Product manual | **06.09.2022**

Busch-Installationsbus® KNX / Busch-free@home®

ST/U10.x.11-xxx
Busch-SmartTouch®

BUSCH-JAEGER

1 Notes on the instruction manual

Please read through this manual carefully and observe the information it contains. This will assist you in preventing injuries and damage to property, and ensure both reliable operation and a long service life for the device.

Please keep this manual in a safe place.

If you pass the device on, also pass on this manual along with it.

Busch-Jaeger accepts no liability for any failure to observe the instructions in this manual.

If you require additional information or have questions about the device, please contact Busch-Jaeger or visit our Internet site at:

www.BUSCH-JAEGER.de

2 Safety

The device has been constructed according to the latest valid regulations governing technology and is operationally reliable. It has been tested and left the factory in a technically safe and reliable state.

However, residual hazards remain. Read and adhere to the safety instructions to prevent hazards of this kind.

Busch-Jaeger accepts no liability for any failure to observe the safety instructions.

2.1 Information and symbols used

The following Instructions point to particular hazards involved in the use of the device or provide practical instructions:

Danger

Risk of death / serious damage to health

– The respective warning symbol in connection with the signal word "Danger" indicates an imminently threatening danger which leads to death or serious (irreversible) injuries.

Warning

Serious damage to health

– The respective warning symbol in connection with the signal word "Warning" indicates a threatening danger which can lead to death or serious (irreversible) injuries.

Caution

Damage to health

– The respective warning symbol in connection with the signal word "Caution" indicates a danger which can lead to minor (reversible) injuries.

Attention

Damage to property

– This symbol in connection with the signal word "Attention" indicates a situation which could cause damage to the product itself or to objects in its surroundings.

NOTE

This symbol in connection with the word "Note" indicates useful tips and recommendations for the efficient handling of the product.

This symbol alerts to electric voltage.

2.2 Intended use

The Busch-SmartTouch® is a KNX touch panel which can be freely programmed. The device serves as a comprehensive control and message unit for the entire KNX installation as well as the representation and operation of KNX and free@home standard functions. The touch panel can be used as terminal device (indoor video station) for communication with the Busch-Welcome® outdoor stations. As part of the Busch-Welcome® door communication system it operates exclusively with the components of this system.

The device is intended for the following:

- Operation according to the listed technical data
- Installation in dry interior rooms
- Use with the connecting options available on the device

The intended use also includes adherence to all specifications in this manual.

2.3 Improper use

Each use not listed in “Intended use“ on page 17 is deemed improper use and can lead to personal injury and damage to property.

Busch-Jaeger is not liable for damages caused by use deemed contrary to the intended use of the device. The associated risk is borne exclusively by the user/operator.

The device is not intended for the following:

- Unauthorized structural changes
- Repairs
- Outdoor use
- The use in bathroom areas
- Insert with an additional bus coupler

2.4 Target group / Qualifications of personnel

2.4.1 Operation

No special qualifications are needed to operate the device.

2.4.2 Installation, commissioning and maintenance

Installation, commissioning and maintenance of the device must only be carried out by trained and properly qualified electrical installers.

The electrical installer must have read and understood the manual and follow the instructions provided.

The electrical installer must adhere to the valid national regulations in his/her country governing the installation, functional test, repair and maintenance of electrical products.

The electrical installer must be familiar with and correctly apply the "five safety rules" (DIN VDE 0105, EN 50110):

1. Disconnect
2. Secure against being re-connected
3. Ensure there is no voltage
4. Connect to earth and short-circuit
5. Cover or barricade adjacent live parts

2.5 Cyber security

The industry faces intensifying cyber security risks. In order to increase stability, safety and robustness of its solutions, Busch-Jaeger has formally established cyber security robustness testing as part of the product development process.

The following measures are prerequisite for the safe operation of your system. Busch-Jaeger accepts no liability for non-observance.

Access control and limitation

The careful isolation of the system against unauthorized access is the basis for every protective concept. Only authorized persons (fitter, caretaker, tenant) are allowed physical access to the IP network or bus system and its components. This also includes the device described in this instruction manual.

The best possible protection of the IP or network media (WLAN) and the transfer nodes must be guaranteed already during planning and installation. Sub-distributions with fieldbus devices must be lockable or be in rooms to which only authorized persons have access.

Bus cabling

- The ends of the bus cables must not be visible, i.e. they must not project out of walls or channels, either inside or outside of the building.
- Bus cables in outdoor areas or in areas with limited protection represent an increased safety risk. The physical access should be made exceptionally difficult.

IP Network

The local network represents a sensitive component for secure communication. That is why unauthorized access to the local network should be prevented. The normal safety mechanisms for IP networks are to be used, e.g.:

- Secure encryption of wireless networks
- Use of complex passwords and protection of these against unauthorized persons
- Physical access to network interfaces (Ethernet interfaces) and network components (router, switches) should only be possible in protected areas.
- MAC filter (table with certified device addresses)

Connection to the Internet or the local IP network

To prevent improper use, no router ports from the Internet into the building network or home network are to be opened to the Busch-SmartTouch®. A VPN tunnel is suitable for safe remote control.

The stable and reliable function of the device also depends on the reliability of the local IP network to which the server is connected. For this reason additional network components are to be used to repel the DoS attacks (denial of service) from the Internet. Such attacks can overload the local IP network or the individual components and make them inaccessible.

Safety of user accounts

Set a strong access password during initial commissioning. Use passwords that you have received from the administrator only for the first login.

Keep passwords secret and use a password manager with two-factor login as memory aid, e.g. Keepass.

Updates

The device supports various update options. A detailed overview is available in see chapter 12.7 “System settings“ on page 339.

Backup / Restoration

The user can backup / restore device settings. To perform the backup the user must enter a password. This password is used as safety key to encrypt the backup information. If the user wants to restore the device settings via a backup file, he must first enter the defined password so that the backup information can be decrypted.

Solutions for protection against malware

The product is not susceptible to malware, because a user-defined code cannot be executed on the system. The only option of updating the software is the update of the firmware. Only a firmware signed by Busch-Jaeger is accepted.

Password rules

The default system password is 345678. During the initial opening of the page the user is requested to change the password.

2.5.1 Ports and services for supporting the main functionality

To support the main functionalities of the device, communication via specific ports and services must be possible in your local network. Contact your network administrator to set up, if necessary, the appropriate port sharing.

Attention!

Enabling the port increases the risk of cyber attacks.

– Assign only necessary enabling.
– Regularly check which ports are enabled for which purpose.

In the following table the TCP and UDP services listed on the device are summarized:

Port	Service	Purpose
5222	TCP	Service for XMPP client.
5269	TCP	Xmpp server
5060/TCP	SIP	Port 5060/TCP is used by SIP Server Flexisip/0.5.0 (sofia-sip-nta/2.0). SIP (Session Initiation Protocol) is a communication protocol for the introduction of communication sessions between systems. The protocol is used mostly in IP Telephony networks / systems to set up, control, and finish sessions between two or more systems.
5060/UDP	SIP	Port 5060/UPD is used by SIP Server Flexisip/0.5.0 (sofia-sip-nta/2.0).
5061/TCP	SIP-TLS	Port 5061/TCP is used by SIP Server Flexisip/0.5.0 (sofia-sip-nta/2.0). The use of SSL encryption makes the encryption of communication sessions possible.
50602/UDP	SIP	Is used by SIP server STUn.
2222/TCP	Private	Is used for b2bsip.
2224/TCP	Private	Is used for b2bsip.
8277/TCP	Private	Is used for internal process communication of safety storage components. This port is limited only for local access by iptables.
Random Port/UDP	Private	The random UDP port is used for the communication of b2bsip.

Network performance

Type	Value
Ethernet	100 Mbps (148,800 packets/s)
ARP	20 Mbps (29,760 packets/s)
ICMP	100 Mbps (148,800 packets/s)
IP	60 Mbps (89,280 packets/s)

2.6 Safety instructions

Danger - Electric voltage!

Electric voltage! Risk of death and fire due to electric voltage of 100 … 240 V.

Dangerous currents flow through the body when coming into direct or indirect contact with live components. This can result in electric shock, burns or even death.

- Work on the 100 … 240 V supply system may only be performed by authorised and qualified electricians.
- Disconnect the mains power supply before installation / disassembly.
- Never use the device with damaged connecting cables.
- Do not open covers firmly bolted to the housing of the device.
- Use the device only in a technically faultless state.
- Do not make changes to or perform repairs on the device, on its components or its accessories.
- Keep the device away from water and wet surroundings.

Caution! - Risk of damaging the device due to external factors!

Moisture and contamination can damage the device.

- Protect the device against humidity, dirt and damage during transport, storage and operation.

3 Information on protection of the environment

3.1 Environment

Consider the protection of the environment!

Used electric and electronic devices must not be disposed of with domestic waste.

– The device contains valuable raw materials which can be recycled. Therefore, dispose of the device at the appropriate collecting depot.

All packaging materials and devices bear the markings and test seals for proper disposal. Always dispose of the packaging material and electric devices and their components via the authorized collecting depots and disposal companies.

The products meet the legal requirements, in particular the laws governing electronic and electrical devices and the REACH ordinance.

(EU Directive 2012/19/EU WEEE and 2011/65/EU RoHS)

(EU REACH ordinance and law for the implementation of the ordinance (EC) No.1907/2006).

4 Product Overview

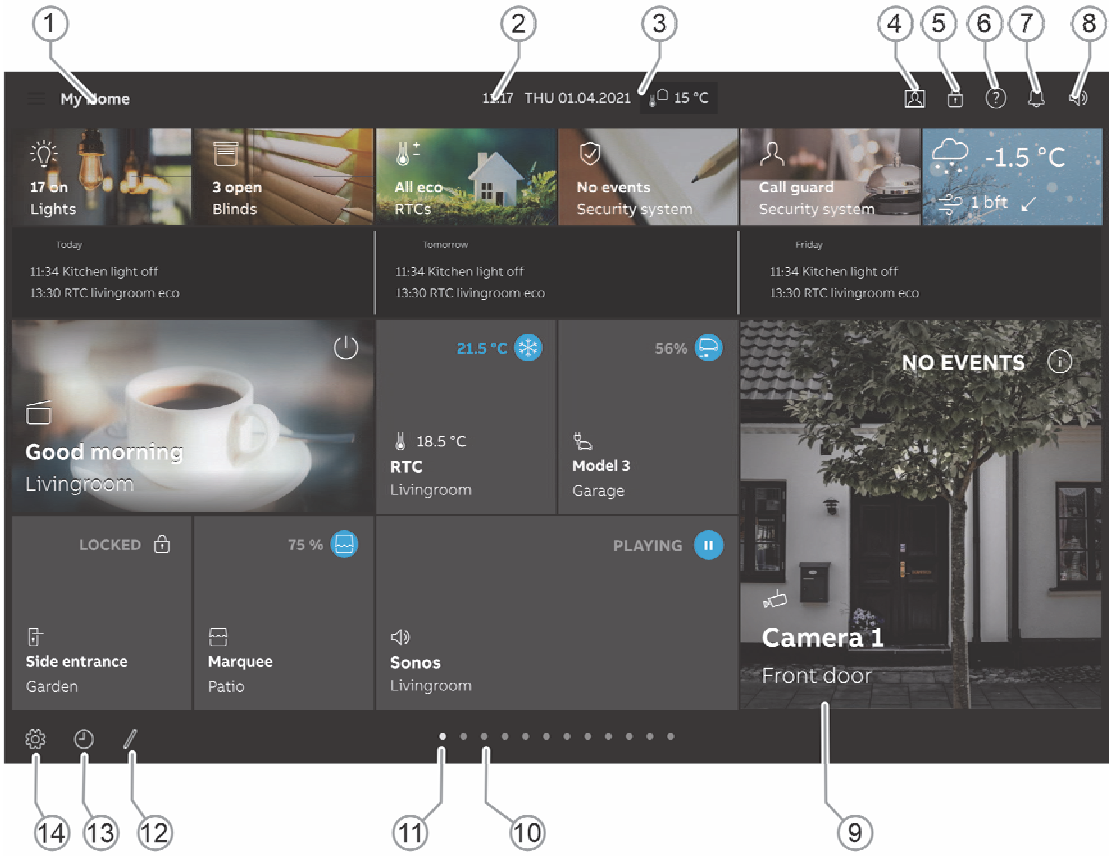


Fig. 1: Product overview

The Busch-SmartTouch® serves as indoor video station for the Busch-Welcome® door communication system and the display and operation of standard KNX and free@home functions (See “Overview of KNX functions“ on page 28 or Chapter 8.2.1 “Parameter settings of panel“ on page 52). It has a capacitive touchdisplay with a resolution of 1280 x 800 (IPS display).

The touch panel is linked with both bus systems, the Busch-Installationsbus® KNX or alternately Busch-free@home® and the Busch-Welcome® bus. The audio/video signals are transmitted and the power for the device is supplied via the Busch-free@home® or Busch-Welcome® bus. This means that at least one Busch-Welcome® central control system or alternatively oneBusch-free@home® System Access Point or one additional power supply is to be provided to ensure the power supply for the touch panel.

If the touch panel connected with the Busch-free@home® System Access Point, the configuration of the System Access Point is taken over (e.g. the number of the control elements). If the touch panel is connected with the Busch-Welcome® bus, the configuration is made via the rotary switch on the rear side of the panel. It is also possible to operate the touch panel without a connection to the Busch-Welcome® bus. The connection to the door communication system is then made via WLAN. This means that an additional power supply is to be provided to ensure the power supply for the touch panel.

When using the touch panel together with the Busch-Installationsbus® KNX, up to 18 functions can be positioned on one operating page. In connection with a configuration with the Busch-Installationsbus® KNX, a total of up to 25 operating pages with a total of 450 control elements can be configured (the audio control element occupies at least four function positions). For a configuration via the Busch-free@home® System Access Point, the scope of functions of the Busch-free@home® App Next is used. The device can also be used for fault and alarm messages.

For the integration in a Busch-Installationsbus® KNX system the touch panel is configured with the KNX commissioning tool ETS Touch DCA App, which available in the KNX shop free of charge. The commissioning tool is embedded in the ETS and allows direct access to group addresses and flags of communication objects. The control element consists of freely programmable touch surfaces. For the integration in a Busch-free@home® system, the commissioning is carried out via the Web-based user interface of the System Access Point.

4.1 Scope of supply

The panel is included in the scope of supply.

The enclosed bus connection terminal serves for the connection with the Busch-Installationsbus® KNX and/or the Busch-Welcome® bus. The connection with the Busch-free@home® System Access Point is made via WLAN and/or the Busch-free@home® bus.

The special Surface-mounted mounting frame (ST/A10.11-xxx) and the associated Flush-mounted installation box (6136/07 UP; windproof) are not included in the scope of supply.

The necessary power supplies (e.g. 6358-101) are also not included in the scope of supply. Separate power supplies are only required in combination with Busch-Installationsbus® KNX, Busch-free@home® and for connection of Busch-Welcome® via WLAN.

4.2 Additional necessary components

- Power adapter for the 20 - 32 V DC (SELV) auxiliary power supply (power supply of device) or the central control system Busch-Welcome® (no additional power supply is necessary in this case).
- Associated flush-mounted installation box or surface-mounted mounting frame (if the device is not mounted on the associated flush-mounted installation box).

4.3 Overview of types

Article no.	Product name	Colour	Display diagonal
ST/U10.1.11-811	Busch-SmartTouch® W/stainless	Stainless steel	25.4 cm (10“)
ST/U10.1.11-825	Busch-SmartTouch® B/stainless	Stainless steel	25.4 cm (10“)
ST/U10.2.11-811	Busch-SmartTouch® W/graphite	Graphite	25.4 cm (10“)
ST/U10.2.11-825	Busch-SmartTouch® B/graphite	Graphite	25.4 cm (10“)
ST/U10.3.11-811	Busch-SmartTouch® W/satin gold	Gold	25.4 cm (10“)
ST/U10.3.11-825	Busch-SmartTouch® B/satin gold	Gold	25.4 cm (10“)
ST/U10.4.11-811	Busch-SmartTouch® W/rose gold	Roségold	25.4 cm (10“)
ST/U10.4.11-825	Busch-SmartTouch® B/rose gold	Roségold	25.4 cm (10“)
ST/A10.11-811	Busch-SmartTouch® SM Frame W	White	25.4 cm (10“)
ST/A10.11-825	Busch-SmartTouch® SM Frame B	Black	25.4 cm (10“)

Table 1: Overview of types

4.4 Overview of KNX functions

The following table provides an overview of the possible functions and applications of the device:

Standard KNX functions	Applications
▪ Switching ▪ Dimming ▪ Slide controller functions ▪ Blind control ▪ RGBW operation ▪ Fan control (step switch) ▪ VRV operation ▪ Split Unit operation ▪ Scene control ▪ Display functions (display elements) ▪ Room temperature controller (RTC) ▪ Page link functions ▪ Audio control	▪ Door communication ▪ Fault and alarm messages ▪ Scene actuator ▪ Presence simulation ▪ Time programs ▪ Logic functions ▪ Internal RTC

Table 2: Overview of functions

4.5 Device overview

Device overview (front side)

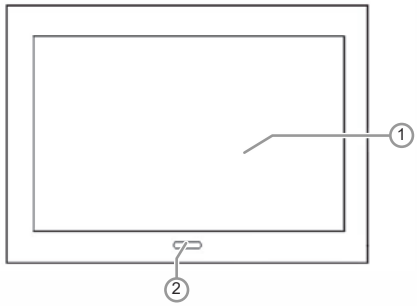


Fig. 2: Device overview Busch-SmartTouch® front side

Pos.	Description
[1]	Touch screen
[2]	Proximity and brightness sensor

Device overview (rear side)

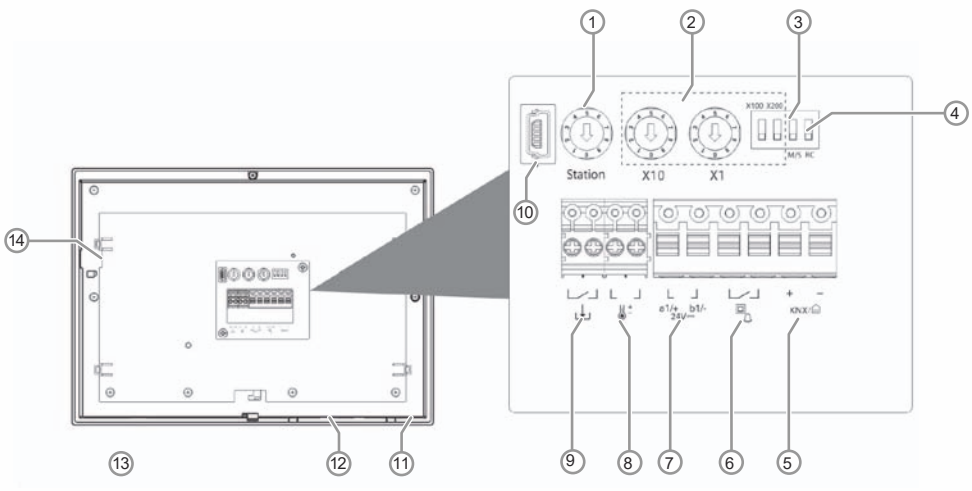


Fig. 3: Device overview Busch-SmartTouch® rear side

Pos.	Description
[1]	**Address of outdoor station** Setting of the address of the standard outdoor station.
[2]	**Indoor station address** Setting the address of the indoor station. ▪ X10: Setting the tens digits. ▪ X1: Setting the ones digits. ▪ X100 and X200: setting the hundreds digits (must only be set for Busch-Welcome® systems of type M range)
[3]	**Master/slave function** Only one indoor station in each apartment can be set as "Master" (ON=Master).
[4]	**Terminal resistor** In video installations or mixed audio and video installations, the switch on the last device of the connection must be set on "RC on" (ON=RC on).
[5]	**KNX** connection /Busch-free@home®
[6]	**Floor call** connection
[7]	Connection of **power input/bus connection**
[8]	**Temperature sensor** connection
[9]	**Binary input** connection
[10]	**USB connection** for firmware upgrade (only for factory use)
[11]	**Temperature sensor**
[12]	**Loudspeaker**
[13]	**Microphone**
[14]	**SD card insertion position**

5 Technical data

Designation	Value
Display resolution	1280 x 800 pixel (HD)
Aspect ratio	16:9
Colour resolution	16 million colours
Display size	25.4 cm (10")
Viewing angle: ▪ horizontal: ▪ vertical:	 75° 75°
Background illumination	LED
Maximum brightness	±240 cd/m^2
Service life	±20 000 h (at maximum brightness of > 125cd/m^2)
Touch technology – Calibration:	Capacitive Automatically
Degree of protection	IP20
Single-wire clamps	2 x 1.0 mm^2 - 2 x 1.4 mm^2
Fine-wire clamps	2 x 0.5 mm^2 - 2 x 1.8 mm^2
Nominal voltage	24 VDC
Mains supply	20 V - 32 V DC
Busch-Welcome® / Busch-free@home® bus voltage	21 V - 32 V DC
KNX bus voltage	21 V - 32 V DC
Energy consumption (power input) ▪ maximum: ▪ standby:	 < 12 W < 1.5 W
KNX bus connection terminal	0.6 mm - 0.8 mm single-wire
WLAN frequency ranges	2400 - 2485 MHz
WLAN transmitting power	Max. 20 dBm (100 mW)
WLAN standard	IEEE 802.11 b/g/n
Micro SD card (SDXC, SDHC)	max. 128 GB, Card slot for SD card, Formatting FAT32 or exFAT
Working temperature	0°C - +45°C
Storage temperature	-20°C - +70°C

Dimensions	254.6 mm x 180.2 mm x 17.4 mm
Commissioning	
Parameter setting: Programming (KNX)	ETS 6 (from ETS 5.x) and BJE DCA SmartTouch 10 via KNX bus or micro SD card
Parameter setting (free@home)	Via 6200 AP (no SD card required)

Table 3: Technical data

5.1 Dimensional drawings

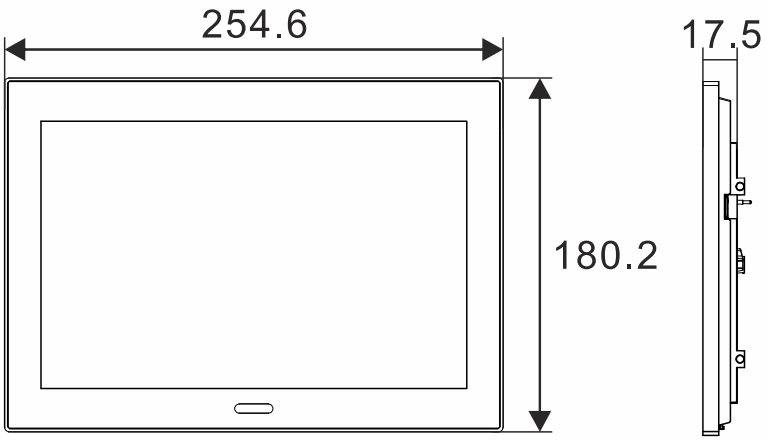


Fig. 4: Dimensions

All dimensions are in millimetres.

The installation height of the device is 14 mm.

The installation depth is 10 mm.

Notice

The dimensions of the associated flush-mounted installation boxes (not included in the scope of supply) are as follows:

- Dimension for flush-mounting (H x W x D): 156 x 238 x 60.
- Dimension for hollow wall mounting (H x W x D): 146 x 227 x 50.

The dimensions of the surface-mounted mounting frame (not included in the scope of supply) are as follows:

- (H x W x D): 176 x 250 x 10

5.2 Circuit diagrams

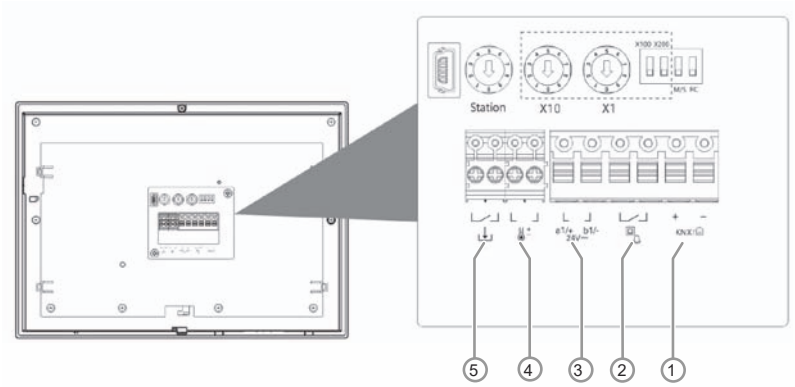


Fig. 5: Electrical connection

Pos.	Function
1	Connection for the Busch-Installationsbus® KNX / free@home
2	Connection for the floor call button
3	Connection for the central control system or the external power supply (e.g. 6358-101) When using several indoor stations: connection for the internal bus.
4	Temperature sensor connection 6226/T or PT1000
5	Binary input connection

Table 4: Function of connection

6 Connection, installation / mounting

6.1 Planning instructions

Notice

Planning and application instructions for the system are available in the system manuals for Busch-Welcome® and Busch-free@home®. These can be downloaded via www.BUSCH-JAEGER.de or https://busch-jaeger.de/freeathome.

6.2 Safety instructions

Danger - Electric voltage!

Risk of death due to electrical voltage of 100 … 240 V during short-circuit in the low-voltage conduit.

– Low-voltage and 100 … 240 V conduits must not be installed together in a flush-mounted box!

6.3 Requirements for the electrician

Danger - Electric voltage!

Install the device only if you have the necessary electrical engineering knowledge and experience.

- Incorrect installation endangers your life and that of the user of the electrical system.
- Incorrect installation can cause serious damage to property, e.g. due to fire.

The minimum necessary expert knowledge and requirements for the installation are as follows:

- Apply the "five safety rules" (DIN VDE 0105, EN 50110):
  1. Disconnect
  2. Secure against being re-connected
  3. Ensure there is no voltage
  4. Connect to earth and short-circuit
  5. Cover or barricade adjacent live parts.
- Use suitable personal protective clothing.
- Use only suitable tools and measuring devices.
- Check the type of supply network (TN system, IT system, TT system) to secure the following power supply conditions (classic connection to ground, protective earthing, necessary additional measures, etc.).

6.4 Preparatory steps

- Terminate all branches of the wiring system with a connected bus device (e.g., indoor station, outdoor station, system device).
- Do not install the central control system directly next to bell transformers and of other switched voltage supplies (avoidance of interference).
- Do not install the cores of the system bus together with 100 - 240 V cores.
- Do not use joint wires for the connecting cables of door openers and wires of the system bus.
- Avoid bridges between different wire types.
- Use only two wires for the system bus in a four-core or multi-core cable.
- During looping, never install the incoming and outgoing bus within a wire.
- Never install the internal and external bus within a conduit.

6.5 Mounting / dismantling

6.5.1 Installation sites

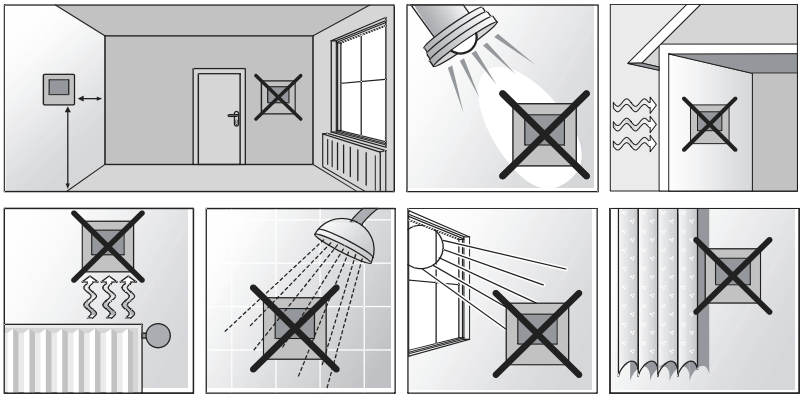


Fig. 6: Installation sites

- When selecting the installation location, ensure that there is a distance to sources of heat or cold.
- Heat or cold sources influence the function of the internal temperature sensor.
- The device should be mounted on a wall opposite the heat source. The distance to side walls or door frames should be at least 50 cm. The distance to the floor should be about 150 cm.
- Do not mount the device on an exterior wall. Low outside temperatures have an effect on the temperature regulation.
- The device must not come into direct contact with liquids.
- Do not mount the device in direct sunlight, near radiators, windows, light sources or behind curtains.

Mounting height

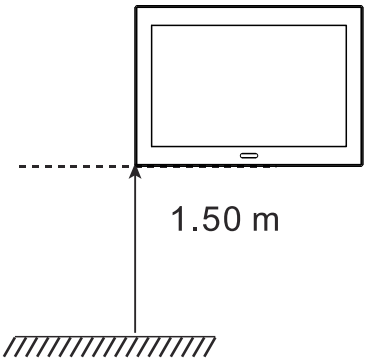


Fig. 7: Mounting height

- The mounting height is 1.50 m.

6.5.2 Mounting

The device is suited for flush-mounted and surface-mounted installation.

The surface-mounted mounting frame ST/A10.11-811; not part of the scope of supply) can be used for surface mounting when the device is not mounted on the associated flush-mounted installation box.

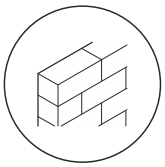
The following mounting versions are possible:

- in flush-mounted installation box
  - Mounting in solid wall, See “Mounting in flush-mounted installation box in solid wall“ on page 37
  - Mounting in hollow wall, See “Mounting in flush-mounted installation box in hollow wall“ on page 38
- in Surface-mounted mounting frame directly on the wall
  - Mounting with surface-mounted mounting frame, See “Mounting with surface-mounted mounting frame“ on page 39 (un Table stand 83506)
  - Mounting with table standSee “Mounting with table stand“ on page 39

The associated Flush-mounted installation box (6136/07 UP; not included in the scope of supply) can be used in hollow walls. Can also be used in solid walls. For this, part of the box must first be inserted flush-mounted.

Notice
Detailed information is available in the enclosed installation instructions for the surface-mounted mounting frame and the associated flush-mounted installation box.

6.5.3 Mounting in flush-mounted installation box in solid wall



Installation on the basis of the instructions on the enclosed plastering template:

Notice

See mounting instructions on the enclosed plaster and drilling template.

First the bottom part of the flush-mounted installation box must be pulled off and installed flush-mounted.

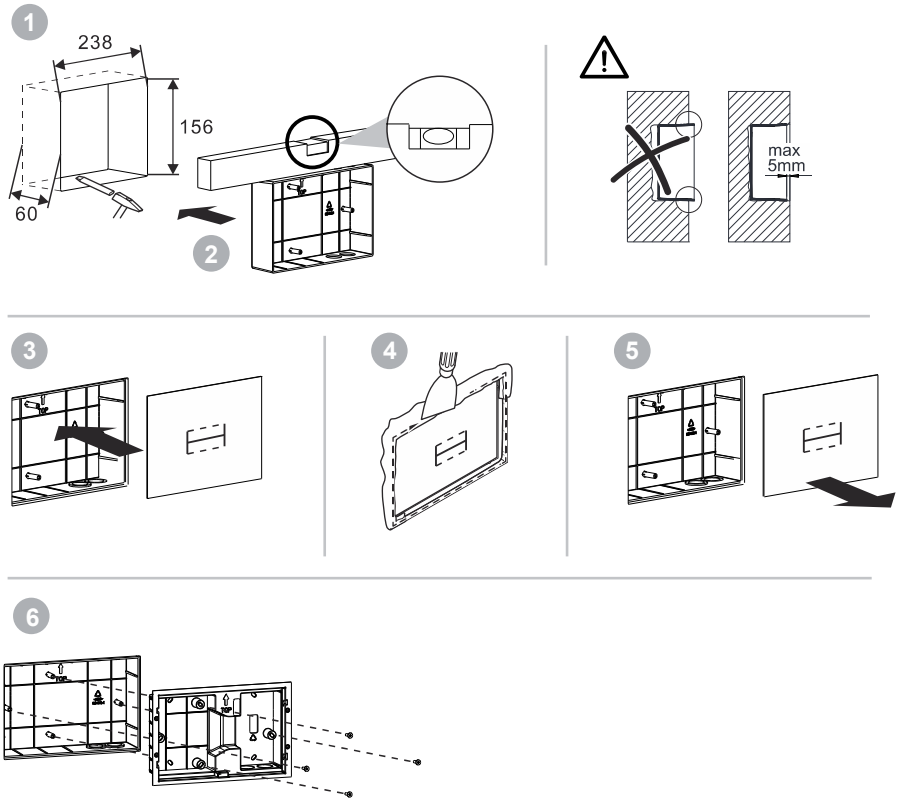
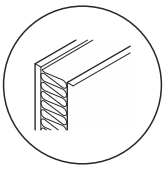


Fig. 8: Mounting in solid wall

Installation on the basis of the instructions on the enclosed drilling template:

Continue with “Electrical connection“ on page 40 and “Installation“ on page 41.

6.5.4 Mounting in flush-mounted installation box in hollow wall



Installation on the basis of the instructions on the enclosed drilling template:

Notice
See mounting instructions on the enclosed plaster and drilling template.
The bottom part of the flush-mounted installation box is not required here.

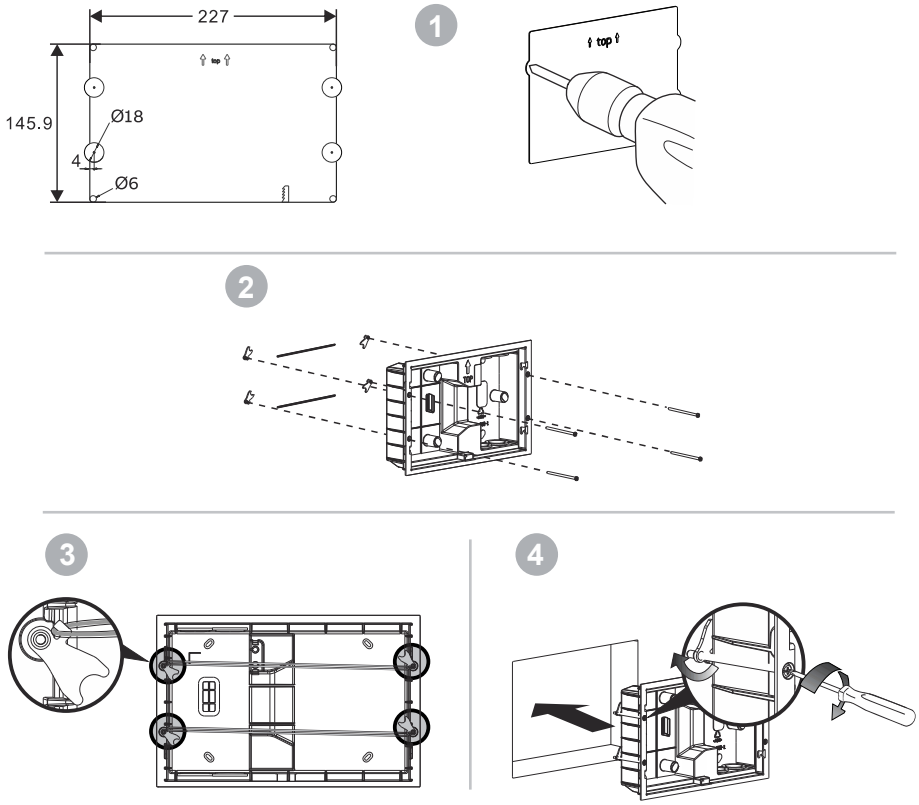


Fig. 9: Mounting in hollow wall

Continue with “Electrical connection“ on page 40 and “Installation“ on page 41.

6.5.5 Mounting with surface-mounted mounting frame

First, depending on the mounting version according to the following specification, the surface-mounted mounting frame must be installed:

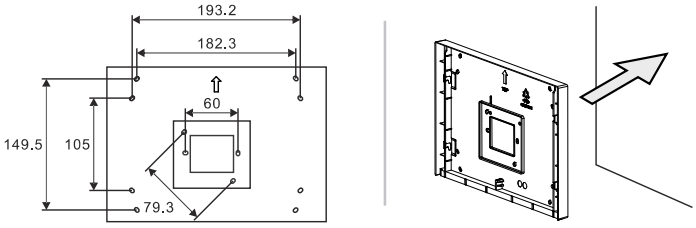


Fig. 10: Installation of surface-mounted mounting frame

Notice
For additional information see the enclosed mounting instructions for surface-mounted mounting frames.

Continue with “Electrical connection“ on page 40 and “Installation“ on page 41.

Mounting with table stand

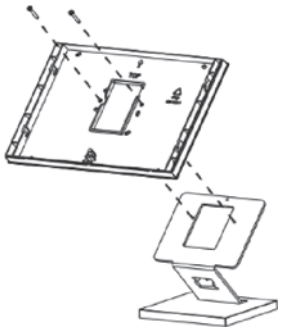


Fig. 11: Table stand 83506

Continue with “Electrical connection“ on page 40 and “Installation“ on page 41.

6.6 Electrical connection

6.6.1 Connection, installation and addressing

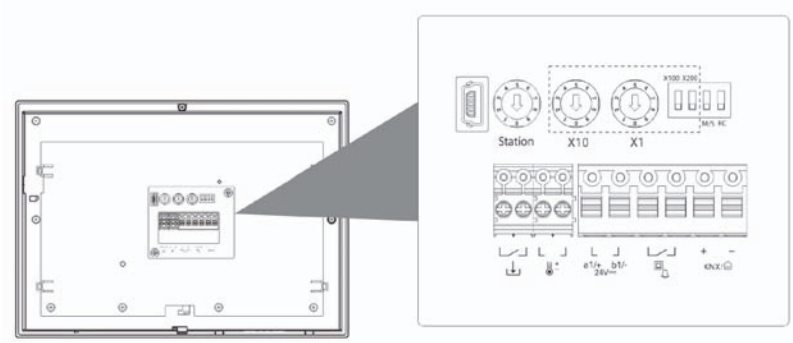


Fig. 12: Overview of connections / switches

The connections, the switches and the terminal resistor are located on the rear of the Busch-SmartTouch®.

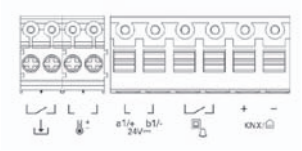


Fig. 13: Overview of connections

1. Connect the device according to the graphics (See “Circuit diagrams“ on page 32).

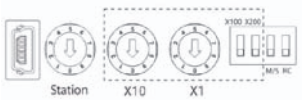


Fig. 14: Overview of switch / terminal resistor

2. Set the address of the preferred outdoor station and the address of the indoor station via the rotary switches on the rear of the housing (See “Addressing“ on page 356).
3. Set the master / slave function and the terminating resistor via the switches on the rear of the housing (Chapter 12.7.13 “Setting master/slave switches“ on page 354).

6.6.2 External power supply

If the panel is not operated via Busch-Welcome®, an external power supply is required. The device can be operated with the power supply named in the following:

- 6358-101

Notice
If you supply three panels with current via a single power supply, you require a separate power supply for the outdoor station. Alternatively, each panel can be connected to its own power supply.

6.6.3 Installation

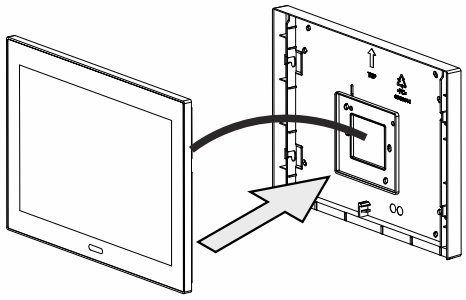


Fig. 15: Attaching the device (example illustration)

1. Attach the device on the installation box.

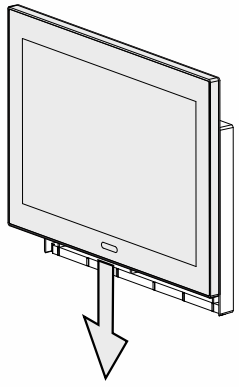


Fig. 16: Latching the device (example illustration)

2. Push the device downward until the bottom clamp latches in.

The device is now fully mounted.

6.7 Dismantling

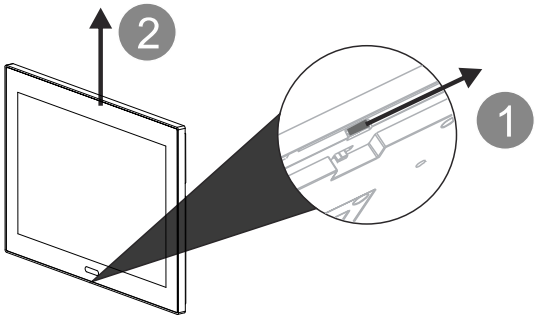


Fig. 17: Loosening the clamp of the device

1. Push the slider on the bottom side of the device to the right.
   – The clamp is loosened.
2. Push the device upwards and then pull it off toward the front.

7 Initial commissioning of device

During initial commissioning of the device, first the general device settings must be made.

1. Specify the panel language.
2. Agree to the licensing terms.
3. Tap on "Next".
4. Agree to the OSS licensing terms.
5. Tap on "Next".

During the next step the system must be specified with which the panel is to be operated. There is a series of different systems with which the Busch-SmartTouch® is compatible. The systems can be used as individual solution or in combination with an additional system. The following system combinations are possible:

- Busch-Installationsbus® KNX
- Busch-free@home®
- Busch-Welcome®
- Busch-Installationsbus® KNX + Busch-Welcome®
- Busch-free@home® + Busch-Welcome®

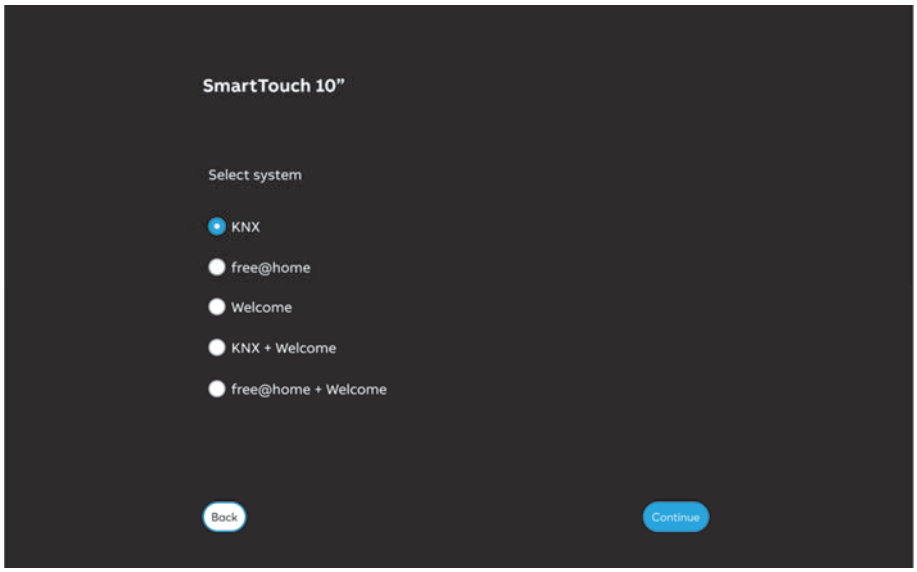


Fig. 18: Selection of system during initial commissioning

The initial commissioning of the Busch-SmartTouch® is described in general in the following. The specific initial commissioning is available in the system-specific description on commissioning.

