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## 1 Introduction

The ComBridge HCC is the first graphical, web-based visualization of IPAS GmbH in a compact device with the ETS application program. Unlike the well-known ComBridge Studio Evolution, the ComBridge HCC is a system with a database in XML format, which means that the visualization and the editor are an integral part of a database. The entire ComBridge HCC software, including the database, is pre-installed in high-performance embedded hardware. This means that the ComBridge HCC only needs to be integrated into the corresponding network in order to start commissioning.

Only basic network knowledge, a standard browser and the ETS programming software are required to create a project. It is a DIN rail mounted device. The size is 4 TE. With the ComBridge HCC, fully graphical individual visualizations can be projected. These are displayed with an Internet browser. Up to 250 KNX objects and an additional 1000 group addresses can be visualised with the ComBridge HCC. The group addresses are configured and programmed using ETS 3 (vd5) and higher.

Furthermore, the ETS is used:

- The assignment of the group addresses to the communication objects.
- The configuration of the IP network parameters.
- The parameterization of the access protection of the web pages and the web editor.
- Setting the device as a time master (synchronisation of the time server via IP) or as a time slave (synchronisation of KNX telegrams).
- Parameterisation of a read request for the 250 KNX object values after a restart/bus reset.



A web editor (editor) is provided on the device for the free design of the web pages. The Web Editor is opened with the integrated Connection Manager. This is loaded directly from the device when it is used for the first time. The editor can be used to display graphics and images in various web formats, such as JPG, PNG, GIF, etc. The editor can also be used to create a new web page. Drag & Drop connects the programmed group addresses with display and control elements. A library of display and operating elements of the following categories is available:

- Switching Light
- Switching General
- Switching Miscellaneous
- Status General
- Solar Protection
- Advanced Elements
- Navigation + Label

These display and control elements are offered in various designs (styles):

- Style Black
- Style Black Transparent
- Style Blue
- Style Blue Transparent



Powerful central functions are also available. The parameterized communication objects and group addresses can be used in the following application modules:

**Sheduler:** with astronomical calendar, for 300 time schedules, with up to 30 time switching commands per time schedule.

**Logic Control:** fully graphical logic module with up to 1000 logic functions.

**Scene Control:** with up to 5000 scenes or events.

**Messenger and Alarm Control:** Alarm function with up to 250 different alarms and e-mail function with up to 20 contacts.

**Chart Module:** for recording up to 10 data points and displaying graphs and bars.

**Monitoring Module:** for monitoring and storing up to 1000 events in a ring memory.

**TCP/UDP commands:** IP-Interface for controlling up to 20 IP devices via up to 20 TCP/UDP commands.

**Overview Datapoints:** Data point manager for displaying, managing and editing communication objects and group addresses.

**SONOS Control:** Direct control of the SONOS Home Sound System.

**Philips HUE:** Control of the Philips HUE LED lighting system.

The configuration of the mentioned central functions is done with the Web Editor.

The Smart Editor is also located on the device. It creates simple and intuitive visualizations, optimized for mobile browsers and all common smartphones. The projected Smart or Tablet visualizations have a continuously structured display and operating philosophy.

Five languages (German, Spanish, French, Italian and English) can be selected to operate the two editors. Via the configuration page of the ComBridge HCC, a firmware upload can be carried out via the network and the ComBridge HCC can therefore always be kept up to date.

The management of the passwords for calling up the visualization views is also carried out via the configuration page of the ComBridge HCC. In addition, the ComBridge HCC provides an interface to KNX installations via data networks using the Internet protocol (IP).

At the same time, this device offers communication between KNX devices and PCs or other data processing devices (KNXnet/IP tunneling).



## 1.1 System requirements

An Internet browser is required for displaying the Web Editor, the Smart Editor or for displaying the visualization pages. All browsers use HTML5 functionality. Google Chrome, Mozilla Firefox, Microsoft Edge and Safari (based on iOS) are tested in the current versions (version of this document). Internet Explorer is only partially supported. For commissioning, the HCC can be connected directly to a PC or laptop using a crossover patch cable. The configuration can also be performed by a remote client PC in the network.

**Note:** Using other web browsers or other versions may cause errors in the operation and display of the web pages or the function is not guaranteed.

## 1.2 Using special characters and symbols

Depending on country-specific system settings, different unicodes are used to represent certain characters. Web applications often use unicodes which may not properly show an Umlaut (ä, ö, ü). We therefore recommend you avoid using an Umlaut or special character.



## 1.3 ComBridge HCC features

Bridge HCC is delivered as follows:

- ComBridge HCC with pre-installed software
- Operating and installation instructions

The following can be found at the bottom of the REG casing (from left to right):

- 24 VDC – power supply,
- KNX bus coupler
- RJ45 plug for Ethernet



The factory setting of the ComBridge HCC

IP address assignment: manual IP

IP address: 192.168.1.133

Physical address: 15.15.255

User password:

Editor password: "**HCC**".

A KNX project created with the ETS programming software should be available for the initial commissioning. This corresponds to the normal procedure. In general, however, the ComBridge HCC can also be commissioned without a project. The ComBridge HCC can then be connected to the network. Access is then via a web browser of your choice. See chapter: [2.1 Web page visit via HTTPS](#).

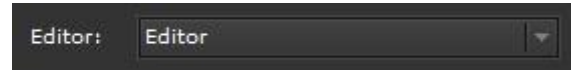
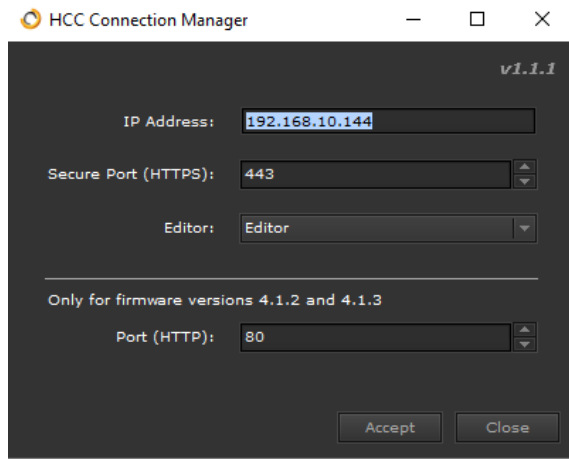
### Error LED

The Error LED indicates the following errors:

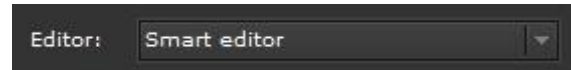
- KNX connection is interrupted.
- ETS application is not loaded.
- e-mail could not be sent.
- Internal error

## 1.4 Concept overview

The editors (Editor / Smart Editor) are opened with the Connection Manager. The Connection Manager can be downloaded via IPAS Website.



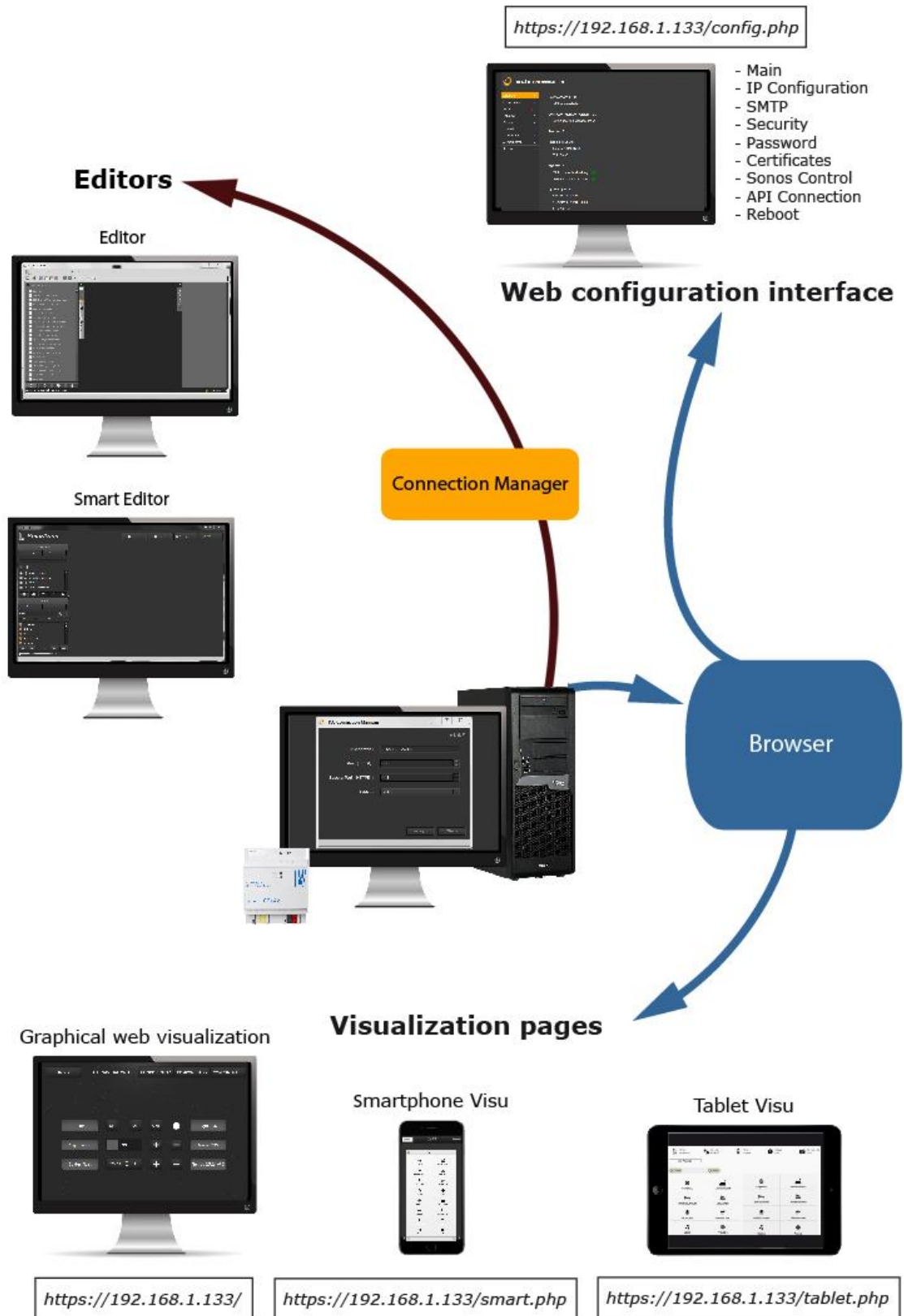
For editing and configuration of the central functions



For creating smart or tablet visualizations

Each visualization page is called up via a web address in a standard browser. The main component of this web address is the IP address of the ComBridge HCC configured in the ETS: "<http://<IP>/...>". The applications are selected via an appropriate extension of the URL.

Example: Standard IP address: **192.168.1.133**.



## 2 Security

The ComBridge HCC version 4.0 or higher supports encrypted HTTPS connections. HTTPS (Hyper Text Transfer Protocol Secure) is displayed in the URL if a website is secured by an SSL certificate. To ensure secure access to the device, it is recommended to purchase certificates from a certificate authority. These certificates can then be loaded into the ComBridge HCC. See also chapter: [11.5 Disclaimer for Cyber Security](#). These certificates will then be recognized as valid by all current browsers.

The ComBridge HCC can also create new certificates itself. Since these certificates were not issued by a certification authority, they are not recognized as valid by the browsers and there are browser-dependent error messages. In addition, cyber attacks can be detected worse or not at all. For these reasons, this procedure is not recommended. A self-signed certificate is pre-installed. The browser window displays buttons similar to "Advanced" and "Continue insecure" that allow you to bypass the displayed security warning and continue with the unsecured loading of the website. See also Chapter: [11.4 Safety instructions](#).

**Note:** To manage the certificates, it is very important that the time in the device is set correctly. It must therefore be ensured that the time is set correctly either via a time server on the Internet or via KNX, see chapter: [3.1 ETS Download](#).

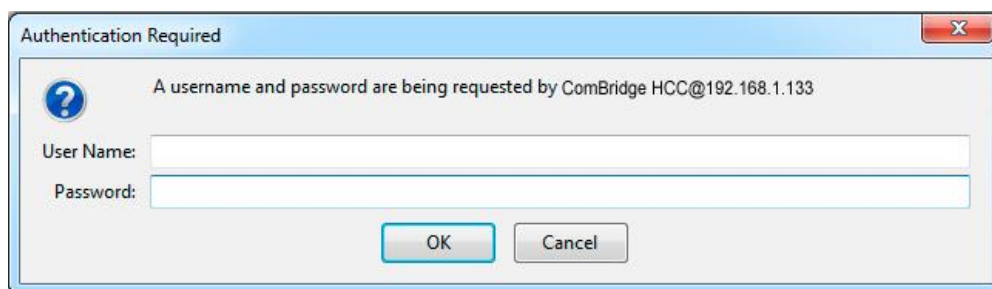
### 2.1 Web page visit via HTTPS

The web visualization is called by default via port 443 (HTTPS). For internal purposes, the connection can also be activated via port 80 (HTTP). For this, the setting must be adjusted on the configuration page ("[https://<ip>/config.php](#)", see chapter [5.2 IP Configuration](#)).

**Note:** For external connections via the Internet, only a secure connection via HTTPS must be used. All configuration pages to change the passwords are only accessible via HTTPS.

### 2.2 Authentication

The ComBridge HCC provides a standard DIGEST authentication. For this purpose, a standard window for entering a username and a password is displayed in the browser.

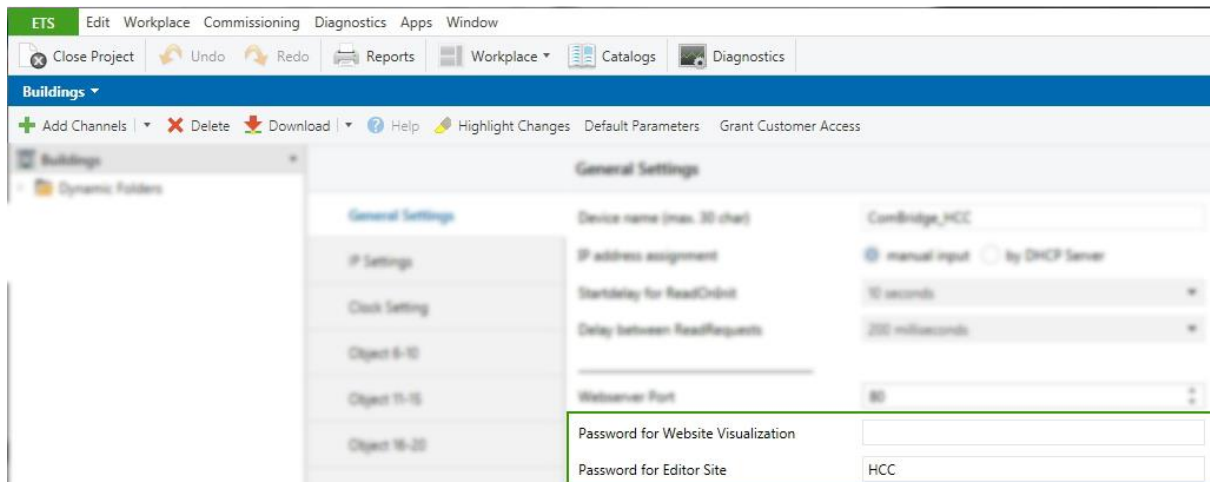


## 2.3 Password-Management

The visualization views and the editors necessary for the configuration should avoid unwanted requests from the WLAN or the Internet, e.g. via DynDNS access with a port forwarding, well sealed off. The respective password protection of the ComBridge HCC must be used for this purpose! By default, a password security rule should be met, so that only passwords with at least 8 characters, uppercase and lowercase letters, at least one digit and special characters are accepted. Choose a random password, without repetition or personal reference. Change your password regularly.

### 2.3.1 Initial definition of the passwords in the ETS

The default editor password "HCC" in the ETS should be changed before the ETS download. A password for the visualization pages is not assigned in the ETS. It is recommended to change the pre-set passwords in the ETS before downloading. The password length is max. 8 characters (depending on the national language). Number and special characters are accepted.

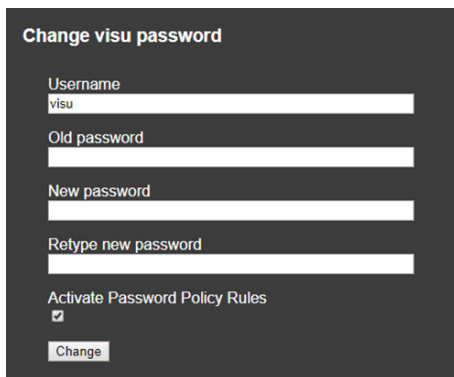


The passwords defined in the ETS must be changed again at the first time.

## 2.3.2 Visualization password

If a password for the visualization has been assigned in the ETS, the user is prompted to assign a new password when the visualization is called. It is automatically directed to the password page ("[https:// <ip>/visu\\_password.php](https://<ip>/visu_password.php)"). This page is only accessible via the encrypted HTTPS connection.

If no visualization password was assigned during parameterization in the ETS, the corresponding field (existing password) remains empty when confirming the new password. If a password was entered during the ETS configuration, this new password is required to confirm the password change. The new password is required for later access of the visualization pages via web browser and replaces the ETS password.



The default user for the visualization is "visu". This name can not be changed. By default, a password security rule should be met, so that only passwords with at least 8 characters, uppercase and lowercase letters, at least one digit and special characters are accepted. However, the need to meet this requirement can be disabled by disabling the checkbox on the page. However, this procedure is not recommended.

Passwords can also be changed subsequently via the central configuration page ("[https:// <ip>/config.php](https://<ip>/config.php)") of the ComBridge HCC. The current password is required to confirm the change.

**Note:** If the operation takes place exclusively internally in a secure network, the password for the visualization can also be switched off completely on request. The input fields can remain empty for this. An empty password leads to a direct entry into the visualization without password prompting (direct login). This procedure is not recommended.

## 2.3.3 Configuration password (Editor)

The editor password is required to call the editor and the central configuration page ("[https:// <ip>/config.php](https://<ip>/config.php)") of the ComBridge HCC. The default user for configuration tasks is "editor". This name can not be changed. When the editor is first called or the configuration page, the existing password corresponds to that from the ETS configuration. If this was not changed during the ETS configuration, the default password is "**HCC**". Again, a password policy is checked by default, which was explained in the previous chapter. The configuration also includes the firmware update (Chapter: [10.6 Firmware Update](#)), which is only possible as user "editor".



The username of the configuration pages can not be changed and is defined as "editor" as in the visualization. When re-assigning the password, the same safety recommendations apply as with the assignment of the visualization password.

The editor password can also be changed later via the central configuration page ("<https://<ip>/config.php>"). The current password is needed for the change.

## 2.3.4 Additional passwords

Apart from the visualization and the configuration, passwords for the Smart Editor and for the API Interface can still be assigned. The same safety recommendations apply as with the other passwords.

### 2.3.4.1 Smart Editor Password

The Smart Editor always has the default editor password, which was previously defined in the ETS. At the first call, the user is prompted to assign a new password for the Smart Editor. It is also possible to redefine this password separately via the central configuration page ("<https://<ip>/config.php>") page.

### 2.3.4.2 API Interface

The API interface with the predefined user "apiuser" does not have a valid password by default. This password must be changed immediately when using this interface via the central configuration page.

## 2.3.5 Change passwords

Passwords can be changed at any time. For this, the central configuration page ("<https://<ip>/config.php>") of the ComBridge HCC is called. The changes are made in the "Password" area. For a password change, the knowledge of the last password is always required.

## 2.3.6 Reset passwords

If the passwords of the device should or must be reset, it is necessary to perform a master reset on the device. This process is described in detail in Chapter: [10.8 Master-Reset](#). After the master reset, a first ETS download must be carried out. After this download, the passwords are set according to the ETS inputs for the visualization, the editor and the smart editor. The user is prompted to change the passwords as in the first call.



## 2.4 Certificates

Digital certificates ensure security on the Internet. An SSL Certificate is a small data file that digitally binds a cryptographic key to the details of an organization or device. When installed on a web server, it activates the security lock and https protocol (via port 443) and enables secure connections from a web server to a browser. They authenticate the identity of IP devices and other encrypted sites. Each time you visit the ComBridge HCC website, your browser receives a certificate. Only with this certificate can a tap-proof, encrypted connection be established between your PC and the ComBridge HCC. The procedure is as follows:

- A browser tries to establish a connection to a website secured with SSL.
- The browser requests the identity of the web server.
- The server sends a copy of its SSL certificate to the browser.
- The browser checks whether the certificate is trustworthy. If this is the case, it sends a message to the server.
- The server then sends back a digitally signed confirmation to initiate an SSL-encrypted session.

For more information about certificates and how they work, see:

[https://en.wikipedia.org/wiki/Public\\_key\\_certificate](https://en.wikipedia.org/wiki/Public_key_certificate).

### 2.4.1 Loading a customer-specific certificate

The ComBridge HCC supports the loading of customer-specific certificates. Certificates can be loaded via the central configuration page "config.php". Via the "Certificates" tab, the certificate and the appropriate private key are loaded. After loading, this certificate must be activated. See also chapter: [5.6 Certificates](#).

Note: To ensure secure access to the device, it is recommended to purchase certificates from a certification authority. Certification authorities are e.g. Verisign <https://www.verisign.com/> or Geotrust <https://www.geotrust.com/de/ssl/>. These certificates can then be loaded into the ComBridge HCC. These certificates will then be recognized as valid on all current browsers.

Note: Alternatively, certificates can also be loaded directly via "[https://<ip>/upload\\_cert.php](https://<ip>/upload_cert.php)". This page can be used to load a certificate and the appropriate private key. This requires authentication with the editor password. The activation then takes place after a reboot.



## 2.4.2 Create a new certificate

The ComBridge HCC is also able to create a new certificate. The created certificate is self-signed and can therefore not be verified on the Internet. A certificate already exists in the delivery state. If desired by the customer, this certificate can be replaced by a newly created certificate. This is done via the ComBridge HCC configuration page under the "Certificates" tab. The creation of certificates by the ComBridge HCC is not recommended for security reasons. See also Chapter: [5.6 Certificates](#).

**Note:** As these certificates were not issued by a certification authority, they are not recognized as valid by the browsers and there are browser-dependent error messages. In addition, cyber attacks can be detected worse or not at all. For these reasons, this procedure is not recommended. For security reasons, a certificate must be created in the local network and should not be created via a remote connection. A new certificate should be created manually under the following aspects.

- Changing the IP address or the network settings
- Changing the DynDns address
- Changing the Host Name

**Note:** A newly generated certificate has a term of 5 years and must then be renewed.

**Note:** After a master reset, a newly generated certificate is always created.

## 2.4.3 Certificate query in the browser

The SSL protocol is used for the certificate query. If a certificate is used by a Certificate Authority, no further action is required.

If a certificate created by the ComBridge HCC itself is used, authenticity cannot be verified. When the visualization is called by a browser, a message is therefore displayed which must be acknowledged for further work with the ComBridge HCC. This is displayed differently for each browser. For security reasons, the use of self-created certificates is not recommended.

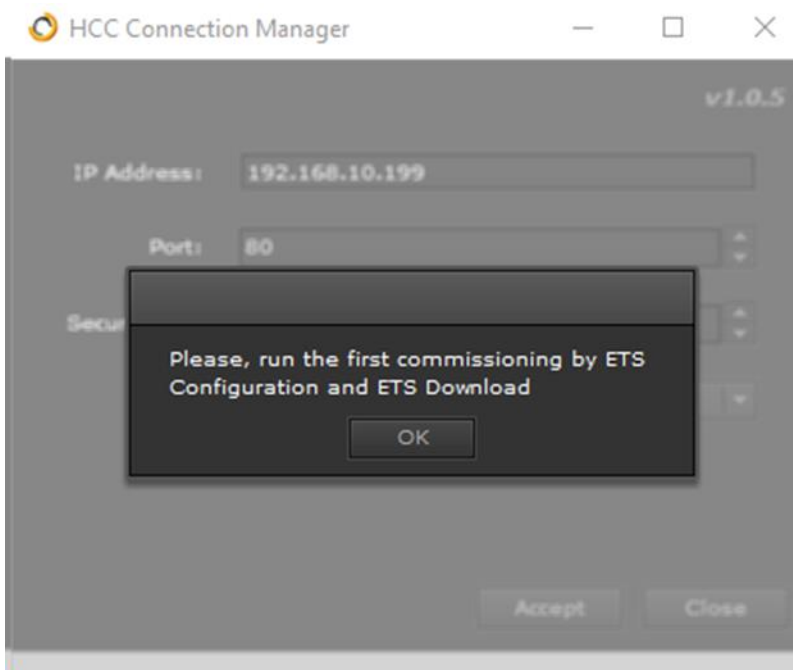
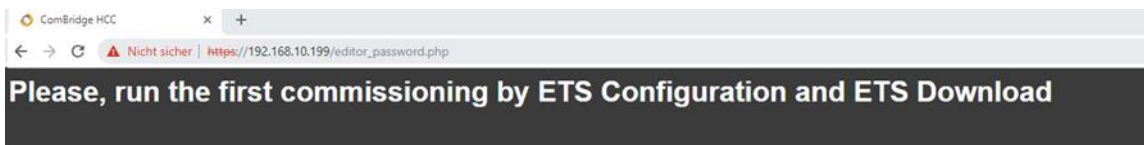
**Note:** When using a customer-specific certificate, the authenticity and validity of the certificate can be verified by the browser on the Internet. In this case there are no further hints which have to be acknowledged.

### 3 Getting started

In a first step, the device is supplied with 24 VDC voltage and connected to the KNX. The basic settings are made with the ETS. This includes:

- Assign KNX physical address
- Set IP parameters, incl. Gateway and DNS server
- Set timer (default is an NTP server on the Internet)

**Note:** In principle, an ETS configuration and download must first be performed. Password-protected pages can not be accessed without a previously performed ETS download. Corresponding error messages appear as follows:



### 3.1 ETS Download

The ComBridge HCC is configured and loaded like every KNX device with the ETS. The detailed description of the objects and parameters is explained in chapter: [4 ETS configuration](#) below.

Basically, the following settings must be observed:

- Correct setting of network parameters
- Correct setting of the time (slave or master)

It is recommended to use a fixed IP address to ensure that the HCC is always reachable via this IP address.

In addition, make sure that the subnet mask is set to at least 255.255.255.0.

To ensure an external connection to the Internet, for example, to reach a time server or to allow e-mail delivery, the DNS server and the gateway must be set to the address of the DSL router.

The setting of the time in the HCC is very important, so that the time programs and also the Chart module work correctly.

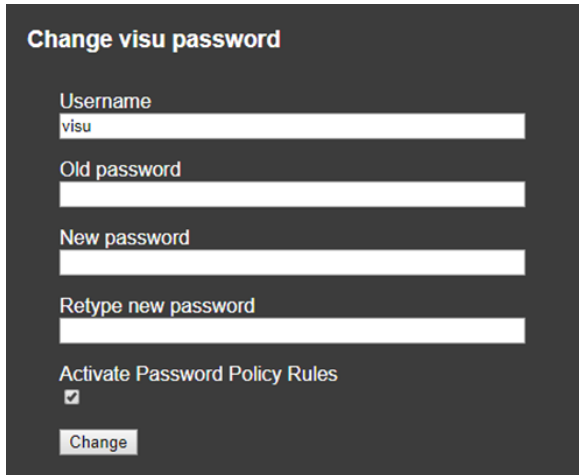
Basically, it is possible to synchronize the time from the KNX, provided there is a real-time clock in the KNX. In this configuration, the HCC operates as a "slave" and must regularly receive the time via KNX via the objects and their group addresses.

It is recommended to synchronize the time via an Internet NTP time server. These are the default settings in the ETS parameters.

**Note:** In this case, the DNS server and the gateway must be entered correctly in the ETS parameters. It is important to note that basically after an ETS download, the password must be changed both for the editor and for the normal visualization, see chapter: [2.3 Password-Management](#).

## 3.2 Change Passwords

After the ETS download, the user is prompted to change the password. To change a password always requires the knowledge of the last password. After the ETS download, the existing password corresponds to that from the ETS configuration. See chapter: [2.3.1 Initial definition of the passwords in the ETS](#) .



The default user for the visualization is "visu". This name can not be changed. By default, a password security rule should be met, so that only passwords with at least 8 characters, uppercase and lowercase letters, at least one digit and special characters are accepted. However, the need to meet this requirement can be disabled by disabling the checkbox on the page. However, this procedure is not recommended. All password management information is described in Chapter: [2.3 Password-Management](#).

**Note:** If the operation takes place exclusively internally in a secure network, the password for the visualization can also be switched off completely on request. The input fields can remain empty for this. An empty password leads to a direct entry into the visualization without password prompting (direct login). This procedure is not recommended.

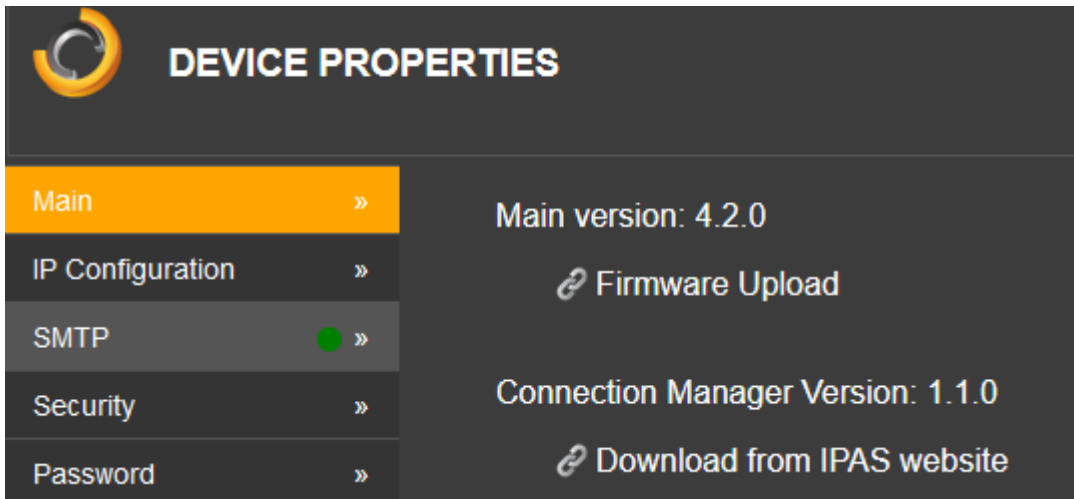
## 3.3 Calling graphical editor

As of version 4, the editor is no longer called as a Flash plugin within a browser, but as a stand-alone program. In order to allow multiple versions of a HCC to be edited with the corresponding editor, a so-called Connection Manager is installed which, after checking the firmware, starts the correct editor.

Installation of the Connection Manager is described in the next chapter: [3.4 Installation Connection Managers](#).

### 3.4 Installation Connection Managers

For a first time use, this tool can be loaded from the IPAS website. The corresponding link is displayed on the page: ("<https://<ip>/editor.php>") or displayed on the configuration page, see configuration page <https://<ip>/config.php>.



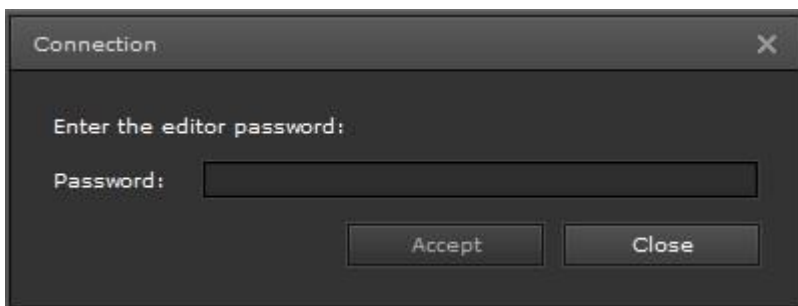
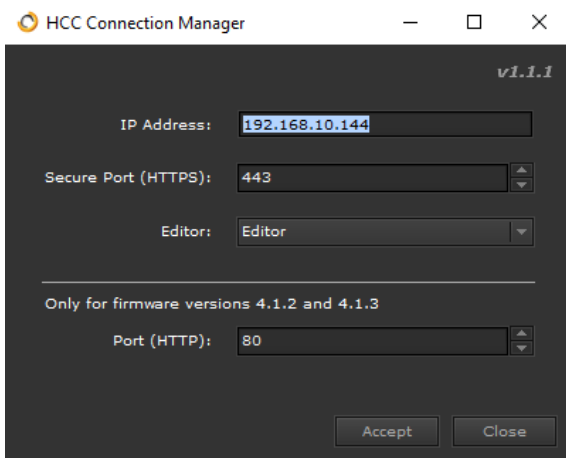
The installation package for the Connection Manager is copied to the PC, depending on the browser, usually in the download directory. After starting the installation, the following message appears:



After installation, if activated in the setup, a shortcut icon appears on the desktop.

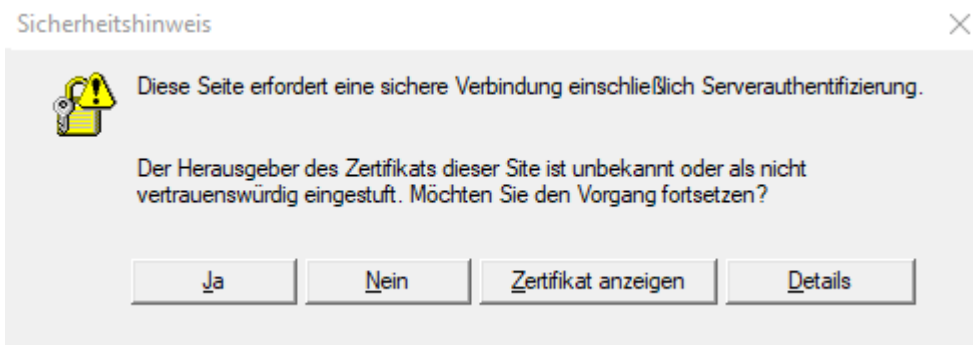


The Connection Manager launches with a user interface to connect to an HCC:



In einem zweiten Schritt wird das Passwort abgefragt. Im Anschluss wird der aktuelle Editor geladen und aufgerufen.

For security reasons, the validity of the certificate must be confirmed with "Yes":



The configuration and use of the editor is explained in detail in chapter: [6 Editor](#).

**Important note:** To use the Connection Manager and the Editor, no proxy must be configured in the system and / or in Internet Explorer. If a proxy has been configured and it cannot be switched off, an exception must be entered for the IP address of the device.

Einstellungen für lokales Netzwerk ✕

**Automatische Konfiguration**

Die automatische Konfiguration kann die manuellen Einstellungen außer Kraft setzen. Deaktivieren Sie die automatische Konfiguration, um die Verwendung der manuellen Einstellungen sicherzustellen.

Einstellungen automatisch erkennen

Skript für automatische Konfiguration verwenden

Adresse:

**Proxyserver**

Proxyserver für LAN verwenden (diese Einstellungen gelten nicht für VPN- oder Einwahlverbindungen)

Adresse:  Port:  Erweitert

Proxyserver für lokale Adressen umgehen

Proxysteinstellungen ✕

**Server**

Typ	Adresse des Proxyserver	Port
HTTP:	<input type="text"/>	<input type="text"/>
Secure:	<input type="text"/>	<input type="text"/>
FTP:	<input type="text"/>	<input type="text"/>
Socks:	<input type="text"/>	<input type="text"/>

Für alle Protokolle denselben Proxyserver verwenden

**Ausnahmen**

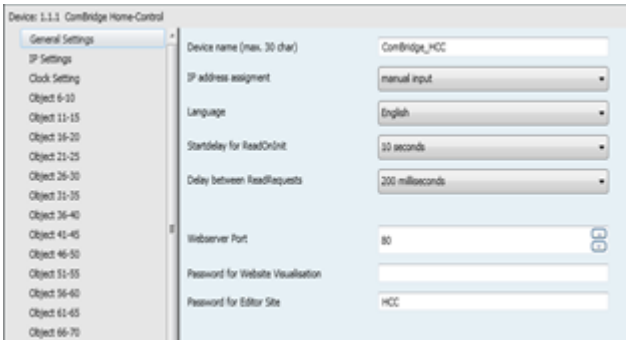
Für Adressen, die wie folgt beginnen, keinen Proxyserver verwenden:

Einträge mit Semikolons (;) trennen.

## 4 ETS configuration

This chapter describes the ETS configuration in detail.

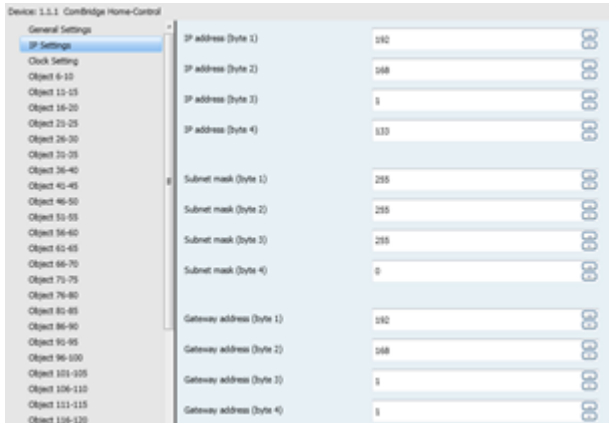
### 4.1 Parameter



Parameter	Settings
Device name (max. 30 char)	
Use this parameter to name the device	
Method of IP address assignment	Manual entry Via DHCP server
The IP address can either be entered manually or defined automatically via DHCP	
Query is started following a bus reset in:	10 seconds 20 seconds 30 seconds 1 minute 2 minutes 3 minutes 4 minutes 5 minutes
Use this parameter to set the time after which you want to query status objects following a bus reset	
Time delay between queries	200 milli seconds 500 milli seconds 1 second 2 seconds
Use this parameter to set the time delay between queries	
Webserver port	80
This parameter defines the port number of the integrated web server. The default setting is port number 80	
Password for visualisation	
Use this parameter to set the password for the web visualisation. By default no password is defined. You can enter up to 8 characters (0-9,A-Z). No distinction is made between capital and lower case letters.	
Editor password	HCC
Use this parameter to set the editor password for the web visualisation. By default no password is defined. You can enter up to 8 characters (0-9,A-Z). No distinction is made between capital and lower case letters.	



## 4.2 Network Settings



Parameter	Settings
IP-address / 1. Byte	192
IP-address / 2. Byte	168
IP-address / 3. Byte	1
IP-address / 4. Byte	133
This parameter is used for the standard IP address of the ComBridge HCC. If DHCP mode was selected, the address is permanently overwritten by the address assigned by the DHCP server. After changing the ip address a new certificate should be created manually, see <a href="#">Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.</a>	
Subnet Mask / 1. Byte	255
Subnet Mask / 2. Byte	255
Subnet Mask / 3. Byte	255
Subnet Mask / 4. Byte	0
This parameter is used for the standard IP subnet mask of the ComBridge HCC. If DHCP mode was selected, the mask is permanently overwritten by the address assigned by the DHCP server. If the device is configured without DHCP server (setting <i>fixed IP address</i> ), the device must have the correct subnet mask for it to function properly.	
IP-address Default Router / 1. Byte	192
IP-address Default Router / 2. Byte	168
IP-address Default Router / 3. Byte	1
IP-address Default Router / 4. Byte	1
The standard router is used to send telegrams which are addressed to a PC outside of the local network. If DHCP mode is selected, the address is permanently overwritten by the DHCP-server. If the DHCP server itself does not transmit an address for a router, it is assumed that no router is to be used. If you want to configure the device without standard router, please use the pre-set (invalid) address <b>(0.0.0.0)</b>	
DNS server address / 1. Byte	192
DNS server address / 1. Byte	168
DNS server address / 1. Byte	1



---

DNS server address / 1. Byte	1
This parameter is used for the standard IP subnet mask of the DNS server. If DHCP mode was selected, the mask is permanently overwritten by the address assigned by the DHCP server. If the device is configured without DHCP server (setting fixed IP address), the device must have a DNS server address to enable name resolution, for example to access a time server. Usually the standard gateway is also the DNS server.	

## 4.3 Date/Time



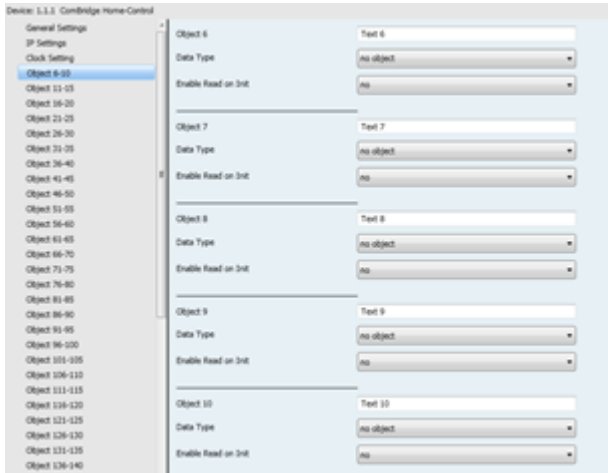
Parameter	Settings
Time zone	(GMT-5:00) Eastern (USA/Canada) (GMT-6:00) Central (USA/Canada) (GMT-7:00) Mountain (USA/Canada) (GMT-8:00) Pacific (USA/Canada) <b>(GMT+1:00) Brussels, Berlin, Rome, Stockholm, Vienna, etc.</b>
The parameter Time zone ensures the adjustment to the local area. Please see above for some of the currently available options.	
Summer time – winter time change	<b>Active</b> Inactive
This parameter defines whether the time is automatically changed from summer to winter time and vice versa.	
Clock synchronisation	<b>Master (HCC -&gt; KNX)</b> Slave (KNX -> HCC)
The following synchronisation options are available: Synchronisation via the device (Master Mode). In this mode the time can be synchronised via IP and a time server. Synchronisation via KNX (Slave Mode). In this mode the internal clock is synchronised via telegrams from the KNX.	
Selecting the date/time object	<b>Date and time object</b> Date/time object combines both types
The time and date information can be sent via 2 different data types: Date and time object (DPT10, DPT11) or a combined object (DPT19).	
Time server 1 (SNTP) Time server 2 (SNTP)	
To synchronise the real-time clock, the time server (SNTP) can be queried in regular intervals	
Sending interval for date/time information	1 minute 2 minutes 5 minutes 10 minutes 30 minutes <b>1 hour</b> 2 hours 4 hours 8 hours 12 hours 24 hours
Use this parameter to set the sending interval for the transmission of date and time information to the KNX.	

## 4.4 General Objects 1-5

The following communication objects can be selected:

Object	Object name	Function	Type	Flags
1	Device status	Status	4 Byte	CTR
Data type: 4 Byte				
2	Date (DPT 11.001)	Datum	3 Byte	CTR
Data type: 11.001				
2	Date (DPT 11.001)	Datum	3 Byte	CUW
Data type: 11.001				
3	Time (DPT 10.001)	Time	3 Byte	CTR
Data type: 10.001				
2	Date (DPT 11.001)	Date	3 Byte	CUW
Data type: 11.001				
4	DateTime (DPT 19.001)	DateTime	8 Byte	CTR
Data type: 19.001				
4	DateTime (DPT 19.001)	DateTime	8 Byte	CUW
Data type: 19.001				
5	Scene	Scene	8 Byte	CUW
Data type: 1 Byte				

## 4.5 Parameters Objects 6-250



Parameter	Settings
Object 6	<b>Text 6</b>
Use this parameter to describe object 6. This configuration is possible for all objects.	
<b>Note:</b> The name can also be imported later on in the Editor via an ESF import.	
Data type	<b>No object</b> 1 bit 1 Byte 0..100% 1 Byte unsigned 1 Byte signed 2 Byte unsigned 2 Byte signed 2 Byte float 4 Byte unsigned 4 Byte signed 4 Byte float 14 Byte text
This parameter sets the data type of the communication object. This configuration is possible for all objects.	
Activate query on start-up	<b>no</b> yes
This parameter defines for each object whether or not to send a query to the bus when the device is started.	

For this definition, the corresponding communication object is displayed in the ETS in order to be connected to a group address.

## 4.6 Objects 6-255

Possible object times for Object 6 to 255. The function and type are defined in the ETS configuration.

Object	Object name	Function	Type	Flags
6	Object 6	Binär	1 Bit	AKSÜ
Data type: 1 bit				
6	Object 6	0..100%	1 Byte	UCWT
Data type: 1 Byte 0..100%				
6	Object 6	unsigned	1 Byte	UCWT
Data type: 1 Byte unsigned				
6	Object 6	signed	1 Byte	UCWT
Data type: 1 Byte signed				
6	Object 6	unsigned	2 Byte	UCWT
Data type: 2 Byte unsigned				
6	Object 6	signed	2 Byte	UCWT
Data type: 2 Byte signed				
6	Object 6	float	2 Byte	UCWT
Data type: 2 Byte float				
6	Object 6	unsigned	4 Byte	UCWT
Data type: 4 Byte unsigned				
6	Object 6	signed	4 Byte	UCWT
Data type: 4 Byte signed				
6	Object 6	float	4 Byte	UCWT
Data type: 4 Byte float				
6	Object 6	text	4 Byte	UCWT
Data type: 4 Byte Text				

Object	Object name	Function	Type	Flags
255	Object 6	Binär	1 Bit	AKSÜ
Data type: 1 bit				
255	Object 6	0..100%	1 Byte	UCWT
Data type: 1 Byte 0..100%				
255	Object 6	unsigned	1 Byte	UCWT
Data type: 1 Byte unsigned				
255	Object 6	signed	1 Byte	UCWT
Data type: 1 Byte signed				
255	Object 6	unsigned	2 Byte	UCWT
Data type: 2 Byte unsigned				
255	Object 6	signed	2 Byte	UCWT
Data type: 2 Byte signed				
255	Object 6	float	2 Byte	UCWT
Data type: 2 Byte float				
255	Object 6	unsigned	4 Byte	UCWT
Data type: 4 Byte unsigned				
255	Object 6	signed	4 Byte	UCWT
Data type: 4 Byte signed				
255	Object 6	float	4 Byte	UCWT
Data type: 4 Byte float				
255	Object 6	text	4 Byte	UCWT
Data type: 4 Byte Text				


## 5 Web-Configuration page

The configuration page shows the most important settings and allows you to set various properties.

For this purpose, the menu sub-items are described in detail below.

The configuration page can be accessed via [HTTPS://<ip>/config .php](https://<ip>/config.php).

### 5.1 Overview

All relevant information is displayed on the "General" tab. Here it is also possible to load a new firmware into the device. All "links" are marked with the character .

Main version: 4.0.15 <a href="#">🔗 Firmware Upload</a>	Display of the installed firmware version and the update function for a new firmware. See Chapter: <a href="#">10.6 Firmware Update</a> .
Connection Manager Version: 1.0.7 <a href="#">🔗 Download Connection Manager</a>	Display of the installed version of the Connection Manager and the update function for updating the Connection Manager.
Revision: B	
Date and Time: Date: 2019-12-04 Time: 10:46	Display of the current date and time on the ComBridge HCC.
KNXnet/IP: Tunnel Connection Status: <span style="color: green;">●</span> Object Connection Status: <span style="color: green;">●</span>	Checking the status of the tunnel and object connection. The red indication means inactive, the green indicates active.
System memory: Total: 92.3 MB Used: 37.4 MB (40 %) Free: 54.9 MB	Display of the available and used flash memory.
RAM memory: Total: 117.3 MB Used: 30.5 MB (26 %) Free: 86.8 MB	Display of the available RAM memory and its use.

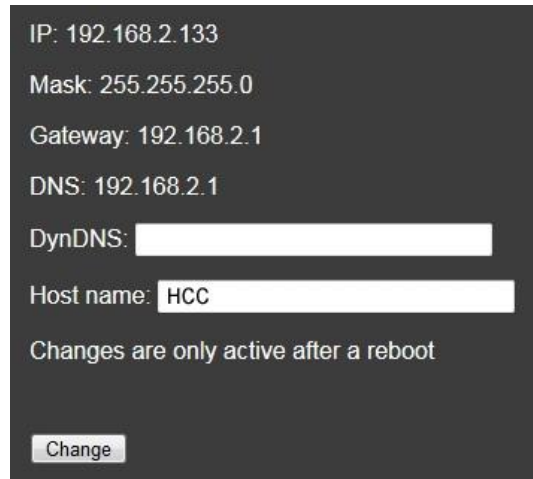
To load the editor, the Connection Manager is required on the PC. This can be loaded here and then installed on the PC, see also chapter: [6 Editor](#).



## 5.2 IP Configuration

IP Configuration »

In this tab the IP settings are displayed and configured.



**IP:** Displays the network address specified in the ETS.

**Mask:** Displays the address of the IP subnet mask specified in the ETS.

**Gateway:** Displays the gateway address specified in the ETS.

**DNS:** Displays the DNS address specified in the ETS.

**DynDNS:** Entry of the domain name registered with a DDNS service. See also Chapter: [11.7 Definition of terms](#).

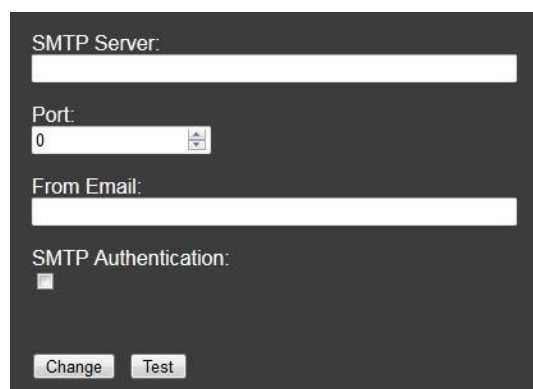
**Host Name:** In Microsoft networks the Host Name can also be used to address the device with this name. A change is possible and becomes active when the system is restarted. See also Chapter: [4 ETS configuration](#).

**Note:** If the Host Name or DynDNS is changed, a new certificate should then be created manually, see Chapter: 2.4 Certificates. The certificate is supplemented by entries in the "Certificate Subject Alt Name". This avoids additional warnings when validating the certificate.

## 5.3 SMTP

SMTP »

Starting with firmware version 4, the SMTP configuration is no longer carried out in the Web Editor, but is called via this tab on the configuration page "<https://<ip>/config.php>".



**Host IP:** Name of the outgoing e-mail server (e.g. smtp@gmx.de).

**Port:** Port of the SMTP server (e.g. 587).

**Sender:** Sender of the e-mail.

**SMTP Authentication:** If authentication is required, this option must be activated. A new window opens in which the user name and password are entered. No SSL or TTLS can be selected for authentication.

**Note:** It is strongly discouraged to use an SMTP configuration without authentication and TLS encryption. To check the specifications and error-free execution of an e-mail, press the "Test" key. A test-e-mail will be sent to the sender.

[Example Hotmail](#)

**Host IP:** The address of the Hotmail SMTP server is: smtp.live.com.

**Port:** The required Hotmail SMTP port is 587.

**From e-mail:** Your full Hotmail address (for example, beispiel@hotmail.com).

**Authenticate SMTP:** Enable this option.

**User: Hotmail SMTP username:** Your full Hotmail address (e.g. beispiel@hotmail.com).

**Password:** The stored Hotmail password.

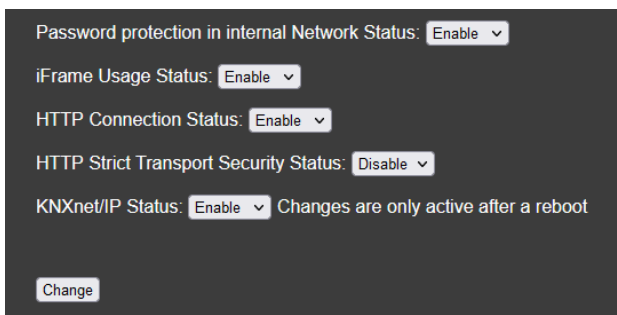
**Authentication:** TTLS

**Note:** Gmail requires special security procedures that are not supported in ComBridge HCC. To still use Gmail as your provider, you must configure your Gmail account accordingly. See also <https://support.google.com/accounts/answer/6010255?hl=en> and <https://www.google.com/settings/security/lesssecureapps>.

## 5.4 Security



Under this sub-item the following security properties can be activated or deactivated. See also Chapter: [2 Security](#).



**Status/Activation Password protection in the local network:** With this setting, password protection in local networks can be cancelled. This allows all devices in the same subnet to access the visualization without password query. Requests from another subnet or the Internet are only accepted with query.

**Status/Activation iFrame usage:** By default, the visualization is not allowed to be displayed in a window of another server. However, this setting can also be activated for a corresponding application.

**Status/activation of HTTP connection:** unencrypted HTTP connection is preset. For security reasons it is not recommended to allow unencrypted HTTP connections.

**Status/Activation HTTP Strict Transport Security:** By default, this http header parameter is deactivated. By using a valid certificate, a browser is informed to use HTTPS, only.

**Status/Activation of the KNXnet/IP:** The KNXnet/IP service can be deactivated with this setting for security reasons. The tunnel is active by default.

**Note:** The current editor password is required to confirm the changes. See Chapter: [2.3.3 Configuration password \(Editor\)](#).

## 5.5 Password

Password »

Passwords can be assigned and changed under this sub-item. See also Chapter: [2.3 Password-Management](#).

- Change visu password
- Change editor password
- Change SmartVisu editor password

### Change visu password

Username

visu

Old password

New password

Retype new password

Activate Password Policy Rules

Change

The default user for the visualization is "visu". This name cannot be changed. By default a password security rule should be met so that only passwords with at least 8 characters, upper and lower case, at least one digit and special characters are accepted.

However, the need to meet this requirement can be turned off by disabling the checkbox on the page. It is not recommended to deactivate this function and to use insecure passwords. See also Chapter: [2.3 Password-Management](#).


**Note:** The same procedure applies to the passwords for the Editor and the Smart Editor.

**Note:** To change a password you always need to know the last password.

## 5.6 Certificates

Certificates »

In order to offer an SSL-encrypted connection to your server, you need an SSL certificate. In this sub-item you have the possibility to create a new certificate or to load your own certificate. See also Chapter: [2.4 Certificates](#).

 Create certificate  
 Upload your own Certificate

**CREATE CERTIFICATE**

Create certificate:

After creating a new certificate, the new certificate must be accepted in the browser.

Certificate loaded successfully

It is also possible to download your own certificate. The certificate must be loaded in the form of a .pem file. The private key is then loaded in the form of a .pem file. The certificate and the private key are activated via the "Activate" button.

### UPLOAD YOUR OWN CERTIFICATE

Upload your own Certificate:

File to upload:  Keine Datei ausgewählt.  to upload the file:

Upload Private Key:

File to upload:  Keine Datei ausgewählt.  to upload the file:

Activate Certificate and Key:

**Note:** It is not recommended to use self-signed certificates.

**Note:** It is recommended to purchase and use certificates from a certification authority such as Verisign <https://www.verisign.com/> or Geotrust <https://www.geotrust.com/en/ssl/>.

## 5.7 SONOS Module

Sonos Modul »

The company [SONOS](#) develops and produces active loudspeaker systems and HiFi components that are wirelessly networked via WLAN. With the ComBridge HCC it is possible to control the Sonos loudspeakers directly. Basic settings of the SONOS module are made in the editor. See Chapter: [8.9 Sonos Control](#).

The Configuration Manager of the ComBridge HCC allows you to call up a previously defined playlist. This is called with the name stored in the SONOS favorites. In order to be able to change this trigger online without the editor, it is possible to change the assignment to the triggers via this page and a drop-down box displaying all configured favorites.

The desired Playlist can be selected out of the SONOS Favorites

### Office - PLAY:1

Favorit 1

WDR2

Favorit 2

BBC

Change

## 5.8 Restart

Reboot »

Here you have the possibility to restart the device.

## 6 Editor

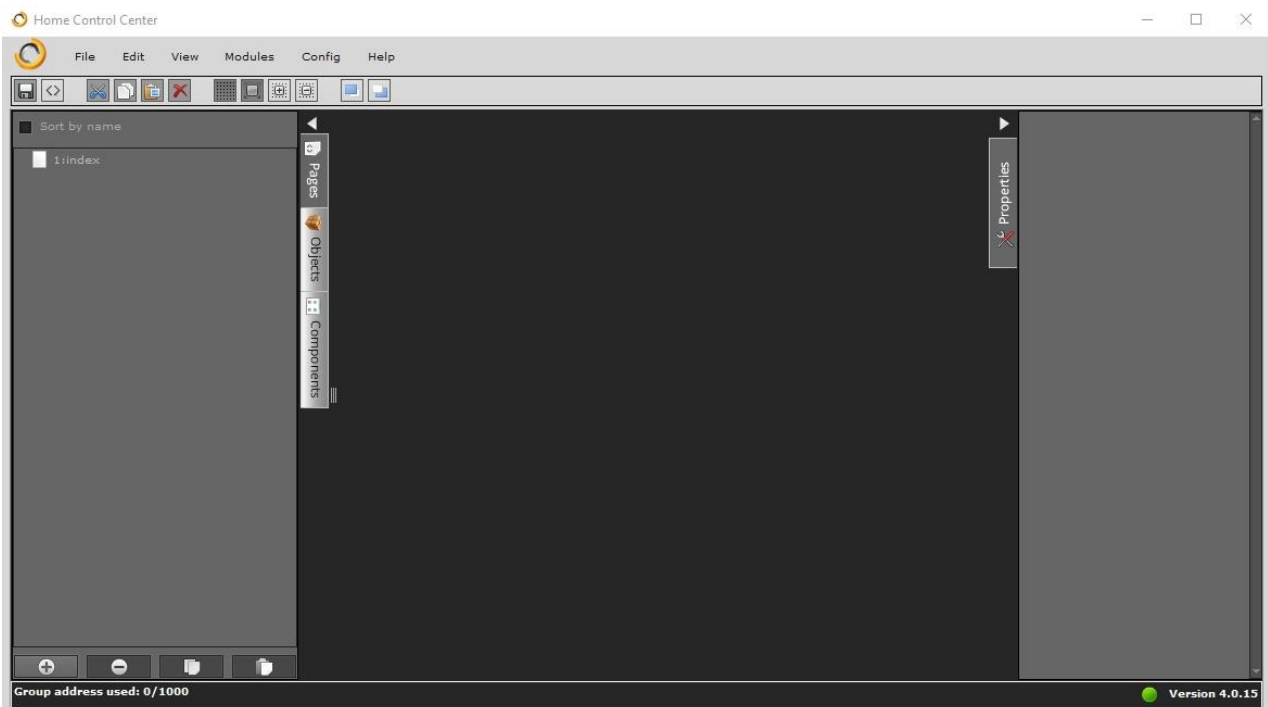
The editor is started via the tool "HCC Connection Manager", see chapter: [3.4 Installation Connection Managers](#).

