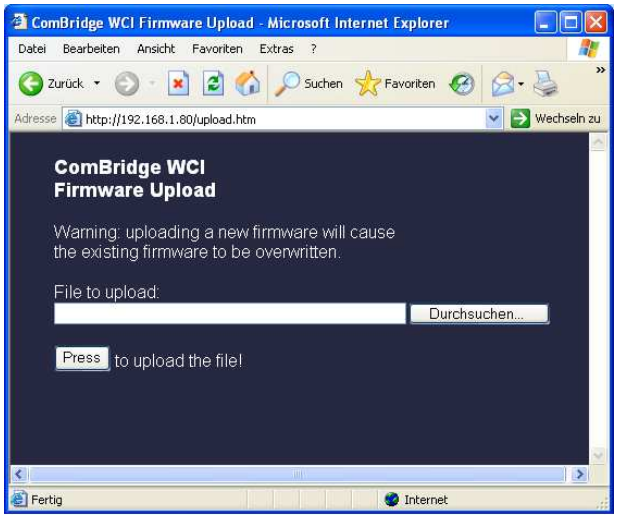
For both selections, the display is as follows:

Maintenance and upgrade

The ComBridge WCI offers the opportunity to perform a firmware upgrade without having to dismantle the device.

Future upgrades can hence easily be uploaded via the IP connection.

The upgrade page is loaded as follows:
http://<ip>/upload.htm



Select the upgrade file via the "Search" button and load it into the device by pressing the button "Press". Update files have the following name:

- UpgradeV505IPASAll.bin

The version is recognisable from the number behind the V, e.g. Version 5.0.5. Update files with the abbreviation ALL in the file name (UpgradeVxxxIPASAll.bin) will cause all device data to be fully overwritten. Any previously set configuration is deleted after the upgrade and the device is reset to its delivery status

A partial upgrade may also be possible (without deleting the configuration data). Such files have the following name:

- UpgradeV505IPAS.bin

The upgrade process can take a few seconds. The device restarts automatically with the new firmware.

Reset to delivery status

To reset the device to the status it had on delivery, the supply voltage needs to be connected whilst pressing down the programming button.

This performs a total reset and the device returns to its original delivery status with the physical address 15.15.255.