1. Select the desired system.
   – Observe Chapter 7.1 “Initial commissioning with Busch-free@home®“ on page 45 for the special features during commissioning with free@home.

Notice
If there is more than one System Access Point in a free@home system, the System Access Point to which a connection is to be established must be selected manually.

2. Specify the country in which the device is operated.

Notice
The setting is important, since there are countries with local restrictions for wireless networks.

3. Tap on "Next".
4. Activate WiFi and establish a connection to a network.
   – For a manual connection, then enter the network information.
5. Tap on "Next".
6. Specify the time zone and time settings.
7. Tap on "Next".
   – The device connects itself with the system. A load screen follows.

Notice
The following parameter setting of the functions is made via the commissioning tool BJE DCA SmartTouch 10, or alternatively, via the Web-based user interface of free@home.

Special features

Depending on the selected system, please observe the following special features:

- Busch-Welcome® IP:
  - The configuration is taken over fully automatic when the device is taken into operation via Busch-Welcome® IP in combination with Busch-free@home®.
  - Access to myBUSCH-JAEGER must be activated
- Busch-Welcome®:
  - only 1 operating page in the panel is possible
- Busch-Welcome® + Busch-Welcome® IP:
  - Busch-Welcome® must be configured first, then follows the configuration of Busch-Welcome® IP
- Busch-free@home®
  - Synchronisation of the weather data is possible only via myBUSCH-JAEGER

7.1 Initial commissioning with Busch-free@home®

The steps described in the following refer to initial commissioning with Busch-free@home® or Busch-free@home® + Busch-Welcome® and are made directly in Busch-SmartTouch®. Ensure that the steps from Chapter 7 “Initial commissioning of device“ on page 43 have already been carried out.

1. For the configuration with Busch-free@home®, select the option "free@home“ or "free@home + Welcome“.
2. Then connect the panel with the corresponding System Access Point.
   – For this, select the correct System Access Point from the list. Please note that the process can take up to 5 minutes.

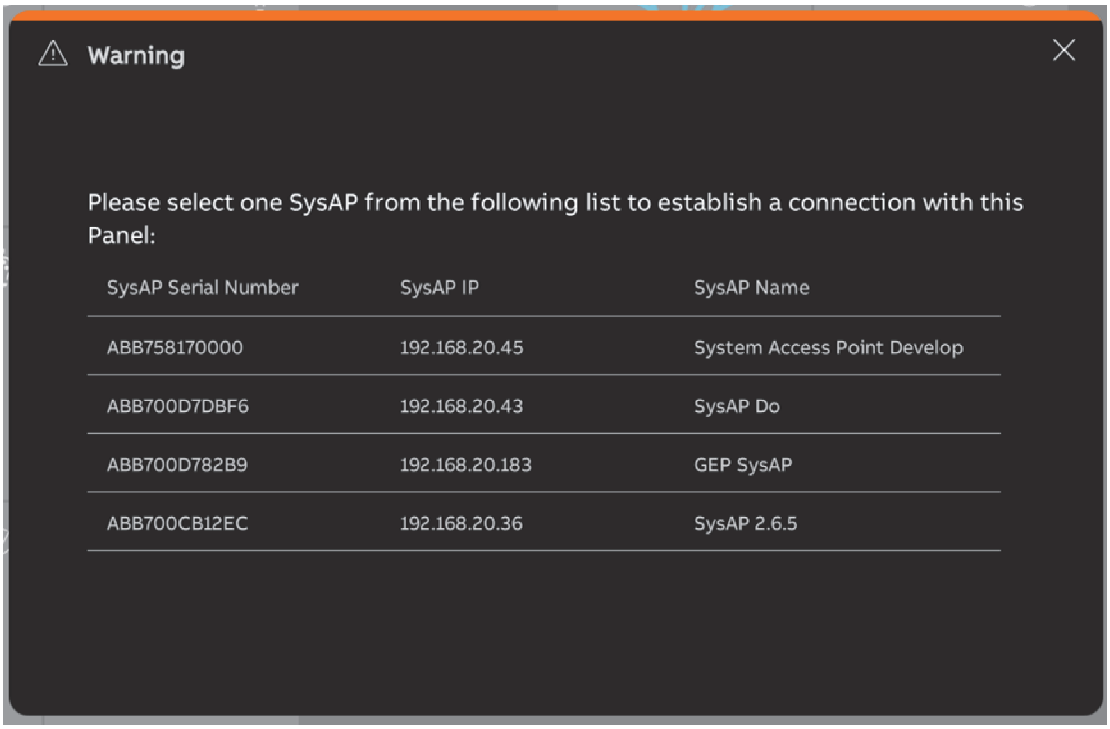


Fig. 19: Connecting the panel with the System Access Point

Notice
The System Access Point to which a connection is to be established must always be selected manually.

3. Change to the web-based surface of the System Access Point.

4. The notification center opens.
   – The panel must be authenticated in the notification center.

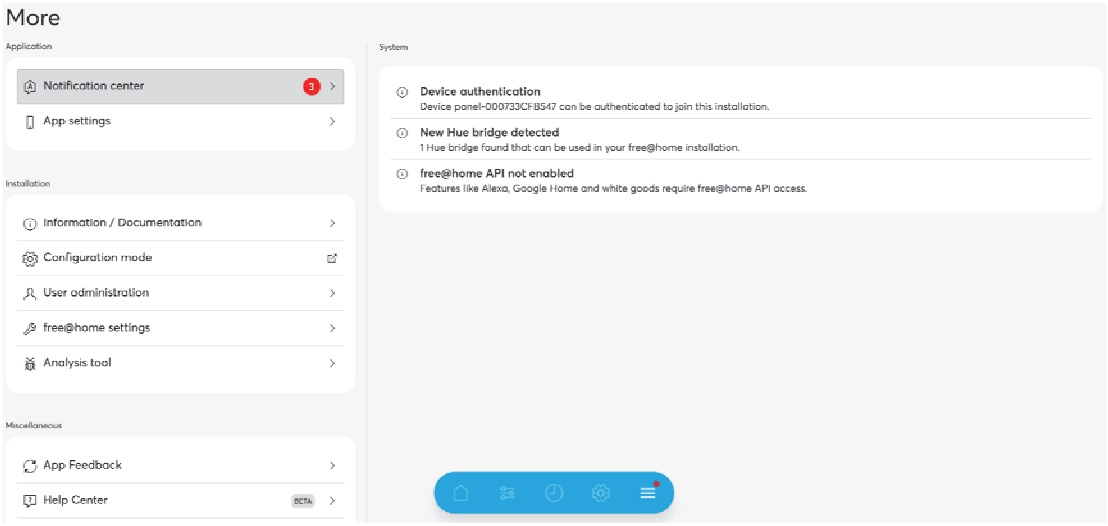


Fig. 20: Authentication

5. Tap on the system message "Device authorization" in the notification center.
6. Then tap on the message.
   – The dialogue "Authenticate device" opens.

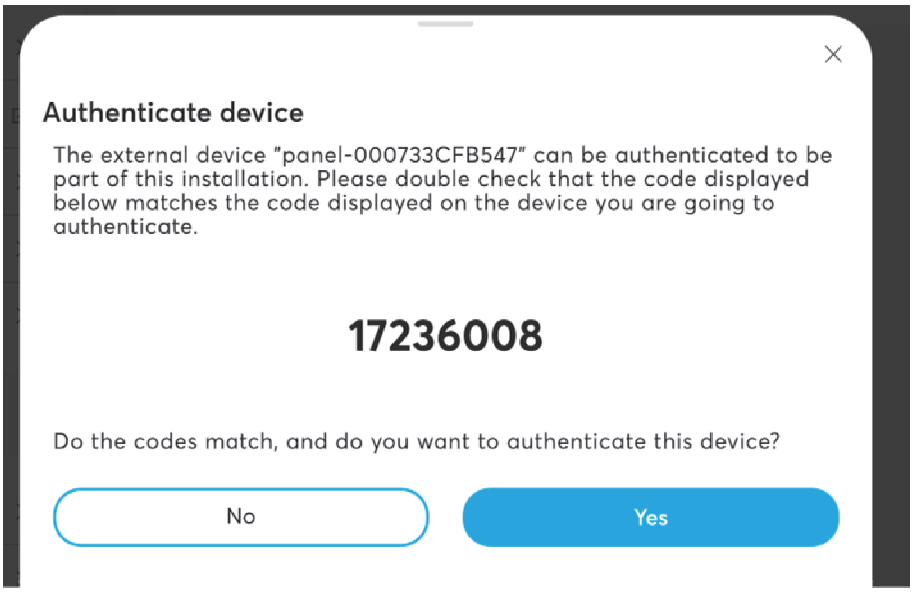


Fig. 21: Authenticating device

7. Confirm the authentication with "Yes".
   – Then the panel is listed in the "System settings" in the area "Info" > "free@home".

After a while the panel is listed as new device in the device list in the System Access Point". The additional configuration is available in Chapter 8 “Commissioning via Busch-free@home®“ on page 48.

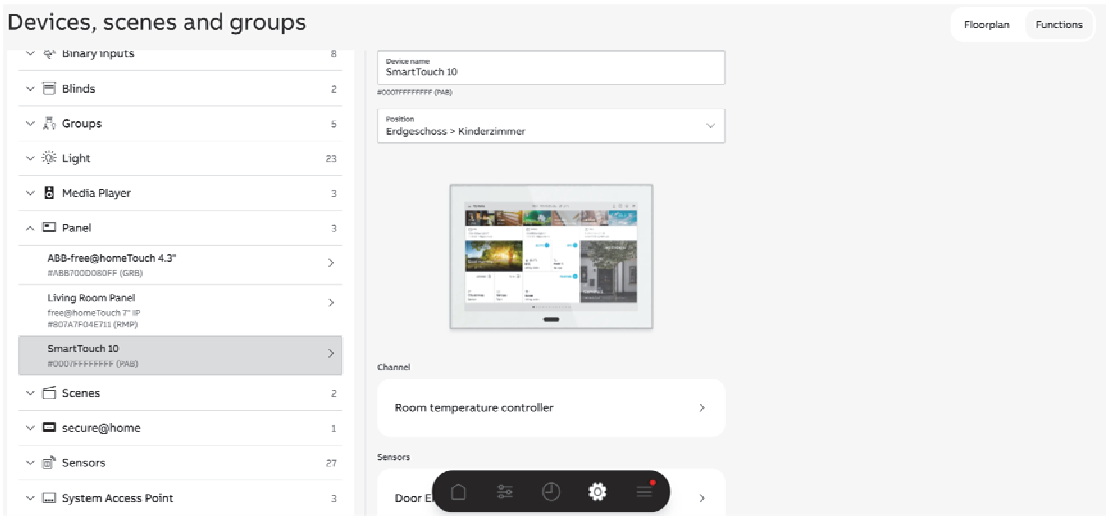


Fig. 22: Panel in device list

8 Commissioning via Busch-free@home®

Commissioning of the device is always carried out via the web-based surface of the System Access Point. It is assumed that the basic commissioning steps of the overall system have already been carried out. Knowledge about the web-based commissioning software of the System Access Point is assumed.

The System Access Point establishes the connection between the free@home participants and the smartphone, tablet or PC. The System Access Point is used to identify and program the participants during commissioning. The link of the Busch-SmartTouch® with the System Access Point is made during the course of initial commissioning (see chapter 7 “Initial commissioning of device“ on page 43).

The devices can be parameterised for the use of additional functions.

Notice
The configuration is taken over fully automatic when the device is taken into operation via Busch-Welcome® IP in combination with Busch-free@home®.

Notice
General information about commissioning and parameterization is available in the Busch-free@home® system manual.

8.1 Allocation of devices and definition of channels

The devices connected to the system must be identified, i.e. they are allocated to a room according to their function and are given a name.

The allocation is carried out via the Web-based user interface of the System Access Point.

8.1.1 Add device

1. Tap on the switch icon (menu devices, scenes and groups) at the left edge of the screen.
   – The "Building plan" opens.
2. Tap on the round plus icon at the bottom right [1].
   – Menu "Select component" opens.

Fig. 23: Opening the building plan and list of components (example illustration)

3. Tap on the desired characteristic in the list of components.
   – The menu with the available devices, functions and actuators opens.
4. Select the desired device and pull it into the floor plan via drag-and-drop.

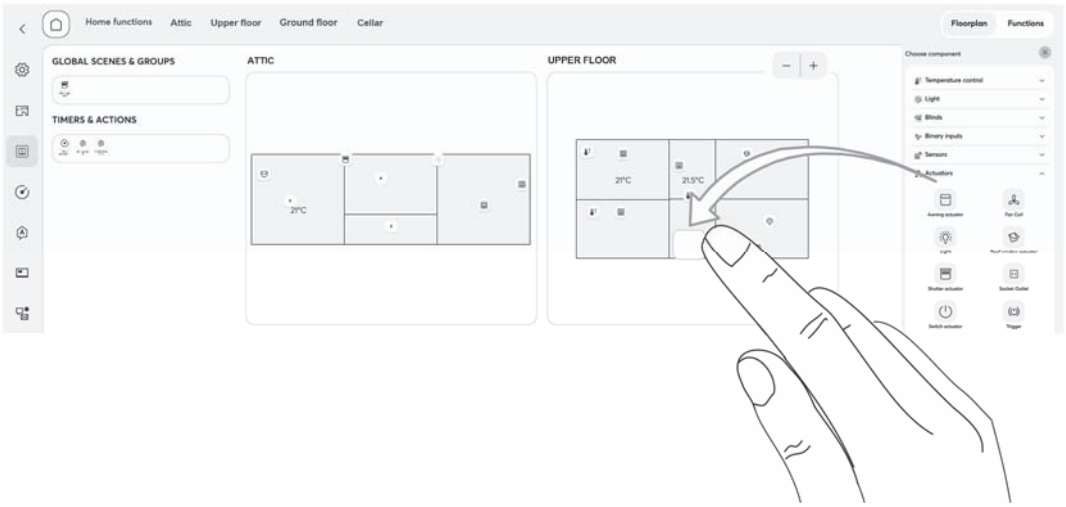


Fig. 24: Pulling the device out of the menu bar (example illustration)

If you pull a new device into a room via drag and drop, a pop-up window opens in which all devices that are located in the system are listed and which have not been allocated to a room. The devices are suitable respectively for the selected application.

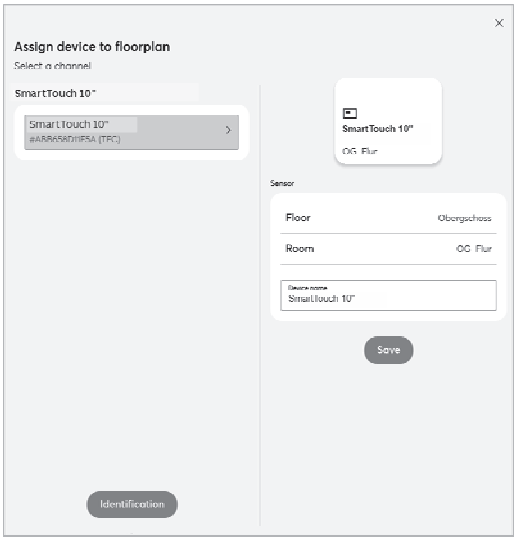


Fig. 25: Pop-up window with the suitable devices (example illustration)

Identification

The device can be identified via the serial number.

Identification via serial number

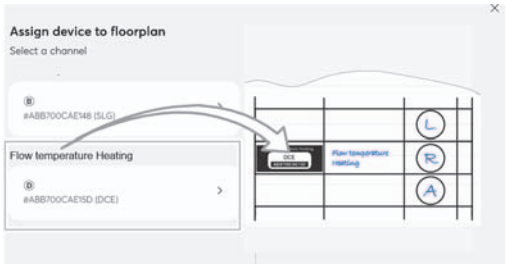


Fig. 26: Identification via serial number (example illustration)

- Compare the serial number and the short ID of the identification label, which is glued on the device plan, with the numbers and IDs in the list. This is how the searched for device and possibly the searched for channel are identified.

Specifying a name

1. Enter a name in text field [3] under which the application is to be displayed later, (e.g. "Ceiling light" or "Living room blind").
2. Tap on the "Save" button to take over the adjustments.
   – This takes over the entry.

8.2 Setting options per channel

General settings and special parameter settings can be made for each channel.

The settings are made via the web-based user interface of the System Access Point.

Select device

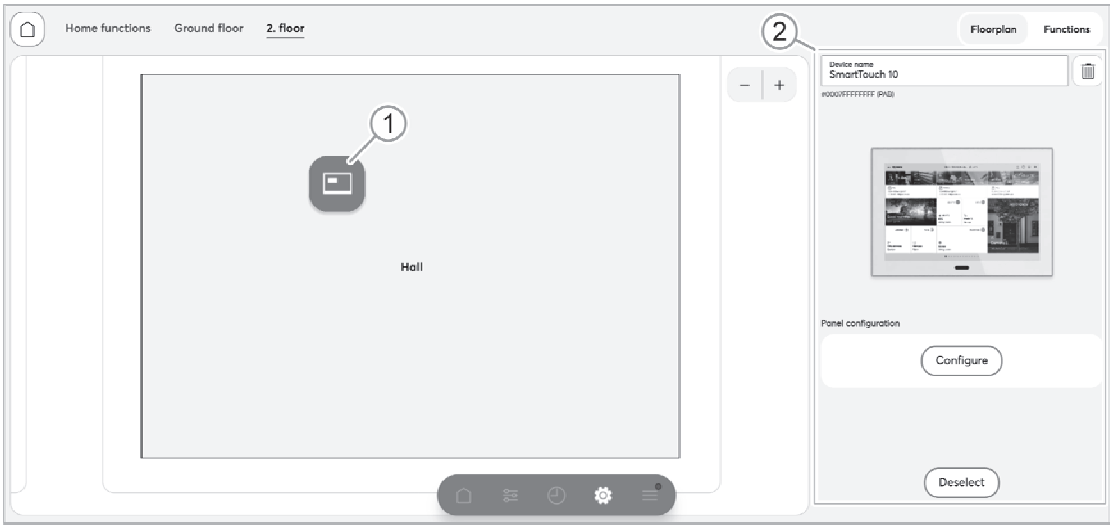


Fig. 27: Selecting device

1. Select the device icon [1] in the floor plan of the working area view.
   – The setting options (name, linkage to panel configuration) for the respective panel are displayed in the list view [2].

8.2.1 Parameter settings of panel

Open overview of devices

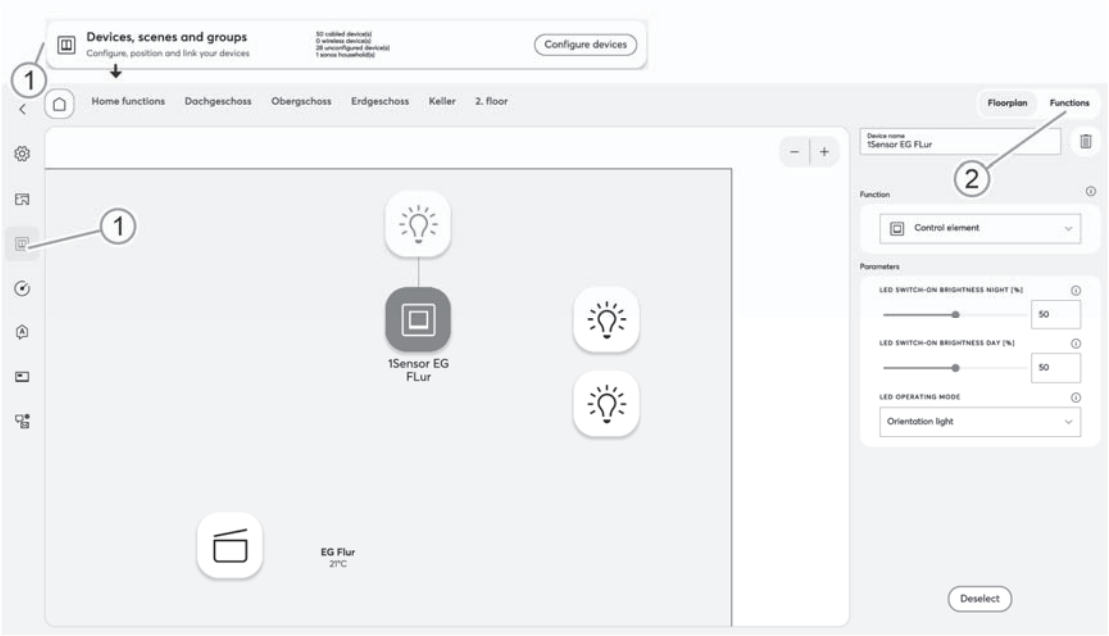


Fig. 28: Open overview of devices (example illustration)

1. Open window "Devices, scenes and groups"
2. Select the "Functions" button [1].
   - The overview of devices opens.
   - Here you can view all devices that are located in the free@home system. The overview page displays information about the device name and the position of the respective device.

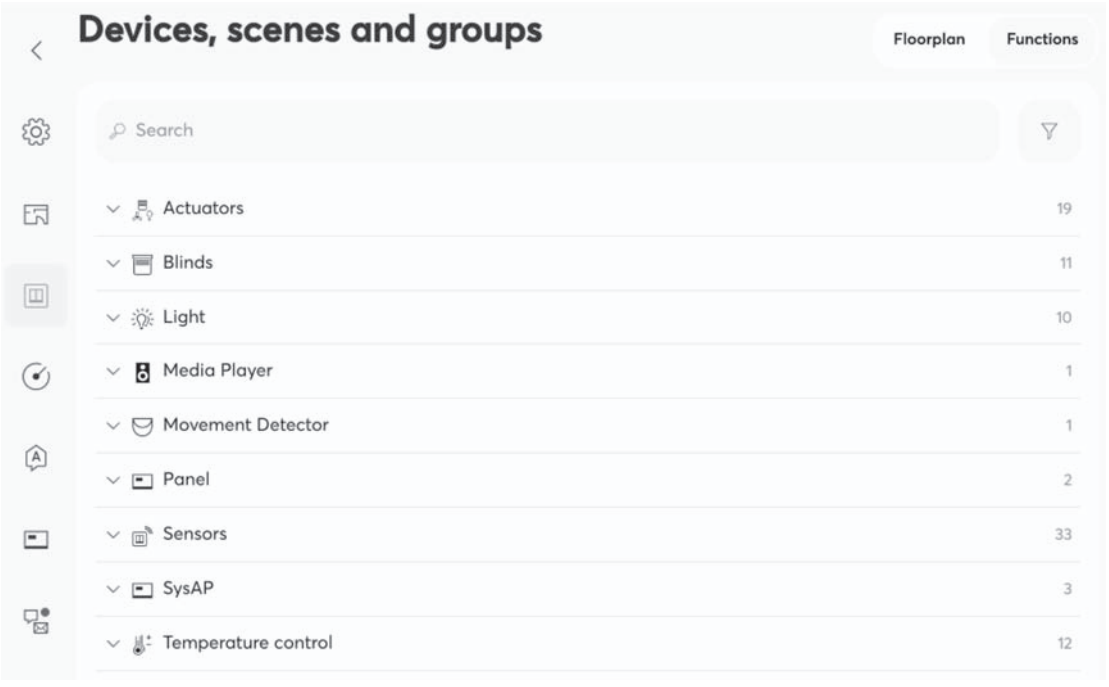


Fig. 29: Overview of devices (example illustration)

3. Tap on a device category.
   – The list of available devices opens.
4. Tap on the device whose information you want to edit.
   – A new window with the information about the respective device opens.

Information about the device name, the device position in the building and additional settings are illustrated in the device menu.

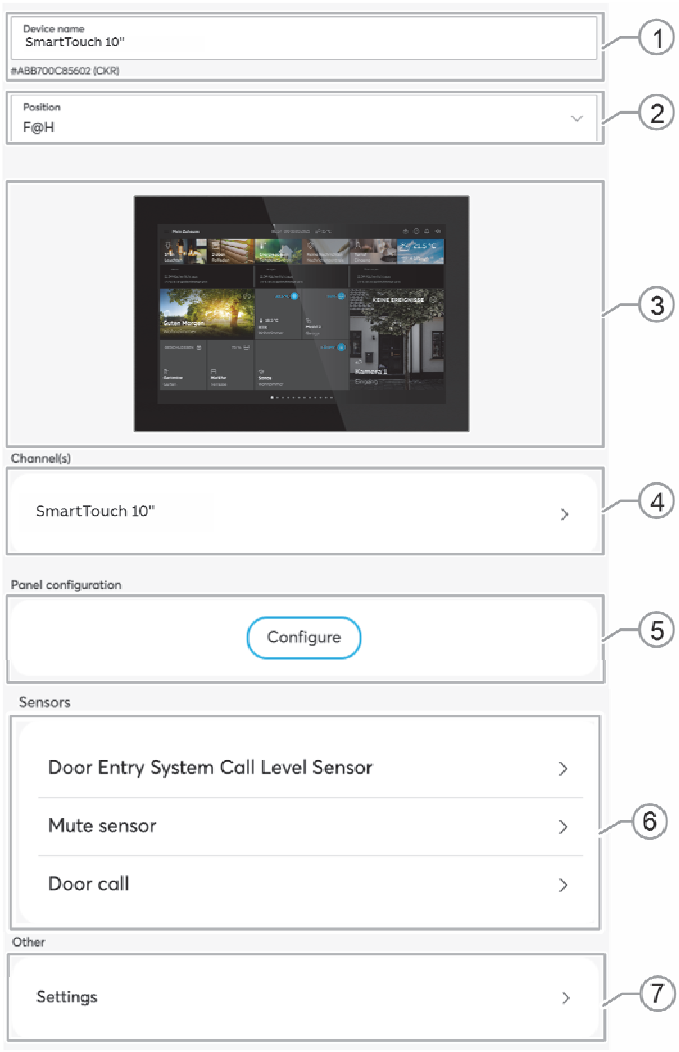


Fig. 30: Device menu

Pos.	Description
[1]	**Device name** An independent designation for the device can be allocated via the text field.
[2]	**Position** By tapping on the drop-down menu you can assign a position to the device in the building structure you defined (e.g. assignment to a room on a certain floor).
[3]	**Illustration** Here the device is illustrated.
[4]	**Channel** Here you reach the parameter settings of the channels. ▪ Channel – Opens the parameter setting of the channels for the internal room temperature controller.
[5]	**Panel configuration** The button is used to access the panel configuration. Here you can add additional control elements to the panel interface. For details about the panel configuration, see chapter 8.3 “Specifying or editing functions (buttons)“ on page 63.
[6]	**Sensors** Here you enter the parameter settings of the Busch-Welcome® sensors. Precise information about the Busch-Welcome® sensors is available in the Busch-Welcome® system manual.
[7]	**Other settings** Here you access the settings for channel selection, authorizations and maintenance. You can also view the general device information.

8.2.1.1 Parameter settings Channel

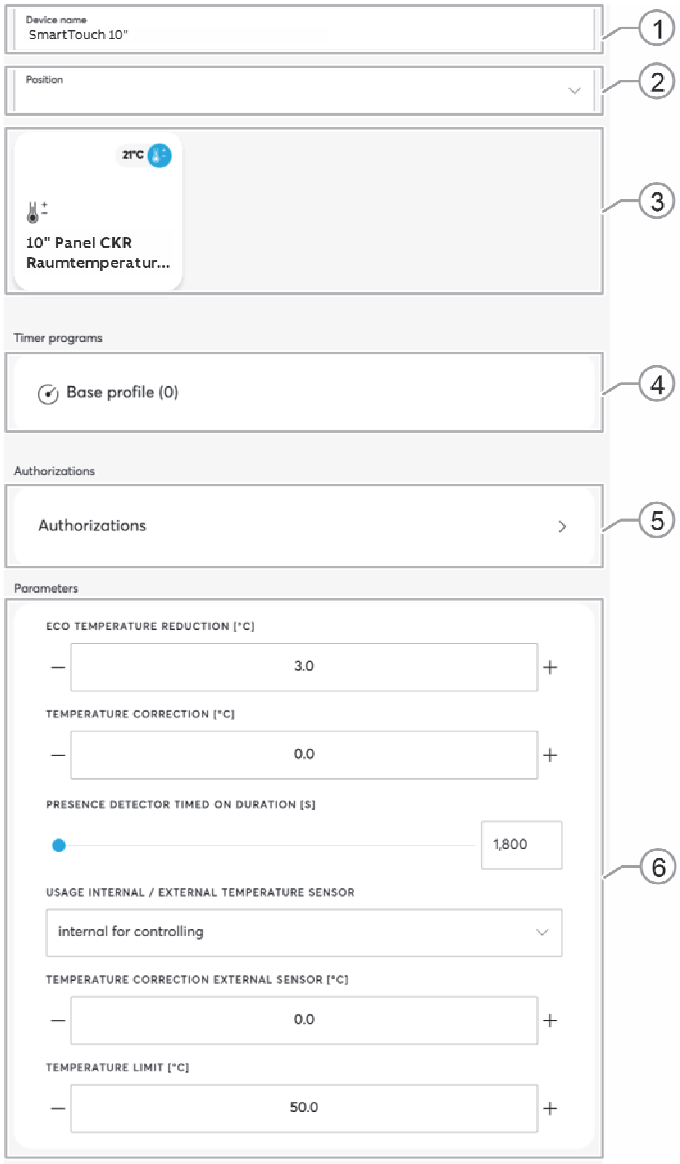


Fig. 31: Parameters of channel

Under the channel settings you can configure the settings described in the following.

Pos.	Description	
[1]	**Device name** An independent designation for the device can be allocated via the text field.	
[2]	**Position** By tapping on the drop-down menu you can assign a position to the device in the building structure you defined (e.g. assignment to a room on a certain floor).	
[3]	**Room temperature sensor** The internal room temperature controller can be set by tapping on the button. You can switch it on and off, set the actual temperature and specify the operating mode.	
[4]	**Time programs** This overview displays all previously created time programs. The number after a time program indicates how often the actuator is used in this time profile. Select a time program for adding it to the actuator.	
[5]	**Authorizations** Menu item "Authorizations" is used to specify whether a user with installer authorization is required for the reconfiguration of the actuator. In addition, you can nevertheless assign users with read rights the authorization to switch this actuator.	
[6]	**Parameters**	
	Eco temperature reduction [°C]	The −/+ buttons can be used to specify by how many degrees the temperature is to be reduced to when ECO mode is activated.
	Temperature correction [°C]	Manual increase/reduction of the temperature value via the -/+ buttons to adjust a permanent temperature offset.
	Switch-off delay during absence [s]	If the ECO mode is deactivated by a movement detector, the switch-off delay can be specified here when the ECO mode is to be re-activated after the room is exited.
	Use of internal/external temperature reading	The following selection options are available for the temperature reading. ▪ **Internal for regulating:** – Use of the internal temperature sensor of the device for reading and regulating the room temperature. ▪ **External for regulating:** – Use of an external temperature sensor for reading and regulating the floor temperature. For this the external temperature sensor must be laid in the screed. ▪ **Internal and external for regulating:** – Use of the internal and an external temperature sensor for reading and regulating the room temperature. Both measured values are used to create an average value. For this the external temperature sensor must be installed behind a ventilated cover plate (e.g. 6541-xx). ▪ **Internal for regulating and external for limiting:** – Use of the internal and an external temperature sensor for reading temperature. The temperature is regulated via the internal temperature sensor. The external temperature sensor serves for limiting the temperature,

		generally the floor temperature (floor heating). As soon as the temperature measured on the external temperature sensor exceeds the set temperature, the relay is switched off. Heating stops.
	Temperature correction of external sensor [°C]	Manual increase/reduction of the temperature value of the external sensor, to adjust a permanent temperature offset.
	Upper temperature limit [°C]	Fixing the maximum admissible temperature that is allowed to be measured by the external temperature sensor before the relay for the heating is switched off. The upper temperature limit is used, for example, to ensure that the floor temperature does not get too warm and cause damage to the floor covering.

8.2.1.2 Other settings

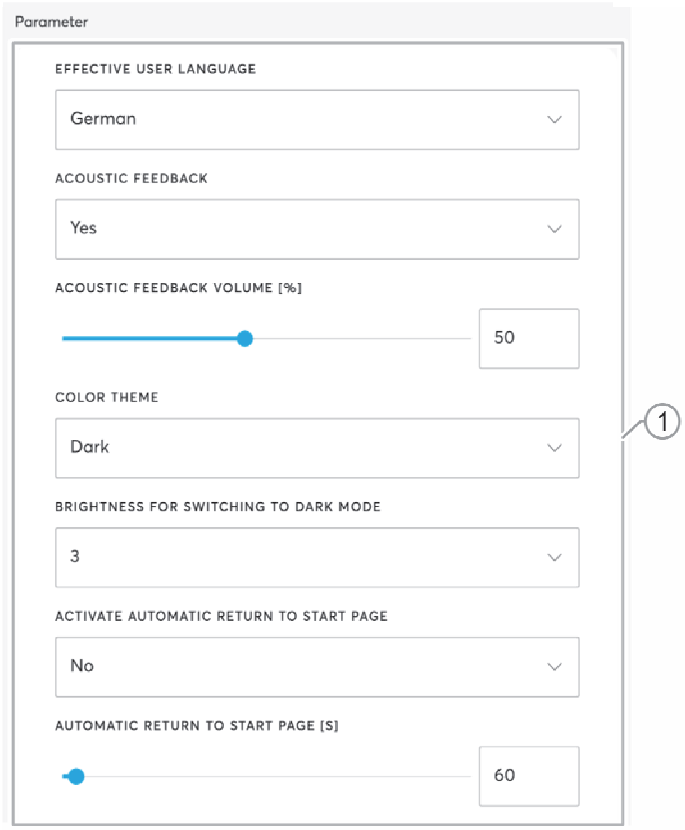


Abb. 32: Other settings - Part 1

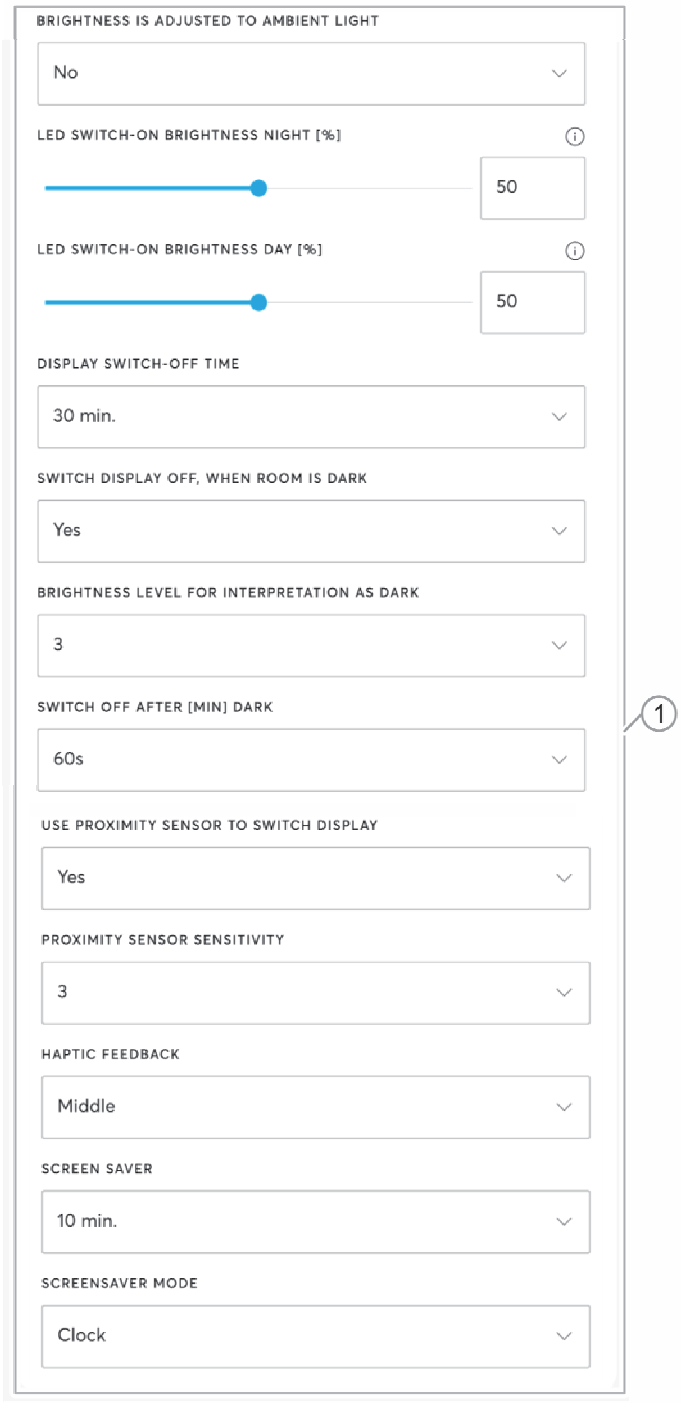


Abb. 33: Other settings - Part 2

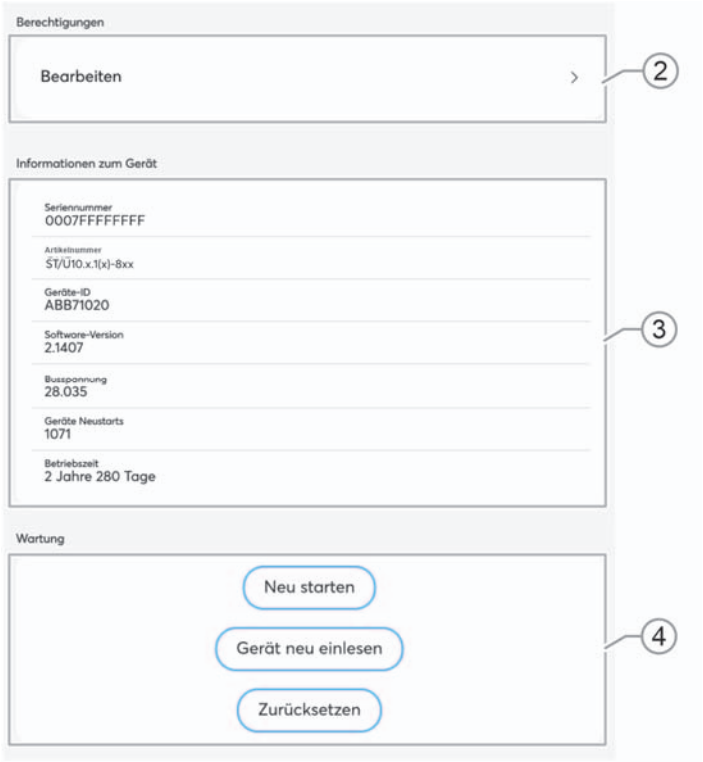


Abb. 34: Other settings - Part 3

Under "Other settings" you can configure the settings described in the following.

Pos.	Description	
[1]	**Parameters**	
	User language	User language in which the information is shown on the display.
	Acoustic feedback	Activation or deactivation of acoustic feedback when using the display.
	Volume of acoustic feedback [%]	The parameter us used to set the volume of the acoustic feedback.
	Colour scheme	The parameter is used to set the colour scheme from "Bright" to "Dark".
	Brightness for switching to dark mode	The parameter is used to specify the brightness value from which the display switches over to dark mode.
	Activating automatic return to the start page	This parameter is use to activate or deactivate the automatic return to the start page.
	Activating automatic return to the start page [s]	This parameter is used to set the the number of seconds after which the display view changes automatically to the start page.
	Adjusting the brightness to the ambient lighting	By activating or deactivating the parameter, the automatic adjustment of the display brightness to the ambient brightness is activated.
	LED switch-on brightness night [%]	Setting the LED switch-on brightness for night in % via the -/+ buttons. **Notice:** The parameter only functions when a time profile with the application "LED day/night switchover" is available. The device (channel) must be linked with this application!
	LED switch-on brightness day [%]	Setting the LED switch-on brightness for day in % via the -/+ buttons. **Notice:** The parameter only functions when a time profile with the application "LED day/night switchover" is available. The device (channel) must be linked with this application!
	Switch-off delay of display	Specifying the time the device changes into the idle state.
	Switch off the display when the room is dark	Specifying whether the display is to switch off when the room is dark.
	■ **Brightness level for the interpretation as dark**	Specifying the brightness level from which the brightness in the room is to be perceived as dark.
	Switch off after the start of darkness	Specifying whether the display is to switch itself off after the start of darkness.
	Using the proximity sensor for switching the display	Specifying whether the proximity sensor is to be used for switching the display.
	Sensitivity of proximity sensor	The parameter us used to specify the sensitivity of proximity sensor.
	Haptic feedback	The parameter is used to specify at which point on the display the haptic feedback is to take place.
	Screensaver	Specifying the time at which the screen saver is to be activated.
	Screen-saver mode	Specifying the form in which the screen saver is to be displayed.

[2]	**Authorizations** Menu item "Authorizations" is used to specify whether a user with installer authorization is required for the reconfiguration of the device. In addition, you can nevertheless assign users with read rights the authorization to switch this device.
[3]	**Information about the device** Listing of device information (device number, software version, etc.)
[4]	**Maintenance** You can start the device anew, read the device in again or reset it by tapping the respective buttons. ▪ Restart ▪ Read device in again ▪ Reset

8.3 Specifying or editing functions (buttons)

The settings are made via the panel configuration of the web-based user interface of the System Access Point.

The Busch-SmartTouch® has an automatic configuration for the synchronization with the System Access Point. At an existing IP connection all located devises are synchronized automatically with the Busch-SmartTouch®. This allows all devices to be switched via the Busch-SmartTouch® without having to be added manually beforehand. One page of the panel can be configured manually in addition. With a connection via Twisted Pair the automatic configuration is cancelled and the panel pages must be configured manually.

In the panel configuration of the web-based view of the System Access Point the buttons of the device can be freely equipped. All panels installed in the system can be selected.

Only panels are listed that have been previously positioned on the floor plan under commissioning step "Allocation"!

The allocated actuator channels can be positioned on the panel via drag-and-drop from the list view. After the confirmation the configuration is taken over and becomes visible on the device after a few seconds.