### 6.1 Editor User Interface



Upon delivery, the pre-set language is English. To change the language, please open the selection window in the menu Config → Select Language. Please select the required language and close the window. The selected language only becomes active after the Editor is re-started. Please close the Editor and log-in again.

The figure below shows the ComBridge HCC Editor interface. Enter `http://"assigned IP address"/editor.php` in the web browser to load the page. At the top of the screen is the title bar of the main menu. Just below the bar, you will see several icons representing the most important editing functions such as save, delete, copy, cut, etc. In the centre of the screen, you will find the visualisation workspace. The functions menu is located to the left and the properties menu to the right of the workspace.



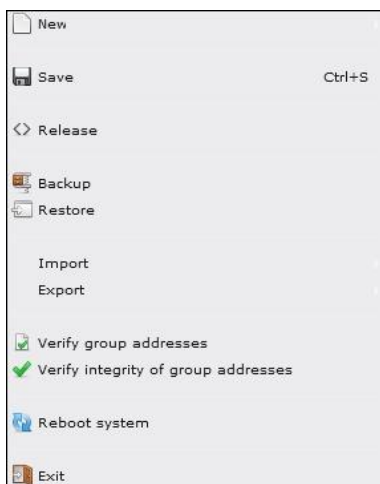
## The tool bar



Save project	Cut	Activate grid	Bring to front
Generate Visualisation	Copy	Latch to the grid	Send to back
	Paste	Increase grid size	
	Delete	Reduce grid size	

Main menu functions in detail:

### 6.1.1 The File-Menu



**New:** Opens a new project page

**Save:** Saves any changes made to the project

**Release:** Generates a visualisation of the project in HTML format and saves it in the ComBridge HCC

**Export:** The entire project is exported and saved on the PC/laptop.

**Restore:** The locally saved project is recovered and restored on the ComBridge HCC

**Import:** ESF import or import of a visualisation page. To import group addresses from the ETS, please use the ESF file (OPC export) created with the ETS. A selection of character sets is available for this purpose to import different characters such as Greek or Chinese. A previously exported visualisation page, for example from a different project, can also be imported.

**Export:** The current visualisation page can be exported.

**Group address control:** Shows how many of the 1000 possible group addresses are already in use.

**Integrity check:** Checks whether group addresses that are used multiple times, are potentially used with different data types.

**Reboot system:** The HCC device will be re-started.

**Exit:** The Editor closes. We recommend you use this option before you terminate the software.

## 6.1.2 The Edit Menu



**Move to front:** The selected element will be moved to the front.

**Send to back:** The selected element will be sent to the back.

**Select all:** All elements of the current page will be selected at once.

**Unselect all:** All elements of the current page will be unselected at once.

**Cut:** The selected element will be cut and stored on the clipboard.

**Copy:** The selected element will be copied and stored on the clipboard.

**Paste:** The selected element will be inserted at the position of the cursor.

**Delete:** Deletes the selected element

## 6.1.3 The View Menu



**Toolbar:** The top tool bar becomes visible/invisible.

**Properties:** Gives direct access to the selected elements

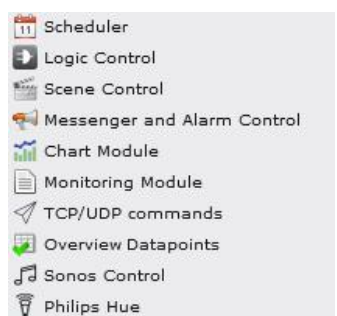
**Pages:** Shows the visualisation pages

**Objects:** Shows the communication objects

**Virtual DP:** Shows the existing variables

**Components:** Shows the visualisation components

## 6.1.4 The Module Menu



**Time schedules:** Access to the Editor module for schedules

**Logic module:** Access to the Editor module for logic functions

**Scene Control:** Access to the Editor module for scenes

**Notification and alarm module:** Access to the Editor module for alarm settings

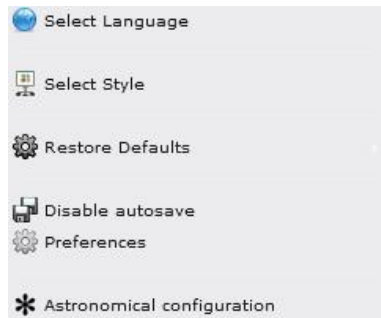
**Chart module:** Access to the configuration of data points for use in charts

**Monitoring module:** Configuration of data points for labelling.

**TCP/UDP commands:** Access to the Editor module for the configuration of IP devices that are to be controlled remotely.



## 6.1.5 The Configuration Menu



**Select Language:** Pre-sets the user language. The language only becomes active after the device has been re-started.

**Select Style:** This option allows the user to select different image styles which are stored on the device. See chapter: [10 Tips](#) for more details.

**Restore default:** The default settings and default parameters are restored. The ETS parameters and IP configuration, however, remain intact.

**Disable autosave:** Activate this option to disable autosaving the project (every minute).

**Preferences:** general system settings, see also chapter: [5 Web-Configuration page](#).

**Astronomical configuration:** Stores GPS data in order to correctly calculate the times for sunrise and sunset. See chapter: [8.1.1 Astronomical calendar configuration](#).

## 6.1.6 The Help Menu



Offers links to the IPAS website or the online Wiki system.



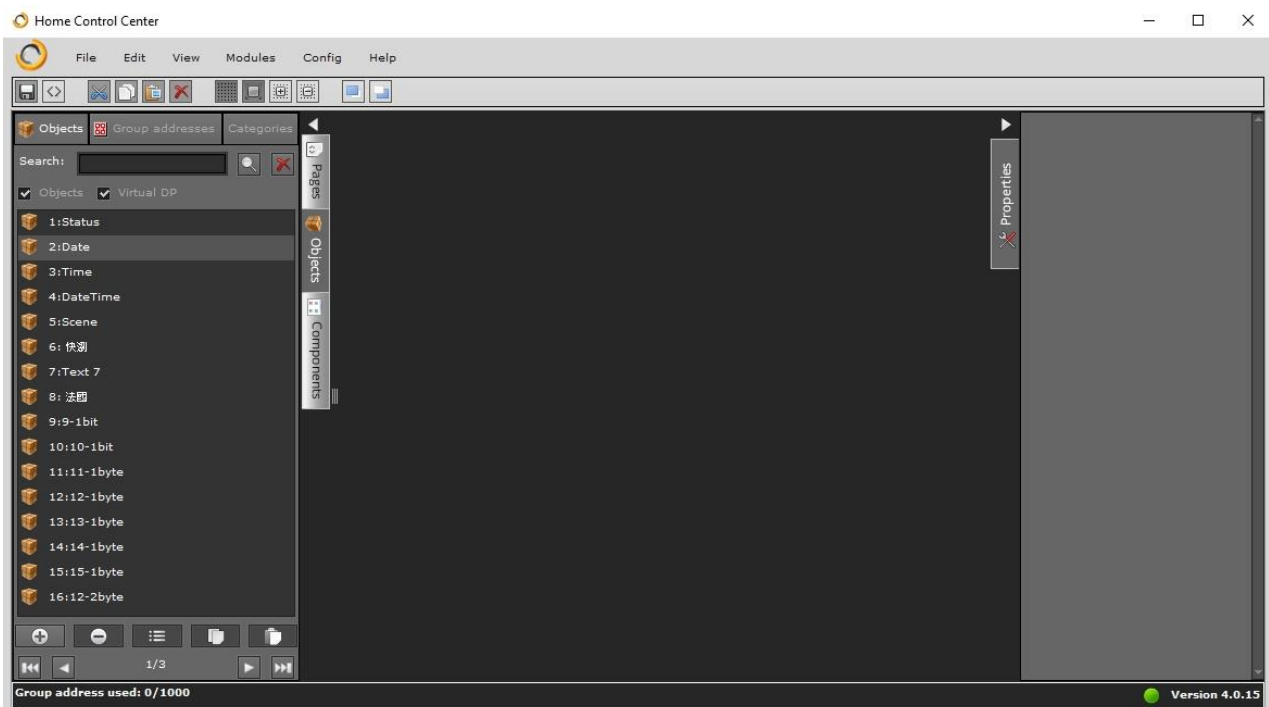
The menu item **System Info** provides the user with information about currently available memory space, the software version and the length of time the device has been running since the last start-up.

## 6.2 Objects, virtual objects and group addresses

Three types of objects can be used in the Editor:

- communication objects
- virtual objects (variables)
- group addresses

Altogether 250 communication objects, 745 variables and up to 1000 group addresses are available. Both object types can be called up via the tab of the tab Objects.



In the lower part of the object selection window is the object management area. By clicking on the corresponding icons you can:



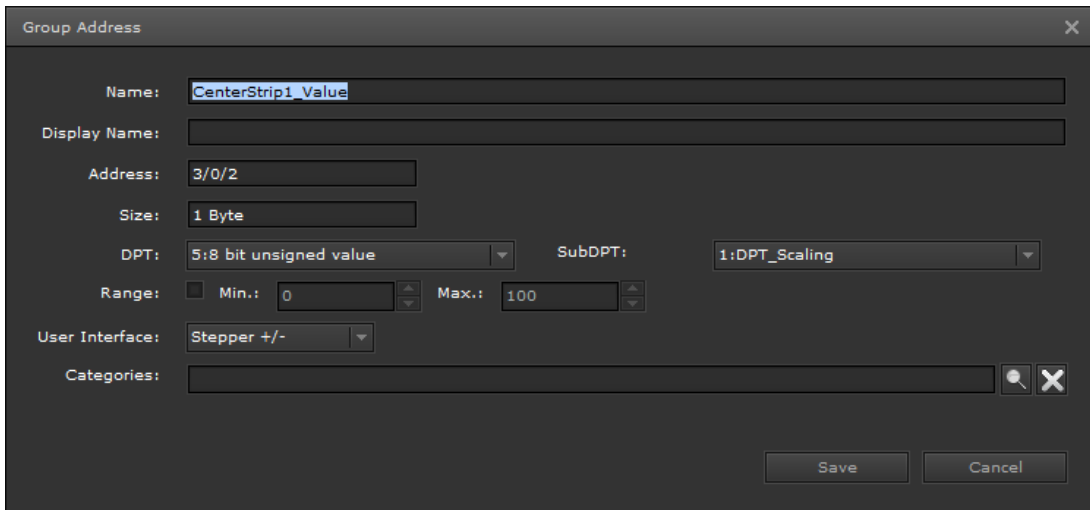
- Add objects
- Delete objects
- Copy objects
- Insert objects

The "Forward / Backward" icons navigate through the pages of existing objects.

### 6.2.1 Group addresses

Group addresses are imported via esf import and listed in a tree view on the left hand side. Open the

configuration window of the group address via a double-click or via the context menu that appears following a right mouse-click.



**Name:** You can use the name field to overwrite the name configured in the ETS.

**Address:** Shows the group address

**Size:** Data length (data format) of the group address

**DPT:** Data point type

**SubDPT:** Modifiable in the Editor to ensure correct display in the visualisation

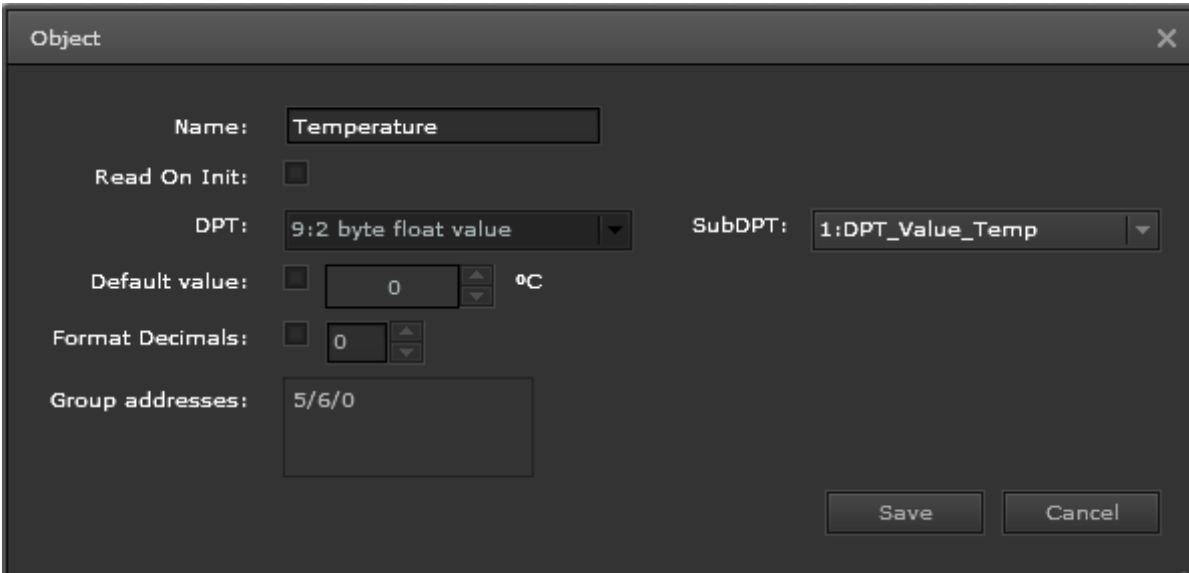
**Range:** Here you can enter the value range for inputs (time schedules or scenes).

**User Interface:** In the HTML configuration pages, this input style is displayed.

**Categories:** Objects or group addresses can be sorted into categories.

## 6.2.2 Communication objects

Communication objects are imported and represented by the parameters configured in the ETS application program. Open the configuration window of the "object" via a double-click or via the context menu that appears following a right mouse-click.



**Name:** You can use the name field to overwrite the name configured in the ETS.

**Read on init:** Read request, cannot be edited in the Editor.

**DPT:** Data point type defined in the ETS, cannot be edited in the Editor.

**SubDPT:** Modifiable in the Editor to ensure correct display in the visualisation.

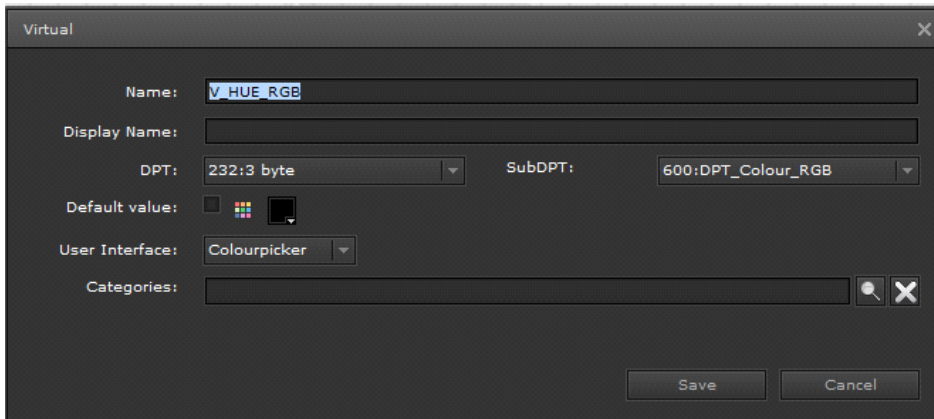
**Default value:** Modifiable in the Editor so that you can work with a pre-defined value if no valid value exists in the KNX.

**Format Decimals:** Modifiable in the Editor to define the number of decimal places that are to be displayed for analogue values.

**Group addresses:** The group address defined in the ETS for this object, cannot be edited in the Editor.

## 6.2.3 Virtual objects

The virtual objects allow the internal exchange of data and parameters between the visualization, alarm, chart, monitoring, logic and schedule function module. To create a new virtual object, right-click in the list of virtual objects. In the now opened window the following properties can be parameterized:



**Name:** Name of virtual object

**Display Name:** Mask for a user-specific description, which is displayed in the online configuration pages.

**DPT:** DPT of your choice

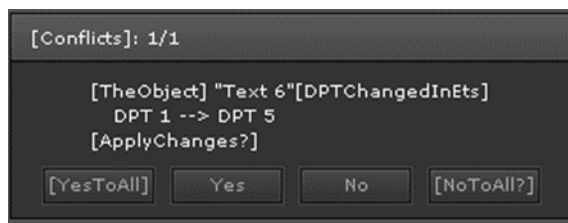
**SubDTP:** The datapoint subtype is required to represent values in the visualisation

**Default value:** Default value of the variable before the current data has been assigned to the object

**User Interface:** In the HTML configuration pages, this input style is displayed.

**Categories:** Objects or group addresses can be sorted into categories.

## 6.2.4 Conflicts caused by different data points



Each time the application program is downloaded via ETS, the Editor will check the data points assigned by the ETS. If there is a difference between already existing and newly assigned DTPs, the change needs to be acknowledged.

If the change is acknowledged, the DTPs in all linked objects are updated. If the change is rejected, all linked objects are de-activated. Once the Editor is re-started the same procedure is carried out again.



## 6.2.5 Categories

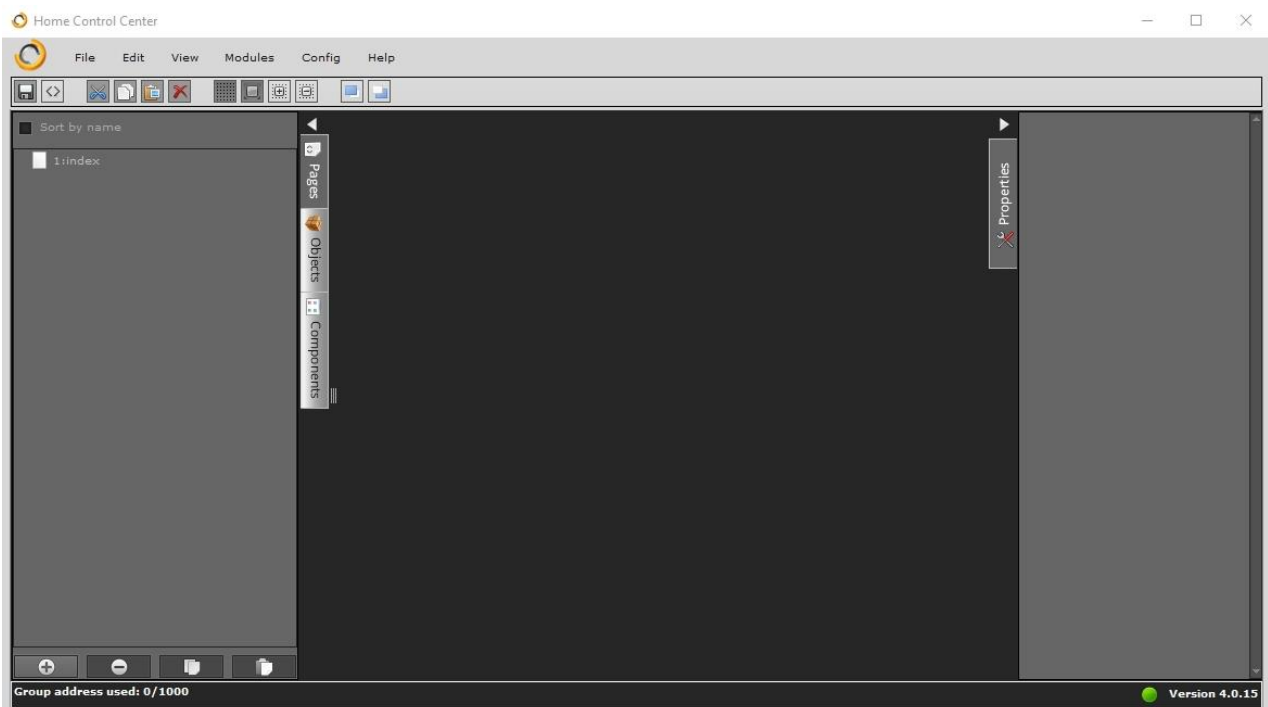
To group data points in a meaningful way, categories can be created and the group addresses can be assigned to these categories. In all windows in which the list of data points (group addresses) can be selected, the categories can be used to help find group addresses faster.

**Note:** The "DTP Management" module is available for displaying, managing and editing the available data points and for assigning categories. See chapter: [8.8 Overview of the data points](#).

## 6.3 Creating a visualisation page

The first step to create a comprehensive visualisation is to generate a visualisation page ("page"). Visualizations with the HCC are always tied to a project. This page consists of a combination of images and controls. When delivered, all pages of the sample project are displayed.

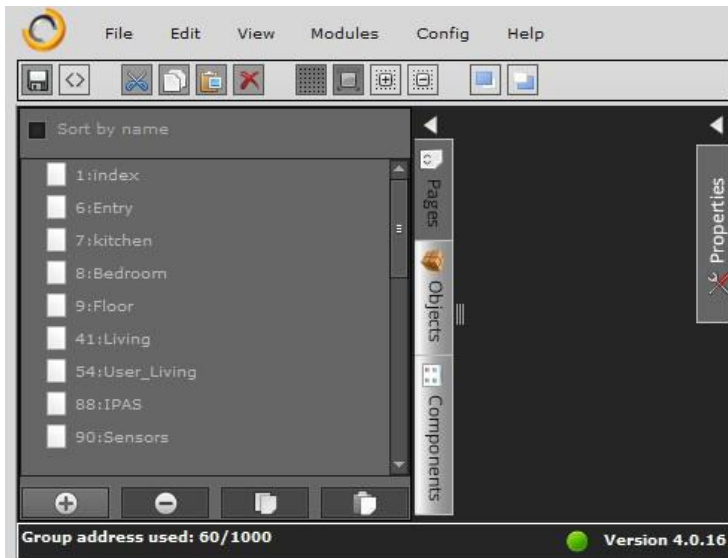
**Note:** The visualization always starts with the *1:index* page. This will always be the starting point of your visualization.



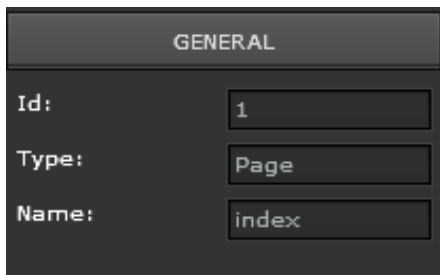
Pressing the right mouse button opens the context menu with the option "New page". This opens a new page for editing in the Editor area. Creating a new visualization page is also possible via the main menu "File / New / Page".

At the bottom of the list, an icon bar appears with the following functions. These functions are for adding, deleting, copying and pasting visualization pages.





If a visualization project has already been created, the available pages are displayed in the left list box. On the right-hand side of the workspace, a menu now shows the properties of the new page. After creating a new will automatically appear on the right side of the editor, a menu will appear with the properties of the new page.

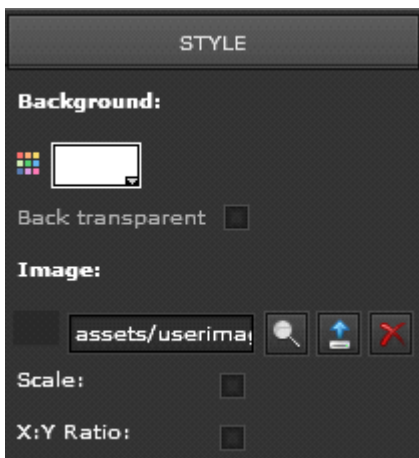


General settings:

**ID:** ID number

**Type:** Type of element




**Name:** Name of the page; the default name is "NewPage". When giving a name to a page, we recommend using a name that is relates to the project so as to facilitate identification



Style:

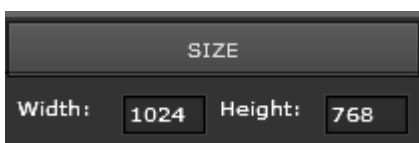
**Background:** Background colour

**Transparent:** Visible/invisible

**Image:** Selection of a background image. Use  to select images and save these on the device. You can also delete images currently stored in the flash memory. Use  to load an image as background image. Use  to delete background images.

**Scale image:** Tick this box to automatically adjust the image resolution to the configured size.

**X:Y Ratio:** Tick this box to retain the width to height ratio when the image is re-sized.



Size:

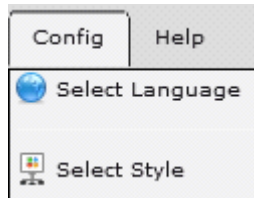
**Size:** defines the size of the page. The width and height are shown in pixels.



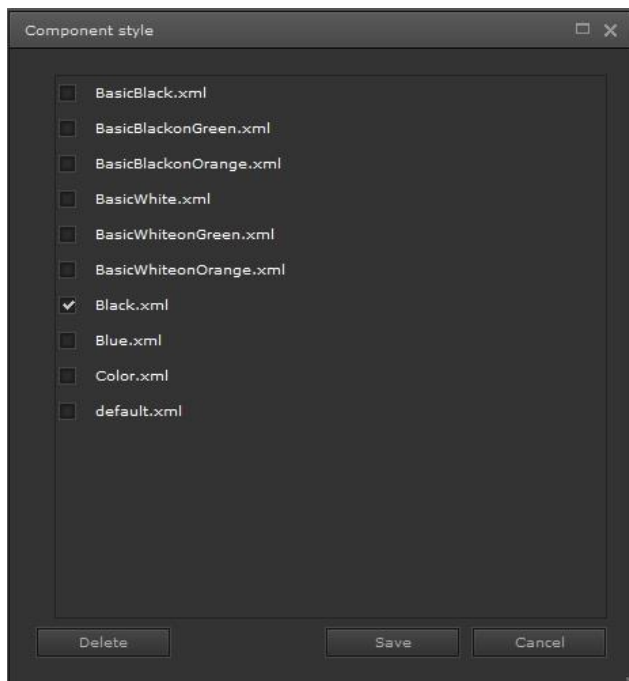
## 7 Control elements

This chapter explains the functions of the provided controls.

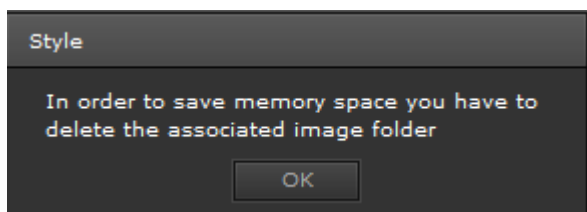
### 7.1 Selecting a style



From **Version 1.1.0** different styles can be selected. In the menu item Configuration / Styles all styles are listed for selection. These are already predefined and are already stored in the HCC upon delivery. Please see chapter: [11.6 Illustration of different styles](#) for a description of all styles.



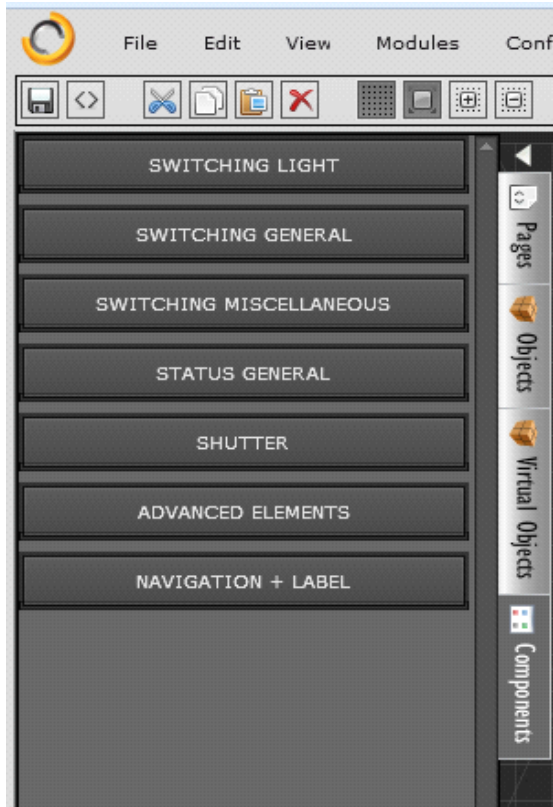
Press the “Delete” button to remove styles from the device.



**Note:** Remember that the style definition is linked to the corresponding images. These need to be deleted separately to free up memory space on the device.

## 7.2 Control elements in the components list

ComBridge HCC offers a range of control elements for the configuration of control functions.



Select a control element and pull it via drag and drop from the components menu to the work space. You can edit the properties of the selected element in the properties menu on the right-hand side. The control elements are divided into the following groups:

- Switching Light
- Switching General
- Switching Miscellaneous
- Status General
- Shutter
- Advanced Elements
- Navigation + Label

There are two types of properties that can be assigned to the control elements.

- Principal properties
- Individual properties

Principal properties are the same for all control elements. They will be described in the following chapter. The descriptions are examples that apply to all other control elements. Individual properties differ depending on the control element. They will be explained for each element.

## 7.3 Principal properties

### 7.3.1 General

The section "General" is used to set the general properties.



**Id:** Internal ID number

**Type:** Type of element

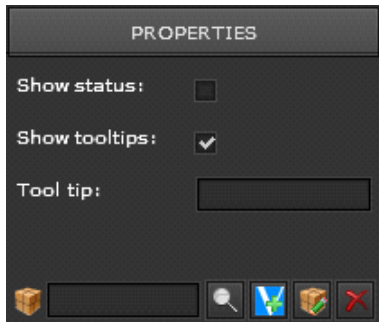
**Name:** Name of the element

**Visible:** to be displayed in the visualisation.

**Enabled:** Tick this box to activate the switching functions. Otherwise only status information will be displayed.

### 7.3.2 Properties

In the "Properties" area, general settings of the element used are made.







**Show status:** The current status of the element is displayed (not for text or input values).

**Show Tooltip:** The Help window opens if the mouse hovers over the element.

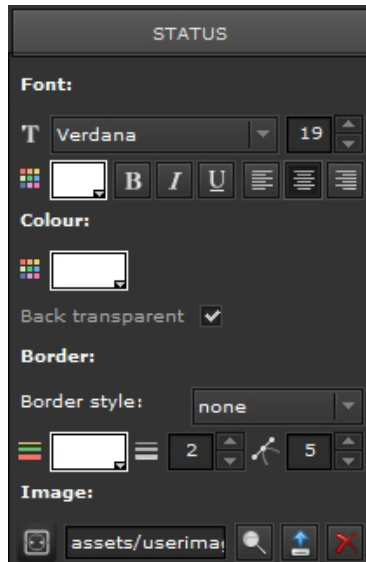
**Tooltip:** Input field for the tooltip that is to be shown

#### Objecttools

-  Selects an object or group address
-  The selected object or group address can be edited
-  A virtual object can be added
-  Removes the assigned communication object or group address from the element

### 7.3.3 Status

The "Status (Style)" section selects the characteristics of font, colour, border and background.



#### Font:

- *Font:* All installed fonts are available
- *Font size:* Font sizes in point, selectable between 8 to 127
- *Font colour:* Selectable from color chart with 216 colors (HTML)




#### Colour:



- *Background color:* Selection of the color of the font background
- *Transparent:* Select if the background is displayed / not displayed

#### Border:

- *Border style:* no (no frame), solid (solid), inset (3D line), outset (3D line)
- *Border colour:* Selectable from color chart with 216 colors (HTML)
- *Border size:* Selectable between 0 px (no frame) and 20 px
- *Corner radius:* Selectable between 0 px (no radius) and 20 px

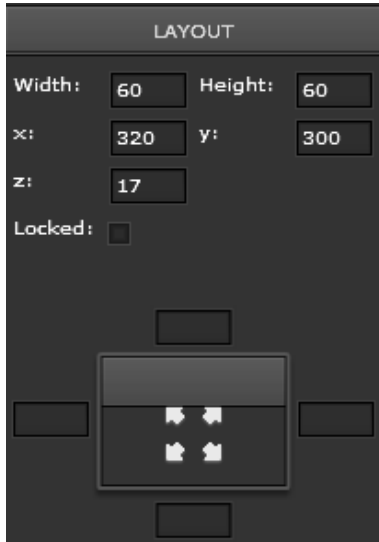
#### Image:

You can select a background image for the control element. Use  to select an image from an existing list. Use  to load a new image as background. Press  to delete the background image.

**Note:** Pressing  and subsequently  removes images that have already been uploaded from the flash memory. It is also possible to delete entire directories.

## 7.3.4 Layout

In the "Layout" section, the size and position of an element can be preset.



**Width:** Defines the width of the sides

**Height:** Defines the height of the sides

**X:** Defines the distance to the left of the element

**Y:** Defines the distance to the top of the element

**Z:** Defines the position of the layer (foreground/background)

**Locked:** The element is blocked and can not be moved around the Editor.

**Coordinate Box:** If you click in the middle, the element is adjusted to the size of the window. You can also define the distance to the window margin.

## 7.4 Standard and basic functions of the control elements

### 7.4.1 Light switch /general



The device offers two independent elements for the transmission of ON/OFF telegrams. Although value types are transmitted depending on the data point type assigned, images are always prepared as a 1 bit DPT.

Toggle switches require a status value when they are visualised for the first time so that when pressed, they will transmit the inverse value. The toggle element can receive the actual status directly from the assigned communication object that was used to configure it. If no such value is received, the element will remain in an undefined status and only show the background image, not indicating whether it is (ON/OFF).

## 7.4.2 Blinds/shutter switch



Three different switch elements are available for the control of blinds/shutters:

- Blind/slats – 1 push-button control
- Blind/slats UP
- Blind/slats DOWN
- Shutter UP
- Shutter DOWN
- Shutter STOP

### 7.4.2.1 Special features: Blinds

To configure the group blind/slats UP/DOWN, you will require communication objects and additional settings:



**Behaviour:** It is possible to select the action of the button (up, down, toggle).

**Status:** Enter the position of the communication object so that the element can obtain the current status.

**Short keypress:** A slat adjustment/start/stop telegram is sent via this object if the pushbutton is pressed briefly.

**Time long pulse:** Time in milliseconds until a long keypress is recognised

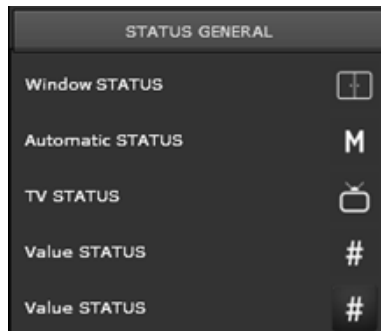
**Long keypress:** The telegram for the up/down command is sent via this object after a long keypress.

To configure the group Blinds "UP/DOWN/STOP" you will only need the communication objects. As only the group address is sent in this case, please remember to select the address for the shutter run. For the stop command, however, please select the address for slat control.



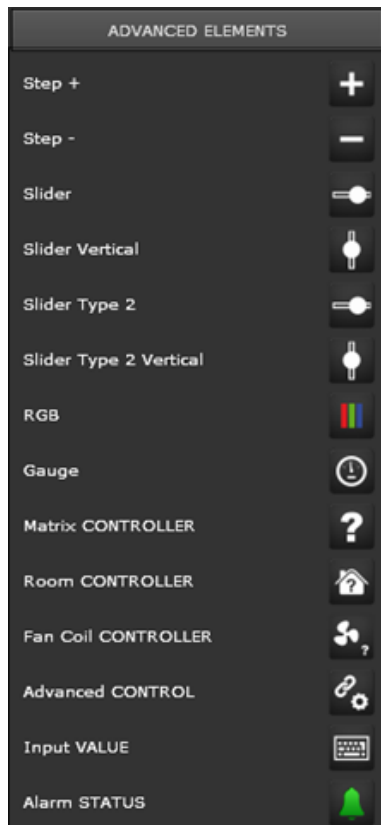
Details of the properties are described in chapter: [7.3.2 Properties](#).

### 7.4.3 Status



This shows the current value. You can find the different symbols both under switch components and under the component group Status General. The "value status" is displayed in numbers not as an image.

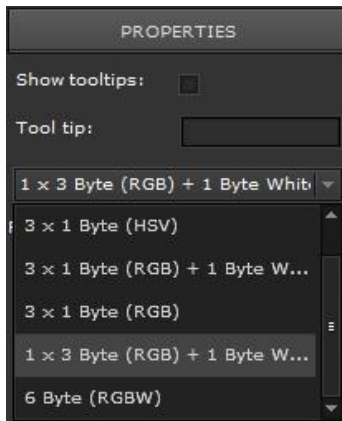
### 7.4.4 Advanced control elements



This component category lists different control elements for value setting.

### 7.4.4.1 RGB Element

The RGB element is used to set RGB values via group addresses. In this element, RGB values can be set via group addresses. Different options for color control are offered on the KNX. The HCC supports the desired activation by the following selection:



- 1 x 3 Byte (RGB)
- 1 x 3 Byte (HSV)
- 3 x 1 Byte (RGB) + 1 Byte White
- 3 x 1 Byte (RGB)
- 1 x 3 Byte (RGB) + 1 Byte White
- 6 Byte (RGBW)

With this element, RGB (RGBW) values can be set via group addresses. A color light control is possible.



- Red channel:** Selection of the object or group address for the red channel (values 0...100%)
- Green channel:** Selection of the object or group address for the green channel (values 0...100%)
- Blue channel:** Selection of the object or the group address for the blue channel (values 0...100%)
- White channel:** Selection of the object or group address for the white channel (values 0...100%)

**Note:** Only applies if Hue Control is not active.

When selecting the Hue Control (HSV), the values are entered in the following form:



- Hue:** Selection of the object or group address for the Hue channel (values 0..100%). Active if Hue Control is set active.
- Saturation:** Selection of the object or group address for the saturation channel (values 0..100%). Active if Hue Control is set active.
- Brightness:** Selection of the object or group address for the Brightness channel (values 0..100%). Applies only if Hue control is set active.

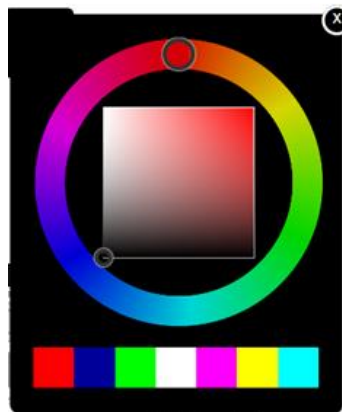




In this element, 7 colors can be predefined as desired. In the visualization view, these 7 colors are directly available as color scenes.

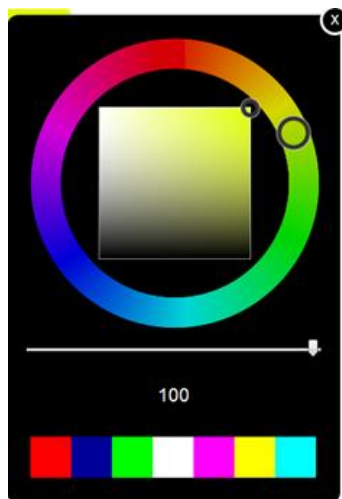


In the visualization view, the following appears after clicking on the icon RGBW control element:



The color is selected in the outer color circle. In the inner square, the color saturation and the brightness are adjusted.

In the horizontal direction, the saturation is changed and in the vertical direction, the brightness is adjusted.



If the additional white channel has been configured for RGBW control, the slider can be used to vary the white color in the range 0 to 100%. The 7 predefined colors can be called up directly as a color scene.

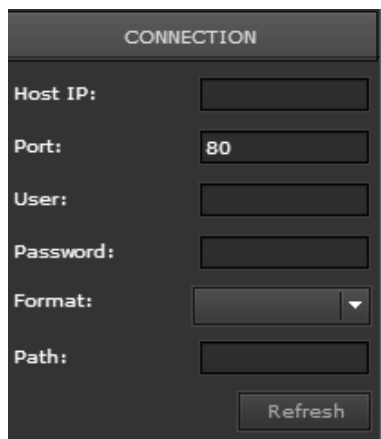
### 7.4.4.2 HTML chart

This element is used to display curve and bar charts. The different options are listed in chapter: [8.5 Chart Module](#).

### 7.4.4.3 IP camera

This element is used to display a web cam. The image can be shown in both .jpg and .mjppg.

When specifying user name and password, the standard Basic Authentication is used.



**Host IP:** IP address of the web cam

**Port:** Port number of the camera

**User:** Username to enable the camera

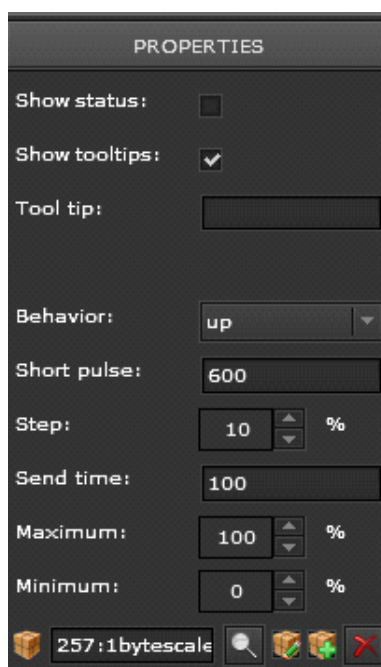
**Password:** Password to enable the camera

**Format:** You can choose whether the camera should provide the image in jpg or mjppg.

**Path:** Path on which the camera images will be provided.

### 7.4.4.4 Stepper

The value +/value - element is used to increase or decrease a value in increments. For example, it may be used for thermostats.



**Behaviour:** Determines the switch behaviour (increase/decrease/toggle)

**Long pulse:** Time in milliseconds after which a signal is deemed a long keypress. During this time, the steps are enumerated and when the button is released, the enumerated end value is sent.

**Step:** Increment of next next value.

**Send time:** The time in milliseconds after which the value is sent to the bus. With repeated keys during this time, the value is counted internally, and the final value is sent after this time.

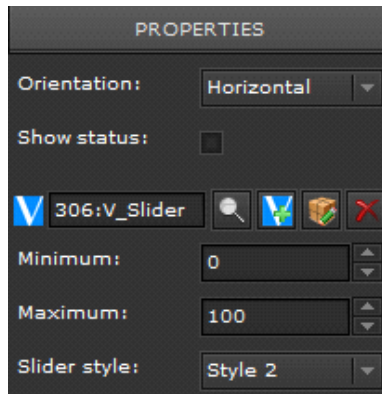
**Maximum:** Highest value that can be sent to the bus.

**Minimum:** Lowest value that can be sent to the bus.

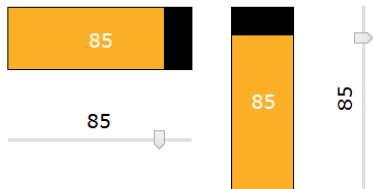
### 7.4.4.5 Slider

he slider can be used to regulate values without increments, for example to control a dimmer. It works like

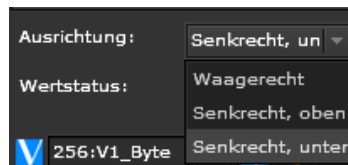
an input value-send element and therefore requires a communication object to display a value.



The element can be scaled for DPT 8 bit unsigned values and DPT 8 Bit (0...100%). If "Live Dragging" is activated, the current value is shown.



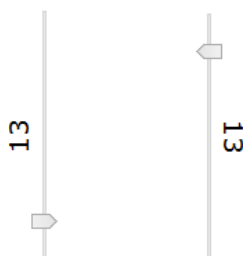
From version 1.2 upwards two different types of sliders are available. Tick the "value status" box to display the current value or untick the box if you do not wish to display the value. Both types can be arranged vertically or horizontally. If you choose the vertical option, you can also define whether you would like to show the maximum value at the top or bottom.



**Note:** If you select "vertical top", the minimum value starts from the "top". This can be particularly useful for blind actuators with a position status or absolute positioning

The image below shows the different display format. For the first slider, the minimum value is at the bottom and for the second slider, the minimum value is at the top (blind/shutter position). Additionally, there is the possibility to choose from 2 styles:

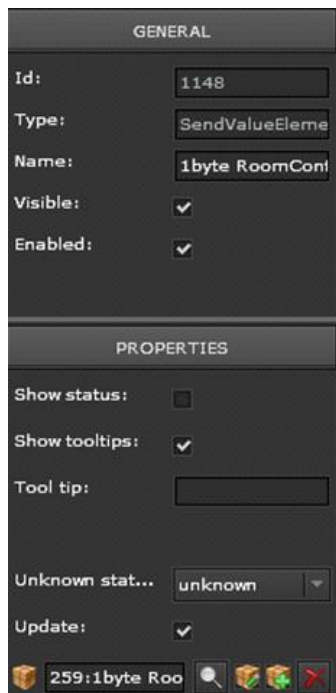
Style 1



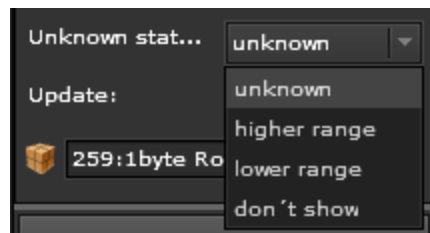
Style 2



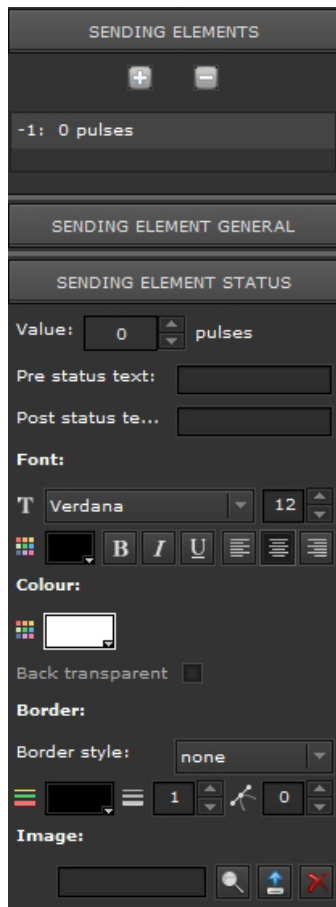
### 7.4.4.6 Matrix Element



You can use the matrix element to send and display different values with a pushbutton. The values can be configured individually. First, you should define the properties and connect an object to the element.



Use the parameter "Unknown status" to define which status is to be shown if the KNX status is unknown or does not match the definition.



Use the +/- buttons "Sending Elements" properties to create an individual status. Use the "Sending Elements Status" tab to define every status required for this value.

**Value:** This is the value that is to be sent or to be checked for. The value can be sent either as a number with text (before or after the value) or it can be configured as an image. For the latter, please select an image from the Image library.

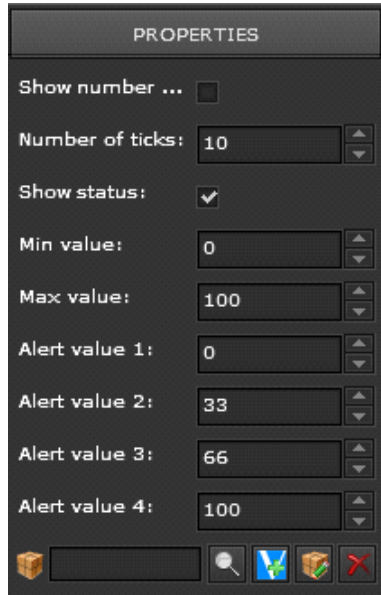


A typical example for its use is temperature control with different status types such as:

- Comfort (value 0)
- Stand-By (value 1)
- Night (value 2)
- Frost protection (value 3)

### 7.4.4.7 Analogue display

Analogue values can be easily displayed by using this element.



**Show number ticks:** Values between the ranges will be displayed as a number.

**Number of ticks:** This parameter defines the number of values between the ranges.

**Show status:** If enabled the current status value will be displayed.

**Min value:** Bottom value range

**Max value:** Top value range

**Alert value 1-4:** It is possible to define up to 4 threshold values which will later be displayed in different colours on the scale. They can serve as warning or alarm values.

Colours and Layout of this element are defined in the style tab. You can also define the transparency for all colour settings. "1" means no transparency.



**Background colour:** Background colour of the element.

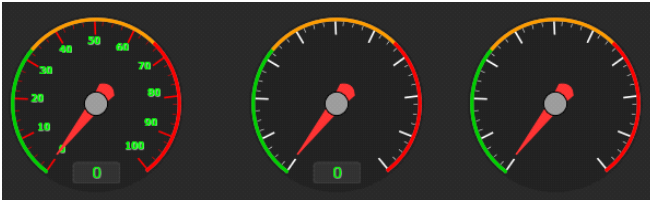
**Indicator colour:** This parameter defines the colour of the indicator.

**Tick:** This parameter defines the colour for the ticks.

**Alert colour 1-4:** The colours for the alert thresholds defined above can be configured here.

**Text:** Defines the font type and colour.

The image below shows different types of display:



#### 7.4.4.8 Operating mode element

This element is a pre-configured matrix element to set the operating mode of a heating controller, see previous chapter: [7.4.4 Advanced control elements](#).

#### 7.4.4.9 Fan element

This element is a pre-configured matrix element to control fan levels, see matrix element. 5 steps with the values 0%, 20%, 40%, 60%, 80% and 100% can be defined. The status is not displayed through the value but via different fan symbols.

#### 7.4.4.10 Advanced element

This element is very complex allowing for the realisation of different applications. The "General" section allows you to set a password so that a page can only be changed after entering the correct password.

**PROPERTIES**

Show status:

Show tooltips:

Tool tip:

Link page:

External link:

External link:

Page Container:

Application: [Page changeover](#)

**Link Page:** A pop-up with all currently configured pages is displayed and a page of your choice can be displayed.

**External link:** If you tick this box, you can load an external website (e.g. a web cam).

**External link:** Use this field to define the http address of the external page.

**Page container:** Please select whether you would like to load the page in a frame (container) or as a new page (\_blank).

**OBJECT PROPERTIES**

Object:

value send:

Value:

Jump To Page Object:

Jump To Page:

Condition:

Jump Value:

Application: [Value setting and page changeover following a KNX event](#)

**Send value:** If you select this setting, the value defined under Value is sent to the KNX when you press the pushbutton.

**Jump to page:** If you select this setting, you can define an object as trigger for a page changeover. In addition, you can enter the condition as well as the reference value for this condition.

#### 7.4.4.11 Value setting

This element is used to send a telegram with a selected value to the bus. Depending on the DPT selected, the display may vary.

Format for 1bit DPT



Format for 1byte, 2 byte, 4 byte DPT



Format for 14 byte DPT



Press SEND to transmit the value displayed in the visualisation to the bus.

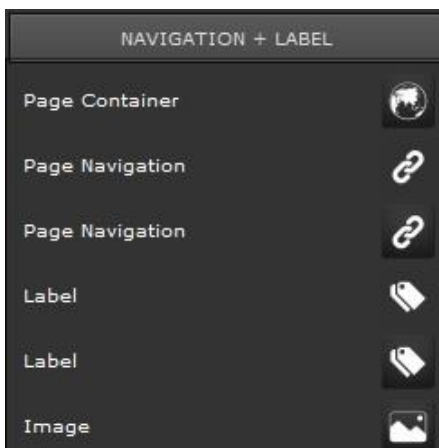
**Note:** The maximum number of characters for the 14 Byte format is 14. Additional characters are automatically cut out.

#### 7.4.4.12 Alarm Status

This element displays a status via a blinking alarm symbol (the function is comparable to the normal binary status).

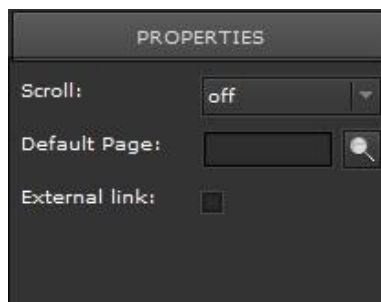
### 7.4.5 Navigation and labelling

This component category lists different control elements for the navigation and for labelling.



### 7.4.5.1 Special features: Page container

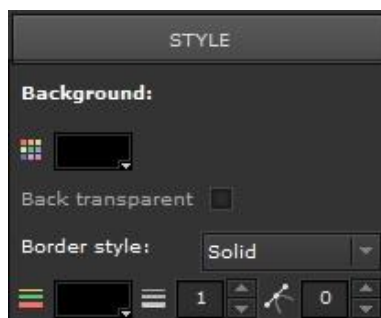
A page container is a frame that is used to display other pages. If you drag the element into the workspace, a pop-up window appears where you can select the pages for this frame. However, you can also select these later. The default size of the page container is 600x480 pixels. This size can be changed at any time. The container is used in conjunction with the control elements for loading a web page (navigation) or external website. This means the container makes it possible to create a frame within a website in which other pages can be displayed. In addition to the general properties (more about this in the chapter: [7.3.1 General](#)), the user has various setting options.



The properties select the page to fit in the container. The option "Scroll" (off / on / auto) shows or hides a scroll bar depending on the setting.

By selecting "External Link" external web pages can be displayed in the container

**Note:** When selecting the page container, the option “\_blank” is only available for external links. The option “blank” opens a new window in Edge, IE, Chrome and a new tab in Firefox.



Styles include background color, transparency (whether the background should be displayed / not displayed), or border properties such as color, width, and radius of the container.



The Layout area lets you change the default container size and position within the page. More in the chapter: [7.3.4 Layout](#).

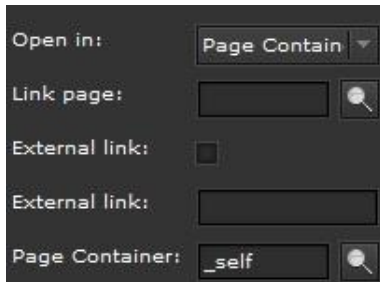
### 7.4.5.2 Special features: Page navigation without background image





This element is used to load other pages either in a pop-up window, a container or on a new page

The "properties" section allows to define the behavior and the links of a visualization page.

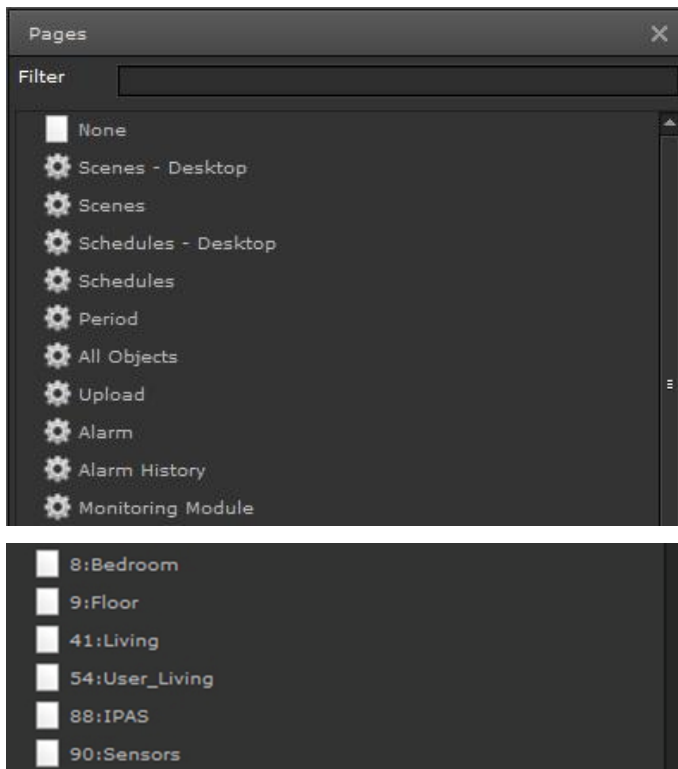


**Open in:** Here it is decided whether the new page should be called in a popup window or in a container.

**Page:** A pop-up, shown below, will be displayed with all currently configured pages, and the desired page can be displayed.

**External link:** When this feature is enabled, an external web page (e.g., a webcam) can be called.

**External link:** Here the http address of the desired external page is defined.



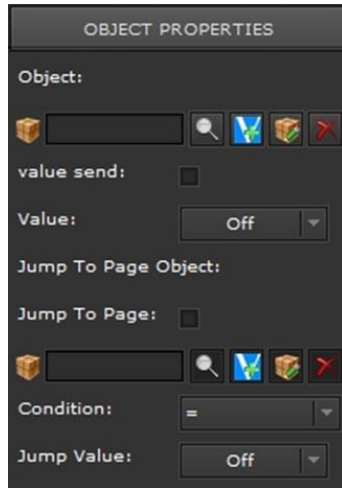
When selecting pages, not only pre-configured visualization pages are listed, but also all preset pages that the device can provide, such as:

- Scenes - Desktop
- Scene
- Schedules - Desktop
- Schedules
- Period
- All Objects
- Upload
- Alarm
- Alarm History
- Monitoring Module







**Page Container:** Here you can choose whether this page should be called in a frame (container) or as a new page (\_self).

For settings such as "Value Status", "Show Tooltip" and the text input "Tooltip" see chapter: [7.3.2 Properties](#).

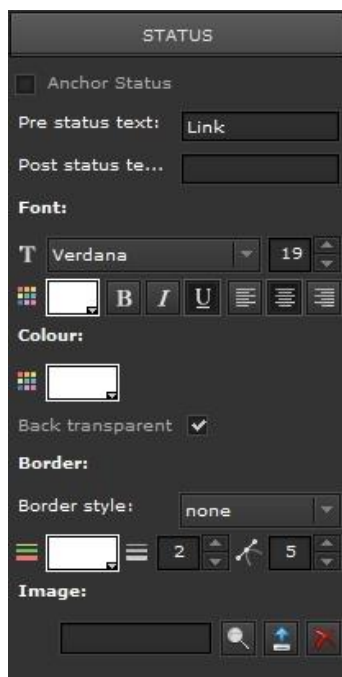


**Send value:** If this setting is selected, the value defined in "Value" is sent to the KNX when the button is pressed.

**Go to page:** If this setting is selected, an object can be defined as trigger for a page break. In addition, the condition as well as the comparison value of this condition can be entered.