Notice
The configuration is taken over fully automatic when the device is taken into operation via Busch-Welcome® IP in combination with Busch-free@home®.

8.3.1 Creating functions

There are two options for accessing the panel configuration. First you need to change to the menu provided. Proceed as follows from the start page:

Version 1: Access via the building plan

1. Tap on the switch icon on the start (menu devices, scenes and groups) at the left edge of the screen.
   – The "Floor plan" opens.
2. Tap on the panel in the building plan whose information you want to edit.
   – A new window with the information about the selected panel opens.
3. Under menu item "Panel configuration" tap on the "Configure" button.
   – The "Panel configuration" opens.

Version 2: Direct access

1. Tap on the panel on the start page (panels and remote controls).
   – The "Panel configuration" opens.
2. On the screen edge at the top select the panel whose information you want to edit.

You can then perform the configuration of the channel. You can add devices or functions either via the room view or the type view.

- In the room view (at the top right in the panel configuration under "Rooms") select the devices/functions according to their positioning in the building plan.

- In the type view (at the top right in the panel configuration under "Type") select the devices/functions according to their type. The devices/functions are grouped here according to type (e.g. lights, scenes, actions, etc.).

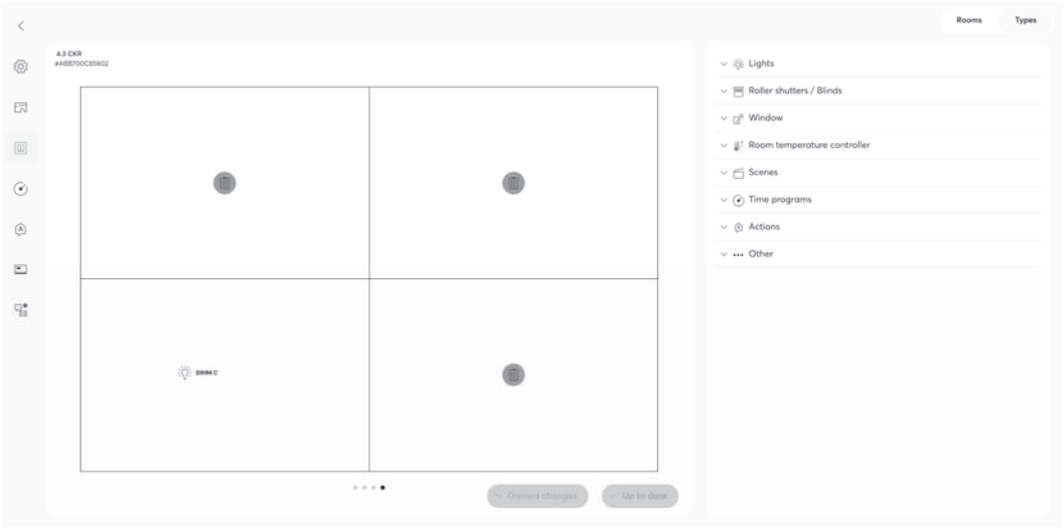


Fig. 35: Panel configuration

Actuators/group selection

1. Select a room in the bar at the right edge of the screen.
   – The actuators and groups contained in the selected room are displayed in the list view. The sequence is portrayed in the following by means of a room temperature controller.

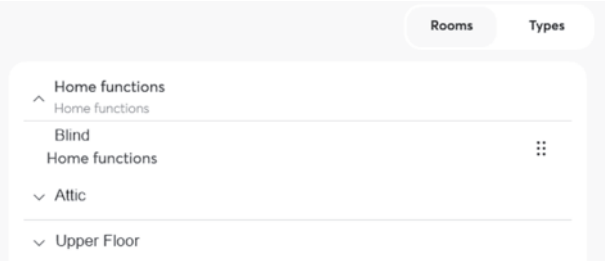


Fig. 36: Actuator/group selection

2. Select the room temperature controller by tapping on the points on the right side and pull the control element of the room temperature controller into the working area on the surface of the panel.

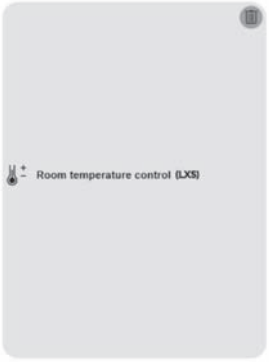


Fig. 37: Control element view

3. Continue in this way and position the desired functions on the monitor of the panel.
   – Additional buttons are always positioned under the previous button.
4. Confirm the adjustments with a click on the "Update panel" button.
   – The new configuration is sent to the panel. Then the new buttons are visible on the panel and can be used.

Notice
18 configurable control elements can be displayed on a screen page.

8.3.2 Changing functions

1. If several panels are available, first select the appropriate panel.
2. Tap on the panel that is to be re-configured.
   – If only the position of the function or of the control element is to be changed, then the function can be shifted onto a free area via drag-and-drop.
3. Tap on the drop-down menu on the right edge of the screen of the respective function to adjust the function method.

8.3.3 Removing functions

1. If several panels are available, first select the appropriate panel.
2. Tap on the panel that is to be re-configured.
3. Select the function (button) to be removed.
4. Tap on the rubbish bin icon at the top right edge of the tile to remove the function. As alternative you can remove it via the "Delete" button in the menu at the right edge of the screen.
   – The selected function (button) is deleted from the monitor.
   – A transmission to the panel is carried out via the "Update panel" button.

9 Commissioning of the KNX function via BJE DCA SmartTouch 10 (from ETS5)

Commissioning the Busch-SmartTouch® via the plug-in ETS5 commissioning tool BJE DCA SmartTouch 10.

9.1 Integration into the KNX system (ETS)

Notice
The device meets KNX guidelines and can be used as product of the KNX system. Detailed expert knowledge for understanding by means of KNX training is assumed, especially with regard to the commissioning software ETS.

9.1.1 Prerequisites

DCA version

The minimum requirement is the use of the BJE DCA SmartTouch 10.

ETS version

The minimum requirement is the use of ETS from version 5.

SD card

The following SD card types are supported:

Type:	Every commercially available SD card is supported
Capacity:	4 - 128 GB
File System:	exFAT / FAT32

Notice
- It is recommended to use SD cards from ScanDisk, Kingston and Transcend that have been fully tested and checked.
- While pictures are being recorded or copied on the card, do not remove the SD card nor restart the panel. Otherwise, pictures may not be displayed.
- Busch-Jaeger is not liable for the performance of an SD card.

9.1.2 Installation of the BJE DCA SmartTouch 10

For the assembly of the control elements, the initial commissioning of the Busch-SmartTouch® and for the display of the DCA commissioning tool, a special app must be installed.

This app can then be called up in the ETS via an additional tab (DCA (BJE DCA SmartTouch 10)). For this a licensed version of the ETS Professional Software must be installed on the target computer for the installation. At least the latest version of the ETS5 is required.

Notice

- Also ETS6 can be used.
- The ETS app can be downloaded via the electronic catalogue (www.busch-jaeger-catalogue.com).
- The ETS app can also be downloaded directly via the homepage of the KNX organisation (https://knx.org).
- The apps are called up as follows:
  - Up to including ETS5: on the ETS start page via "App" (bottom right).
  - From ETS6: via the ETS settings.

9.1.3 Installation sequence

Notice
The following description of the installation sequence is made on the basis of version ETS5.

The ETS app (etsapp file, BJE DCA SmartTouch 10) for the Busch-SmartTouch® is installed via the ETS.

The app can be downloaded either via www.BUSCH-JAEGER.de or via the My KNX access.

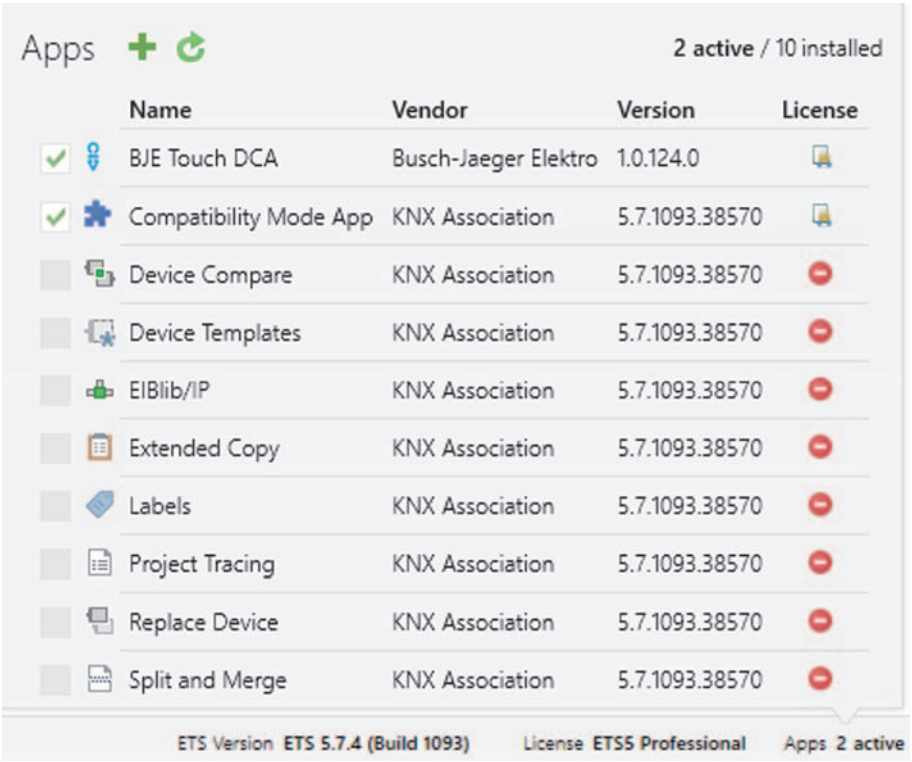


Fig. 38: App installation (example illustration)

1. Open the ETS5.
2. Click the green plus sign.
3. Select the etsapp file.
   – The app is added to the ETS.

Notice
The displayed apps, the designation and the versions, are only exemplary and serve only for illustration.

9.1.4 Integrating the Busch-SmartTouch® into the ETS

The following steps describe how to integrate the Busch-SmartTouch® into the ETS.

1. Start the ETS.
2. Import the product data of the Busch-SmartTouch® into the project database via the import function of the ETS (File type: *.knxprod).

9.2 Overview of the DCA commissioning tool

The following section includes basic information about the DCA commissioning tool.

DCA is a project planning software with which you can configure the KNX functions of the panel for the Busch-Jaeger building automation. Every panel can be set up individually. DCA leads you through the configuration during project planning.

Essential tasks during project planning with DCA are:

- Specifying fundamental KNX settings, e.g. display language of the panel (basic settings).
- Configuration of existing applications.
- Configuration of pages, e.g. arrangement of buttons.
- Configuration of control elements, e.g. selection of button icons.
- Linking with group addresses to establish the connection to actuators and sensors via the bus.

9.2.1 Starting the DCA

Notice
The installation on the target computer functions only with a licensed version of the ETS Professional Software. At least the latest version of the ETS5 is required. The demo version of the ETS cannot be used.

1. Start the ETS software (double-click on the program icon or via the start menu of the operating system (Start -> Programs -> KNX -> ETS5)).
   – The overview window of the ETS opens.
2. Import an existing project file or create a new project.
   – The main window of the ETS opens.

Notice
Detailed knowledge of ETS operation is assumed for project planning.
It is recommended to first import the product data into the project database (see chapter 9.13.1 “Import“ on page 111).

3. Integrate the device into the project via the catalogue.
4. Select the device.
5. Click on "DCA" above the status bar.
   – DCA opens inside the list view of the ETS.

9.3 Screen areas of the DCA

During project planning with DCA you work in several areas. In this section the purpose the screen areas serve is explained and how they are to be handled.

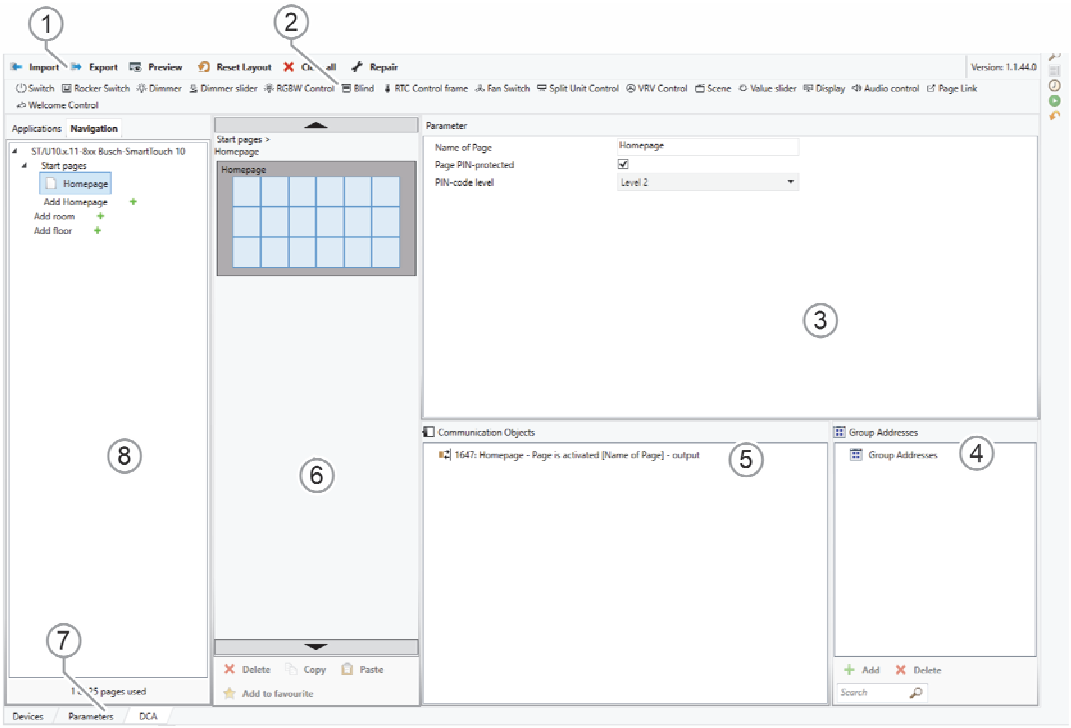


Fig. 39: DCA screen areas

Pos.	Screen area	Function
[1]	DCA icon bar	Quick access to different DCA tools, e.g. "Importing" or "Exporting".
[2]	"Control elements" area	The desired "Control elements" can be pulled via drag and drop from this area onto the operating pages in the work area. Only the available control elements are displayed.
[3]	"Parameter" area	Makes available corresponding input and output options in the work area depending on the selected control element. The applications and general settings for the Busch-SmartTouch® can be configured here (see library area).
[4]	"Group addresses" area	Area for managing and creating group addresses. A group address can be searched for in this area with the lens.
[5]	"Communication objects" area	Listing of available communication objects of the marked control elements (see work area). Here communication objects can be selected and edited via the ETS. The same applies to several applications (see library area).
[6]	Work area with icon bar	Graphically displays the operating pages created in the library area. In this way the pages are also displayed on the Busch-SmartTouch®. Control elements can be pulled via drag and drop from the "Control elements" area onto the operating pages and marked there. The setting options for marked elements are displayed in the "Parameter" area. Direct functions can be carried out for the marked elements via the icon bar. The arrow buttons can be used to "swipe" up or down, as on the Busch-SmartTouch®
[7]	Device menu bar	Opens the lists of the "Communication objects", "Channels" and "Parameters" for the device
[8]	Library area	"Navigation" tab: Includes a tree structure of the entire project. Here floors, rooms and operating pages can be added. Also general settings for the Busch-SmartTouch® can be selected here and configured in the "Parameter" area. The same applies to the "Applications" tab. Here the available applications can be selected and configured in the "Parameter" area

Table 5: DCA screen areas

Notice

The size of areas 4, 5, 6 and 8 can be changed by pulling the black frame while keeping the mouse button pressed.

9.4 Explanation of the basic structure (Terms)

The panel consists of the following areas:

- Dashboard pages (max. 2)
- Operating pages
- Application pages

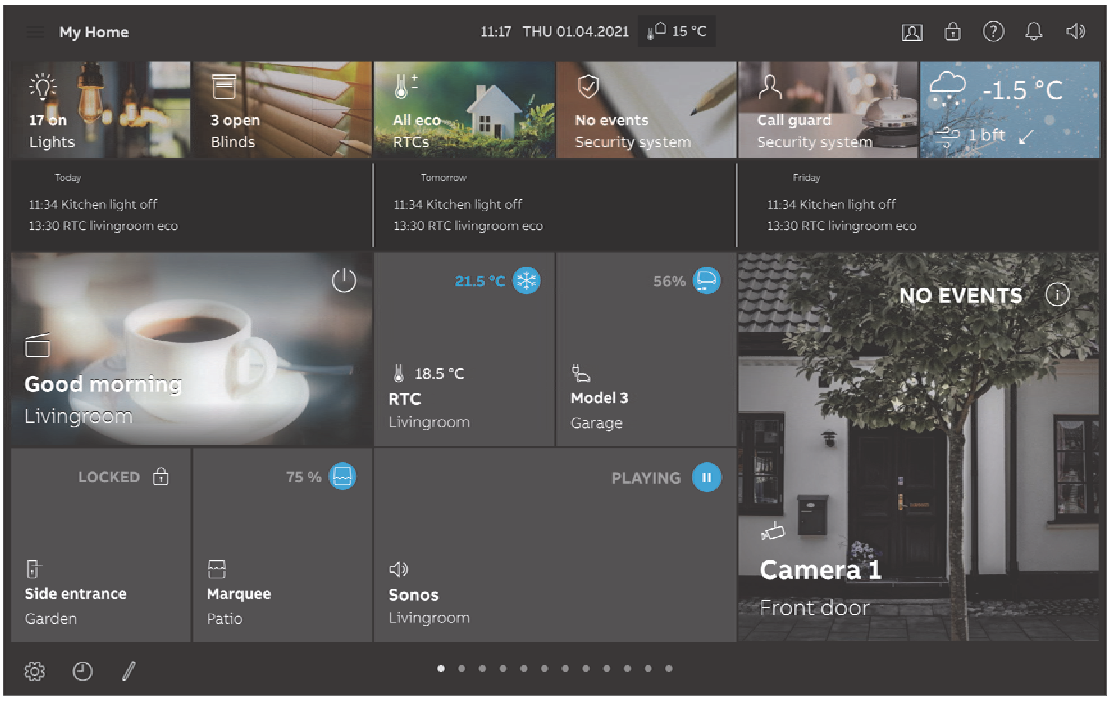


Fig. 40: Busch-SmartTouch® with control elements

The dashboard page is displayed after the device has started. The additional operating pages include the control elements such as switches, dimmers or scenes and applications such as door communication, fault and alarm messages.

Basically, all operating pages can be configured as required. Control elements can be positioned on all operating pages (dashboards, start pages) to execute house and device functions. You can jump to a previously defined operating page via the "Page link" control element. All available operating pages are displayed in the bottom screen edge of the Busch-SmartTouch®.

Maximum number of pages and control elements

Busch-SmartTouch®	▪ Number of pages: 25 ▪ Number of control elements: 450

Navigation

If you swipe to the right or left on the dashboard of the Busch-SmartTouch®, you can switch between the available operating pages.

Via the burger menu at the top left screen edge of the Busch-SmartTouch® you can view the available floors and rooms, as well as categories of applications. Information on the various categories of control elements and applications, as well as the associated icons, is available in Chapter 12 “Operation“ on page 303.

If several rooms have been created on a floor, you can switch back and forth between them. Basic settings and examples of time programs are displayed at the bottom left.

Notice

Additional explanations are available in Chapter 12 “Operation“ on page 303.

9.5 Commissioning sequence

To be able to work with the DCA commissioning tool as effectively as possible, the following work sequence (standard workflow) is recommended:

1. Start the ETS software (see chapter 9.2.1 “Starting the DCA“ on page 72).
2. Create a new project or open an existing one.
3. Open the configuration surface via the "DCA" tab.
4. Configure basic settings for the touchdisplay.
5. Create the navigation structure (see chapter 9.7 “Creating the navigation structure“ on page 93).
6. Configure the operating pages (insert and configure control elements).
7. Configure the applications and application pages.
8. Edit the available communication objects.
9. Create group addresses and allocate the correct data point type (DPT) to all group addresses used in the device (e.g. function: 1.001 switch).

Notice
Alternatively the allocation of the group addresses to the communication objects can also be made in the "Communications objects" tab of the ETS.

9.6 Configuring basic settings for the panel

The basic settings for the panel can be specified beforehand.

1. Open the "Applications" tab in the library area.
2. Open "System settings".
   – The basic settings are displayed in the "Parameter" area and can be edited (see chapter 9.6.1 “Basic settings (system settings) of the panel“ on page 78).
   – Available communication objects for certain functions are displayed in the "Communication objects" area and can be used.
   – Group addresses can be allocated via the "Group addresses" area.

9.6.1 Basic settings (system settings) of the panel

Notice
Entries in text fields must be confirmed with the return key.

Common

- **Panel language**

Options:	English
	German
	Spanish
	…

The panel language of the device can be freely set. A selection between 19 different languages can be made.

- **Name of the dashboard page**

Options:	<Name>

Here a name for the dashboard can be assigned.

- **Send cyclic 'In operation' [min]**

Options:	5 - 3000

The parameter is used to specify the space of time the telegram 'In operation' is sent.

- **Decimal separators**

Options:	Comma
	Dot

The parameter is used to specify the type of character that is to serve as as decimal separator.

- **Thousands separator**

Options:	Comma
	Dot

The parameter is used to specify the type of character that is to serve as as thousands separator.

Time and date

- **Time format**

Options:	12 h
	24 h

The parameter is used to specify the time format in which the time is to be displayed.

- **Date format**

Options:	DD-MM-YY
	MM/DD/YY
	DD-MM-YY
	YY-MM-DD
	YY.MM.DD

The parameter is used to specify the date format in which the date is to be displayed.

- **Sending/receiving time and date**

Options:	No sending and no receiving
	Only sending
	Only receiving

The device has an internal date and time module. The parameter is used to set how the device uses the date and time.

- *No sending and no receiving*: The device uses date and time only internal.
- *Only sending*: The device synchronizes additional KNX components in the system.
- *Only receiving*: The device receives date and time from a separate KNX timer.

Notice
Normally the panel synchronizes time and date via the NTP server. The device accepts the received value only when it is not connected to the Internet.

If you select "Only sending" or "Only receiving", the time and date can be synchronized via a communication object. The synchronization is carried out by sending a group address to or from the device.

Link the communication objects "Time output" and "Date output" with a corresponding group address.

- **Automatic summer/winter time changeover**

Options:	Activated
	Deactivated

The parameter is used to specify whether the changeover between summer and winter time is is to be made.

- **Sending time and date**

Options:	Every minute
	Every hour
	Every 12 hours
	At 00:00
	At 00:02
	At summer/winter time changeover
	At 00:00 + summer/winter time changeover
	At 00:02 + summer/winter time changeover

The parameter is used to specify the time interval at which the device sends the date and time.

Notice
The parameter is available only when parameter "Send/receive time and date" is set on "Only sending".

- **First day of the week**

Options:	Saturday
	Sunday
	Monday

The parameter is used to specify the first weekday.

- **Lat. [dd.dd][+ = North, − = South]**

Options:	Setting option from +90.00 to -90.00

The parameter is used to set the geographic latitude for the location of the device (90° North to 90° South)

This setting is important for the astro function.

Notice
Whether a dot or a comma is to be used as decimal separator depends on the system. If a wrong separator is used, the decimal places cannot be entered as desired, or the value entered is replaced by a standard value after the entry.

If the entry is made in decimal degrees for example, the angular minutes are specified as number of decimal places: 1 degree corresponds to 60 minutes.

Example:

51° 14′ 53" North (51 degrees, 14 minutes and 53 seconds North) = 51.25 decimal degrees

Example of calculation:

53' (seconds) divided by 60 = 0.88' (minutes)

14' (minutes) + 0.88' (minutes) = 14.88' (minutes)

14.88' (minutes) divided by 60 = 0.248' (degrees)

51° (degrees) + 0.248° (degrees) = 51.248° (degrees)

Notice

Negative values are entered with a minus character.

- **Long. [ddd.dd][+ = East, − = West]**

Options:	Setting option from +180.00 to -180.00

The parameter is used to set the geographic longitude for the location of the device (180° East to 180° West)

This setting is important for the astro function.

Notice
Whether a dot or a comma is to be used as decimal separator depends on the system. If a wrong separator is used, the decimal places cannot be entered as desired, or the value entered is replaced by a standard value after the entry.

If the entry is made in decimal degrees for example, the angular minutes are specified as number of decimal places: 1 degree corresponds to 60 minutes.

For example:

7°36′ 13' East (7 degrees, 34 minutes 13 seconds East) = 7.60 decimal degrees

Example of calculation:

13' (seconds) divided by 60 = 0.22' (minutes)

36' (minutes) + 0.22' (minutes) = 36.22' (minutes)

36.22' (minutes) divided by 60 = 0.603' (degrees)

7° (degrees) + 0.603° (degrees) = 7.603° (degrees)

Notice
Negative values are entered with a minus character.

Displays

- **Type of the control elements**

Options:	Normal
	Reduced

The parameter is used to specify the type of representation of the control elements. Control elements that are represented in a reduced layout only show the most important data.

- **Colour theme**

Options:	Dark
	Light
	Dependent on daylight

The parameter is used to specify the colour theme of the display. With option "Depending on daylight" the theme is bright throughout the day. At reduced brightness in the evening the colour theme switches over to dark automatically.

- **Brightness for switching to dark mode**

Options:	1 - 5

The parameter is used to specify the brightness value from which the switchover to darkness mode takes place (1 = dark - 5= bright).

- **Activating the automatic return to the dashboard page**

Options:	Activated
	Deactivated

When the checkbox is activated, there is an automatic return to the dashboard page.

- **Return to the start screen after … [sec.]**

Options:	10 - 3600

The parameter is used to specify after how many seconds there is an automatic return to the start screen.

Notice
The parameter is only available if the parameter "Enable automatic return to dashboard page" is activated.

- **The brightness is adjusted to the ambient light**

Options:	Activated
	Deactivated

When the checkbox is activated, there is an automatic adjustment of the display to the ambient light.

- **Display brightness [%]**

Options:	10 - 100

The parameter is used to set the display brightness in %.

Notice
The parameter is only available if the "Brightness is adjusted to the ambient light" parameter is deactivated.

- **Switch off the display after [min]**

Options:	1
	2
	5
	10
	15
	30

The parameter is used to set after how many minutes the display is switched off.

- **Switch off the display when the room is dark**

Options:	Activated
	Deactivated

When the checkbox is activated, the display is switched off when the room is dark.

- **Brightness value for interpretation as dark**

Options:	1 - 5

The parameter is used to specify the brightness value below which the brightness is interpreted as dark (1 = dark - 5 = bright).

Notice
The parameter is only available if the parameter "Switch off the display when the room is dark" is activated.

- **Switch off after [min] of darkness**

Options:	1
	2
	5
	10

The parameter is used to specify after how many minutes of darkness the display switches itself off.

Notice
The parameter is only available if the parameter "Switch off the display when the room is dark" is activated.

Proximity sensor

- **Use approximation for switching on the display**

Options:	Activated
	Deactivated

When the checkbox is activated, a proximity is used as switch-on criteria for the display.

- **Sensitivity of the proximity function**

Options:	1
	2
	3

The parameter us used to specify the sensitivity of the proximity function (1 = near, 3 = max. distance).

Notice
The parameter is only available if the parameter "Use approximation to switch on the display" is activated.

- **Use 1-bit output object of proximity function**

Options:	Activated
	Deactivated

When the checkbox is activated, a 1-bit output object of the proximity function is used.

Notice
The parameter is only available if the parameter "Use approximation to switch on the display" is activated.

- **Switch-on value**

Options:	Off
	On

The parameter is used to set the switch-on value of the proximity sensor.

Notice
The parameter is only available if the parameter "Use approximation to switch on the display" and the "Use 1-bit output object of proximity function" are activated.

- **Switch-off value**

Options:	Off
	On

The parameter is used to set the switch-off value of the proximity sensor.

Notice
The parameter is only available if the parameter "Use approximation to switch on the display" and the "Use 1-bit output object for proximity function" are activated.

Notice
When activated, the switch-off value is first sent when the panel switches into the standby mode.

- **Activate communication object "Deactivate proximity" 1 bit**

Options:	Activated
	Deactivated

The parameter is used to activate the "Deactivate proximity" communication object.

Temperature

Notice
The temperature parameters refer to the temperature display in the top bar of the display.

- **Unit of temperature**

Options:	°C
	°F

The parameter is used to specify the temperature in the units of °C (Celsius) or °F (Fahrenheit).

- **Display room temperature**

Options:	Activate
	Deactivate

The room temperature is displayed when the checkbox is activated.

- **Display of outside temperature**

Options:	Activate
	Deactivate

The exterior and room temperature are displayed alternating when the checkbox is activated.

- **Room/outdoor temperature change interval [sec.]**

Options:	3 - 10

The parameter is used to specify the room/outdoor temperature change interval [sec.]

Notice
The parameter is available only when the parameters "Display outdoor temperature" and "Display room temperature" are activated.

- **Use for room temperature sensor**

Options:	Indoor sensor
	Outdoor sensor

The parameter is used to specify whether the room temperature is measured via the indoor sensor of the device or via an outdoor KNX temperature sensor.

The outdoor sensor must be allocated via a group address.

- **Compensating value for temperature measurement (x 0.1K) [K]**

Options:	Setting option from -128 - +127 K

The parameter is used to specify the adjustment value for the temperature measurement.

- **Send indoor sensor temperature**

Options:	Do not send
	On change
	Cyclic
	On change and cyclic

The parameter is used to specify whether or when the temperature values of the indoor sensor are passed on to other devices.

- **Cycle time for automatic transmission of the internal sensor temperature [sec.]**

Options:	Setting option from 5 - 3600 seconds

The parameter is used to specify the intervals at which the temperature values of the indoor sensor are passed on to other devices.

Notice
This parameter is only available if parameter "Send indoor sensor temperature" has been parameterized to "cyclic".

Haptic and acoustic feedback

- **Acoustic signal at press of button**

Options:	Activated
	Deactivated

When the checkbox is activated an acoustic signal sounds during the press of a button.

- **Default setting of volume of acoustic signal [%]**

Options:	Setting option from -128 - +127 K

The parameter us used to specify the volume of the acoustic signal at the press of a button.

Notice
This parameter is only available if parameter "Send indoor sensor temperature" has been parameterized to "cyclic".

- **Sensitivity of the haptic feedback**

Options:	Inactive
	Soft
	Middle
	Hard

The parameter us used to specify the sensitivity of the haptic feedback.

Screen saver

- **Display screen saver [min.]**

Options:	No screen saver
	5
	10
	15
	30
	60
	120

The parameter is used to specify the duration after which the screen saver is to be displayed.

- **Screen saver mode**

Options:	Timer
	Picture display
	Weather data
	Internet weather

The parameter us used to specify the type of screen saver.

- **Type of clock**

Options:	Analog
	Digital

The parameter is used to specify the type of clock.

Notice
The parameter is available only when parameter "Screen saver mode" has been set on "Timer".

- **Display of seconds**

Options:	Activated
	Deactivated

This parameter is use to deactivate or activate the display of the seconds.

Notice
The parameter is available only when parameter "Screen saver mode" has been set on "Timer".

- **Effect of picture transfer**

Options:	Shift from the right
	Fade out

The parameter is used to specify the slide transition effect.

Notice
The parameter is available only when parameter "Screen saver mode" is set on "Display of slides".

- **Slide show interval**

Options:	5 - 120

The parameter is used to specify the slide show interval in seconds.

Notice
The parameter is available only when parameter "Screen saver mode" is set on "Display of slides".

- **Order of slides**

Options:	At random
	Alphabetically

The parameter is used to specify the order of slides.

Notice
The parameter is available only when parameter "Screen saver mode" is set on "Display of slides".

Information start page

- **Use information start page**

Options:	Activated
	Deactivated

The use of the information start page is activated via the checkbox.

- **Use line x**

Options:	No
	Static text
	14-byte text

The parameter is adjustable for a total of 4 lines. The parameter is used to specify the text type that is to be used for the respective line.

Notice
The parameter is available only when parameter "Use information start page" has been activated.

Primary function

The primary function is triggered by touching the display with 3 or more fingers.

- **Use primary function**

Options:	Activated
	Deactivated

The checkbox is used to specify whether the primary function is to be activated or deactivated.

- **Icon for primary function**

Options:	<Icon>

The parameter is used to specify the icon for the primary function.

- **Object type**

Options:	1 bit
	1-byte value [0-100%]
	1-byte value [0-255%]
	Number of scene [1-64]
	RTC operating mode [1 byte]

The parameter is used to specify the object type.

- **Reaction to pressing**

Options:	Value 1
	Value 2
	Alternating value 1/value 2
	Inactive

The parameter is used to specify the reaction behaviour to pressing.

- **Reaction to release**

Options:	Value 1
	Value 2
	Alternating value 1/value 2
	Inactive

The parameter is used to specify the reaction behaviour to release.

- **Value x**

Options:	Auto
	Comfort
	Standby
	ECO
	Frost/heat protection

The parameter is used to set type of the value during pressing or releasing.

Notice
The parameter is only available if one of the parameters "Response to pressing" and "Response to releasing" has been activated and the response is at least "Value 1".

Safety

- **Length of the PIN code**

Options:	4 digits
	5 digits
	6 digits

The parameter is used to specify the length of the PIN cade.

- **PIN codes can be changed by the end customer**

Options:	Activated
	Deactivated

When the checkbox is activated the end customer can change the PIN code personally.

- **Enable system settings for end customer**

Options:	Yes
	With code

The parameter is used to specify how the system settings are to be enabled for the customer.

- **Code for system settings [0000 - 9999]**

Options:	0 - 999999

The parameter is used to specify the code for access to the system settings.

- **PIN code level x**

Options:	0 - 999999

The parameter is used to specify the PIN code per level. There is a total of 3 levels.

9.7 Creating the navigation structure

The panel has operating pages (start pages) via which the building automation is operated. These pages must be created beforehand. Generally a main start page is created (see chapter 9.4 “Explanation of the basic structure (Terms)“ on page 75).

A total of 10 operating pages can be created. The number of the operating pages is displayed below in the library area.

9.7.1 Creating operating pages (start pages)

1. Open the "Navigation" tab in the library area.
2. Click on the arrow to the left of the device details.
3. Click on the arrow to the left of "Start pages".
   – The main operating page is displayed as standard.
4. Click on the main operating page to display it in the work area.
5. To add additional operating pages, in the tree structure of the library area click on the plus icon on the right next to "Add page".
   – The next page is displayed in the work area and in the tree structure.

Notice
Operating pages can also be added by clicking on "Start pages" in the tree structure. A further page is then displayed with a plus icon in the work area. When you click on this page, a further page is added and displayed in the tree structure.

All created operating pages of a floor can be displayed in the work area by clicking on "Start pages" in the tree structure. Then one can "swipe" in the work area as on the panel. This is done via the arrows.

A total of 9 operating pages (start pages) can be created in addition to the main operating page (marked with a star). The number of the created pages is displayed in the bottom part of the library area.

9.7.2 Creating room and floor pages

1. Open the "Navigation" tab in the library area.
2. Click on the arrow to the left of the device details.
3. Click on the plus icon at the right next to "Room 1" or "Floor 1".
   – A new room or a new floor is added below the device details.
4. Click on the room or the floor to display it in the work area.
5. To add additional rooms and/or floors, repeat the action described above.
   – The additional rooms or floors are displayed in the work area and in the tree structure.

All created rooms and floors can be displayed in the work area by clicking on the respective room or floor in the tree structure. Then one can "swipe" in the work area as on the panel. This is done via the arrows.

9.7.3 Editing operating pages

Adjust name of the page

1. Open the "Navigation" tab in the library area.
2. Select the operating page in the tree structure.
3. In the "Parameter" area, click in the name input field and enter a new name. The length of the name is limited to 60 characters.

You can also change the name of the page in the library area.

1. In the tree structure, click on the page entry with the right mouse button.
   – A pop-up menu opens.
2. Click on "Rename" and change the name.

Move page within the tree structure

1. In the tree structure, click on the page entry with the right mouse button.
   – A pop-up menu opens.
2. Click on "Up" or "Down".
   – The page is moved accordingly.

Notice
Operating pages can also be shifted via drag and drop to a different position in the tree structure.

Copy the page and paste it again

1. In the tree structure, click on the page entry with the right mouse button.
   – A pop-up menu opens.
2. Click on "Copy".
   – The page is copied with all entries.
3. Select "Start pages" or a floor or a room.
4. Click on the entry with the right mouse button.
5. Click on "Insert" in the pop-up menu.
   – The copied page is inserted.

Delete Page

1. In the tree structure, click on the page entry with the right mouse button.
   – A pop-up menu opens.
2. Click on "Delete".
   – The page is deleted with all entries.

Notice
The main operating page cannot be deleted.

Adjust access to pages

1. Open the "Navigation" tab in the library area.
2. Select the operating page in the tree structure.
3. In the "Parameter" area specify the access to the page.
   – It can be specified whether the page can be called up with or without a PIN code.
   – If the function has been activated, also the PIN code level can be specified.

Notice
The PIN code is specified via the basic KNX settings.

9.8 Configuration of the operating pages

Control elements can be inserted into all operating pages (Start pages). Each control element can be pulled from the "Control elements" area via drag and drop onto the page view in the work area and pasted there.

The size of the buttons is specified by means of a grid in the page view. Certain control elements require two buttons and therefore two areas in the grid. The "Audio control" control element requires at least four areas.

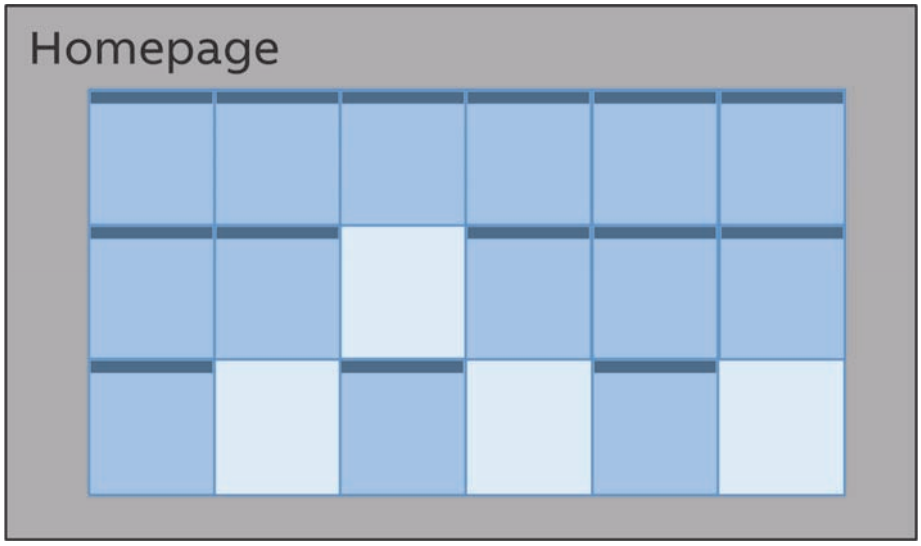


Fig. 41: Operating page with control elements (example arrangement)

Parameterising control elements

1. Open the "Navigation" tab in the library area.
2. Select a start or operating page in the tree structure.
   – The page is displayed in the work area.
3. Pull a control element into the page view from the "Control elements" area via drag and drop.
4. Select the control element in the page view.
   – The control element is marked with a red frame.

Notice
The marking with a red frame also applies to available control elements that are to be parameterised subsequently.

5. Make the parameter settings in the "Parameter" area for the selected control element.

Notice
Entries in text fields must be confirmed with the return key.

The control elements are described in the following sections. For the description of the parameters of the respective control elements see chapter 10 “KNX control elements and application parameters“ on page 113

9.8.1 "Switch" control element

You can, among others, set up a light control via the "Switch" control element. An allocated lamp can then be controlled via the control element. However, also an insert can be used as push-button or scene control element.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.1 “"Switch" control element“ on page 113.

9.8.2 Control element "Rocker switch"

You can, among others, set up a light control via the "Rocker switch" control element. An allocated lamp can then be controlled via the control element.

In contrast to the "Switch" control element, with the "Rocker switch" control element a button is pressed on the top or bottom to open and close the corresponding switching circuit.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.2 “Control element "Rocker switch"“ on page 120.

9.8.3 "Dimmer" control element

You can set up a dimmer control via the "Dimmer" control element. An allocated lamp can then be dimmed and switched on and off via the control element.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.3 “"Dimmer" control element“ on page 126.

9.8.4 Control element: "Dimmer slider"

A dimmer control can be set up via the "Dimmer slider" control element. This can then be used to both dim and switch an allocated lamp on and off.

In contrast to the "Dimmer" control element, here a slider is used and no buttons.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.4 “Control element: "Dimmer slider"“ on page 128.

9.8.5 Operation of "RGBW" control element“

A control for corresponding lamps (LEDs, Philips Hue, etc.) can be set up via the "RGBW control" control element. The allocation is made via the selected elements (group addresses). Specific settings can then be made for the lamps. For example, the colours can be changed or the warm-white component can be adjusted.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.5 “Operation of "RGBW" control element““ on page 131.

9.8.6 "Blind" control element

A blind control can be set up via the "Blind" control element. This allows an allocated blind to be operated.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.6 “"Blind" control element“ on page 137.

9.8.7 Control element "RTC control element"

The "RTC control element" (extension unit) can be used to control an allocated room temperature controller, for example.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.7 “Control element "RTC control element"“ on page 141.

9.8.8 Control element "Fan switch"

A fan control can be set up via the "Fan switch" control element. This, for example, allows the fan speed level to be changed for an allocated fan.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.8 “Control element "Fan switch"“ on page 144.

9.8.9 Control element "Split Unit Control"

A climate control can be set up via the "Split Unit control". This, for example, allows a heating or cooling function to be set up for an allocated Split Unit.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.9 “Control "Split Unit Control"“ on page 150.

9.8.10 Control element "VRV control"

A climate control can be set up via the "VRV control". This, for example, allows a cooling function to be set up for an allocated VRV device.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.10 “Control "Split Unit Control"“ on page 156.

9.8.11 "Scene" control element

A scene can be allocated via the "Scene" control element. The scene starts when clicking on this element, if this has been so defined. The scenes must first be created by the commissioner.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.11 “"Scene" control element“ on page 162.

9.8.12 Control element: "Value slider"

The values of a selected element (group address) can be displayed and at the same time adjusted via the slider using the "Value slider" control element. When adjusted, the values are displayed directly updated. This allows values to be sent and received via this function.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.12 “Control element: "Value slider"“ on page 166.

9.8.13 "Display" control element

Currently transmitted values from a selected device (group address) can be displayed via the "Display" control element.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.13 “"Display" control element“ on page 170.

9.8.14 Control element "Audio control"

An allocated audio device can be controlled via the "Audio control" control element.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.14 “Control element "Audio control"“ on page 189.

9.8.15 "Page link" control element

The following links are possible via the "Page link" control element:

- on a page created directly via the commissioning tool (DCA) or
- on the application pages "Door communication", "Alarm", "Timer" or "System settings".

This opens the linked pages.

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.15 “"Page link" control element“ on page 197.

9.8.16 Control element "Welcome control"

Links to functions of a Welcome door communication are possible via the "Welcome control" control element:

Setting and selection options via the "Parameter" area of the DCA, see chapter 10.16 “Control element "Welcome control"“ on page 199.

9.9 Editing control elements

After the parameterization of the control elements, further editing can be carried out, e.g. a parameterized control element can be copied to additionally use it on a different operating page.

9.9.1 Delete control element

1. Open the "Navigation" tab in the library area.
2. Select an operating page in the tree structure.
   – The page is displayed in the work area.
3. Select the control element in the page view.
   – A red frame appears.
4. Click in the icon bar of the work area.
5. Click on "Delete".
   – The control element is deleted from the page view.

9.9.2 Copy control element

1. Open the "Navigation" tab in the library area.
2. Select an operating page in the tree structure.
   – The page is displayed in the work area.
3. Select the control element in the page view.
   – A red frame appears.
4. Click in the icon bar of the work area.
5. Click on "Copy".
   – The control element is copied with all settings.
6. Select the operating page in the tree structure into which the control element is to be copied.
   – The page is displayed in the work area.
7. Click in a free area of the page view with the right mouse button.
8. Click on "Paste".
   – The control element is pasted.

9.9.3 Add control element to favourites list

1. Open the "Navigation" tab in the library area.
2. Select an operating page in the tree structure.
   – The page is displayed in the work area.
3. Select the control element in the page view.
   – A red frame appears.
4. Click in the icon bar of the work area.
5. Click on "Add to favourites".
   – The control element is added to the favourites list.

Note
The favourites created here can be used repeatedly on other operating pages in the DCA. They are called up in the library area via the "Applications" tab and displayed via "Favourite control elements". A control element can then be pulled out of the tree structure into an operating page via drag and drop.

9.10 Configuration of applications and application pages

The panel can contain applications with fixed functions (e.g. door communication). When these applications are activated, they can be accessed via the application pages or the application runs in the background. You can appropriately configure these applications beforehand.

Note
Basic settings for the panel, see chapter 9.6 “Configuring basic settings for the panel“ on page 77.

9.10.1 Application "Door communication"

This application has an application page.

In the DCA you can activate the application and specify different basic settings.

1. Open the "Applications" tab in the library area.
2. Open the "Door communication" application.
   – The basic settings are displayed in the "Parameter" area and can be edited here.

Further setting and selection options via the "Parameter" area, see chapter 9.10.1 “Application "Door communication"“ on page 102.

9.10.2 Application "Fault and alarm messages"

This application has an application page on which the issued messages are displayed. The individual messages are also displayed directly in the panel according to the configuration.

Messages can be created, activated and configured via the DCA.

1. Open the "Applications" tab in the library area.
2. Open "Fault and alarm messages".
3. In the "Parameter" area use, activate the application via "Fault and alarm messages".
   – In the "Parameters" area, the general settings for the application page and messages are displayed. They can be edited here.
   – All messages are listed in the application page. The special specifications for the individual messages can be made separately for each message.

Notice

Individual fault and alarm messages can be created. These can also be added via the work area.

– Here a page with a plus is displayed. This page must be clicked. This is how a further fault and alarm message is added and displayed in the tree structure.
– If it is called up via the tree structure, the settings can be adjusted for the individual message in the "Parameter" area.
– By clicking the arrow next to "Fault and alarm messages", all available messages are displayed.

- For further setting/selection options via the "Parameter" area for the general settings of the application page, see chapter 9.10.2 “Application "Fault and alarm messages"“ on page 103.
- For further setting/selection options via the "Parameter" area for the settings of the individual message, see chapter 9.10.2 “Application "Fault and alarm messages"“ on page 103

9.10.3 Application "Scene actuator"

This application has no application page. The scene actuators are started via the "Scene" control element. The application serves for compiling a scene.

The scene actuators can be created via the DCA.

1. Open the "Applications" tab in the library area.
2. Open "Scene actuator".

Note

Individual scene actuators can be created. These can also be added via the work area.

– Here a page with a plus is displayed. This page must be clicked. This is how a further scene actuator is added and displayed in the tree structure.
– If it is called up via the tree structure, the settings can be adjusted for the individual scene actuators in the "Parameter" area.
– By clicking the arrow next to "Scene actuator", all available scene actuators are displayed.

- Further setting/selection options via the "Parameter" area for the settings of the scene actuators, see chapter 9.10.3 “Application "Scene actuator"“ on page 104.

9.10.4 Application "Presence simulation"

This application (function) has no application page. However, the function can be called up via application page "Time programs" in the panel. For an explanation see chapter 9.10.4 “Application "Presence simulation"“ on page 104.

The general settings of this function can be created via the DCA.

1. Open the "Applications" tab in the library area.
2. Open "Presence simulation".
3. In the "Parameter" area use, activate the application via "Use presence simulation".
   – In the "Parameters" area, the general settings for this function are displayed. They can be edited here.

Further setting/selection options via the "Parameter" area for the general settings of the function, see chapter 9.10.4 “Application "Presence simulation"“ on page 104.

9.10.5 Application "Time programs"

This application has an application page, via which time programs can be set. This allows the holiday function to be started and set up, for example.

The general settings can be made via the DCA.

1. Open the "Applications" tab in the library area.
2. Open "Time programs".
   – The general settings for this application are displayed in the "Parameter" area. They can be edited here.

Further setting/selection options via the "Parameter" area for the general settings of the time programs, see chapter 9.10.5 “Application "Time programs"“ on page 105.

9.10.6 Application "Logical functions"

This application (function) has not an own application page. The logic functions can be defined in channels and run in the background.

The channels / logic functions can be created via the DCA.

1. Open the "Applications" tab in the library area.
2. Click on "Logic functions", a page with a plus appears here.
3. Click on this page, and a channel will be added and displayed in the tree structure.

Notice

Individual logic functions can be created in the respective channels. The channels can be added via the work area.

– You can add more channels via the page with the plus.
– If such a channel is called up via the tree structure, the settings can be adjusted for the individual logic functions in the "Parameter" area.
– By clicking the arrow next to "Logic functions", all available channels are displayed in the tree structure.

For further setting/selection options via the "Parameter" area for the settings of the logic functions, see chapter 9.10.6 “Application "Logical functions"“ on page 105.

9.10.7 Application "Internal RTC"

This application has no application page. The internal room temperature controller (RTC) can be controlled via the "RTC control element" (extension unit). For this the control element must be allocated accordingly and equipped with group addresses.

The general settings can be made via the DCA as follows:

1. Open the "Applications" tab in the library area.
2. Open the "Internal RTC".
   – The general settings for this application are displayed in the "Parameter" area and can be edited here.

Notice

Individual internal RTCs can be created. These can also be added via the work area.

- Here a page with a plus is displayed. This page must be clicked. This is how a further internal RTC is added and displayed in the tree structure.
- If it is called up via the tree structure, the settings can be adjusted for the individual internal RTCs in the "Parameter" area.
- By clicking the arrow next to "Internal RTC", all available internal RTCs are displayed.

For further setting or selection options via the "Parameter" area for the general settings of the function of the internal RTC, see chapter 9.10.7 “Application "Internal RTC"“ on page 106.

9.10.8 "Favourite control elements"

You can create favourites under "Favourite control elements" in the "Applications" tree structure. You can then use these favourite control elements repeatedly on other operating pages in the DCA. A control element can be pulled out of the tree structure into an operating page via drag and drop.

Note

Favourites must first be added to the favourites list, see chapter 9.9.3 “Add control element to favourites list“ on page 101.

Renaming favourites

1. Open the "Applications" tab in the library area.
2. Open "Favourite control elements".
3. In the tree structure, click on the favourites entry with the right mouse button.
   – A pop-up menu opens.
4. Click on "Rename" and change the name.

Deleting favourites

1. Open the "Applications" tab in the library area.
2. Open "Favourite control elements".
3. In the tree structure, click on the favourites entry with the right mouse button.
   – A pop-up menu opens.
4. Click on "Delete".

– The favourite is deleted from the favourites list.

9.11 Editing communication objects

The available communication objects of the marked control elements (see work area) are listed in the "Communication objects" area. They can here be selected and edited directly via the ETS. The same applies to several applications (see library area).

Notice
Detailed expert knowledge for understanding by means of KNX training is assumed, especially with regard to the ETS commissioning software.

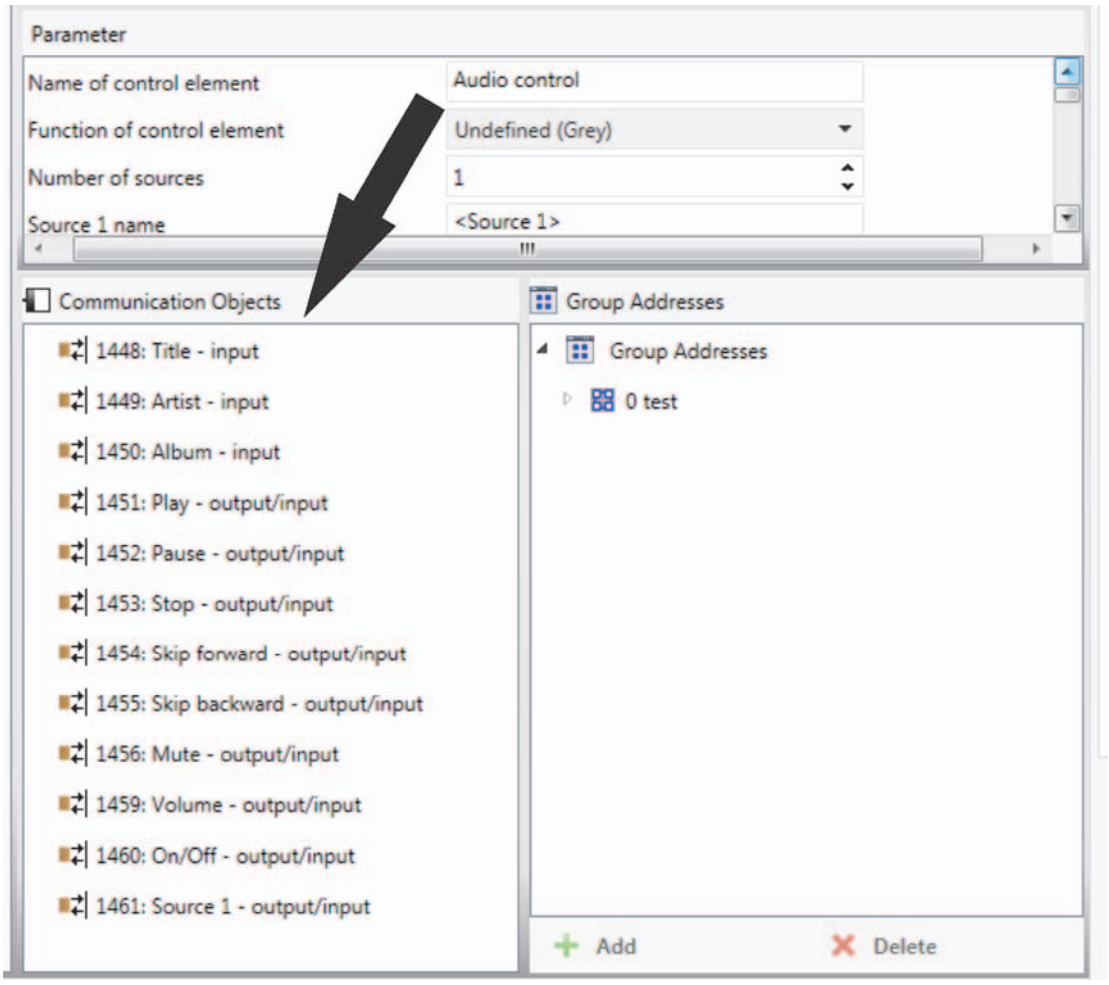


Fig. 42: Communication objects area

To establish the connection between a control element and a sequence, for example, you must assign a group address to the control element in the ETS. Each control element has several communication objects for this purpose.

Allocating a group address to a control element:

1. Pull a group address out of the group address window onto a communication object with the left mouse button.

This application has no application page. The internal room temperature controller (RTC) can be controlled via the "RTC control element" (extension unit). For this the control element must be allocated accordingly and equipped with group addresses.

The general settings can be made via the DCA as follows:

1. Open the "Applications" tab in the library area.
2. Open the "Internal RTC".
   – The general settings for this application are displayed in the "Parameter" area and can be edited here.

Notice

Individual internal RTCs can be created. These can also be added via the work area.

- Here a page with a plus is displayed. This page must be clicked. This is how a further internal RTC is added and displayed in the tree structure.
- If it is called up via the tree structure, the settings can be adjusted for the individual internal RTCs in the "Parameter" area.
- By clicking the arrow next to "Internal RTC", all available internal RTCs are displayed.

For further setting or selection options via the "Parameter" area for the general settings of the function of the internal RTC, see chapter 9.10.7 “Application "Internal RTC"“ on page 106.

9.12 Editing group addresses

Group addresses are created and managed in the "Group addresses" area.

Notice

Detailed expert knowledge for understanding by means of KNX training is assumed, especially with regard to the commissioning software ETS.

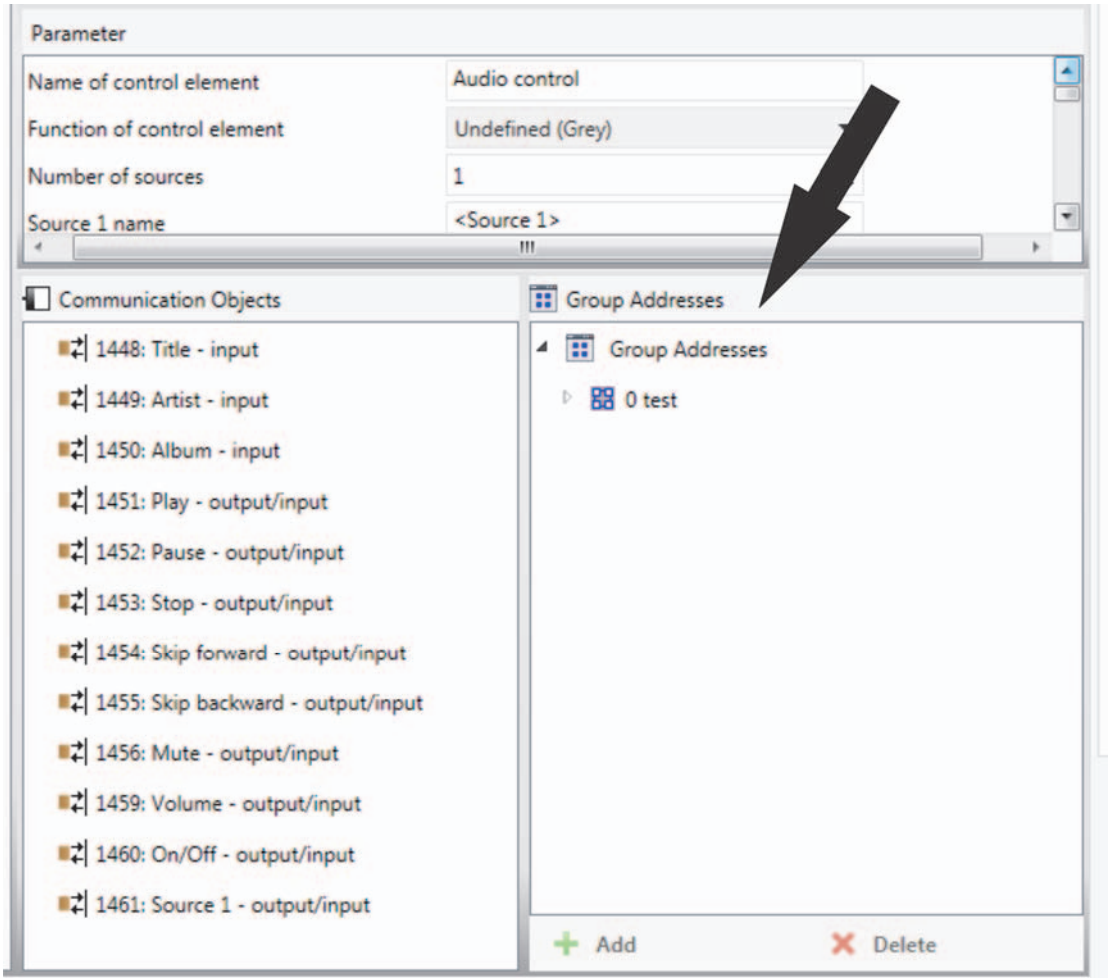


Fig. 43: "Group addresses" area

The group address of the elements is used for the functional allocation:

- The sending group contains the group address to which a telegram is to be sent. A maximum of one sending group address can be used per element.
- The status groups include one or several group addresses to display the status of a component. The sending group address is often also a status group.
- The value includes the value that is to be sent or the value to which the device (home automation system) is to respond.

9.13 Additional tools (functions)

You can call up additional tools or functions of the DCA via the DCA icon bar.

9.13.1 Import

1. Click on "Import" in the DCA icon bar, a dialog window with the following entries opens.
   – Import master
   – Import structure from terminal file (file format with ending .TERMINAL)
   – Import building structure

Import master

Import of masters of a different panel via .stpl file.

1. Select the appropriate file in the dialogue window.
2. Click on "Open".
   – The master is imported and can be used in the project.

Notice
The master file must first be exported from a different device.

9.13.2 Export

1. Click on "Export" in the DCA icon bar, a dialog window with the following entries appears.

– Export image in pid file

– Export in project file

Export image in pid file

This function is used to create an image file (*.pid).

1. Select the target directory in the dialogue window.
2. Assign a file name.
3. Click on "Save".

Notice
The image file can be stored on a micro SD card (SDHC) and in this way be transferred to the panel.

Export in project file

This function is used to create a project file (*.stpl).

1. Select the target directory in the dialogue window.
2. Assign a file name.
3. Click on "Save".

Notice
The project file can, for example, be transferred to a different PC and imported as master into the commissioning tool.

9.13.3 Preview

Notice
This function is not available when the ETS is executed on a virtual machine.

With this function you can test to see how project planning would look on a real panel. This allows you to test whether the project has been parameterized as desired before you create an image file.

9.13.4 Reset layout

With this function you can reset the user interface of the DCA to the standard display.

Via the combination of "Ctrl" + drag and drop you can place the different windows in the DCA also at other positions.

9.13.5 Reset all

This function resets all parameter settings to the basic settings. All created pages and the group addresses will be deleted.

10 KNX control elements and application parameters

10.1 "Switch" control element

10.1.1 Name of the control element

Options:	<Name>

Naming the switch control element, e.g. name of the lamp that is to be switched.

The length of the name is limited to 36 characters.

10.1.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.1.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.1.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.1.5 Type of switch

Options:	Switchover
	Press/release
	Short/long

Notice
The selection depends on the type of switch.

The parameter is used to specify the signals (values) the switch sends to the KNX bus when it is operated.

– *Switchover*: No additional parameters available.

– *Pressing/releasing*: Pressing = value 1; releasing = value 2.
The following supplementary parameters are available, see chapter “Object type 1 / value 2“ on page 114:
  – *Object type value 1*: When actuated (pressing) the control element sends telegrams via the associated communication object. This parameter is used to specify the size of the communication object.
  – *Object type value 2*: When actuated (releasing) the control element sends telegrams via the associated communication object. This parameter is used to specify the size of the communication object.

– *Short/long*: Short press = value 1; long press = value 2.
The following supplementary parameters are available, see chapter “Object type 1 / value 2“ on page 114:
  – *Long operation after...*:

Options:	Setting option from 0.3 - 10 seconds

The parameter is used to specify how long the button must be pressed to recognize a long operation.

  – *Object type value 1*: When actuated (short press) the control element sends telegrams via the associated communication object. This parameter is used to specify the size of the communication object.
  – *Object type value 2*: When actuated (long press) the control element sends telegrams via the associated communication object. This parameter is used to specify the size of the communication object.

10.1.6 Object type 1 / value 2

Options:	Inactiv
	Switch
	Forced operation
	1-byte value [0% - 100%]
	1-byte value [0 - 255]
	1-byte value [-128 - 127]
	Scene number
	RTC operating mode
	Temperature
	2-byte value [-32768 - +32767]
	2-byte value [0 - 65535]
	2-byte floating point
	4-byte value [-2147483648 - 2147483647]
	4-byte value [0 - 4294967295]
	14-byte text

Parameters "Object type value 1" and "Object type value 2" are used to specify the size of the communication object.

Notice
The parameters are only available when parameter "Type of switching" is set on "Pressing/releasing" or "Short/long".

– *Inactive*: No additional parameters available.
– *Switch*: The following supplementary parameters are available:

  Sent value 1:

Options:	Switchover
	0
	1

  – *Switchover*: At each actuation a switchover takes place between the two set values "Object type 1" and "Object type 2".
  – 0 / 1: Switching commands are sent with 1 bit (0 or 1), e.g. for switching a switching actuator.

  Sent value 2:

Options:	0
	1

  – 0 / 1: Switching commands are sent with 1 bit (0 or 1), e.g. for switching a switching actuator.

– *Forced operation*: Management systems can access the device directly via KNX. However, it can also be specified that one can select manually (forced operation) via buttons. The following supplementary parameter is available:

  Sent value 1 / value 2:

Options:	ON, forced operation active
	OFF, forced operation active
	Deactivate forced operation

– *1-byte value [0% - 100%]*: A value is sent as 1-byte value without a sign (percentage value). The following supplementary parameter is available:

  Sent value 1 / value 2 [0 - 100%]:

Options:	Setting option from 0 - 100

– *1-byte value [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. an actuating value, angle or brightness value. The following supplementary parameter is available:

  Sent value 1 / value 2 [0 - 255]:

Options:	Setting option from 0 - 255

– *1-byte value [-128 - 127]*: A value is sent as 1-byte value with a sign, e.g. an actuating value. The following supplementary parameter is available:

  Sent value 1 / value 2 [-128 - 127]:

Options:	Setting option from -128 - +127

– *Scene number*: The parameter is used to select a 1-byte object to link it with a scene number. Values between 1 and 64 are available for light scene numbers. The following supplementary parameter is available:

Transmitted value 1 / value 2 [scene number]:

Options:	Setting option from 0 - 64
	Calling up or storing scenes

  - *0 - 64*: Entry of scene number.
  - *Calling up or storing scenes*: The parameter is used to specify whether the scene is called up or stored (the scene number is sent with the additional information that the scene is to be stored).

– *RTC operating mode*: After actuating the control element the device switches to the parameterized operating mode. The following supplementary parameter is available:

Sent value 1 / value 2 [RTC operating mode]:

Options:	Auto
	Comfort
	Standby
	ECO
	Frost/heat protection

– *Temperature*: After the control element is actuated, the device sends the parameterized temperature value. The following supplementary parameter is available:

Transmitted value 1 / value 2 [temperature]:

Options:	Setting option from 16 - 31

– *2-byte value [-32768 - +32767]*: A value is sent as 2-byte value with a sign, e.g. an actuating value or a time difference. The following supplementary parameter is available:

Sent value 1 / value 2 [-32768 - 32767]:

Options:	Setting option from *-32768 - +32767*

– *2-byte value [0 - 65535]*: A value is sent as 2-byte value without a sign, e.g. an actuating value or a time interval. The following supplementary parameter is available:

Sent value 1 / value 2 [0 - 65535]:

Options:	Setting option from 0 - 65535

– *2-byte floating point*: A value is sent as 2-byte floating point value, e.g. a temperature value, a time duration, a performance or a consumption value. The following supplementary parameter is available:

Sent value 1 / value 2 [-671088.64 - 670760.96]:

Options:	Setting option from -671088.64 - +670760.96

– *4-byte value [-2147483648 - 2147483647]*: A value is sent as 4-byte value with a sign, e.g. an actuating value or a time difference. The following supplementary parameter is available:

Sent value 1 / value 2 [-2147483648 - 2147483647]:

Options:	Setting option from -2147483648 - 2147483647

– *4-byte value [0 - 4294967295]*: A value is sent as 4-byte value without a sign, e.g. an actuating value. The following supplementary parameter is available:

Sent value 1 / value 2 [0 - 4294967295]:

Options:	Setting option from 0 - 4294967295

– *14-byte text*: Makes it possible to send any text. The following supplementary parameter is available:

  Sent value 1 / value 2 [max- 14 characters]:

Options:	<Text>

The length of the text is limited to 14 characters.

10.1.7 Status control element (icon/text) is operated via a separate object

Options:	No
	Yes

An additional 1-bit communication object "Status" is enabled via the parameter.

When the object has been enabled, the status display of the control element indicates the current status of the object. The feedback object can ensure that the correct status is always displayed.

If an actuator has a separate feedback object, this additional object can check whether the actuator has switched. For this the feedback object of the actuator must be connected with the feedback object of the button via a common group address (Action).

If the status display is not activated via a feedback object, the control element always changes to the other status when actuated.

10.1.8 Icon type

Options:	Icons
	Text

The parameter is used to set whether an icon or a text is displayed.

– *Icons*:

Icons for On:

Options:	<Selection of an icon from the list>

The selected icon is displayed when the light is switched on.

Icons for Off:

Options:	<Selection of an icon from the list>

The selected icon is displayed when the light is switched off.

– *Text*:

Text for On:

Options:	<Text>

The entered text is displayed when the light is switched on.

Text for Off:

Options:	<Text>

The entered text is displayed when the light is switched off.

10.1.9 Enable 1-bit communication object "Disable"

Options:	No
	Yes

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.2 Control element "Rocker switch"

10.2.1 Name of the control element

Options:	<Name>

Naming the switch control element, e.g. name of the lamp that is to be switched.

The length of the name is limited to 36 characters.

10.2.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.2.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.2.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.2.5 Icon type

Options:	Icons
	Text

The parameter is used to set whether an icon or a text is displayed.

– *Icons*:

Icon for bottom/ value 1:

Options:	<Selection of an icon from the list>

The selected icon is displayed when the rocker (button) bottom is actuated.

Icon for top / value 2:

Options:	<Selection of an icon from the list>

The selected icon is displayed when the rocker (button) top is actuated.

– *Text*:

Text for bottom / value 1:

Options:	<Text>

The entered text is displayed when the rocker (button) bottom is actuated.

Text for top / Value 2:

Options:	<Text>

The entered text is displayed when the rocker (button) top is actuated.

10.2.6 Status control element (icon/text) is operated via a separate object

Options:	No
	Yes

An additional 1-bit communication object "Status" is enabled via the parameter.

When the object has been enabled, the status display of the control element indicates the current status of the object. The feedback signal object can ensure that the correct status is always displayed.

If an actuator has a separate feedback object, this additional object can check whether the actuator has switched. For this the feedback object of the actuator must be connected with the feedback object of the button via a common group address (Action).

If the status display is not activated via a feedback object, the control element always changes to the other status when actuated.

10.2.7 Additional status text for value

Notice
This additional status text is only displayed when normal control elements are used, but not for reduced control elements.

Additional status text for value 1:

Options:	<Text>

The entered text is displayed for value 1.

Additional status text for value 2:

Options:	<Text>

The entered text is displayed for value 2.

Notice
Value 1 corresponds to button top
Value 2 corresponds to button bottom

10.2.8 Object type

Options:	Switch
	Forced operation
	1-byte value [0% - 100%]
	1-byte value [0 - 255]
	1-byte value [-128 - 127]
	Scene number
	RTC operating mode
	Temperature
	2-byte value [-32768 - +32767]
	2-byte value [0 - 65535]
	2-byte floating point
	4-byte value [-2147483648 - 2147483647]
	4-byte value [0 - 4294967295]
	14-byte text

When actuated, the control element sends telegrams via the associated communication object. Parameter "Object type" is used to specify the size of the communication object.

Notice
Value 1 is assigned to the left button, and value 2 to the right button.

– *Switch*: The following supplementary parameter is available:

  Sent value 1 / value 2:

Options:	0
	1

  – 0 / 1: Switching commands are sent with 1 bit (0 or 1), e.g. for switching a switching actuator.

– *Forced operation*: Management systems can access the device directly via KNX. It can additionally be specified that selection can be carried out manually via buttons (forced operation). The following supplementary parameter is available:

  Sent value 1 / value 2:

Options:	ON, forced operation active
	OFF, forced operation active
	Deactivate forced operation

– *1-byte value [0% - 100%]*: A value is sent as 1-byte percentage value. The following supplementary parameter is available:

  Sent value 1 / value 2 [0 - 100%]:

Options:	Setting option from 0 - 100

– *1-byte value [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. an actuating value, angle or brightness value. The following supplementary parameter is available:

  Sent value 1 / value 2 [0 - 255]:

Options:	Setting option from 0 - 255

– *1-byte value [-128 - 127]*: A value is sent as 1-byte value with a sign, e.g. a actuating value. The following supplementary parameter is available:

  Sent value 1 / value 2 [-128 - 127]:

Options:	Setting option from -128 - +127

– *Scene number*: The parameter is used to select a 1-byte object to link it with a scene number. Values between 1 and 64 are available for light scene numbers. The following supplementary parameter is available:

  Transmitted value 1 / value 2 [scene number]:

Options:	Setting option from 0 - 64
	Calling up or storing scenes

  – *0 - 64*: Entry of scene number.
  – *Calling up or storing scenes*: The parameter is used to specify whether the scene is called up or stored (the scene number is sent with the additional information that the scene is to be stored).

– *RTC operating mode*: After actuating the control element the device switches to the parameterized operating mode. The following supplementary parameter is available:

  Sent value 1 / value 2 [RTC operating mode]:

Options:	Auto
	Comfort
	Standby
	ECO
	Frost/heat protection

– *Temperature*: After the control element is actuated, the device sends the parameterized temperature value. The following supplementary parameter is available:

  Transmitted value 1 / value 2 [temperature]:

Options:	Setting option from 16 - 31

– *2-byte value [-32768 - +32767]*: A value is sent as 2-byte value with a sign, e.g. an actuating value or a time difference. The following supplementary parameter is available:

  Sent value 1 / value 2 [-32768 - 32767]:

Options:	Setting option from -*32768 - +32767*

– *2-byte value [0 - 65535]*: A value is sent as 2-byte value without a sign, e.g. an actuating value or a time interval. The following supplementary parameter is available:

  Sent value 1 / value 2 [0 - 65535]:

Options:	Setting option from 0 - 65535

– *2-byte floating point*: A value is sent as 2-byte floating point value, e.g. a temperature value, a time duration, a performance or a consumption value. The following supplementary parameter is available:

  Sent value 1 / value 2 [-671088.64 - +670760.96]:

Options:	Setting option from -671088.64 - +670760.96

– *4-byte value [-2147483648 - 2147483647]*: A value is sent as 4-byte value with a sign, e.g. an actuating value or a time difference. The following supplementary parameter is available:

  Sent value 1 / value 2 [-2147483648 - 2147483647]:

Options:	Setting option from -2147483648 - 2147483647

– *4-byte value [0 - 4294967295]*: A value is sent as 4-byte value without a sign, e.g. an actuating value. The following supplementary parameter is available:

  Sent value 1 / value 2 [0 - 4294967295]:

Options:	Setting option from 0 - 4294967295

– *14-byte text*: Makes it possible to send any text. The following supplementary parameter is available:

  Sent value 1 / value 2 [max- 14 characters]:

Options:	<Text>

  The length of the text is limited to 14 characters.

10.2.9 Enable 1-bit communication object "Disable"

Options:	No
	Yes

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.3 "Dimmer" control element

10.3.1 Name of the control element

Options:	<Name>

Naming the dimmer control element, e.g. name of the lamp that is to be dimmed.

The length of the name is limited to 36 characters.

10.3.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.3.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.3.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.3.5 Icon type

Options:	Standard
	User-defined

The parameter is used to set whether a standard icon or a self-selected icon is displayed.

10.3.6 Icon for On / icon for Off

Options:	Icon for On
	Icon for Off

The parameter is used to set the icon that is to be displayed when the light is switched on or off.

– *Icon for On*: The selected icon is displayed when the light is switched on.
– *Icon for Off*: The selected icon is displayed when the light is switched off.

Notice
The parameter can only be set when parameter "Icon type" is set on "User-defined".

10.3.7 Status control element (icon) is controlled by a separate object

Options:	Deactivated
	Activated

An additional 1-bit communication object "Status" is enabled via the parameter.

When the object has been enabled, the status display of the control element indicates the current status of the object. The feedback object can ensure that the correct status is always displayed.

If an actuator has a separate feedback object, this additional object can check whether the actuator has switched. For this the feedback object of the actuator must be connected with the feedback object of the button via a common group address (Action).

If the status display is not activated via a feedback object, the control element always changes to the other status when actuated.

10.3.8 Manner of dimming

Options:	Start/stop
	Stepwise
	Value

– *Start/stop*: When the button is pressed a telegram with the information "dim brighter" or "dim darker" is sent. When the button is released a telegram with the information "stop dimming" is sent.

Brightness change [%]:

Options:	Setting option in % (different values)

The parameter is used to specify in which step widths to dim.

Telegram is repeated every [sec.]:

Options:	Setting option from 0.25 - 1.25 seconds

The parameter is used to specify the space of time between two dimming telegrams.

10.3.9 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.4 Control element: "Dimmer slider"

10.4.1 Name of the control element

Options:	<Name>

Naming the slider control element, e.g. name of the lamp that is to be dimmed.

The length of the name is limited to 36 characters.

10.4.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.4.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.4.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.4.5 Icon type

Options:	Standard
	User-defined

The parameter is used to set whether a standard icon or a self-selected icon is displayed.

10.4.6 Icon for On / icon for Off

Options:	Icon for On
	Icon for Off

The parameter is used to set the icon that is to be displayed when the light is switched on or off.

– *Icon for On*: The selected icon is displayed when the light is switched on.
– *Icon for Off*: The selected icon is displayed when the light is switched off.

Notice
The parameter can only be set when parameter "Icon type" is set on "User-defined".

10.4.7 Status control element (icon) is operated via a separate object

Options:	Deactivated
	Activated

An additional 1-bit communication object "Switch status" is enabled via the parameter.

When the object has been enabled, the status display of the control element indicates the current status of the object. The feedback object can ensure that the correct status is always displayed.

If an actuator has a separate feedback object, this additional object can check whether the actuator has switched. For this the feedback object of the actuator must be connected with the feedback object of the button via a common group address (Action).

If the status display is not activated via a feedback object, the control element always changes to the other status when actuated.

10.4.8 Display value in control element

Options:	Deactivated
	Activated

The parameter is used to specify whether the dimming value is displayed in the control element.

– *No*: No display. No additional parameters available.

– *Yes*: The following parameters are displayed:

Status of dimming value is controlled by a separate object:

Options:	Deactivated
	Activated

The brightness value signalled by the dimmer slider can be displayed via a separate object. An additional 1-bit communication object "Status value" is enabled. The displayed value does not originate from the control element. The value is received via a separate feedback object.

Unit:

Options:	<Text>

The parameter is used to enter the unit or the unit sign with which the value is displayed in the control element.

The length of the text is limited to 20 characters.

10.4.9 Slider sends

Options:	When releasing the slider
	Cyclic

The parameter is used to specify whether the signal is sent "When releasing the slider" or "Cyclic".

– *When releasing the slider*: No additional parameters available.

– *Cyclic*: The following supplementary parameter is available:

Telegram is repeated every [sec.]:

Options:	Setting option from 0.25 - 1.25 seconds

The parameter is used to specify the space of time between two dimming telegrams.

10.4.10 Brightness change [%]

Options:	Setting option from 1 - 20

The parameter is used to set the number of steps (in percent) for dimming. The brightness change takes place when the slider is released.

10.4.11 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.5 Operation of "RGBW" control element“

10.5.1 Name of the control element

Options:	<Name>

Naming the switch control element, e.g. name of the lamp that is to be switched.

The length of the name is limited to 36 characters.

10.5.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.5.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.5.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.5.5 Display value in control element

Options:	Deactivated
	Activated

The parameter is used to specify whether the RGBW value is displayed in the control element.

10.5.6 Type of colour/white lamp

Options:	RGB
	HSV
	RGB+W
	RGB+Tunable White
	Tunable White

The parameter is used to specify how the colour activation is to be controlled. Corresponding sliders will be displayed in the control element. The type of colour control depends on the type of lamp. Specific settings can be made for the lamps. For example, the colours can be changed or the warm-white component can be adjusted.

RGB: Used for RGB lamp.
The following supplementary parameter is available:

- **Switching On/Off via:**

Options:	Switch object
	RGB feedback signal

The parameter is used to specify the On/Off control.

– Switch object: Setting, when the lamp contains a "Switch" object. The following supplementary parameters are available:

- **Switched On -> preset value:**

Options:	Deactivated
	Activated

– *Deactivated*: No presets are sent when the lamp is switched on.

– *Activated*: The stored presets are sent when the lamp is switched on.

- **Switched Off -> RGB value 0,0,0:**

Options:	Deactivated
	Activated

– *Deactivated*: No RGB values are sent when the lamp is switched off.

– *Activated*: The RGB values (0,0,0) are sent when the lamp is switched off. This parameter is important for lamps that do not contain a "Switch" object.

– *RGB feedback*: Setting when the lamp contains no "Switch" object but is switched off via the RGB values.

HSV: Used for RGB lamp.
The following supplementary parameter is available:

- **Switched On -> preset value:**

Options:	Deactivated
	Activated

  – *Deactivated*: No presets are sent when the lamp is switched on.
  – *Activated*: The stored presets are sent when the lamp is switched on.

- **Switched Off -> HSV value 0,0,0:**

Options:	Deactivated
	Activated

  – *Deactivated*: No HSV values are sent when the lamp is switched off.
  – *Activated*: The HSV values (0,0,0) are sent when the lamp is switched off. This parameter is important for lamps that do not contain a "Switch" object.
  – *HSV feedback*: Setting when the lamp contains no "Switch" object but is switched off via the HSV values.

RGB+W: Used for RGB lamp with integrated white component.
The following supplementary parameters are available:

- **Switched On -> preset value:**

Options:	Deactivated
	Activated

  – *Deactivated*: No presets are sent when the lamp is switched on.
  – *Activated*: The stored presets are sent when the lamp is switched on.

- **Switched Off -> RGB value 0,0,0:**

Options:	Deactivated
	Activated

  – *Deactivated*: No RGB values are sent when the lamp is switched off.
  – *Activated*: The RGB values (0,0,0) are sent when the lamp is switched off. This parameter is important for lamps that do not contain a "Switch" object.

- *RGB+WW/CW*: Use for RGB lamp with integrated warm white and cold white component. The following supplementary parameters are available:

RGB+Tunable White: Used for RGB lamp.
The following supplementary parameter is available:

- **White activation via:**

Options:	Warm/cold objects
	Temperature/brightness objects

The parameter is used to specify how the white lamps are controlled.

– *Warm/cold objects*: The activation takes place via separate channels, i.e. via a "Warm White" (WW) and a "Cold White" (CW) channel. Prerequisite: The lamp to be controlled has different channels (e.g. 2 stripes).

– *Temperature/brightness objects*: If no separate channels are available (e.g. Philips Hue), activation takes place via the colour temperature and brightness. The communication objects are named the same for both types of activation; however, different values are sent (either brightness and colour temperature or Cold White and Warm White).

- **Object temperature**

Options:	DPT 1-byte
	DPT 7.600 2-byte

- **Minimum colour temperature:**

Options:	Setting option from 1500 - 10000

The parameter is used to specify the minimum colour temperature.

- **Maximum colour temperature:**

Options:	Setting option from 1500 - 10000

The parameter is used to specify the maximum colour temperature.

- **Switching On/Off via:**

Options:	1 object
	2 objects

The parameter is used to specify the On/Off control.

– *1 Object*: Setting when the lamp has only one channel (e.g. Philips Hue).

– *2 Objects*: Setting when the lamp has several channels (RGB and White separated, e.g. two stripes), separate ON/OFF switching via data points.

- **Switched On -> preset value:**

Options:	Deactivated
	Activated

– *Deactivated*: No presets are sent when the lamp is switched on.

– *Activated*: The stored preset is sent when the lamp is switched on.

- **Switched Off -> RGB value 0,0,0:**

Options:	Deactivated
	Activated

– *Deactivated*: No RGB values are sent when the lamp is switched off.

– *Activated*: The RGB values (0,0,0) are sent when the lamp is switched off. This parameter is important for lamps that do not contain a "Switch" object.

Tunable White: Used for lamps with Warm White and Cold White component.
The following supplementary parameters are available:

- **White activation via:**

Options:	Warm/cold objects
	Temperature/brightness objects

The parameter is used to specify how the white lamps are controlled.

– *Warm/cold objects*: The activation takes place via separate channels, i.e. via a "Warm White" (WW) and a "Cold White" (CW) channel. Prerequisite: The lamp to be controlled has different channels (e.g. 2 stripes).

– *Temperature/brightness objects*: If no separate channels are available (e.g. Philips Hue), activation takes place via the colour temperature and brightness. The communication objects are named the same for both types of activation; however, different values are sent (either brightness and colour temperature or Cold White and Warm White).

- **Object temperature**

Options:	DPT 1-byte
	DPT 7.600 2-byte

- **Minimum colour temperature:**

Options:	1500 - 10000

The parameter is used to specify the minimum colour temperature.

- **Maximum colour temperature:**

Options:	1500 - 10000

The parameter is used to specify the maximum colour temperature.

10.5.7 Brightness change [%]

Options:	Setting option from 1 - 20

The parameter is used to set the number of steps (in percent) for dimming. The brightness change takes place when the slider is released.

10.5.8 Telegram is repeated every [sec.]:

Options:	Setting option from 0.25 - 1.25 seconds

The parameter is used to specify the space of time between two telegrams.

10.5.9 Status control element (icon) is operated via a separate object

Options:	Deactivated

	Activated

An additional 1-bit communication object "Switch status" is enabled via the parameter.

When the object has been enabled, the status display of the control element indicates the current status of the object. The feedback object can ensure that the correct status is always displayed.

If an actuator has a separate feedback object, this additional object can check whether the actuator has switched. For this the feedback object of the actuator must be connected with the feedback object of the button via a common group address (Action).