-  Selects an object or group address
-  The selected object or group address can be edited
-  A virtual object can be added
-  Removes the assigned communication object or group address from the element

In the section Status (Style) you can select the characteristics of font, background and frame.



**Common Settings:** When selected, layout properties are shared

Text before / after status: Defines whether the text appears before or after the status field

**Font:** Selection of font, font size, font color and formatting. All fonts installed on the computer are available

**Color:** Selection of the background color




**Transparent:** Select whether the background should be displayed / not displayed

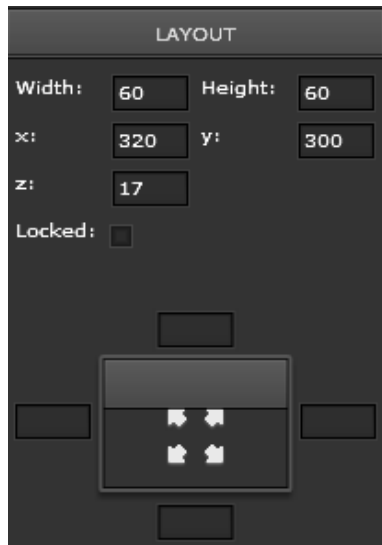
**Border:** selection of a frame and its formatting features (shape color, width and corner radius)

**Background:** Selection of the background color


Image: With an existing image is selected from a list. With a new image is loaded. Using, the current image can be removed from the application

**Image:** You can select a background image for the control element.

Use  to select an image from an existing list. Use  to load a new image as background. Press  to delete the background image



Settings in the Layout section, see chapter: [7.3.4 Layout](#).

**Note:** After each adaptation, the HTML display must be updated via the "Generate visualization" button. 

### 7.4.5.3 Special features: Page navigation with Background image



The element is identical to the previous one with the difference that a background is already predefined to allow the appearance of a navigation key.

### 7.4.5.4 Special features: Label

Dieses Element dient zur Beschreibung eines anderen Elements. Die Beschreibung wird in das vorgesehene Text-Feld eingetragen.



General settings and layout are described in chapter: [7.3 Principal properties](#).

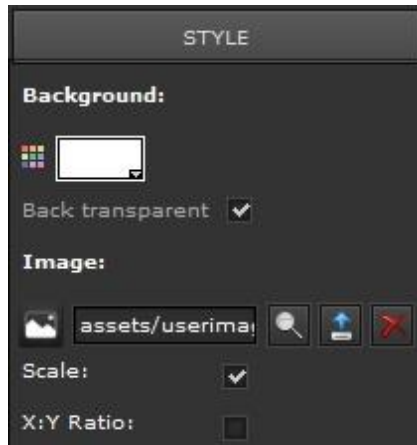
**Note:** To avoid errors in the text display, please do not use the backlash “\” symbol.

### 7.4.5.5 Special features: Background image






This element inserts a custom background image into a visualization page. The description is entered in the provided text field.

See chapter: [7.3.1 General](#).




**Background:** This is used to select the background colour.

**Image:** Use  to select an existing image from a list and  to upload new images.  Deletes the current image from the element.

**Scale:** Tick the Scale box to adjust the image to the resolution set under Properties.

**X:Y Ratio:** retains the width-to-height ratio when the image is resized.

Positioning details are described in chapter: [7.3.4 Layout](#).

**Note:** Use  followed by “Remove image” to remove already uploaded images from the flash-memory. It is possible to delete entire directories.

## 8 Modules

The ComBridge HCC offers the user a wide range of functions to easily and effectively automate a KNX system. The functions are structured in a modular manner. Go to the main menu Modules to select a function. The different modules are described below:



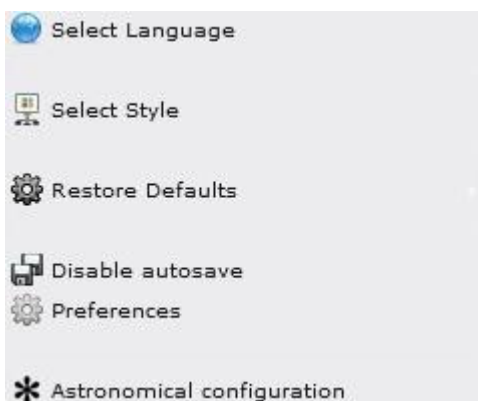
- Scheduler
- Logic Control
- Scene Control
- Messenger and Alarm Control
- Chart Modul
- Monitoring Module
- TCP/UDP comands
- Overview Datapoints
- Sonos Control
- Philips Hue

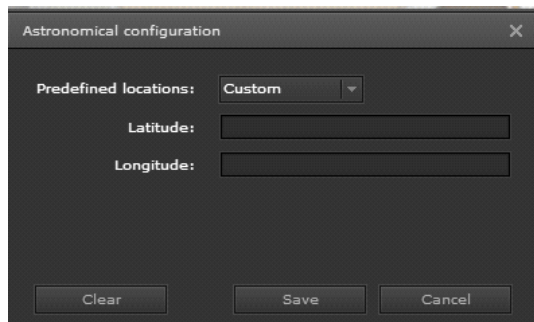
### 8.1 Schedules

From **Version 3.0** upwards, an astronomical calendar is available. This means that switch commands can be defined to coincide with sunrise and sunset. These times are entered as offsets and can be up to 3 hours long.

#### 8.1.1 Astronomical calendar configuration

To ensure that the times for sunrise and sunset are calculated correctly, the longitude and latitude of the location need to be known. These can be entered in the Editor.



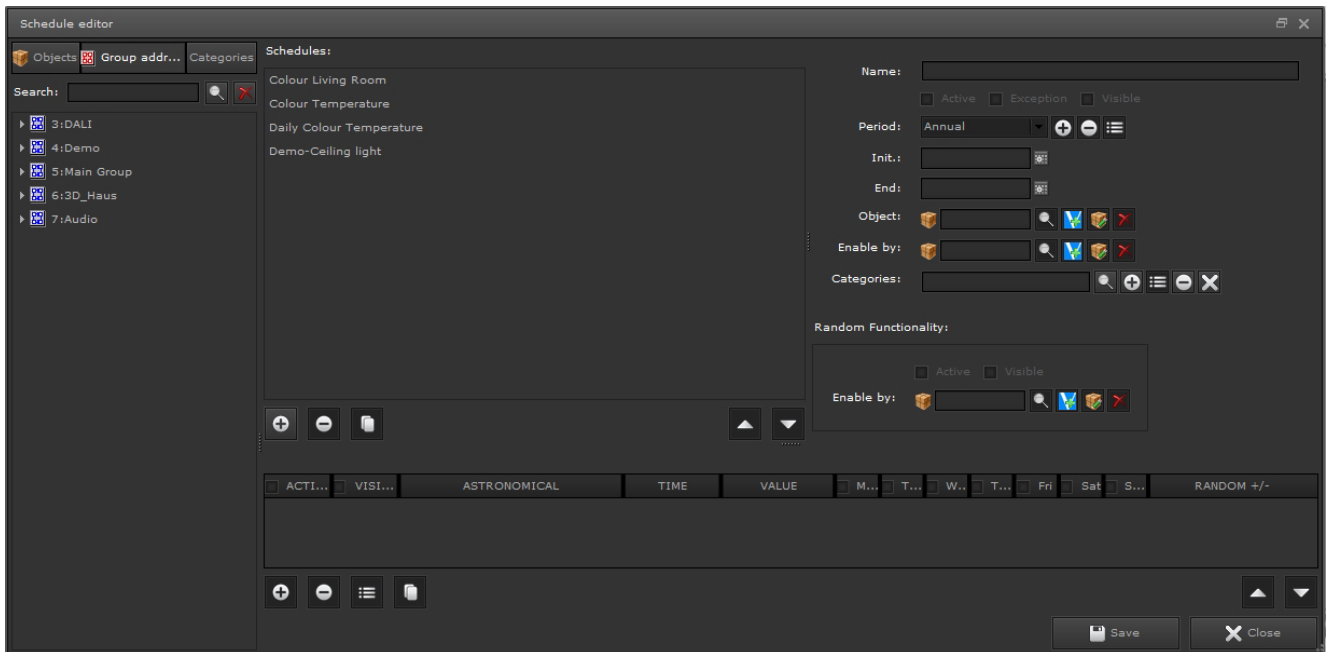


This setting is carried out in the editor:

A few pre-defined locations are available including details of longitude and latitude. Values are entered as decimal degrees. The internet offers numerous tools to find the exact data.

## 8.1.2 Schedule configuration

The ComBridge HCC allows 300 time switching commands per week with up to 30 events. A timer module is called in the editor for the configuration. The following figure shows the window of the schedule editor:



On the left side, the objects or group addresses are displayed for selection. The schedules already created are displayed in the middle. On the right side is the menu for the basic settings. In the lower part the time commands can be defined and edited. In this menu section new schedules can be added, existing schedules can be doubled or deleted.

**Note:** Please select the object first, as the name is automatically replaced with the object name in this case or with the group address name in the case of a group address.

Selecting a schedule completes the page with the individual definitions in the next step:



The screenshot shows a configuration window for a schedule named "Colour Living Room". The interface includes the following fields and controls:

- Name:** Colour Living Room
- Active:**  **Exception:**  **Visible:**
- Period:** Annual (with +, -, and list icons)
- Init.:** 01/01 (with calendar icon)
- End:** 31/12 (with calendar icon)
- Object:** 3/2/5:CenterS (with search, up/down, and delete icons)
- Enable by:** (with search, up/down, and delete icons)
- Categories:** (with search, +, list, -, and X icons)

**Name:** Name of the schedule

**Active:** Activates/de-activates the schedule

**Exception:** If this option is activated, the period specified in the schedule is applied to all other schedules linked to the same object, ie other normal schematics of the object are deactivated at this time and only the exception is executed, see chapter: [8.1.2.1 Example of an exception](#) .

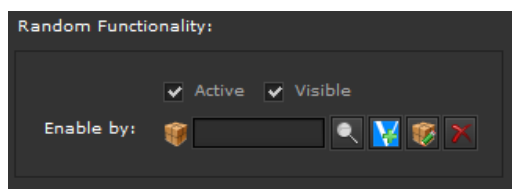
**Visible:** If you tick this box, the schedule becomes visible to the user enabling the user to make changes.

**Period:** By default, each scheduling module is set to an annual cycle. You can select other time periods with the buttons to the right of the field. The beginning and the end of a period are shown in the fields below. You can use the calendars next to the fields to select a date.

**Objects:** defines the object or group address for which the schedule is created.

**Enabled by:** The schedule can be triggered via another object. It will only be executed if the value of the enabling object is "1".

**Categories:** Here the object (schedule) can be assigned to a category. This allows for sorting and grouping in the web configuration interface.



The screenshot shows the "Random Functionality" configuration window. It includes the following fields and controls:

- Active:**  **Visible:**
- Enable by:** (with search, up/down, and delete icons)

It is possible to randomly vary a timer within a certain range. This function can be activated and also made visible for the HTML pages. In addition, this function can be deactivated via an object for the entire circuit diagram. In this way, a presence can be simulated since

the command is not executed at the same time each day. The following section shows you how to set up events for a schedule. Up to 30 events are possible per schedule.



Use the command buttons at the bottom to:

- Add a new entry
- Delete an entry
- Edit an entry
- Duplicate an entry

ACTIVE	VISIBLE	ASTRONOMICAL	TIME	VALUE	Mon	Tue	Wed	Thu	Fri	Sat	Sun	RANDOM +/-
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NO	00:00	22 °	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NO

**Active:** Activates/de-activates the event.

**Visible:** If you tick the box, the schedule becomes visible to the user.

**Astronomical:** If you activate the astronomical clock, a time difference before/after sunrise/sunset can be defined.

**Time:** Sets the time when the event is triggered.

**Value:** Value entry. The field varies depending on the DPT.

**Weekday:** Selects the weekdays on which the event will take place.

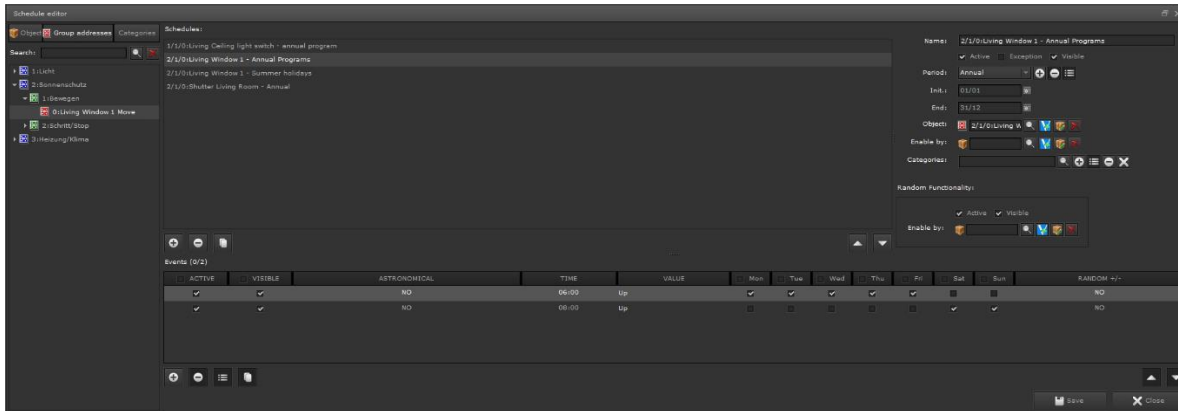
**Variance:** Enter the random variance in the time switch point. The switching value is changed every day with a value within this variance.

**Note:** Entries can be directly edited in window.

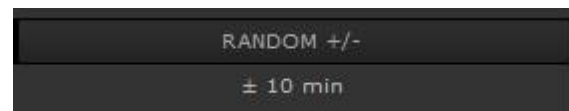
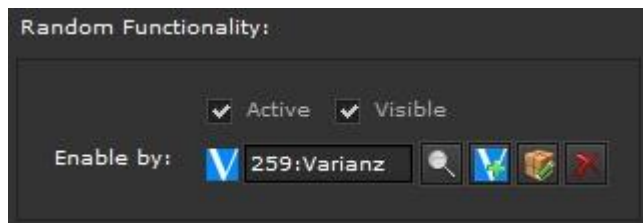


### 8.1.2.1 Example of an exception

In an annual program, they open the blind every day at 6:00. To do this, you define a normal annual program:

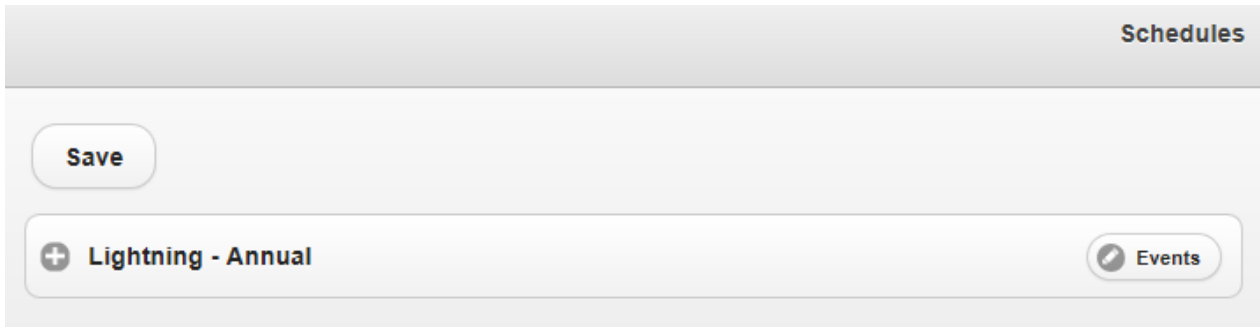


Now, if you would like to open the blind 1 hour later during the summer holidays, you can define an exception for this period:



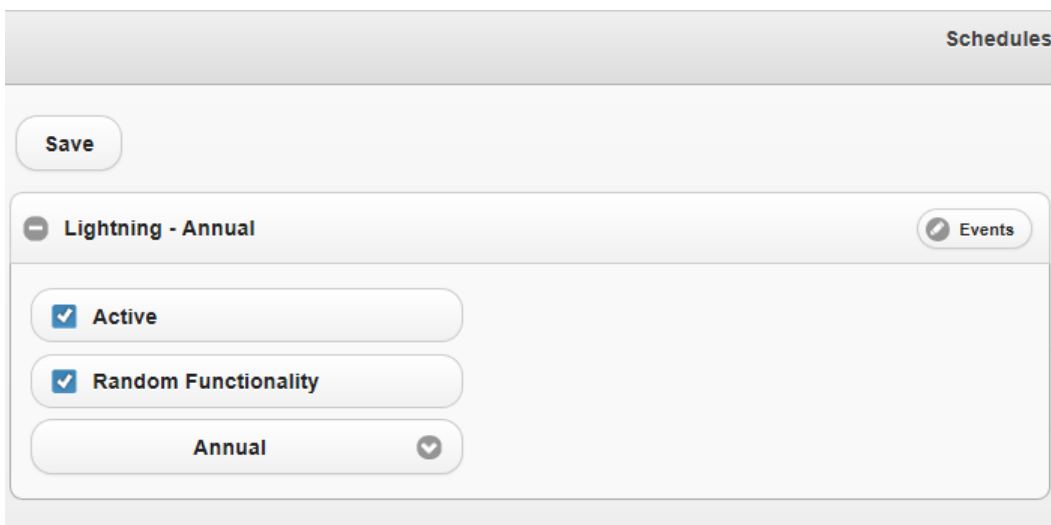
### 8.1.3 HTML View of schedules

Once the configuration in the Editor is complete, the user can make changes on the visualisation page. You will need to create an appropriate link (See chapter: [7.4.5.2 Special features: Page navigation without background image](#)), in the visualisation in order to display the current schedule on the visualisation page.



**Note:** The user can only make changes if you ticked the option "Visible" in the properties section.

Enter the name of the time schedule in the info bar. A disabled schedule is "crossed out". By selecting the line, a drop-down area appears to activate the schedule or assign it to a predefined period.



0/6/1:Licht vor Haustüre

Aktiv

Zufällige Varianz der Befehle

Jahresprogramme

In addition, the basic function of variance can also be activated here. To get to the view of the switching commands for this schedule, the button at the end of the line can be clicked. The switching point as well as the selected days (marked black and bold) are displayed.

Save

00:00 Mo Tu We Th Fr Sa Su 23 pulses

Active Astro Random

Mo Tu We Th Fr Sa Su

Time

00:00

Value

23

Delete

**Active:** Here, this switching command can be deactivated or activated.

**Astro:** Here you can define, whether it is a normal time or an offset to sunrise or sunset.

**Variance:** Here the variance function can be activated.

**Weekday:** Activation / deactivation of individual weekdays.

**After / Before:** The time is after or before Sunsetting / rising.

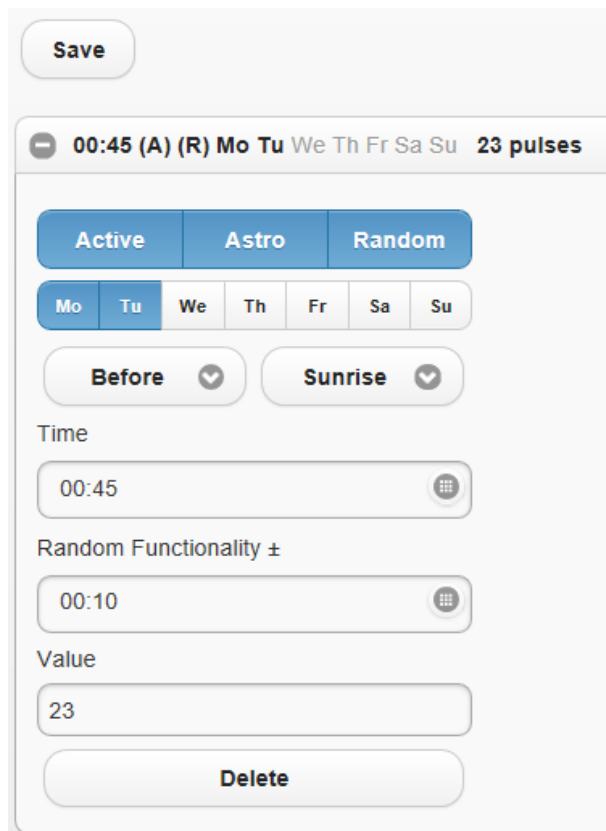
**Time:** Dropdown menu for setting the time at which an event should be executed.

**Random Variance + -:** Drop-down menu for setting the variance by which the set time should vary each day.

**Value:** Allows changing the value sent on the bus. An astro time is defined relative to sunrise or sunset. To recognize this setting in the overview page, a "(A)" appears in the line.

**Delete:** This entry can be deleted.

**Note:** An (A) in the overview line means that this time was defined relative to the sunset or sunrise. An (R) in the summary row means that this time is varied every day.




With the button the settings can be saved.



The +button allows the addition of new schedules.

**Note:** The setting options depend on the preselection of the DTP (data point types) in the editor.

### 8.1.4 HTML View of periods

Once the period settings in the Editor are complete, the user can modify the settings on the visualisation page. To access the web interface, you will need to create the appropriated link in the visualisation in order to display the current schedule on the visualisation page.



**Name:** Name of the period

**Start:** Start date of the period

**End:** End date of the period

Press the button to save your settings.

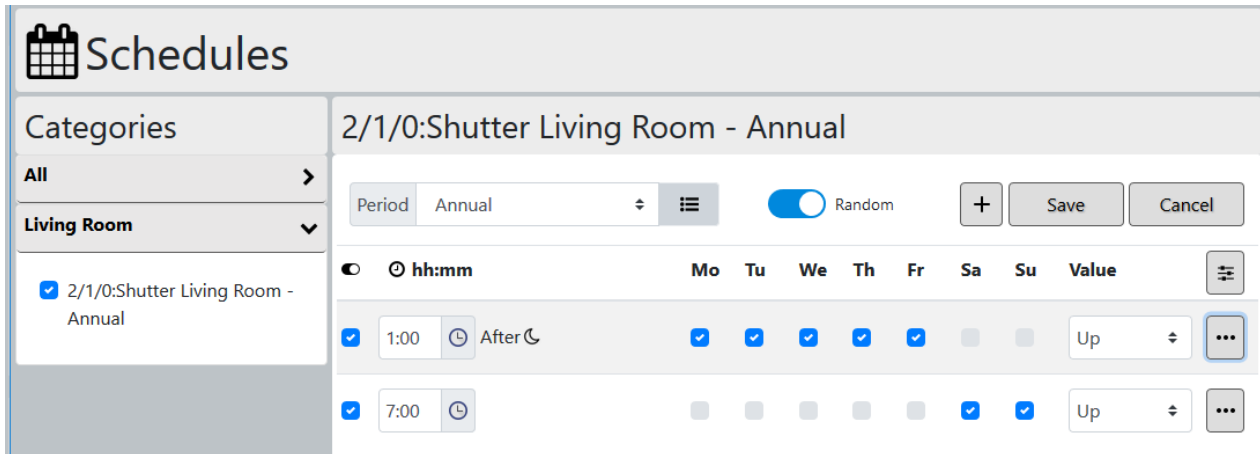


### 8.1.5 HTML View of schedules (Desktop)

Once the configuration in the Editor is complete, the user can make changes on the visualisation page. You



will need to create an appropriate link in the visualisation in order to display the current schedule on the visualisation page, see chapter: [7.4.5.2 Special features: Page navigation without background image](#).

This desktop view shows on the left side a tree with all available categories and the corresponding schedule programs. On the right side, the settings for this schedule is displayed.

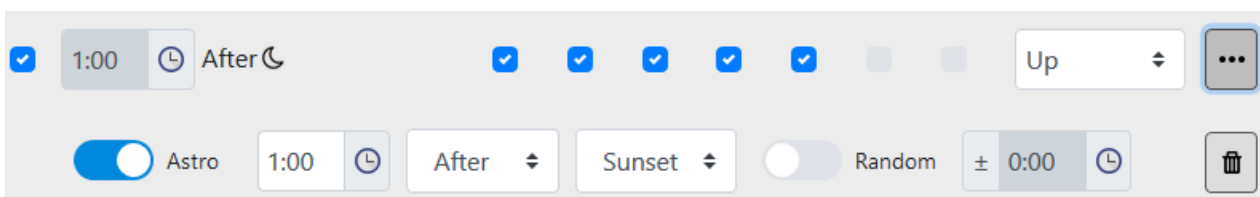


In this view the user can directly change:

- activation or deactivation of the entry
- time of executing
- the weekday can be set
- the value can be set

New schedule commands can be added with the button . The button  shows further setting options.

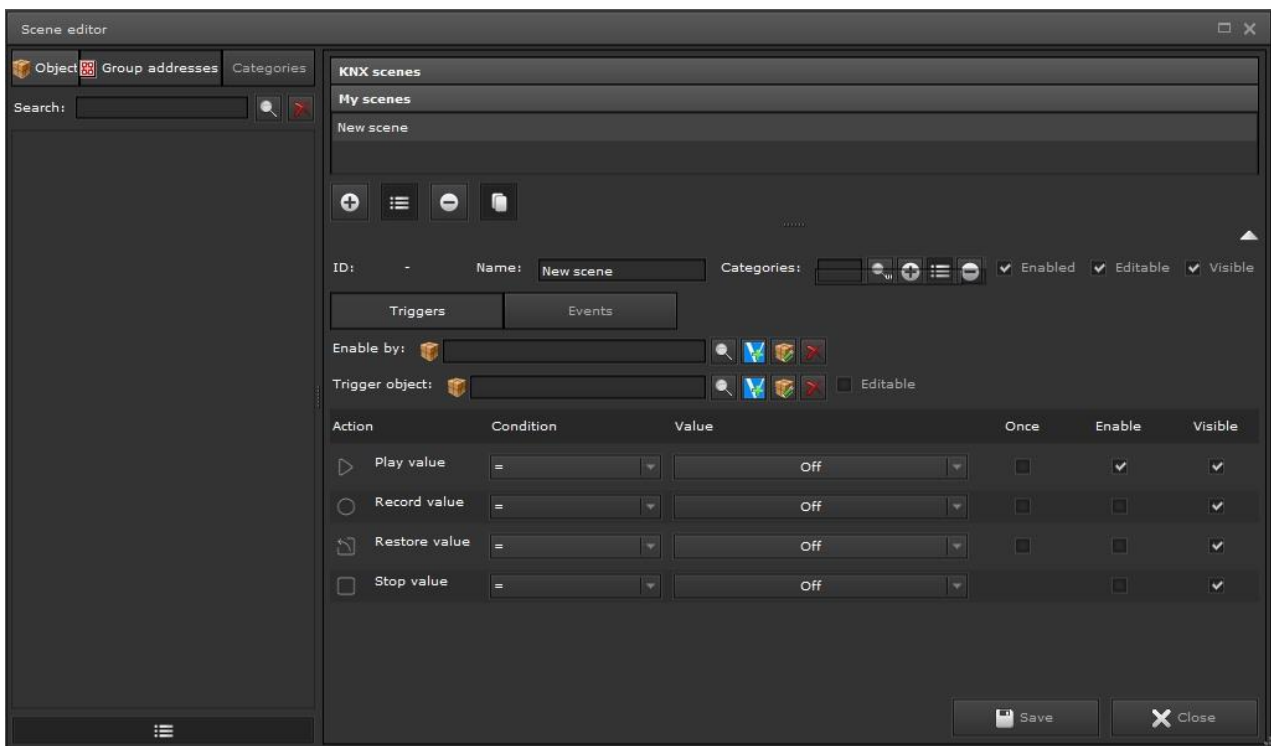
Here you can set both the astro-function and the variance around the time switch point



## 8.2 Scenes

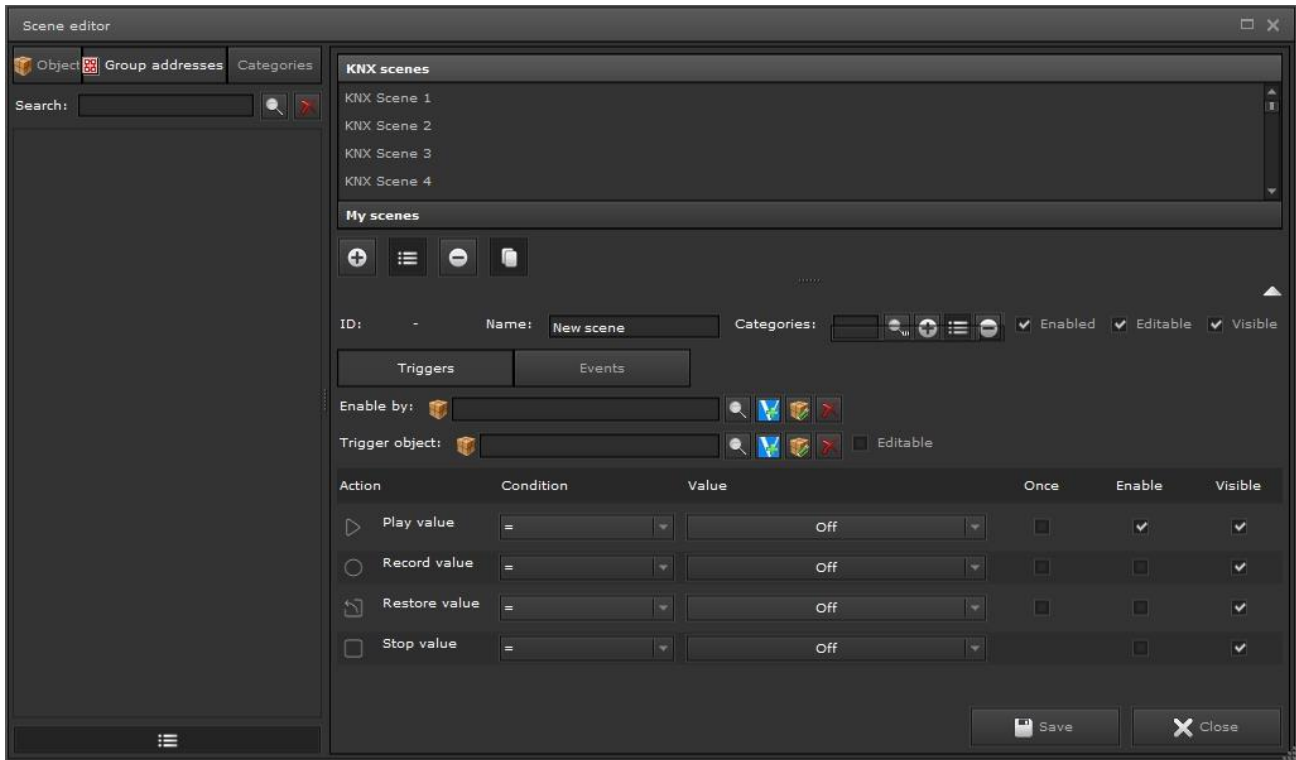
The Scenes Module in ComBridge HCC allows for the configuration of up to 5000 scenes or events. This number includes 64 KNX scenes. One scene consists of a list of events with communication objects that are launched by a trigger object. The scenes control menu can be opened from the main menu of the Editor by clicking on Modules /Scenes Control.

The configuration window for scenes contains on the left hand side the object list or the treeview of group addresses followed by pre-defined scenes with the name KNXScenes (scenes that can be invoked via the central scenes object) as well as user-defined scenes called MyScenes.



## 8.2.1 KNX scenes

For the use of KNX scenes there are fixed parameters defined by the KNX standard specifications.



Add scenes



Edit scenes



Remove scenes



Clone scenes

For activating KNX scenes, some parameters are defined, defined by the KNX standard.



**Name:** Name of the scene

**Category:** The scene can be assigned to a category.

**Enabled by:** Enables/disables a complete scene 

**Trigger object:** Name of the trigger object. Click on to select the trigger object of your choice from a list or via drag&drop from the selection tree on the left.

**Editable:** The scene may be edited in an HTML configuration.

**Visible:** The trigger condition is also displayed in the HTML configuration page and is available there.

### 8.2.1.1 Triggering a scene

The two buttons for triggering a scene offer the following options:



#### Section Trigger

Action	Condition	Value	Once	Enable	Visible
<input type="checkbox"/> Play value	=	On	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Record value	=	Off	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Restore value	=	Off	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Stop value	=	Off	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Play value:** Select the logical trigger condition and the number of trigger impulses required to invoke the scene.

**Record value:** Select the logical trigger condition and the number of trigger impulses required to record the scene.

**Restore value:** Select the logical trigger condition and the number of trigger impulses required to restore the scene. This function is not supported by KNX scenes.

**Stop value:** Select the logical trigger condition and the number of trigger impulses required to stop the scene. This function is not supported by KNX scenes.

**Once:** If you tick this box the linked action will only be performed once. The scene will only be re-started on receipt of a new value.

**Enable:** The trigger condition can be deactivated. By default, all conditions are enabled.

**Visible:** The trigger condition is also displayed in the HTML configuration page and is available there.

**Note:** It is also possible to freely assign the group address. That is, any known group address is entered directly in the field, regardless of the group addresses offered after an esf file import. The group address, with its effect, should be known from the ETS project. The corresponding data point type should be considered!



## Area event

In the table view, the objects or group addresses can be dragged and dropped. The values can be changed directly in this view.

DELAY	OBJECT	DISPLAY NAME	VALUE	ENABLED	EDITABLE	USED	AVAILABLE
0 s	263:Meeting		On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 s	264:Projector		On	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**Delay:** Defines the initial delay of this event.

**Object:** Here an object or a group address is defined via drag & drop or by keyboard input.

**Display name:** For presentation on an HTML configuration page, another description text can be entered in this field.

**Value:** This field defines the value. The input option depends on the type of DP, for example, colours can also be entered via a colour palette.

**Activate:** This can be used to deactivate or activate an event.

**Edit:** This setting determines whether the event can be edited in the HTML configuration.

**Used:** This setting indicates whether this event can be used in the HTML configuration.

**Available:** All events with this option are offered as possible events in the HTML configuration.

Es stehen am unteren Rand folgende Befehlstasten zur Verfügung:



Add  
event



Edit  
event



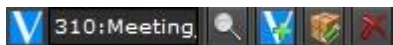
Remove  
event



Clone  
event

**Note:** If an event of a scene is to be executed, but not provided in the HTML configuration, the "Used" setting must be deactivated.

The events can be edited directly in the overview window. Clicking opens the following settings window:



**Search:** Opens a search window.

**New virtual object:** Create a new virtual object.

**Edit process point:** Editing the process point.

**Disconnect:** Disconnects the current process item.

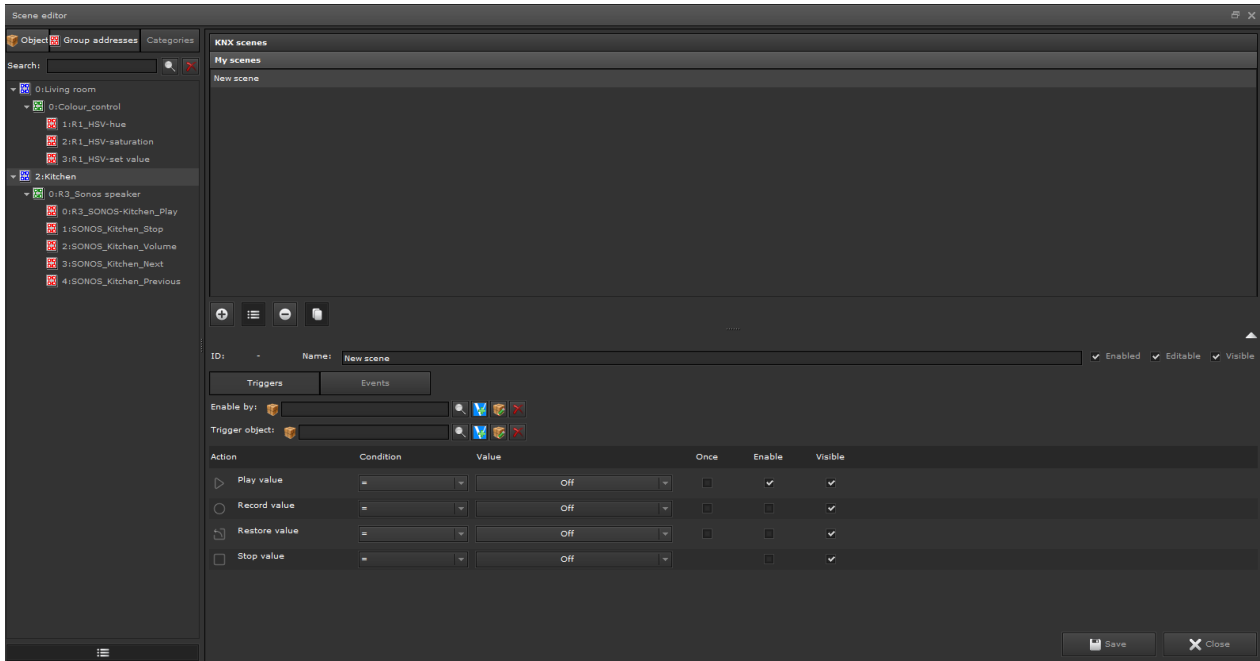


**Note:** If the scene editor is open and a scene recording has been started within the project at the same time, the changed values are adopted in the scene module after the recording has ended. If the editor is already open, changes in the device will not be displayed until the editor is restarted.

**Note:** 14-byte DPTs can not be used as the trigger object of a scene. If alphanumeric and numeric characters are used to start a scene, it will not be executed.

## 8.2.2 My scenes

This selection configures your own scenes with their own trip objects or group addresses within the ComBridge HCC. The following figure shows an example of a standard scene:



**Note:** It is also possible to freely assign the group address. Any known group address is entered directly in the field, regardless of the group addresses offered after an esf file import. The group address, with its effect, should be known from the ETS project. The corresponding data point type must also be considered.

### Triggering scene

The triggering of a scene is described in chapter: [8.2.1.1 Triggering a scene.](#)

### 8.2.3 HTML View of scenes

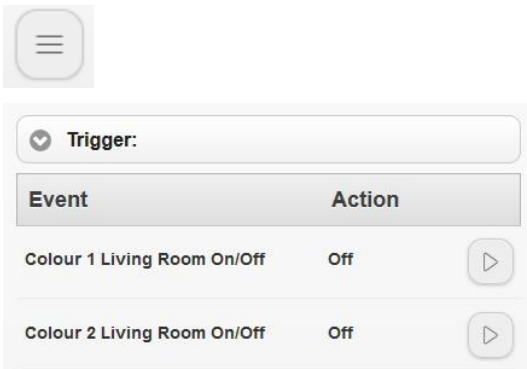
After completing the configuration settings, the user has the option to make settings and changes on the visualization page. For access, a linked link must be created in the visualization to display the current schedule on the visualization page. Depending on the configuration in the editor, actions for the HTML view are released.



Possible actions in the scene overview are:

- Play (Play)
- Record
- Stop
- Restore
- Event

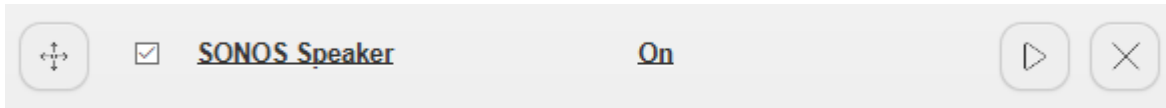
To change the scenes, press the "Event" button:



On the following page, individual commands can be executed directly or tested. To make changes, the edit mode can be selected via the upper "Edit" button. Basically, a "Save" button appears to save the changes permanently in the device.



In this mode, a "Plus" button appears in the header to add new events. Only events that were previously marked with the option "Available" in the editor are displayed here. The lower part now displays all events that have been marked with the option "used" in the editor. All events with the option "Edit" can also be changed in the HTML view.



The following changes are available:

- Position or sequence of events
- Activation or deactivation of an event
- Change the name
- Change the value
- Test or execute an event
- Delete the event

**Note:** The possible options for designing the HTML configuration are described in chapter: [8.2.2 My scenes](#).

Name:

Delay:  
 No

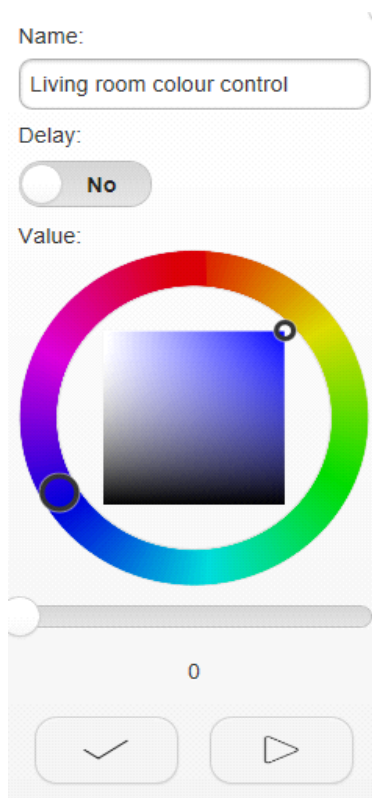
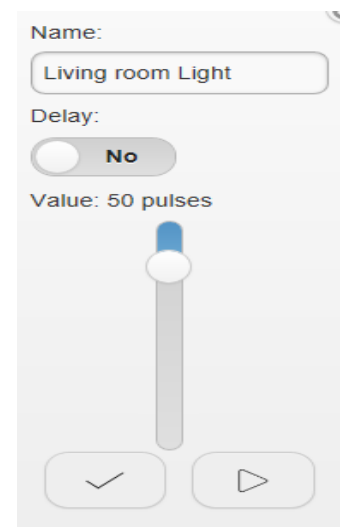
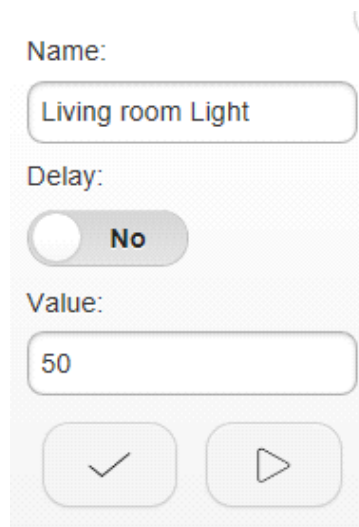
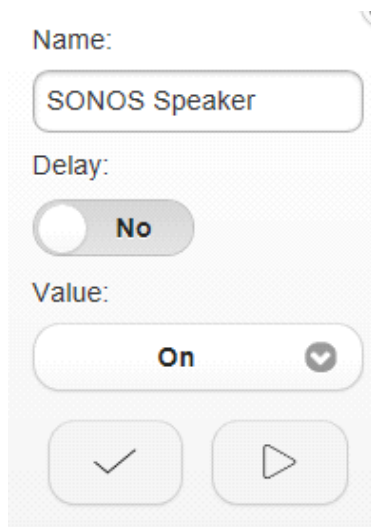
Value:

Clicking on the text or the value opens another popup to change these values.

In addition to the name and value, a delay may also be defined prior to the execution of the event. For this purpose, another event "delay" is displayed:

Event	Value
Living Room Light 1	On ⇅
Living Room Shutter	Down ⇅

Depending on the data point type and the selected display form, different windows are displayed:

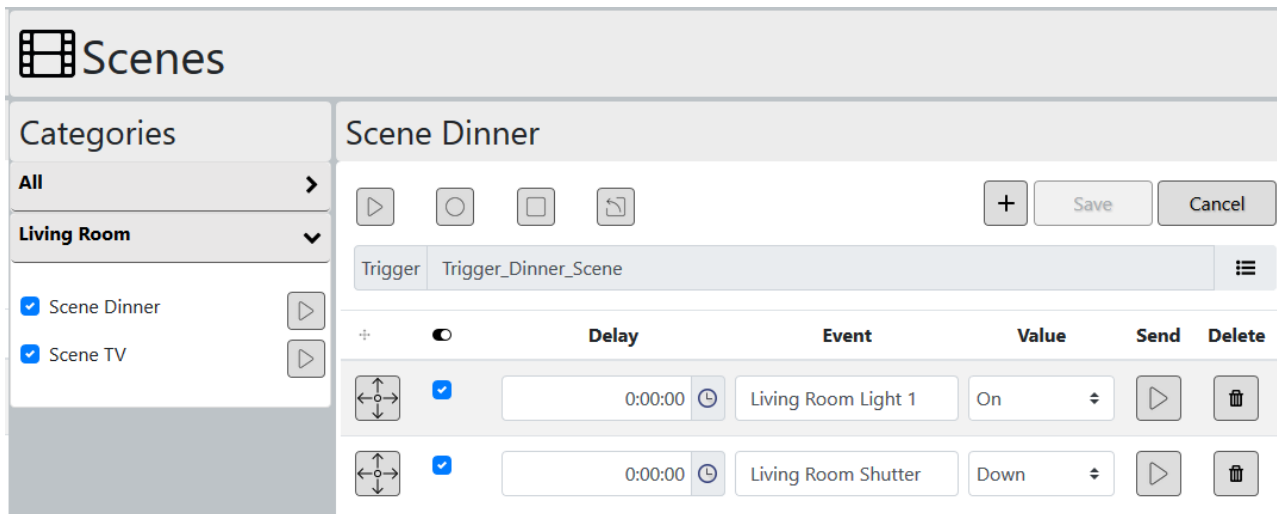


**Note** The type of representation can be defined in the overview of the data points, see chapter: [8.8 Overview of the data points](#).

## 8.2.4 HTML View of scenes (Desktop)

Once the configuration in the Editor is complete, the user can make changes on the visualisation page. You will need to create an appropriate link in the visualisation in order to display the current scene on the visualisation page, see chapter: [7.4.5.2 Special features: Page navigation without background image](#).

This desktop view shows on the left side a tree with all available categories and the corresponding scenes. On the right side, the settings for this scene is displayed.



	Delay	Event	Value	Send	Delete
<input checked="" type="checkbox"/>	0:00:00	Living Room Light 1	On		
<input checked="" type="checkbox"/>	0:00:00	Living Room Shutter	Down		

In the upper part of the view, the following functions can be executed, if enabled in the editor (see chapter: [6 Editor](#)).

	Scene is started
	Scene is recorded
	Scene is stopped
	Scene will be set to previous value

With the + key, further events from a list can be added to this scene. Any change can be saved with the Save button.





In addition, the trigger of a scene is displayed, and can also be changed accordingly.



**Note:** Saving a change is only possible if an editor is not open at the same time.

Trigger	Trigger_Dinner_Scene		
Play	= ▾	Off	☐ Once
Record	= ▾	Off	☐ Once
Restore	= ▾	Off	☐ Once
Stop	= ▾	Off	

In the following, all events are listed for this scene:

+	☐	Delay	Event	Value	Send	Delete
	<input checked="" type="checkbox"/>	0:00:00 	Living Room Light 1	On ▾		

The following parameter can be changed:

- Position or sequence of events
- Activation or deactivation of an event
- Change the name
- Change the value
- Test or execute an event
- Delete the event

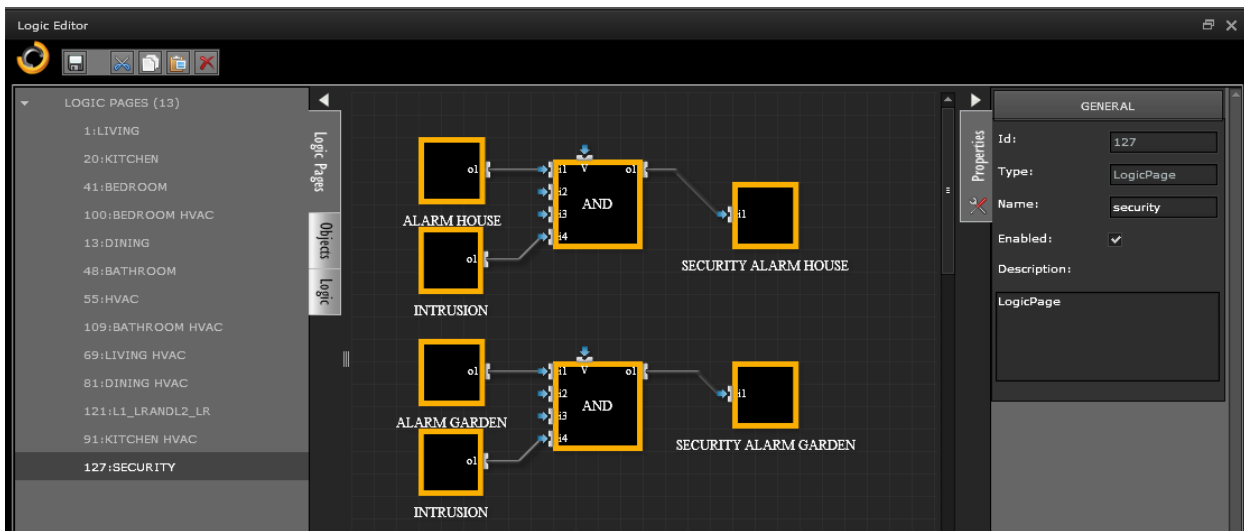
An event can also be tested with the button










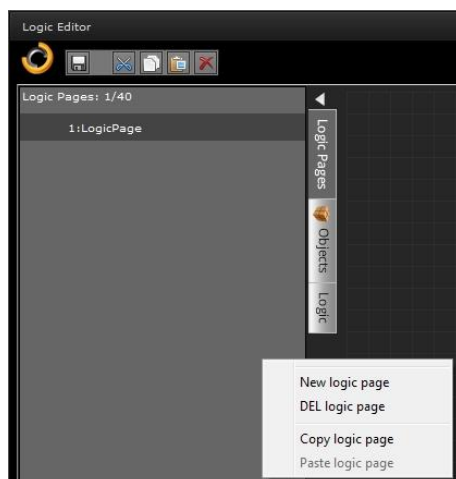
## 8.3 Logic module

In addition to standard gates such as "AND", "OR", "INVERT", the ComBridge HCC's powerful logic module also offers comparators, mathematical operators, converters and logic gates. The fully graphical workspace makes the configuration quick and easy. Start the logic module by clicking on modules/logic elements in the main menu. The following image shows the window of the logic editor.



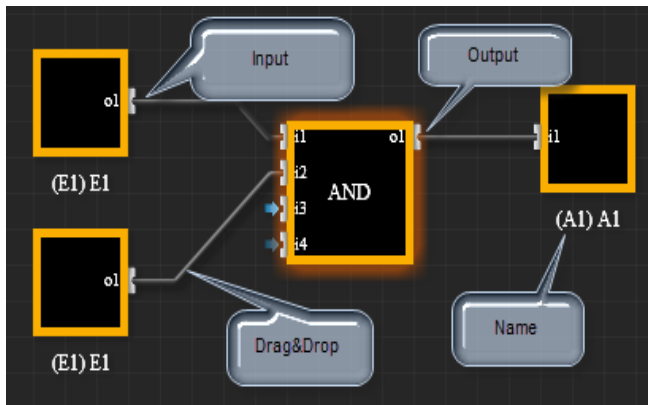
The tool bar offers the following functions:

-  Saves the logic plan in the Editor
-  Inserts a copy of the selected element
-  Cuts the selected element
-  Copies the selected element
-  Deletes the selected element



On the left-hand side logic plans can be organised in up to 40 different folders. Each one contains a group of functions which can consist of up to 25 logic elements. This means that altogether up to 1000 logic functions can be realised.

You can also copy entire logic pages. Click on the required logic page with the right mouse button and select Copy Logic Page from the context menu.



The central element of a logic function is the logic gate with inputs on the left-hand side and outputs on the right hand side. Inputs and outputs are configured with the respective communication elements.

If the connector of a logic element is selected with a pressed-down left mouse button, a line to another connector can be created by dragging the mouse along.

If the contact has been successful, the colour of the line changes from grey to green. The list of configuration parameters opens after selecting an item on the right side of the editor. Logic pages can also be completely copied. To do this, right-click the desired logic page and select Copy Logic Page in the context menu. This mouse click also makes it possible to cut, paste and delete logic diagrams.

**Note:** The basic settings are identical to all existing logic functions.

### 8.3.1 Event evaluation at the entrance of the gates

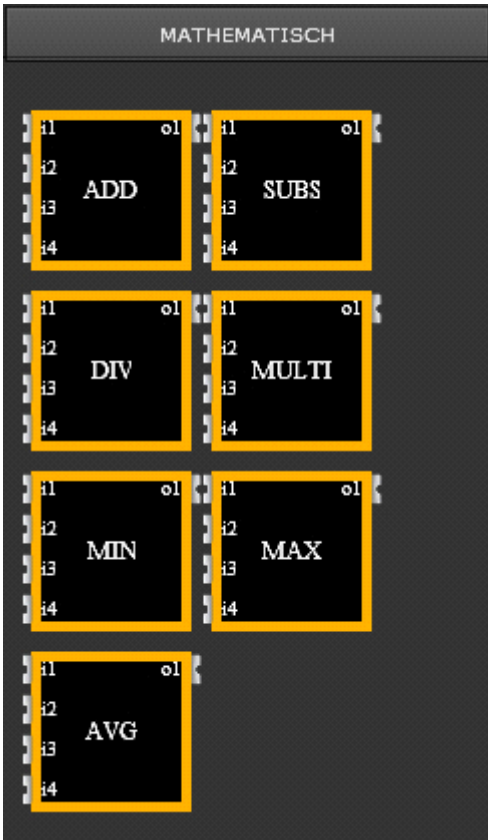
By default, all events on a gate input will result in the calculation of the gate. This is marked with the flag "Send", see picture:

INPUTS				
No.	Name	Invert	Disp	Link t
No. Inputs: 5				
1	i1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	o1
2	i2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	o1
3	i3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4	i4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5	v	<input type="checkbox"/>	<input type="checkbox"/>	

In some applications, an event at an input should not directly lead to the execution of the logic. In this case, the "Send" flag can be deactivated. A changed value will then be used for calculation at another input event and the result will be made available at the output.

### 8.3.1.1 Mathematical functions

These logic gates calculate a mathematical function depending on the input values. The inputs are linked to an operator and calculated. The result is sent to the bus.



**PLUS:**  $E1 + E2 + E3 + E4 = A1$

**MINUS:**  $E1 - E2 - E3 - E4 = A1$

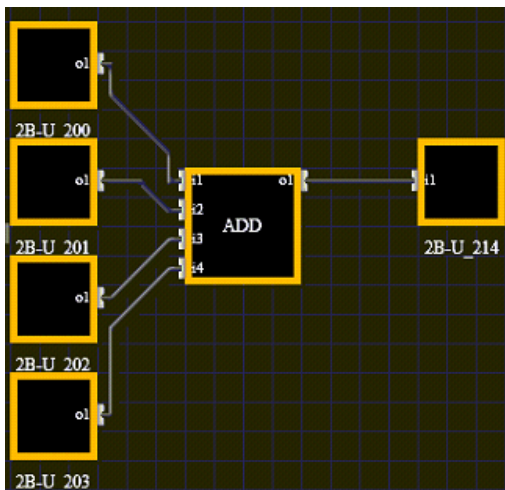
**MULTIPLIED:**  $E1 * E2 * E3 * E4 = A1$

**DIVIDED:**  $E1 / E2 / E3 / E4 = A1$

**MINIMUM**

**MAXIMUM**

**AVERAGE**



Example of an addition of 4 inputs

### 8.3.2 Enable and Disable logic gates

From version 2.0 onwards, all logic gates can be enabled or disabled either via an object or a group address (v-entry above). To do so, please connect the input to an object. If you choose input "1", the gate is executed. If the value at the input is "0", the gate is disabled and no signal is processed.



For this input other data types can also be linked.

In this case, the following rule applies:

Value equals 0 → block is disabled

Value not equal 0 or not connected → block is enabled

**Note:** When changing the activation input from 0 to 1 (activate), the flag "Send", see previous chapter, decides whether the logic should be executed directly. By default, the logic is not executed immediately upon activation.

### 8.3.3 Data point types and invert option

The inputs and outputs of the logic gates can be connected to all types of data points, except date/time. Each logic gate is working with double precision internally as well as with positive and negative values.

The processing order is as follows:

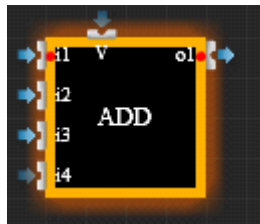
- Convert the data point type into double precision
- Possible inverting procedure in the input will be executed
- Calculating of logic gate is executed
- Possible inverting procedure in the output will be executed
- Transfer of the internal value to the data point type of the output
- Control the value range and limit if necessary

The inputs as well as the outputs of logic gates can be inverted. In the property window, tick the box for the respective input or output to activate the inverting option:

INPUTS				
No. Inputs:		5		
No.	Name	Invert	Dispa	Link t
1	i1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2	i2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3	i3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4	i4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5	v	<input type="checkbox"/>	<input type="checkbox"/>	

OUTPUTS			
No. Outputs:		1	
No.	Name	Inverte	Link to
1	o1	<input checked="" type="checkbox"/>	



The following rules must be considered:

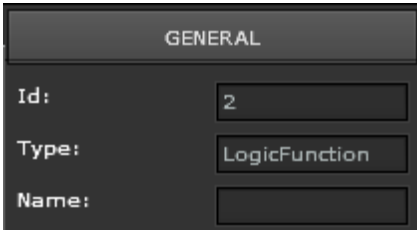
A binary value will be managed as:  $0 \rightarrow 1$ ;  $1 \rightarrow 0$

An analogue value will be managed as:  $5 \rightarrow -5$ ;  $-10 \rightarrow 10$

The linked data point type is now being checked. In case the output of a logic block results in the value -5 and the data point type of the output is “unsigned” the value is limited to 0. In this case the limited value 0 is sent instead of the calculated value -5.

### 8.3.4 Logic inputs and outputs

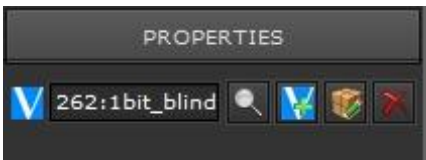
Click on the "Logic" tab to open the logic elements menu. Selection of the "General" settings of the selected element.



The **ID** and **type** are assigned automatically.

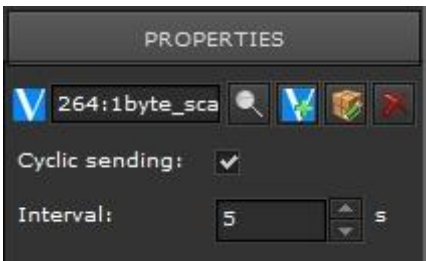
**Name:** A name can be assigned for easier identification. The name is displayed underneath the element.

The section for defining the "Properties" of the selected element.



Communication objects can be selected for inputs and outputs. If a communication object is configured for the first time, it is automatically assigned the name of the logic element.

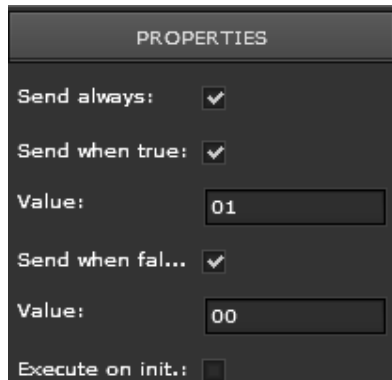
If the communication object is changed, the name must be adjusted manually. Logic inputs have one input per element. Select the input to configure the corresponding properties. Logic outputs have one output per element. Select the output to configure the corresponding properties.



**Note:** With the outputs it is possible from Version 2.0 to define a cyclically sending output. This property must be activated, and the interval must be defined in seconds.

### 8.3.5 Logic gates

It can be chosen from three groups of logic gates: *comparators*, *mathematical functions* and *binary functions*. All logic gates have 4 inputs and one output. To configure, the corresponding logic gate must be selected.



**Send always:** If you tick this box, the trigger conditions are analysed every time a telegram is received, and the result is sent to the bus.

**Send when... (True):** The value is only sent if the condition is true.

**Value:** Value that is to be sent

**Send when... (False):** The value is only sent if the condition is false.

**Value:** Value that is to be sent

**Execute on init:** If you tick this box, the trigger conditions are analysed after every download, reset or re-start of the device and the result is sent to the bus.

**Note:** The option "at start ... (execute)" requires that the parameter "Read object values from the bus during a restart" has been activated. If inputs have no value, this is an undefined state. If this is the case, there is no evaluation of the triggering condition. Analogue values can also be sent. This can be very interesting if a threshold or temperature value should be set after a logical check.

#### 8.3.5.1 Validity of the inputs

Inputs can only be processed if they contain a valid value. If inputs do not have a valid value due to a missing query or for other reasons, the dominant case is executed at the gate.

**Example AND gate:** 1 input are valid, all others are invalid:

If the valid input is 0, it sets output 0 because 0 is dominant at an AND gate.

If the valid input is 1, the output remains 0 if all other outputs do not have a valid 1 as well.

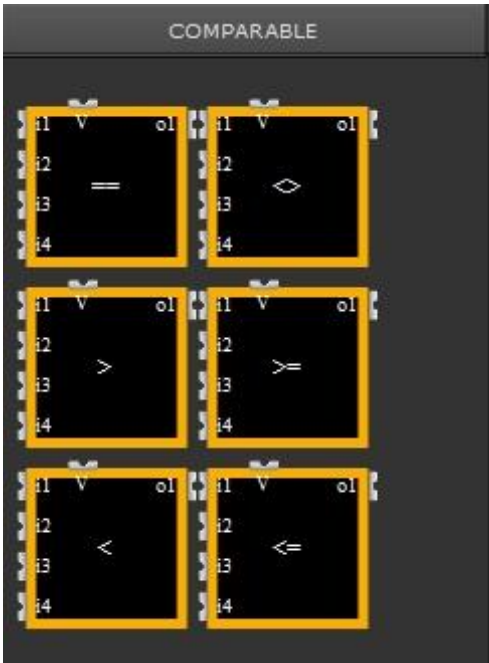
**Example OR gate:** 1 input is valid; all others are invalid:

If the valid input is 1, it sets output 1 because 1 is dominant at an AND gate

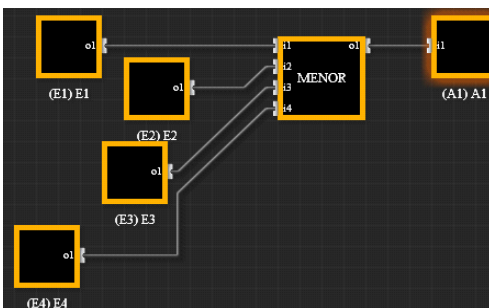
If the valid input is 0, the output remains 1 as long as all other outputs are not also a valid 0.

### 8.3.6 Comparator

These gates compare the inputs with one another. The following compare functions can be selected in the property's menu:



<b>EQUAL</b>	$E1 = E2 = E3 = E4 = A1$
<b>MENOR</b>	$E1 < E2 < E3 < E4 = A1$
<b>MAYOR</b>	$E1 > E2 > E3 > E4 = A1$
<b>DISTINCT</b>	$E1 \neq E2 \neq E3 \neq E4 = A1$
<b>&lt; =</b>	$E1 \leq E2 \leq E3 \leq E4 = A1$
<b>&gt; =</b>	$E1 \geq E2 \geq E3 \geq E4 = A1$

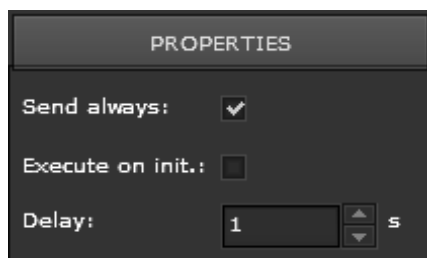


Example of a comparator operation with 4 inputs:



### 8.3.7 Advanced functions

This tab contains time and delay functions.

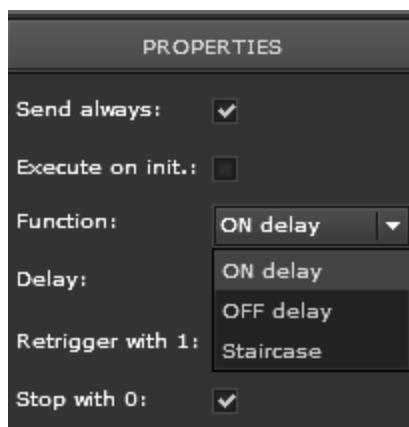


**Delay functions:** The input [in] is sent to the output [out] after a delay. The delay time is defined in seconds

**Note:** The delay time can be changed from the outside via the [set] input. Use a communication object or a group address to set a value that overwrites the delay time. This value is saved permanently so that the change is also visible and active in the Editor after a restart. It is possible to link all data types to the [set] input. The following rules have to be taken into account:

- *Values < 0:* these values are being ignored
- *Values > 4294944:* these values are limited to 4294944

**Note:** Floating point values are always rounded down. Sample: 24.8 → 24



ON/OFF/staircase function: After a delay time the input [in] presents itself at the output [out] in different ways. The delay time is defined in seconds. The following functions can be selected:

- ON delay
- OFF delay
- Staircase

The behaviour can also be defined in more detail:

**Function: ON delay:**

A "1" event at the input is sent to the output after a delay.

***Option re-trigger with 1***

- enabled: if another "1" is received at the input [in], the delay time is restarted.
- disabled: if another "1" is received at the input [in], the delay time is not restarted and the "1" event is sent to the output after the initial delay time has expired.

***Option stop with 0***

- enabled: if a "0" is received, the delay time can be stopped immediately and the event is not sent to the output.
- disabled: if a "0" is received, a "1" event is still sent to the output after the delay time.

**Function: OFF delay:**

A "0" event at the input is sent to the output after a delay.

***Option re-trigger with 0***

- enabled: if another "0" is received at the input [in], the delay time is restarted.
- disabled: if another "0" is received at the input [in], the delay time is not restarted and the "0" event is sent to the output after the initial delay time has expired.

***Option stop with 1***

- enabled: if a "1" is received, the delay time can be stopped immediately and the event is not sent to the output.
- disabled: if a "1" is received, a "1" event is still sent to the output after the delay time.

## **Function: staircase**

A "1" event at the input is immediately sent to the output and after a delay time reset to "0".

### ***Option re-trigger with 1***

- enabled: if another "1" is received at the input [in], the delay time is restarted and the output therefore reset later.
- disabled: if another "1" is received at the input [in], the delay time is not restarted and the "1" event is sent to the output after the initial delay time has expired. Only afterwards can the function be activated again

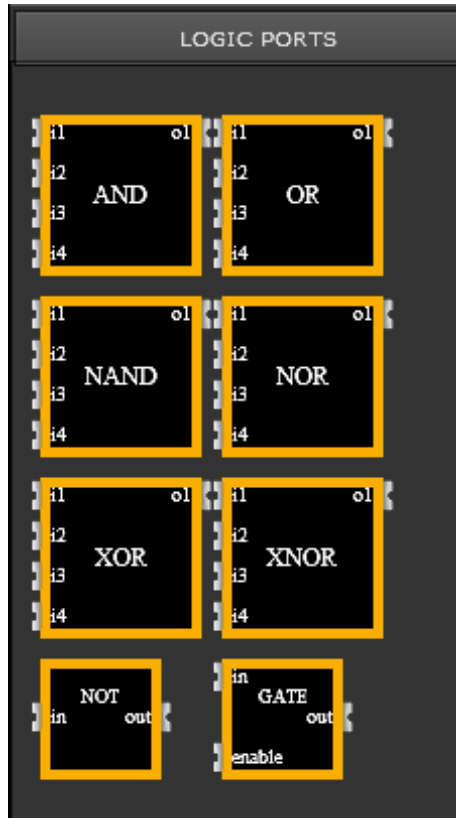
### ***Option stop with 0***

- enabled: if a "0" is received, the delay time can be stopped immediately and the "0" event is immediately sent to the output.
- disabled: if a "0" is received, a "0" event is only sent to the output after the delay time.

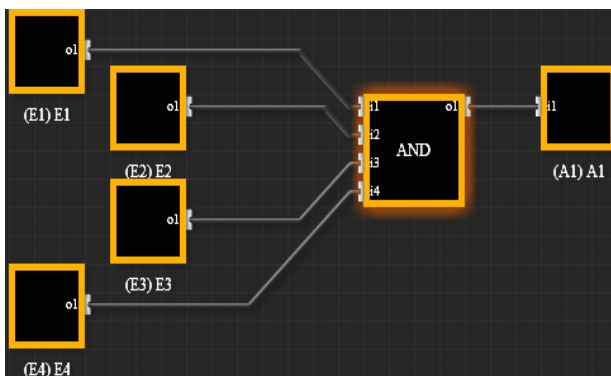
**Note:** The delay time can be changed from the outside via the [set] input. Use a communication object or a group address to set a value that overwrites the delay time. This value is saved permanently so that the change is also visible and active in the Editor after a restart.

### 8.3.8 Logic ports

Use these ports to create logic connections with the standard gates AND, NAND, OR, NOR, XOR, XNOR, NOT and GATE. Up to four inputs can be connected to a logic port.



- AND:**  $E1 \wedge E2 \wedge E3 \wedge E4 = A1$
- OR:**  $E1 \vee E2 \vee E3 \vee E4 = A1$
- NAND:**  $E1 \wedge E2 \wedge E3 \wedge E4 = A1$
- NOR:**  $E1 \vee E2 \vee E3 \vee E4 = A1$
- XOR:**  $E1 \wedge E2 \wedge E3 \wedge E4 = A1$
- XNOR:**  $E1 \vee E2 \vee E3 \vee E4 = A1$

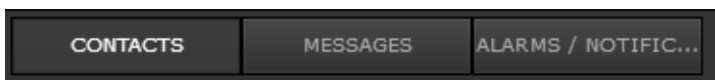
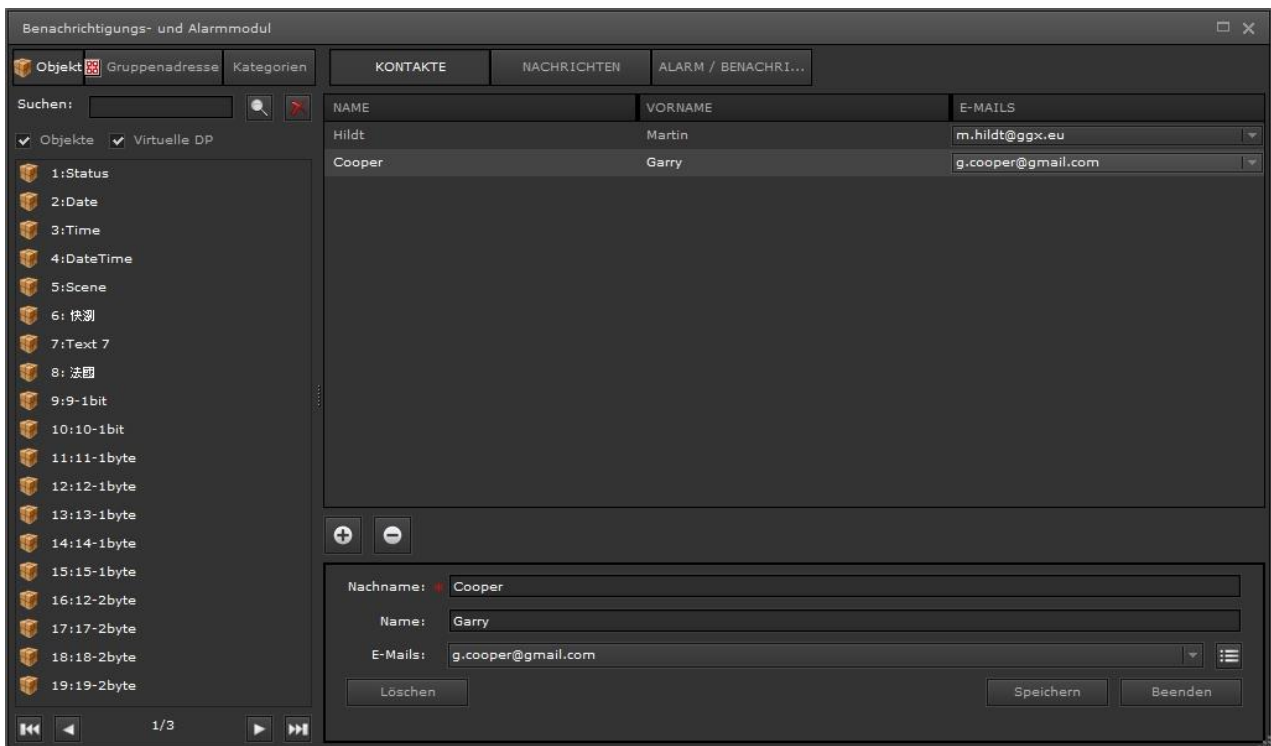


Example of an AND logic gate with 4 inputs

**Note:** In all logic modules, the order of the calculation is the same. The results from the calculations of I1 and I2 are used for the calculation of I3. This is then used as the basis for the calculation of the final result with I4. Please remember this order to avoid errors with calculations using DIV, SUB, MAYOR, MENOR and AVERAGE.

## 8.4 Notification and alarm module

The ComBridge HCC's alarm module offers 250 different alarms, the issuing of 250 messages and the creation of 20 contacts with the possibility of assigning 2 e-mails per contact. An alarm is linked to a communication object that is launched by a configured value. The module registers all current states of an alarm system and displays them in detail. Alarms can both be displayed in a window on the visualisation page or they can be sent by e-mail to a pre-determined address. The alarm module can be opened from the main menu of the editor by clicking on Modules / Alarm Control. Three settings are required to configure the alarm module.



**Contacts:** A list of contacts that are to be notified in case of an alarm

**Messages:** Definition of the message text and assignment of e-mail addresses

**Alarm/notification:** List of conditions that will trigger an alarm

## 8.4.1 Contacts

CONTACTS			MESSAGES	ALARMS / NOTIFICA...
LAST NAME	FIRST NAME	E-MAILS		
Hildt	Martin	m.hildt@ggx.eu		
Cooper	Garry	g.cooper@gmail.com		

+
-

Last name:

Name:

Emails:  ⋮

Clear
Save
Cancel

The contact list can contain a maximum of 20 addresses with 2 notification texts each. Click on ADD to open a window where you can enter the name (compulsory entry) and first name for the contact address. Please save the entry before you enter the e-mail address.

Last name:

Name:

Emails:  ⋮

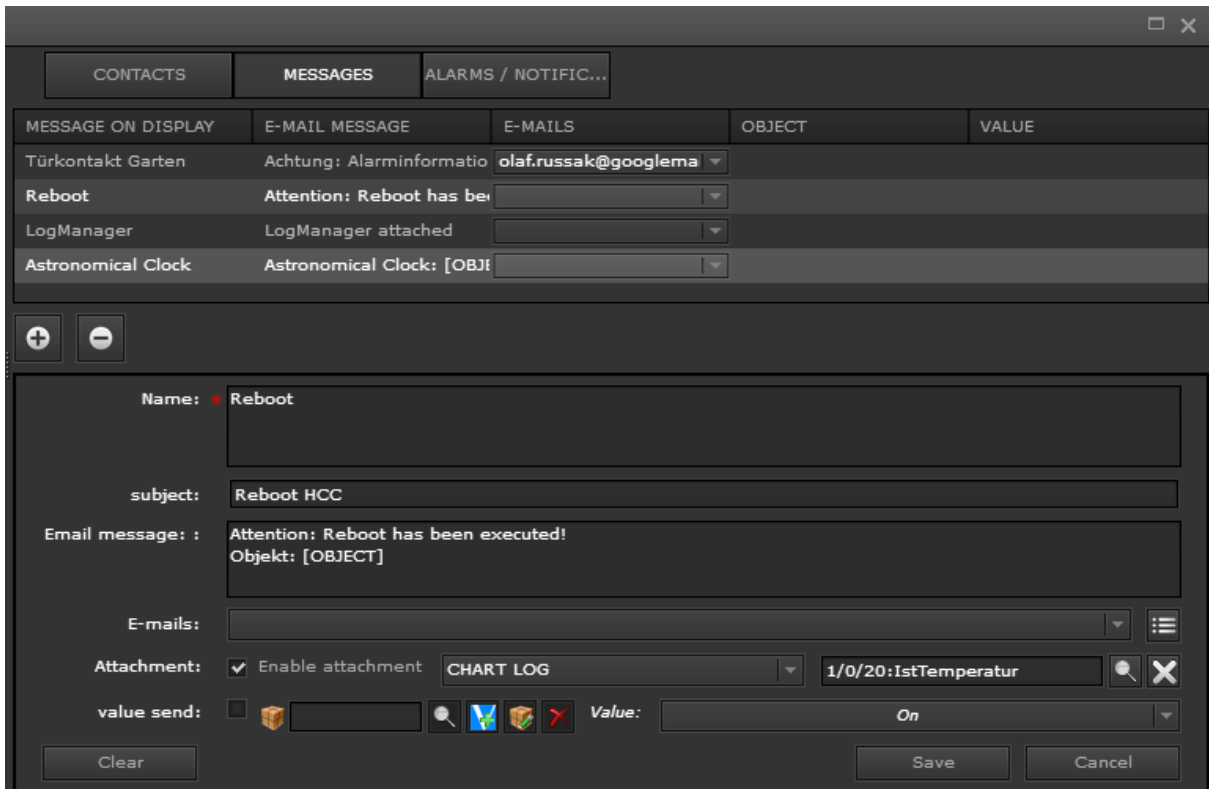
Clear
Save
Cancel

Now click on CHANGE to open a window where you can enter the e-mail address. These contact details will be used for the alarm management and alarm notification.

CONTACTS			MESSAGES	ALARMS / NOTIFICA...
LAST NAME	FIRST NAME	E-MAILS		
Hildt	Martin	m.hildt@ggx.eu		
Cooper	Garry	g.cooper@gmail.com		

## 8.4.2 Messages

Use this section to configure the alarm notifications required for the project. The parameters are displayed in lines as shown in the example below:



The screenshot shows a configuration window with three tabs: CONTACTS, MESSAGES, and ALARMS / NOTIFIC... The MESSAGES tab is active, displaying a table of message configurations:

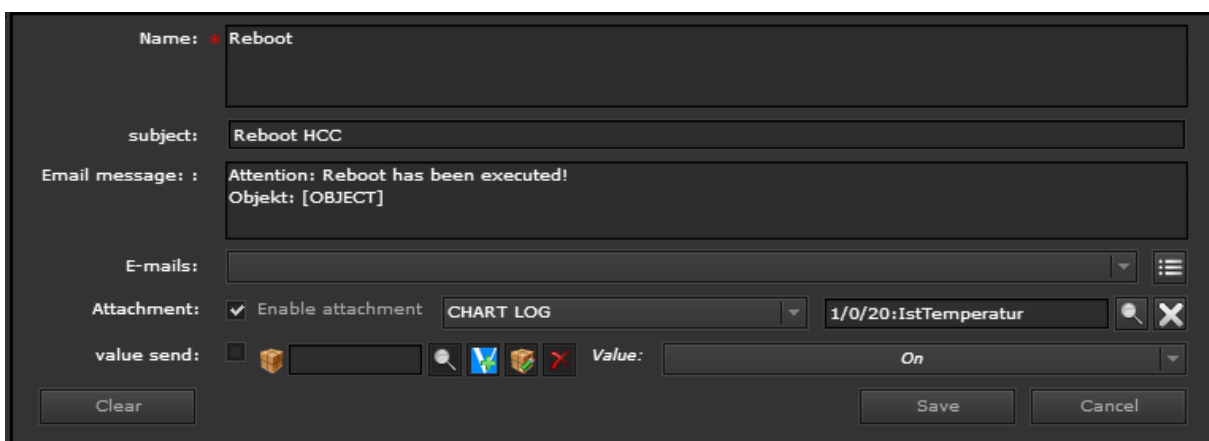
MESSAGE ON DISPLAY	E-MAIL MESSAGE	E-MAILS	OBJECT	VALUE
Türkontakt Garten	Achtung: Alarminformatio	olaf.russak@googlema		
Reboot	Attention: Reboot has bei			
LogManager	LogManager attached			
Astronomical Clock	Astronomical Clock: [OBJI			

Below the table is a detailed configuration form for the 'Reboot' message:

- Name:** Reboot
- subject:** Reboot HCC
- Email message:** Attention: Reboot has been executed!  
Objekt: [OBJECT]
- E-mails:** (empty)
- Attachment:**  Enable attachment | CHART LOG | 1/0/20:IstTemperatur
- value send:**  | Value: On

Buttons: Clear, Save, Cancel

The created parameters are displayed as lines, as the following example shows:





This is a detailed view of the configuration form for the 'Reboot' message, identical to the one shown in the previous screenshot:

- Name:** Reboot
- subject:** Reboot HCC
- Email message:** Attention: Reboot has been executed!  
Objekt: [OBJECT]
- E-mails:** (empty)
- Attachment:**  Enable attachment | CHART LOG | 1/0/20:IstTemperatur
- value send:**  | Value: On

Buttons: Clear, Save, Cancel



Click on the Add  button to open a window where you can enter a new message. Use the edit and delete buttons  to edit or delete an existing alarm.

**Name:** Name of the alarm

**Subject:** Subject line of the message

**Message:** The message text that is sent with the e-mail

**Note:** The notification window can also contain place holders such as object name, object value, condition and threshold which can be filled with the real value when the alarm is triggered.

**Email:** E-mail recipient

**Attachment:** When activated one of the following attachments can be sent:

- Alarm recording
- Data recording
- Chart recording

The data is sent in form of an xml file that can be loaded directly with a spreadsheet program.

**Value Send:** Sends a value (on alarm) to the linked communication object

**Value:** The value that is sent to the bus

**Note:** Once you have completed all the entries, please press Save. If you press Delete, all entries are deleted. Cancel closes the window without saving the entries.



### 8.4.3 Alarm/Notification

Use the alarm window to configure the alarm conditions and link the alarm to a previously configured message:

CONTACTS	MESSAGES	ALARMS / NOTIFICA...			
Filter					
NAME	OBJECT	CONDITION	THRESHOLD	MESSAGE	CATEGORY
Door contact	1/3/0:Living Room Light	=	0 %	Message Door contact	ALL
Alarm	259:Alarm	=	On	1111	ALL

Name:

Category: 
When the alarm:

Threshold:  =

Status Alarm:

Ack:

Status Ack:

Message: 
 Hide Notification window

Sound:  Enable sound

Name:

Category: 
When the alarm:

Threshold:  =

Status Alarm:

Ack:

Status Ack:

Message: 
 Hide Notification window

Sound:  Enable sound

**Name:** Name of the alarm or notification

**Category:** Alarm category. Assigning an alarm to a category makes the administration of the different alarms easier. Categories can be created or deleted via the +/- buttons.

**Alarm:** If you select "Always", an alarm is triggered every time the threshold value has been reached. If you select "only first time", the alarm is only sent once.

**Threshold:** Defines the object, the comparator and the threshold value

**Alarm status:** Here an object can be defined to send the alarm state.

**Acknowledgment:** This can be used to acknowledge an alarm via an external object or group address.

**Status Acknowledgment:** Here an object can be defined to send the acknowledgment status. With a group address, e.g. an external buzzer is triggered to indicate an unacknowledged alarm.

**Message:** Message text

**Hide message:** Stops the notification from causing an alarm with entry in the alarm list. This means that e-mail messages can be sent without creating a potentially disturbing alarm.

**Sound:** Defines whether there should be an acoustic acknowledgement. By default, the existing sound file bell.mp3 is played. The number that follows defines how often the sound should be repeated. "0" means infinite repetition. The sound is played on acknowledgement.

**Note:** Please remember that the threshold communication object only supports the following DTP:

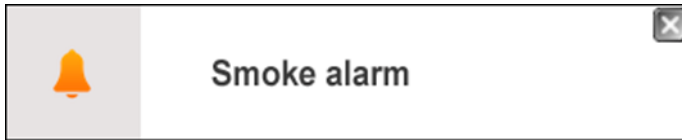
<b>DPT_1_0XX:</b>	// 1-bit Boolean 1 o 0	
<b>DPT_5_001:</b>	// 8-Bit Unsigned Value	// DPT_Scaling
<b>DPT_5_010:</b>	// 8-Bit Unsigned Value	// DPT_Value_1_Ucount
<b>DPT_7_001:</b>	// 2-Octet Unsigned Value	// DPT_Value_2_Ucount
<b>DPT_8_001:</b>	// 2-Octet Signed Value	// DPT_Value_2_Count
<b>DPT_9_0XX:</b>	// 2-Octet Float Value	
<b>DPT_12_001:</b>	// 4 -Octet Unsigned Value	// DPT_Value_4_Ucount
<b>DPT_13_001:</b>	// 4-Octet Signed Value	// DPT_Value_4_Count
<b>DPT_14_0XX:</b>	// 4-Octet Float Value	

#### 8.4.4 SMTP server configuration

All e-mails defined in the alarm module can only be sent if a valid SMTP service has been previously configured. To do this, configure the e-mail service on the config page, see chapter: [Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.](#)

## 8.4.5 Web user interface

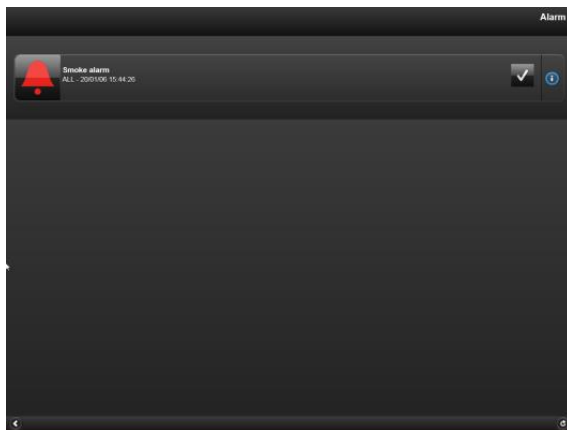
A web user interface administers the alarms. This greatly simplifies the administration even of complex alarm settings.



A link in the visualisation or a pop-up window (notification window) on the open visualisation page both enable access after an alarm has been triggered

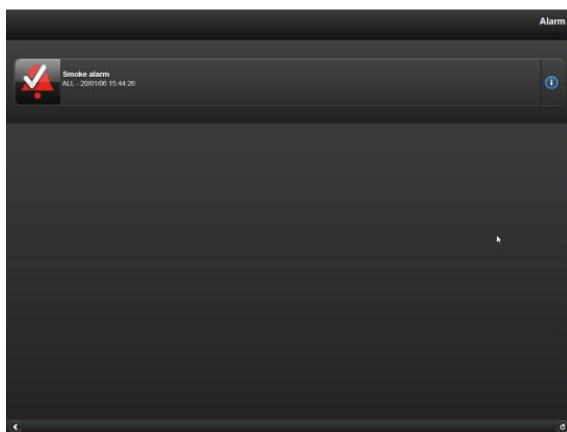
**Note:** If the browser supports notification, the alarm is also displayed when the browser window is minimised. Whether notification is to be displayed for this website is queried when the alarm first arrives. However, it can also be configured later. As an example, see the settings for Chrome:

<https://support.google.com/chrome/answer/3220216?hl=de>

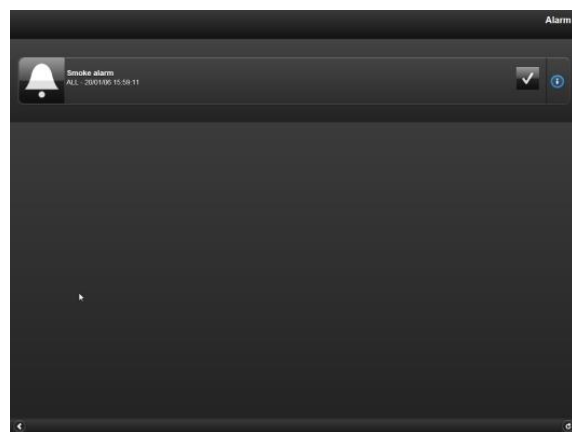


Clicking on the cross at the top right closes the pop-up window. Clicking in the pop-up window calls up the alarm page.


The alarm confirmation is displayed symbolically on the left. The alarm is still active.

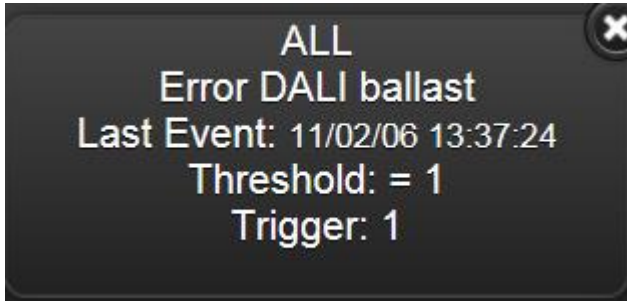


If the alarm is no longer active, but has not yet been confirmed, this is indicated by a white icon.



If the alarm has been confirmed and is no longer active, it will be deleted from the alarm page.

 The info button on the right of the alarm line displays more detailed alarm information. The following information is displayed:



**Category:** The category assigned to the alarm

**Status:** The current status of the alarm

**Ack:** Shows whether the alarm has already been acknowledged or whether the acknowledgement is still outstanding.

**Date/time:** Date/time when the alarm was triggered

**Name/threshold value:** The name of the alarm and the configured threshold value.

**Trigger/current:** The configured value to trigger the alarm and the current value.

The status notifications for each alarm are as follows:



Alarm is active and awaits acknowledgement



Alarm is active and has been acknowledged



The alarm is no longer active and has been acknowledged. Next time the alarm page is loaded, the acknowledged status will no longer be shown.



The alarm is no longer active and waiting for confirmation. If the pop-up window does not open in the event of an alarm, a message is displayed to the user.

## 8.4.6 Alarm history

All registered alarms are recorded in a log file which can be shown on the web-interface.

🔍 🔄 📄

Name

**Enable date filter**

from

18/01/2016

-

00:00

to

18/01/2016

-

23:59

date	time	action	Alarm	trigger
19/04/2018	08:53:36	NORMAL	Messe 2016 - Alarm	0
19/04/2018	08:53:26	ACK	Messe 2016 - Alarm	1
19/04/2018	08:53:01	ALARM	Messe 2016 - Alarm	1
19/04/2018	08:52:38	ACK	Messe 2016 - Alarm	0
19/04/2018	08:51:58	NORMAL	Messe 2016 - Alarm	0
19/04/2018	08:51:48	ALARM	Messe 2016 - Alarm	1

**Date / Time:** Date / time of the alarm event

**Action:** The change of alarm states:

**NORMAL:** The status is back to normal

**ALARM:** The alarm is triggered

**ACK:** The alarm was confirmed

**Alarm:** The name assigned to the alarm

**Trigger:** The value now of change to another state

In addition, there is a filter option. You can filter according to alarm name, date and time. Three icons are shown for the filter:



Search for a search term.



Page is updated.



The selected data can be exported as xml file. The file can be opened directly with a spreadsheet program.

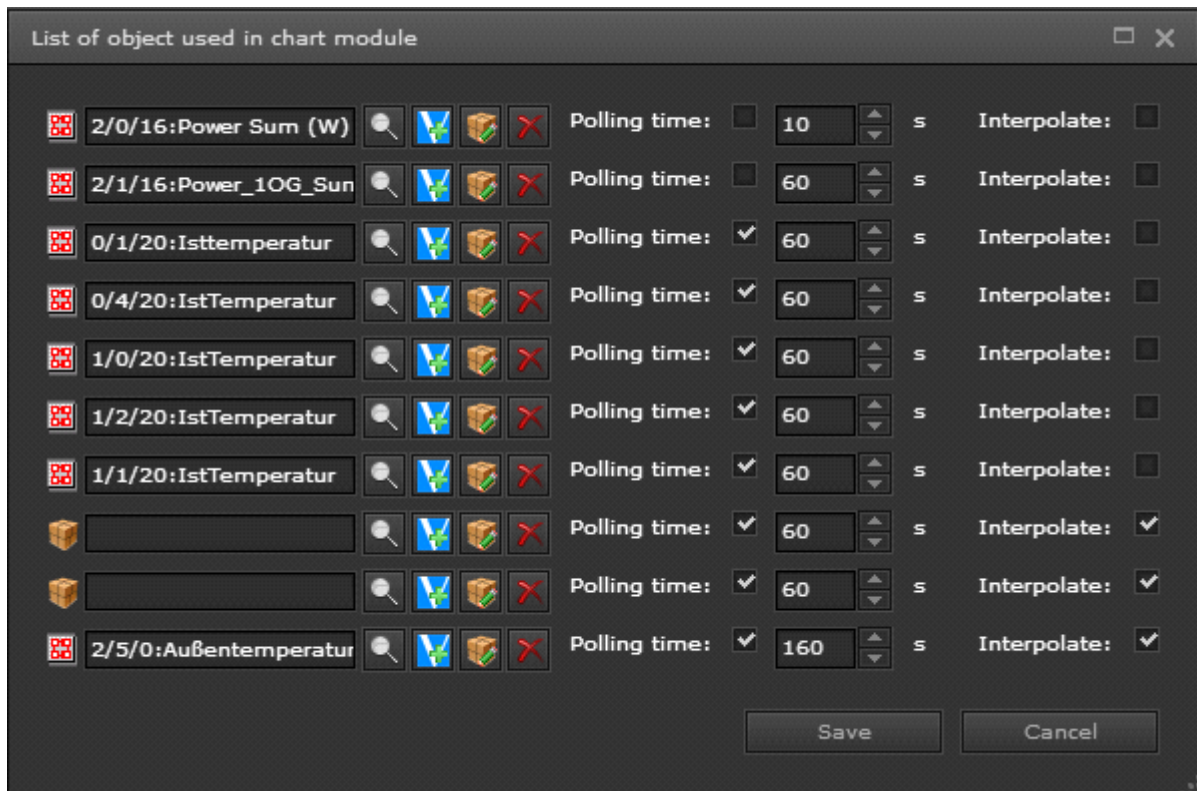
**Note:** The alarm history is not saved persistently and is therefore empty when the device is re-started. However, if you perform a deliberate re-start, for example through an ETS download or firmware update, the data is saved.

## 8.5 Chart Module

The chart module is used to graphically display values in the form of bar or curve diagrams.

### 8.5.1 Data point configuration

Open the configuration window by clicking on the module's menu.



**Polling time:** If this setting is activated, the respective data point is polled cyclically. A read request is sent to the KNX bus. The polling interval in seconds is also defined. These data are recorded and the average, maximum and minimum are calculated and stored per minute. If no value is received from the KNX bus within one minute, the values that are not present in the meantime can be interpolated. After one hour, values are calculated and stored as hourly average, hourly minimum and hour minimum.

**Interpolate:** When this setting is enabled, non-existing data will be interpolated.

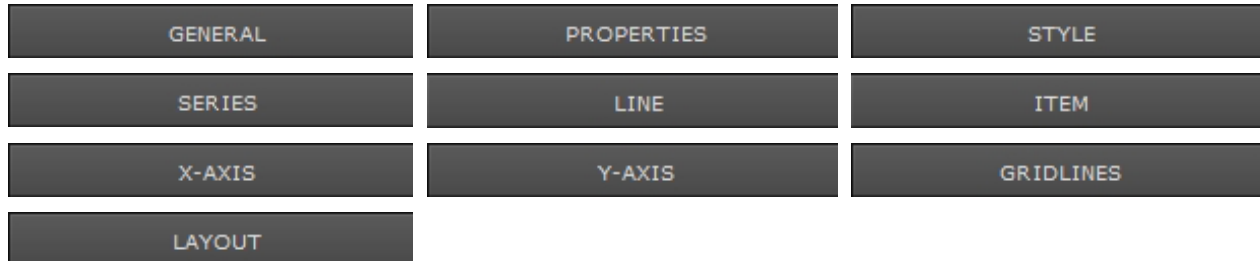
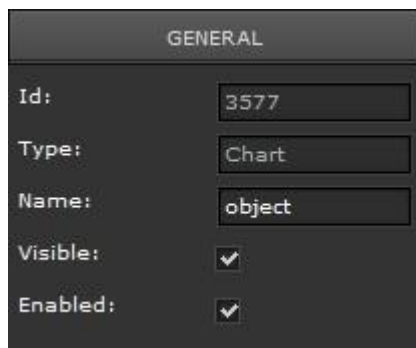
The "Save" button records the configured data points.

**Note:** Up to 10 data points can be defined for chart recording.

You can also define whether you would like to query data points cyclically (read request on the KNX) and whether you would like to interpolate values. The data is recorded and every minute the average value, the maximum value and the minimal value are saved. If no value is received within a minute, the value can be interpolated (if selected). After one hour, these values are saved as hourly average value as well as maximum and minimum value for the hour.

## 8.5.2 Element configuration

After this basic configuration, the element can be placed on a web page and the form of representation can be defined in detail.

In the "General" section, the data point to be used for recording is defined. More about this in the chapter: [7.3.1 General](#).

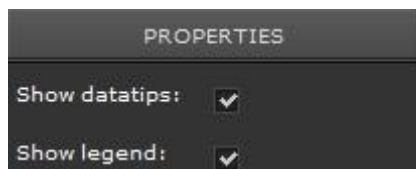
**ID:** Display of the internal ID number.

**Type:** Display of the element property.

**Name:** Name of the control element.

**Visible:** Display of the element in the visualization.

**Active:** Activation of the switching functions. When deactivated, only the status information is displayed.



In the properties, the display of a tooltip and the legend (diagram caption) can be selected.



The "Style" section contains the assignment of the diagram title as well as general layout options. More about this in the chapter: [7.3.3 Status](#).



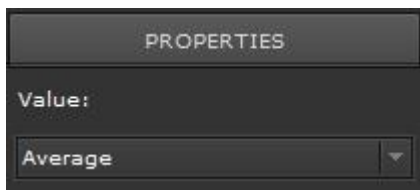
Under display format, you can choose between a curve and a bar chart.



Bar chart



Curve chart



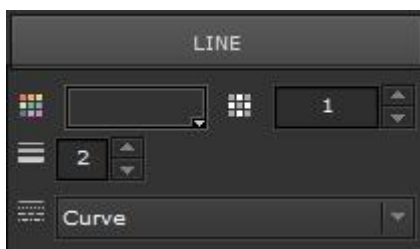
Entries can be deleted or placed in the foreground or in the background. By clicking on the corresponding entry further parameters are displayed. The calculation type of the display value is defined in the "Properties" tab.

The following calculation types are available:

- Average
- maximum
- minimum
- Delta of the average values
- Delta of maximum values
- Pos. Delta of the average values
- Pos. Delta of maximum values

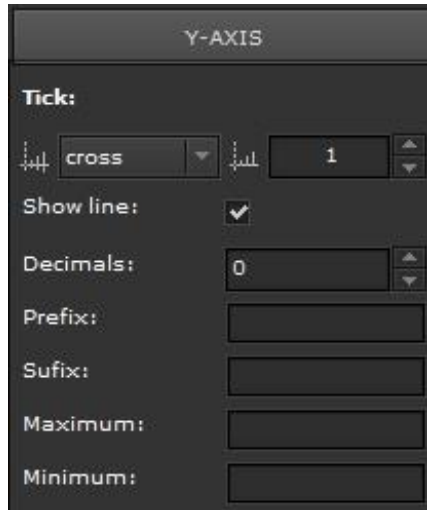


When the bar graph is selected, the fill color and transparency can be set in the Pillar area. For transparency, the default value is 1 (no transparency).

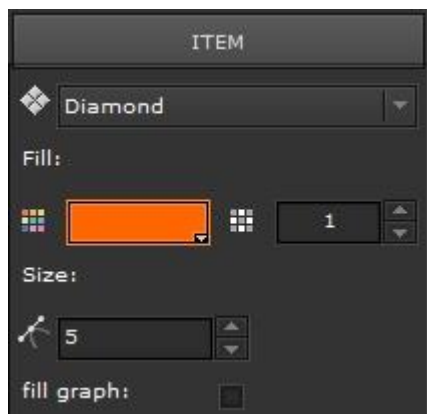
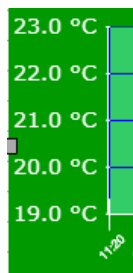


When the line chart is selected, the line width (px) and the appearance (curve / segment) can be selected in the "Line" area in addition to Fill color and Transparency.

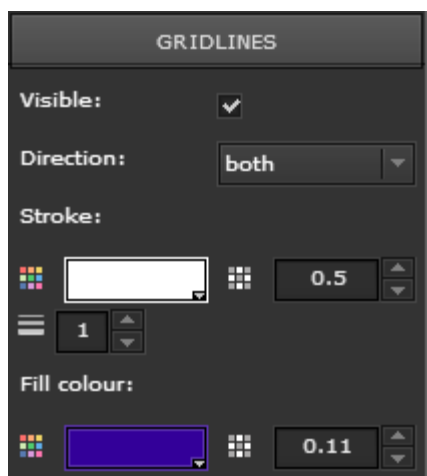
The "Axis" area can be used to define the shape of the X-axis and Y-axis. Important is the definition of the preset time range.



The values on the axes can be displayed with or without decimal places. By specifying the prefix and suffix, e.g. Units are plotted on the Y axis. Also, the Y-axis can be manually scaled by defining the maximum or minimum. If no information is given at this point, scaling will be performed automatically based on the values.

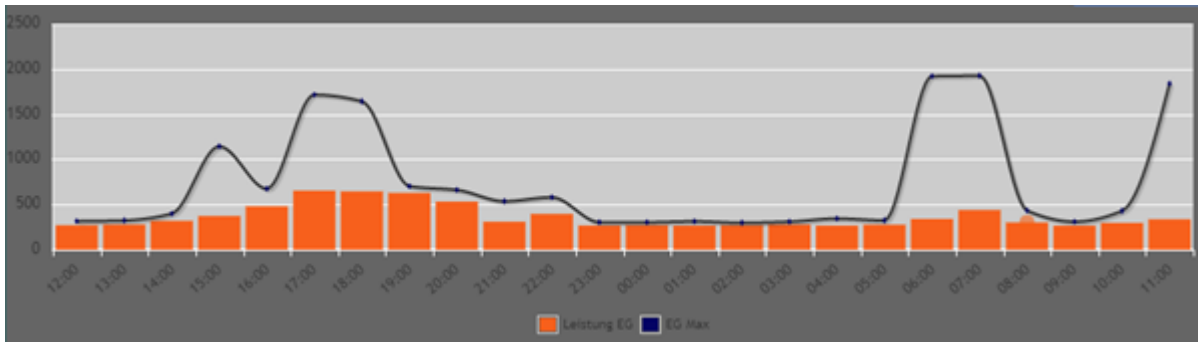


The "Value point" section, shape, transparency and size can be varied.



In the area, a grid can be made visible and its shape can be defined. The direction of the grid lines can be considered a normal grid (x- and y-axis), or only horizontal (y-axis) or only vertical (x-axis). Grid color, transparency and fill color can also be set.

The delta calculation calculates the difference between the current value and the previous value. This can be very interesting for the representation of a power consumption, for example. The difference in an energy meter would indicate the consumption per hour, for example.

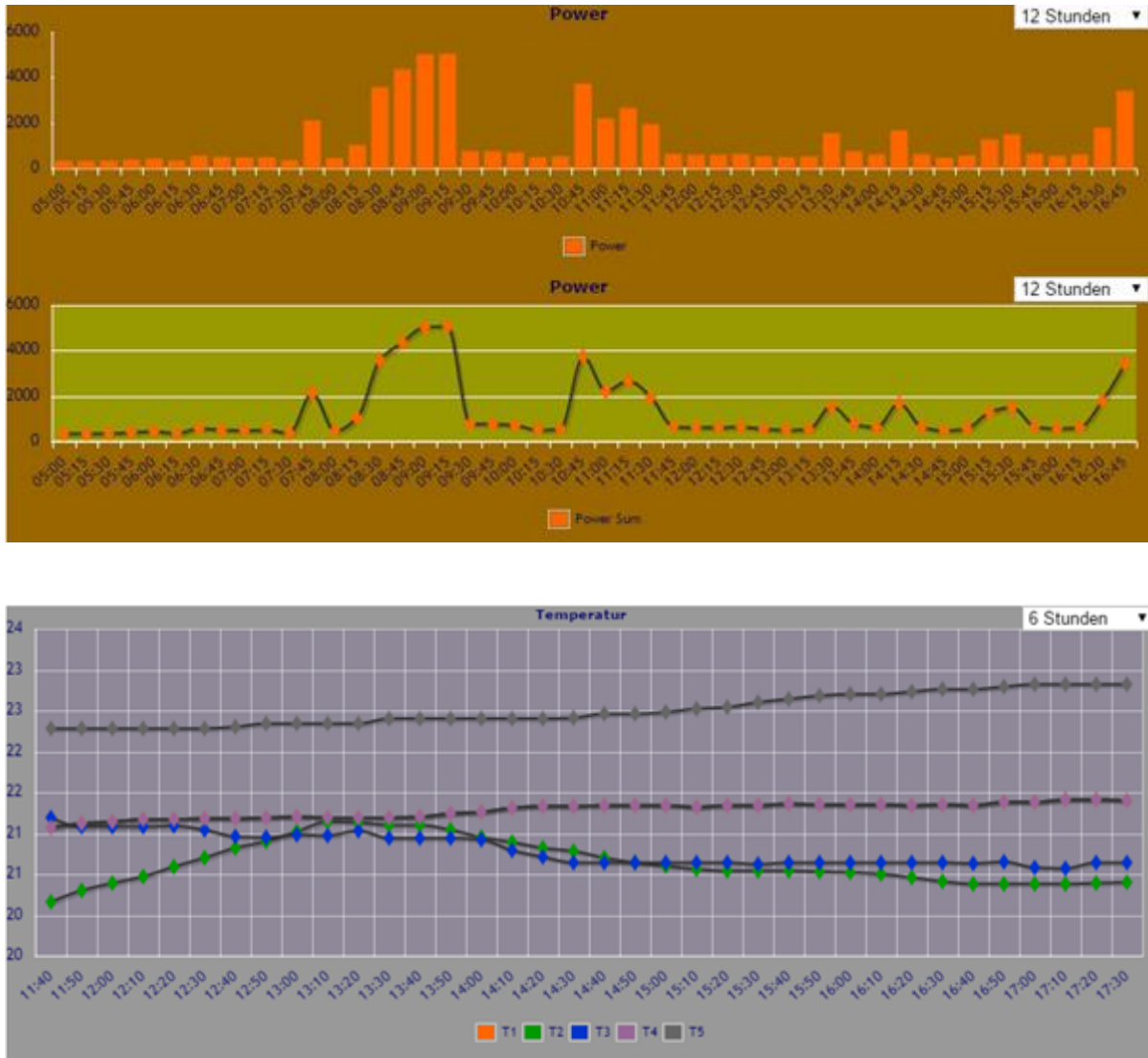


It is possible to create a daily profile. The following delta values are used for the respective time ranges:

Time range	Delta	Number of values
1 hour	1 minute	60
3 hours	5 minutes	36
6 hours	10 minutes	36
12 hours	15 minutes	48
1 day	60 minutes	24
1 day (30 min)	30 minutes	48
1 week	24 hour	7
1 week (12 Stunden)	12 hours	14
1 week (6 Stunden)	6 hours	28
1 month	1 day	30
3 months	1 week	12
6 months	1 week	24
1 year	1 months	12

### 8.5.3 HTML display

The chart module presents itself on the website as follows:



The time range can be adjusted on-line. The display style (curve or bar) is defined in the Editor and cannot be changed on-line. If you use the cursor to hover over a value point or bar, a tooltip with additional information will appear automatically.

- Name of the data point
- Date and time
- Value

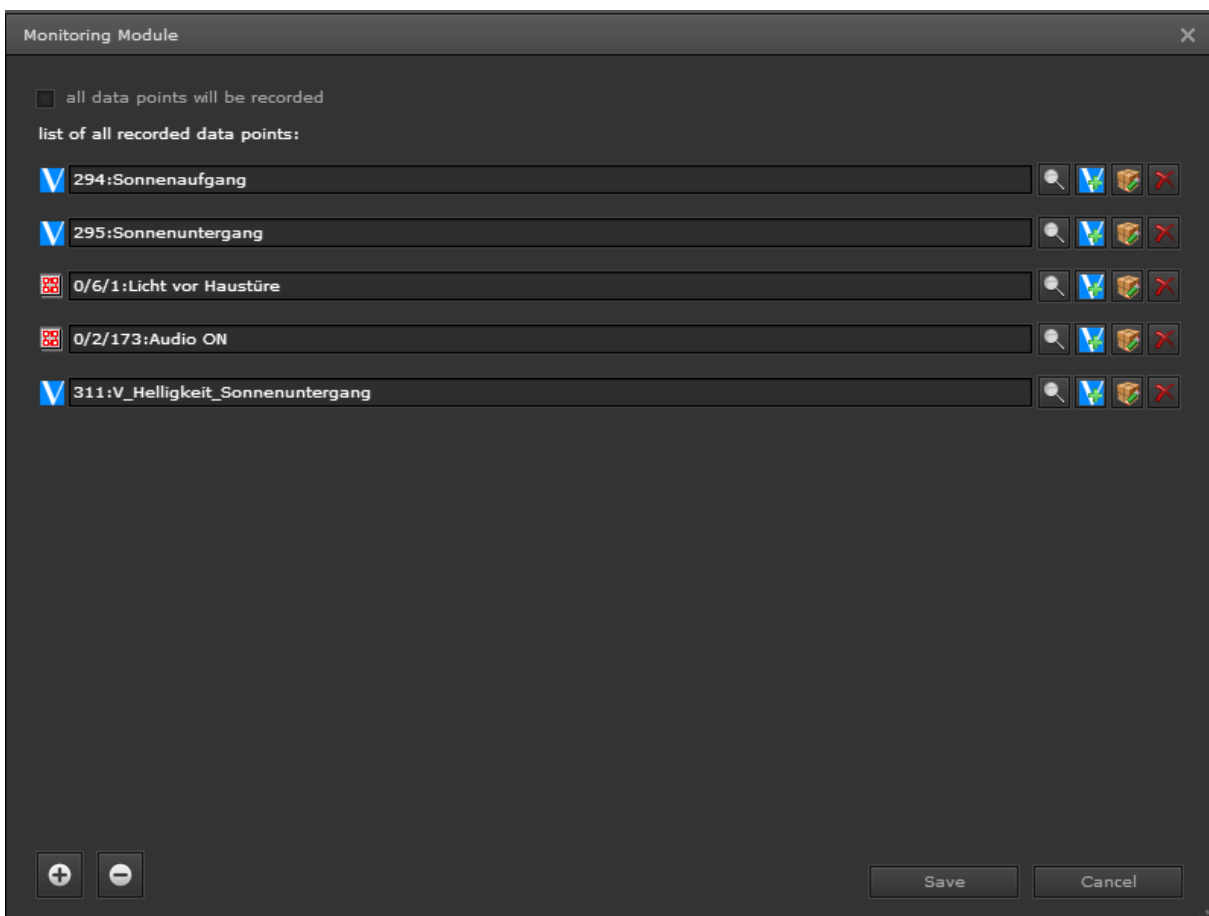
**Note:** The recorded data is saved in the volatile memory (RAM) and is therefore no longer available after a restart (power loss). If you perform a deliberate re-start, however, for example via an ETS download or firmware update, the data is still available.

## 8.6 Monitoring module

The monitoring module is a service tool and is used to analyze data on the KNX bus. This module is like the group monitor from the ETS tool. It helps the system integrator, or the installer troubleshoot. The monitoring module is a recording module to log all or only certain bus events.

### 8.6.1 Configuration

Use the modules menu to load the configuration window.



In this module you can choose the data you would like to record.

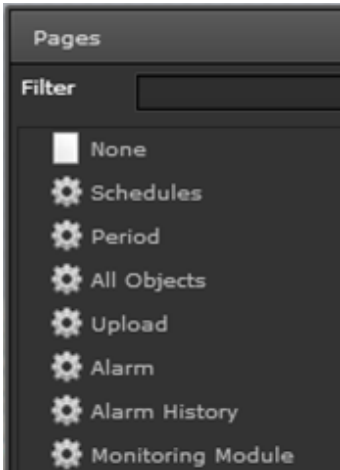
**1st approach:** Lists all group addresses or objects you want to record.

**2nd approach:** Lists all group addresses or objects you do not want to record.

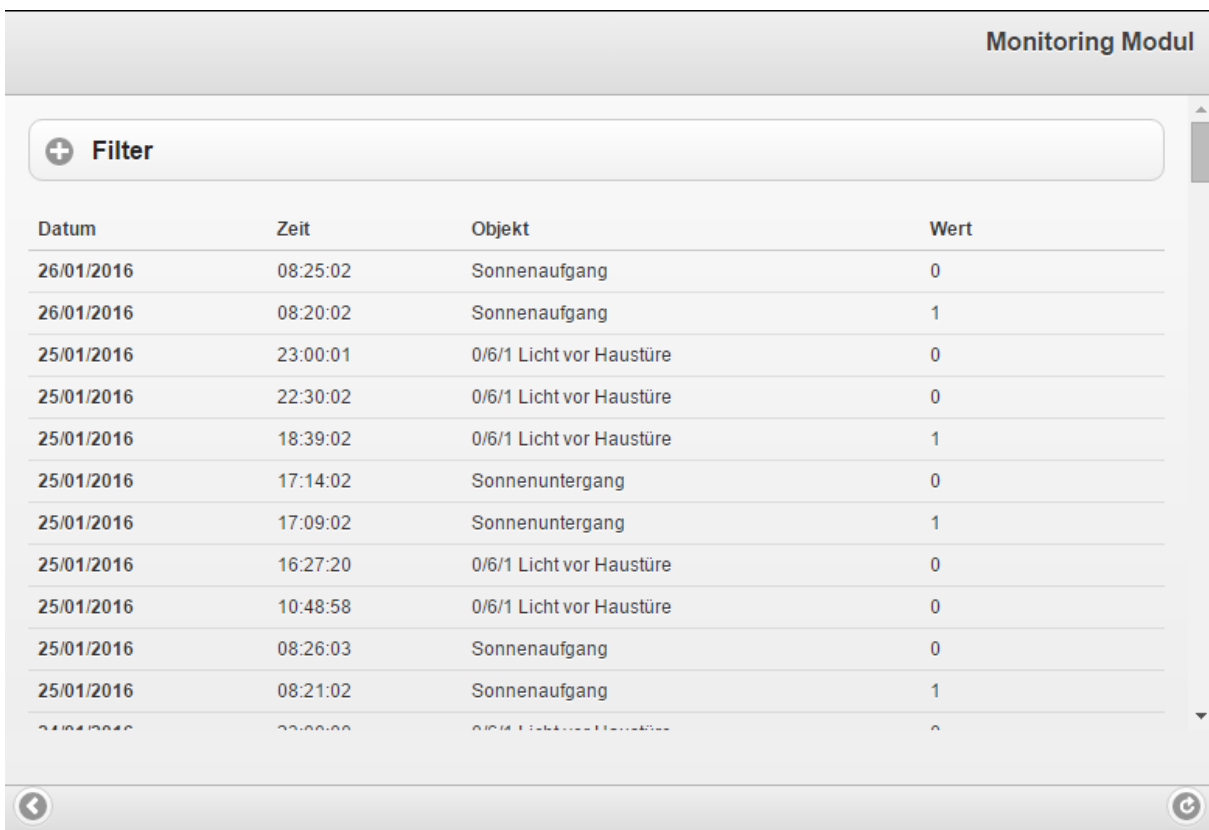
**Note:** Up to 1000 events are logged. Then the older entries are deleted so that the last 1000 entries are always visible. The recorded data are kept in volatile memory (RAM) and are therefore no longer available after a restart (power failure). However, if a deliberate restart is performed, e.g. By ETS download or a firmware update, the data is saved and will not be lost.

## 8.6.2 HTML display

The saved data can be displayed via a navigation element.