If the status display is not activated via a feedback object, the control element always changes to the other status when actuated.

10.5.10 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.6 "Blind" control element

10.6.1 Name of the control element

Options:	<Name>

Naming the blind switch control element, e.g. name of the window whose blind is to be switched.

The length of the name is limited to 36 characters.

10.6.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.6.3 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.6.4 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.6.5 Using 1-byte positioning

Options:	Deactivated
	Activated

The parameter is used to specify whether the 1-byte positioning is used.

Display value in control element:

Options:	Deactivated
	Activated

The parameter is used to specify whether the value is displayed in the control element.

10.6.1 Icon type

Options:	Blind animation
	Roller blind animation
	Awning animation
	Curtain animation
	Custom

The parameter is used to set whether a standard icon or a self-selected icon ("user-defined") is displayed.

The following parameters can only be set when parameter "Icon type" is set on "User-defined".

Icon for opened:

Options:	<Selection of an icon from the list>

The parameter is used to select the icon that is to be displayed when the blind is open.

Icon for closed:

Options:	<Selection of an icon from the list>

The parameter is used to select the icon that is to be displayed when the blind is closed.

Icon for intermediate position:

Options:	<Selection of an icon from the list>

The parameter is used to select the icon that is to be displayed when the blind is in an intermediate position.

10.6.2 Type of control

Options:	With slat adjustment
	Without slat adjustment

The parameter is used to specify whether commands to move the blinds in connection with the slat adjustment are sent to linked blind actuators via the actuation of the buttons.

The following supplementary parameters are available for the selection "With slat adjustment":

Position for icon "Slat up":

Options:	Left
	Right

The parameter is used to specify whether the icon for "Slat up" is positioned on the right or left side of the control element.

Icon for up/open:

Options:	<Selection of an icon from the list>

The parameter is used to select the icon that is to be displayed in the control element for "Up/Open".

Icon for down/close:

Options:	<Selection of an icon from the list>

The parameter is used to select the icon that is to be displayed in the control element for "Down/Close".

Repeat telegram "Slat adjustment" all:

Options:	<Selection of an icon from the list>

This parameter is used to set the time interval between two "Slat adjustment" telegrams.

10.6.3 Status control element (icon) is operated via a separate object

Options:	Deactivated
	Activated

An additional 1-bit communication object "Switch status" is enabled via the parameter.

– *Deactivated*: The communication object is not available.

– *Activated*: The status display of the control element indicates the current status of the object. The feedback object can ensure that the correct status is always displayed.

If an actuator has a separate feedback object, this additional object can check whether the actuator has switched. For this the feedback object of the actuator must be connected with the feedback object of the button via a common group address (Action).

If the status display is not activated via a feedback object, the control element always changes to the other status when actuated.

The following supplementary parameter is available for selection "Activated":

Type of feedback signal:

Options:	1 bit
	2x1 Bit
	1 byte [0 - 100%]
	1 byte [0 - 255]

The parameter is used to specify what the feedback object sends back.

10.6.4 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.7 Control element "RTC control element"

10.7.1 Name of the control element

Options:	<Name>

Naming of the RTC control element.

The length of the name is limited to 36 characters.

10.7.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.7.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.7.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.7.5 Additional functions/objects

Options:	Deactivated
	Activated

The parameter is used to specify whether parameter "Delay time during reading of telegrams after reset [sec.]" is displayed.

10.7.6 Delay time during reading of telegrams after reset [sec.]

Options:	Setting option from 1 - 255 seconds

The parameter is used to specify the number of seconds telegrams are delayed after a reset.

Notice
The parameter can only be set when parameter "Additional functions/objects" is set on "Yes".

10.7.7 Display actual temperature

Options:	Deactivated
	Activated

The parameter is used to specify whether the current temperature is displayed.

10.7.8 Display

Options:	Current setpoint
	Relative set value

The parameter is used to specify the setpoint that is shown in the display.

10.7.9 Hide temperature unit

Options:	Disabled
	Activated

The parameter is used to specify whether the temperature unit is displayed.

10.7.10 Unit of temperature

Options:	°C
	°F

The parameter is used to specify the unit with which the temperature is displayed.

10.7.11 Adjusting the temperature unit via object

Options:	Disabled
	Activated

The parameter is used to specify whether the adjustment of the temperature unit is made via an object.

10.7.12 Heating/cooling switchover

Options:	Deactivated
	Activated

The parameter is used to specify whether the RTC control element can be switched over between heating and cooling mode.

10.7.13 Fan coil control during heating mode

Options:	Deactivated
	Activated

The parameter is used to specify whether the fan coil fan is activated during heating mode.

10.7.14 Fan coil control during cooling mode

Options:	Deactivated
	Activated

The parameter is used to specify whether the fan coil fan is activated during cooling mode.

10.7.15 Step size of setpoint adjustment

Options:	0.1 °C
	0.2 °C
	0.5 °C
	1.0 °C

The parameter is used to specify the step size for manual setpoint adjustment.

10.7.16 Setpoint adjustment master/slave via communication object

Options:	1-byte counter value
	Absolute temperature value
	Relative temperature value

The parameter is used to specify how the master/slave setpoint adjustment is carried out via the communication object.

10.7.17 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.7.18 Number of fans

Options:	Heating/cooling via one system
	Heating/cooling via two systems

The parameter is used to specify the number of fans.

10.7.19 Fan speed level data format of master/slave

Options:	Counter values (e.g. 0 - 5)
	Percentage values

This parameter is used to specify the data format in which the data is displayed.

10.7.20 Number of fan speed levels

Options:	3 levels
	5 levels
	10 levels (output 0-255)

The parameter is used to specify the number of fan speed levels.

10.7.21 Lowest manually adjustable fan speed level

Options:	Speed 0
	Speed 1

This parameter is used to specify the lowest manually adjustable fan speed level.

10.7.22 Fan coil settings heating

Level values

Options:	Specify individually
	according to values table

The parameter is used to specify how the fan coil fan is activated during heating mode.

10.7.23 Fan coil settings for cooling

Level values

Options:	Specify individually
	according to value table

The parameter is used to specify how the fan coil fan is activated during cooling mode.

10.8 Control element "Fan switch"

10.8.1 Name of the control element

Options:	<Name>

Naming the fan switch control element, e.g. name of the fan that is to be controlled.

The length of the name is limited to 36 characters.

10.8.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.8.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.8.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.8.5 Deactivation of switch-off option

Options:	Deactivated
	Activated

The parameter is used to specify whether the ventilation control can be completely switched off.

10.8.6 Icon type

Options:	Standard
	User-defined

The parameter is used to set whether a standard icon or a self-selected icon ("user-defined") is displayed.

The following parameter can only be set when parameter "Icon type" is set on "User-defined".

Icon for On:

Options:	<Selection of an icon from the list>

The parameter is used to select the icon that is to be displayed when the fan is switched on.

Icon for Off:

Options:	<Selection of an icon from the list>

The parameter is used to select the icon that is to be displayed when the fan is switched off.

10.8.7 Number of levels

Options:	Setting option from 1 - 8

The parameter is used to specify the number of fan speed levels that are available and can be switched.

10.8.8 Object type

Options:	1 bit [0/1]
	1 byte unsigned [0 - 255]

When actuated, the control element can send telegrams via the associated communication object. Parameter "Object type" is used to specify the size of the communication object.

– *1 bit [0/1]:* Switching commands are sent with 1 bit (0 or 1), e.g. for switching a fan actuator (fan coil actuator). The following supplementary parameters are available:

Also sending bits with value 0:

Options:	Deactivated
	Activated

The parameter is used to specify whether also switching commands with value "0" are sent.

Switch pattern:

Options:	1 of n
	x of n
	Gray code

The parameter is used to specify how the fan is switched.

– *1 off n*: The speed level values ("0 - 3" or "0 - 5") are output via 1-bit objects. Available are as many 1-bit objects as fan speed levels, e.g. for speed level "2" the fan speed level object "2" is output with value "1". The other fan speed level objects are output with value "0".

(For 5 objects, object 1 to 5):

00000
10000
01000
00100
00010
00001

– *x off n*: The speed level values ("0 - 3" or "0 - 5") are output via 1-bit objects. Available are as many 1-bit objects as fan speed levels, e.g. for speed level "2" the fan speed level objects "1" and "2" are output with value "1". The other fan speed level objects are output with value "0".

x of n (For 5 objects, object 1 to 5):

00000 > send all objects "0"

10000 > Object 1 sends "1" (also sends the 0 bit = Yes), objects 2 to 5 send "0"
11000 > Objects 1 and 2 send "1", objects 3 to 5 send "0"
11100 etc.
11110
11111

– *Grey code*: For 5 objects, object 1 to 5:

00000	01100	00110
10000	11100	etc.
01000	00010	
11000	10010	
00100	01010	
10100	11010	

– *1-byte unsigned [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. actuating value. The value can be sent for each level. The following supplementary parameters are available:

Value Off:

Options:	Setting option from 0 - 255

The parameter is used to set which 1-byte value is to be sent.

Notice
The parameter is only available when parameter "Deactivation of switch-off option" is set on "No".

Value level x (1 - 8):

Options:	Setting option from 0 - 255

The parameter is used to set for which level the value is to be sent.

Notice
How many "Value level x" parameters are available depends on the setting of the "Number of levels" parameter.

10.8.9 Display status

Options:	User-defined
	Standard
	No

The parameter is used to specify which status texts are displayed for the individual switching levels.

– *User-defined*: User-defined texts are displayed for the individual switching levels. The following supplementary parameters are available:

Text Off:

Options:	<Text for "Off">

The parameter is used to specify the text that is to be displayed when the fan is switched off. The length of the text is limited to 15 characters.

Note
The following parameter is only available when parameter "Deactivation of switch-off option" is set on "No".

Text level x (1 - 8):

Options:	<Text for switching level>

The parameter is used to specify the text that is sent for the respective level. The length of the text is limited to 15 characters.

Note
How many "Text level x" parameters are available depends on the setting of the "Number of levels" parameter.

Text beyond reach:

Options:	<Text for "beyond reach">

The parameter is used to specify the text that is displayed when the user-defined texts are too long. The length of the text is limited to 15 characters.

– *Standard*: Standard texts are displayed for the individual switching levels. The following supplementary parameter is available:

Text beyond reach:

Options:	<Text for "beyond reach">

The parameter is used to specify the text that is displayed when the standard texts are too long. The length of the text is limited to 15 characters.

– *No*: No texts are displayed.

10.8.10 Status control element (icon) is controlled by a separate object

Options:	Deactivated
	Activated

An additional 1-bit communication object "Status" is enabled via the parameter.

When the object has been enabled, the status display of the control element indicates the current status of the object. The feedback object can ensure that the correct status is always displayed.

If an actuator has a separate feedback object, this additional object can check whether the actuator has switched. For this the feedback object of the actuator must be connected with the feedback object of the button via a common group address (Action).

If the status display is not activated via a feedback object, the control element always changes to the other status when actuated.

10.8.11 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.9 Control "Split Unit Control"

10.9.1 Name of the control element

Options:	<Name>

Naming of the control element, e.g. name of the Split Unit Control.

The length of the name is limited to 36 characters.

10.9.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.9.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.9.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.9.5 Display actual temperature

Options:	Disabled
	Activated

The parameter is used to specify whether the actual temperature is displayed.

10.9.6 Minimum setpoint

Options:	Setting option from 16 to 32

The parameter is used to specify the minimum setpoint.

10.9.7 Maximum setpoint

Options:	Setting option from 16 to 32

The parameter is used to specify the maximum setpoint.

10.9.8 Step size of setpoint adjustment

Options:	0.1 °C
	0.2 °C
	0.5 °C
	1.0 °C

The parameter is used to specify the step size of the manual setpoint adjustment.

10.9.9 Number of fan speed levels (without AUTO)

Options:	1
	2
	3

The parameter determines how many fan speed levels (without auto) are available.

10.9.10 Use automatic mode for fans

Options:	Disabled
	Activated

The parameter is used to specify whether the automatic mode for the fan is activated.

10.9.11 Use mode: Automatic

Options:	Disabled
	Activated

This parameter is used to specify whether the automatic mode is activated.

10.9.12 Use mode: Heating

Options:	Disabled
	Activated

The parameter is used to specify whether the heating mode is activated.

10.9.13 Use mode: Cooling

Options:	Disabled
	Activated

The parameter is used to specify whether cooling mode is activated.

10.9.14 Use mode: Drying

Options:	Disabled
	Activated

The parameter is used to specify whether the drying mode is activated.

10.9.15 Use mode: Fan

Options:	Disabled
	Activated

The parameter is used to specify whether the fan mode is activated.

10.9.16 Use horizontal oscillation

Options:	Disabled
	Activated

This parameter is used to specify whether "Use horizontal oscillation" is activated.

10.9.17 Use vertical oscillation

Options:	Disabled
	Activated

This parameter is used to specify whether "Use vertical oscillation" is activated.

10.9.18 Use extra mode: Silence Mode

Options:	Disabled
	Activated

This parameter is used to specify whether the silent mode is activated.

10.9.19 Use additional mode: Boost

Options:	Disabled
	Activated

This parameter is used to specify whether the additional boost mode is activated.

10.9.20 Use additional mode: Forced operation

Options:	Disabled
	Activated

The parameter is used to specify whether the forced operation is activated.

10.9.21 Use additional mode: Scene

Options:	Disabled
	Activated

This parameter is used to specify whether the additional scene mode is activated.

10.9.22 Additional mode Use window contact

Options:	Disabled
	Activated

This parameter is used to specify whether the additional window contact mode is activated.

10.9.23 Use additional Presence mode

Options:	Disabled
	Activated

This parameter is used to specify whether the additional presence mode is activated.

10.9.24 Enable 1-bit communication object "Disable"

Options:	No
	Yes

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.10 Control "Split Unit Control"

10.10.1 Name of the control element

Options:	<Name>

Naming the slider control element, e.g. name of the lamp that is to be dimmed.

The length of the name is limited to 36 characters.

10.10.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.10.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.10.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.10.5 Value [1 byte 0-255] for heating mode

Options:	Setting option from 1 to 255

The parameter is used to set the value for the heating operation.

10.10.6 Value [1 byte 0-255] for cooling mode

Options:	Setting option from 1 to 255

The parameter is used to set the value for the cooling operation.

10.10.7 Using only fan operation

Options:	deactivated
	activated

Only the fan operation is activated when the parameter is activated.

10.10.8 Value [1 byte 0-255] for "Only fan operation"

Options:	Setting option from 1 to 255

The parameter is used to set the value for the fan operation.

10.10.9 Using dehumidification operation

Options:	deactivated
	activated

The dehumidification operation is activated when the parameter is activated.

10.10.10 Value [1 byte 0-255] for dehumidification operation

Options:	Setting option from 1 to 255

The parameter is used to set the value for the dehumidification operation.

10.10.11 Using automatic operation

Options:	deactivated
	activated

The automatic operation is activated when the parameter is activated.

10.10.12 Value [1 byte 0-255] for automatic operation

Options:	Setting option from 1 to 255

The parameter is used to set the value for the automatic operation.

10.10.13 Fan speed levels

Options:	1
	2
	3
	4
	5

The parameter is used to set the fan speed level.

10.10.14 Value for the speed x

Options:	Setting option from 0 to 255

The parameter is used to set the value for the fan speed.

10.10.15 Using automatic fan speed control

Options:	deactivated
	activated

The use of the automatic fan speed control is activated via the parameter.

10.10.16 Value for automatic fan speed x

Options:	Setting option from 0 to 255

The value of the automatic fan speed control is set via the parameter.

10.10.17 Step size

Options:	0.5 °C
	1.0 °C
	1.5 °C
	2.0 °C

The parameter is used to set the step size for the temperature measurement in decimal steps of 0.5.

10.10.18 Maximum setpoint [°C]

Options:	Setting option from 0 to 40

The parameter is used to specify the maximum adjustable temperature setpoint.

10.10.19 Minimum setpoint [°C]

Options:	Setting option from 0 to 40

The parameter is used to specify the minimum adjustable temperature setpoint.

10.10.20 Using VRV temperature sensor error display

Options:	deactivated
	activated

The parameter is used to activate the use of the VRV temperature sensor error display.

10.10.21 Using VRV error display

Options:	deactivated
	activated

The parameter is used to activate the use of the VRV error display.

10.10.22 Value for cancelling the VRV error display

Options:	Setting option from 0 to 255

The parameter is used to specify the setpoint from which the use of the VRV error display is deactivated.

10.10.23 Enable 1-bit communication object "Disable"

10.11 "Scene" control element

10.11.1 Name of the control element

Options:	<Name>

Naming of the scene control element.

The length of the name is limited to 36 characters.

10.11.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.11.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.11.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.11.5 Scene background

Options:	Image
	Icon

Specifies a picture or an icon for the scene background.

10.11.6 Start scene at selection

Options:	Deactivated
	Activated

The parameter is used to specify whether the scene is executed directly with a click on the control element or whether it must be started again separately.

10.11.7 Long operation after...

Options:	Setting option from 0.3 - 10 seconds

The parameter is used to specify how long the button must be pressed to recognize a long

operation.

10.11.8 Status control element (icon) is controlled by a separate object

Options:	Deactivated
	Activated

An additional 1-bit communication object "Status" is enabled via the parameter.

When the object has been enabled, the status display of the control element indicates the current status of the object. The feedback object can ensure that the correct status is always displayed.

If an actuator has a separate feedback object, this additional object can check whether the actuator has switched. For this the feedback object of the actuator must be connected with the feedback object of the button via a common group address (Action).

If the status display is not activated via a feedback object, the control element always changes to the other status when actuated.

10.11.9 Number of scenes [1 - 10]

Options:	Setting option from 1 - 10

The parameter is used to specify the number of scenes available in the selection list.

10.11.10 Scene number x [1 - 64]

Options:	Setting option from 1 - 64

The parameter is used to specify which scenes are to be started.

Notice
How many "Scene number x [1 - 64]" parameters are available depends on the setting of the "Number of scenes [1 - 10]" parameter.

10.11.11 Name of scene x

Options:	<Name>

Designation of scene. The length of the name is limited to 60 characters.

Notice
How many "Name of scene x" parameters are available depends on the setting of the "Number of scenes [1 - 10]" parameter.

10.11.12 Background for scene x

Notice
Whether a picture or an icon can be selected is dependent on the setting of the "Scene background" parameter.

Background for scene x - picture

Options:	None
	Afternoon
	At home
	Breakfast
	Cleaning
	Coming home
	Cooking
	Dinner
	Evening
	Guests
	Holidays
	Leaving
	Listening to music
	Morning
	Party
	Reading
	Relaxing
	Sleeping
	Scene
	TV
	Working
	User defined 1
	User defined 2
	User defined 3
	User defined 4
	User defined 5

Specifies a picture for the background of scene x.

Background for scene x - icon

Options:	<Icon>

Specifies an icon for the background of scene x.

Notice
How many "Background for scene x" parameters are available depends on the setting of the "Number of scenes [1 - 10]" parameter.

10.11.13 Saving scene x with a long press

Options:	Deactivated

	Activated

The parameter is used to specify whether the scene x can be saved only with a long press of the button. Adjustment of the button pressure, see parameter "Long operation after...".

Notice
How many "Save scene x with a long press" parameters are available depends on the setting of the "Number of scenes [1 - 10]" parameter.

10.11.14 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.12 Control element: "Value slider"

10.12.1 Name of the control element

Options:	<Name>

Naming the slider control element, e.g. name of the device that is to be controlled.

The length of the name is limited to 36 characters.

10.12.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.12.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.12.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.12.5 Display value in control element

Options:	Deactivated
	Activated

The parameter is used to specify whether the value is displayed in the control element.

– *Deactivated*: No display. No additional parameters available.

– *Activated*: The following supplementary parameters are displayed:

Status value is controlled by a separate object:

Options:	Deactivated
	Activated

An additional 1-bit communication object "Status value" is enabled via the parameter. If an actuator has a separate object to feed back the status, it can be linked with a separate feedback object.

Unit:

Options:	<Text>

The parameter is used to enter the unit or the unit sign with which the value is displayed in the control element.

The length is limited to 20 characters.

Decimal places:

Options:	Setting option from 0 - 2

The parameter is used to specify the number of decimal places of the displayed value.

The number is limited to 2 places.

10.12.6 Slider sends

Options:	When releasing the slider
	Cyclic

The parameter is used to specify whether the signal is sent "When releasing the slider" or "Cyclic".

– *When releasing the slider*: No additional parameters available.

– *Cyclic*: The following supplementary parameter is available:

Telegram is repeated every [sec.]:

Options:	Setting option from 0.25 - 1.25 seconds

The parameter is used to specify the space of time between two value telegrams.

10.12.7 Object type

Options:	1-byte value [0% - 100%]
	1-byte value [0 - 255]
	1-byte value [-128 - +127]
	2-byte value [0 - 65535]
	2-byte value [-32768 - +32767]
	2-byte floating point
	4-byte value [0 - 4294967295]
	4-byte value [-2147483648 - 2147483647]
	4-byte floating point

When actuated, the control element can send telegrams via the associated communication object.

Parameter "Object type" is used to specify the size of the communication object.

– *1-byte value [0% - 100%]*: A value is sent as 1-byte value without a sign (percentage value).

– *1-byte value [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. actuating value, angle or brightness value.

– *1-byte value [-128 - 127]*: A value is sent as 1-byte value with a sign, e.g. actuating value.

– *2-byte value [0 - 65535]*: A value is sent as 2-byte value without a sign, e.g. actuating value or time interval.

– *2-byte value [-32768 - +32767]*: A value is sent as 2-byte value with a sign, e.g. actuating value or time difference.

– *2-byte floating point*: A value is sent as 2-byte floating point value, e.g. a temperature value, a time duration, a power or a consumption value.
– *4-byte value [0 - 4294967295]*: A value is sent as 4-byte value without a sign, e.g. actuating value.
– *4-byte value [-2147483648 - 2147483647]*: A value is sent as 4-byte value with a sign, e.g. actuating value or time difference.
– *4-byte floating point*: A value is sent as 4-byte floating point value, e.g. a temperature value, a time duration, a power, a consumption value.

The following supplementary parameters are available for all options:

Notice
Different values can be set, depending on the selected option.

Value change:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the steps in which a change in values is made.

Minimum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value that is sent from the control element via telegrams.

Any value within the limits specified by the object type and its value range can be entered.

Maximum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value that is sent from the control element via telegrams.

Any value within the limits specified by the object type and its value range can be entered.

Displayed minimum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value displayed by the control element on the control element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Minimum object value".

Displayed maximum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value displayed by the control element on the control element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Maximum object value".

10.12.8 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.13 "Display" control element

10.13.1 Name of the control element

Options:	<Name>

Naming of the display control element.

The length of the name is limited to 36 characters.

10.13.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.13.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.13.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.13.5 Type of display element

Options:	Status display
	Value display
	Linear measurement display
	Round measurement display
	Wind rose
	Wind force
	Temperature
	Rain
	Twilight
	Brightness
	CO_2
	Moisture
	Air pressure
	Measurement of power consumption
	Voltage
	Current
	Frequency
	Power
	Energy
	Power factor
	Phase angle
	Gas (volume)
	Water (volume)
	Flow-through volume

The parameter is used to specify the display elements and the values in the display that are shown on the dashboard page.

Notice
Supplementary parameters are available for all options. The parameters that are displayed depends on the setting of the "Type of display element" parameter.

10.13.6 Type of display element — Status display — Object type

Options:	1 bit
	1-byte value [0 - 255]

Parameter "Object type" is used to specify the size of the communication object.

– *1 bit*: Status commands are sent with 1 bit (0 or 1). The following supplementary parameters are available:

Type of status display:

Options:	Text
	Icon

The parameter is used to specify whether a text or an icon is displayed.

– *Text*: The following supplementary parameters are available:

Text for value 0:

Options:	<Text>

The parameter is used to specify the text that is displayed for value 0.

The length of the text is limited to 60 characters.

Text for value 1:

Options:	<Text>

The parameter is used to specify the text that is displayed for value 1.

The length of the text is limited to 60 characters.

– *Icon*: The following supplementary parameters are available:

Icon for value 0:

Options:	<Icon>

The parameter is used to specify the icon that is displayed for value 0.

Icon for value 1:

Options:	<Icon>

The parameter is used to specify the icon that is displayed for value 1.

– *1-byte value [0 - 255]*: A status value is sent as 1-byte value without a sign. The following supplementary parameters are available:

Text x for value [0 - 255]:

Options:	Setting option from 0 - 255

The parameter is used to set the status value at which text x is displayed.

Notice
8 parameters of "Text x at value [0 - 255]" are available which can be set as required.

Text x:

Options:	<Text>

The parameter is used to specify the text that is displayed.

The length of the text is limited to 60 characters.

Notice
8 parameters of "Text x" are available which can be set as required.

10.13.7 Type of display element — Value display — Measurement display with colour display

Options:	Deactivated
	Activated

The parameter is used to specify whether a colour display follows.

For this the communication object is enabled.

– Switching red
– Switching orange
– Switching green

10.13.8 Type of display element — Value display — Object type

Options:	1-byte value [0% - 100%]
	1-byte value [0 - 255]
	1-byte value [-128 - 127]
	2-byte value [0 - 65535]
	2-byte value [-32768 - +32767]
	2-byte floating point
	4-byte value [0 - 4294967295]
	4-byte value [-2147483648 - 2147483647]
	4-byte floating point
	14-byte text

Parameter "Object type" is used to specify the size of the communication object.

- *1-byte value [0% - 100%]*: A value is sent as 1-byte value without a sign (percentage value).
- *1-byte value [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. actuating value, angle or brightness value.
- *1-byte value [-128 - 127]*: A value is sent as 1-byte value with a sign, e.g. actuating value.
- *2-byte value [0 - 65535]*: A value is sent as 2-byte value without a sign, e.g. actuating value or time interval.
- *2-byte value [-32768 - +32767]*: A value is sent as 2-byte value with a sign, e.g. actuating value or time difference.
- *2-byte floating point*: A value is sent as 2-byte floating point value, e.g. a temperature value, a time duration, a power or a consumption value.
- *4-byte value [0 - 4294967295]*: A value is sent as 4-byte value without a sign, e.g. actuating value.
- *4-byte value [-2147483648 - 2147483647]*: A value is sent as 4-byte value with a sign, e.g. actuating value or time difference.
- *4-byte floating point*: A value is sent as 4-byte floating point value, e.g. an energy display, electric current (A), electric power (W), DTP 14.
- *14-byte value*: Makes it possible to send any text with a maximum of 14 characters.

The following supplementary parameters are available for all options, except for option "14-byte value":

Notice
Different values can be preset or set, depending on the selected option.

Unit:

Options:	<Text>

The parameter is used to enter the unit or the unit sign with which the value is displayed in the display element.

The length of the text is limited to 60 characters.

Minimum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value that is sent via telegrams to the display element.

Any value within the limits specified by the object type and its value range can be entered.

Maximum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value that is sent via telegrams to the display element.

Any value within the limits specified by the object type and its value range can be entered.

Displayed minimum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value that is displayed in the display element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Minimum object value".

Displayed maximum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value that is displayed in the display element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Maximum object value".

– *14-Byte value*:

14-Byte text:

Options:	<Text>

10.13.9 Type of display element — Linear measurement display — Measurement display with colour display

Options:	Deactivated
	Activated

The parameter is used to specify whether a colour display follows. For this the communication objects "Switch alarm", "Switch warning", and "Switch information" are enabled.

10.13.10 Type of display element — Linear measurement display — Display value in control element

Options:	Deactivated
	Activated

The parameter is used to specify whether the value of the selected element is displayed in the display element.

– *Deactivated*: No display. No additional parameters available.

– *Activated*: The following supplementary parameters are displayed:

Unit:

Options:	<Text>

The parameter is used to enter the unit or the unit sign with which the measured value is displayed in the display element.

The length of the text is limited to 60 characters.

Decimal places:

Options:	Setting option from 0 - 2

The parameter is used to specify the number of decimal places of the displayed measured value.

The number is limited to 2 places.

Thousands separator:

Options:	Deactivated
	Activated

The parameter is used to specify whether a thousands separator is displayed in the measured value.

10.13.11 Type of display element — Linear measurement display — Object type

Options:	1-byte value [0% - 100%]
	1-byte value [0 - 255]
	1-byte value [-128 - 127]
	2-byte value [0 - 65535]
	2-byte value [-32768 - +32767]
	2-byte floating point
	4-byte value [0 - 4294967295]
	4-byte value [-2147483648 - 2147483647]
	4-byte floating point

Parameter "Object type" is used to specify the size of the communication object.

- *1-byte value [0% - 100%]*: A value is sent as 1-byte value without a sign (percentage value).
- *1-byte value [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. actuating value, angle or brightness value.
- *1-byte value [-128 - 127]*: A value is sent as 1-byte value with a sign, e.g. actuating value.
- *2-byte value [0 - 65535]*: A value is sent as 2-byte value without a sign, e.g. actuating value or time interval.
- *2-byte value [-32768 - +32767]*: A value is sent as 2-byte value with a sign, e.g. actuating value or time difference.
- *2-byte floating point*: A value is sent as 2-byte floating point value, e.g. a temperature value, a time duration, a power or a consumption value.
- *4-byte value [0 - 4294967295]*: A value is sent as 4-byte value without a sign, e.g. actuating value.
- *4-byte value [-2147483648 - 2147483647]*: A value is sent as 4-byte value with a sign, e.g. actuating value or time difference.
- *4-byte floating point*: A value is sent as 4-byte floating point value, e.g. an energy display, electric current (A), electric power (W), DTP 14.

The following supplementary parameters are available for all options:

Notice
Different values can be preset or set, depending on the selected option.

Minimum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value that is sent via telegrams to the display element.

Any value within the limits specified by the object type and its value range can be entered.

Maximum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value that is sent via telegrams to the display element.

Any value within the limits specified by the object type and its value range can be entered.

Displayed minimum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value that is displayed in the display element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Minimum object value".

Displayed maximum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value that is displayed in the display element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Maximum object value".

10.13.12 Type of display element — Round measurement display

Note
For option "Round measurement display" of parameter "Type of display element" the same supplementary parameters are available, such as for option "Linear measurement display", Chapter 10.13.9 “Type of display element — Linear measurement display — Measurement display with colour display“ on page 176.

10.13.13 Type of display element — Wind rose

Note
For option "Wind rose" of parameter "Type of display element" the same supplementary parameters are available, such as for option "Linear measurement display", Chapter 10.13.9 “Type of display element — Linear measurement display — Measurement display with colour display“ on page 176.
Parameter "Measurement display with colour display" is not available.

10.13.14 Type of display element — Wind rose — Display value in control element

Options:	Deactivated
	Activated

The parameter is used to specify whether the value of the selected element is displayed in the display element.

– *Deactivated*: No display. No additional parameters available.

– *Activated*: The following supplementary parameters are displayed:

Unit:

Options:	<Text>

The parameter is used to enter the unit or the unit sign with which the measured value is displayed in the display element.

The length of the text is limited to 60 characters.

Notice
Display the "Value of wind force" parameter when activating the parameter

– Only the following units are available for the selection of the parameter "Display value of wind force":

Unit - Parameter "Display value of wind force":

Options:	m/s
	Bft
	km/h

Decimal places:

Options:	Setting option from 0 - 2

The parameter is used to specify the number of decimal places of the displayed measured value.

The number is limited to 2 places.

Thousands separator:

Options:	Deactivated
	Activated

The parameter is used to specify whether a thousands separator is displayed in the measured value.

10.13.15 Type of display element — Wind rose — Display value wind force

Options:	Deactivated
	Activated

The parameter is used to specify whether the wind force is displayed. For this the "Wind force" communication object is enabled.

10.13.16 Type of display element — Wind rose - Object type

Options:	1-byte value [0% - 100%]
	1-byte value [0 - 255]
	1-byte value [-128 - 127]
	2-byte value [0 - 65535]
	2-byte value [-32768 - +32767]
	2-byte floating point
	4-byte value [0 - 4294967295]
	4-byte value [-2147483648 - 2147483647]
	4-byte floating point

Parameter "Object type" is used to specify the size of the communication object.

- *1-byte value [0% - 100%]*: A value is sent as 1-byte value without a sign (percentage value).
- *1-byte value [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. actuating value, angle or brightness value.
- *1-byte value [-128 - 127]*: A value is sent as 1-byte value with a sign, e.g. actuating value.
- *2-byte value [0 - 65535]*: A value is sent as 2-byte value without a sign, e.g. actuating value or time interval.
- *2-byte value [-32768 - +32767]*: A value is sent as 2-byte value with a sign, e.g. actuating value or time difference.
- *2-byte floating point*: A value is sent as 2-byte floating point value, e.g. a temperature value, a time duration, a power or a consumption value.
- *4-byte value [0 - 4294967295]*: A value is sent as 4-byte value without a sign, e.g. actuating value.
- *4-byte value [-2147483648 - 2147483647]*: A value is sent as 4-byte value with a sign, e.g. actuating value or time difference.
- *4-byte floating point*: A value is sent as 4-byte floating point value, e.g. an energy display, electric current (A), electric power (W), DTP 14.

The following supplementary parameters are available for all options:

Notice
Different values can be preset or set, depending on the selected option.

Minimum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value that is sent via telegrams to the display element.

Any value within the limits specified by the object type and its value range can be entered.

Maximum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value that is sent via telegrams to the display element.

Any value within the limits specified by the object type and its value range can be entered.

Displayed minimum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value that is displayed in the display element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Minimum object value".

Displayed maximum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value that is displayed in the display element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Maximum object value".

10.13.17 Type of display element — Wind force — Unit

Options:	m/s
	Bft
	km/h

The parameter is used to specify the unit with which the wind force is displayed in the display element.

10.13.18 Type of display element — Temperature — Unit

Options:	°C
	°F

The parameter is used to specify the unit with which the temperature is displayed in the display element.

10.13.19 Type of display element — Rain — Text for rain

Options:	<Text>

The parameter is used to specify the text that is displayed for rain.

The length of the text is limited to 60 characters.

10.13.20 Type of display element — Rain — Text for no rain

Options:	<Text>

The parameter is used to specify the text that is displayed for dry weather.

The length of the text is limited to 60 characters.

10.13.21 Type of display element — Twilight — Unit

Options:	Lux
	kLux

The parameter is used to specify the unit with which the twilight is displayed in the display element.

10.13.22 Type of display element — Brightness

Notice
For option "Brightness" of parameter "Type of display element" the same supplementary parameters are available, such as for option "Twilight".

10.13.23 Type of display element — CO_2 — Unit

Options:	Fixed at ppm

The parameter is used to specify the unit with which the concentration of carbon dioxide (CO_2) in the air is displayed in the display element.

10.13.24 Type of display element — Moisture — Unit

Options:	Fixed at %

The parameter is used to specify the unit with which the air moisture is displayed in the display element.

10.13.25 Type of display element — Air pressure — Unit

Options:	Fixed at Pa

The parameter is used to specify the unit with which the air pressure is displayed in the display element.

10.13.26 Type of display element — Measurement of power consumption— Data point type

Data point type

Options:	13,013
	13,010

The parameter is used to specify the data point used.

10.13.27 Type of display element — Measurement of power consumption— Unit

Options:	Wh
	kWh

The parameter is used to specify the unit with which the "Measurement of power consumption" is shown in the display element.

10.13.28 Type of display element — Voltage— Data point type

Data point type

Options:	14,027
	9,027

The parameter is used to specify the data point used.

10.13.29 Type of display element — Voltage — Unit

Options:	mV
	V

The parameter is used to specify the unit with which the voltage is displayed in the display element.

10.13.30 Type of display element — Current — Data point type

Data point type

Options:	14,019
	9,021

The parameter is used to specify the data point used.

10.13.31 Type of display element — Current — Unit

Options:	mA
	A

The parameter is used to specify the unit with which the current is displayed in the display element.

10.13.32 Type of display element — Frequency — Unit

Options:	Fixed at Hz

The parameter is used to specify the unit with which the frequency is displayed in the display element.

10.13.33 Type of display element — Power— Data point type

Data point type

Options:	14,056
	9,024

The parameter is used to specify the data point used.

10.13.34 Type of display element — Power — Unit

Options:	W
	kW

The parameter is used to specify the unit with which the power is displayed in the display element.

10.13.35 Type of display element — Energy — Data point type

Data point type

Options:	13,013
	13,010

The parameter is used to specify the data point used.

10.13.36 Type of display element — Energy — Unit

Options:	Wh
	kWh

The parameter is used to specify the unit with which the energy is displayed in the display element.

10.13.37 Type of display element — Power factor — Unit

Options:	Specified at cos Φ

The parameter is used to specify the unit with which the power factor is displayed in the display element.

10.13.38 Type of display element — Phase angle — Unit

Options:	Fixed at °

The parameter is used to specify the unit with which the phase angle is displayed in the display element.

10.13.39 Type of display element — Gas (volume) — Data point type

Data point type

Options:	12.1201
	14,076
	12.1200

The parameter is used to specify the data point used.

10.13.40 Type of display element — Gas (volume) — Unit

Options:	m^3

The parameter is used to specify the unit with which the energy is displayed in the display element.

10.13.41 Type of display element — Water (volume) — Data point type

Data point type

Options:	12.1201
	14,076
	12.1200

The parameter is used to specify the data point used.

10.13.42 Type of display element — Water (volume) — Unit

Options:	m^3

The parameter is used to specify the unit with which the energy is displayed in the display element.

10.13.43 Type of display element — Flow-through volume — Data point type

Data point type

Options:	12,001
	13,002

The parameter is used to specify the data point used.

10.13.44 Type of display element — Flow-through volume — Unit

Options:	Fixed at m^3/h

The parameter is used to specify the unit with which the energy is displayed in the display element.

10.13.45 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.14 Control element "Audio control"

10.14.1 Name of the control element

Options:	<Name>

Naming of the control element for audio control.

The length of the name is limited to 36 characters.

10.14.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.14.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.14.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.14.5 Number of sources

Options:	Setting option from 0 - 8

The parameter is used to set how many audio sources are enabled.

– *0*: No audio sources are enabled. No additional parameters available.

– *1 - 8*: The following supplementary parameters are available:

Source x Name:

Options:	<Name>

Designation of audio source. The length of the name is limited to 40 characters.

Source x type:

Options:	1 bit
	1-byte value [0 - 255]

The parameter is used to specify the size of the communication object.

– *1 bit*: Commands are sent to an audio source with 1 bit (0 or 1). No additional parameters available.

- *1-byte value [0 - 255]*: The value of an audio source is sent as 1-byte value without a sign. The following supplementary parameter is available:

Source x value:

Options:	Setting option from 0 - 255

The parameter is used to send the value per source.

10.14.6 Object type Playback / Pause control

Object type Playback / Pause control:

Options:	1 bit
	1-byte value [0 - 255]

The parameter is used to specify the size of the communication object for sending telegrams.

– *1 bit*: Commands of a playback button are sent with 1 bit (0 or 1). The following supplementary parameter is available:

Value for play:

Options:	0
	1

The parameter is used to send the command of the playback button with "0" or "1".

– *1 bit*: Commands of a pause button are sent with 1 bit (0 or 1). The following supplementary parameter is available:

Value for pause:

Options:	0
	1

The parameter is used to send the command of the pause button with "0" or "1".

- *1-byte value [0 - 255]*: The value of a playback button is sent as 1-byte value without a sign. The following supplementary parameter is available:

Value for play:

Options:	Setting option from 0 - 255

The parameter is used to send the value of the playback button as absolute value.

- *1-byte value [0 - 255]*: The value of a pause button is sent as 1-byte value without a sign. The following supplementary parameter is available:

Value for pause:

Options:	Setting option from 0 - 255

The parameter is used to send the value of the pause button as absolute value.

10.14.7 Use forward/reverse control

Options:	Disabled
	Activated

– *Deactivated*: No forward/reverse control is enabled. No additional parameters available.
– *Activated*: Forward/reverse control is enabled. The following supplementary parameter is available:

10.14.8 Object type Forward/reverse control

Notice
"**Forward/Reverse control**" **object type** is only available if "**Use Forward/Reverse control**" is activated.

Object type Forward/reverse control:

Options:	1 bit
	1-byte value [0 - 255]

The parameter is used to specify the size of the communication object for sending telegrams.

- *1 bit*: Commands for "Forward" are sent with 1 bit (0 or 1). The following supplementary parameter is available:

  Value for forward:

Options:	0
	1

The parameter is used to send the command for "Forward" with "0" or "1".

- *1 bit*: Commands for "Return" are sent with 1 bit (0 or 1). The following supplementary parameter is available:

  Value for return:

Options:	0
	1

The parameter is used to send the command for "Return" with "0" or "1".

- *1-byte value [0 - 255]*: The value for "Forward" is sent as a 1-byte unsigned value. The following supplementary parameter is available:

  Value for forward:

Options:	Setting option from 0 - 255

The parameter is used to send the value for "Forward" as absolute value.

- *1-byte value [0 - 255]*: The value for "Return" is sent as a 1-byte unsigned value. The following supplementary parameter is available:

  Value for return:

Options:	Setting option from 0 - 255

The parameter is used to send the value for "Return" as absolute value.

10.14.9 Use of button for mute

Options:	Deactivated
	Activated

– *Deactivated*: No mute button is enabled. No additional parameters available.

– *Activated*: The mute button is enabled. The following supplementary parameter is available:

Object type mute:

Options:	1 bit
	1-byte value [0 - 255]

The parameter is used to specify the size of the communication object for sending telegrams.

– *1 bit*: Commands of a mute button are sent with 1 bit (0 or 1). The following supplementary parameters are available:

Value for mute:

Options:	0
	1

The parameter is used to send the command for "Mute" with "0" or "1".

Value for unmute:

Options:	0
	1

The parameter is used to send the command for "Unmute" with "0" or "1".

- *1-byte value [0 - 255]*: The value of a mute button is sent as 1-byte value without a sign. The following supplementary parameters are available:

Value for mute:

Options:	Setting option from 0 - 255

The parameter is used to send the value for "Mute" as absolute value.

Value for unmute:

Options:	Setting option from 0 - 255

The parameter is used to send the value for "Unmute" as absolute value.

10.14.1 Use shuffle control

Options:	Deactivated
	Activated

– Deactivated: No random playback is enabled. No additional parameters available.

– Activated: Random playback is enabled. The following supplementary parameter is available:

Object type shuffle control:

Options:	1 bit
	1-byte value [0 - 255]

The parameter is used to specify the size of the communication object for sending telegrams.

- *1 bit*: Random playback commands are sent with 1 bit (0 or 1). The following supplementary parameter is available:

  Value for shuffle:

Options:	0
	1

The parameter is used to send the the "Value for shuffle" with "0" or "1".