Please select the entry "monitoring module".

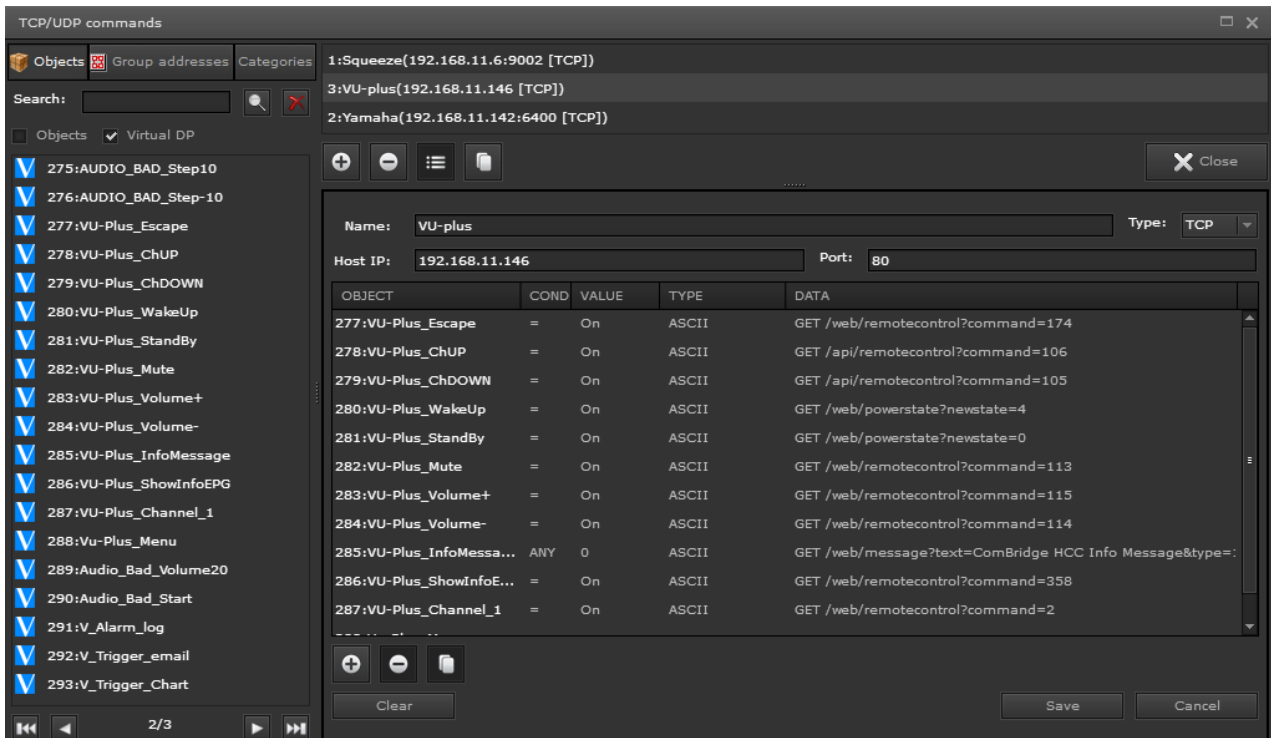


Datum	Zeit	Objekt	Wert
26/01/2016	08:25:02	Sonnenaufgang	0
26/01/2016	08:20:02	Sonnenaufgang	1
25/01/2016	23:00:01	0/6/1 Licht vor Haustüre	0
25/01/2016	22:30:02	0/6/1 Licht vor Haustüre	0
25/01/2016	18:39:02	0/6/1 Licht vor Haustüre	1
25/01/2016	17:14:02	Sonnenuntergang	0
25/01/2016	17:09:02	Sonnenuntergang	1
25/01/2016	16:27:20	0/6/1 Licht vor Haustüre	0
25/01/2016	10:48:58	0/6/1 Licht vor Haustüre	0
25/01/2016	08:26:03	Sonnenaufgang	0
25/01/2016	08:21:02	Sonnenaufgang	1
24/01/2016	23:00:00	0/6/1 Licht vor Haustüre	0

In addition, a filter option is available. You can filter according to name or date and time.

## 8.7 TCP/UDP commands

With this module it is possible to send telegrams via the ComBridge HCC. Up to 20 devices, e.g. Beamer, router, audio / video equipment, heating systems, etc., each with up to 20 TCP / UDP commands are controlled. For this purpose, data points such as communication objects, virtual objects or group addresses are defined. If the value content of these data points meets a specific condition, defined commands are sent to the IP users.



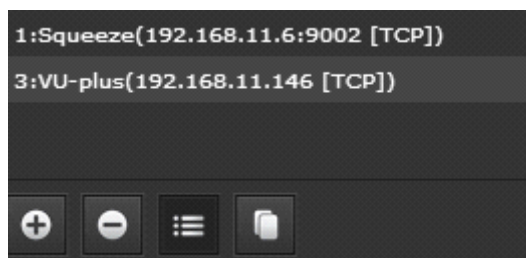
Several IP subscribers can be defined. Each subscriber is identified by:

**Name:** Name of the IP device to be controlled.

**Host IP:** IP address of the IP device to be controlled.

**Port:** Port number of the IP device.

**Communication Type:** TCP or UDP identified.



Use the buttons to add, delete, edit or double any IP subscribers. Up to 20 IP subscribers can be defined.

**Note:** Up to 20 IP subscribers can be defined.



In the bottom part, a list of commands can be defined for each subscriber. The following example shows the control of a VU + SAT receiver (DreamBox):

OBJECT	COND	VALUE	TYPE	DATA
277:VU-Plus_Escape	=	On	ASCII	GET /web/remotcontrol?command=174

The trigger object can be a communications object, a virtual object or a group address. You can also select a condition according to the data point type. Use the field "type" to define whether the IP subscriber is to expect an ASCII command or a binary command. The corresponding IP command is sent for each input event after the condition has been successfully checked.

**Note:** Up to 20 commands can be defined. An http command is defined as follows:

**Example:** http://<ip>:90/control?command=25

**Type:** ASCII

**Data:** GET /control?command=25

Further commands for DreamBox or similar devices can be found here:

<http://wiki.dbox2-tuning.net/wiki/index.php/Enigma2:WebInterface>

**Note:** If you click on the right mouse button in the data field, you can add the placeholder [VALUE] which will be replaced with the real data point value on execution. Any changes become active as soon as they are saved.

### 8.7.1 PJLINK: Control of projectors

PJLink is a standard for configuring video projectors over a network interface. It was developed by the *Data Projector Group* within the Japan Business Machine and Information System Industries Association (JBMIA). The aim of the standard is to define a manufacturer and model-independent interface for the configuration and monitoring of video projectors. This standard is already supported by over 300 models and many manufacturers. The following syntax should be used in the TCP module to control projectors via PJLINK:

- **IP address:** <ip> of projector
- **Port:** 4352
- **Command:** PJLINK <password> <command> <parameter>  
<password> has to be replaced by the password given by the projector

**Example:** Projector switch ON

**Typ:** ASCII

**Data:** PJLINK <password> POWR 1

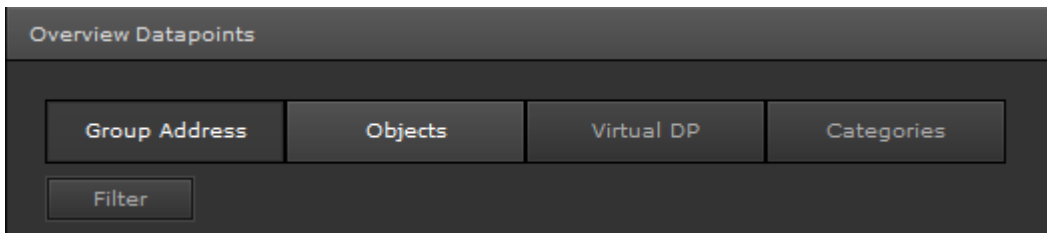


**Example:**

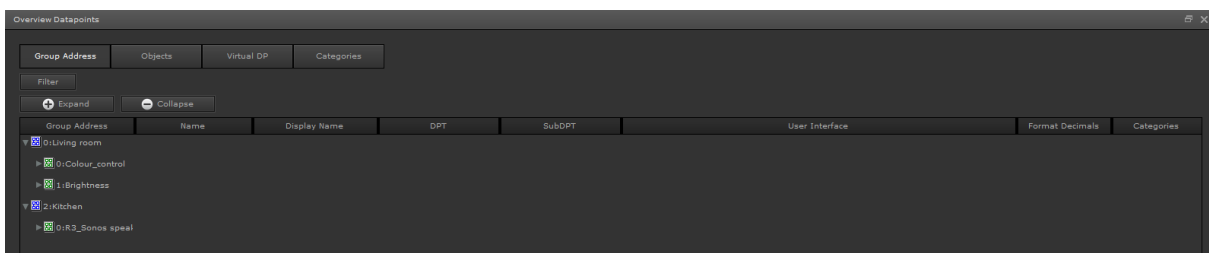
Command	Parameter	Description
POWR	0 = Standby 1 = Switch On	On/Off
INPT	11: RGB 1 12: RGB 2 13: RGB 3 31: DIGITAL 1 32: DIGITAL 2 33: DIGITAL 3 46: AUX1 21: VIDEO 1 22: VIDEO 2 25: VIDEO 5 47: AUX 2 48: AUX 3 49: AUX 4	Input Selection

## 8.8 Overview of the data points

All available data points are summarized in a list. In this list, the representation of these data points can be predefined. This predefined representation is used as the basis for all configuration pages. These include the HTML configuration pages for the weekly programs and the scenes. All data points are divided into the following categories:



In order to filter or find certain data points, various criteria can be set under "Filter".



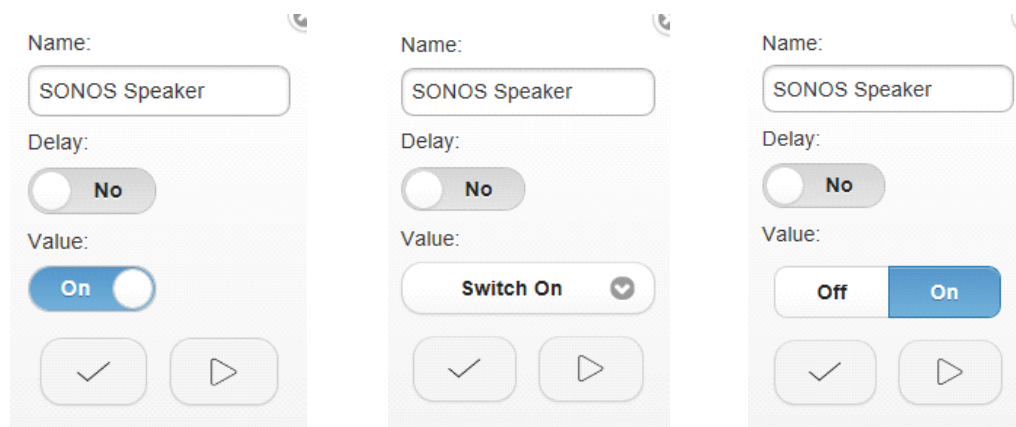
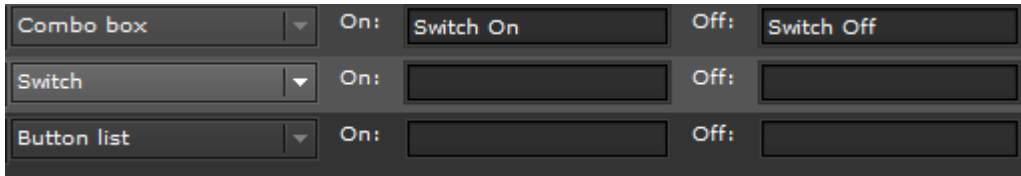
### 8.8.1 Change of designation

Each group address has an internal name (usually from the export of the ETS). It is possible here to replace this name with a "display name".

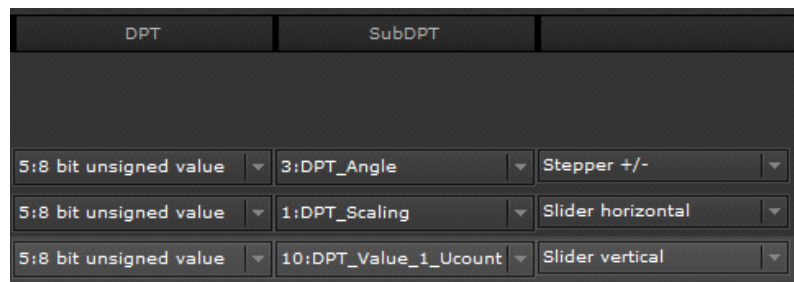


### 8.8.2 Change of presentation form

Furthermore, it is possible to vary the appearance of the control buttons. For a simple on / off command, 3 different views can be selected:



For a 1-byte value, such as an indication in% (0...100%), the following display forms can be selected:



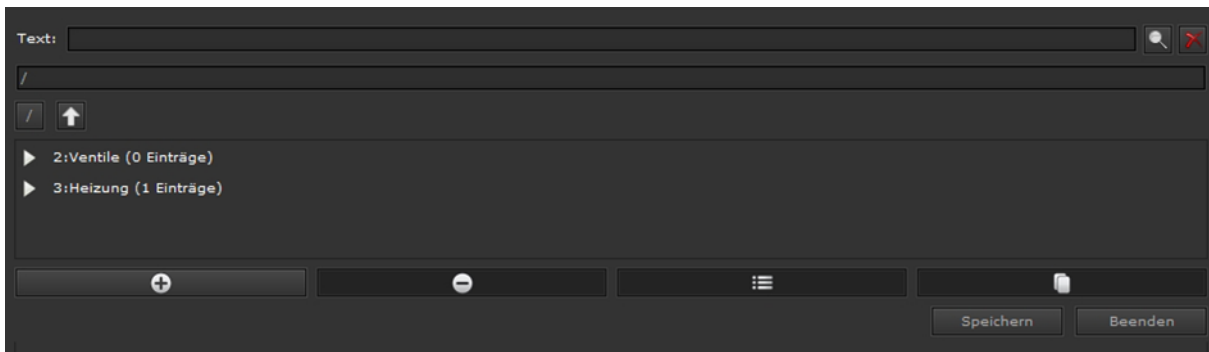
- Step +/-
- Slider horizontal
- Slider vertical

For analog values, the range of values can be restricted and the number of decimal places can be defined.



## Assignment of categories

To group data points in a meaningful way, user-defined categories can be created, and the group addresses, objects or virtual objects assigned to these categories. In all windows, where group addresses, objects or virtual objects required from the list of data points are selected, the categories can be used for quicker search. The text field at the top allows a full-text search. Also group addresses of a category can be found like this.



There are 4 buttons available for creating and editing categories:



**Add:** button to add a new category.



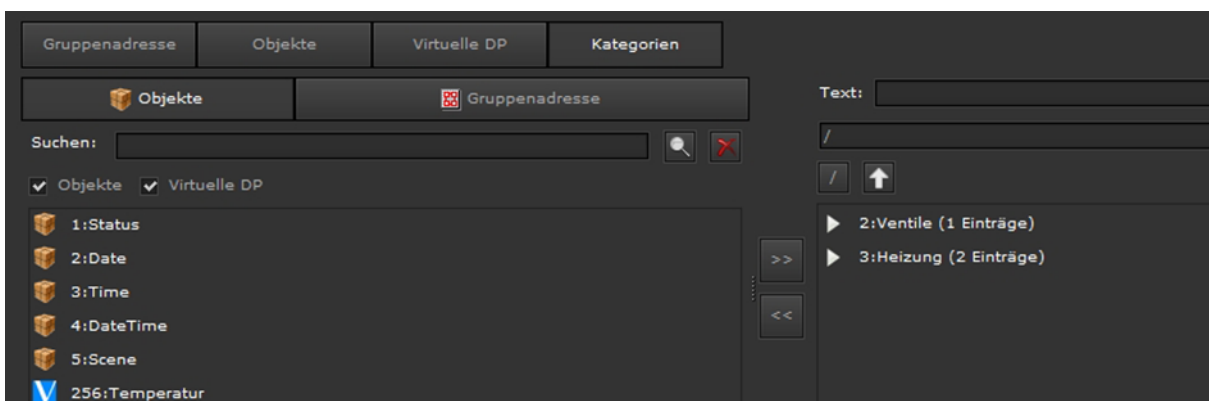
**Delete:** button to delete an existing category.



**Edit:** button to edit (name) an existing category.



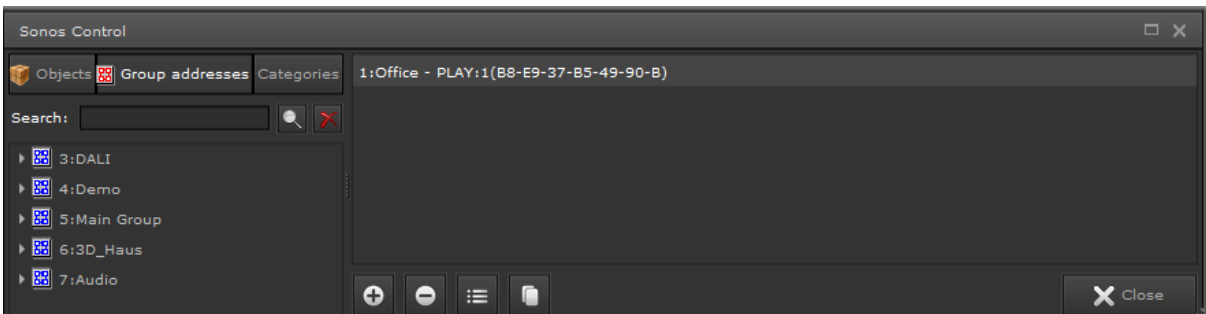
**Copy:** button to copy an existing category.



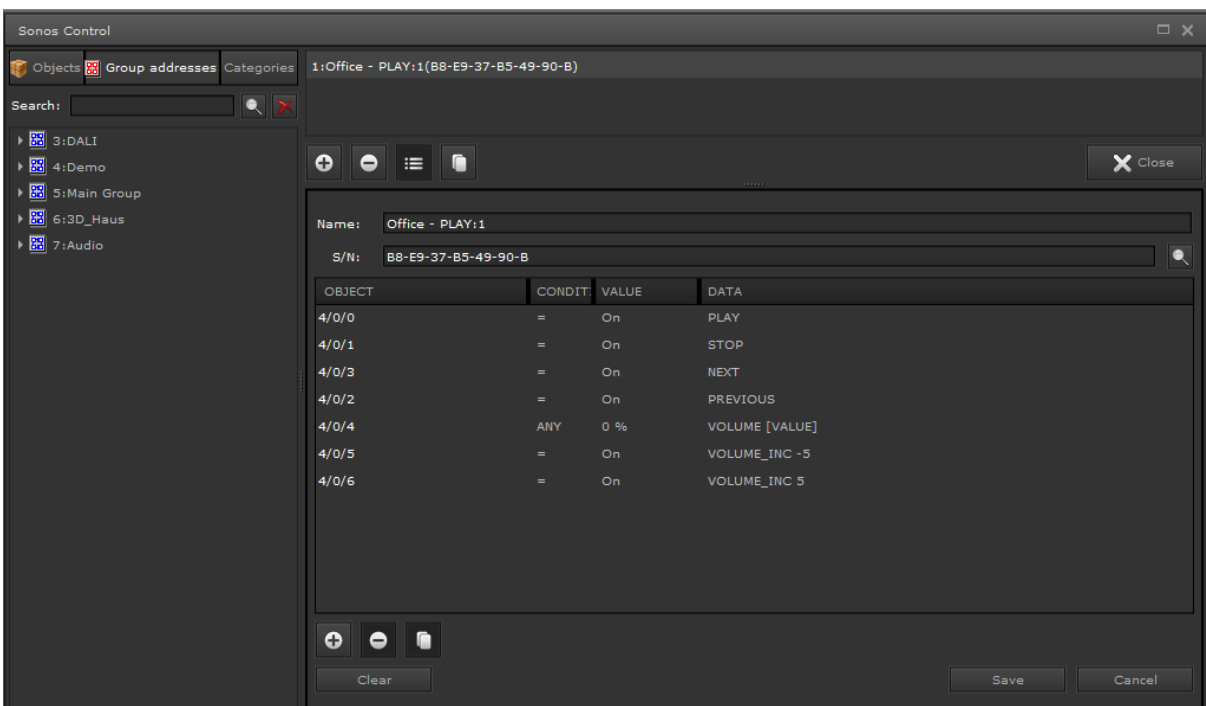
The data points to be assigned are added to the created categories by the direction keys or by drag & drop. The "Save" button saves the created categories and their contents.

## 8.9 Sonos Control

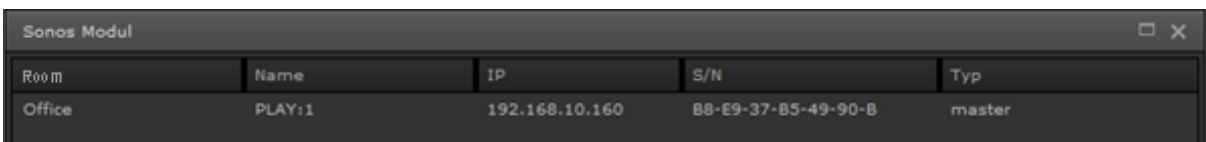
From ComBridge HCC **Version 4.0** it is possible to control SONOS loudspeakers directly. The configuration is carried out in the editor in the menu item Module --> SONOS Module.



With the plus button, a new Sonos loudspeaker can be added.



With the help of the magnifying glass loudspeakers in the network can be found. All relevant information about the found SONOS loudspeakers is displayed in a new window. For a better overview it is possible to assign an alias name. Then select the desired loudspeaker to define the control elements.



Room	Name	IP	S/N	Typ
Office	PLAY:1	192.168.10.160	B8-E9-37-B5-49-90-B	master

The following commands are currently supported:

- Play
- Stop
- Pause
- Next
- Previous
- Volume
- Volume Inc
  - The volume is relatively changed by a defined value.
- Mute
- LED
  - The LED on the loudspeaker can be switched on (condition true) or off (condition false)
- Button\_Lock
  - The button operation on the loudspeaker can be locked (condition true) or released (condition false)
- Bass
- Treble
- Load
- Playlist
  - The desired playlist is selected from the list of Sonos favorites

Similar to the general TCP module, see chapter: [8.7 TCP/UDP commands](#), these commands can be assigned to group addresses or virtual objects. To trigger a command, a condition can be defined. A special feature is the command "Volume". If this command is ideally linked to a group address or object of the data type 1-byte scaling (0 ... 100%), the value is passed directly to the command. The condition for this is "ANY". At each event, the value is passed to the Sonos loudspeaker. A value of 30% would set the speaker to 30% of the volume. However, it is possible to set the volume to a fixed value for another condition.

```
4/0/4          ANY      0 %          VOLUME [VALUE]
```

**Note:** In version 4.0, the interface does not yet support the updating of the values, if they are changed by another app. Therefore, it makes more sense to make the incremental change in volume: **Volume\_Inc**

Here you can additionally specify the change in the volume by the current value. This can then be sent via a 1bit command simply via KNX button. This sample changes the volume by +-5%, depending on the group address linked.

```
4/0/5 = On VOLUME_INC -5
4/0/6 = On VOLUME_INC 5
```

Of course, the same object or group address can be used:

```
0/2/176:KÜ-Audio++ = Ein VOLUME_INC 5
0/2/176:KÜ-Audio++ = Aus VOLUME_INC -5
```

**Note:** The command Playlist requires a second parameter indicating the title of the desired playlist. This title must be under the favorites. If this title is found in Sonos Favorites, this list will be selected. Thus, it is possible to select different playlists by pressing a button.

It is thus possible to use a normal light switch with on / off to adjust the volume. For this, the volume can be increased with the condition "On" and the volume can be reduced with the condition "Off". With this configuration only one group address is necessary. The favorites in SONOS are only recognized by the name. It is therefore advisable to select simple names for the favorites in the SONOS configuration.

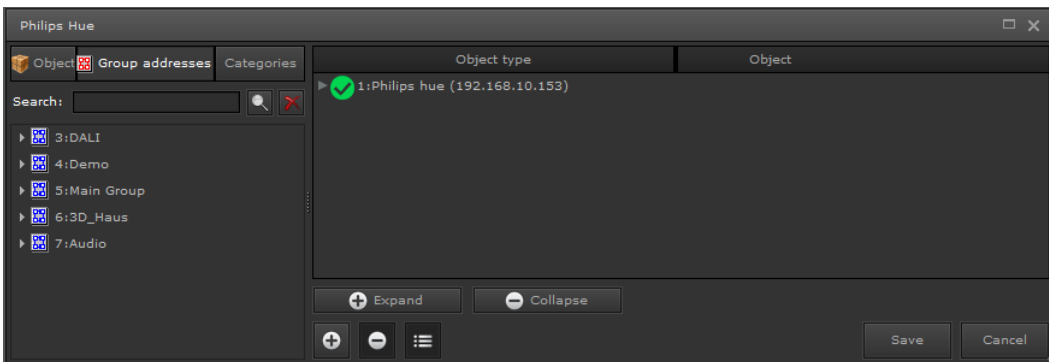
**Note:** SONOS is a registered trademark. See chapter: [11.9 References](#).


## 8.10 Philips HUE

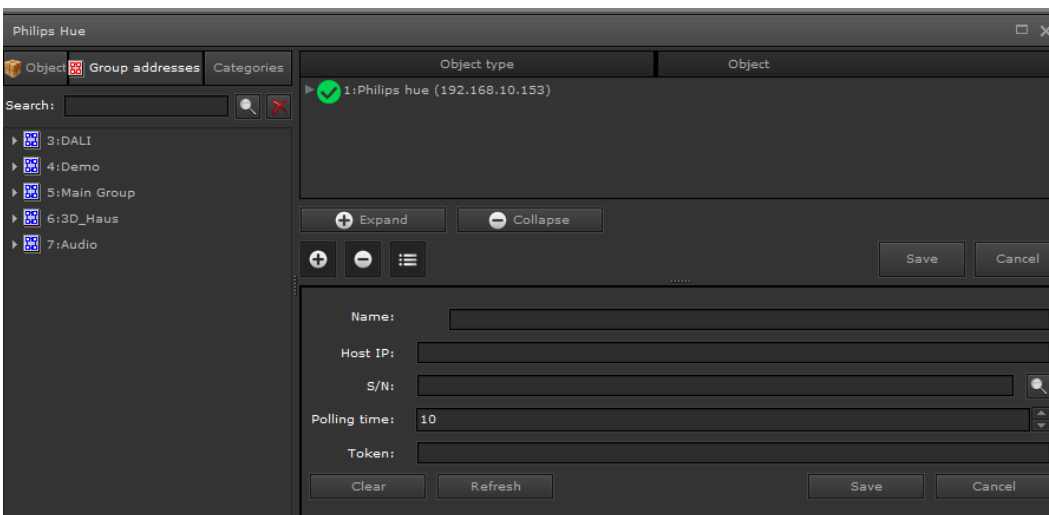
Starting with the ComBridge HCC version 4, it is possible to directly control the Philips HUE LED lighting system. Hue is the Philips lighting system that allows you to wirelessly control your lighting using an application. The system allows the control of the lighting of a house via a mobile app. The system can be operated via a smartphone, a tablet or a voice control function. A Philips HUE system always consists of a bridge and connected lights. The bridge implements the interface to the IP network to allow control via apps or the ComBridge HCC. To do this, the bridge must be in the same network. The procedure described here assumes that the Philips system has already been fully installed. All lights are already registered with the Philips app at the bridge.


Each client, including the ComBridge HCC, must register with the Bridge and authenticate. This process is performed by pressing a button on the bridge. This assigns a "token" for authentication so that the HCC can send commands to the connected HUE lights. The following description describes step by step the configuration process and the login at the bridge:

**Note:** Both the HCC and the PC with the editor must be in the same IP network. The configuration is carried out in the editor in the menu item Modules -> Philips HUE.



 With the plus button, a new Philips Bridge can be added.

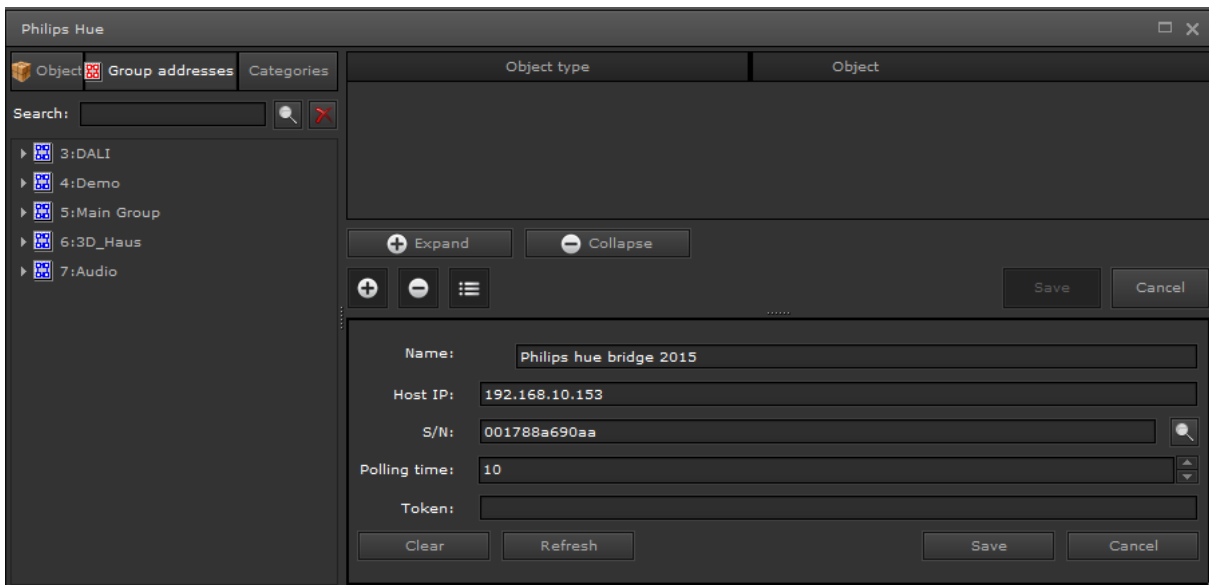


 The magnifying glass can be used to find Philips systems (bridges).

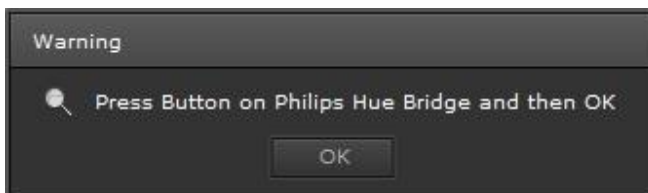
Friendly name	Name	IP	S/N
Philips hue (192.168.10.153)	Philips hue bridge 2015	192.168.10.153	001788a690aa

The button OK adds the found bridge to the list.

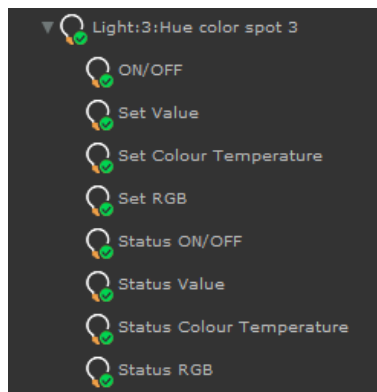
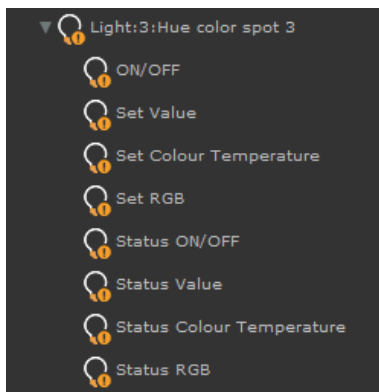




Until now no token, or the authentication has not yet been performed. Pressing the Quit button prompts you to press the button on the Philips Bridge. This must take place within 2 minutes.



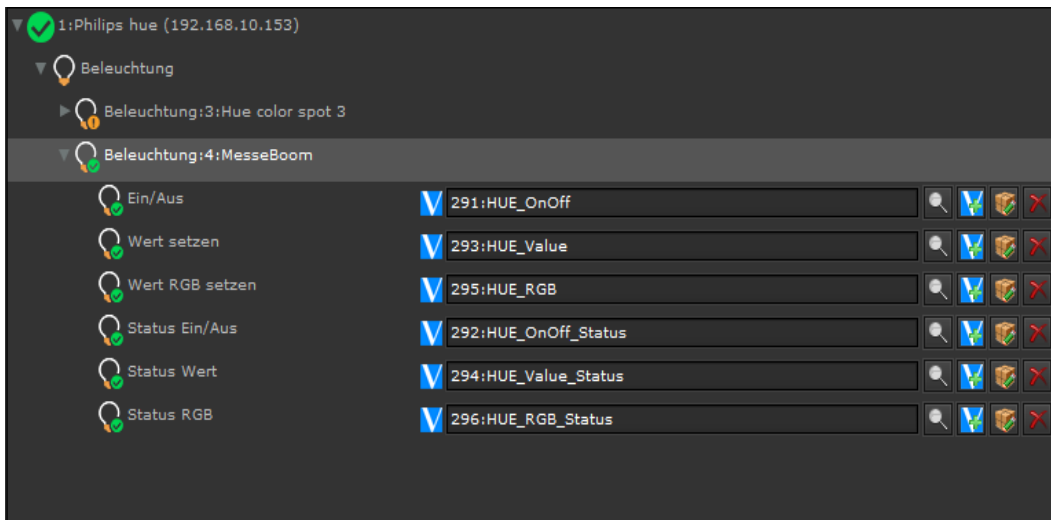
Now you should first press the button on the bridge and then confirm in the editor window with OK. A so-called token is generated which allows the HCC to send switching commands to the bridge. The polling interval defines the time that the system will update values that were not set with the HCC but with another HUE app. The following shows all configured lights with the corresponding possible switching commands:



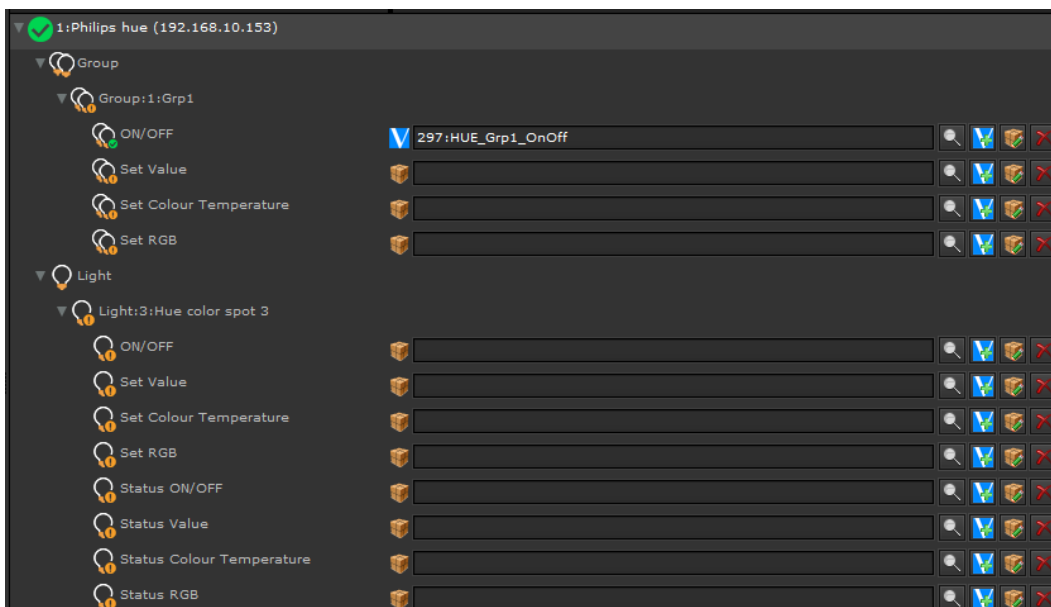
Depending on the type of luminaire, the possible objects are displayed.

**Note:** Color control requires the data point type: 232.600 (3-byte RGB). The color temperature is coded with the DPT: 7.600 (2 byte unsigned).

The HUE commands can be linked with group addresses, with communication objects or with virtual objects.



In the HUE Bridge, or with the help of various apps, groups can be formed. This means that several lights can be combined and switched simultaneously.

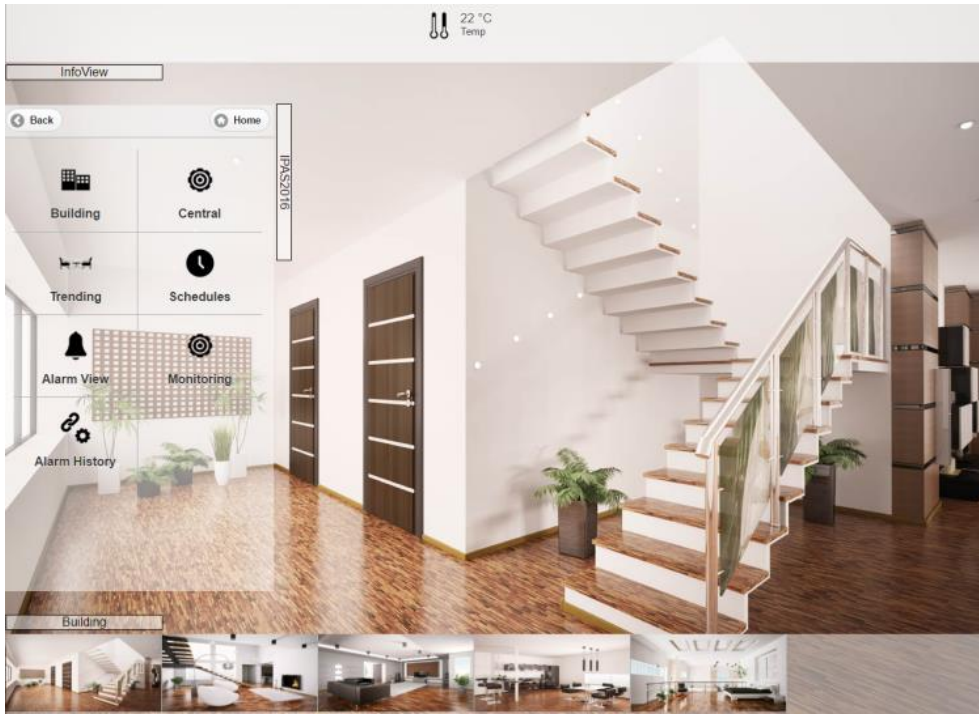


**Note:** Philips HUE is a registered trademark. See chapter: [11.9 References](#).

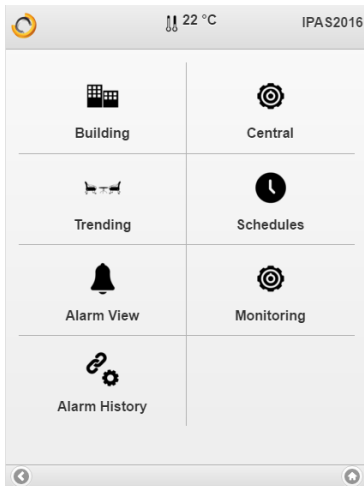
## 9 Smart & Tablet Visu

The ComBridge HCC makes it possible to optimise visualisations for different end user devices such as smartphones or tablets. In addition to the WEB editor, there is a Smart Editor on the ComBridge HCC. This is very easy and intuitive to use. The smart or tablet visualizations designed in this way have a consistently

structured display and operating philosophy. The Smart Visualization is optimized for mobile browsers, for all smartphones and a room control unit. Here are two examples:



Tablet Visu view:



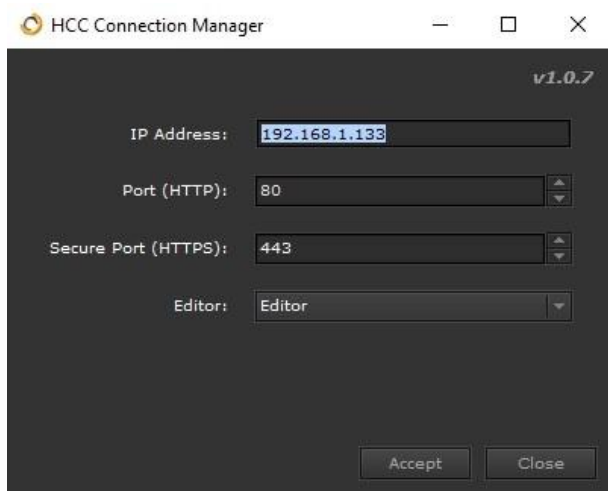
Smart Visu view:

## 9.1 Configuring the ComBridge HCC

Before you can start the SmartVisu configuration, you need to set the network configuration. Network settings are necessary to adjust the standard settings to the network conditions of the project. For this purpose, you need to first configure these settings in the ETS application program and load them onto the device. The PC used to create the project must also have the appropriate settings to access the device via the network.

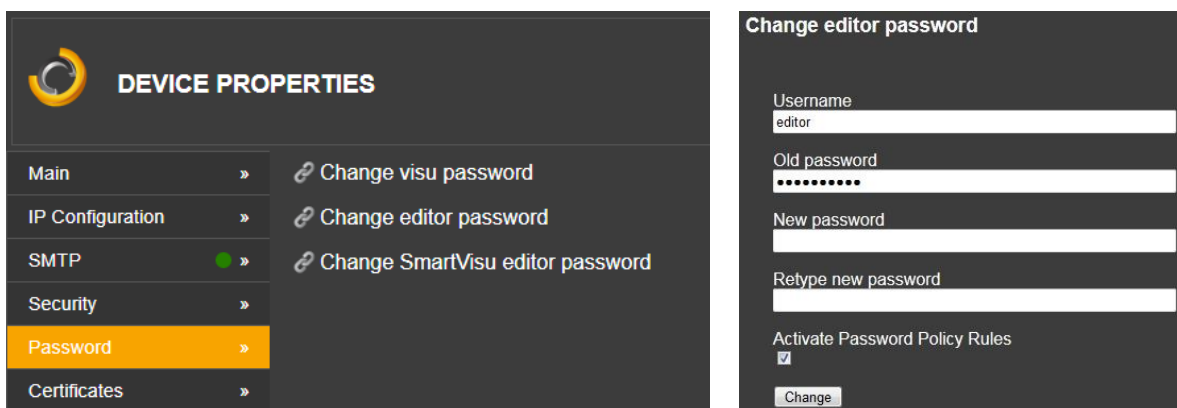
## 9.2 Accessing the SmartEditor

The call is made in the Connection Manager, as described in chapter: [3.4 Installation Connection Managers](#).



The username for the Smart Editor is set to "smarteditor" by default. The default password is "HCC". However, it must be changed on the first call of the Smart Editor.

To assign a Smart Editor password, the configuration page is first called up at the address [https:// <ip>/config.php](https://<ip>/config.php). The language of the device configuration can be preset in the editor under Language Settings.



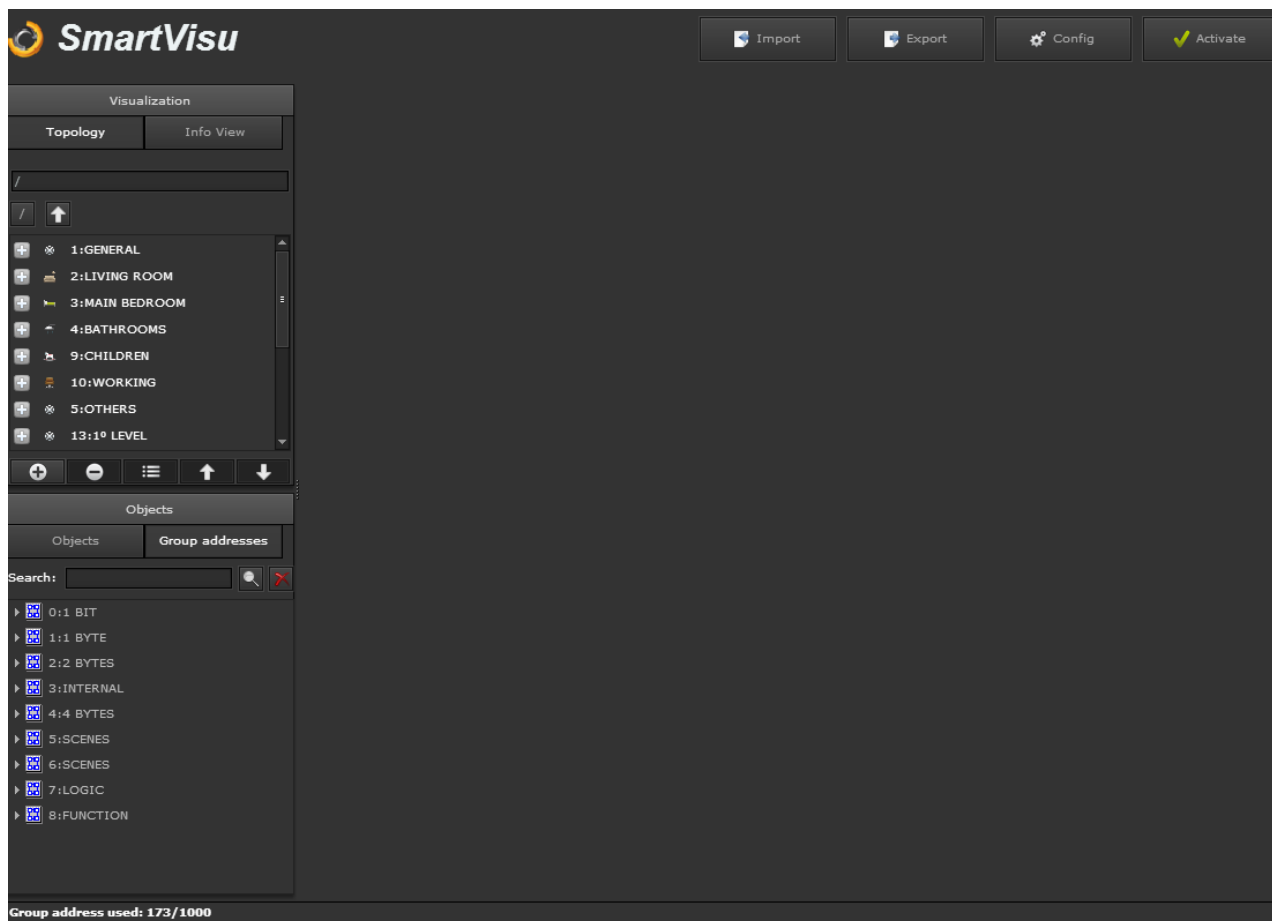
The Smart Editor password allows access to the Smart Editor to generate a Smart Visualization. This prevents any user from making changes to the visualization.

**Access Installer:** via Connection Manager, see chapter: [3.4 Installation Connection Managers](#)

**Access user:** [https:// <ip>/smart.php](https://<ip>/smart.php)

Only one installer can be logged in to the Smart Editor. If another installer logs in simultaneously (e.g., remotely), a warning message will appear. This also applies to the normal editor. In principle, only one editor can be opened.

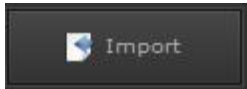
The figure shows the working area of the ComBridge HCC. In the header, on the right, of the Smart Editor are the function buttons for "Import", "Export", "Configuration" and "Activate".



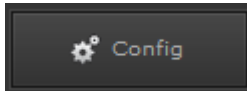
**Note:** Please be careful when restoring a normal visu backup because it also contains the smartvisu configuration. If a smartvisu configuration is created after a normal visu backup file and this backup is restored later, the smartvisu configuration will be lost because it was previously empty. If a global backup is required, we recommend you use the normal editor backup option.



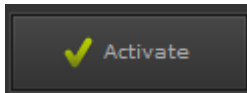
Restore a previous configuration file in the editor.



Save the actual configuration into a file on a local PC.



Allows selecting the style and theme of the visualisation.



Releases the actual configuration into HTML.

The configuration workspace is located in the upper right corner of the screen. On the left-hand side there are two different tabs:

**Topology:** Shows a tree structure with the functions/folders created for the visualisation

**Info View:** Shows status values from the installation in order to display them in a slide left panel in the visualization

On the bottom of the workspace, the following icons are available:

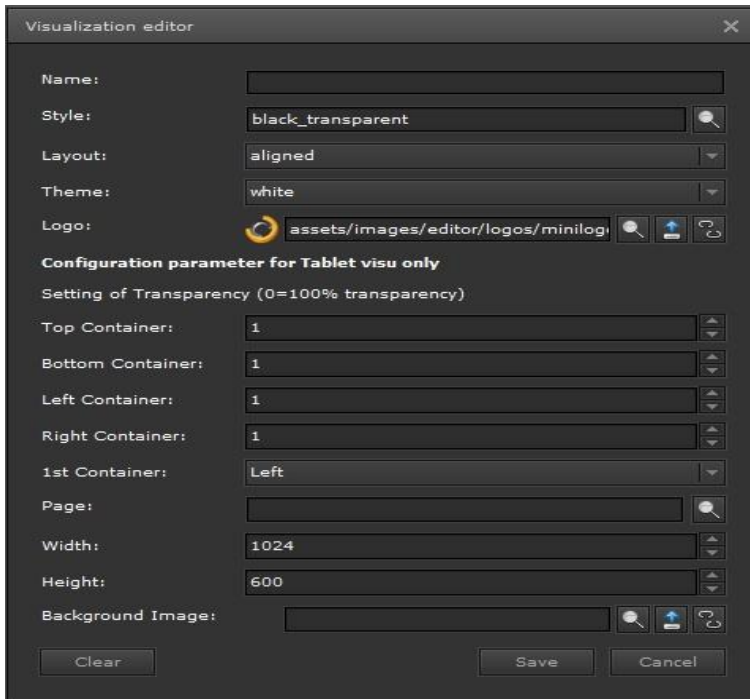
- Create new folder/icon
- New function
- Delete function
- Move function created up/down

The second window shows objects and group addresses that can be linked via drag&drop.

**Note:** Any number of folders, subfolders or functions can be created. If not all folders (page navigations / containers) or not all functions can be displayed on the visualization pages of the smartphone or tablet, sliders are displayed on the right and bottom of the visualization view. Thus, one can navigate to all existing visualization pages and functions.

## 9.3 Configuration

Das Konfigurationsfenster ermöglicht die Auswahl verschiedener Layouts der Visualisierung.



**Name:** This text appears like a title in the upper right-hand corner of the visualisation

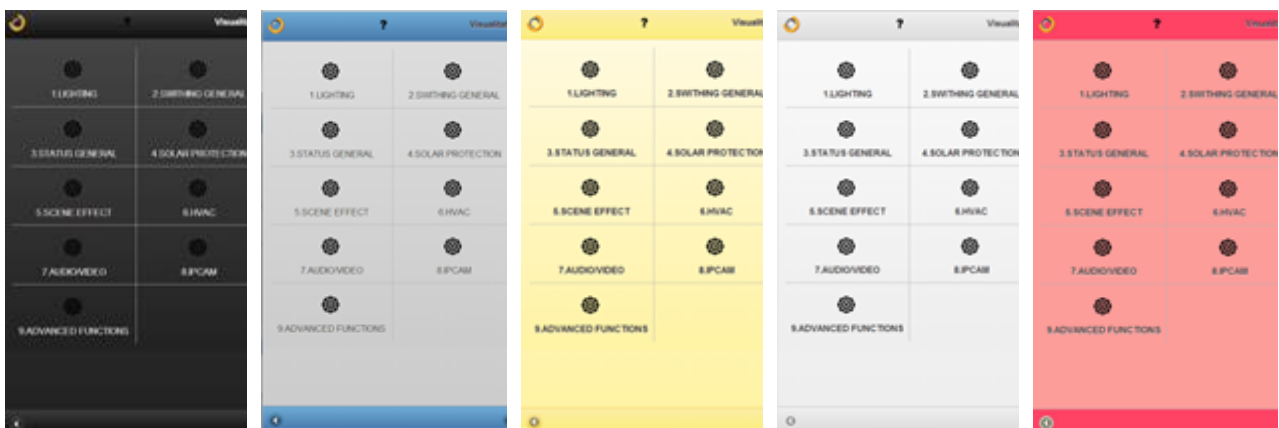
**Style:** Allows selecting an icon for group style. The following are available: *Black, Black/Transparent, Blue, Multi colour and White/Transparent.*

**Layout:** Allows changing the type of representation of the icons between aligned layout type and central layout type.

**Theme:** Allows changing the background colour between 5 different options: Black, Blue/Grey, White, Yellow and Red.

**Logo:** Here you can define a logo that should be displayed later in the upper left corner of the Smart Visu.

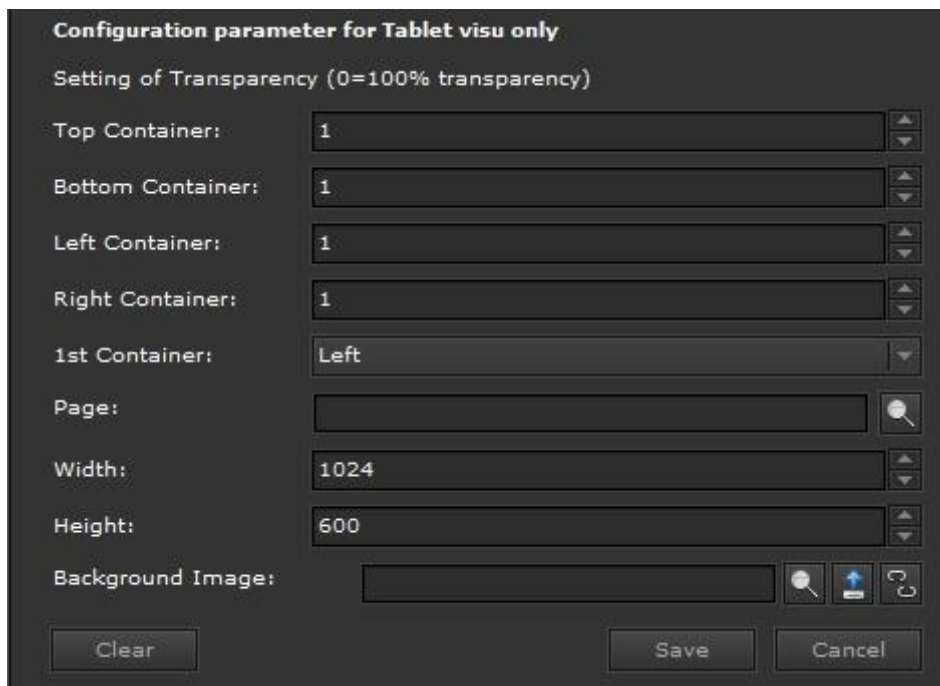
With the selection of topics, a specific background color of the display and user interface can be selected. The four colors black, blue / gray, yellow and white are available. Presentation of the possible topics:





### 9.3.1 Configuration specifically for the tablet visu

Further configuration settings relate to the display on a tablet. Please load the Smart Visu via the following link: <http://<ip>/tablet.php>. Up to 4 containers with information can be displayed in the tablet visu.



The transparency of these containers can be set between 0 and 100%. In addition, it can be defined at which position the first menu level (1st container) should be displayed. Basically, there is the option of selecting a visualization page previously created in the editor as the default background or a static image as the background.

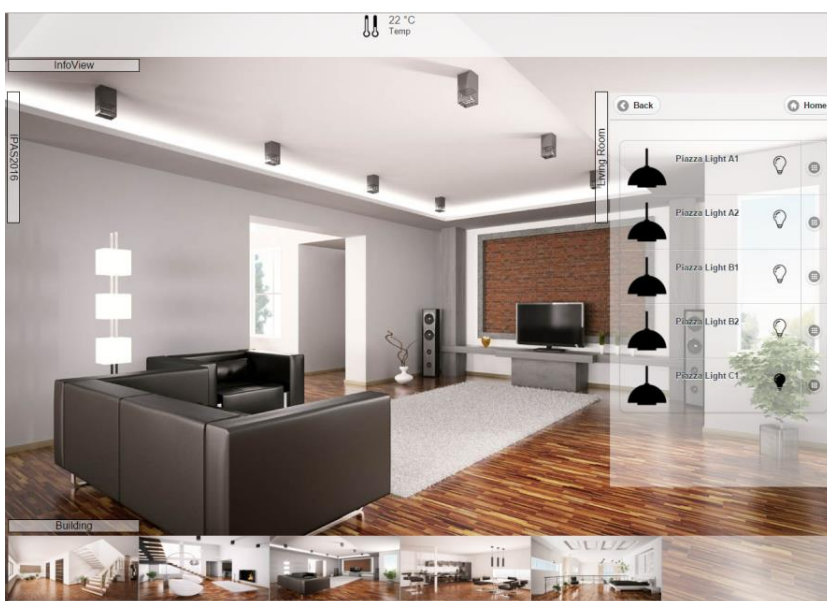


It is possible to choose a previously created visualisation page or a static image as standard background. Width and height should correspond to the resolution of the tablet used.