- *1-byte value [0..255]*: The value without random playback is sent as a 1-byte unsigned value. The following supplementary parameter is available:

  Value for not shuffle:

Options:	0
	1

The parameter is used to send the the "Value for not shuffle" with "0" or "1".

- *1-byte value [0..255]*: The value without random playback is sent as a 1-byte unsigned value. The following supplementary parameter is available:

  Value for shuffle:

Options:	Setting option from 0 - 255

The parameter is used to send the "Value for shuffle" as absolute value.

Value for not shuffle:

Options:	Setting option from 0 - 255

The parameter is used to send the "Value for not shuffle" as absolute value.

- *1 bit*: Random playback commands are sent with 1 bit (0 or 1). The following supplementary parameter is available:

10.14.2 Use repeat control

Options:	Deactivated
	Activated

– Deactivated: No repetition is enabled. No additional parameters available.

– Activated: The repetition is enabled. The following supplementary parameter is available:

Object type repeat control:

Options:	1 bit
	1-byte value [0 - 255]

The parameter is used to specify the size of the communication object for sending telegrams.

- *1 bit*: Repeat commands are sent with 1 bit (0 or 1). The following supplementary parameter is available:

  Value for repeating:

Options:	0 1

The parameter is used to send the the "Value for repeating" with "0" or "1".

- *1 bit*: Repeat commands are sent with 1 bit (0 or 1). The following supplementary parameter is available:

  Value for not repeating:

Options:	0 1

The parameter is used to send the the "Value for not repeating" with "0" or "1".

- *1-byte value [0..255]*: The value of the repetition is sent as a 1-byte unsigned value. The following supplementary parameter is available:

  Value for repeating:

Options:	Setting option from 0 - 255

The parameter is used to send the "Value for repeating" as absolute value.

- *1-byte value [0 - 255]*: The value of the repetition is sent as a 1-byte unsigned value. The following supplementary parameter is available:

  Value for not repeating:

Options:	Setting option from 0 - 255

The parameter is used to send the "Value for not repeating" as absolute value.

10.14.3 Use of volume button

Options:	Deactivated Activated

– *Deactivated*: No volume button is enabled. No additional parameters available.

– *Activated*: The volume button is enabled. The following supplementary parameter is available:

Object type volume button:

Options:	2 x 1 Bit 1 x 4 Bit 1-byte value [0 - 100%]

The parameter is used to specify the size of the communication object for sending telegrams.

– *2 x 1 bit*: Commands of a volume button are sent with 2 x 1 bit (0 or 1). The following supplementary parameters are available:

Value for increase:

Options:	0 1

The parameter is used to send the command for "Increase volume" with "0" or "1".

Value for decrease:

Options:	0
	1

The parameter is used to send the command for "Decrease volume" with "0" or "1".

– *1 x 4 bit*: Commands of a volume button are sent with 4 bit. No additional parameters available.

- *1-byte value [0 - 255]*: The value of a volume button is sent as 1-byte value without a sign. The following supplementary parameters are available:

  Change of volume [%]:

Options:	Setting option from 1 - 50

The parameter is used to specify in which step widths the volume is raised or lowered.

Telegram is repeated every [sec.]:

Options:	Setting option from 0.25 - 1.25 seconds

The parameter is used to specify the space of time between two telegrams.

10.14.4 Use of ON/OFF button

Options:	Deactivated
	Activated

– *Deactivated*: No ON/OFF button is enabled. No additional parameters available.

– *Activated*: The ON/OFF button is enabled. The following supplementary parameter is available:

Object type ON/OFF button:

Options:	1 bit
	1-byte value [0 - 255]

The parameter is used to specify the size of the communication object for sending telegrams.

– *1 bit*: Commands of an ON/OFF button are sent with 1 bit (0 or 1). The following supplementary parameters are available:

Value for ON:

Options:	0
	1

The parameter is used to send the command for "ON" with "0" or "1".

Value for OFF:

Options:	0
	1

The parameter is used to send the command for "OFF" with "0" or "1".

- *1-byte value [0 - 255]*: The value of an ON/OFF button is sent as 1-byte value without a sign. The following supplementary parameters are available:

Value for ON:

Options:	Setting option from 0 - 255

The parameter is used to send the value for "ON" as absolute value.

Value for OFF:

Options:	Setting option from 0 - 255

The parameter is used to send the value for "OFF" as absolute value.

10.14.5 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.15 "Page link" control element

10.15.1 Name of the control element

Options:	<Name>

Naming of the page link control element.

The length of the name is limited to 36 characters.

10.15.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.15.3 Size of the button

Options:	1x1
	1x2
	2x2

The parameter is used to specify whether the control element occupies one column (one button or control frame) or two columns (two buttons or control frames).

10.15.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.15.5 Linked with page

Options:	<Homepage>
	<System settings>
	<Dashboard>
	<Time programs>
	<Door communication>

The parameter is used to specify with which operating or application page the page link control element is linked.

10.15.6 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.16 Control element "Welcome control"

10.16.1 Name of the control element

Options:	<Name>

Naming of the control element for audio control.

The length of the name is limited to 36 characters.

10.16.2 Name of room (otional)

Options:	<Name>

Naming a room in which the control element Split Unit Control is located.

The length of the name is limited to 36 characters.

10.16.3 Size of the button

Options:	1x1
	1x2
	2x2

Specifies the size of the affected button on the dashboard.

10.16.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

10.16.5 Type of the control element

Options:	Outdoor station
	Analogue camera
	IP Camera

Specifying the control element type of the Welcome Control.

10.16.6 Using trigger object

Options:	Activated
	Deactivated

The parameter is used to specify whether a trigger object is to be used for the activation.

10.16.7 Trigger with

Options:	1
	0
	1 and 0

The parameter is used to specify the signal for the trigger.

10.16.8 Enable 1-bit communication object "Disable"

Options:	Disabled
	Activated

There is the option of temporarily disabling the function via an additional communication object "Disable".

10.17 Application "Door communication"

10.17.1 Use of door communication

Options:	Deactivated
	Activated

The parameter is used to specify whether an application page is displayed in the panel for the door communication.

– *Deactivated*: No application page is displayed. No additional parameters available.

– *Activated*: An application page is displayed. The following supplementary parameters are displayed:

Which door communication system

Options:	Welcome
	Welcome M

The parameter is used to specify which door communication system is used.

10.17.2 Page PIN-protected

Options:	Deactivated
	Activated

The parameter is used to specify whether the application page for the door communication is protected by a PIN code.

– *Deactivated*: The application page is not protected.

– *Activated*: The application page can only be called up by entering a PIN code. The following supplementary parameter is available:

PIN code level:

Options:	Level 1
	Level 2
	Level 3

The parameter is used to specify the PIN code level for the application page.

Notice
Details about the PIN code, see chapter “Basic settings (system settings) of the panel“ on page 78.

10.17.3 Use of control elements [%]

Options:	Deactivated
	Activated

The parameter is used to specify whether the control elements are used.

– *Deactivated*: No control elements are used. No additional parameters available.

– *Activated*: The following supplementary parameters are displayed:

Number of control elements:

Options:	1
	2
	3
	4
	5

The parameter is used to specify how many control elements are used.

Type of the control element x:

Options:	Switch
	Roller blind
	Forced operation
	1-byte value [0-100%]
	1-byte value [0-255]
	8-bit scene

The parameter is used to specify the type of control element used.

– *Switch*: Switching commands are sent with 1 bit (0 or 1), e.g. for switching a switching actuator. The following supplementary parameter is available:

Value for object x:

Options:	OFF
	ON

– *Roller blind*: Allocation of a blind actuator. The following supplementary parameter is available:

Value for object x:

Options:	"Up/Open"
	"Down/Close"

– *Forced operation*: Management systems can access the device directly via KNX. It can additionally be specified that selection can be carried out manually via buttons (forced operation). The following supplementary parameter is available:

Value for object x:

Options:	ON, forced operation active
	OFF, forced operation active
	Deactivate forced operation

– *1-byte value [0 - 100%]*: A value is sent as 1-byte percentage value. The following supplementary parameter is available:

Value for object x:

Options:	Setting option from 0 - 100

– *1-byte value [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. actuating value, angle or brightness value. The following supplementary parameter is available:

Value for object x:

Options:	Setting option from 0 - 255

– *8-bit scene*: A light scene number is sent with 8 bits. The following supplementary parameter is available:

Value for object x:

Options:	Setting option from 1 - 64

Notice
How many "Object type x" parameters are displayed depends on the setting of the "Number of participants" parameter.

Notice
Parameter "Value for object x" can only be set for all options if parameter "Object x is to be changed" is set on "Yes".

Name of the control element x:

Options:	<Name>

The parameter is used to specify the designation that is used for the control element. The length of the name is limited to 60 characters.

Icon of the control element x:

Options:	<Icon>

The parameter is used to specify the icon that is used for the control element.

10.18 Application "Fault and alarm messages" - Global settings

10.18.1 Use of fault and alarm messages

Options:	Deactivated
	Activated

The parameter is used to specify whether the fault and alarm messages are displayed.

– *Disabled*: No display in the panel. No additional parameters available.

– *Activated*: The following parameters appear:

10.18.2 Page PIN-protected

Options:	Deactivated
	Activated

The parameter is used to specify whether the fault and alarm messages application page is protected by a PIN code.

– *Deactivated*: The application page is not protected.

– *Activated*: The application page can only be called up by entering a PIN code. The following supplementary parameter is available:

PIN code level:

Options:	Level 1
	Level 2
	Level 3

The parameter is used to specify the PIN code level for the application page.

Notice
Details about the PIN code, see chapter 9.6.1 “Basic settings (system settings) of the panel“ on page 78.

10.18.3 Enable export

Options:	Deactivated
	Activated

The parameter is used to specify whether the messages can be exported under the fixed file name in CSV format. The messages can then be exported via the application page.

– *Deactivated*: No export. No additional parameters available.

– *Activated*: The following parameter appears:

File name [.CSV]:

Options:	<Text>

The parameter is used to change the file name of the export file.

The length of the name is limited to 60 characters.

10.18.4 Automatic archiving at an acknowledgement

Options:	Deactivated
	Activated

The parameter is used to specify that after acknowledgement in the application page the message is archived immediately and is no longer displayed in the alarm list.

– *Deactivated*: No automatic archiving after acknowledgement. The following supplementary parameter is available:

Automatic archiving as soon as the alarm is no longer active.

Options:	Deactivated
	Activated

  – *Deactivated*: No automatic archiving when the alarm is no longer active.
  – *Activated*: The message is archived and displayed as soon as the alarm is no longer active.

– *Activated*: The message is archived in the application page automatically after the acknowledgement.

10.18.5 Sound for alarm

Options:	Setting option from 1 - 5

The parameter is used to specify which signal tone is to be played during the display of the message. Five different signal tones are available for selection.

10.18.6 Sound for Notice

Options:	Setting option from 1 - 5

The parameter is used to specify which signal tone is to be played during the display of the message. Five different signal tones are available for selection.

10.18.7 Signal tone for error

Options:	Setting option from 1 - 5

The parameter is used to specify which signal tone is to be played during the display of the message. Five different signal tones are available for selection.

10.18.8 Default setting for signal tone volume [%]

Options:	Setting option from 10 - 100

The volume of the signal tones is preset in percent via the parameter.

10.19 Application "Fault and alarm messages" - Settings of the individual messages

10.19.1 Name of message

Options:	<Name>

Designation of message. The length of the name is limited to 60 characters.

10.19.2 Type of message

Options:	Alarm
	Notice
	Error

The parameter is used to specify the type of message that is displayed.

10.19.3 Type of alarm

Options:	1 bit
	14 bytes

The parameter is used to specify whether the alarm is displayed and sent with or without text.

– *1 bit*: No text is displayed and sent when acknowledging the alarm. The following supplementary parameters are available:

Text for alarm message:

Options:	<Text>

The parameter is used to specify the text that is displayed when this message appears. The length of the text is limited to 60 characters.

Sending 0 at acknowledgement:

Options:	Deactivated
	Activated

The parameter is used to specify whether "0" is sent at acknowledgement.

Acoustic alarm signal:

Options:	Deactivated
	Activated

The parameter is used to specify whether the signal tone specified under the global settings is played see chapter 10.18 “Application "Fault and alarm messages" - Global settings“ on page 205.

– *Deactivated*: No acoustic alarm signal. No additional parameters available.

– *Activated*: The signal tone is played at an alarm signal. The following supplementary parameter is available:

Duration of audio signal [min.]:

Options:	Setting option from 1 - 60

The parameter is used to specify how long the specified signal tone is to be played (in minutes).

Repeat of alarm as long as it is active:

Options:	Deactivated
	Activated

– *Deactivated*: In the active state the acoustic alarm signal is not repeated. No additional parameters available.

– *Activated*: The signal tone is repeated as long as the alarm is active. The following supplementary parameter is available:

Repeat time [min.]:

Options:	Setting option from 1 - 60

The parameter is used to specify the cycle (in minutes) with which the alarm is repeated.

– *14 byte*: A text is displayed and sent when acknowledging the alarm. The following supplementary parameters are available:

Sending text at acknowledgement:

Options:	Deactivated
	Activated

– *Deactivated*: No text is sent at acknowledgement. No additional parameters available.

– *Activated*: The text that was specified via the following parameters is sent at acknowledgement:

Text at acknowledgement:

Options:	<Text>

The parameter is used to specify the text that is sent at acknowledgement of the alarm. The length of the text is limited to 60 characters.

Acoustic alarm signal:

Options:	Deactivated
	Activated

The parameter is used to specify whether the signal tone specified under the global settings is played see chapter 10.18 “Application "Fault and alarm messages" - Global settings“ on page 205.

– *Deactivated*: No acoustic alarm signal. No additional parameters available.

– *Activated*: The signal tone is played at an alarm signal. The following supplementary parameter is available:

Duration of audio signal [min.]:

Options:	Setting option from 1 - 60

The parameter is used to specify how long the specified signal tone is to be played (in minutes).

10.20 Application "Scene actuator"

10.20.1 Name of scene actuator

Options:	<Text>

Naming of scene actuator. The length of the name is limited to 60 characters.

10.20.2 Number of participants

Options:	Setting options from 1 - 15

The parameter is used to specify the number of participants (actuators).

Notice
A separate parameter "Object type x" appears for each participant.

10.20.3 Number of scenes

Options:	Setting options from 1 - 10

The parameter is used to specify the number of scenes involved.

Note
A separate parameter set "**Scene x**" appears for each scene.

10.20.4 Overwriting scenes during download

Options:	Deactivated
	Activated

The parameter is used to specify whether the values in existing scenes are to be overwritten during the download.

10.20.5 Telegram delay

Options:	Setting option from 200 ms - 10 seconds

The parameter is used to specify the time delay between two telegrams that are sent consecutively.

10.20.6 Object type x

Options:	Switch
	Roller blind
	Forced operation
	1-byte value [0 - 100%]
	1-byte value [0 - 255]
	RGB colour
	RGBW colour
	Colour temperature
	8-bit scene
	RTC operating mode
	Temperature
	14-byte text

When actuated or during a sequence, components of a scene can send telegrams via the associated communication object. Parameter "Object type x" is used to specify the size of the communication object.

– *Switch*: Switching commands are sent with 1 bit (0 or 1), e.g. for switching a switching actuator. The following supplementary parameter is available:

  Value for object x:

Options:	OFF
	ON

Notice
Parameter "Value for object x" can only be set for all options if parameter "Object x is to be changed" is set on "Yes".

– *Roller blind*: Allocation of a blind actuator. The following supplementary parameter is available:

  Value for object x:

Options:	"Up/Open"
	"Down/Close"

– *Forced operation*: Management systems can access the device directly via KNX. It can additionally be specified that selection can be carried out manually via buttons (forced operation). The following supplementary parameter is available:

  Value for object x:

Options:	ON, forced operation active
	OFF, forced operation active
	Deactivate forced operation

– *1-byte value [0 - 100%]*: A value is sent as 1-byte percentage value. The following supplementary parameter is available:

  Value for object x:

Options:	Setting option from 0 - 100

– *1-byte value [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. actuating value, angle or brightness value. The following supplementary parameter is available:

  Value for object x:

Options:	Setting option from 0 - 255

– *RGB colour*: A colour value is sent as hexadecimal value. The following supplementary parameter is available:

  Value for object x:

Options:	Setting option from #000000 - #FFFFFF

  The entered colour value (red, green, blue) is displayed as colour pattern next to the parameter.

– *RGBW colour*: A colour value is sent as hexadecimal value.

  Value for object x:

Options:	Setting option from #00000000 - #FFFFFFFF

  The entered colour value (red, green, white) is displayed as colour pattern next to the parameter.

– *Colour temperature*: The colour temperature is sent in Kelvin (K). The following supplementary parameter is available:

  Value for object x:

Options:	Setting option from 1500 - 10000

– *8-bit scene*: A light scene number is sent with 8 bits. The following supplementary parameter is available:

  Value for object x:

Options:	Setting option from 1 - 64

– *RTC operating mode*: The RTC operating mode is sent via the communication object. The following supplementary parameter is available:

  Value for object x:

Options:	Comfort
	Auto
	Standby
	ECO
	Frost/heat protection

– *Temperature*: After the control element is actuated, the device sends the parameterized temperature value. The following supplementary parameter is available:

  Value for object x:

Options:	Setting option from 16 - 31

– *14-byte text*: Makes it possible to send any text with a maximum of 15 characters. The following supplementary parameter is available:

  Value for object x:

Options:	<Text>

Notice
How many "Object type x" parameters are displayed depends on the setting of the "Number of participants" parameter.

Notice
Parameter "Value for object x" can only be set for all options if parameter "Object x is to be changed" is set on "Yes".

10.20.7 Name of scene

Options:	<Text>

Designation of scene. The length of the name is limited to 60 characters.

10.20.8 Scene number

Options:	Setting option from 1 - 64

The number of the scene is set via the parameter.

10.20.9 Light scenes can be started with a

Options:	0
	1
	Both

The parameter is used to specify with which separate 1-bit communication object the light scene is started.

10.20.10 Light scene can be stored

Options:	Disabled
	Activated

The parameter is used to specify whether the light scene can be stored.

– *Deactivated*: The light scene will not be stored.
– *Activated*: The light scene can be stored.

10.20.11 Object x is to be changed

Options:	Deactivated
	Activated

– *Deactivated*: No additional parameters available.
– *Activated*: Parameter "Value for object x" appears.

Notice
The setting options for parameter "Value for object x" depend on the setting of parameter "Object type x".

10.21 Application "Presence simulation"

10.21.1 Use of presence simulation

Options:	Deactivated
	Activated

The parameter is used to specify whether presence simulation is displayed.

– *Disabled*: No display in the panel. No additional parameters available.

– *Activated*: An entry on the application page "Time programs" is displayed for activating and deactivating the function on the panel. The following parameters are displayed:

10.21.2 Page PIN-protected

Options:	Deactivated
	Activated

The parameter is used to specify whether the presence simulation application is protected by a PIN code.

– *Deactivated*: The application is not protected.

– *Activated*: The application can only be activated or deactivated by entering a PIN code (replay or record). The following supplementary parameter is available:

PIN code level:

Options:	Level 1
	Level 2
	Level 3

The parameter is used to specify the PIN code level for the application.

Notice
Details about the PIN code, Chapter 9.6.1 “Basic settings (system settings) of the panel“ on page 78.

10.21.3 Enable export

Options:	Deactivated
	Activated

The parameter is used to specify that the recorded telegrams can be exported under the fixed file name in CSV format.

– *Deactivated*: No export. No additional parameters available.

– *Activated*: The following parameter appears:

File name [.CSV]:

Options:	<Text>

The parameter is used to change the file name of the export file.

The length of the name is limited to 60 characters.

10.21.4 Delay time up to activation [min.]

Options:	Setting option from 0 - 60

The parameter is used to specify the number of minutes after which the recorded telegrams are played.

Notice
A selection of "0" means no waiting time.

10.21.5 Object type 1-20

Options:	1 bit
	Value (1 byte)

The parameter is used to specify the object types that are to be recorded via the telegrams.

– *1 bit*: Switch, blind, etc.
– *Value (1 byte)*: Dimmer, scene number, etc.

10.22 Application "Time programs"

10.22.1 Page PIN-protected

Options:	No
	Yes

The parameter is used to specify whether the time programs application page is protected by a PIN code.

– *No*: The application page is not protected.

– *Yes*: The application page can only be called up by entering a PIN code. The following supplementary parameter is available:

PIN code level:

Options:	Level 1
	Level 2
	Level 3

The parameter is used to specify the PIN code level for the application page.

Notice
Details about the PIN code, see chapter “Basic settings (system settings) of the panel“ on page 78.

10.22.2 Overwriting time programs during download

Options:	No
	Yes

The parameter is used to specify whether the existing time programs are to be overwritten during the download.

– *No*: The existing time programs are not to be overwritten during the download.

– *Yes*: The existing time programs will be overwritten during the download.

10.23 Application "Logical functions"

10.23.1 Channel x — Application

Name of channel:

Options:	<Name>

Naming of the channel. The length of the name is limited to 30 characters.

Application:

Options:	Inactive
	Logic gate
	Multiplexer
	Multiplier
	Gate
	Temperature comparator
	Status converter
	Time function

The parameter is used to specify the logic function that is allocated to channel x.

Depending on the selection, individual parameters appear for the respective logic function.

– *Inactive*: The logic functions are not active. No additional parameters available.

– *Logic gate*: If the function is specified with AND, OR, NAND, NOR, XOR or XNOR, up to ten input communication objects can be enabled per logic function. The size of the inputs can be specified either with 1 bit or with 1 byte. At the receipt of a new telegram at the input, they are switched according to the selected function. The inputs can also be individually inverted.

  Each function has an output object on which results determined from the inputs can be sent. The size of the output object can, depending on the parameterization, be 1 bit or 1 byte. The default value that is to be sent at a positive result can be adjusted.

  The following parameters are displayed:

  Number of input objects:

Options:	Setting options from 1 - 10

The parameter is used to set the number of input objects that are to be linked in the logic function. See the explanation above.

Notice
If the parameter is set on "1", the "logic function" parameter is specified on "NOT".

Logic function:

Options:	AND
	OR
	XOR
	XNOR
	NAND
	NOR

The parameter is used to specify the logic gate the communication objects are to be linked with. See the explanation above.

Object type input x:

Options:	1 bit
	1 byte

The parameter is used to specify whether the input object consists of a 1-bit value (0/1) or a 1-byte value (0 - 255). See the explanation above.

Notice
How many "Object type input x" parameters are displayed depends on the setting of the "Number of input objects" parameter.

Initial value input x:

Options:	Initialised with 0
	Initialised with 1

See the explanation above.

Notice
How many "Initial value input x" parameters are displayed depends on the setting of the "Number of input objects" parameter.

Logic input x:

Options:	Normal
	Inverse

See the explanation above.

Notice
How many "Logic input x" parameters are displayed depends on the setting of the "Number of input objects" parameter.

Object type output:

Options:	1 bit
	1 bytes

The parameter is used to specify whether the output object consists of a 1-bit value (0/1) or a 1-byte value (0 - 255). See the explanation above.

Sending output objects:

Options:	With each input telegram
	With a change of the output object

The parameter is used to specify when the output object is sent.

Value of the output object at logic true:

Options:	Output is set on 1
	Defined via output default value true

The parameter is used to specify the value of the output object in the logic status "True". See the explanation above.

Value of the output object at logic untrue:

Options:	Output is set on 0
	Defined via output default value untrue

The parameter is used to specify the value of the output object in the logic status "Untrue". See the explanation above.

– *Multiplexer*: This logic function is used to steer the input data targeted to the output. The function has four communication objects "Control", "Input 1", "Input 2" and "Output". The bit-size of the inputs and outputs can also be set on 1 byte or 2 byte via the "Object type input/output" parameter. The above functionality is retained. This means that only input 1 is visible on the output when the control input has the value "1". Input 2 is switched to the output as soon as the control input has the value "0".

Notice
The output is only sent when there is an actual change of the inputs. If, for example, the control input changes without a change of the input values, the output signal remains as it is. A new output value is sent only when an input signal changes.

The following parameters are displayed:

Object type input/output:

Options:	1 bit
	1 byte
	2 bytes

The parameter is used to specify the size of the communication object. See the explanation above.

– *Multiplier*: This function makes it possible to send up to ten output telegrams with one input telegram. The size of the input communication object is 1 bit or 1 byte. The size of the output communication objects can be either 1 bit or 1 byte. The size is adjusted via a corresponding parameter.

Whether a multiplier is triggered at an ON or OFF telegram or via a 1-byte value between 0 and 255, can be specified via the "Start command" setting. There is also the option of sending the output telegrams consecutively time-delayed. The default delay time is 200 ms.

The values for sending output telegrams can be set individually for each output via a corresponding parameter. "On" or "Off" can be set for 1-bit outputs. Values from 0 to 100% can be specified for 1-byte outputs.

The following parameters are displayed:

Start requirements:

Options:	1 bit
	1 bytes

See the explanation above.

– *1 bit*: The following parameter appears:

Start command:

Options:	OFF - telegram
	ON - telegram

See the explanation above.

– *1 byte*: The following parameter appears:

Start command:

Options:	Setting options from 0 - 255

See the explanation above.

Telegram delay:

Options:	Setting option from 200 ms - 10 seconds

The parameter is used to set the time delay for telegrams.

Used outputs:

Options:	Setting options from 1 - 10

The parameter is used to set the number of output objects to be used in the "Multiplier" application.

Object type output x:

Options:	1 bit
	1 byte [0 - 100%]

The parameter is used to specify whether the output object consists of a 1-bit value (0/1) or a 1-byte value (in percent).

Notice
How many "Object type output x" parameters are displayed depends on the setting of the "Outputs used" parameter.

– *1 bit*: The following parameter appears:

Value of output x:

Options:	0
	1

This parameter is used to specify the value the communication object has on output x.

– *1 byte [0 - 100%]*: The following parameter appears:

Value of output x:

Options:	Setting options from 0 - 100

This parameter is used to specify the value (in percent) the communication object has on output x.

Notice
How many "Value of output x" parameters are displayed depends on the setting of the "Outputs used" parameter.

– *Gate*: This logic function can be used to filter certain signals and block the flow of signals temporarily. The function has three communication objects: "Control input", "Input" and "Output". The input or output can take on size 1 bit, 2 bit, 1 byte, 2 byte, 4 byte or 14 byte. The control can take place from input to output, from output to input and in both directions. Enabling via the control input can take place via an ON or OFF telegram.

It can also be set as to whether the input signals are to be stored or not "during the blocking phase". If the setting "Store input signals during blocking" has been selected and if a

telegram has been received on the input during the blocking phase, the output sends its value.

If the size of the input and output objects is 1 bit, the input can also be inverted. This allows an inverting member to be implemented via a gate. It is also possible to block signals via the "Filter function" setting. Either "Do not filter" or the signal "Filtered out ON" or the signal "Filtered out OFF" is sent.

The following parameters are displayed:

Direction of data flow:

Options:	Input -> Output
	Output -> Input
	Input <-> Output

The parameter is used to specify the direction data are sent via the channel. See the explanation above.

Sending an output telegram:

Options:	At every receipt
	At changed values

The parameter is used to specify when the output telegram is sent.

Control input:

Options:	Activation at OFF
	Activation at ON

See the explanation above.

Object type input/output:

Options:	Switch
	Forced operation
	1-byte value [0% - 100%]
	1-byte value [0 - 255]
	1-byte value [-128 - 127]
	Scene number
	RTC operating mode
	Temperature
	2-byte value [-32768 - +32767]
	2-byte value [0 - 65535]
	2-byte floating point
	4-byte value [-2147483648 - 2147483647]
	4-byte value [0 - 4294967295]
	14-byte text

The parameter is used to specify the size of the communication object.

– *Switch*: The following supplementary parameters are available:

Inverting an input:

Options:	Deactivated
	Activated

The parameter is used to specify whether the switching input is inverted.

Filter function:

Options:	Do not filter
	Filter 0
	Filter 1

See the explanation above.

- *Forced operation*: Management systems can access the device directly via KNX. However, it can also be specified that one can select manually (forced operation) via buttons. No additional parameters available.
- *1-byte value [0% - 100%]*: A value is sent as 1-byte value without a sign (percentage value). No additional parameters available.
- *1-byte value [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. actuating value, angle or brightness value. No additional parameters available.
- *1-byte value [-128 - 127]*: A value is sent as 1-byte value with a sign, e.g. actuating value. No additional parameters available.
- *Scene number*: The parameter is used to link the channel with a scene number. No additional parameters available.
- *RTC operating mode*: After actuating the control element the device switches to the parameterized operating mode. No additional parameters available.
- *Temperature*: After the control element is actuated, the device sends the parameterized temperature value. No additional parameters available.
- *2-byte value [-32768 - +32767]*: A value is sent as 2-byte value with a sign, e.g. actuating value or time difference. No additional parameters available.
- *2-byte value [0 - 65535]*: A value is sent as 2-byte value without a sign, e.g. actuating value or time interval. No additional parameters available.
- *2-byte floating point*: A value is sent as 2-byte floating point value, e.g. a temperature value, a time duration, a power or a consumption value. No additional parameters available.
- *4-byte value [-2147483648 - 2147483647]*: A value is sent as 4-byte value with a sign, e.g. actuating value or time difference. No additional parameters available.
- *4-byte value [0 - 4294967295]*: A value is sent as 4-byte value without a sign, e.g. actuating value. No additional parameters available.
- *14-byte text*: Makes it possible to send a text. No additional parameters available.

Saving input signal during blocking:

Options:	Deactivated
	Activated

See the explanation above.

- *Temperature comparator*: This function can be used to compare temperature values. The following parameters are displayed:

  Type of comparator:

Options:	Temperature with a constant
	2 temperatures

This function can be used to compare two temperatures. Or a temperature can be compared with an internal specified temperature value (constant).

– *Temperature with a constant*: This function makes an input available with a 2-byte communication object. On this object temperature telegrams are received and compared, which are sent from a KNX temperature sensor for example.

The following parameters are displayed:

Input 2 [°C]:

Options:	Setting options from -30 - +70

This parameter is used to specify the value with which the temperature at input 1 is to be compared.

Hysteresis:

Options:	Setting options from 0.5 - 10

– *2 temperatures*: This function makes two separate inputs with 2-byte communication objects available. On these objects temperature telegrams are received and compared with each other, which are sent from KNX temperature sensors. No additional parameters available.

Object type of the output:

Options:	1 bit
	1 bytes

The parameter is used to specify whether the output object sends a 1-bit value (0/1) or a 1-byte value (0 - 255).

– *1 bit*: The following supplementary parameters are available:

Sending value when input 1 > input 2:

Options:	OFF telegram
	ON telegram

The parameter is used to specify which output object is sent (ON or OFF) when input 1 is logically larger than input 2.

Sending value when input 1 < input 2:

Options:	OFF telegram
	ON telegram

The parameter is used to specify which output object is sent (ON or OFF) when input 1 is logically smaller than input 2.

– *1 byte*: The following supplementary parameters are available:

Sending value when input 1 > input 2:

Options:	Setting options from 0 - 255

The parameter is used to specify which output object is sent when input 1 is logically larger than input 2.

Sending value when input 1 < input 2:

Options:	Setting options from 0 - 255

The parameter is used to specify which output object is sent when input 1 is logically smaller than input 2.

Telegram is sent at:

Options:	Change output
	Output 1 is larger than input 2
	Output 1 is smaller than input 2

A telegram is sent when the selected condition is met.

Cyclic sending of output:

Options:	Deactivated
	Activated

The parameter is used to specify whether the output telegram is sent in cycles.

– *Deactivated*: No additional parameters available.

– *Activated*: The following parameter appears:

Cycle time:

Options:	Setting options from 00:00:01 - 00:30:00

The parameter is used to specify the cycle time (hh:mm:ss).

– *Status converter*: This function is used to convert an input value into a 14-byte text or divide it into several 1-bit telegrams. The following parameters are displayed:

Type of converter:

Options:	1 bit -> text
	1 byte -> text
	1 byte -> 8x1 bit
	2 byte -> 16x1 bit

See the explanation above.

– 1 bit -> text: A 1-bit value is converted into text. The following parameter appears:

Number of inputs:

Options:	Setting options from 1 - 4

The parameter is used to set the number of available inputs. The following parameter appears:

Using value xxxx:

Options:	Deactivated
	Activated

The parameter is used to specify whether the signal is used for the conversion into text.

– *Deactivated*: No additional parameters available.

– *Activated*: The following parameter appears:

Text for value xxxx:

Options:	<Text>

Naming of the value. The length of the text is limited to 15 characters.

Notice
How many "Use value xxxxx" parameters and "Text for value xxxx" are displayed depends on the setting of the "Number of inputs" parameter.

– 1 byte -> text: A 1-byte value is converted into text. The following parameter appears:

Number of texts:

Options:	Setting options from 1 - 16

The parameter is used to set the number of values to be converted into text. The following parameters are displayed:

Text x for value [0 - 255]:

Options:	Setting options from 0 - 255

The parameter is used to set which value is to be converted into text x.

Text x:

Options:	<Text>

Naming of the value. The length of the text is limited to 15 characters.

– 1 byte -> 8x1 bit: A 1-byte value is converted into eight 1-bit values. The following parameter appears:

Sending output values:

Options:	At every receipt
	At changed values

The parameter is used to specify when the 1-byte value is converted and sent.

– 2 byte -> 16x1 bit: A 1-byte value is converted into sixteen 1-bit values. The following parameter appears:

Sending output values:

Options:	At every receipt
	At changed values

The parameter is used to specify when the 1-byte value is converted and sent.

– *Time function*: The 1-bit communication objects "Input" and "Output" are available for the time function.

When an ON telegram is received via 1-bit communication object "Input", the staircase light period is triggered and an ON telegram is sent on the 1-bit communication object "Output". After the set period has expired, an OFF telegram is sent via the output object.

If an OFF telegram is received during the staircase light period, the staircase light period is reset and an OFF telegram is sent on the output.

If an ON telegram is received again during the staircase light period, the delay time can be restarted again (retrigger). If this behaviour is desired, the "Retrigger" parameter is to be set on "Yes". A switch-on delay time can be additionally activated. This means that the start of the staircase light period and the sending of an ON telegram on the output object can happen only after the switch-on delay time has expired.

The following parameters are displayed:

Type of time function:

Options:	Staircase lighting
	ON/OFF delay

The parameter is used to select between a staircase light function and an On/Off delay.

– *Staircase lighting*: The following parameters are displayed:

Staircase light period [hh:mm:ss]:

Options:	Setting options from 00:00:01 - 12:00:00

The time of the switch-off delay (hh:mm:ss) is set via the parameter.

Use of switch-on delay time:

Options:	Deactivated
	Activated

The parameter is used to specify whether the staircase light is switched with a switch-on delay.

– *Deactivated*: No additional parameters available.

– *Activated*: The following parameter appears:

Switch-on delay time [hh:mm:ss]:

Options:	Setting options from 00:00:01 - 12:00:00

The time of the switch-off delay (hh:mm:ss) is set via the parameter.

Retriggerable:

Options:	Deactivated
	Activated

The parameter is used to specify whether the delay times are reset or restarted with renewed switching of the staircase light.

– *ON/OFF delay*: The following parameters are displayed:

Use of switch-on delay time:

Options:	Deactivated
	Activated

The parameter is used to specify whether the time function is switched with a switch-on delay.

– *Deactivated*: No additional parameters available.

– *Activated*: The following parameter appears:

Switch-on delay time [hh:mm:ss]:

Options:	Setting options from 00:00:01 - 12:00:00

The time of the switch-on delay (hh:mm:ss) is set via the parameter.

Use of switch-off delay time:

Options:	Deactivated
	Activated

The parameter is used to specify whether the time function is switched with a switch-off delay.

– *Deactivated*: No additional parameters available.
– *Activated*: The following parameter appears:

  Switch-off delay time [hh:mm:ss]:

Options:	Setting options from 00:00:01 - 12:00:00

The time of the switch-off delay (hh:mm:ss) is set via the parameter.

10.24 Application "Internal RTC"

10.24.1 General - Control function

Options:	Heat
	Heating with additional stage
	Cool
	Cooling with additional stage
	Heating and cooling
	Heating and cooling with additional stage

– *Heating*: For operating a heat-based single-room control. The temperature is regulated to the setpoint value defined in the parameter. The "Controller type" and "Heating type" can be programmed for optimal control.

– *Heating with additional stage*: In addition to the control function described under heating, the additional stage enables the activation of an additional heating circuit. This type of additional stage is used, for example, to quickly heat up a bathroom with floor heating via a heated towel rack.

– *Cooling*: For operating a cooling-based single-room control. The temperature is regulated to the setpoint value defined in the parameter. The "Controller type" and "Cooling type" can be programmed for optimal control.

– *Cooling with additional stage*: In addition to the control function described under cooling, the additional stage enables the activation of an additional cooling device. This type of additional stage is used, for example, to quickly cool a room via an added cooling device.

– *Heating and cooling*: For operating a two-wire or four-wire system used to heat or cool a room. Switching between heating and cooling takes place using a central switch (two-wire system) or is carried out manually and / or automatically via the single room temperature controller (four-wire system).

– *Heating and cooling* with an additional stage: In addition to the heating and cooling functions, one additional stage each with an autonomous controller type can be programmed.

10.24.2 General - Operating mode after reset

Options:	Comfort
	Standby
	Eco mode
	Frost/heat protection

After a reset the device will run in the operating mode after a restart until a new operating mode is set as the result of device operation or by communication objects, as the case may be. This operating mode should be defined during the planning phase. An improperly defined operating mode can result in a loss of comfort or increased energy consumption.

– *Comfort*: If the room temperature is not automatically lowered and the room is therefore controlled independent of its use.

– *Standby*: If the room is controlled automatically, e.g. by a presence detector, as a function of its use.

– *Eco mode*: If the room is controlled automatically or manually as a function of its use.
– *Frost/heat protection*: If only the building protection function is necessary in the room after a reset.

10.24.3 General - Additional functions/objects

Options:	Deactivated
	Activated

– This parameter enables additional functions and communication objects.

10.24.4 General — Delay time for read telegrams after reset [s]

Options:	Setting option from 1 - 255 seconds

– This parameter can be used to receive telegrams via the "Input" object. The received telegrams are sent with the set delay time to the "Output" object after a reset.

Note
This parameter is only available if the "Additional function" parameter is set to "Yes".

10.24.1 General - "Current HVAC operating mode" object active

Options:	Deactivated
	Activated

The parameter is used to specify whether the "Current HVAC operating mode" object is activated.

10.24.2 Heating control

Notice
Only available when the "Control function" parameter is set either on "Heating," "Heating with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

10.24.3 Heating control - Control value type

Options:	2-point 1 bit, Off/On
	2-point 1 byte, (0/100%)
	PI continuous, 0-100%
	PI PWM, On/Off
	Fan coil unit

The actuation of the control valve is determined by the selection of the controller type.

– *2-Point 1 Bit, Off/On*: The 2-point control is the simplest type of control. The controller switches on when the room temperature drops below a certain level (setpoint temperature value minus hysteresis) and switches off when a particular value (setpoint temperature value plus hysteresis) is exceeded. The switch-on and switch-off commands are sent as 1-bit commands.
– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).
– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint value and enables a precise regulation of the room temperature to the setpoint value. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. In addition, the control value can be sent cyclically.
– *PI PWM, On/Off*: This also is a PI controller. The output is as a 1-bit command. For this, the calculated control value is converted into a pulse-interval signal.
– *Fan coil unit*: The fan coil controller functions similar to the PI continuous controller. In addition, it allows the separate control of the fan in the fan coil unit (e.g. fan speed levels 1 - 3).

Notice
The controller parameters "Type of heating" and "Basic-stage heating" are only available in dependence of the selected parameters "Type of control value" and "Extended settings".

10.24.4 Heating control — Heating type

Optionen:	PI continuous, 0 – 100% and PI PWM, On/Off:
	▪ Area (e.g. floor heating) 4°C 200 min
	▪ Convector (e.g. heater) 1.5°C 100 min
	▪ Free configuration

	Fan coil:
	▪ Fan coil 4°C 90 min
	▪ Free configuration

Multiple heating types (panel heating, convector heating or fan coil) with preset parameters are available to the user.

– If the required heating type is not available, individual parameters can be specified in free configuration.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.5 Heating control — P-component

Options:	Setting option between 1 - 20

The P-component stands for the proportional range in a control. It fluctuates around the setpoint value and can be used to influence the control speed of a PI controller. The smaller the value set, the faster the control reacts. However, the value should not be set too small because otherwise there may be a risk of an overshoot. A P-component from 0.1 to 2 K can be set.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%,"PI PWM, On/Off“ or "Fan coil". In addition, the "Heating type" parameter must be set on "Free configuration".

10.24.6 Heating control — I-component

Options:	Setting option between 0 - 600

The I-component refers to the readjust time of a control. The integral component has the effect of moving the room temperature slowly toward, and ultimately reaching, the setpoint value. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the readjust time.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%,"PI PWM, On/Off“ or "Fan coil". In addition, the "Heating type" parameter must be set on "Free configuration".

10.24.7 Heating control — Extended settings

Options:	Deactivated
	Activated

– This parameter enables additional functions and communication objects, e.g. "Basic stage heating".

10.24.8 Basic stage heating

Notice
Only available when the "Extended settings" parameter under "Heating control" is activated.

10.24.9 Basic stage heating — Status object heating

Options:	Deactivated
	Activated

– The parameter enables the "Status heating" communication object.

10.24.10 Basic stage heating — Mode of the control value

Options:	Normal
	Inverse

The mode of the control value can be used to adapt the control value to de-energised opened (normal) or de-energised closed (inverse) valves.

– *Normal*: Value 0 means "Valve closed".
– *Inverse*: Value 0 means "Valve open".

10.24.11 Basic stage heating — Hysteresis

Options:	Setting option between 0.3 - 25

The hysteresis of the two-point controller specifies the fluctuation range of the controller around the setpoint value. The lower switching point is located at "Setpoint value minus hysteresis" and the upper point is at "Setpoint value plus hysteresis".

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On" or "2-point 1 Byte, 0/100%".

10.24.12 Basic stage heating — Control value difference for sending of heating control value

Options:	2 %
	5 %
	10 %
	Send cyclic only

The control values of the 0 - 100% PI continuous controller are not transmitted after every calculation. Instead, they are transmitted when the calculation results in a value that is different enough to the previous sent value to make a transmission meaningful. This value difference can be entered here.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.13 Basic stage heating — Cyclic sending of the control value

Options:	00:01:00 - 01:00:00

The current control value used by the device can be cyclically transmitted to the bus.