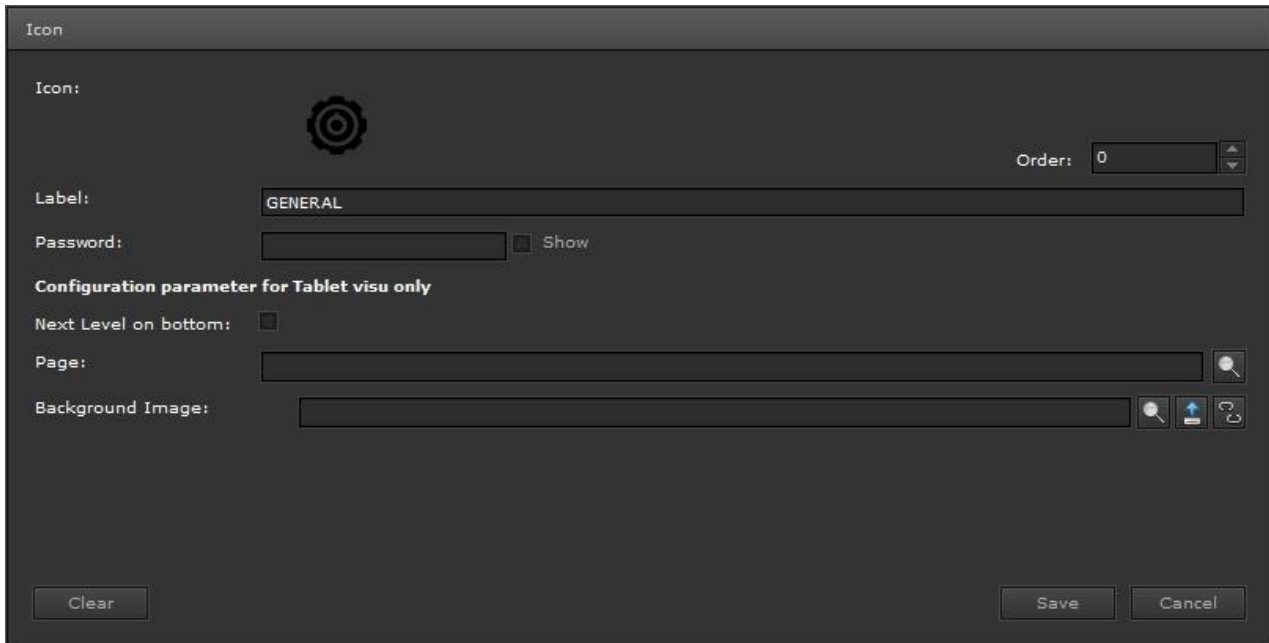
The following is an overview of the four possible containers: The top container shows all the status information that was defined in the info view, see chapter: [9.4 Info view panel](#).

The left container usually shows the main menu. A further menu level can be displayed in the bottom container. These buttons are automatically displayed with the selected background image. The container on the right shows the different functions. This level corresponds to the function view in the Smart Visu for smart phones.



The menu items of the first menu level are displayed on the left-hand side. If a second menu level is being configured, the second level is shown in the bottom container.

To do so, please select the parameter "next level below" on the previous level. This means that the next level is displayed in the bottom container. Every page can be displayed via a dynamic visualisation page or a static background image.



The menu items of the first menu level are displayed on the left-hand side. If a second menu level is being configured, the second level is shown in the bottom container.

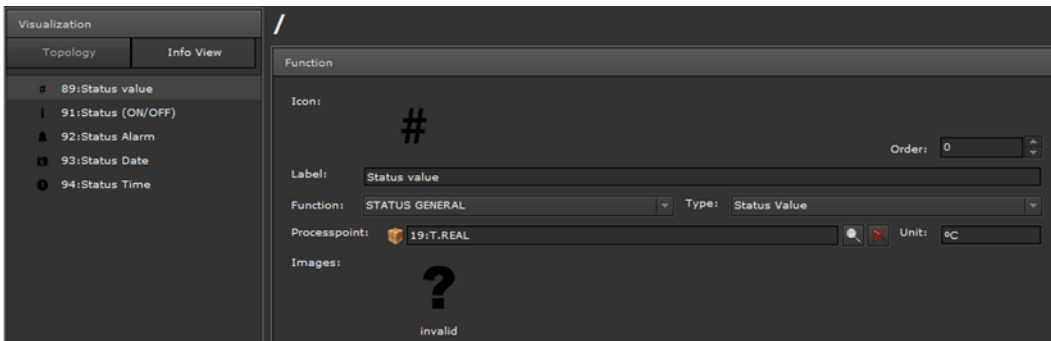
To do so, please select the parameter "next level below" on the previous level. This means that the next level is displayed in the bottom container. Every page can be displayed via a dynamic visualisation page or a static background image.

It can be chosen between the layout "distributed" and centered. This setting refers to the arrangement of the display and operating functions or their icons. The "distributed" setting displays the function icon and the function label on the left. With the respective button on the right of the function line, a submenu for the function is displayed, e.g. the dimming function is displayed as a slider or the RGB control as a special element. Basically, for simple functions, e.g. On / Off, can be switched directly over the entire operating line, the submenu is not necessary.

Likewise, a logo can be set. This logo is displayed in the Smart Visualization at the top left of the menu bar. By default, a HCC logo is preset. Other pictures can be uploaded and set.

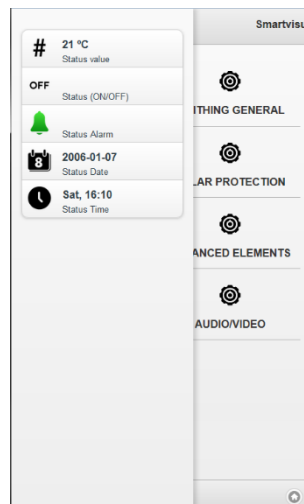
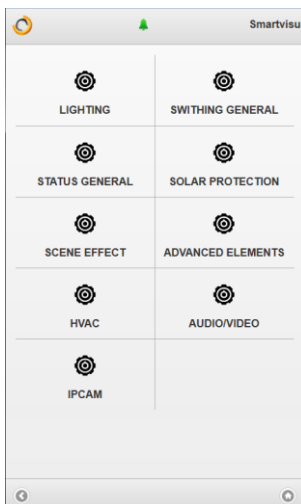
## 9.4 Info view panel

This panel enables you to add different status values from the installation in order to show them in a slide left panel in the visualization.



Example: If the alarm icon is clicked, a window with the current settings will appear.

The following status types are available:



The following status types are available:

- Status value:** Accept any kind of DPT
- Status ON/OFF:** Ready for 1 bit DPT
- Status Alarm:** Ready for 1 bit DPT
- Status Date:** Ready for Date DPT
- Status Time:** Ready for Time DPT

## 9.5 Menu structure

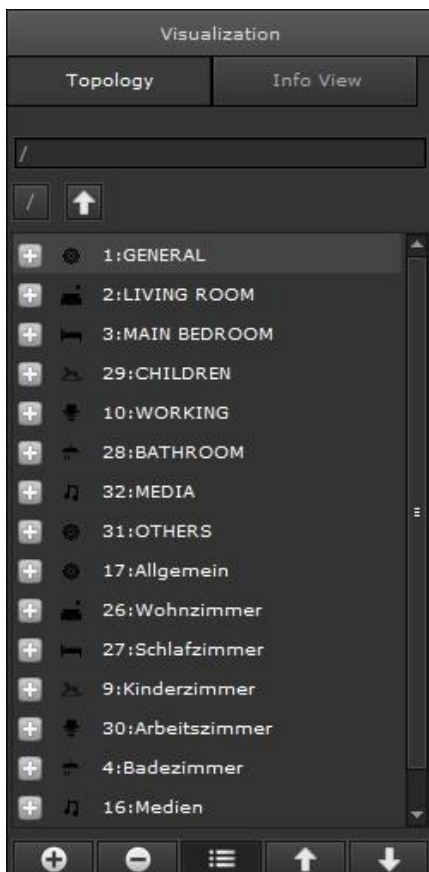


With a double-click on the folder or a click on the plus-symbol in front of the folder you get to the subfolder etc. There you can now define further subpages and thus an operator topology. The function button "Add function" creates a function on the operating page.

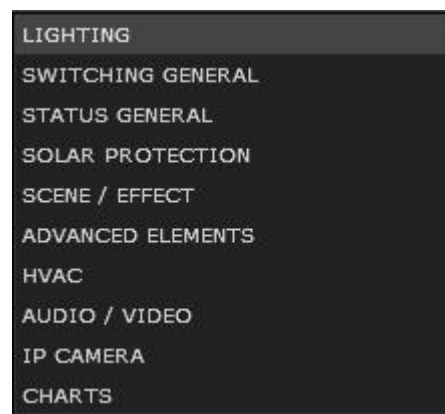
Before the display and operating functions are set up, the page structure or navigation of the Smart Visu project must be defined in the Topology tab or the display content of the various containers must be defined in a Tablet Visu project. To do this, the Add button is used to create a menu or a special page with its name.

This name is displayed under the navigation button for this page. Access to the respective page can also be protected with a password. This is set up under "Password". Behind "Picture" you can select a suitable icon for the navigation button. This can, for example, represent a trade such as lighting, sun protection or HVAC or present a local structure such as office 1, office 2, meeting room etc. In the special pages, the web views of the various modules already configured in the web editor, such as schedules, periods, alarms, alarm history, monitoring, can be assigned.

Special configuration parameters for tablet visualization are offered. If you activate the Next level selection below, a second menu level is displayed in another container. Each menu page or special page can be represented by a dynamic visualization page from the Web Editor or by a static background image.

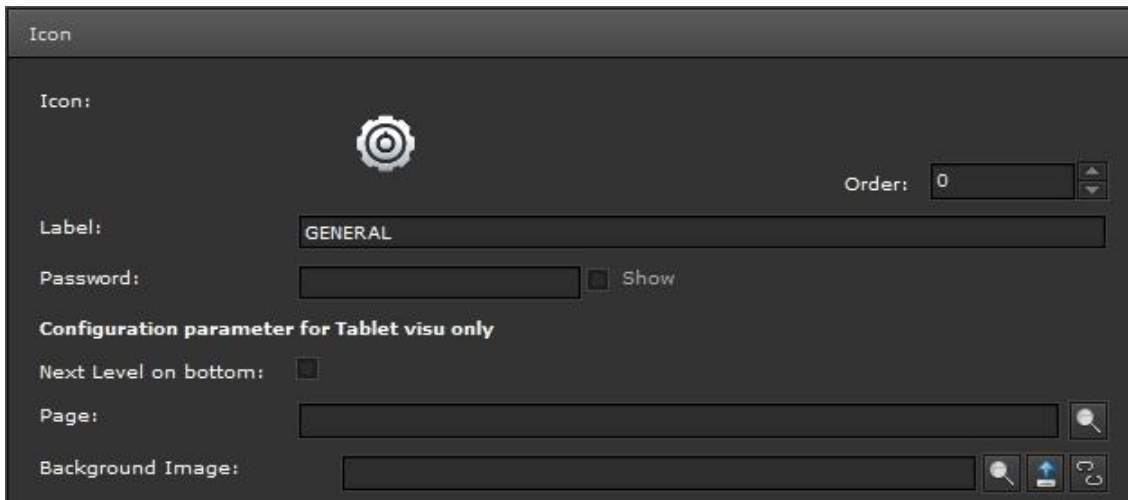


Function categorized in groups are available for visualization. The following categories are offered:




## 9.6 Menu

Menu items can be added at the menu level. The corresponding configuration page appears on the right-hand side of the window:



Icon

Icon: 


Order: 0




Label: GENERAL

Password:  Show

**Configuration parameter for Tablet visu only**

Next Level on bottom:

Page:  

Background Image:    

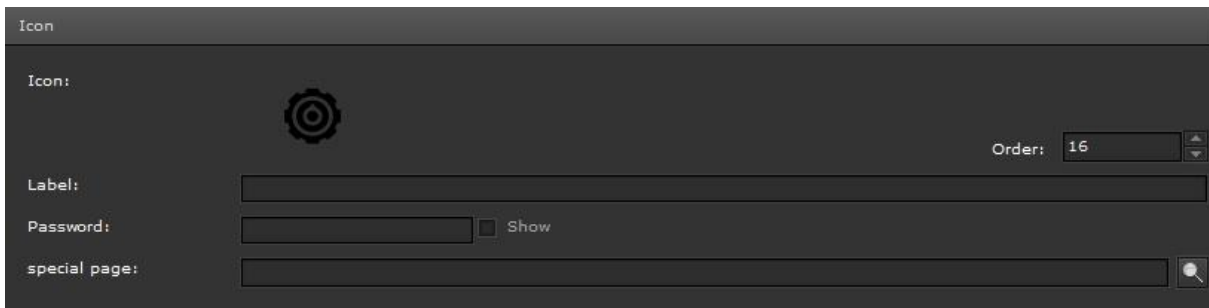
Here the image, the identifier and a password can be displayed, if desired.

## 9.7 Special pages


Special pages can be added at the menu level. In the special pages, the Web views can be assigned from the various modules already configured in the Web Editor, such as schedules, periods, alarms, alarm history, monitoring. Special configuration parameters for the tablet visualization are offered. If you activate the option "next level down", a second menu level will be displayed in another container.

Each menu page or special page can be represented by a dynamic visualization page from the Web Editor or by a static background image. With a double-click on the folder or a click on the plus-symbol in front of the folder you get to the subfolder etc. There you can now define further sub-pages and thus an operating topology. A function is created with the function button "Add function". This is displayed on the operating page.

Here the image, the identifier and a password can be displayed, if desired. The selection of the special page is made possible by clicking on the magnifying glass:




Icon

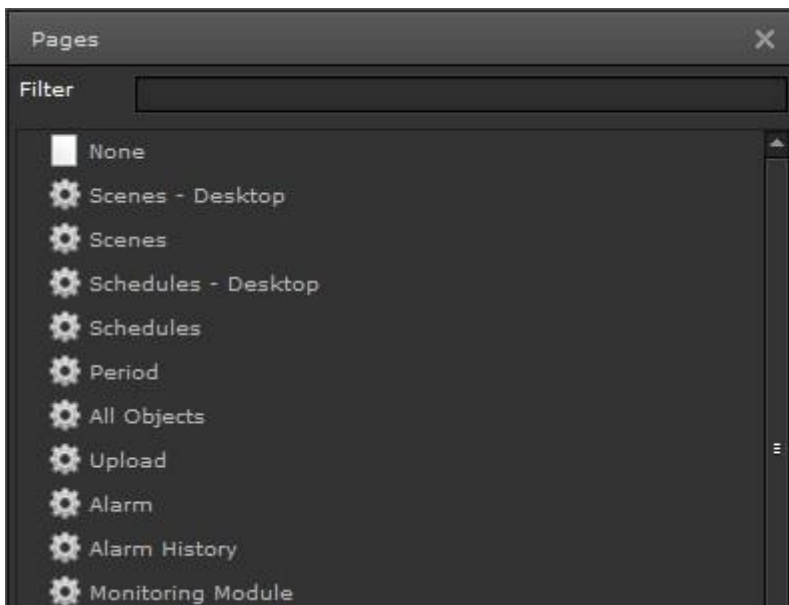
Icon: 

Order: 16

Label:

Password:   Show

special page:  



The ready-made pages are displayed accordingly in the respective browser

## 9.7.1 Lighting functions

To create the functions, the respective relevant folder, the page, is selected and a function is added. The selection of the function "Lighting" offers 7 types to choose from.

### 9.7.1.1 Light switch

This element sends ON/OFF values. Its status is updated directly via the assigned communication object "processpoint". If no status value is received, the object will remain in a state called "Invalid".



**Icon:** Icon function

**Label:** Function name.

**Order:** Position assigned in the visualisation.

**Function:** LIGHTING

**Subtype:** Light switch.

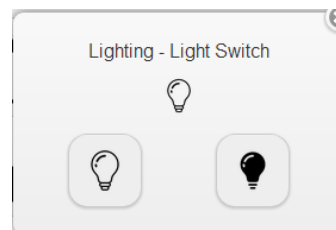
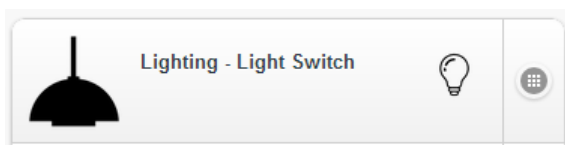
**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

**Processpoint:** Communication object or virtual variable linked.

**Images:** Images to show for each action/status.

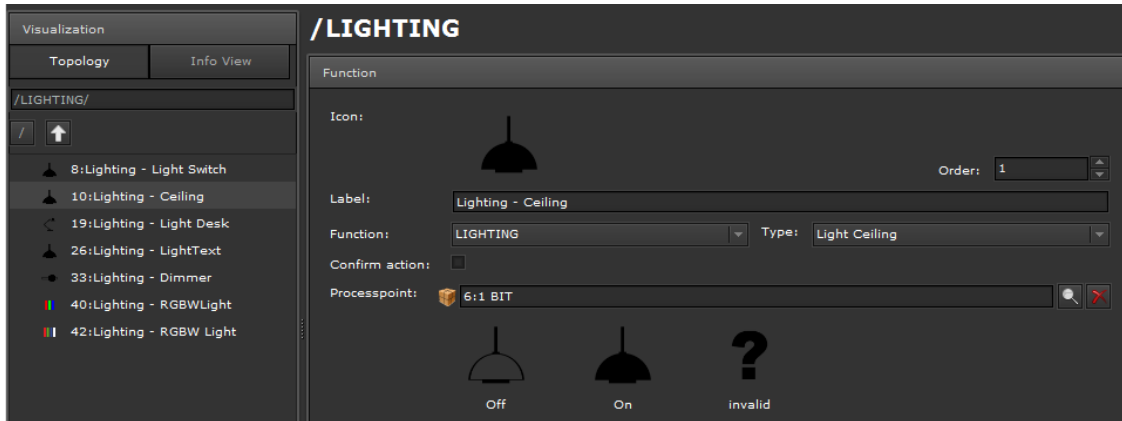
**Allowed DPT:** 1bit

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.1.2 Light Ceiling

This element sends ON/OFF values. Its status is updated directly via the assigned communication object "processpoint". If no status value is received, the object will remain in a state called "Invalid".



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Function name.

**Function:** LIGHTING

**Subtype:** Light ceiling.

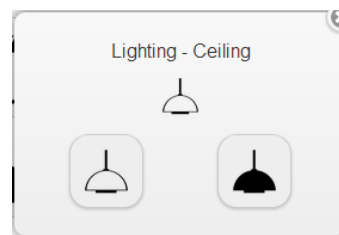
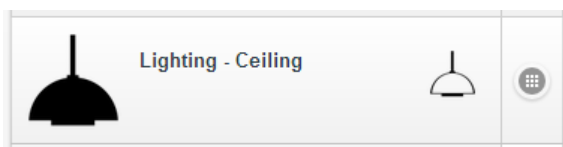
**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

**Processpoint:** Communication object or virtual variable linked.

**Images:** Images to show for each action/status.

**Allowed DPT:** 1bit

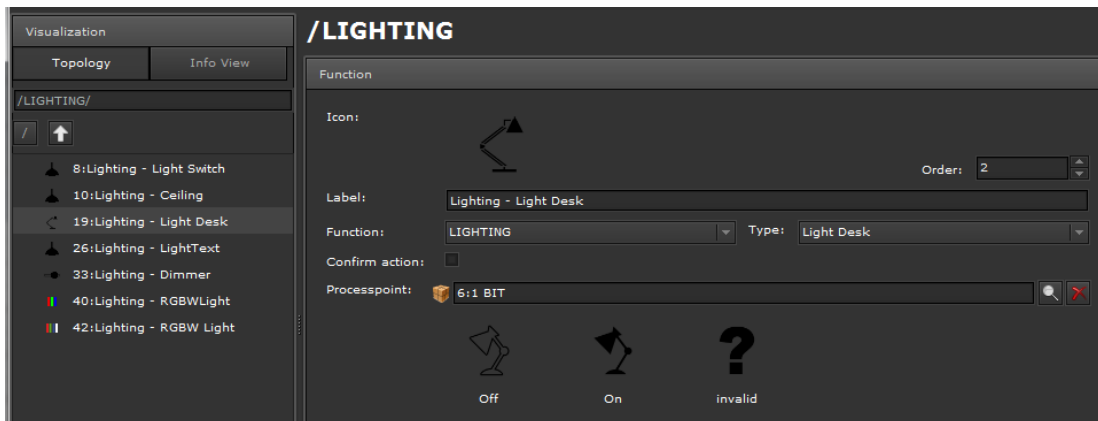
The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:





### 9.7.1.3 Light Desk

This element sends ON/OFF values. Its status is updated directly via the assigned communication object "processpoint". If no status value is received, the object will remain in a state called "Invalid".



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Function name.

**Function:** LIGHTING

**Subtype:** Light desk.

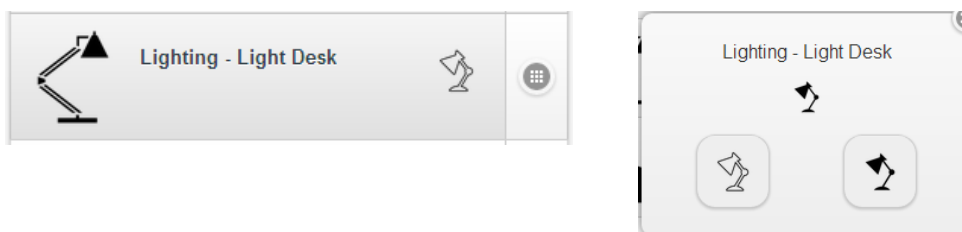
**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

**Processpoint:** Communication object or virtual variable linked.

**Images:** Images to show for each action/status.

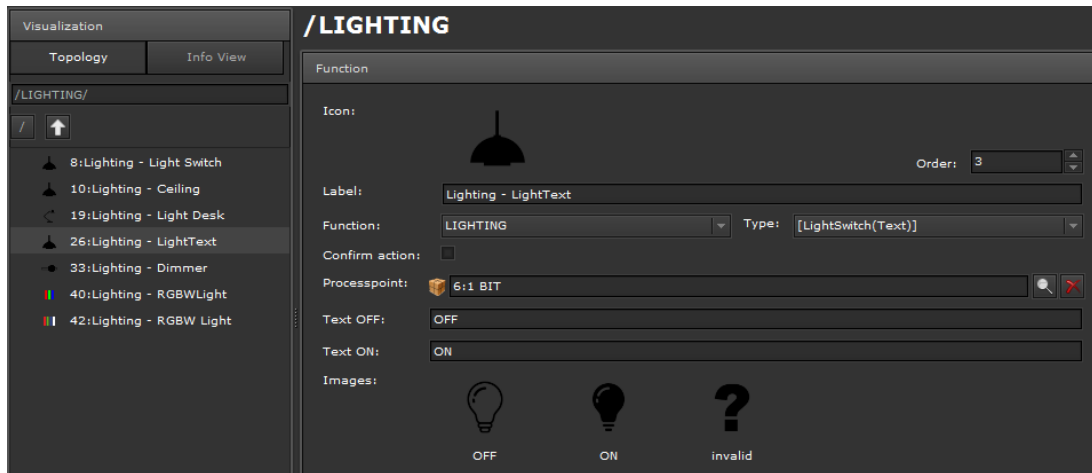
**Allowed DPT:** 1bit

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.1.4 Light (text)

This element sends ON/OFF values to control a light and also shows text descriptions for actions and status. Its status is updated directly via the assigned communication object “processpoint”. If no status value is received, the object will remain in a state called “Invalid”.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Function name.

**Function:** LIGHTING

**Subtype:** Light switch text.

**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

**Processpoint:** Communication object or virtual variable linked.

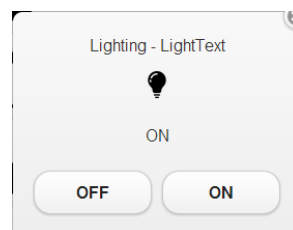
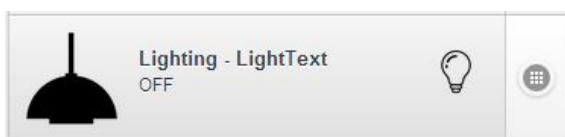
**Text OFF:** Text to show for OFF value/status.

**Text ON:** Text to show for ON value/status.

**Images:** Images to show for each action/status.

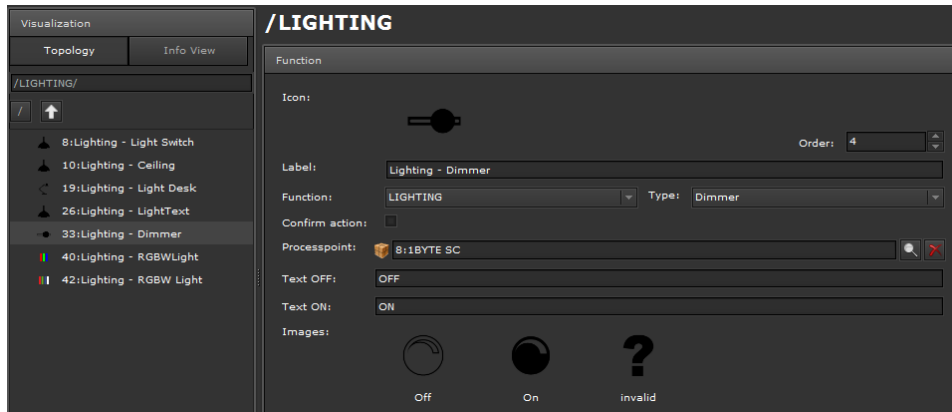
**Allowed DPT:** 1bit

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.1.5 Dimmer

This element sends On/Off and absolute values to control a dimmer light. It also shows text descriptions for actions and status. Its status is updated directly via the assigned communication objects "processpoint". If no status value is received, the objects will remain in a state called "Invalid"



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Function name.

**Function:** LIGHTING

**Subtype:** Dimmer.

**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

**Processpoint:** Communication object or virtual variable linked.

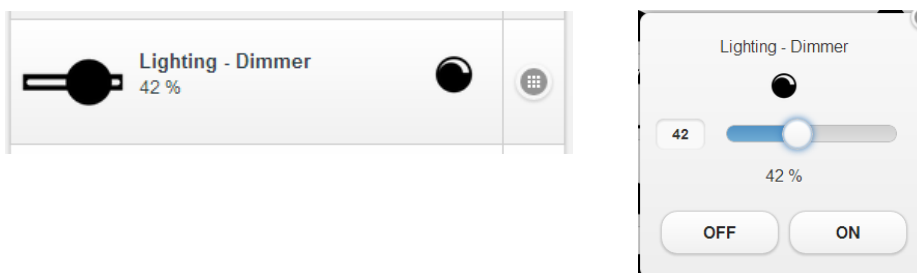
**Text OFF:** Text to show for OFF value/status (Value = 0%)

**Text ON:** Text to show for ON value/status (Value=100%)

**Images:** Images to show for each action/status.

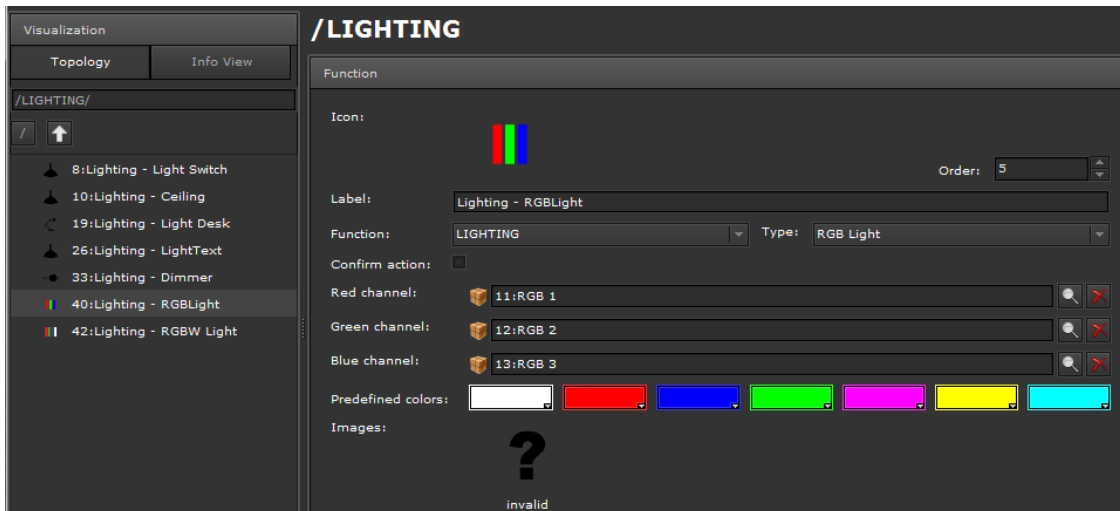
**Allowed DPT:** 1byte

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.1.6 RGB Light

This element sends 3 x 1 byte absolute values to control an RGB light. Its status is updated directly via the assigned communication objects “processpoint”. If no status value is received, the objects will remain in a state called “Invalid”



**Icon:** Icon function

**Order:** Position assigned in the visualisation

**Label:** Name assigned to the function

**Type:** Switching

**Subtype:** RGB light

**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

**Red channel:** 1byte object or virtual variable linked for red colour control.

**Green channel:** 1byte object or virtual variable linked for green colour control.

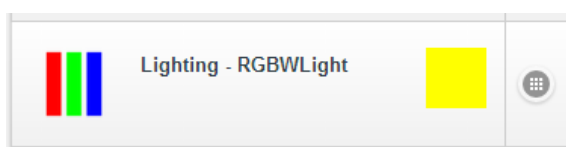
**Blue channel:** 1byte object or virtual variable linked for blue colour control.

**Predefined colours:** Colours to send sequentially.

**Allowed DPT:** 1byte

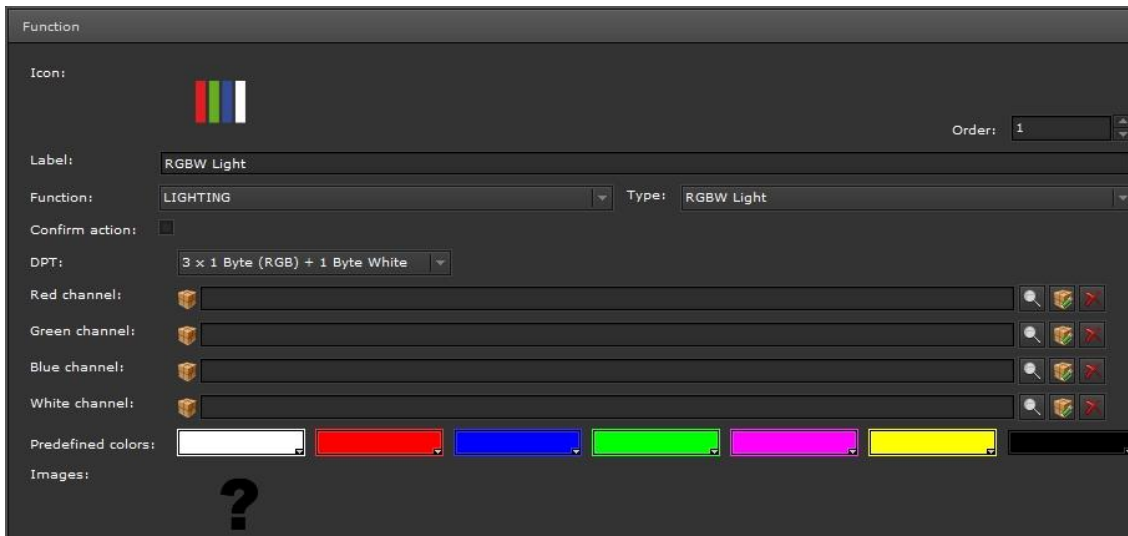


The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.1.7 RGBW Light

This element sends 4 x 1 byte absolute values to control an RGB light with White colour control. Its status is updated directly via the assigned communication objects "processpoint". If no status value is received, the objects will remain in a state called "Invalid".



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Name assigned to the function.

**Type:** Switching

**Subtype:** RGBW light.

**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

**Red channel:** 1byte object or virtual variable linked for red colour control.

**Green channel:** 1byte object or virtual variable linked for green colour control.

**Blue channel:** 1byte object or virtual variable linked for blue colour control.

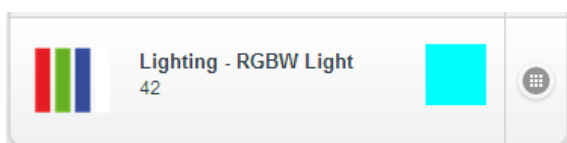
**White channel:** 1byte object or virtual variable linked for blue colour control.

**Predefined colours:** Colours to send sequentially.

**Allowed DPT:** 1byte

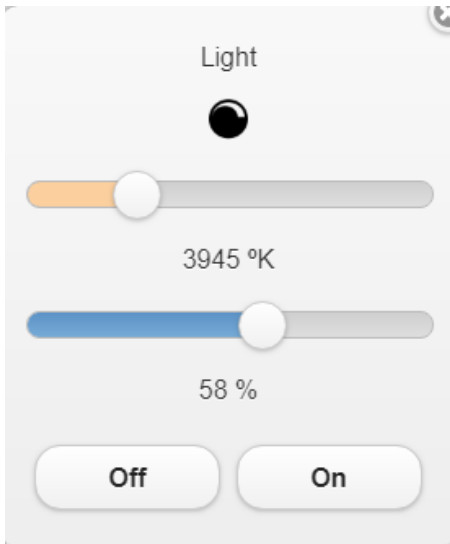
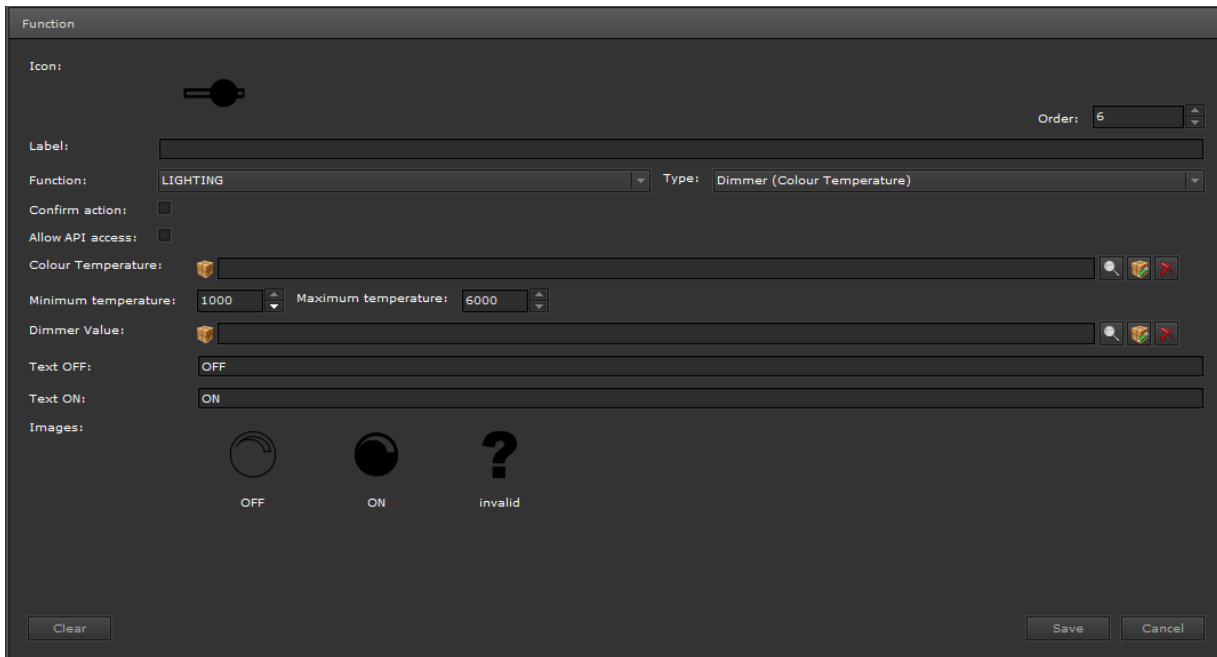


The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.1.8 Dimmer (color temperature)

With this element it is possible to adjust a light in both the brightness and in the color temperature. Both values are adjusted via a slider. For the color temperature, the minimum and maximum possible value range can be entered.

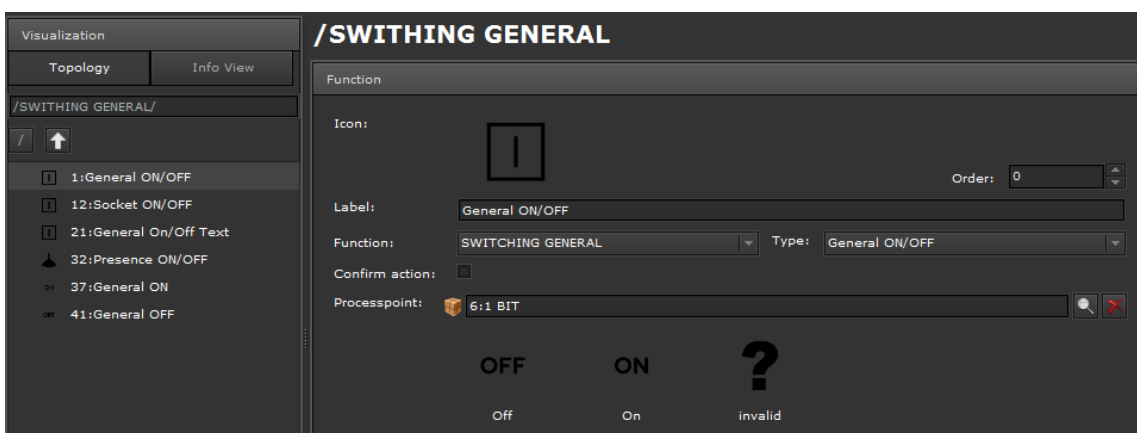


## 9.7.2 Switching General

To create the functions, the relevant folder, the page, selected and added a function. The selection of Function "Switch General" offers 6 types to choose from.

### 9.7.2.1 General ON/OFF

This element sends ON/OFF values. Its status is updated directly via the assigned communication object "processpoint". If no status value is received, the object will remain in a state called "Invalid".



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Function name.

**Function:** Switching General

**Subtype:** General ON/OFF.

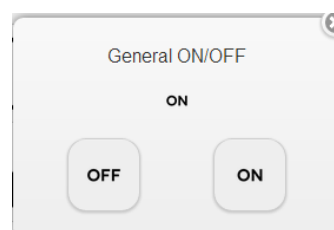
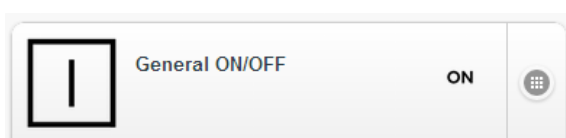
**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

**Processpoint:** Communication object or virtual variable linked.

**Images:** Images to show for each action/status.

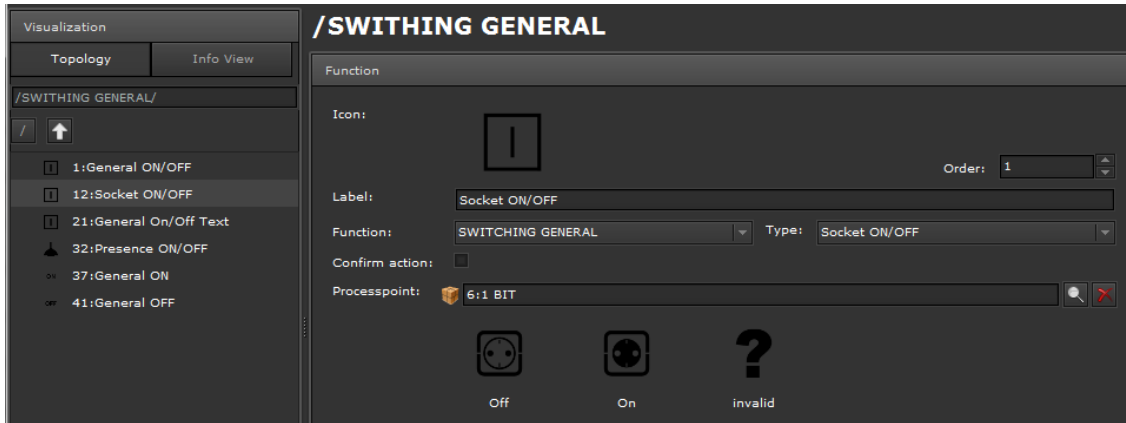
**Allowed DPT:** 1bit

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.2.2 Socket ON/OFF

This element sends ON/OFF values. Its status is updated directly via the assigned communication object "processpoint". If no status value is received, the object will remain in a state called "Invalid".



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Function name.

**Function:** Switching General

**Subtype** Socket ON/OFF.

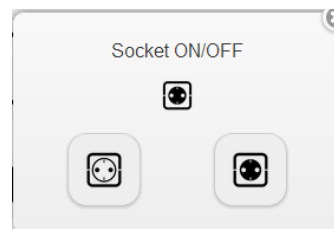
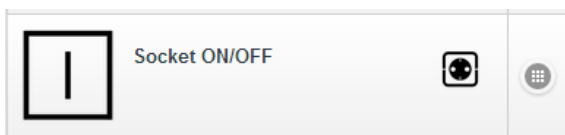
**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

**Processpoint:** Communication object or virtual variable linked.

**Images:** Images to show for each action/status.

**Allowed DPT:** 1bit

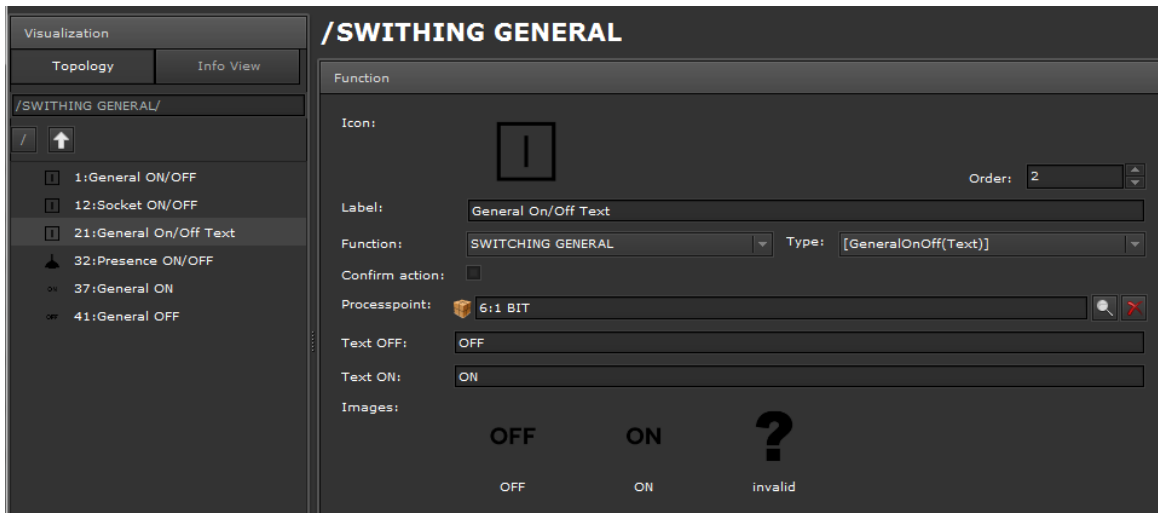
The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:





### 9.7.2.3 General ON/OFF Text

This element sends ON/OFF values and shows text descriptions for actions and status. Its status is updated directly via the assigned communication object "processpoint". If no status value is received, the object will remain in a state called "Invalid".



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Function name.

**Function:** Switching General

**Subtype:** General ON/OFF Text.

**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

**Processpoint:** Communication object or virtual variable linked.

**Text OFF:** Text to show for OFF value/status.

**Text ON:** Text to show for ON value/status.

**Images:** Images to show for each action/status.

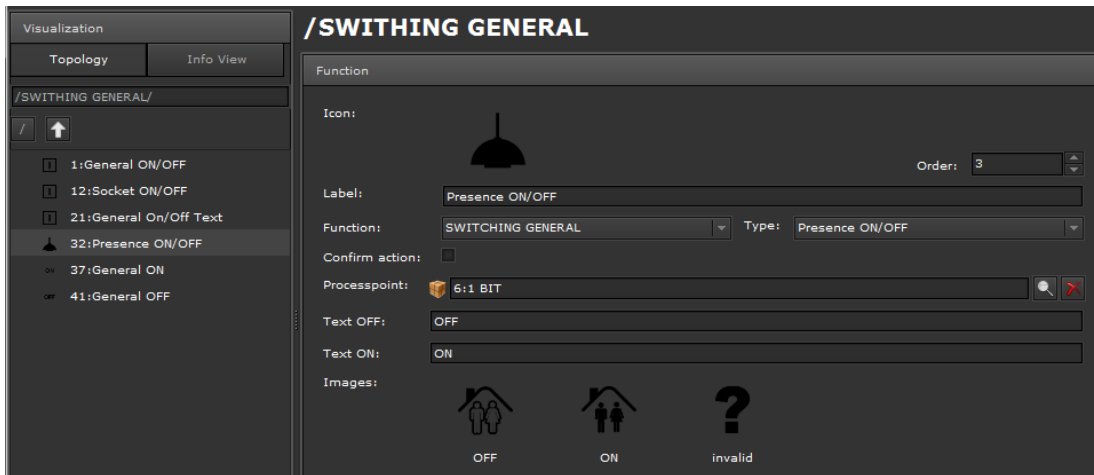
**Allowed DPT:** 1bit

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.2.4 Presence ON/OFF

This element sends ON/OFF values and shows texts descriptions for actions and status. Its status is updated directly via the assigned communication object "processpoint". If no status value is received, the object will remain in a state called "Invalid".



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Function name.

**Function:** Switching General.

**Subtype:** Presence ON/OFF.

**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

**Processpoint:** Communication object or virtual variable linked.

**Text OFF:** Text to show for OFF value/status.

**Text ON:** Text to show for ON value/status.

**Images:** Images to show for each action/status.

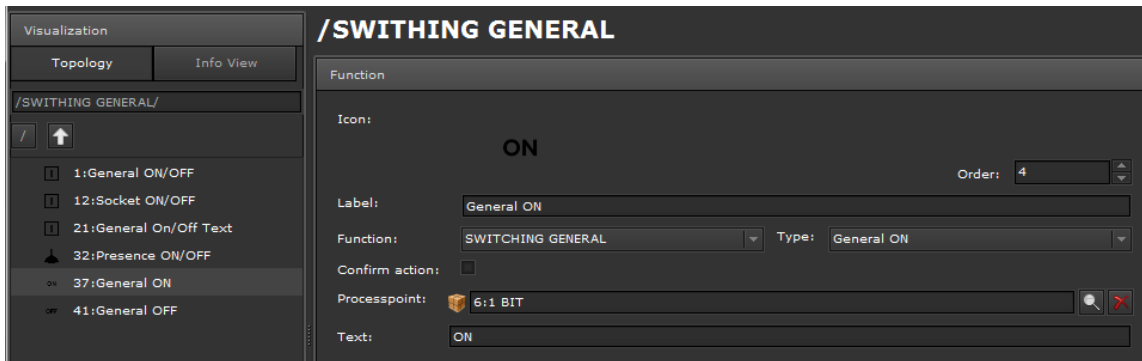
**Allowed DPT:** 1bit

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.2.5 General (ON)

This element sends ON values and shows text descriptions for ON actions and status. Its status is updated directly via the assigned communication object "processpoint". If no status value is received, the object will remain in a state called "Invalid".



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Function name.

**Function:** Switching General.

**Subtype:** General ON.

**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

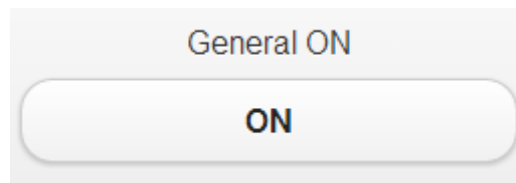
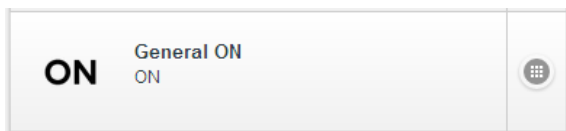
**Processpoint:** Communication object or virtual variable linked.

**Text ON:** Text to show for ON value/status.

**Images:** Images to show for each action/status.

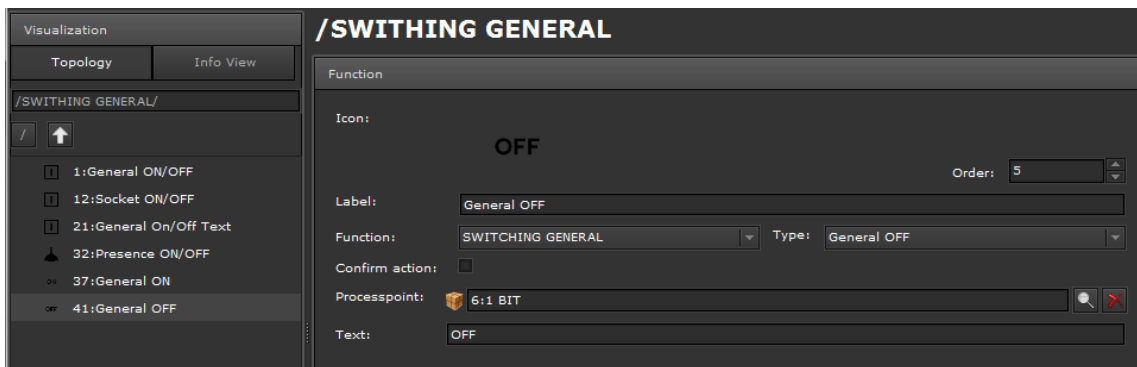
**Allowed DPT:** 1bit

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.2.6 General (OFF)

This element sends OFF values and shows text descriptions for OFF actions and status. Its status is updated directly via the assigned communication object "processpoint". If no status value is received, the object will remain in a state called "Invalid".



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Function name.

**Function:** Switching General.

**Subtype:** General OFF.

**Confirm Action:** If this option is activated, the action will be confirmed via a popup window.

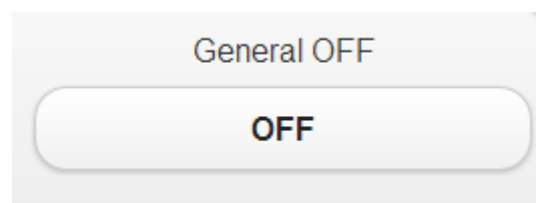
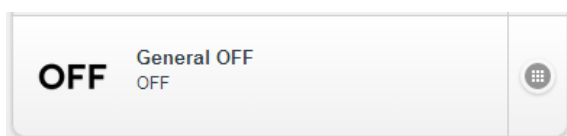
**Processpoint:** Communication object or virtual variable linked.

**Text OFF:** Text to show for OFF value/status.

**Images:** Images to show for each action/status.

**Allowed DPT:** 1bit

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:

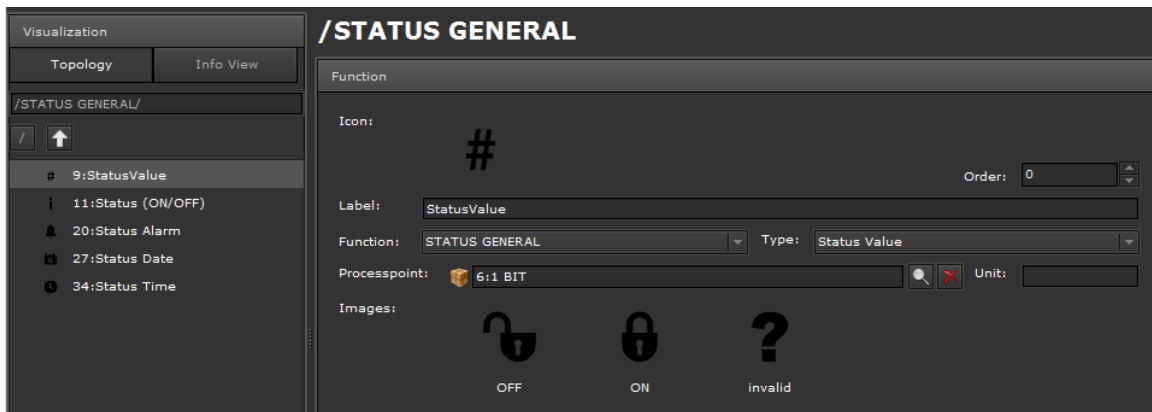


### 9.7.3 Status General

To create the functions, the relevant folder, the Page, selected and added a feature. The selection of Function "Status General" offers 5 types to choose from.

#### 9.7.3.1 Status Value

This element shows different status values of the assigned communication object.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Name assigned to the function.

**Function:** Status general

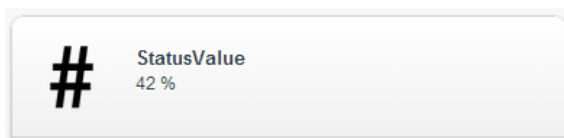
**Subtype:** Status value

**Processpoint:** Communication object or virtual variable linked.

**Unit:** Unit for the received status value.

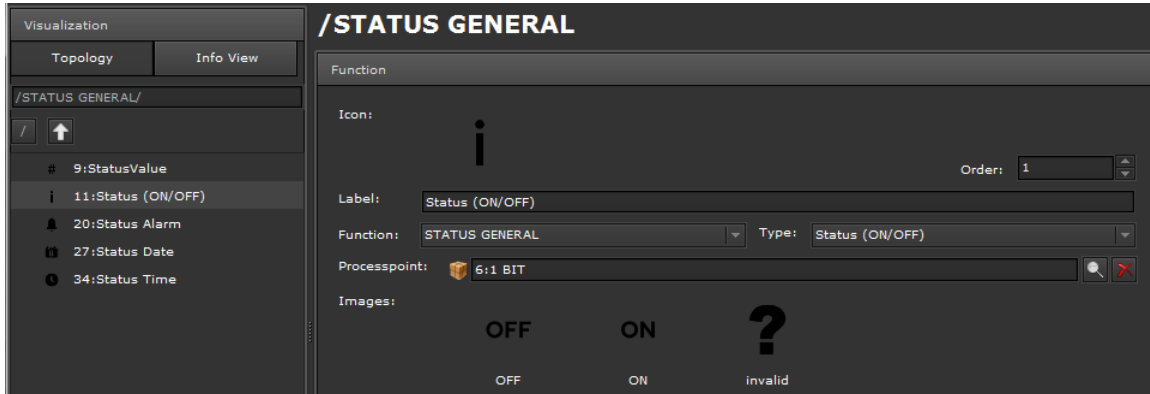
**Allowed DPT:** Any DPT

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.3.2 Status (ON/OFF)

This element shows the ON/OFF status values of the assigned communication object.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Name assigned to the function.

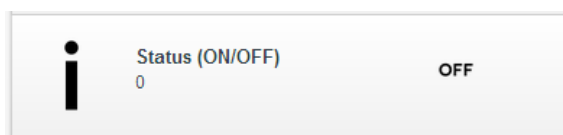
**Function:** Status general

**Subtype:** Status ON/OFF

**Processpoint:** Communication object or virtual variable linked.

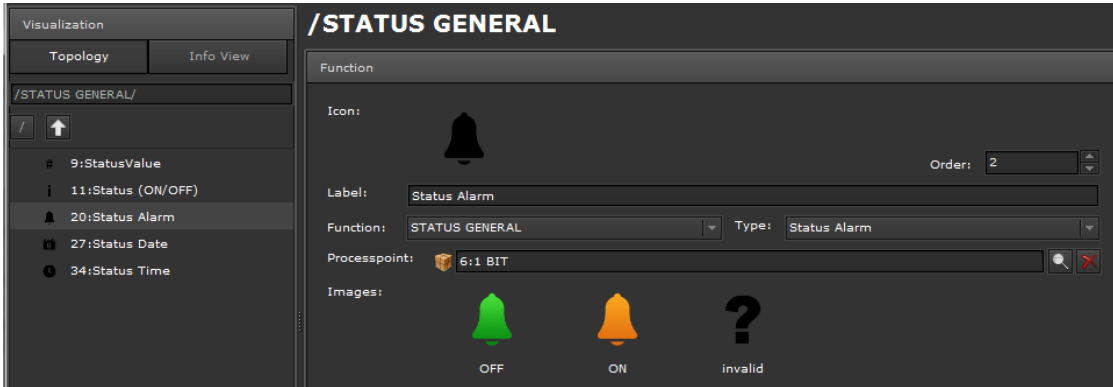
**Allowed DPT:** 1bit

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.3.3 Status Alarm

This element shows ON/OFF alarm status values of the assigned communication object.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Name assigned to the function.

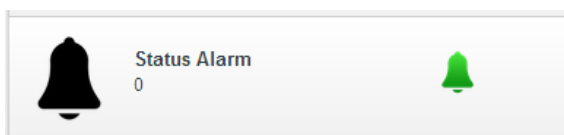
**Function:** Status General

**Subtype:** Status Alarm.

**Processpoint:** Communication object or virtual variable linked.

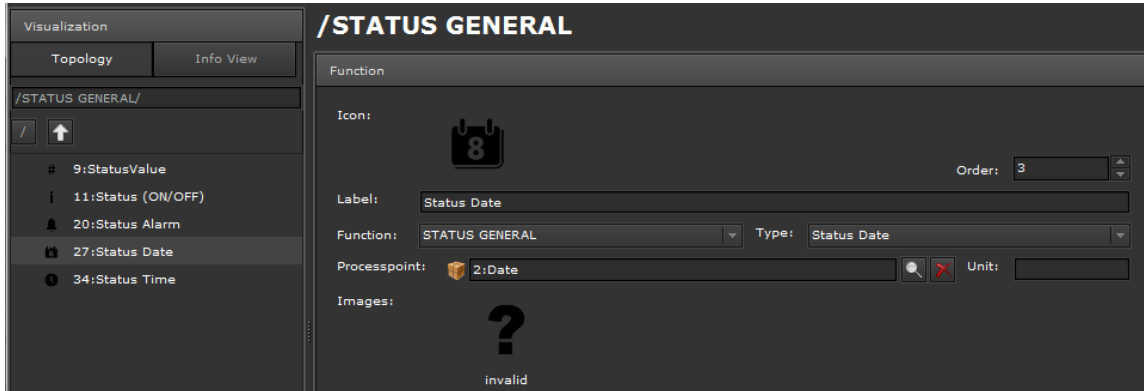
**Allowed DPT:** 1bit

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.3.4 Status Date

This element shows date status values of the assigned communication object.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

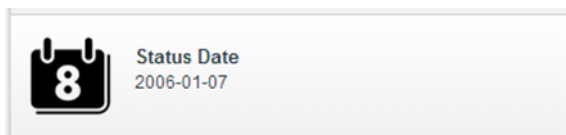
**Label:** Name assigned to the function.