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On, 2-point 1 Byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

10.24.14 Additional stage heating - PWM cycle heating

Options:	00:01:00 - 01:00:00

In PI PWM, On/off the control value percentage values are converted into a pulse-interval signal. This means that a selected PWM cycle will be divided into an on-phase and an off-phase based on the control value. Accordingly, a control value output of 33% in a PWM cycle of 15 min. results in an On-phase of five minutes and an Off-phase of 10 min. The time for a PWM cycle can be specified here.

Notice
This parameter is only available when the "Control value type" parameter is set on "PI PWM, On/Off“.

10.24.15 Basic stage heating — Maximum control value (0 - 255)

Options:	Setting option between 0 - 255

The maximum control value of the PI controller defines the maximum value outputted by the controller. If a maximum value under 255 is chosen, the value will not be exceeded, even if the controller calculates a higher control value.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.16 Basic stage heating — Minimum control value for basic load (0 to 255)

Options:	Setting option between 0 - 255

The minimum control value of the PI controller defines the minimum value output by the controller. If a minimum value greater than zero is chosen, the controller will not output a lower value, even if it calculates a value that is lower. This parameter can be used to set a basic load, e.g. for operating floor heating. Even if the controller calculates the control value zero, a heating medium will flow through the floor heating system to prevent the floor from cooling down. Under

"Settings of basic load", it is also possible to define whether this basic load will be permanently active or whether it will be switched by the "Basic load" object.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.17 Control of additional heating stage

Notice
Only available when the "Control function" parameter is set either on "Heating with additional stage," or "Heating and cooling with additional stages".

10.24.18 Control of additional heating stage — Control value type

Options:	2-point 1 bit, Off/On
	2-point 1 byte, (0/100%)
	PI continuous, 0-100%
	PI PWM, On/Off
	Fan coil

The actuation of the control valve is determined by the selection of the controller type.

– *2-Point 1 Bit, Off/On*: The 2-point control is the simplest type of control. The controller switches on when the room temperature drops below a certain level (setpoint temperature value minus hysteresis) and switches off when a particular value (setpoint temperature value plus hysteresis) is exceeded. The switch-on and switch-off commands are transmitted as 1-bit commands.

– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).

– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint value and enables a precise regulation of the room temperature to the setpoint value. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. The control value can also be transmitted cyclically.

– *PI PWM, On/Off*: This also is a PI controller. Here, the output is a 1-bit command. For this to occur, the calculated control value is converted into a pulse-interval signal.

– *Fan coil*: The fan coil controller operates like the PI continuous controller. In addition, it allows the separate activation of the fan in the fan coil unit (e.g. fan speed levels 1 - 3).

10.24.19 Control of additional heating stage — Additional heating type

Options:	PI continuous, 0 – 100% and PI PWM, On/Off:
	▪ Area (e.g. floor heating) 4°C 200 min
	▪ Convector (e.g. heater) 1.5°C 100 min
	▪ Free configuration
	Fan coil:
	▪ Fan coil 4°C 90 min
	▪ Free configuration

Multiple heating types (panel heating, convector heating or fan coil) with preset parameters are available to the user.

– If the required heating type is not available, individual parameters can be specified in the free configuration.

Note
This parameter is only available when "Control value type" parameter for the additional stage is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.20 Control of additional heating stage - P-component

Options:	Setting option between 1 - 25

The P-component stands for the proportional range in a control. It fluctuates around the setpoint value and can be used to influence the control speed of a PI controller. The smaller the value set, the faster the control reacts. However, the value should not be set too small because otherwise there may be a risk of an overshoot. A P-component from 1 to 25 K can be set.

Notice
This parameter is only available when "Control value type" parameter for the additional stage is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". The "Additional heating type" parameter must be set on "Free configuration".

10.24.21 Control of additional heating stage - I-component

Options:	Setting option between 0 - 600

The I-component refers to the readjust time of a control. The integral component has the effect of moving the room temperature slowly toward, and ultimately reaching, the setpoint value. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the readjust time.

Notice
This parameter is only available when "Control value type" parameter for the additional stage is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". The "Additional heating type" parameter must be set on "Free configuration".

10.24.22 Control of additional heating stage - Temperature difference to basic stage

Options:	Setting option between 0 - 25

The setpoint temperature of the additional stage is defined as a function of the current setpoint temperature of the base stage and is expressed as a difference. The value represents the setpoint value starting at which the additional stage will operate.

10.24.23 Control of additional heating stage - Extended settings

Options:	Deactivated

	Activated

This parameter enables additional functions and communication objects, e.g. "Additional heating stage".

10.24.24 Additional heating stage

Notice
Only available when the "Extended settings" parameter under "Control of additional heating stage" is activated.

10.24.25 Additional heating stage — Mode of the control value

Options:	Normal
	Inverse

The mode of the control value can be used to adapt the control value to de-energised opened (normal) or de-energised closed (inverse) valves.

– N*ormal*: Value 0 means "Valve closed".
– *Inverse*: Value 0 means "Valve open".

10.24.26 Additional stage heating - PWM cycle heating

Options:	00:01:00 - 01:00:00

In PI PWM, On/off the control value percentage values are converted into a pulse-interval signal. This means that a selected PWM cycle will be divided into an on-phase and an off-phase based on the control value. Accordingly, a control value output of 33% in a PWM cycle of 15 min. results in an On-phase of five minutes and an Off-phase of 10 min. The time for a PWM cycle can be specified here.

Notice
This parameter is only available when the "Control value type" parameter is set on "PI PWM, On/Off“.

10.24.27 Additional heating stage — Control value difference for sending of heating control value

Options:	2 %
	5 %
	10 %
	Send cyclic only

The control values of the 0 - 100% PI continuous controller are not transmitted after every calculation. Instead, they are transmitted when the calculation results in a value that is different enough to the previous sent value to make a transmission meaningful. This value difference can be entered here.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.28 Additional heating stage - Cyclic sending of the control value

Options:	00:01:00 - 01:00:00

The current control value used by the device can be cyclically transmitted to the bus.

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On", 2-point 1-Byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

10.24.29 Additional heating stage — Maximum control value (0 - 255)

Options:	Setting option between 0 - 255

The maximum control value of the PI controller defines the maximum value outputted by the controller. If a maximum value under 255 is chosen, the value will not be exceeded, even if the controller calculates a higher control value.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.30 Additional heating stage — Minimum control value for basic load (0 - 255)

Options:	Setting option between 0 - 255

The minimum control value of the PI controller defines the minimum value output by the controller. If a minimum value greater than zero is chosen, the controller will not output a lower value, even if it calculates a value that is lower. This parameter can be used to set a basic load, e.g. for operating floor heating. Even if the controller calculates the control value zero, a heating medium will flow through the floor heating system to prevent the floor from cooling down. Under "Settings of basic load", it is also possible to define whether this basic load will be permanently active or whether it will be switched by the "Basic load" object.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.31 Additional heating stage - Hysteresis

Options:	Setting option between 0.3 - 25

The hysteresis of the two-point controller specifies the fluctuation range of the controller around the setpoint value. The lower switching point is located at "Setpoint value minus hysteresis" and the upper point is at "Setpoint value plus hysteresis".

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On" or "2-point 1 Byte, 0/100%".

10.24.32 Cooling control

Notice
Only available when the "Control function" parameter is set either on "Cooling," "Cooling with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

10.24.33 Cooling control — Control value type

Options:	2-point 1 bit, Off/On
	2-point 1 byte, (0/100%)
	PI continuous, 0-100%
	PI PWM, On/Off
	Fan coil

The actuation of the control valve is determined by the selection of the controller type.

– *2-Point 1 Bit, Off/On*: The 2-point control is the simplest type of control. The controller switches on when the room temperature drops below a certain level (setpoint temperature value minus hysteresis) and switches off when a particular value (setpoint temperature value plus hysteresis) is exceeded. The switch-on and switch-off commands are transmitted as 1-bit commands.
– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).
– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint value and enables a precise regulation of the room temperature to the setpoint value. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. The control value can also be transmitted cyclically.
– *PI PWM, On/Off*: This also is a PI controller. Here, the output is a 1-bit command. For this to occur, the calculated control value is converted into a pulse-interval signal.
– *Fan coil*: The fan coil controller operates like the PI continuous controller. In addition, it allows the separate activation of the fan in the fan coil unit (e.g. fan speed levels 1 - 3).

10.24.34 Cooling control — Cooling type

Options:	PI continuous, 0 – 100% and PI PWM, On/Off:
	▪ Area (e.g. cooling ceiling) 5°C 240 min
	▪ Free configuration
	Fan coil:
	▪ Fan coil 4°C 90 min
	▪ Free configuration

Two cooling types (area or fan coil) with preset parameters are available to the user.

If the required cooling type is not available, individual parameters can be specified in free configuration.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.35 Cooling control - P-component

Options:	Setting option between 1 - 25

The P-component stands for the proportional range in a control. It fluctuates around the setpoint value and can be used to influence control speed of a PI controller. The smaller the value set, the faster the control reacts. However, the value should not be set too small because otherwise there may be a risk of an overshoot. A P-component from 1 to 25 K can be set.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Cooling type" parameter must be set on "Free configuration".

10.24.36 Cooling control - I-component

Options:	Setting option between 0 - 600

The I-component refers to the readjust time of a control. The integral component has the effect of moving the room temperature slowly toward, and ultimately reaching, the setpoint value. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the readjust time.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Cooling type" parameter must be set on "Free configuration".

10.24.37 Cooling control - Extended settings

Options:	Deactivated
	Activated

This parameter enables additional functions, e.g. "Basic stage cooling".

10.24.38 Basic stage cooling

Notice
Only available when the "Extended settings" parameter under "Cooling control" is activated.

10.24.39 Basic stage cooling — Status object cooling

Options:	Deactivated
	Activated

This parameter enables the "Status cooling" communication object.

10.24.40 Basic stage cooling — Mode of the control value

Options:	Normal
	Inverse

The mode of the control value can be used to adapt the control value to de-energised opened (normal) or de-energised closed (inverse) valves.

– N*ormal*: Value 0 means "Valve closed".
– *Inverse*: Value 0 means "Valve open".

10.24.41 Basic stage heating - Control value difference for sending of heating control value

Options:	2%
	5%
	10%
	Send cyclic only

The control values of the 0 - 100% PI continuous controller are not transmitted after every calculation. Instead, they are transmitted when the calculation results in a value that is different enough to the previous sent value to make a transmission meaningful. This value difference can be entered here.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%,"PI PWM, On/Off“ or "Fan coil".

10.24.42 Basic stage cooling — Cyclic sending of the control value

Options:	00:01:00 - 01:00:00

The current control value used by the device can be cyclically transmitted to the bus.

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On", "2-point 1 Byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

10.24.43 Basic stage cooling — Hysteresis

Options:	Setting option between 0.3 - 25

The hysteresis of the two-point controller specifies the fluctuation range of the controller around the setpoint value. The lower switching point is located at "Setpoint value minus hysteresis" and the upper point is at "Setpoint value plus hysteresis".

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On" or "2-point 1 Byte, 0/100%".

10.24.44 Additional stage cooling — PWM cycle cooling (min)

Options:	00:01:00 - 01:00:00

In PI PWM, On/off the control value percentage values are converted into a pulse-interval signal. This means that a selected PWM cycle will be divided into an on-phase and an off-phase based on the control value. Accordingly, a control value output of 33% in a PWM cycle of 15 min. results in an On-phase of five minutes and an Off-phase of 10 min. The time for a PWM cycle can be specified here.

Notice
This parameter is only available when the "Control value type" parameter is set on "PI PWM, Off/On“.

10.24.45 Basic stage cooling — Maximum control value (0 - 255)

Options:	Setting option between 0 - 255

The maximum control value of the PI controller defines the maximum value outputted by the controller. If a maximum value under 255 is chosen, the value will not be exceeded, even if the controller calculates a higher control value.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.46 Basic stage cooling — Minimum control value for basic load (0 to 255)

Options:	Setting option between 0 - 255

The minimum control value of the PI controller defines the minimum value output by the controller. If a minimum value greater than zero is chosen, the controller will not output a lower value, even if it calculates a value that is lower. This parameter can be used to set a basic load, e.g. for operating surface cooling. Even if the controller calculates the control value zero, a

cooling medium will flow through the cooling area to prevent the floor from heating up. Under "Settings of basic load", it is also possible to define whether this basic load will be permanently active or whether it will be switched by the "Basic load" object.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.47 Control of additional cooling stage

Notice
Only available when the "Control function" parameter is set either on "Cooling with additional stage," or "Heating and cooling with additional stages".

10.24.48 Control of additional cooling stage - Control value type

Options:	2-point 1 bit, Off/On
	2-point 1 byte, (0/100%)
	PI continuous, 0-100%
	PI PWM, On/Off
	Fan coil

The actuation of the control valve is determined by the selection of the controller type.

– *2-Point 1 Bit, Off/On*: The 2-point control is the simplest type of control. The controller switches on when the room temperature drops below a certain level (setpoint temperature value minus hysteresis) and switches off when a particular value (setpoint temperature value plus hysteresis) is exceeded. The switch-on and switch-off commands are sent as 1-bit commands.
– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).
– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint value and enables a precise regulation of the room temperature to the setpoint value. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. In addition, the control value can be sent cyclically.
– *PI PWM, On/Off*: This also is a PI controller. The output is as a 1-bit command. For this, the calculated control value is converted into a pulse-interval signal.
– *Fan coil*: The fan coil controller operates like the PI continuous controller. In addition, it allows the separate activation of the fan in the fan coil unit (e.g. fan speed levels 1 - 3).

10.24.49 Control of additional cooling stage — Cooling type

Options:	PI continuous, 0 – 100% and PI PWM, On/Off:
	▪ Area (e.g. cooling ceiling) 5°C 240 min
	▪ Free configuration
	Fan coil:
	▪ Fan coil 4°C 90 min
	▪ Free configuration

Two cooling types (area or fan coil) with preset parameters are available to the user.

If the required cooling type is not available, individual parameters can be specified in free

configuration.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.50 Control of additional cooling stage — P-component

Options:	Setting option between 1 - 25

The P-component stands for the proportional range in a control. It fluctuates around the setpoint value and can be used to influence control speed of a PI controller. The smaller the value set, the faster the control reacts. However, the value should not be set too small because otherwise there may be a risk of an overshoot. A P-component from 1 to 25 K can be set.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Cooling type" parameter must be set on "Free configuration".

10.24.51 Control of additional cooling stage — I-component

Options:	Setting option between 0 - 600

The I-component refers to the readjust time of a control. The integral component has the effect of moving the room temperature slowly toward, and ultimately reaching, the setpoint value. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the readjust time.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Cooling type" parameter must be set on "Free configuration".

10.24.52 Control of additional cooling stage - Temperature difference to basic stage

Options:	Setting option between 0 - 25

The setpoint temperature of the additional stage is defined as a function of the current setpoint temperature of the base stage and is expressed as a difference. The value represents the setpoint value starting at which the additional stage will operate.

10.24.53 Control of additional cooling stage — Extended settings

Options:	Deactivated
	Activated

This parameter enables additional functions and communication objects, e.g. "Additional cooling stage".

10.24.54 Additional cooling stage

Note
Only available when the "Extended settings" parameter under "Control of additional cooling stage" is set on "Yes".

10.24.55 Additional cooling stage — Mode of the control value

Options:	Normal
	Inverse

The mode of the control value can be used to adapt the control value to de-energised opened (normal) or de-energised closed (inverse) valves.

– *Normal*: Value 0 means "Valve closed".
– *Inverse*: Value 0 means "Valve open".

10.24.56 Additional stage cooling — PWM cycle cooling (min)

Options:	00:01:00 - 01:00:00

In PI PWM, On/off the control value percentage values are converted into a pulse-interval signal. This means that a selected PWM cycle will be divided into an on-phase and an off-phase based on the control value. Accordingly, a control value output of 33% in a PWM cycle of 15 min. results in an On-phase of five minutes and an Off-phase of 10 min. The time for a PWM cycle can be specified here.

Notice
This parameter is only available when the "Control value type" parameter is set on "PI PWM, Off/On“.

10.24.57 Additional cooling stage — Control value difference for sending of cooling control value

Options:	2%
	5%
	10%
	Send cyclic only

The control values of the 0 - 100% PI continuous controller are not transmitted after every calculation. Instead, they are transmitted when the calculation results in a value that is different enough to the previous sent value to make a transmission meaningful. This value difference can be entered here.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.58 Additional cooling stage — Cyclic sending of the control value

Options:	00:01:00 - 01:00:00

The current control value used by the device can be cyclically transmitted to the bus.

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On, "2-point 1 Byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

10.24.59 Additional cooling stage — Maximum control value (0 - 255)

Options:	Setting option between 0 - 255

The maximum control value of the PI controller defines the maximum value outputted by the controller. If a maximum value under 255 is chosen, the value will not be exceeded, even if the controller calculates a higher control value.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.60 Additional cooling stage — Minimum control value for basic load (0 - 255)

Options:	Setting option between 0 - 255

The minimum control value of the PI controller defines the minimum value output by the controller. If a minimum value greater than zero is chosen, the controller will not output a lower value, even if it calculates a value that is lower. This parameter can be used to set a basic load, e.g. for operating surface cooling. Even if the controller calculates the control value zero, a cooling medium will flow through the cooling area to prevent the floor from heating up. Under "Settings of basic load", it is also possible to define whether this basic load will be permanently active or whether it will be switched by the "Basic load" object.

Note
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.61 Additional cooling stage — Hysteresis

Options:	Setting option between 0.3 - 25

The hysteresis of the two-point controller specifies the fluctuation range of the controller around the setpoint value. The lower switching point is located at "Setpoint value minus hysteresis" and the upper point is at "Setpoint value plus hysteresis".

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On" or "2-point 1 Byte, 0/100%".

10.24.62 Settings of basic load

Notice
Only available when the "Control function" parameter is set either on "Heating with additional stage," "Cooling with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

10.24.63 Settings of basic load — Minimum control value for basic load > 0

Options:	Always active
	Activate via object

The function finds application when in the desired area, e.g. with floor heating, the floor is to have a basic warmth. The size of the minimum control value specifies the volume of heating medium that flows through the controlled area, even when the calculation of the control value of the controller would indicate a lower value.

– *Always active*: Here it is possible to define whether this basic load will be permanently active or whether it will be switched via the "Basic load" object.
– *Activate via object*: When this parameter is selected, the basic load function, which means the minimum control value with a value higher than zero, can be activated (1) or deactivated (2). If it is activated, then the heating medium will always be fed through the system with at least the minimum control value. If it is deactivated, the control value can be reduced to zero with the controller.

10.24.64 Basic load settings — Basic load active when controller is off

Options:	Yes
	No

– This parameter switches the basic load active when the controller is off.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

10.24.65 Combined heating and cooling modes

Notice
Only available when the "Control function" parameter is set either on "Heating and cooling" or "Heating and cooling with additional stages".

10.24.66 Combined heating and cooling modes — Switchover of heating/cooling

Options:	Automatic
	Only via object
	On-site/via extension unit and via object

This function makes it possible to switch between the heating and cooling mode of the device.

– *Automatic*: E.g. for four-conductor systems which allow the switchover between heating and cooling at all times. The device switches automatically between heating and cooling and to the associated setpoint. The "Switchover heating/cooling" object is a transmitting 1-bit communication object. In heating mode a 1 is sent and a 0 in cooling mode.
– *Only via object*: E.g. for two-conductor systems which are operated in heating mode in the winter and cooling mode in the summer. The switchover between heating and cooling and to the associated setpoint is carried out via the corresponding 1-bit communication object. This function is used when a central switchover of the single room controllers is required. "Switchover heating/cooling" is a receiving object.
– *Local/ via extension unit and via object*: E.g. for four-conductor systems which allow the switchover between heating and cooling at all times. The switchover between heating and cooling and to the associated setpoint is carried out manually on the device by the user of the room or via the "Switchover heating/cooling" object via the bus. The 1-bit "Switchover heating/cooling" communication object is a transmitting and receiving object. In heating mode a 1 is sent and a 0 in cooling mode.

10.24.67 Combined heating and cooling modes — Operating mode after reset

Options:	Cooling only
	Heating

After a bus voltage failure, a system reset or after switching on the bus voltage, the device starts in the parameterised "Operating mode after reset". The operating mode can be changed when the system is running using the options set under "Switchover heating/cooling".

10.24.68 Combined heating and cooling modes — Heating/cooling control value output

Options:	Via 1 object
	Via 2 objects

This parameter is used to define whether the control value is transmitted to the climate control actuator using one or two objects. If the climate control actuator has separate control value inputs for heating and cooling, or if separate actuators are used, then the option "Via 2 objects" must be selected. Select the option "Via 1 object" if a single actuator only has one object that receives both the heating and the cooling control values.

10.24.69 Combined heating and cooling modes — Additional heating/cooling stage control value output

Options:	Via 1 object
	Via 2 objects

This parameter is used to define whether the control value is transmitted to the climate control actuator using one or two objects. If the climate control actuator has separate control value inputs for heating and cooling, or if separate actuators are used, then the option "Via 2 objects" must be selected. Select the option "Via 1 object" if a single actuator only has one object that receives both the heating and the cooling control values.

Note
This parameter is only available when the "Control function" parameter is set on "Heating and cooling with additional stages".

10.24.70 Setpoint settings

Note
The following parameters are available without enabling "Extended settings".

10.24.71 Setpoint settings — Setpoint for heating comfort = setpoint for cooling comfort

Options:	Deactivated
	Activated

This parameter is used to configure the manner in which the setpoint adjustment functions.

– *Deactivated*: The device has the same setpoint for heating and cooling in the comfort mode. The system switches to heating mode when the temperature drops below the setpoint minus hysteresis. It switches to cooling mode when the temperature exceeds the setpoint plus hysteresis. The hysteresis can be parameterised.
– *Deactivated*: The function has two separate setpoints for heating and cooling in the comfort mode. The device will display the currently active setpoint value. Switching between heating and cooling occurs via the "Switchover heating/cooling" parameter setting.

Notice
This parameter is only available when the "Control function" parameter is set on "Heating and cooling" or "heating and cooling with additional stages".

10.24.72 Setpoint settings - Setpoint for standby and Eco are absolute values

Options:	Deactivated
	Activated

The parameter is used to specify whether the setpoints for standby and Eco are absolute values.

10.24.73 Setpoint settings - Hysteresis for switchover heating/cooling

Options:	Setting option between 0.5 - 10

This parameter specifies the one-sided hysteresis for switching between heating and cooling when "Setpoint heating comfort = Setpoint cooling comfort" is active. If the room temperature exceeds the setpoint temperature value plus hysteresis, the system switches to cooling mode. If the room temperature falls below the setpoint temperature value minus hysteresis, the system switches to heating mode.

Notice
This parameter is only available when the "Setpoint heating comfort = Setpoint cooling comfort" parameter is set on "Yes".

10.24.74 Setpoint settings — Setpoint for heating and cooling comfort

Options:	Setting option between 10 - 40

Specifies the comfort temperature for heating and cooling when people are present.

Notice
This parameter is only available when the "Control function" parameter is set on "Heating and cooling" or "Heating and cooling with additional stages" and the "Setpoint for heating comfort = Setpoint for cooling comfort" parameter is "activated".

10.24.75 Setpoint settings — Setpoint for heating comfort

Options:	Setting option between 10 - 40

Specifies the comfort temperature for heating when people are present.

Notice
This parameter is only available when the "Control function" parameter is set on "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stage" and parameter "Setpoint heating comfort = setpoint cooling comfort" is set on "deactivated".

10.24.76 Setpoint settings — Setpoint for heating standby

Options:	Setting option between 5 - 45

Specifies the comfort temperature for heating during standby.

Notice
This parameter is only available when the "Control function" parameter is set on "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stage" and parameter "Setpoint for standby and Eco are absolute values" is set on "activated".

10.24.77 Setpoint settings — Reduction for standby heating by

Options:	Setting option between 0 - 15

Specifies the temperature in heating mode when nobody is present. On devices with a display, this mode is indicated by the standby icon.

Notice
This parameter is only available when the "Control function" parameter is set on "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stages" and parameter "Setpoint for standby and Eco are absolute values" is set on "deactivated".

10.24.78 Setpoint settings — Setpoint for heating economy

Options:	Setting option between 5 - 45

Specifies the comfort temperature for heating economy.

Notice
This parameter is only available when the "Control function" parameter is set on "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stage" and parameter "Setpoint for standby and Eco are absolute values" is set on "activated".

10.24.79 Setpoint settings — Reduction for heating economy by

Options:	Setting option between 0 - 15

Specifies the temperature in heating mode when nobody is present. On devices with a display, this mode is indicated by the ECO icon.

Notice
This parameter is only available when the "Control function" parameter is set on "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stages" and parameter "Setpoint for standby and Eco are absolute values" is set on "deactivated".

10.24.80 Setpoint settings — Setpoint for heating building protection

Options:	Setting option between 5 - 15

Function for protecting the building against the cold. On devices with a display, this mode is indicated by the frost protection icon. Manual operation is blocked.

Notice
This parameter is only available when the "Control function" parameter is set on "Heating," "Heating with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

10.24.81 Setpoint settings — Setpoint for cooling comfort

Options:	Setting option between 10 - 40

Specifies the comfort temperature for cooling when people are present.

Notice
This parameter is only available when the "Control function" parameter is set on "Cooling" or "Cooling with additional stage" and parameter "Setpoint heating comfort = setpoint cooling comfort" is set on "deactivated".

10.24.82 Setpoint settings — Setpoint for cooling standby

Options:	Setting option between 10 - 40

Specifies the comfort temperature for cooling during standby.

Notice
This parameter is only available when the "Control function" parameter is set on "Cooling" or "Cooling with additional stage" and parameter "Setpoint heating comfort = setpoint cooling comfort" is set on "deactivated".

10.24.83 Setpoint settings — Increase for cooling standby by

Options:	Setting option between 0 - 15

Specifies the temperature in cooling mode when nobody is present. On devices with a display, this mode is indicated by the standby icon.

Notice
This parameter is only available when the "Control function" parameter is set on "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages" and parameter "Setpoint for standby and Eco are absolute values" is set on "deactivated".

10.24.84 Setpoint settings — Setpoint for cooling economy

Options:	Setting option between 10 - 40

Specifies the comfort temperature for cooling economy.

Notice
This parameter is only available when the "Control function" parameter is set on "Cooling" or "Cooling with additional stage" and parameter "Setpoint heating comfort = setpoint cooling comfort" is set on "deactivated".

10.24.85 Setpoint settings — Increase for cooling economy

Options:	Setting option between 0 - 15

Specifies the temperature in cooling mode when nobody is present. On devices with a display, this mode is indicated by the Eco icon.

Notice
This parameter is only available when the "Control function" parameter is set on "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages" and parameter "Setpoint for standby and Eco are absolute values" is set on "deactivated".

10.24.86 Setpoint settings — Setpoint for cooling building protection

Options:	Setting option between 27 - 45

Function for protecting the building against heat. On devices with a display, this mode is indicated by the heat protection icon. Manual operation is blocked.

Notice
This parameter is only available when the "Control function" parameter is set on "Cooling," "Cooling with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

10.24.87 Setpoint settings — Setpoint setting via communication object (DPT 9.001)

Options:	No
	For comfort, standby, Eco
	For comfort, standby, Eco, building protection

This parameter is used to specify whether the setpoint setting is made via communication objects.

10.24.88 Setpoint settings — Display

Options:	Absolute setpoint
	Relative set value

The display can indicate either the absolute or relative setpoint value.

– *Current setpoint*: On devices with a display, the setpoint is shown as an absolute temperature, e.g. 21.0°C.
– *Relative setpoint*: On devices with display, the setpoint is indicated as a relative value, e.g. -5°C to +5°C.

10.24.89 Setpoint settings - Hide temperature unit

Options:	Deactivated
	Activated

This parameter is used to specify whether the temperature unit is displayed.

10.24.90 Setpoint settings — Send current setpoint

Options:	Cyclic and during change
	Only for change

The current setpoint value can be sent to the bus either cyclically and after a change, or only after a change.

10.24.91 Setpoint settings - Cyclic sending of the current setpoint

Options:	00:05:00 - 18:12:15

This parameter is used to specify the amount of time that will elapse before the current setpoint is automatically transmitted.

Notice
This parameter is only available when the "Send current setpoint" is set on "Cyclic and during change".

10.24.92 Setpoint settings - Basic set value is

Options:	Comfort cooling setpoint
	Comfort heating setpoint
	Mean value between comfort heating and cooling

- Setpoint for cooling comfort:
  - The device uses the temperature value that has been set via parameter "Setpoint temperature for cooling comfort" (°C).
- Setpoint for heating comfort:
  - The device uses the temperature value that has been set via parameter "Setpoint temperature for heating comfort" (°C).
- Mean value between heating comfort and cooling comfort:
  - The device uses the mean value of the two specified setpoints.

The RTC requires a defined basic set value for its function. The parameter is used to specify the setpoint the device accesses.

Notice
The parameter can only be set when the "Setpoint heating comfort = Setpoint cooling comfort" parameter is deactivated.

10.24.93 Setpoint adjustment

10.24.94 Setpoint adjustment — Maximum manual increase during heating mode (0 - 9°C)

Options:	Setting option between 0 - 9

This preset can be used to limit the manual increase during heating.

Note
This parameter is only available when parameter "Controller function" is set on "Heating" and parameter "Control value type" on "2-point 1 bit, On/Off" or "2-point 1 byte, 0/100%".

10.24.95 Setpoint adjustment — Maximum manual reduction during heating mode (0 - 9°C)

Options:	Setting option between 0 - 9

This preset can be used to limit the manual decrease during heating.

Note
This parameter is only available when parameter "Controller function" is set on "Heating" and parameter "Control value type" on "2-point 1 bit, On/Off" or "2-point 1 byte, 0/100%".

10.24.96 Setpoint adjustment — Maximum manual increase during cooling mode (0 - 9°C)

Options:	Setting option between 0 - 9

This preset can be used to limit the manual increase during cooling.

Note
This parameter is only available when the "Control function" parameter is set on "Cooling," "Cooling with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

10.24.97 Setpoint adjustment — Maximum manual reduction during cooling mode (0 - 9°C)

Options:	Setting option between 0 - 9

This preset can be used to limit the manual decrease during cooling.

Note
This parameter is only available when the "Control function" parameter is set on "Cooling," "Cooling with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

10.24.98 Setpoint adjustment - Step size of manual setpoint adjustment

Options:	0.1°C
	0.2°C

	0.5°C
	1.0°C

This parameter is used to specify the step size for manual setpoint adjustment.

10.24.99 Setpoint adjustment - Setpoint adjustment master/slave via communication object

Options:	1-byte counter value
	Relative temperature value
	Absolute temperature value

This parameter is used to specify whether the setpoint adjustment for master/slave is carried out via a temperature value or a 1-byte counter value.

10.24.100 Setpoint adjustment — Resetting of the manual adjustment for receipt of a basic setpoint

Options:	Deactivated
	Activated

Activating this parameter will cause the manual adjustment to be deleted and the new setpoint value to be provided when a new value is received via the "Basic setpoint" object.

If the parameter is deactivated, the manual adjustment is added to the new base setpoint value. Example: Previous base setpoint value of 21°C + manual adjustment of 1.5°C = 22.5°C. The object receives a new basic setpoint of 18°C plus the previous manual adjustment of 1.5°C for a total of 19.5°C.

10.24.101 Setpoint adjustment — Resetting the manual adjustment for change of operating mode

Options:	Deactivated
	Activated

If the device switches to a new operating mode, the manual adjustment is deleted and the parameterised setpoint temperature for the operating mode plus any change by the base setpoint value object will be applied if this parameter is activated. Example: Comfort temperature of 21°C plus manual adjustment of 1.5°C = 22.5°C. Change to Eco with programmed temperature 17°C. The device regulates the temperature to 17°C, since the manual adjustment is deleted.

If the parameter is deactivated, the manual setpoint adjustment will be added to the temperature in the new operating mode. Example: Comfort temperature of 21°C plus manual adjustment of 1.5°C = 22.5°C. If the system switches to Eco with a parameterised temperature of 17°C, the device regulates the temperature to 18.5°C, since the manual adjustment is added.

10.24.102 Setpoint adjustment — Resetting the manual adjustment via object

Options:	Deactivated
	Activated

If this parameter is activated, a separate object can be used to delete the manual adjustment at any time. Example of application: Resetting the manual adjustment on all devices located in an office building using a system clock.

10.24.103 Setpoint adjustment — Permanent storage of on-site operation

Options:	Deactivated
	Activated

If this parameter is activated, the manual settings for setpoint and, where applicable, fan speed level, as well as the value of the "Basic load" object, will be stored in the device and re-activated after a reset. The same applies to the operating mode.

If the device is re-programmed, the stored setpoint values will also be deleted.

10.24.104 Temperature reading

10.24.105 Temperature reading — Inputs of temperature reading

Options:	Internal measurement
	External measurement
	Weighted measurement

The room temperature can be measured at the device or fed to the device by an object via the bus. In addition, weighted measuring is also available, in which the weighted average of up to three temperature values (1 x internal, 2 x external) is calculated and used as an input value for control.

10.24.106 Temperature reading — Inputs of weighted temperature reading

Options:	Internal and external measurement
	2 x external measurement
	Internal and 2x external measurement

Specifies the temperature reading inputs for the weighted measurement, in which the calculated weighted average of the inputs is used as an input value for control

Note
This parameter is only available when the "Inputs of temperature reading" parameter is set on "Weighted measurement".

10.24.107 Temperature reading — Weighting of internal measurement (0 to 100%)

Options:	Setting option between 0 - 100

Specifying the weighting of the internal measurement from 0 to 100%.

Note
This parameter is only available when the "Inputs of weighted temperature reading" parameter is set on "Internal and external measurement" or "Internal and 2x external measurement".

10.24.108 Temperature reading — Weighting of external measurement (0 to 100%)

Options:	Setting option between 0 - 100

Specifying the weighting of the external measurement from 0 to 100%.

Note
This parameter is only available when the "Inputs of weighted temperature reading" parameter is set on "Internal and external measurement", "2x external measurement" or "Internal and 2x external measurement".

10.24.109 Temperature reading — Weighting of external measurement 2 (0 to 100%)

Options:	Setting option between 0 - 100

Specifying the weighting of the external measurement 2 from 0 to 100%. The setting together with the weighting of the external measurement (0 - 100%) must result in 100%.

Note
This parameter is only available when the "Inputs of weighted temperature reading" parameter is set on "2x external measurement" or "Internal and 2x external measurement".

10.24.110 Temperature reading — Cyclic sending of the actual temperature (min)

Options:	Setting option between 5 - 240

The current actual temperature used by the device can be cyclically transmitted to the bus.

10.24.111 Temperature reading — Difference of value for sending the actual temperature

Options:	Setting option between 0.1 - 10

If the change in temperature exceeds the parameterised difference between the measured actual temperature and the previous actual temperature that was sent, the changed value will be transmitted.

Notice
This parameter is only available when the "Inputs of temperature reading" parameter is set on "Internal measurement" or "Weighted measurement".

10.24.112 Temperature reading — Adjustment value for internal temperature measurement

Options:	Setting option between -25 - 25

Every installation location has different physical conditions (interior or exterior wall, lightweight or solid wall, etc.). In order to use the actual temperature at the installation location as a measured value for the device, a temperature measurement must be performed by an external equalised and / or calibrated thermometer at the installation location. The difference between the actual temperature displayed on the device and the actual temperature determined by the external measurement device must be entered in the parameter field as an "Adjustment value".

Notice
- The calibration measurement should not be carried out immediately after the device has been installed. The device should first adjust to the ambient temperature before calibration is carried out. The calibration measurement should be repeated shortly before or after the room is occupied.
- This parameter is only available when the "Inputs of temperature reading" parameter is set on "Internal measurement" or "Weighted measurement".

10.24.113 Temperature reading — Monitoring of temperature reading

Options:	Deactivated
	Activated

The parameter is used to specify whether parameter "Monitoring time of temperature reading" is available.

10.24.114 Temperature reading — Monitoring time for temperature reading

Options:	Setting option between 00:01:00 - 18:12:15

If no temperature is read within the parameterised time period, the device switches to error mode. It transmits a telegram to the bus via the "Actual temperature error" and applies the operating mode and control value for error.

Notice
This parameter is only available when parameter "Monitoring of temperature reading" is activated.

10.24.115 Temperature reading — Operating mode for fault

Options:	Cooling
	Heating

In the event of a failure of the actual temperature measurement, the device will no longer be able to independently specify the heating/cooling operating type. As a result, the operating type best suited to protecting the building will be selected.

Note
This parameter is only available when the "Control function" parameter is set on "Heating and cooling" or "heating and cooling with additional stages".

10.24.116 Temperature reading — Control value for fault (0 - 255)

Options:	Setting option between 0 - 255

In the event of a failure of the actual temperature measurement, the device will no longer be able to independently determine the control value. In case of an error, a PWM control (1 Bit) with a fixed cycle time of 15 minutes is used automatically instead of a parameterized 2-point control (1 Bit). In this case the set parameter value is taken into consideration for the control value during an error.

10.24.117 Alarm functions

10.24.118 Alarm functions - Condensate water alarm

Options:	Deactivated
	Activated

If a fan coil device is used, condensation may form during operation as a result of excessive cooling and/or humidity. The associated condensate is typically collected in a container. To protect the container against overflowing, and thus prevent potential damage to devices and/or the building, the container alerts the "Condensation alarm" object (receiving only) that the maximum fill level has been exceeded. This causes the controller to switch to a protective mode. This is indicated by the corresponding icon on devices that have a display. Local operation is blocked. Operation is only possible again after the alarm has been deactivated.

Notice
This parameter is only available when the "Control function" parameter is set either on "Cooling," "Cooling with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

10.24.119 Alarm functions — Dew point alarm

Options:	Deactivated
	Activated

When refrigerating machines are used, dew may appear on the refrigerant supply lines during operation as a result of excessive cooling and/or humidity. The dew indicator signals the dew formation via the "Dew point alarm" object (receiving only). This causes the controller to switch to a protective mode. This is indicated by the corresponding icon on devices that have a display. Local operation is blocked. Operation is only possible again after the alarm has been deactivated.

Notice
This parameter is only available when the "Control function" parameter is set either on "Cooling," "Cooling with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

10.24.120 Alarm functions - Frost alarm temperature for HVAC and RHCC status (°C)

Options:	Setting option between 0 - 20

The RHCC status and HVAC objects have a frost alarm bit. It the input temperature of the controller drops below the temperature set in this parameter, then the frost alarm bit is set in the status objects. It is reset when the temperature is exceeded.

10.24.121 Alarm functions - Heat alarm temperature for RHCC status (°C)

Options:	Setting option between 20 - 70

The RHCC status object has a heat alarm bit. If the input temperature of the controller exceeds the temperature set in this parameter, then the heat alarm bit is set in the status object. It is reset when the temperature falls below the set temperature.

10.24.122 Temperature limiter

10.24.123 Temperature limiter - Temperature limit of heating

Options:	Deactivated
	Activated

The parameter is used to specify whether the following parameters are available for the "Temperature limit of heating".

– Setpoint temperature
– Hysteresis
– Integral component of PI controller

10.24.124 Temperature limiter - Temperature limit of additional heating stage

Options:	Deactivated
	Activated

The parameter is used to specify whether the following parameters are available for the "Temperature limit of additional heating stage".

– Setpoint temperature
– Hysteresis
– Integral component of PI controller

10.24.125 Temperature limiter - Setpoint temperature of heating / additional heating stage

Options:	Setting option from 20 - 100

The parameter is used to specify the value of the setpoint temperature for "Heating" or the "Additional heating stage".

10.24.126 Temperature limiter - Temperature limit of cooling

Options:	Deactivated
	Activated

The parameter is used to specify whether the following parameters are available for the "Temperature limit of cooling".

– Setpoint temperature
– Hysteresis
– Integral component of PI controller

10.24.127 Temperature limiter - Temperature limit additional cooling stage

Options:	Deactivated
	Activated

The parameter is used to specify whether the following parameters are available for the "Temperature limit of additional cooling stage".

– Setpoint temperature
– Hysteresis
– Integral component of PI controller

10.24.128 Temperature limiter - Setpoint temperature of cooling / additional cooling stage

Options:	Setting option from 1 - 30

The parameter is used to specify the value of the setpoint temperature for "Cooling" or the "Additional cooling stage".

10.24.129 Temperature limiter - Hysteresis

Options:	Setting option between 0.5 - 5

The hysteresis specifies the fluctuation range of the controller around the setpoint value. The lower switching point is located at "Setpoint value minus hysteresis" and the upper point is at "Setpoint value plus hysteresis".

Notice
This parameter is only available when one or several of the following parameters are activated.
"Temperature limit heating"
"Temperature limit additional heating stage"
"Temperature limit cooling"
Temperature limit additional cooling stage

10.24.130 Temperature limiter - Integral component of PI controller

Options:	Keep
	Reset

The parameter is used to specify whether the integral component of the PI controller is retained or reset.

10.24.131 Summer compensation

10.24.132 Summer compensation - Summer compensation

Options:	Deactivated
	Activated

In order to save energy, and to ensure that the temperature difference occurring during entry and exit of a climate-controlled building stays within comfortable limits, the excessive reduction of room temperature should be prevented during high temperatures in the summer (Summer compensation according to DIN 1946). The room temperature is increased by adjusting the setpoint temperature for cooling.

Raising the room temperature does not, however, mean that you heat up the room. Rather, the adjustment is intended to allow the room temperature to increase to a certain setpoint without cooling. This, for example, prevents the air-conditioning system from further reducing the room temperature to 24°C with an external temperature of 35°C.

However, activation of the summer compensation requires an outside temperature sensor that transmits its measured value to the bus and can be evaluated by the room temperature controller.

The following parameters are available for summer compensation:

- "(lower) starting temperature for summer compensation.
- "Offset of the setpoint temperature for the entry into summer compensation"
- "(upper) exit temperature for summer compensation"
- "Offset of the setpoint temperature for the exit from summer compensation"

Above the "upper outside temperature value," the minimum setpoint temperature for cooling is the outside temperature minus the "upper setpoint offset". The outside temperature has no effect on the minimum setpoint temperature for cooling below the "lower outside temperature value". Between the "Lower" and "Upper outside temperature value," the minimum setpoint temperature for cooling undergoes floating adjustment by the parameterised setpoint temperature equal to the outside temperature minus the "Lower offset" to a value equal to the outside temperature minus the "Upper setpoint offset" as a function of the outside temperature.

Typical values for summer compensation are:

- 21°C: lower outside temperature value
- 32°C: upper outside temperature value
- 0 K: lower setpoint offset
- 6 K: upper setpoint offset

This means that a continuous increase of the minimum setpoint value for cooling occurs to a value equal to the outside temperature minus a setpoint offset of 0 to 6 K if the outside temperature increases to 32°C from 21°C.