**Function:** Status General

**Subtype:** Status Date

**Processpoint:** Communication object or virtual variable linked.

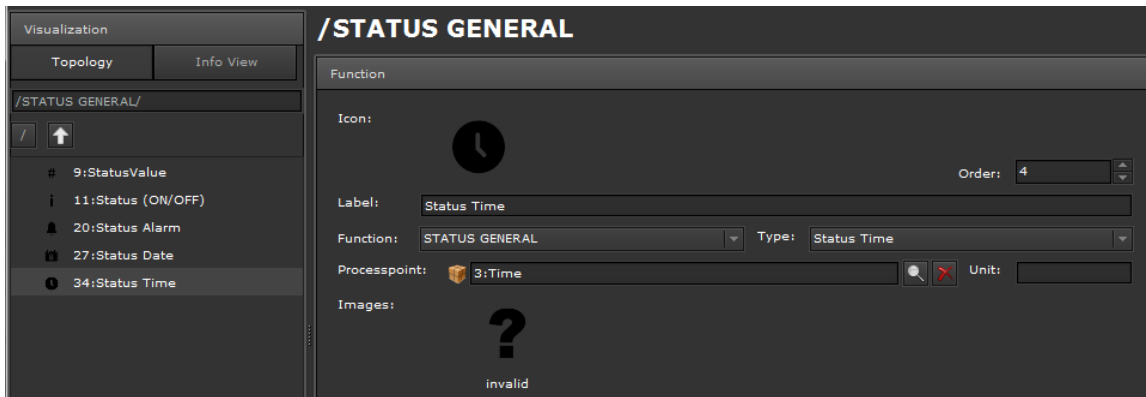
The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:





### 9.7.3.5 Status Time

This element shows time status values of the assigned communication object.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

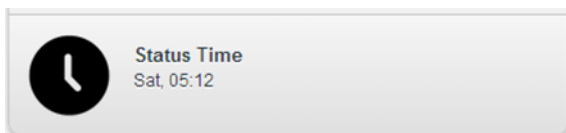
**Label:** Name assigned to the function.

**Function:** Status General

**Subtype:** Status Date

**Processpoint:** Communication object or virtual variable linked.

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:

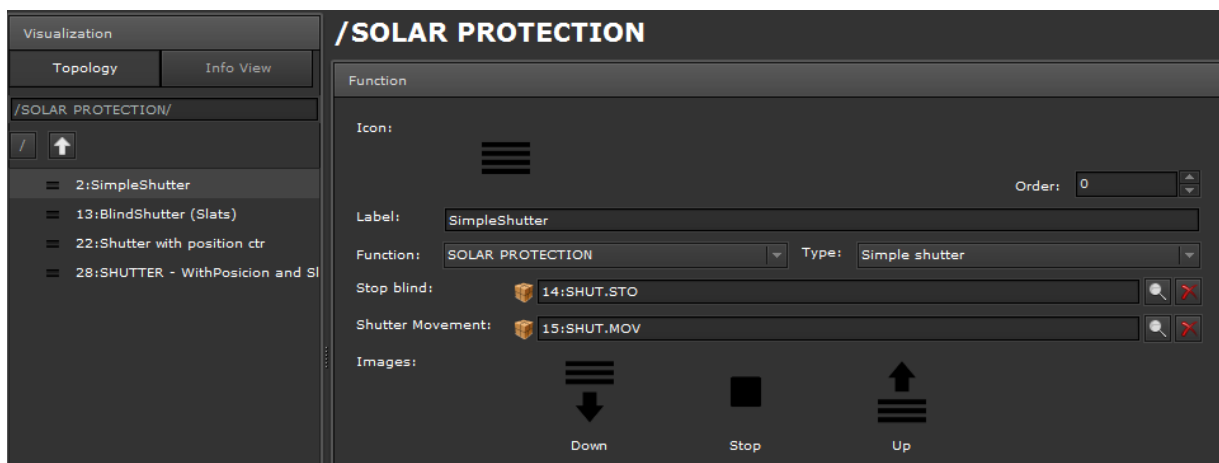


## 9.7.4 Solar protection

To create the functions, the relevant folder, the page, selected and added a feature. The selection. The sun protection function offers 4 types to choose from.

### 9.7.4.1 Simple shutter

This element sends stop and movement values for shutter control via the assigned communications objects.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Name assigned to the function.

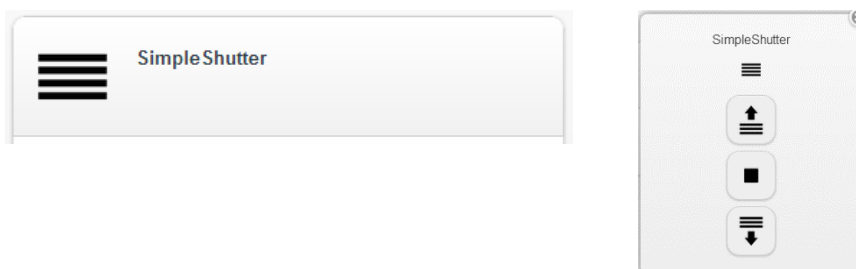
**Type:** Solar protection

**Stop blind:** Stop communication object or virtual variable linked (1bit allowed)

**Shutter movement:** Movement communication object or virtual variable linked (1bit allowed).

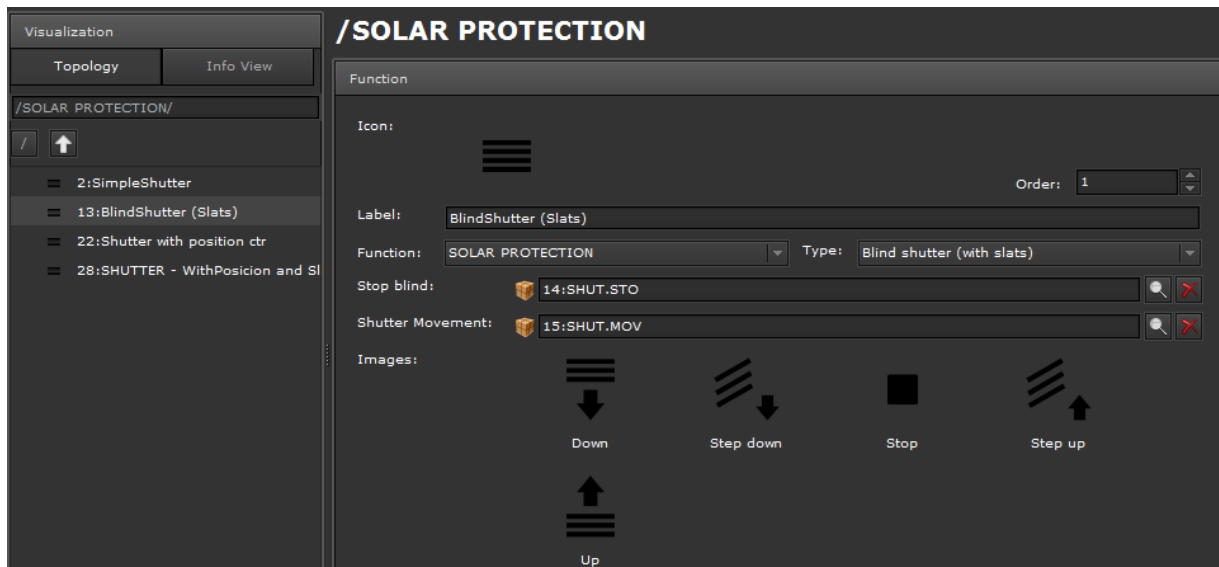
**Images:** Images linked to every action

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.4.2 Blind shutter (with slats)

This element sends stop and movement values for blind control, and step values for slats control via the assigned communications objects.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Name assigned to the function.

**Type:** Solar protection.

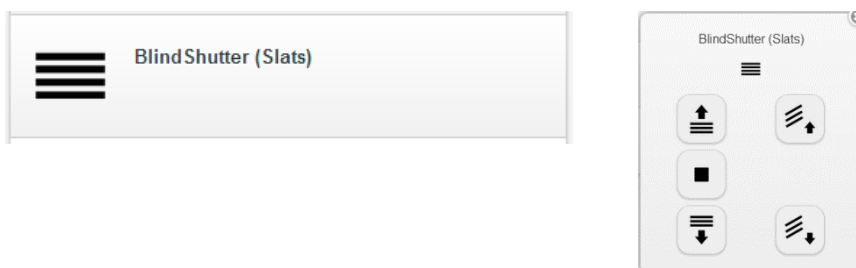
**Stop blind:** Stop/Slat communication object or virtual variable linked (1bit allowed).

**Shutter movement:** Movement communication object or virtual variable linked (1bit allowed).

**Images:** Images linked to every action

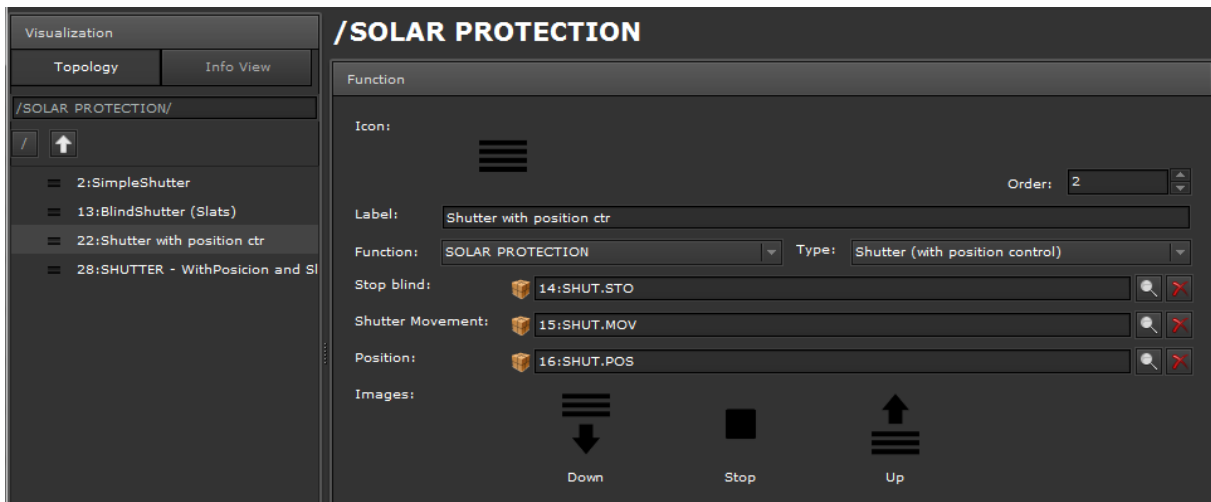
**Allowed DPT:** 1bit

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.4.3 Slide shutter (with position control)

This element sends stop, movement and position values for shutter control. Its status is updated directly via the assigned communication objects.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Name assigned to the function.

**Type:** Solar protection.

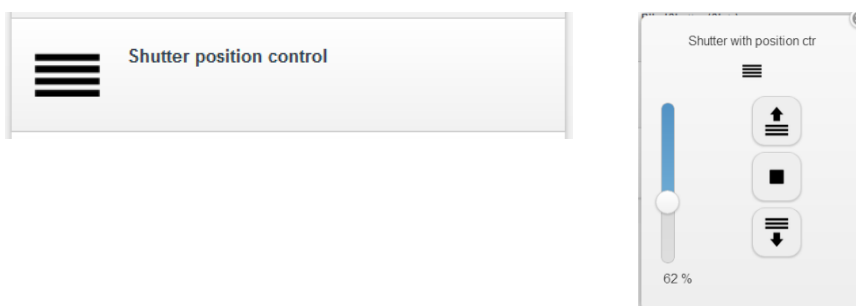
**Stop blind:** Stop communication object or virtual variable linked (1bit allowed).

**Shutter movement:** Movement communication object or virtual variable linked (1bit allowed).

**Position:** Position communication object or virtual variable linked (1byte allowed).

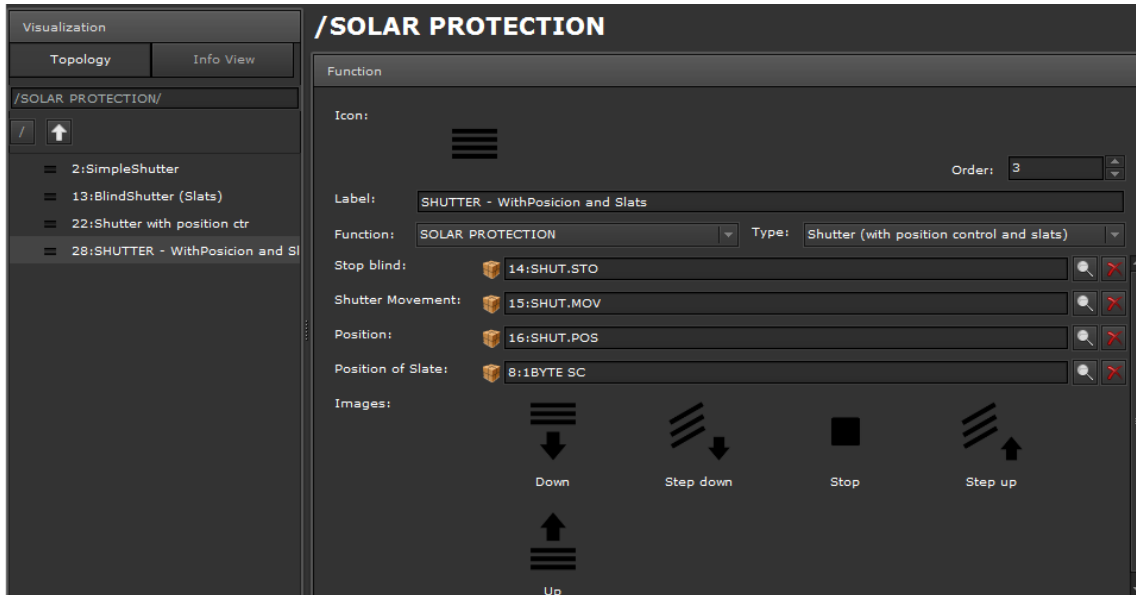
**Images:** Images linked to every action

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.4.4 Shutter (with position control and slats)

This element sends stop, movement and position for blind control and slat position values for slats control. Its status is updated directly via the assigned communication objects



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Name assigned to the function.

**Type:** Solar protection.

**Stop blind:** Stop communication object or virtual variable linked (1bit allowed).

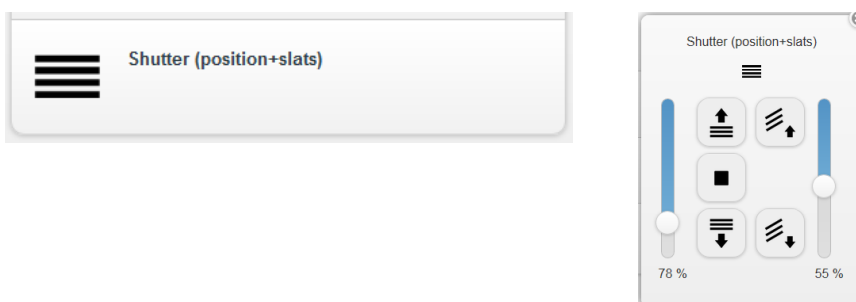
**Shutter movement:** Movement communication object or virtual variable linked (1bit allowed).

**Position:** Position object or virtual variable linked (1byte allowed).

**Position of Slats:** Slat object or virtual variable linked (1byte allowed)

**Images:** Images linked to every action

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:

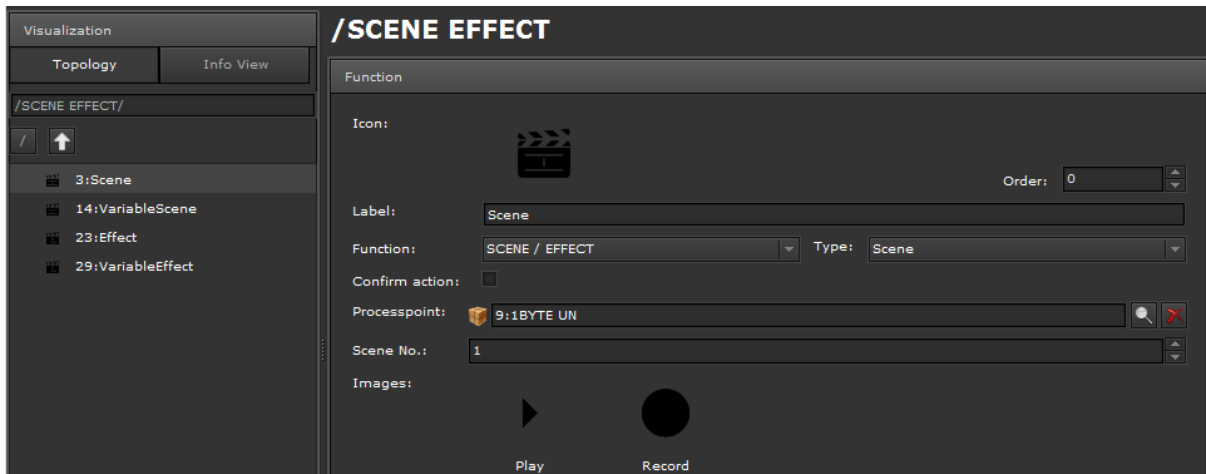


### 9.7.5 Scene Effect

To create the functions, the relevant folder, the page, selected and added a function. The selection of the function "Scenes / Effects" offers 4 types to choose from.

### 9.7.5.1 Scene

This element controls a specific scene via a scene number. Functions such as transmitting play values or record values are controlled via the assigned communication object, according to KNX specifications.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

**Label:** Name assigned to the function.

**Type:** Scene effect

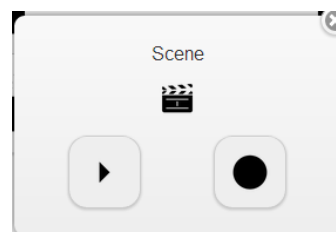
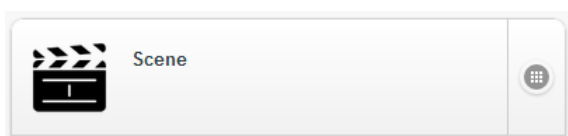
**Confirm action:** Directly sends the specified value without opening the popup window.

**Scene number:** Number to control a specific scene (valid values 1..64)

**Processpoint:** Scene communication object or virtual variable linked (1byte allowed).

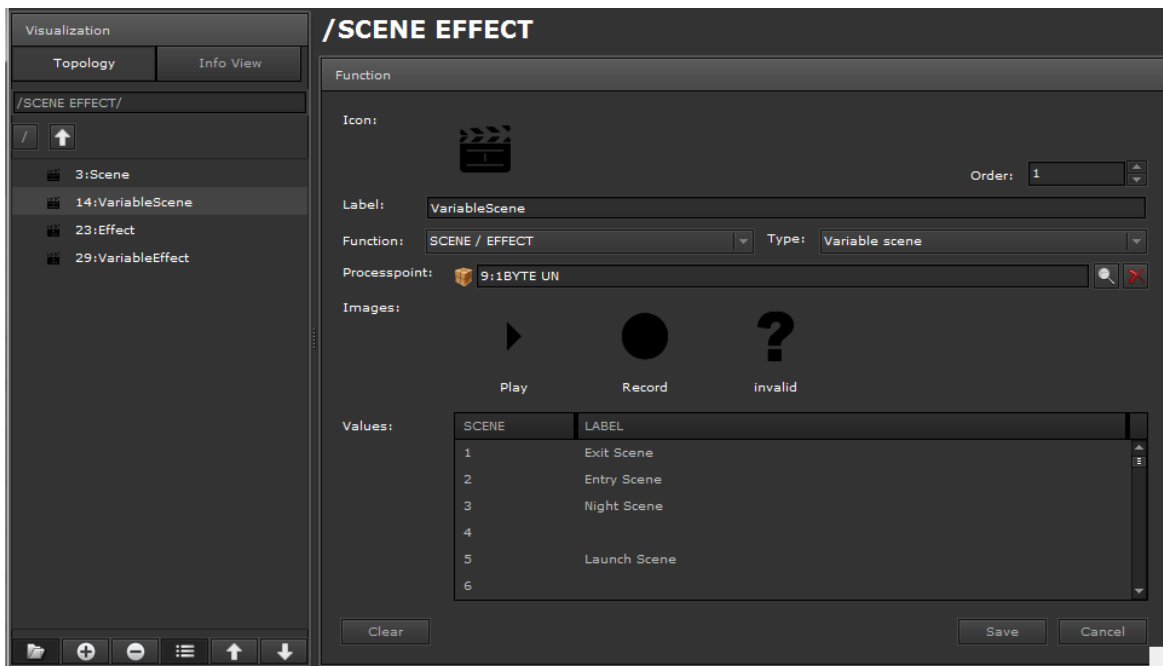
**Images:** Images linked to every action

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.5.2 Variable Scene

This element controls different numbers of scenes with a 1 byte communication object, by adding the number and text description for each scene. Functions such as transmitting play values or record values are controlled via the assigned communication object, according to KNX specifications.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation.

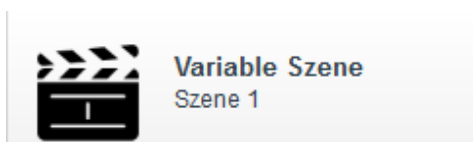
**Label:** Name assigned to the function.

**Type:** Scene effect

**Processpoint:** Scene object or virtual variable linked (1byte allowed).

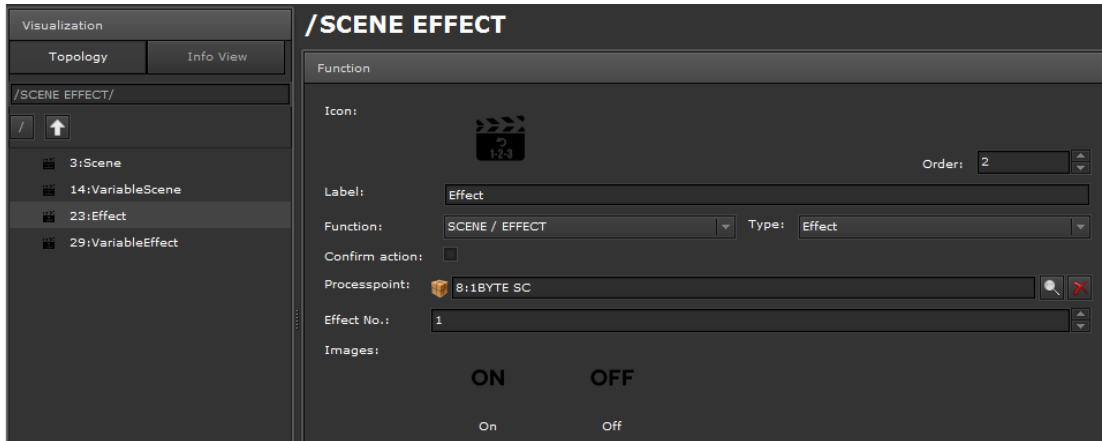
**Values:** Field to add numbers and text description for each scene to be controlled. **Images:** Images linked to every action

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



### 9.7.5.3 Effect

This element controls a specific effect via an effect number. Functions such as transmitting play values or record values are controlled via the assigned communication object, according to KNX specifications.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

**Label:** Name assigned to the function.

**Type:** Scene/Effect

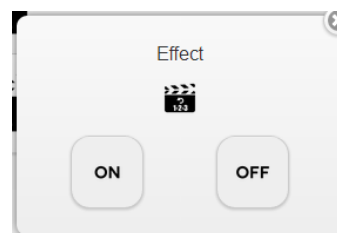
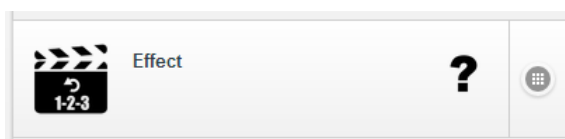
**Confirm action:** Sends the specific number without opening the popup window.

**Effect number:** Fixed number to control a specific effect (valid values 1..16).

**Processpoint:** Effect object or virtual variable linked (1byte allowed).

**Images:** Images linked to every action

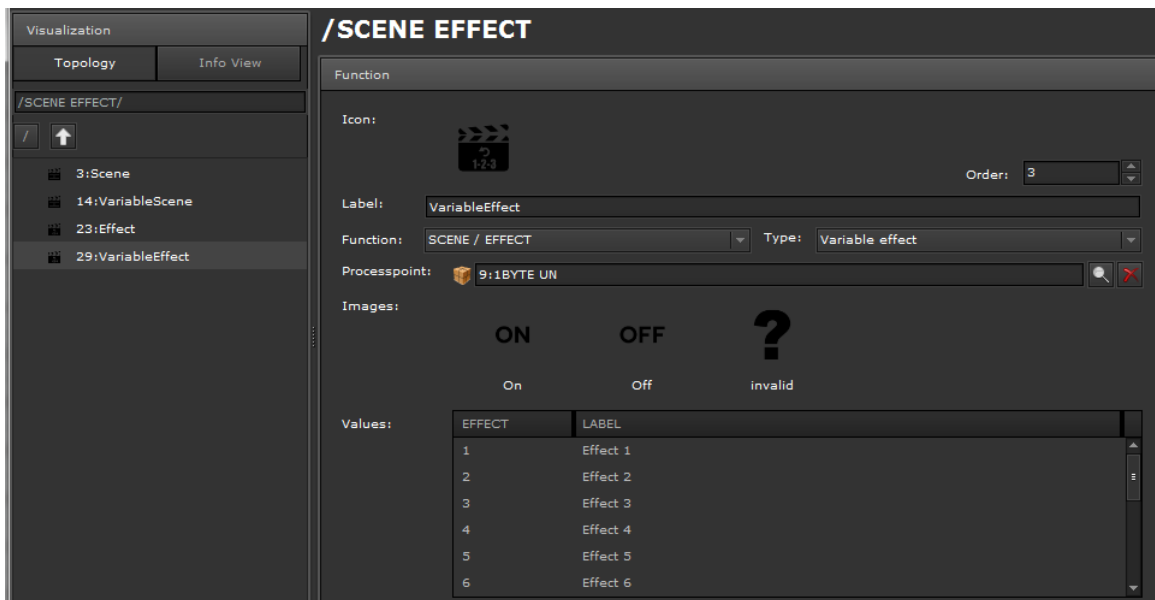
The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:





### 9.7.5.4 Variable Effect

This element controls different numbers of effects, by adding the number and text description for each one. Functions such as transmitting play values or record values are controlled via the assigned communication object, according to KNX specifications.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

**Label:** Name assigned to the function.

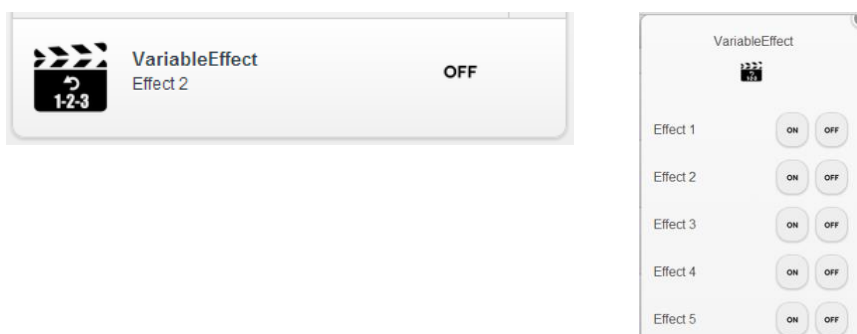
**Type:** Scene/Effect

**Processpoint:** Effect object or virtual variable linked (1byte allowed).

**Values:** Field to add a variable number of scenes with a text description for each one in order to control the defined effects.

**Images:** Images linked to every action

The default icons can be changed by clicking on them with the mouse. The next figure shows a list of all available icons. The result is displayed in the navigator as follows:



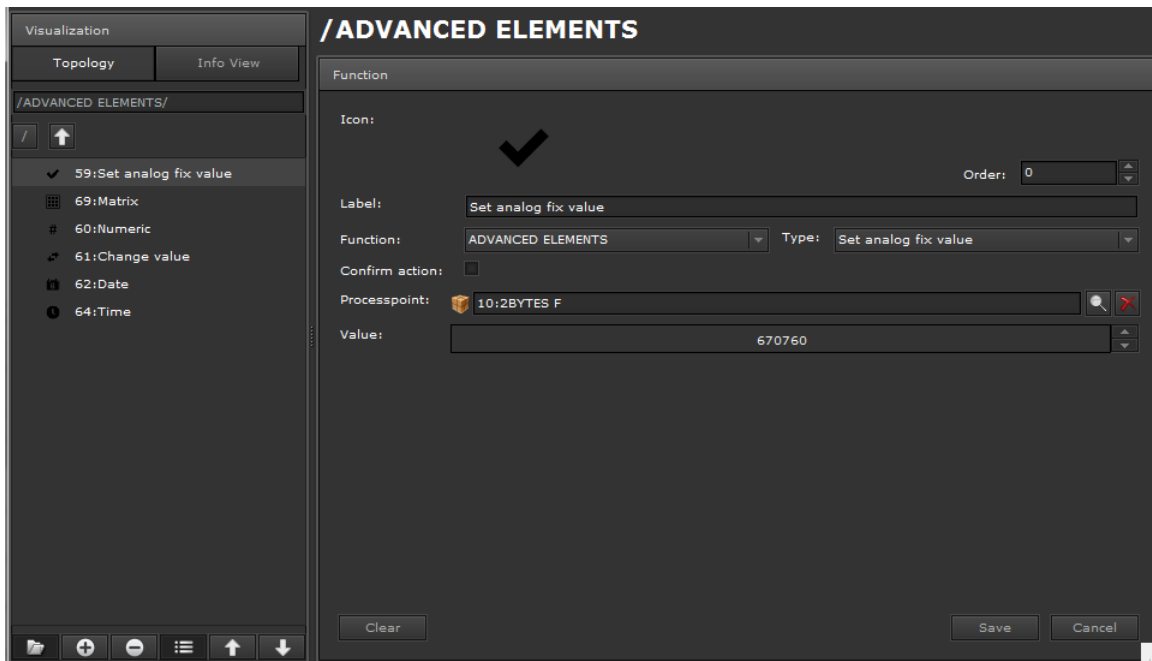
### 9.7.6 Advanced Elements

To create the functions, select the relevant folder, the page, and add a function. Selecting the Advanced

Controls feature offers 6 types to choose from.

### 9.7.6.1 Set Analogue Fixed Value

This element sends a fixed preset analog value to any DPT. The step size for setting the analog value can be set. This analog value depends on the value assigned in its value range Data point type of the linked object or group address.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

**Label:** Name assigned to the function.

**Type:** Advanced elements

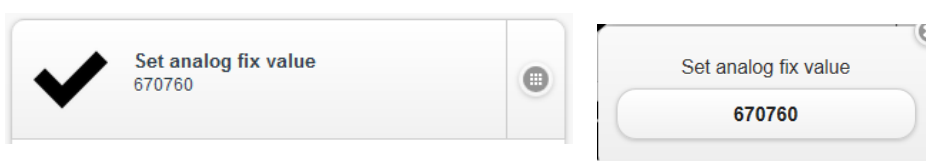
**Confirm action:** Sends the specific number without opening the popup window

**Processpoint:** Communication object or virtual variable linked (any DPT).

**Values:** Fixed value to be sent.

**Images:** Images linked to every action

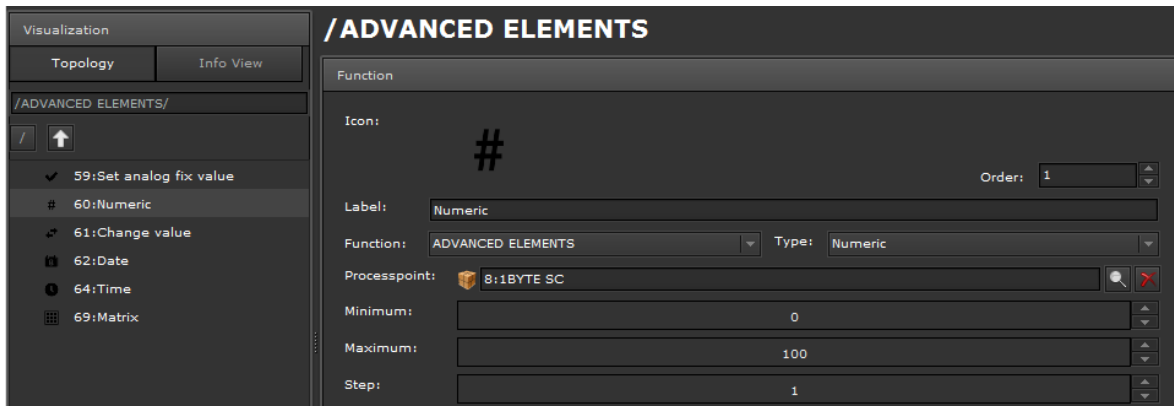
The result is displayed in the navigator as follows:



### 9.7.6.2 Numeric

This element sends numeric values within a predefined range considering the minimum and maximum values. In its value range, this value depends on the assigned data point type of the linked object or group

address.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

**Label:** Name assigned to the function.

**Type:** Advanced elements

**Processpoint:** Communication object or virtual variable linked (5, 6, 7, 8, 9, 12, 13, 14 DPT's).

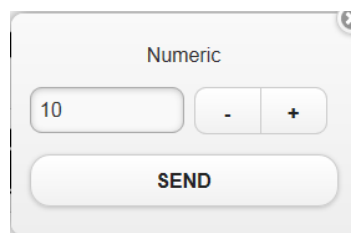
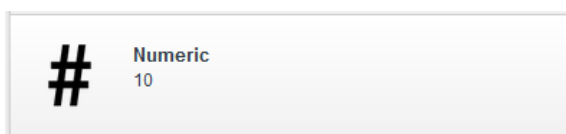
**Minimum:** Minimum value of the range to be sent.

**Maximum:** Maximum value of the range to be sent.

**Step:** Established step value to increment/decrement the value to be sent.

**Allowed DPT:** 5, 6, 7, 8, 9, 12, 13, 14

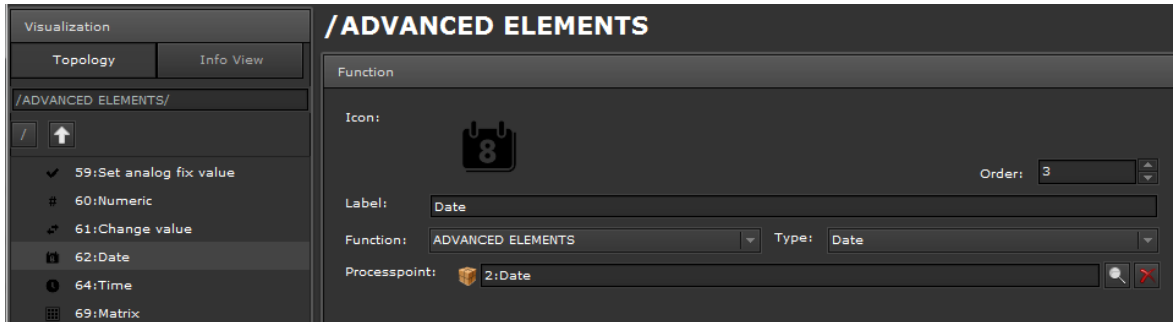
The result is displayed in the navigator as follows:





### 9.7.6.4 Date

This element displays the value (date) of the linked communication object. The date is updated by the correspondingly configured object or group address.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

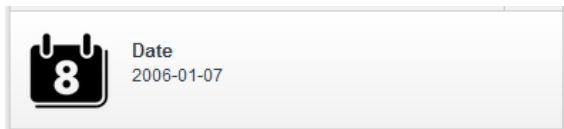
**Label:** Name assigned to the function.

**Type:** Advanced elements

**Processpoint:** Communication object or virtual variable linked.

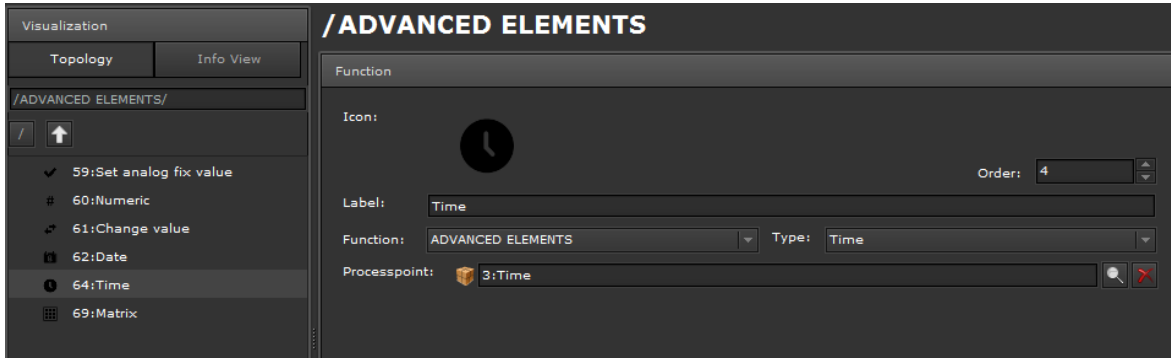
**Allowed DPT:** 11

The result is displayed in the navigator as follows:



### 9.7.6.5 Time

This element shows the time value received from the assigned communication object.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

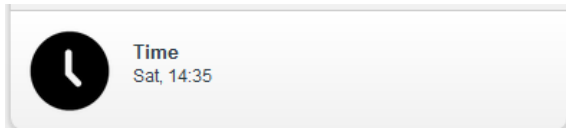
**Label:** Name assigned to the function.

**Type:** Advanced elements

**Processpoint:** Communication object or virtual variable linked.

**Allowed DPT:** 11

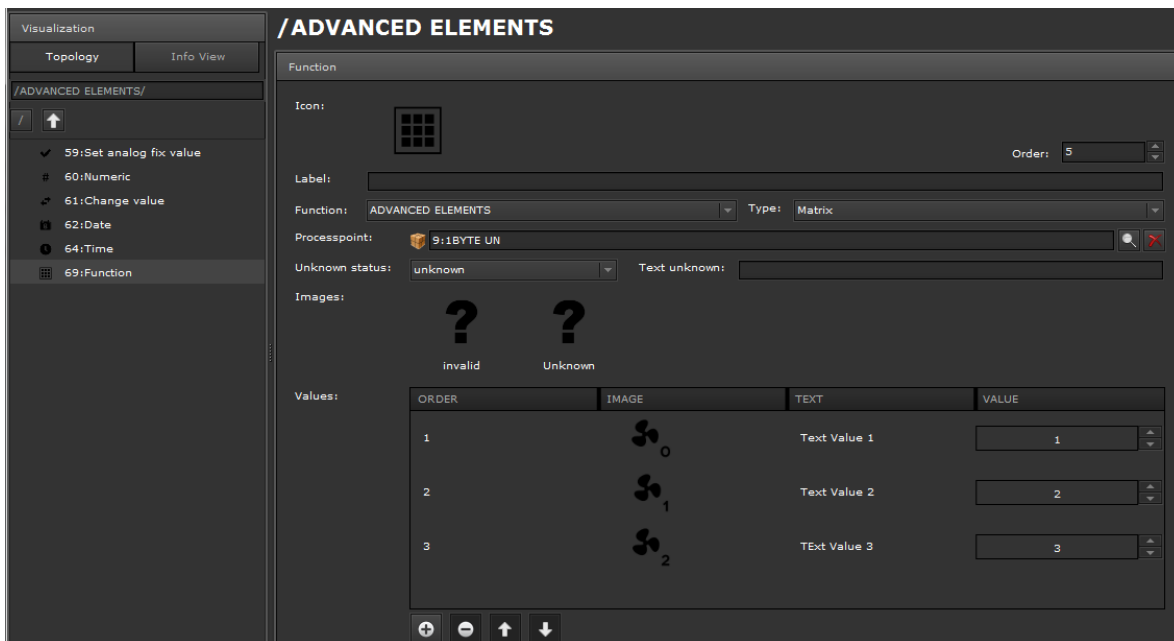
The result is displayed in the navigator as follows:



### 9.7.6.6 Matrix

This element sends different values using one object from a predefined list of values adding icons, text descriptions and values for each action. Functions such as transmitting values and receiving values are controlled via the assigned communication object.

In case the received value does not match with any value on the list, the Unknown status will be shown according to the option selected below (Unknown, higher range, lower range, don't show, closest value).



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

**Label:** Name assigned to the function.

**Type:** Advanced elements

**Subtype:** Matrix.

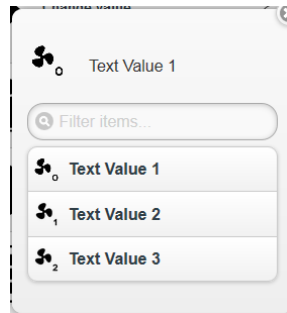
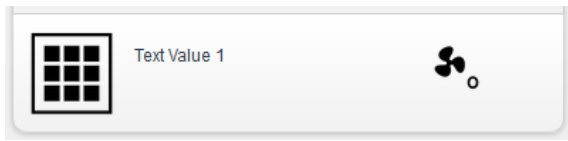
**Processpoint:** Communication object or virtual variable linked.

**Unknown status:** The following options are available:

- Unknown: If the value received does not match with any value, the selected icon and text will be shown.
- Higher range: The higher value from the list is displayed
- Lower range: The lower value from the list is displayed
- Don't show: If the value received is not on the list of values, nothing will be shown
- Closest: The closest value will be shown
- 

**Allowed DPT:** any DPT

The result is displayed in the navigator as follows:



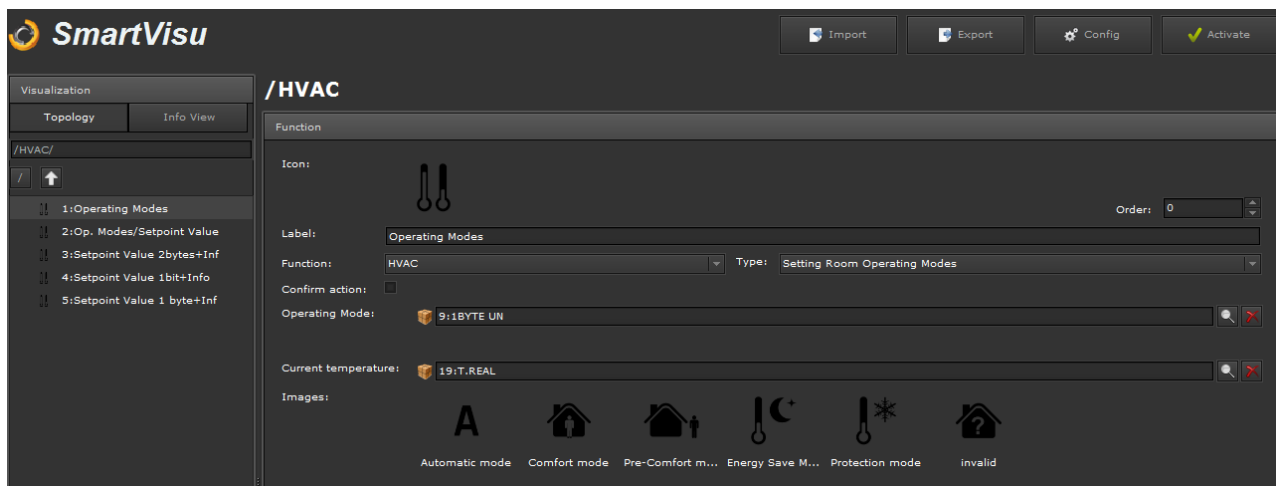


## 9.7.7 HVAC functions

To create the functions, select the relevant folder, the page, and add a function. The selection of the function "HVAC" offers 7 types to choose from.

### 9.7.7.1 Setting Room Operating Modes

This element is used to control the room temperature. The room operating mode or automatic mode is set. The associated value is transmitted via the linked 1-byte object or the group address. If no status value is received, the object remains in the "invalid" state. An icon as a question mark signals this. This element displays the current room temperature. The received measured value is updated via the linked 2-byte floating-point object or the group address.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

**Label:** Name assigned to the function.

**Function:** HVAC

**Type:** Setting Room Operating Modes.

**Confirm action:** Toggle sequentially between the 5 modes available without opening the popup window. (Automatic/Comfort/Pre-Comfort/Energy Save/Protection mode)

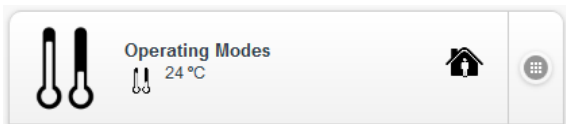
**Processpoints:** The following are available:

**Operating Mode:** Allows changing the mode

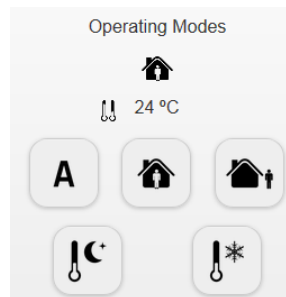
- Automatic mode (value 0).
- Comfort mode (value 1)
- Pre-Comfort mode (value 2)
- Energy Save (value 3)
- Protection mode (value 4)
- Disconnected

**Current temperature:** Displays the value of the current temperature using a 2 bytes float comm. object

The result is displayed in the navigator as follows:



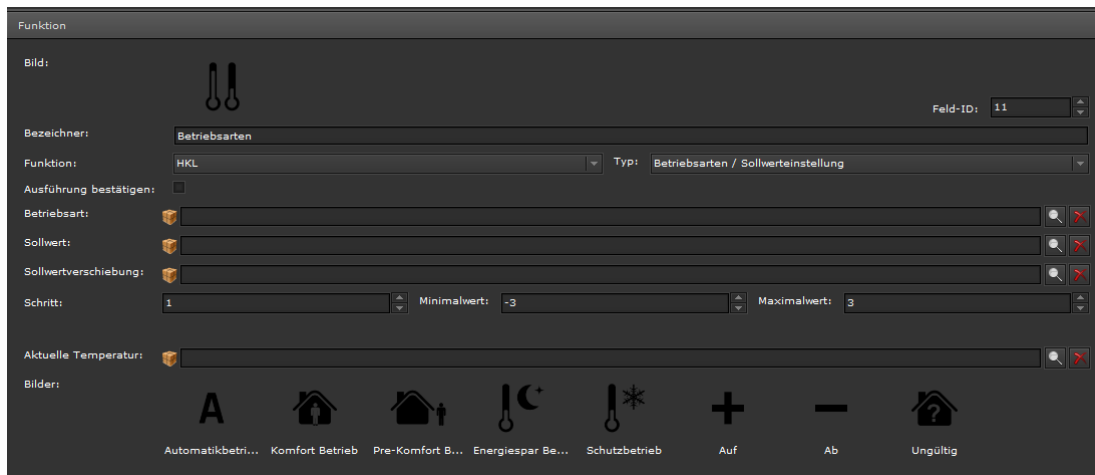
Without indication of the actual temperature



With indication of the actual temperature

### 9.7.7.2 Setting Room Operating Modes/ Setpoint Value

This element can control thermostats using advanced parameters, such as 1 byte for control mode, current temperature, and set point temperature (controlled by 2 bytes DPT offset values). The values used for each action are predefined through KNX specifications. Functions such as transmitting values and receiving values are controlled via the assigned communication objects.



**Icon:** Icon function.

**Label:** Name assigned to the function.

**Function:** HVAC

**Type:** Setting Room Operating Modes /Set point value

**Confirm action:** Toggle sequentially between the 5 modes available without opening the popup window. (Automatic/Comfort/Pre-Comfort/Energy Save/Protection mode)

**Objects:**

- Current temperature (2 bytes float comm.)
- Setpoint (2 bytes float comm.)
- Setpoint offset (2 bytes float comm.)
- Step (2 bytes float comm.)
- Minimum/maximum value



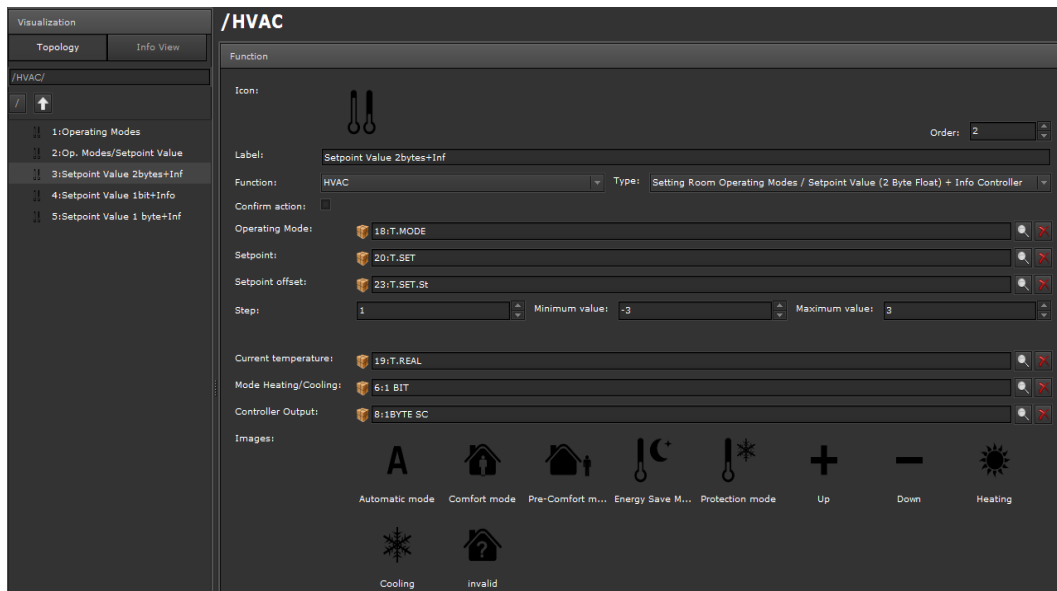
**Allowed DPT:** 1 byte standard HKL / KNX object and 2 byte floating point

The result is displayed in the navigator as follows:



### 9.7.7.3 Setting room operating modes / Setting Value (2 bytes float) + Info controller

This element controls thermostats using advanced parameters such as 1 byte for control mode, heating/cooling status, current temperature, valve position and set point temperature (controlled by 2 bytes float offset values). The values used for each action are predefined through KNX specifications.



**Icon:** Icon function.

**Label:** Name assigned to the function.

**Order:** Position assigned in the visualisation

**Function:** HVAC

**Type:** Setting Room Operating Modes /Setting Value (2 byte float) + Info Controller.

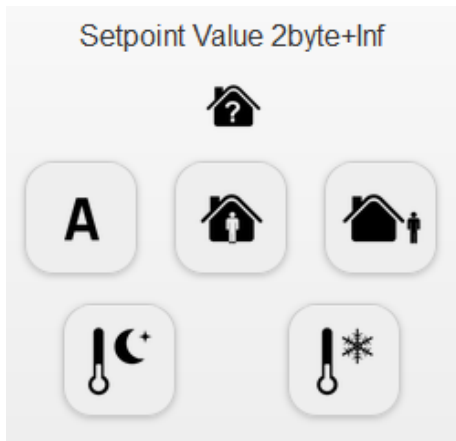
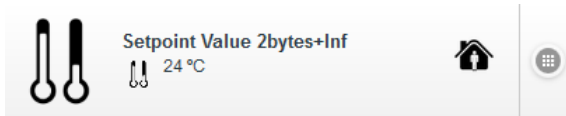
**Confirm action:** Toggle sequentially between the 5 modes available without opening the popup window. (Automatic/Comfort/Pre-Comfort/Energy Save/Protection mode)

**Objects:**

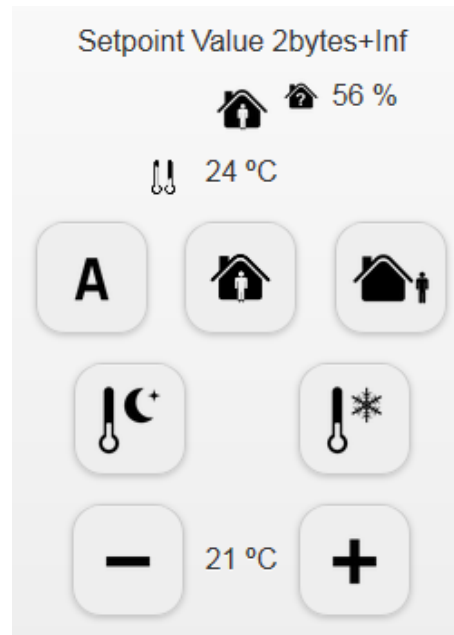
- operating modes (1 byte)
- setpoint (2 byte floating point)
- setpoint shift (2 byte floating point)
- step (2 byte floating point)
- minimum value / maximum value
- Current temperature (2 byte floating point)
- Operating mode heating / cooling (1 bit: only if the corresponding object is linked)
- Controller output (1 byte: only if the corresponding object is linked)
- 

**Allowed DPT:** 1-byte standard HKL / KNX object and 2-byte floating point

The result is displayed in the navigator as follows:



Without linked objects



With linked objects

---

#### **9.7.7.4 Setting Room Operation Modes / Setpoint Value (1 bit) + Info Controller**

This element controls thermostats using advanced parameters such as 1 byte for control mode, heating/cooling status, current temperature, valve position, set point status and set point temperature (controlled by 1 bit DPT offset values). The values used for each action are predefined through KNX specifications.

This function differs only in that a 1- bit object can be used for setpoint adjustment:

- Setpoint shift (1 bit) 1 = Increase 0 = Lower

#### **9.7.7.5 Setting Room Operation Modes / Setpoint Value (1 byte) +Info Controller**

This element controls thermostats using advanced parameters such as 1 byte for control mode, heating/cooling status, current temperature, valve position, set point status and set point temperature. The values used for each action are predefined through KNX specifications.

This function differs only in that a 1 - byte object can be used for setpoint adjustment:

- Setpoint shift (1-byte signed) + value

## 9.7.8 Fan Coil functions

To create the functions, select the relevant folder, the page, and add a function. The selection of the function "fan control" offers 2 types to choose from.

### 9.7.8.1 Fan Control via 1 byte object

This element controls three speeds of fan drives (1 byte DPT) and the mode change of automatic / manual (1 bit DPT). If no status value is received, the object remains in the "invalid" state. An icon as a question mark signals this.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

**Label:** Name assigned to the function.

**Type:** HVAC

**Object:** Communication object (1 byte DPT) for sending different values

**Values:** Value 0 = Off, Value 1 = Level 1, Value 2 = Level 2, Value 3 = Level 3

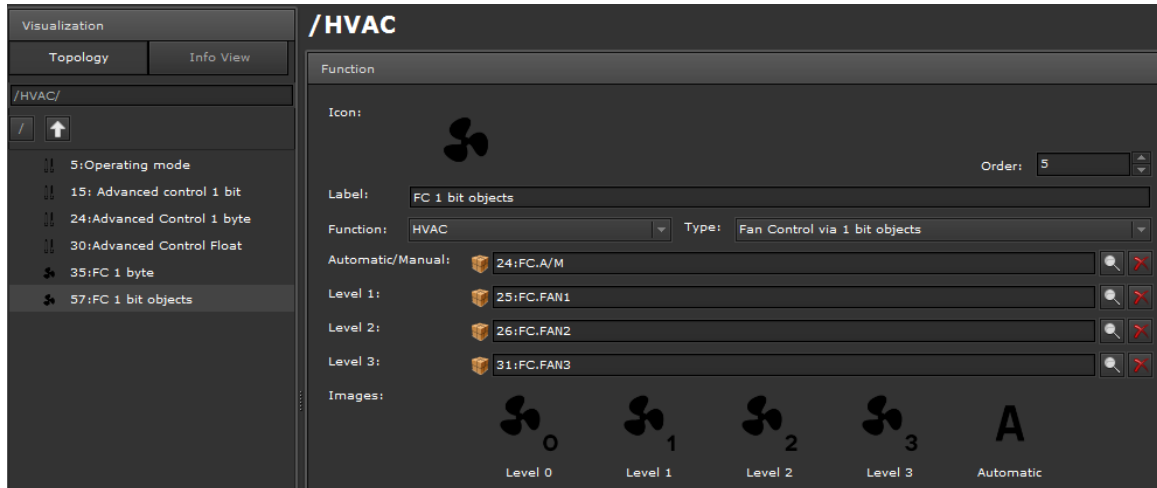
**Automatic/Manual:** Communication object (1 bit DPT) for changing the operation mode

The result is displayed in the navigator as follows:



### 9.7.8.2 Fan Coil - 1bit control

This element controls the 3 speeds of fan coil actuators by using a 1 bit DPT and the mode (automatic/manual) by using a 1 bit DPT.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

**Label:** Name assigned to the function.

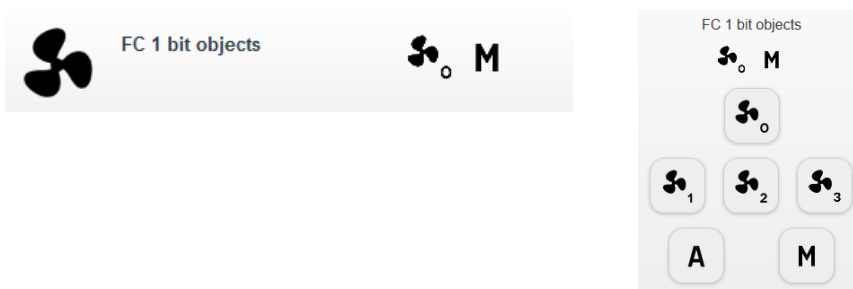
**Type:** HVAC

**Automatic/Manual:** Communication object (1 bit DPT) for changing the mode of the fan coil speed control actuator.

- Level 1: Communication object (1 bit DPT) to select the speed of fan level 1
- Level 2: Communication object (1 bit DPT) to select the speed of fan level 2
- Level 3: Communication object (1 bit DPT) to select the speed of fan level 3
- 

When switching from one level to another, the other values are first set to "0" before the desired level (1 bit object) is set to "1".

The result is displayed in the navigator as follows:



### 9.7.9 Audio / Video

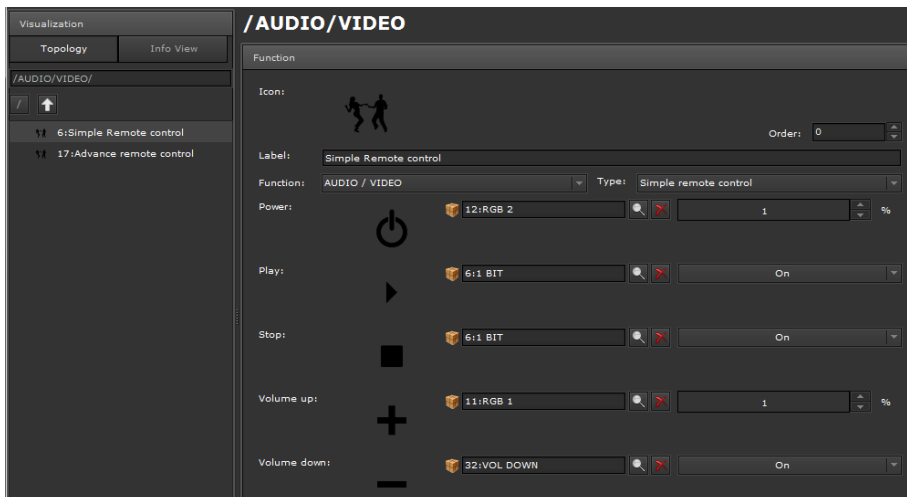
To create the functions, select the relevant folder, the page, and add a function. The selection of the



function "Audio / Video" offers 2 types to choose from.

### 9.7.9.1 Simple remote control

This element sends different values using one object for each one. A list with predefined values for basic media actions is available. Icons, texts, descriptions and values can be adjusted for each action. Actions such as Power, Play, Stop, Volume up and Volume down are ready to use.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

**Label:** Name assigned to the function.

**Type:** Audio/Video

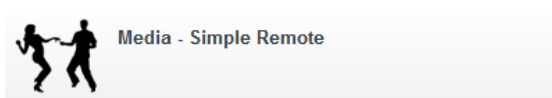
**Subtype:** Simple remote control.

**Objects:** For each one of the following actions a different communication object (any DPT) can be linked.

**Functions:** The following options are available:

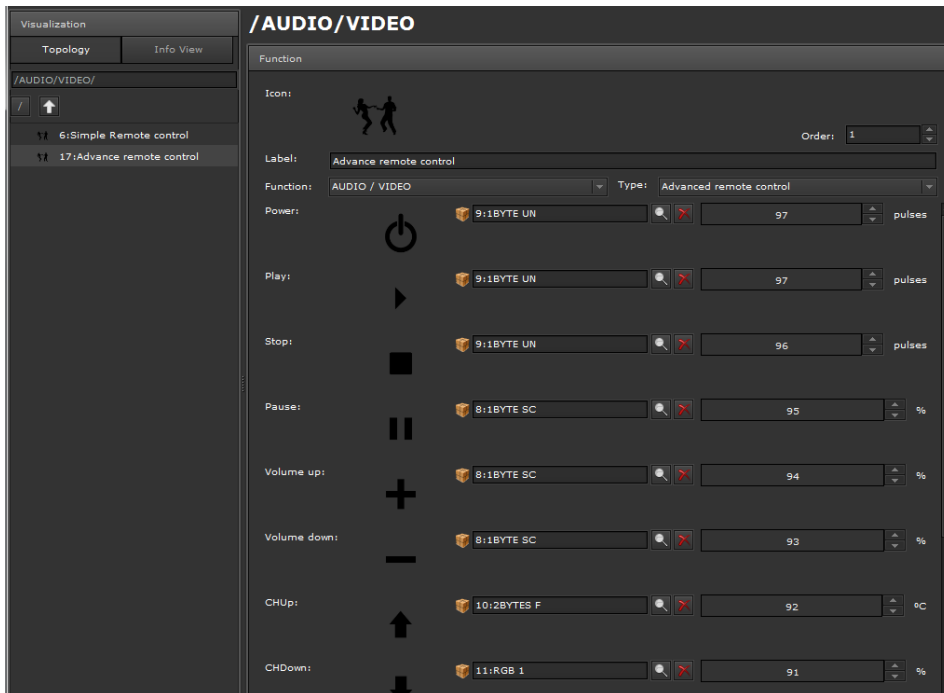
- Power.
- Play
- Stop
- Volume up
- Volume down

The result is displayed in the navigator as follows:



### 9.7.9.2 Advanced remote

This element is the same as before but includes an extended media values list. It sends different values using one object for each one. Icons, texts, descriptions and values can be adjusted for each action.



**Icon:** Icon function.

**Order:** Position assigned in the visualisation

**Label:** Name assigned to the function.

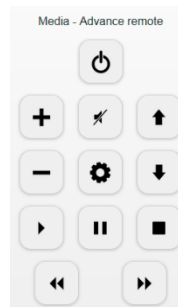
**Type:** Audio / Video

**Subtype:** Advanced remote control.

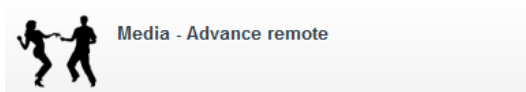
**Objects:** For each one of the following actions a different communication object (any DPT) can be linked.

**Functions:**

- |               |           |
|---------------|-----------|
| - Power       | - Ch +    |
| - Play        | - Ch -    |
| - Stop        | - Back    |
| - Pause       | - Forward |
| - Volume up   | - AV      |
| - Volume down | - Mute    |



The result is displayed in the navigator as follows:

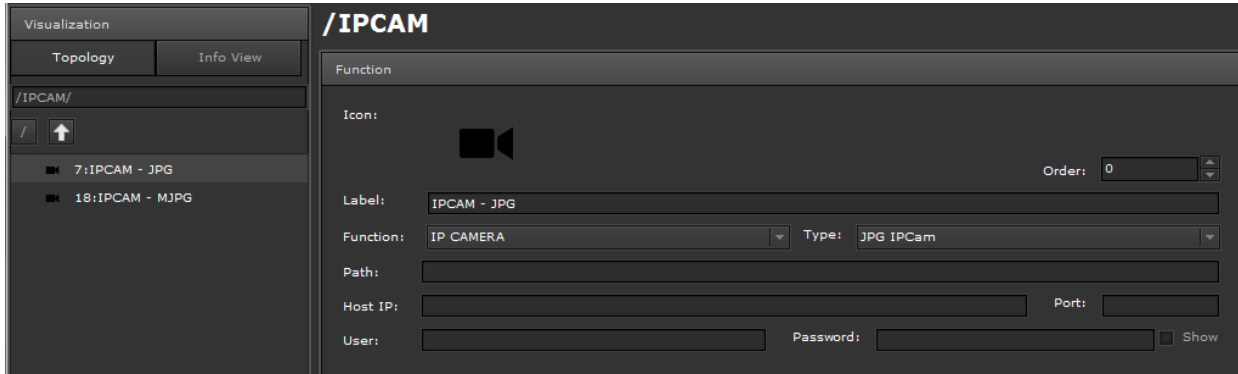


### 9.7.10 IP camera functions

To create the functions, select the relevant folder, the page, and add a function. The selection of the function "IP Camera" offers 2 types to choose from.

### 9.7.10.1 JPG IP / MJPG Camera

This element shows an image for JPG IP and MJPG camera types.



**Icon:** Icon function.

**Label:** Name assigned to the function.

**Type:** JPG IP Camera

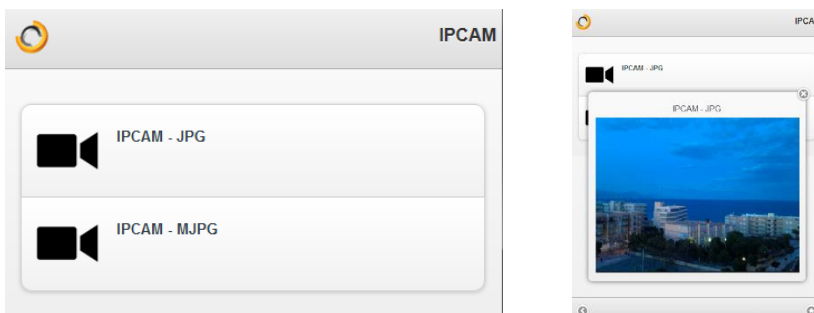
**Path:** The path given by the camera, starting with "/"

**Host IP:** IP address configured in the camera

**Port:** Port configured in the camera

**User/password:** Access configured in the camera

The result is displayed in the navigator as follows:



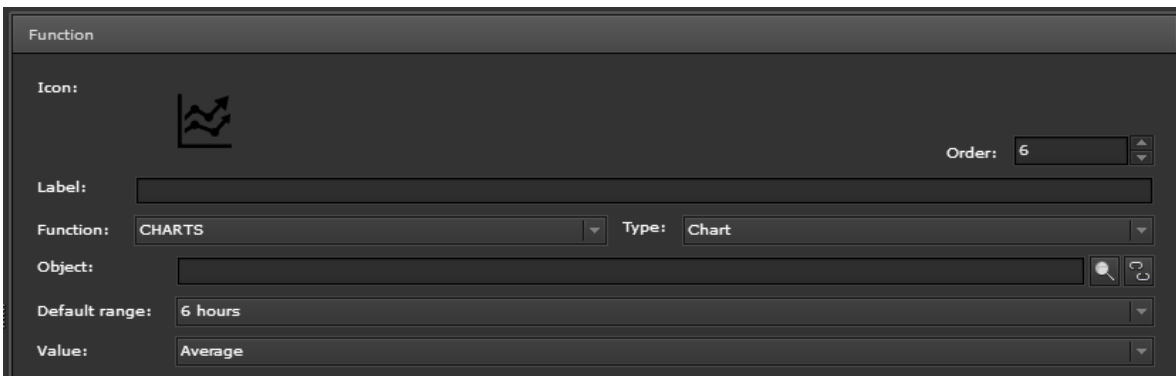
**Note:** Authentication with User / Password uses Basic Authentication. In case of doubt, it must be clarified whether the connected camera supports this authentication. The function IP Camera works with a proxy on the HCC, so that the Smart Visu only needs a connection to the HCC in the browser.

## 9.7.11 Chart

To create the function, select the relevant folder, the page, and add a function.

### 9.7.11.1 Chart configuration

This element shows the chart display of a data point.



**Icon:** Icon function.

**Label:** Name of the configured function

**Order:** Position assigned in the visualisation

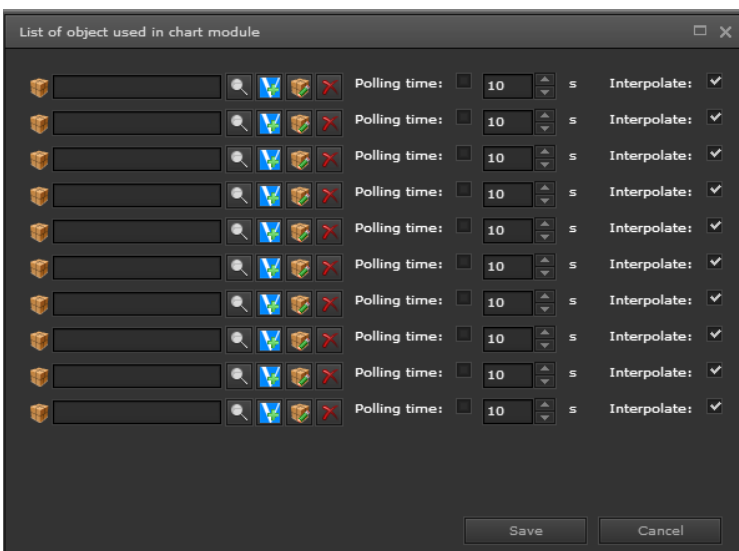
**Function:** Chart

**Type:** Chart

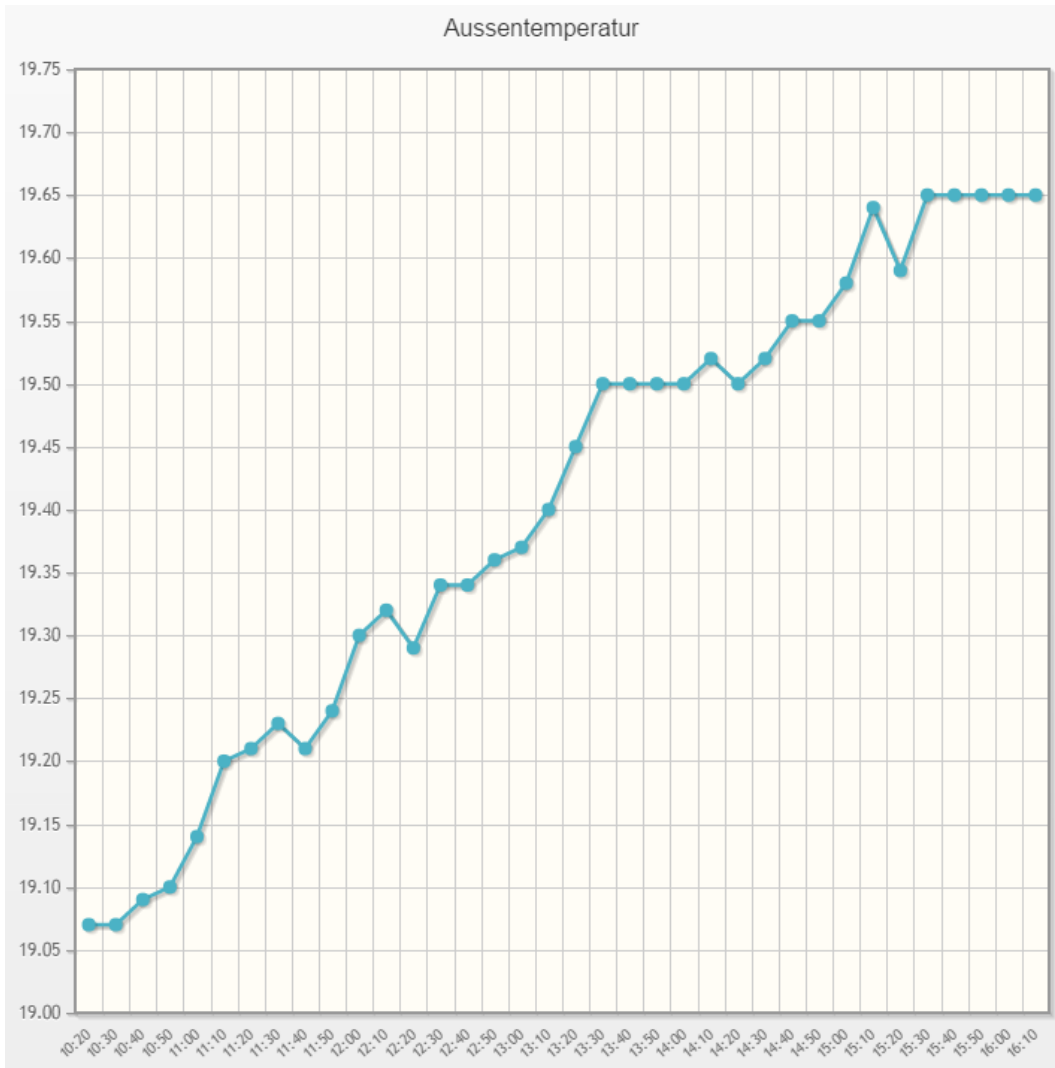
**Object:** Choice of one of the available objects. The list of objects is created in the configuration of the normal editor, see chapter: [8.5.1 Data point configuration](#). Up to 10 data points can be selected.

**Default range:** Allows you to select the time range to be displayed. Values between 1 hour and 1 year can be selected.

**Value:** The average, maximum and minimum value can be displayed.



The result is shown in the visualisation as follows:



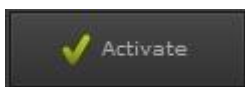
## 9.8 Calling the Smart Visualization

### 9.8.1 Call Visu (Smart)

After completion of the configuration of the Smart Visualization, it should be saved with the button "Exit" (Save):



With the button "Activate" the HTML pages are generated:



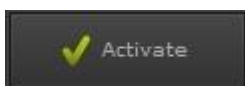
After entering the IP address preset in the ETS and the extension "smart.php" in the web browser, the smart visualization is called: [https:// <ip>/smart.php](https://<ip>/smart.php).

### 9.8.2 Call Visu (Tablet)

After completion of the configuration of the tablet visualization, this should be saved with the button "Exit" (Save):



With the button "Activate" the HTML pages are generated:

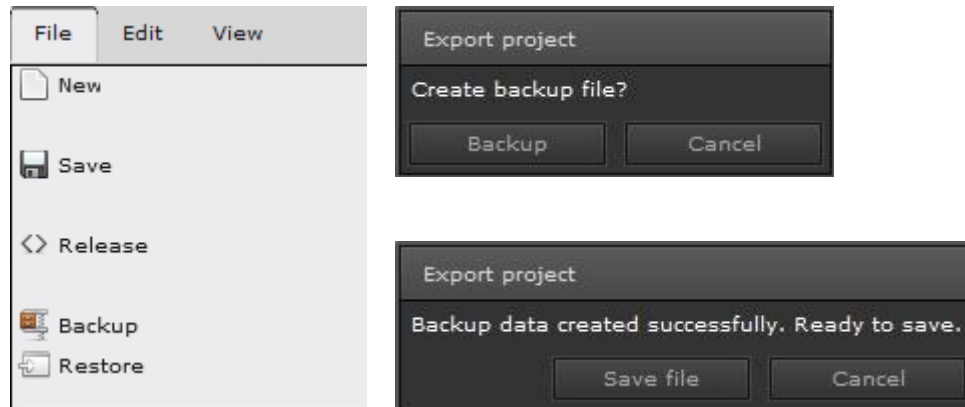


After entering the IP address preset in the ETS and the extension "tablet.php" in the web browser, the smart visualization is called: [https:// <ip>/tablet.php](https://<ip>/tablet.php).

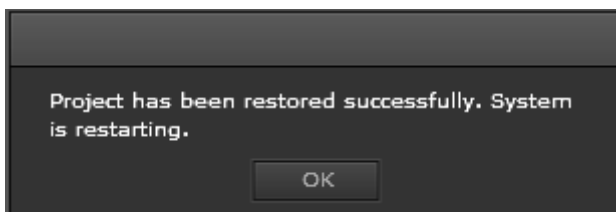
## 10 Tips

### 10.1 Backup and restore

The current project can be saved under menu item File "Backup".



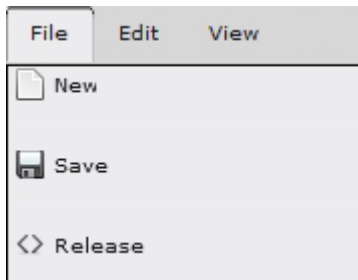
The backup is saved in a file with the extension .hcc. If you restore a project, please remember that all current data is lost. The current project is overwritten.



The following notice appears in the Editor after the restore:

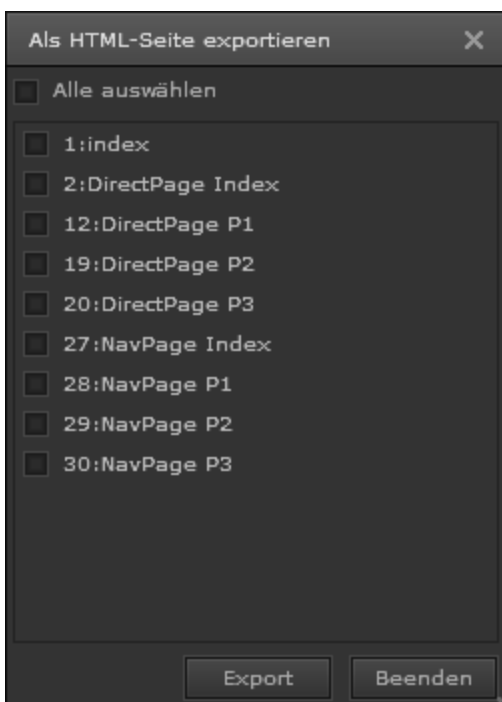


Press OK to go to the normal visualisation level. Once a project has been successfully restored, the restored project is not automatically displayed.



The following screen appears in the visualisation

To activate the restored project, all pages in the editor must be generated again. To do this, select Generate visualization in the File menu and select all HTML pages that are to be generated.



## 10.2 Calling a visualization page

It is possible to jump directly to one of the configured pages. This means that HMI devices in different rooms can always call up the corresponding page and do not have to be navigated to this page first.



## 10.3 General

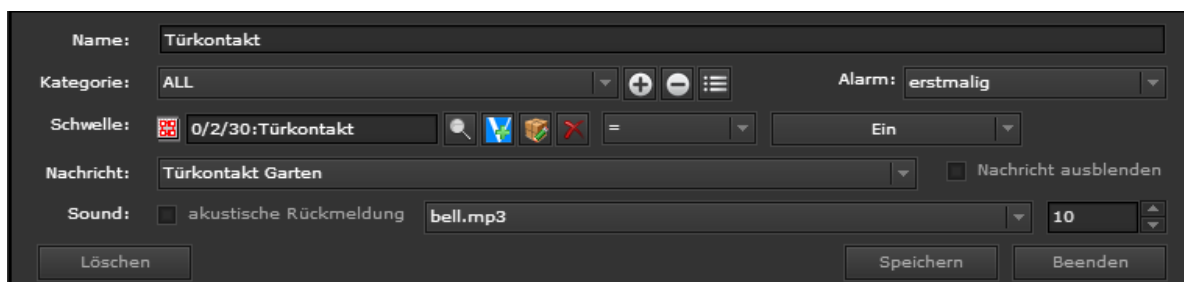
- To select several control elements at the same time, please hold down the shift button and click on the required elements with the mouse. You can now copy the selection and paste it into other pages.
- Please use the same grid size on all pages to enable the insertion of copied elements at the right position.
- Lasso function: From version 1.2 upwards you can also select several elements with the mouse at the same time (Lasso function).
- Copy pages: Use the context menu (right click) in the left tree to copy a page once or several times.
- If you enter the group addresses directly, you can use the ETS style (number, space, number, space, number) and the address is changed into 1/2/3.

## 10.4 Sending e-mails with attachment

The sending of e-mails is configured with the notification and alarm module, see chapter: [8.4.2 Messages](#). Different attachments can be defined within the message:

- Alarm recording
- Data recording
- Chart recording

The data is sent in the form of xml files, which can be called directly by a spreadsheet program. In order for this notification not to lead to an alarm, the alarm function can be switched off, see chapter: [8.4 Notification and alarm module](#).



**Hide message:** Stops the notification from causing an alarm with entry in the alarm list. This means that e-mail messages can be sent without creating a potentially disturbing alarm.

## 10.5 Status object in the ETS

For an automatic diagnosis that is running in the background, the current service status of ComBridge HCC



is sent to the bus. Communication object 1 of the ETS application is set aside for this purpose. Please use a DPT 4 Byte "unsigned" for the configuration. This communication object is solely meant to be used as a diagnosis object and must not be used for other tasks. If an error occurs, an assigned value (error code) is automatically sent to the bus enabling a quick error analysis by means of an error code table. Once the error has been addressed, the value 0 (device o.k.) is sent to the bus

**0** - no error

**<> 0** - error

#### Error analysis according to masks:

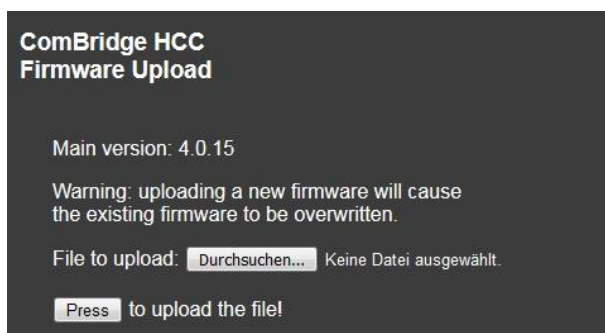
<b>Web error</b>	0x00100000	// server is not started
<b>Policy error</b>	0x00200000	// server is not started
<b>FTP error</b>	0x00400000	// server is not started
<b>DNS error</b>	0x00800000	// dns is wrong
<b>SMTP un-defined username</b>	0x01000000	// user is needed
<b>SMTP un-defined password</b>	0x02000000	// password is needed
<b>SMTP invalid password</b>	0x04000000	// SMTP: user or pass error
<b>SMTP interrupted connection</b>	0x10000000	// server is down
<b>SMTP Server/Port error</b>	0x20000000	// SMTP: bad server or bad port
<b>SMTP invalid host name</b>	0x40000000	// Bad get hostbyname
<b>SMTP error</b>	0x80000000	// SMTP: unknown error

Status object (Obj n°1) is set back to 0 if the bus is not connected.

## 10.6 Firmware Update

The device includes the ability to upload updated firmware. The page is accessed in the browser under --> [http:// \"assigned IP address\" /upload.php](http://\) or via the general configuration page under --> [http:// \"assigned IP address\" /config.php](http://\).

To import a firmware update, the editor password is required. The appropriately configured password is requested for the user "editor". It opens a new page from which the update can be executed. The file with the update should first be saved on the desktop of the used PC / laptop. The command line is used to enter the location of the file directly or using the "Select File" button. searched. The update is carried out with the "Press" key.



**Note:** Please do not turn off the PC/laptop during the upgrade. If possible, please terminate all parallel processes beforehand.

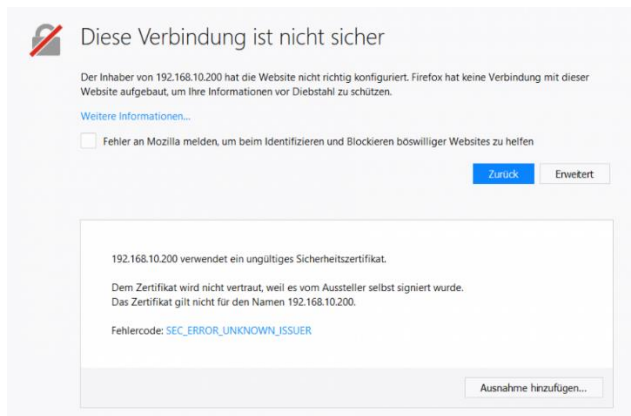
## 10.7 Firmware update from version 3.0

With the firmware update from the version 3.x to the version 4.x some special features are to be considered. The firmware update is delivered in 2 parts:

- HCC\_update4100\_part1.hpc
- HCC\_update4100\_part2.hpc

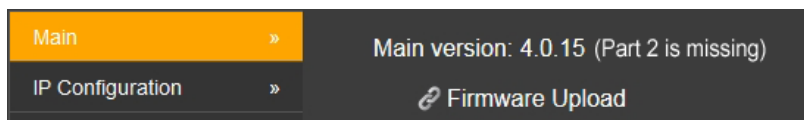
There must be at least 13 Mbytes of memory available. If this requirement is not met, the editor configuration data must first be saved (Editor: File menu --> Save) and then reset to the default setting (Editor: Configuration menu --> restore default setting).

As usual, the firmware update page <http://<ip>/upload.php> is called in version 3.x. After importing the first part, the following communication is processed encrypted. After restarting the device, the connection is redirected to HTTPS. To do this, the certificate must first be accepted.



Then the 2nd part of the update can be loaded via the page <https://<ip>/config.php>. For security reasons, a new password must first be assigned, see chapter: [3.2 Change Passwords](#).

On the "General" tab, the second part of the update can be selected and loaded.



## 10.8 Master-Reset

In order to put the ETS configuration data in the delivery state and thus also the possibility to re-assign the passwords with the ETS, a master reset can be carried out.

The following steps are necessary for this:

- Supply device with 24V voltage
- Disconnect the KNX bus from the device
- Press and hold the programming button for 5 seconds until the Error LED starts to flash
- If the programming button (Error LED flashes) is still pressed, connect the bus to the device
- Release the programming button
- The device will be without ETS data and with the phy. Address [15.15.255](#) restarted

With the following ETS download, the passwords of the ETS configuration are activated.

After this initial ETS download, the user will be asked on the website to change these ETS passwords, see chapter: [3.2 Change Passwords](#).

**Note:** A master reset does not change the IP settings. However, the SMTP (e-mail) settings are reset and a new certificate is automatically created.

The e-mail settings must then be reconfigured as described in Chapter: [5.3 SMTP](#).

## 10.9 Storage control

For the firmware update to be able to be loaded neatly, the device must have twice the memory at the time of the upload.

```
System Information
====ComBridge HCC====
Version: 4.0.15

====System Information====
Operation time:
7 days 1 hours 33 min 10 s
Date: 11 / 12 / 2019
Time: 12 : 27 : 45

====System memory====
Total: 92.2 MB
Used: 37.3 MB (40%)
Free: 54.8 MB

====RAM memory====
Total: 117.2 MB
Used: 30.7 MB (27%)
Free: 86.5 MB

OK
```

Example: The firmware update has a size of 7 Mbyte. Accordingly, there must be a free flash memory of 14 Mbytes in the device, check see chapter: [5.1 Overview](#) or [6 Editor](#) (menu item: Help --> System Info).

If the storage space is insufficient, the device must be set to the delivery state (menu item: Configuration --> Restore default).

**Note:** A backup should always be created before.

## 11 Appendix

### 11.1 Default settings

The default setting of ComBridge HCC is:

- IP address assignment: manual IP
- IP address: 192.168.1.133
- Physical address: 15.15.255
- User password:
- Editor password:
- Smart Editor password: identical to the editor password

For the first commissioning, please use a KNX project which was created with the ETS programming tool. You can then connect the ComBridge HCC to the network. You can choose any web browser for the connection.

### 11.2 Working with group addresses from version 2.0 upwards

In the firmware **versions 2.0** upwards you can make direct use of up to 1000 group addresses. These can be directly linked to the elements or pulled out of a list via drag&drop.

#### 11.2.1 OPC Export

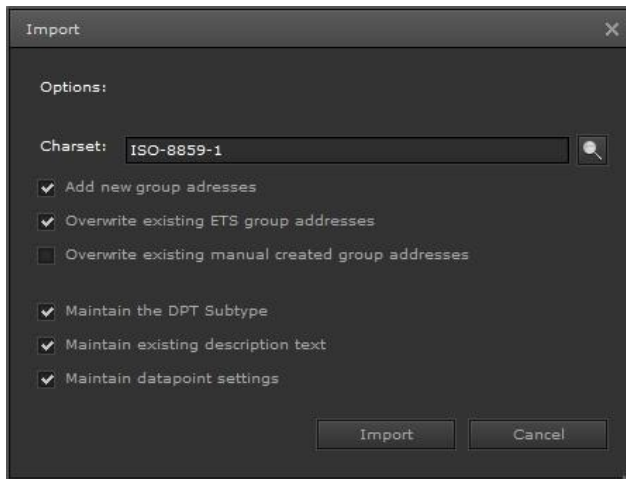
To use the group addresses they can be exported. For this, the format "ETS project file (knxproj)" or "OPC export (esf)" can be selected when exporting from the ETS 5. Importing the group addresses into the Home Control Center requires the ESF format.

##### 11.2.1.1 Export from the ETS 5

Select the required project on the overview page, then trigger the export with the right mouse button → *Export*. A dialog box opens for selecting the desired format and assigning the file name. Alternatively, the export can also be triggered via the export symbol of the button bar.

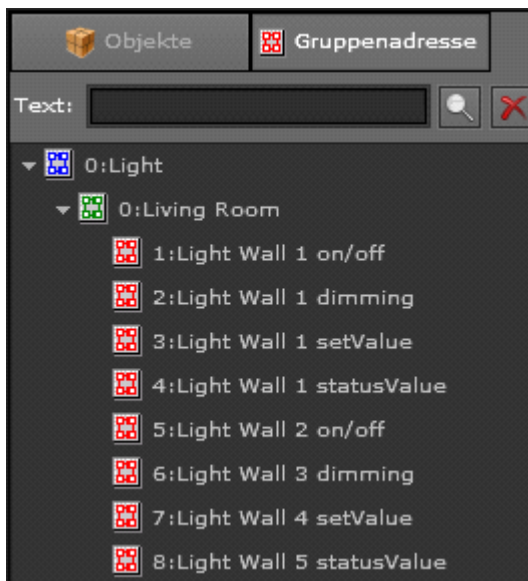
Projects   Archive   ETS Inside		
Name	Last Modified ▼	Status
IPAS - Demo	27.10.2019 09:45	Unknown

Filename:	IPAS_Demo
File type:	ETS project files (*.knxproj)
	ETS project files (*.knxproj)
	OPC Export

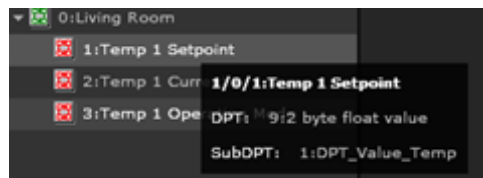


Use the menu item --> "Import ESF read in" to import an esf file that has previously been generated as an OPC export with the ETS. If you have used special characters such as Greek or Chinese, the respective set of characters can be pre-selected. You can also define whether you want to overwrite any already existing description texts or defined sub-datapoint types.

The display in the Editor is the same as in the ETS. Whilst the data length of the esf export in the ETS is known, the exact data type is not known. The Editor therefore has the following pre-settings:

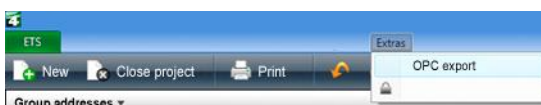


- 1 bit --> 1 bit
- 1 byte --> 1 byte unsigned
- 2 byte --> 2 byte float, SubDPT: DPT\_Value\_Temp
- 4 byte --> 4 byte float



### 11.2.1.2 Export aus der ETS 4

To use the group addresses, a so-called OPC export can be carried out in older ETS versions. For this, the menu item Extras → Export OPC is selected in the button bar. All group addresses already linked in the ETS project are saved in ESF format. The import into the IPCC is done as described above.



## 11.2.2 Linking group addresses with elements

Use drag&drop to pull one or several group addresses from the tree into an entry field to link them. You can also enter a group address with the keyboard. If no sub-datapoint type has been defined for this address, the editing window for the group address opens up automatically.



Group Address ✕


DPT:  SubDPT:

Format Decimals:

Group addresses:

Read	O	Address	Name	Sending
<input type="checkbox"/>		7/7/5		<input checked="" type="checkbox"/>
<input type="checkbox"/>		<input type="text"/>		<input type="checkbox"/>
<input type="checkbox"/>		<input type="text"/>		<input type="checkbox"/>
<input type="checkbox"/>		<input type="text"/>		<input type="checkbox"/>
<input type="checkbox"/>		<input type="text"/>		<input type="checkbox"/>



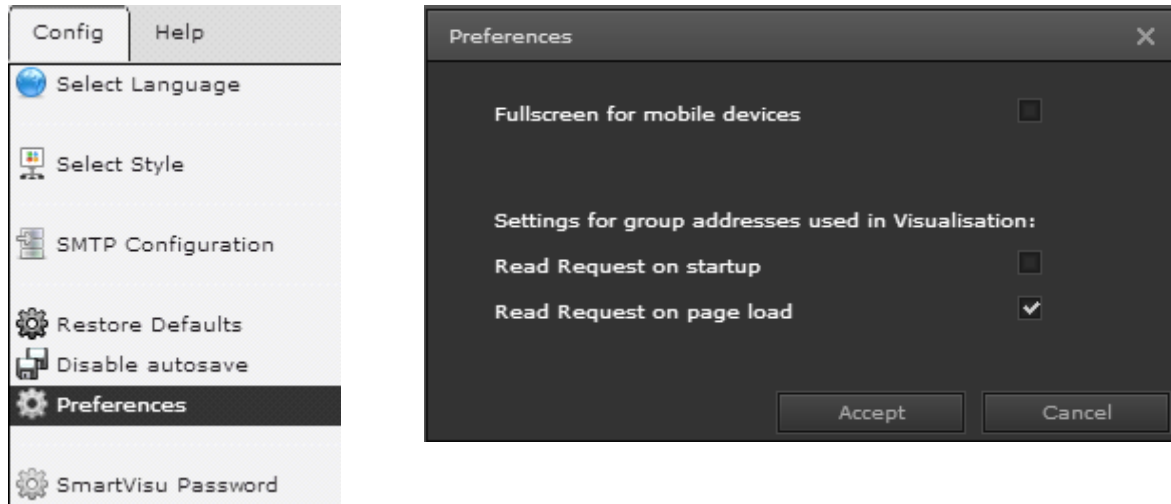
You can also open the window by clicking on the  button. Up to 5 group addresses can be linked to an element. By default, the datapoint type and sub-datapoint type are defined for each link. The first column „Read on start“ defines which group addresses are to be read when the device is started. The address and name columns display the corresponding function. The last column “Sending“ defines which group address is to be used as the sending address. All other group addresses listen in as is usual for touch sensors in a KNX installation. You can also select the number of decimal places you want to be displayed.

**Note:** The description of the group addresses can also be changed subsequently. Use the option flag during the import to select whether you want to overwrite the text with the text from the ETS. The "Sending" flag is automatically set for the first group address. The second group address (usually a status address) gets the "Read" flag automatically in order to send a read request. This group address is indicated by "\*".



### 11.2.3 Initialising values

With the right ETS settings, objects which are configured via ETS can be read by the KNX at start-up of the device. To define this behaviour for the additional group addresses, please use the settings page in the Editor:



The following selection is supported:

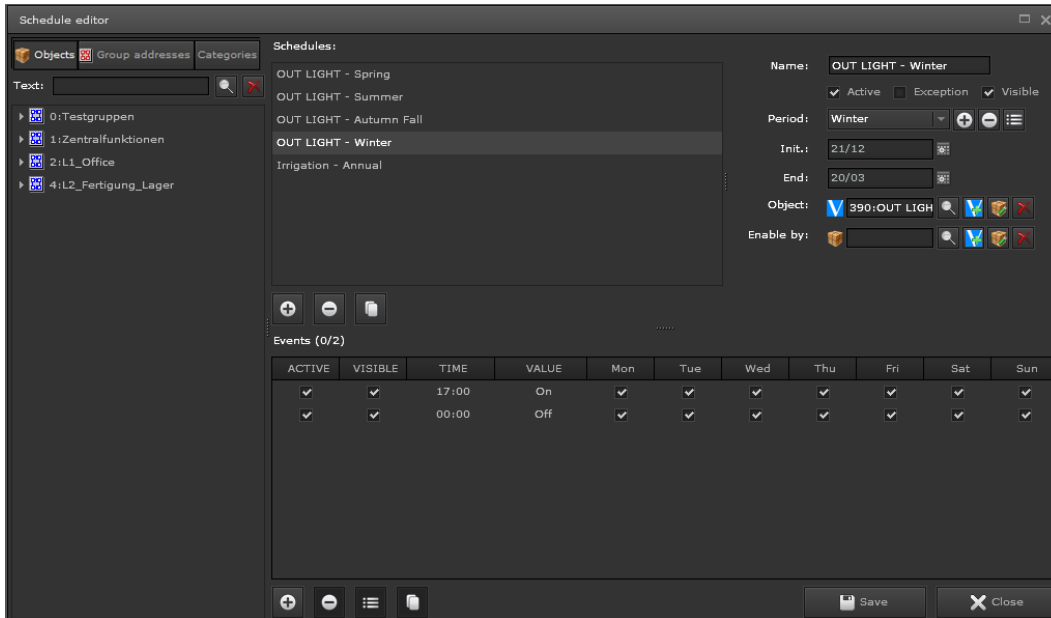
- Read Request on startup
- Read Request on page load (default)

In order to avoid 1000 group addresses (maximal configuration) from being queried during start-up, it is possible to send the read request only when the page on which the group address was linked, is loaded for the first time. In general, a read request is sent only if the option above has been selected and if no valid value is already available. As soon as a valid value is present, no read request will be sent to the KNX.

However, it is also possible to read all existing group addresses during start-up (see first option). In this case the time delay settings between the read requests are defined in the ETS as usual.

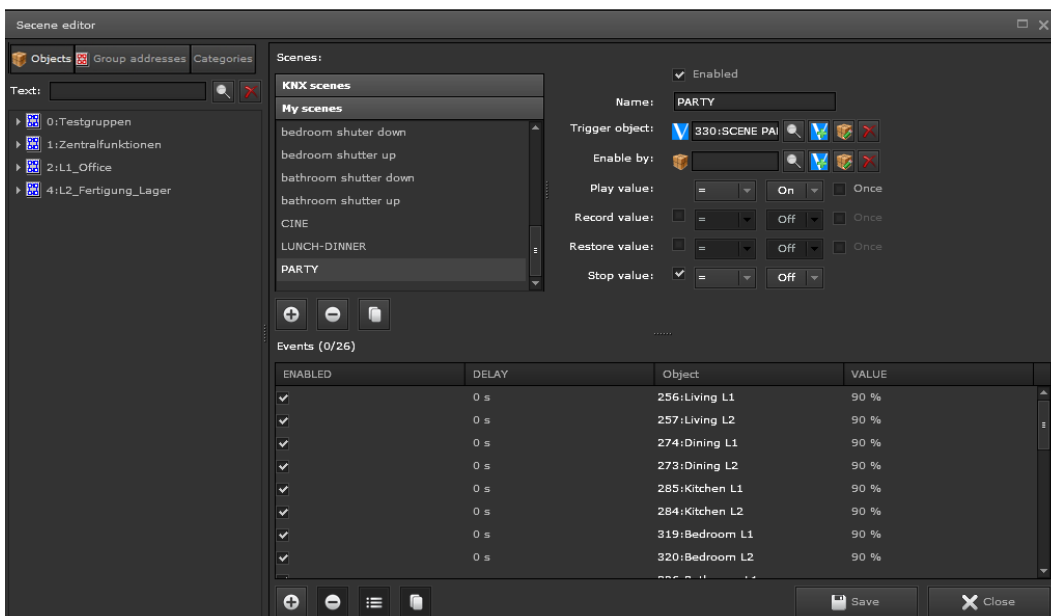
## 11.2.4 Using group addresses in the scheduling editor

The scheduling editor has been optimised so that a schedule can be configured easily and quickly without additional pop-up windows.



## 11.2.5 Using group addresses in scenes

The scene editor has been optimised so that scenes can be configured easily and quickly without additional pop-up windows. All values can be edited directly in the table or via drag & drop.



## 11.3 Data sheet

### Power supply

- 24 V DC

### Control elements

- Programming button to toggle between normal and addressing mode

### Display elements

- LED red indicates normal/addressing mode
- ERR-LED red signals a fault status
- LNK-LED yellow signals communication via Ethernet connection

### Connectors

- Bus line: KNX bus connector (black/red)
- Power supply: bus connector (yellow/white)
- Ethernet 100 Mbit: RJ45 plug

### Mechanical data

- Casing: Plastic ABS-V0
- Dimensions REG casing 4TE:
  - Width: 72 mm
  - Height: 55 mm
  - Length: 86 mm
- Weight: 150 g
- Mounting: 35mm DIN rail

### Electrical safety

- Pollution class: 2
- Protection type (in accordance with EN 60529): IP20
- Protection class: (in accordance with IEC 1140) I
- Overvoltage category: III
- Bus: Separated extra-low voltage SELV DC 24 V

### EMC- requirements

- Complies with EN 50090-2-2 and EN 61000-6-2:2005,
- EN 61000-6-3:2007

### Environmental conditions

- Weather resistance: EN 50090-2-2
- Environmental conditions during operation: -5°C to +45°C
- Storage temperature: -25°C to +70°C
- Rel. humidity (non condensing): 5 % to 93 %

### Approbation

- EIB/KNX registered

### CE-Signage

- According to EMC-Guidelines (Residential and commercial buildings), Low Voltage guidelines

## 11.4 Safety instructions

The visualization pages and the necessary editors (configuration) should be effectively protected against unauthorized requests from the intranet or the internet. For this purpose, the respective password protection of the Connection Manager or Editor must be strictly applied. Your password should be at least eight characters long. It can consist of any combination of letters, numbers and symbols (ASCII characters). Choose a random password, without repetition or personal reference. Change your password regularly.

### 11.4.1 Remote access to the visualization

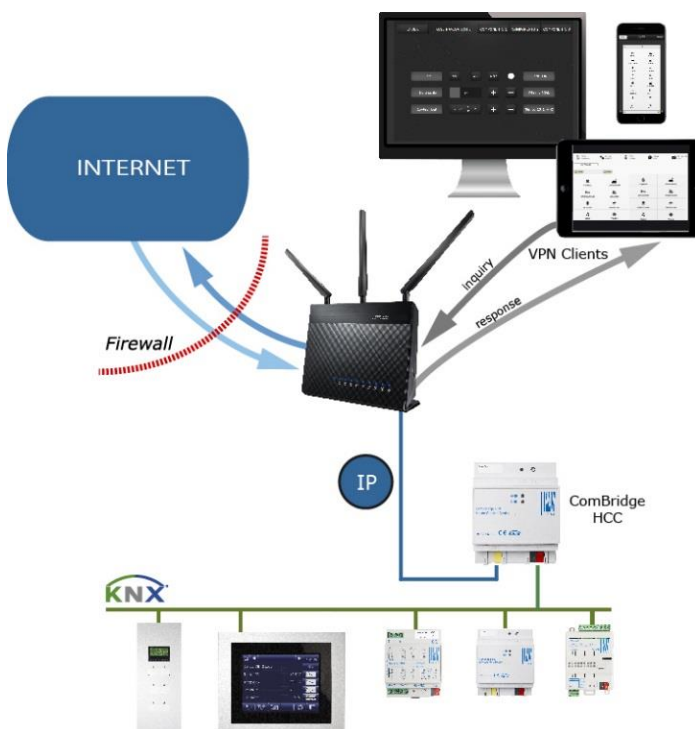
The visualization should only be accessed via the encrypted port 443.

- WEB server for calling the graphical HTML visualization, the smart visualization and the tablet visualization: Port **443 (HTTPS)** or if released Port **80 (HTTP)**

### 11.4.2 Remote access to the editor

A remote access to the editor may only be set up via an encrypted connection. Because the relevant ports that are used by the programs or services must be open. This so-called port forwarding allows protected access to the editor from the Internet. For the different services and functions the following ports are used:

- Access to the editor for a full graphic configuration or for access to the Smart Editor: Port **443**



To set up a Virtual Private Network (VPN) for remote access to the ComBridge HCC. With this one can access the HCC safely and protected from the Internet. The VPN client (eg PC, tablet, smartphone) sends a request (black arrows) to the VPN router via the VPN tunnel encrypted in the Internet. This checks the authorization of the client and forwards the request only after successful login to the Internet or the intranet (blue arrows). The answer is the reverse way.

The administration of access rights (ports) to the ComBridge HCC within a network must be coordinated with the network administrator.

### 11.4.3 Portforwarding

The own network and the participants there should be well isolated from unwanted requests from the Internet. This task is performed in the network by the router, which provides a packet filter for this purpose in



order to block unwanted network traffic from outside.

With NAT (Network Address Translation), the router also ensures that the participants in the local network are not directly accessible, but go online collectively over the IP of the router. On the Internet, thanks to NAT, the IP address assigned to the router by the provider always appears as the sender of all data packets from the local network. Direct communication from the Internet to a LAN PC is therefore not possible, which is a good thing for security reasons. The sender from the Internet does not even know that the data packets do not originate from the router itself, but from a PC behind it. And data packets that the router cannot assign to a client computer in the internal network are discarded by the built-in packet filter for security reasons.

In order for a PC and individual services in the local network to be accessible from the outside, you must release the required ports. The router must be configured accordingly. This is achieved by port release on the router, which then ensures that the requests to the open port are also forwarded internally to the correct device. More information can be found at: [https://en.wikipedia.org/wiki/Port\\_forwarding](https://en.wikipedia.org/wiki/Port_forwarding).

**Note:** To use the visualization via the Internet, a fixed IP address or a DynDns address is required. The DynDNS service can be activated for all common routers. In addition to the address accessible on the Internet, an external port number must be defined. This external port number must be linked to the security port SSL 443.



---

## 11.5 Disclaimer for Cyber Security

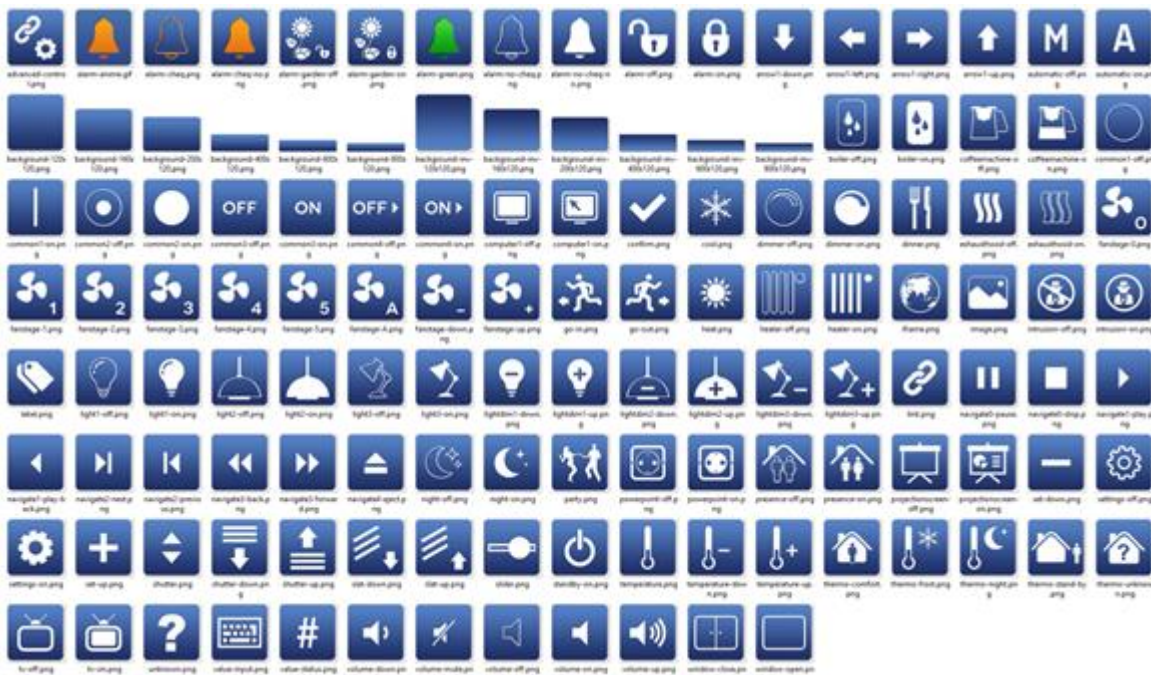
To protect systems, systems, machines and networks against online threats, it is necessary to implement a holistic, state-of-the-art security concept and to always keep it up to date.

You are responsible for preventing unauthorized access to your equipment, systems, machines and networks. These should only be connected to a network or the Internet if and as far as the connection is required and if adequate security precautions (eg firewalls or network segmentation) are available. In addition, the safety recommendations of IPAS GmbH must be observed. For more information, please contact your contact person at IPAS GmbH or visit our website.

IPAS GmbH strongly recommends that you use updates as soon as they become available, and always use the latest versions. Using versions that are no longer supported or using the latest updates may increase your risk of online threats. IPAS GmbH strongly recommends following safety recommendations on the latest security threats, patches and related measures.



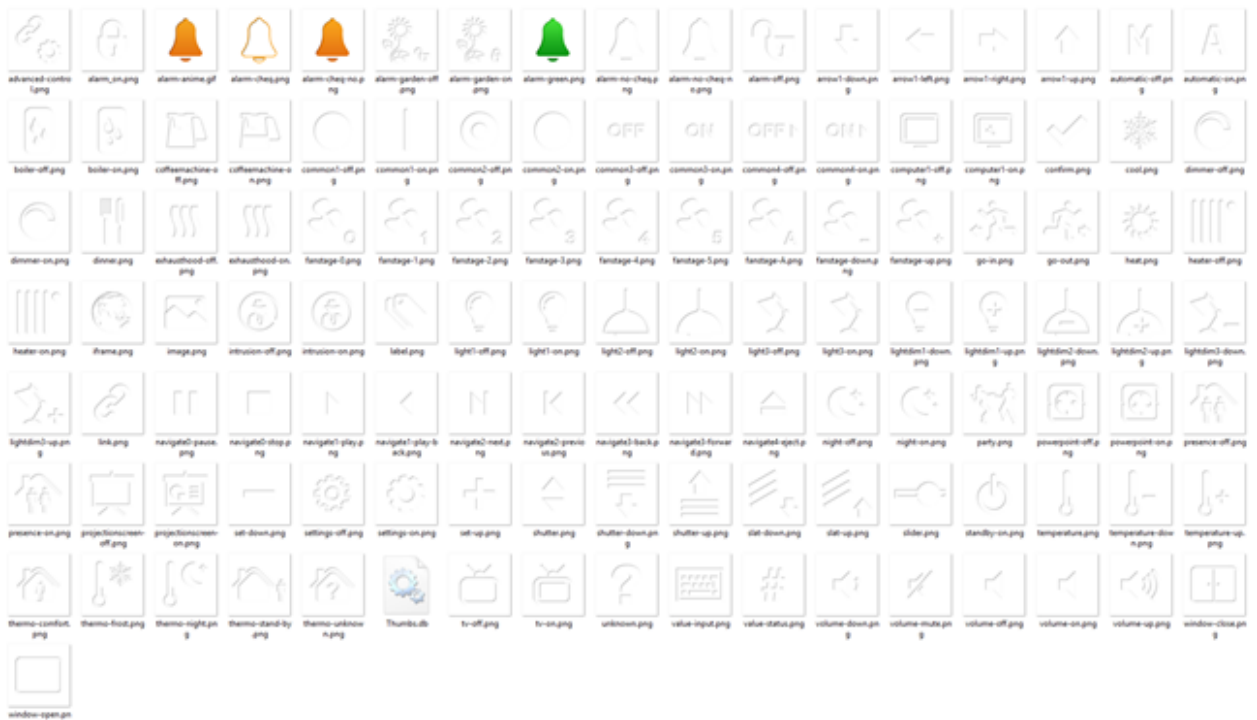
### 11.6.2 Style Blue







### 11.6.3 Style White Transparent



### 11.6.4 Style Black Transparent



## 11.7 Definition of terms

<b>DBMS</b>	Database Management System
<b>DHCP</b>	Dynamic Host Configuration Protocol
<b>DLL</b>	Dynamic Link Library
<b>DNS</b>	Domain Name System
<b>DSL</b>	Digital Subscriber Line: High-speed data transfer via a standard telephone cable.
<b>DynDNS</b>	Dynamic DNS
<b>EIB</b>	European Installation Bus
<b>EIBA</b>	EIB Association
<b>ETS</b>	KNX Tool software: This is the standard KNX configuration tool.
<b>Internet</b>	A global network that consists of numerous individual networks which are connected by the use of TCP/IP protocols. The Internet comprises the individual networks of universities, schools, companies, research institutes, government departments, individuals and other organisations. The regulatory authority for this global network is the Internet Activities Board (IAB).
<b>Internet Address</b>	IP address
<b>IP</b>	Internet Protocol. This is the network-layer protocol on which the Internet is based. IP offers a simple, wireless packet exchange. Other protocols such as □ UDP and TCP use IP to perform their connection-oriented and secure delivery services
<b>IP Address</b>	A 4-byte (32 bit) number which uniquely identifies a computer, other Internet device or an IP Internet network. The IP address describes a specific network or a specific network gateway. An example for an IP address is 192.168.1.1. Normally an IP address is assigned from an existing pool of IP addresses either by a LAN network administrator or an IP Service Provider.
<b>JVM</b>	Java Virtual Machine. This is the runtime environment for programmes written in Java. Modern browsers use JVM to execute Java Applets that are contained in web sites.
<b>KNX</b>	KNX association (Konnex association).
<b>KNXnet/IP</b>	Protocol to transmit telegrams between KNX sub-networks or between a KNX sub-network and a PC via an IP network (LAN or WAN).
<b>KNXnet/IP device management</b>	EIBnet/IP protocol to configure KNXnet/IP devices via an IP network (LAN or WAN).
<b>KNXnet/IP Routing</b>	EIBnet/IP protocol to transmit telegrams between KNX/KNX sub-networks (“Line coupler function”) via an IP network (LAN or WAN).
<b>KNXnet/IP Tunneling</b>	KNXnet/IP protocol for point-to-point transmission of telegrams between an EIB/KNX sub-network and, for example, a computer via an IP network (LAN or WAN). Tunnelling can be used for visualisation and configuration.
<b>LAN</b>	Local Area Network. This network is restricted to a local area – a single building, a collection of buildings or a single room.
<b>ODBC</b>	Open Database Connectivity. A driver manager and a group of ODBC drivers



which enable applications to access a database when using  SQL as default language.

<b>OPC</b>	OLE for Process Control. A uniform interface between process control and SCADA systems.
<b>RDBMS</b>	Relational Data Base Management System
<b>SCADA</b>	System Control and Data Acquisition
<b>SMTP</b>	Simple Message Transport Protocol. This is the electronic mail protocol.
<b>SQL</b>	Structured Query Language.
<b>TCP</b>	Transmission Control Protocol. Transport-layer protocol which uses the Internet Protocol (IP) for the secure and guaranteed delivery of packets.
<b>UDP</b>	User Datagram Protocol. UDP uses a wireless, non-guaranteed packet delivery method. It is much faster than TCP. UDP can be used as a reliable method of transport when a higher layer protocol exists, which guarantees that data is transmitted to the recipient.
<b>WAN</b>	Wide Area Network. This network connects IP devices and computers in different cities and countries.

## 11.8 Licenses

In the ComBridge HCC software open source parts were used, which in detail under Help --> OSS Licenses are visible:



The file ReadmeOSS can be found locally in the directory  
"C:\Users\<<username>\AppData\Roaming\HCCConnectionManager\Local Store  
\versions\<<Version>\editor".

## 11.9 References

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## 11.10 Sources and References

- Wikipedia