For example:

For an increasing outside temperature, the minimum setpoint value for cooling will be increased starting at an outside temperature of 21°C. The minimum setpoint temperature for cooling is 25.1°C at an outside temperature of 30°C; 25.5°C at an outside temperature of 31°C; 26°C at an outside temperature of 32°C; and 27°C at an outside temperature of 33°C.

10.24.133 Summer compensation - (Lower) Starting temperature for summer compensation (°C)

Options:	Setting option between 10 - 40

The parameter is used to specify the lower outside temperature value up to which temperature value the setpoint correction (summer compensation) is performed based on too high an outside temperature.

Notice
This parameter is only available if the "Summer compensation" parameter is set on "Yes".

10.24.134 Summer compensation - Offset of the setpoint temperature for the entry into summer compensation

Options:	Setting option between 0 - 25

The parameter is used to specify how many degrees Kelvin the setpoint value will be increased by during summer compensation when the lower temperature value is reached.

Typical values for summer compensation are:

- 20°C: lower outside temperature value
- 32°C: upper outside temperature value
- 0 K: lower setpoint offset
- 4 K: upper setpoint offset

That means that a flowing setpoint increase of 0 to 4 K occurs if the outside temperature increases from 20°C to 32°C.

Notice
This parameter is only available if the "Summer compensation" parameter is set on "Yes".

10.24.135 Summer compensation - (Upper) exit temperature for summer compensation

Options:	Setting option between 10 - 40

The parameter is used to specify the upper outside temperature value up to which temperature value the setpoint correction (summer compensation) is performed based on too high an outside temperature.

Notice
This parameter is only available if the "Summer compensation" parameter is set on "Yes".

10.24.136 Summer compensation - Offset of the setpoint temperature for the exit from summer compensation

Options:	Setting option between 0 - 25

The parameter is used to specify how many degrees Kelvin the setpoint value will be increased by during summer compensation when the upper temperature value is reached.

Typical values for summer compensation are:

- 20°C: lower outside temperature value
- 32°C: upper outside temperature value
- 0 K: lower setpoint offset
- 4 K: upper setpoint offset

That means that a flowing setpoint increase of 0 to 4 K occurs if the outside temperature increases from 20°C to 32°C.

Notice
This parameter is only available if the "Summer compensation" parameter is set on "Yes".

10.24.137 Settings of fan coil unit

Notice
Only available only when parameter "Control value type" is set on "Fan coil unit".

10.24.138 Settings of fan coil unit - Number of fans

Options:	Heating/cooling via one system
	Heating/cooling via two system

The parameter is used to specify the number of fans.

10.24.139 Settings of fan coil unit — Fan speed level data format of master/slave

Options:	Counter value (e.g. 0 - 5)
	Percentage value

The parameter is used to specify the data format.

10.24.140 Settings of fan coil unit - Fan speed level/stage x to control value (0 to 255)

Options:	Setting option between 0 - 255

Here the fan speed / fan speed level are assigned to the control values of the controller. This assignment is used when fan speed / fan speed level are sent together with the control value.

Notice

- These level settings should be adjusted to match the settings in the fan coil actuator.
- Setting the "Control value type" to "Fan coil" in the control parameters is only useful for one of either the basic stage or the additional stage. Setting the basic and additional stage parameters to fan coil is not useful, since the control of only one fan coil actuator each for heating and cooling is supported.
- The following parameters are available only when parameter "Number of fans" is set on "Heating/cooling via a system":
  - "Fan speed / level 1 up to control value (0 to 255)"
  - "Fan speed / level 2 up to control value (0 to 255)"
  - "Fan speed / level 3 up to control value (0 to 255)"

10.24.141 Settings of fan coil unit — Fan speed limit/level limit during Eco mode

Options:	Deactivated
	Activated

This parameter limits the fan speed level when the system is switched to eco mode.

10.24.142 Fan settings heating

Notice
Only available when parameter "Number of fans" is set on "Heating/cooling via two systems".

Notice
Additional parameters for "Fan settings heating" are available under "Fan coil unit settings".

10.24.143 Fan settings cooling

Notice
Only available when parameter "Number of fans" is set on "Heating/cooling via two systems".

Notice
Additional parameters for "Fan settings cooling" are available under "Fan coil unit settings".

10.24.144 Fan settings - Level output

Options:	According to standard value table
	Specify individually

This parameter is used to specify whether the level output is set according to the value table or individually.

10.24.145 Fan speeds/- levels

10.24.146 Fan speeds/- levels heating

Notice
Only available when parameter "Number of fans" is set on "Heating/cooling via two systems".

10.24.147 Fan speeds/- levels cooling

Notice
Only available when parameter "Number of fans" is set on "Heating/cooling via two systems".

10.24.148 Fan speeds/- levels - Number of fan speeds/- levels

Options:	3 levels
	5 levels
	10 levels (output 0-255)

This parameter is used to specify the number of fan speed levels the actuator will use to control the fan of the fan coil.

10.24.149 Fan speeds/- levels - Format of speeds-/ level output

Options:	0-5
	0-255
	1 bit m off n
	1 bit m 1 off n

- *0-5*: The level values (0-3 or 0-5) are output in the 1 byte format as counter values 0-3 or 0-5.
- *0-255*: The level values (0-3 or 0-5) are output as percentage values. Example 5-stage fan: The level value 1 is output as 20%, and 5 is output as 100%.
- *1 Bit 1 from n*: The level values (0-3 or 0-5) are output using 1-bit objects. The number of objects available is the same as the number of fan speed levels. For level 2, for example, the 1-bit fan speed level objects 1 and 2 are output as the value 1, while the other fan speed level objects use the value 0.
- *1 Bit 1 from n*: The level values (0-3 or 0-5) are output using 1-bit objects. The number of objects available is the same as the number of fan speed levels. For the level 2, for example, only the 1-bit fan speed level object 2 is output as the value 1. The other fan speed level objects use the value 0.

10.24.150 Fan speeds/- levels - Speeds-/ levels output

Options:	For manual operation and automatic
	Only for manual operation

This parameter is used to specify when the output of the fan speed level values will occur: either only when the fan speed levels are manually adjusted or also in automatic mode. This setting depends on the options for the fan coil actuator. If the actuator itself controls the fan speed levels in automatic mode based on a derivative of the control value, than the "Only for manual operation" option must be selected. Otherwise, the other option should be selected.

10.24.151 Fan speeds/- levels - Lowest manually adjustable speed-/ level

Options:	Speed level 0
	Speed level 1

This parameter is used to preselect the lowest fan speed level that can be set by an operation performed at the device. When level 0 is selected, the heating/cooling system will not be in operation (fan speed level and valve control 0) as long as the current operating mode and operation type are maintained. To avoid damage to the building, level 0 is deactivated after 18 hours and the device is returned to automatic mode.

10.24.152 Fan speeds/- levels Evaluation of fan speed/- level

Options:	Deactivated
	Activated

The controller obtains the current fan speed level for controlling a fan coil actuator either by calculating it from the table of level values under "Fan coil settings for heating" or "Fan coil settings for cooling," or by receiving feedback from the fan coil actuator. If the option is "activated" here, then the "Fan coil level status" object is activated for receiving the fan speed level from the fan coil actuator.

11 KNX communication objects

For a quick overview of the options of the Busch-SmartTouch®, all communication objects are listed in an overview table. The detailed function can be read in the description following the individual communication objects.

Notice
Some communication objects are dynamic and only visible when the corresponding parameters have been activated in the application program.

The communication objects are listed in the following overview:

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Home screen								
Start page X - page is active [Page name]	Output	1 bit	[1.001] Switching	K			U	-
Page X - page is active [Page name]	Output	1 bit	[1.001] Switching	K			U	-
System setting								
Date	Output	3 bytes	[11.001] Date	K	-	S	U	A
Time of day	Output	3 bytes	[10.001] Daytime	K	-	S	U	A
Date	Input	3 bytes	[11.001] Date	K	-	S	U	A
Time of day	Input	3 bytes	[10.001] Daytime	K	-	S	U	A
Display brightness	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Switching between dark and bright (dark = 1)	Input	1 bit	[1.001] Switching	K	-	S	-	A
Background illumination ON/OFF	Input	1 bit	[1.001] Switching	K	-	S	-	A
Background illumination status	Output	1 bit	[1.001] Switching	K	-	-	U	-
Screen saver ON/OFF	Input	1 bit	[1.001] Switching	K	-	S	-	A
Screen saver status	Output	1 bit	[1.001] Switching	K	-	-	U	-
Temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Activate information page	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Information page line 1	Input	14 bytes	[16.001] Character (ISO 8859-1)	K	-	S	-	A

Information page line 2	Input	14 bytes	[16.001] Character (ISO 8859-1)	K	-	S	-	A
Information page line 3	Input	14 bytes	[16.001] Character (ISO 8859-1)	K	-	S	-	A
Information page line 4	Input	14 bytes	[16.001] Character (ISO 8859-1)	K	-	S	-	A
Primary function	Output	1 bit	[5.001] Switching	K	-	S	U	A
Proximity function	Output	1 bit	[1.001] Switching	K	-	-	U	-
Deactivate approximation	Input	1 bit	[1.002] Boolean	K		S		A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
External inside temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Outside temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Inside temperature	Output	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
In operation	Output	1 bit	[1.001] Switching	K	-	-	U	-
Door communication								
Volume of bell sound	Input/ Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Increase/decrease volume of bell sound	Input	4 bit	[5.001] Percent (0 - 100%)	K	-	S	-	A
Voice volume	Input/ Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Increase/decrease voice volume	Input	4 bit	[5.001] Percent (0 - 100%)	K	-	S	-	A
Ringing	Output	1 bit	[1.001] Switching	K	-	-	U	-
Start of call	Output	1 bit	[1.001] Switching	K	-	-	U	-
End of call	Output	1 bit	[1.001] Switching	K	-	-	U	-
Mute incoming calls	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Switch Light	Input	1 bit	[1.001]	K	-	S	U	A

			Switching					
Open door	Input	1 bit	[1.001] Switching	K	-	S	U	A
Control element 1	Output	1 bit	[1.001] Switching	K	-	-	U	-
Control element 2	Output	1 bit	[1.001] Switching	K	-	-	U	-
Control element 3	Output	1 bit	[1.001] Switching	K	-	-	U	-
Control element 4	Output	1 bit	[1.001] Switching	K	-	-	U	-
Control element 5	Output	1 bit	[1.001] Switching	K	-	-	U	-
Inputs								
Binary input	Output	1 bit	[1.001] Switching	K	-	-	U	-
Temperature sensor	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Fault and alarm messages								
Signal tone volume	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Raise/lower signal tone volume	Input	1 byte	[3.007] Dimmer step	K	-	S	-	A
Confirm all [1 bit]	Input	1 bit	[1.016] Confirmation	K	-	S	-	A
Message [14 bytes]	Input/ Output	14 bytes	[16.001] Character (ISO 8859-1)	K	-	S	U	A
Message [1bit]	Input/ Output	1 bit	[1.005] Alarm	K	-	S	U	A
Confirm message [14 bytes]	Output	14 bytes	[16.001] Character (ISO 8859-1)	K	-	S	U	A
Confirm message [1bit]	Input/ Output	1 bit	[1.016] Confirmation	K	-	S	U	A
Scene actuator								
Object 1 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 1 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 2 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 2 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 3 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 3 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 4 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 4 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 5 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 5 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 6 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 6 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 7 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 7 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 8 [send]	Output	1 bit	[1.001]	K	-	-	U	-

			Switching					

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Object 9 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 9 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 10 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 10 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 11 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 11 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 12 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 12 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 13 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 13 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 14 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 14 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Object 15 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object 15 [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Scene number	Input/ Output	1 byte	[18.001] Scene control	K	-	S	U	A
Activate scene 1	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Scene 1 dimming	Input	3 bit	[3.007] Dimmer step	K	-	S	-	A
Activate scene 2	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Scene 2 dimming	Input	3 bit	[3.007] Dimmer step	K	-	S	-	A
Activate scene 3	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Scene 3 dimming	Input	3 bit	[3.007] Dimmer step	K	-	S	-	A
Activate scene 4	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Scene 4 dimming	Input	3 bit	[3.007]	K	-	S	-	A

			Dimmer step					
Activate scene 5	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Activate scene 6	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Scene 6 dimming	Input	3 bit	[3.007] Dimmer step	K	-	S	-	A
Activate scene 7	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Scene 7 dimming	Input	3 bit	[3.007] Dimmer step	K	-	S	-	A
Activate scene 8	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Scene 8 dimming	Input	3 bit	[3.007] Dimmer step	K	-	S	-	A
Activate scene 9	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Scene 9 dimming	Input	3 bit	[3.007] Dimmer step	K	-	S	-	A
Activate scene 10	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Scene 10 dimming	Input	3 bit	[3.007] Dimmer step	K	-	S	-	A
Presence simulation								
activation	Input/ Output	1 bit	[1.010] Start/Stop	K	-	S	U	A
Object 1	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 2	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 3	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 4	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 5	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 6	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 7	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 8	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 9	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 10	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A

Object 11	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 12	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Object 14	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 15	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 16	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 17	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 18	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 19	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Object 20	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Time programs								
Block all time programs	Input	1 bit	[1.003] Enable	K	-	S	-	A
Activate the holiday function	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Holiday status	Output	1 bit	[1.010] Start/Stop	K	-	S	U	A
Logic functions								
Logic gate - Output	Output	8 bit	[5.001] Percent (0 - 100%)	K	L	-	U	-
Logic gate - Input 1	Input	1 bit	[1.001] Switching	K	-	S	-	A
Logic gate - Input 2	Input	1 bit	[1.001] Switching	K	-	S	-	A
Logic gate - Input 3	Input	1 bit	[1.001] Switching	K	-	S	-	A
Logic gate - Input 4	Input	1 bit	[1.001] Switching	K	-	S	-	A
Logic gate - Input 5	Input	1 bit	[1.001] Switching	K	-	S	-	A
Logic gate - Input 6	Input	1 bit	[1.001] Switching	K	-	S	-	A
Logic gate - Input 7	Input	1 bit	[1.001] Switching	K	-	S	-	A
Logic gate - Input 8	Input	1 bit	[1.001] Switching	K	-	S	-	A
Logic gate - Input 9	Input	1 bit	[1.001]	K	-	S	-	A

			Switching					
Logic gate - Input 10	Input	1 bit	[1.001] Switching	K	-	S	-	A
Multplexer - Control input	Input	1 bit	[1.003] Enable	K	-	S	-	A
Multiplexer - Input 1	Input	1 bit	[1.001] Switching	K	-	S	-	A
Multiplexer - Input 2	Input	1 bit	[1.001] Switching	K	-	S	-	A

Name	**Object function**	**Length**	**Data type**	Flags				
				K	**L**	**S**	**U**	**A**
Multiplier - Input	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Multiplier - Output 1	Output	1 bit	[1.001] Switching	K	-	-	U	-
Multiplier - Output 2	Output	1 bit	[1.001] Switching	K	-	-	U	-
Multiplier - Output 3	Output	1 bit	[1.001] Switching	K	-	-	U	-
Multiplier - Output 4	Output	1 bit	[1.001] Switching	K	-	-	U	-
Multiplier - Output 5	Output	1 bit	[1.001] Switching	K	-	-	U	-
Multiplier - Output 6	Output	1 bit	[1.001] Switching	K	-	-	U	-
Multiplier - Output 7	Output	1 bit	[1.001] Switching	K	-	-	U	-
Multiplier - Output 8	Output	1 bit	[1.001] Switching	K	-	-	U	-
Multiplier - Output 9	Output	1 bit	[1.001] Switching	K	-	-	U	-
Multiplier - Output 10	Output	1 bit	[1.001] Switching	K	-	-	U	-
Gate - Control input	Input	1 bit	[1.003] Enable	K	-	S	-	A
Gate - Input	Input/ Output	1 bit	[1.001] Switching	K	-	S	-	A
Gate - Output	Input/ Output	1 bit	[1.001] Switching	K	-	S	-	A
Temperature comparator - Input 1	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Temperature comparator - Input 2	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Temperature comparator Output	Output	8 bit	[5.010] Counting pulses (0 - 255)	K	-	S	-	A

Status converter - Input 1 (LSB)	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Status converter - Input 2	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Status converter - Input 3	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Status converter - Input 4	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Status converter - Output	Output	14 bytes	[16.001] Character (ISO 8859-1)	K	-	S	U	A
Status converter - Input	Input	8 bit	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Status converter - Input	Input	2 bytes	[7.010] Pulses	K	-	S	-	A

Name	**Object function**	**Length**	**Data type**	Flags				
				K	**L**	**S**	**U**	**A**
Status converter - Output 2	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 3	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 4	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 5	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 6	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 7	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 8	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 8 (MSB)	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 9	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 10	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 11	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 12	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 13	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 14	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 15	Output	1 bit	[1.002] Boolean	K	-	S	U	A

Status converter - Output 16 (MSB)	Output	1 bit	[1.002] Boolean	K	-	S	-	A
Time function - Input	Input	1 bit	[1.001] Switching	K	-	S	-	A
Time function - Output	Output	1 bit	[1.001] Switching	K	-	S	U	A
Time function - staircase lighting (sec.)	Input	2 bytes	[7.005] Time (s)	K	-	S	U	A
Time function - Switch-on delay (sec.)	Input	2 bytes	[7.005] Time (s)	K	-	S	U	A
Internal RTC								
Heating control value	Output	1 bit	[1.001] Switching	K	-	-	U	-
Additional-stage heating	Output	1 bit	[1.001] Switching	K	-	-	U	-
Cooling control value	Output	1 bit	[1.001] Switching	K	-	-	U	-
Additional-stage cooling	Output	1 bit	[1.001] Switching	K	-	-	U	-
On/off confirmation (Master)	Output	1 bit	[1.001] Switching	K	L	S	U	A

Name	**Object function**	**Length**	**Data type**	Flags				
				K	**L**	**S**	**U**	**A**
Actual temperature weighted	Output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
External actual temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
External actual temperature 2	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Fault, actual temperature (master)	Output	1 bit	[1.001] Switching	K	L	-	U	-
Current setpoint	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
Normal operating mode (master)	Input/ Output	1 byte	[20.102] HVAC mode	K	-	S	U	A
Override operating mode (Master/Slave)	Input	1 byte	[20.102] HVAC mode	K	-	S	U	A
Window contact (master/slave)	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Presence detector (master/slave)	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Heating status	Output	1 bit	[1.001] Switching	K	-	-	U	-
Cooling status	Output	1 bit	[1.001] Switching	K	-	-	U	-

Basic load	Input	1 bit	[1.001] Switching	K	-	S	U	A
Heating/cooling switchover	Output		[1.100] Heating/cooling					
Confirm fan manually (master)	Output	1 bit	[1.001] Switching	K	L	-	U	-
Fan speed / level	Output	1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
Basic setpoint	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Resetting manual setpoints	Input	1 bit	[1.001] Switching	K	-	S	-	A
Dew point alarm	Input	1 bit	[1.001] Switching	K	-	S	U	A
Condensation / fill level alarm (Master/Slave)	Input/ Output	1 bit	[1.005] Alarm	K	-	S	U	A
Outside temperature for summer compensation	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Summer compensation active	Output	1 bit	[1.001] Switching	K	-	-	U	-
Temperature calibration	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A

Name	**Object function**	**Length**	**Data type**	Flags				
				K	**L**	**S**	**U**	**A**
Setpoint display (master)	Output	2 bytes	[9.001] Temperature (°C)	K	L	-	U	-
Request set value (master)	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Confirm setpoint (master)	Output	2 bytes	[9.001] Temperature (°C)	K	L	-	U	-
Request fan speed level manually (slave)	Output	1 bit	[1.010] Switching	K	-	-	U	-
Request fan speed level manually (master)	Input	1 bit	[1.001] Switching	K	-	S	-	A
Request fan speed level (slave)	Output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	-	U	-
Request fan speed (master)	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Confirm fan speed level (slave)	Input/ Output	1 byte	[6.010] Counting	K	-	S	U	A

			pulses (-128 - 127)					
Confirm fan speed (master)	Output	1 byte	[5.001] Percent (0 - 100%)	K	L	-	U	-
Controller RHCC status	Output	2 bytes	[22,101]	K	-	-	U	-
Controller HVAC status (master)	Output	1 byte	[5.001] Percent (0 - 100%)	K	L	-	U	-
Heating temperature limit basic stage	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Heating temperature limit additional stage	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Cooling temperature limit basic stage	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Cooling temperature limit additional stage	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Comfort heating setpoint	Output	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Standby heating setpoint	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Economy heating setpoint	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Heating setpoint for building protection	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Comfort cooling setpoint	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Economy cooling setpoint	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Cooling setpoint for building protection	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Setpoint error	Output	1 bit	[9.001] Temperature (°C)	K	-	-	U	-
Current HVAC operating mode	Output	1 byte	[20.102] HVAC mode	K	-	S	U	A
Switch								
Value 1 [send]	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Value 2 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Status value [receive]	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Rocker switch								
Value 1 [send]	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Value 2 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Status value [receive]	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Dimmer								
Switch	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Dimming	Output	3 bit	[3.007] Dimmer step	K	-	S	U	-
Value	Input/ Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Switch status	Input	1 bit	[1.001] Switching	K	-	S	-	A
Status value	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Dimmer slider								
Switch	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A

Value	Input/ Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Status value	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
RGBW operation								
Switch	Output	1 bit	[1.001] Switching	K	-	-	U	A
Switch status	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Value red	Input/ Output	1 byte	[5.001] Counting pulses (0 - 255)	K	-	S	U	A
Value green	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value blue	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value white	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value RGB [3 bytes]	Output	3 bytes	[232.600] RGB value 3x (0 - 255)	K	-	-	U	-
Status value RGB [3 bytes]	Input	3 bytes	[232.600] RGB value 3x (0 - 255)	K	-	S	-	A
RGB value [6 bytes]	Output	4 bytes	[251.600] RGB value 4x (0 - 255)	K	-	-	U	-
Status value RGBW [6 bytes]	Input	4 bytes	[251.600] RGB value 4x (0 - 255)	K	-	S	-	A
Value cold white	Output	8 bit	[5.010] Counting pulses (0 - 255)	K	-	-	U	-
Status value cold white	Input	8 bit	[5.010] Counting pulses	K	-	S	-	A

			(0 - 255)					
Value warm white	Input/ Output	8 bit	[5.010] Counting pulses (0 - 255)	K	-	-	U	-
Status value warm white	Input	8 bit	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Hue value	Input/ Output	1 byte	[5.001] Counting pulses (0 - 255)	K	-	S	U	A
Saturation value	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A

Name	**Object function**	**Length**	**Data type**	**Flags**				
				K	**L**	**S**	**U**	**A**
HSV value [3 bytes]	Output	3 bytes	[232.600] RGB value 3x (0 - 255)	K	-	-	U	-
Status value RGB [3 bytes]	Input	3 bytes	[232.600] RGB value 3x (0 - 255)	K	-	S	-	A
Brightness value	Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	-	U	-
Brightness status value	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Temperature value	Output	2 bytes	[7.600] Absolute colour temperature (K)	K	-	-	U	-
Temperature status value	Input	2 bytes	[7.600] Absolute colour temperature (K)	K	-	S	-	A
Blind								
Moving UP/DOWN	Input/ Output	1 bit	[1.008] Up/Down	K	-	S	U	A
Stop / slat adjustment	Input/ Output	1 bit	[1.008] Up/Down	K	-	S	U	A
Move to position	Input/ Output	1 byte	[5.001] Percent	K	-	S	U	A

			(0 - 100%)					
Slat position	Input/ Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Position status	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Upper end position status	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Bottom end position status	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Height status [0 - 100%]	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Slat status [0-100%]	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Height status [0 - 255]	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Slat status [0-255]	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A

Name	**Object function**	**Length**	**Data type**	Flags				
				K	**L**	**S**	**U**	**A**
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
RTC control element								
Control On/Off (slave)	Input	1 bit	[1.001] Switching	K	-	S	U	A
External actual temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Fault, actual temperature (slave)	Input/ Output	1 bit	[1.001] Switching	K	-	S	-	A
Operating mode (slave)	Output	1 byte	[20.102] HVAC mode	K	-	S	U	A
Override operating mode (Master/Slave)	Input/ Output	1 byte	[20.102] HVAC mode	K	-	S	U	A
Window contact (master/slave)	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Presence detector (master/slave)	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Fan coil manual confirmation (Slave)	Input/ Output	1 bit	[1.011] Status	K	-	S	U	A
Fan coil manual (heating) confirmation (Slave)	Input/ Output	1 bit	[1.011] Status	K	-	S	U	A
Fan coil manual (cooling) confirmation (Slave)	Input/ Output	1 bit	[1.011] Status	K	-	S	U	A

Condensation / fill level alarm (Master/Slave)	Input/ Output	1 bit	[1.005] Alarm	K	-	S	U	A
Units switchover (slave)	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
On/off request (slave)	Output	1 bit	[1.001] Switching	K	-	-	U	-
Setpoint display (slave)	Input/ Output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Request setpoint (slave)	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
Confirm setpoint (slave)	Input/ Output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Heating/cooling request (slave)	Output	1 bit	[1.100] Heating/Cooling	K	-	-	U	-
Request fan speed level manually (slave)	Output	1 bit	[1.001] Switching	K	-	-	U	-
Request fan speed level (slave)	Output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	-	U	-
Confirm fan speed level (slave)	Input/ Output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	U	A

Name	**Object function**	**Length**	**Data type**	Flags				
				K	**L**	**S**	**U**	**A**
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Fan switch								
Step output	Input/ Output	1 byte	[5.100} Fan speed level (0 - 255)	K	-	S	U	A
	Input	1 byte	[5.100} Fan speed level (0 - 255)	K	-	S	-	A
Output 1	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 2	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 3	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 4	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 5	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A

Output 6	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 7	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 8	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Split Unit Control								
Control On/Off	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Setpoint temp	Input/ Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
Actual temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Fan speed / level	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Operating mode	Input/ Output	1 byte	[20.102] HVAC control mode	K	-	S	U	A
Horizontal oscillation	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Vertical oscillation	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Silent mode	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Boost	Input	1 bit	[1.001] Switching	K	-	S	U	A
Forced operation	Input	1 bit	[1.001] Switching	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Window contact	Input	1 bit	[1.001] Switching	K	-	S	-	A
Presence	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
VRV control								
Value 1 [send]	Input/ Output	1 bit	[1.001] Switching	K	-	-	U	-
Value 2 [send]	Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	-	U	-
Status value [receive]	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	-	U	-
Block	Output	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Status value	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value blue	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value RGB [3 bytes]	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Room temperature display (from VRV)	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Value white	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Temperature sensor fault	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Scene								
Scene number 1	Output	1 byte	[18.001] Scene control	K	-	-	U	-
Scene number 2	Output	1 byte	[18.001] Scene control	K	-	-	U	-
Scene number 3	Output	1 byte	[18.001] Scene control	K	-	-	U	-

Scene number 4	Output	1 byte	[18.001] Scene control	K	-	-	U	-

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Scene number 6	Output	1 byte	[18.001] Scene control	K	-	-	U	-
Scene number 7	Output	1 byte	[18.001] Scene control	K	-	-	U	-
Scene number 8	Output	1 byte	[18.001] Scene control	K	-	-	U	-
Scene number 9	Output	1 byte	[18.001] Scene control	K	-	-	U	-
Scene number 10	Output	1 byte	[18.001] Scene control	K	-	-	U	-
Scene number status	Input	1 byte	[18.001] Scene control	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Slider value								
Value [1 byte] unsigned	Input/ Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Status [1 byte] unsigned	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Value [1 byte] unsigned	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Status [1 byte] unsigned	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Value [1 byte] signed)	Input/ Output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	U	A
Status [1 byte] signed	Input	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	-	A
Value [2 byte] unsigned	Input/ Output	2 byte	[7.001] Counting pulses	K	-	S	U	A
Status [2 byte] unsigned	Input	2 byte	[7.001] Counting pulses	K	-	S	-	A
Value [2 byte] signed)	Input/ Output	2 byte	[8.001] Pulse difference	K	-	S	U	A
Status [2 byte] signed	Input	2 byte	[8.001]	K	-	S	-	A

			Pulse difference					
Value [2 Byte] float	Input/ Output	2 byte	[9.001] Temperature (°C)	K	-	S	U	A
Status [2 byte] float	Input	2 byte	[9.001] Temperature (°C)	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Status [4 byte] unsigned	Input	4 byte	[12.001] Counting pulses (unsigned)	K	-	S	-	A
Value [4 byte] signed)	Input/ Output	4 byte	[13.001] Counting pulses (signed)	K	-	S	U	A
Status [4 byte] signed	Input	4 byte	[13.001] Counting pulses (signed)	K	-	S	-	A
Value [4 Byte] float	Input/ Output	4 byte	[13.001] Rotary acceleration (rad/s^2)	K	-	S	U	A
Status [4 byte] float	Input	4 byte	[13.001] Rotary acceleration (rad/s^2)	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Display screen								
Value	Input	1 bit	[1.001] Switching	K	-	S	-	A
Switching red	Input	1 bit	[1.001] Switching	K	-	S	-	A
Switching orange	Input	1 bit	[1.001] Switching	K	-	S	-	A
Switching green	Input	1 bit	[1.001] Switching	K	-	S	-	A
Wind force	Input	2 byte	[9.005] Speed (m/s)	K	-	S	-	A
Temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Rain	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Twilight	Input	2 bytes	[9.004] Lux (lux)	K	-	S	-	A
Brightness	Input	2 bytes	[9.004]	K	-	S	-	A

			Lux (lux)					
CO2	Input	2 bytes	[9.008] Parts/million (ppm)	K	-	S	-	A
Moisture	Input	2 bytes	[9.007] Moisture (%)	K	-	S	-	A
Air pressure	Input	2 bytes	[9.007] Pressure (Pa)	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Voltage	Input	2 bytes	[9.020] Voltage (mV)	K	-	S	-	A
Current	Input	2 bytes	[9.021] Current (mA)	K	-	S	-	A
Frequency	Input	4 bytes	[14.033] Frequency (Hz)	K	-	S	-	A
Power	Input	2 bytes	[9.024] Power (kW)	K	-	S	-	A
Energy?	Input	4 bytes	[13.010] Effective work (Wh)	K	-	S	-	A
Power factor	Input	4 bytes	[14.033] Power factor (cosΦ)	K	-	S	-	A
Phase angle	Input	4 bytes	[14.055] Phase angle(°)	K	-	S	-	A
Gas volume	Input	4 bytes	[12.1201] Volume (m^3)	K	-	S	-	A
Water quantity	Input	4 bytes	[12.1201] Volume (m^3)	K	-	S	-	A
Flow-through volume	Input	4 bytes	[13.002] Flow-through volume(m^3/h)	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Audio control								
title	Input	14 bytes	Sign (ASCII)	K	-	S	-	A
Artist	Input	14 bytes	Sign (ASCII)	K	-	S	-	A
Album	Input	14 bytes	Sign (ASCII)	K	-	S	-	A
Play	Input/ Output	1 bit	[1.001] Start/Stop	K	-	S	U	A
Pause	Input/ Output	1 bit	[1.001] Enable	K	-	S	U	A
Forward	Input/	1 bit	Step	K	-	S	U	A

	Output		(0 - 100%)					
Backwards	Input/ Output	1 bit	Step (0 - 100%)	K	-	S	U	A
Tone off	Input/ Output	1 bit	[1.001] Enable	K	-	S	U	A
Shuffle	Input/ Output	1 bit	[1.001] Enable	K	-	S	U	A
Retry	Input/ Output	1 bit	[1.001] Enable	K	-	S	U	A
Volume	Input/ Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Source 1	Input/ Output	1 bit	[1.017] Trigger	K	-	S	U	A
Source 2	Input/ Output	1 bit	[1.017] Trigger	K	-	S	U	A
Source 3	Input/ Output	1 bit	[1.017] Trigger	K	-	S	U	A
Source 4	Input/ Output	1 bit	[1.017] Trigger	K	-	S	U	A
Source 5	Input/ Output	1 bit	[1.017] Trigger	K	-	S	U	A
Source 6	Input/ Output	1 bit	[1.017] Trigger	K	-	S	U	A
Source 7	Input/ Output	1 bit	[1.017] Trigger	K	-	S	U	A
Source 8	Input/ Output	1 bit	[1.017] Trigger	K	-	S	U	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Setting link								
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Welcome Control								
Value 1 [send]	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

12 Operation

12.1 General control and display functions

After the device has been connected to the power supply, the boot-up process starts. Then the parameterized main operating page (homepage) is displayed. This is marked with a house in the page display.

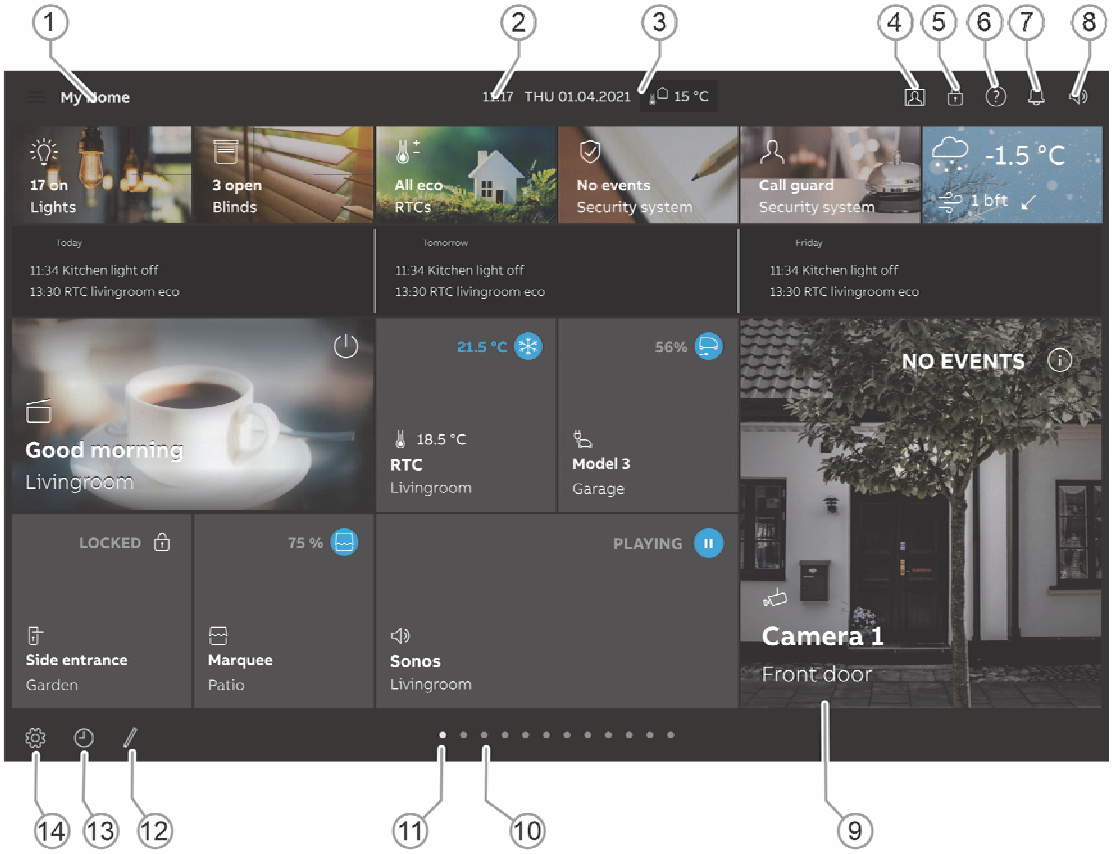
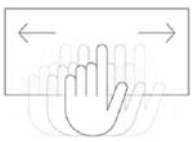


Fig. 44: Overview of operation

Pos.	Description
[1]	**Floors/rooms navigation** When parameterized, this can be used to call up the operating pages which have been allocated to the floors/rooms.
[2]	**Display of current time**
[3]	**Display of current date** Further information is available, depending on the parameter settings. In this case, for example, the temperature of the internal temperature sensor is displayed.
[4]	**Call-up of the outdoor station door communication**
[5]	**Access to page via PIN code** Enabled page displays an open lock, see chapter “Control elements“ on page 305.
[6]	**Show help for operation**
[7]	**Notification function**, see chapter “Control elements“ on page 305.
[8]	**Volume control / mute button**, see chapter “Control elements“ on page 305.
[9]	**Touch-sensitive user interface** For the Busch-SmartTouch® up to 18 functions can be positioned on one operating page. A total of 30 pages with a total of 480 control elements can be created.
[10]	**Display of available operating pages**
[11]	**Callup of the main operating page**
[12]	**Editing function** ▪ The control elements on the dashboard can be freely adjusted via the editing function see chapter “Control elements“ on page 305.
[13]	**Access to time programs**
[14]	**Access to general settings**



- The individual operating pages can be called up by swiping the user interface (swiping to the right or left)
- The main operating page (homepage) is marked with a house icon.
- The primary function is activated by tapping with three or more fingers

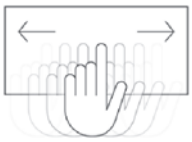
12.2 Control elements

Control elements are used to fulfil the basic functions such as "Switching", "Dimming", Blinds", "Scenes" and RTC. The elements can also contain switches, buttons and sliders.

Available are:

Button operation	Execution of function with a single press
Tapping operation	Execution of function by pressing and holding
Control operation	Shifting of a slider

Notice
Additional functions can be called up within some control elements (e.g. RTC) by swiping.



Specifying values

By swiping to the top or bottom , values, fan or dimming levels can be set on a control element.

Switching on/off

With a brief tap on the center or the icon of a control element it can be switched on or off.

Control element settings

Additional settings can be made by tapping on the three points at the top right edge of a control element.

12.2.1 Basic structures of control elements

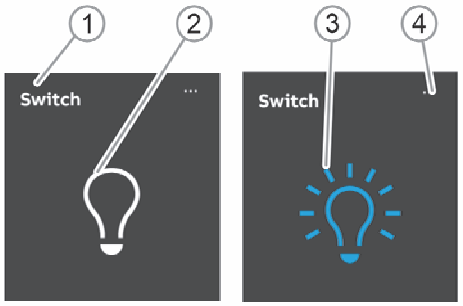


Fig. 45: Various conditions of the same control element

Pos.	Description
[1]	Name or channel designation of the device
[2]	**Device inactive** If the device is inactive, the button is displayed as follows: ▪ Type of button "Icon" – During inactivity the button is displayed white. ▪ Type of button "Text" – During inactivity the button is displayed black.
[3]	**Device is active** If the device is active, the button is displayed as follows: ▪ Type of button "icon" – During activity the button is displayed blue. ▪ Type of button "Text" – During activity the button is displayed white.
[4]	Control element settings

12.2.2 Additional basic principles

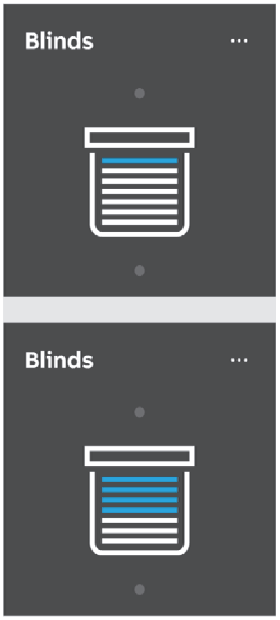


Fig. 46: Basic principles

Function buttons of blind control elements can, for example, display the different stages of blinds by means of alternating icons (e.g. alternating colour marking in the icon).

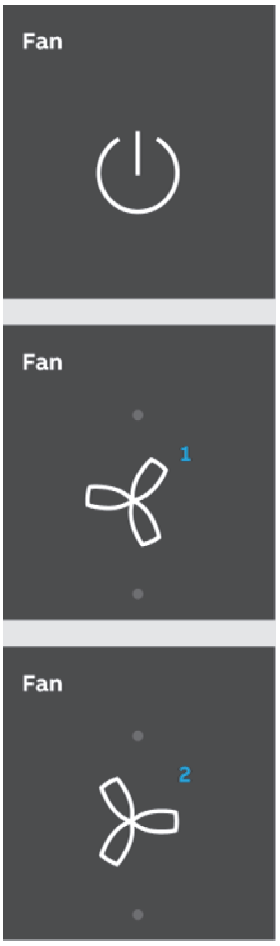


Fig. 47: Additional basic principles

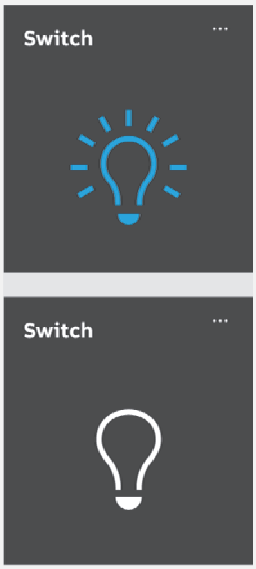
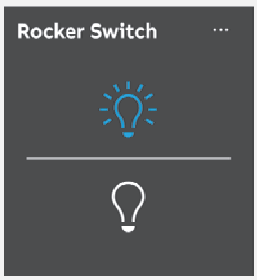
Default settings of steps or levels (e.g. dimming steps, fan speed levels) are, for example, shown with different icons and numbers. In the illustrated example, fan speed levels 1 - 2 are preset.

12.2.3 Adjustable control elements

Notice
The basic versions described here can be further adjusted.

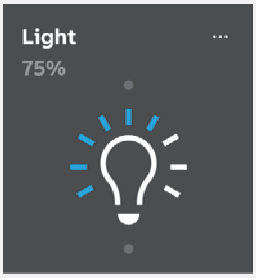
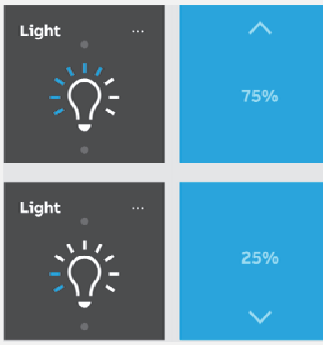
Push-buttons (basic version)

Simple switches can be implemented with push-buttons. This makes light switches or switches for simple switching processes based on push-buttons possible.

Control element	Status	Function
Switch		When operated, a changeover push-button sends out one of two values alternately and changes between two statuses (e.g. "On" and "Off").
Rocker switch		A neutral push-button with rocker function when actuated on the top or bottom side of the rocker sends out a switching telegram. A differentiation is made between whether the rocker is actuated on the top or on the bottom side. This allows one of two versions of a function to be selected. The icons represent the function of the rocker switch. A neutral push-button with rocker function can be used to call up two different scenes for example (in the example: "Presence" or "Absence").

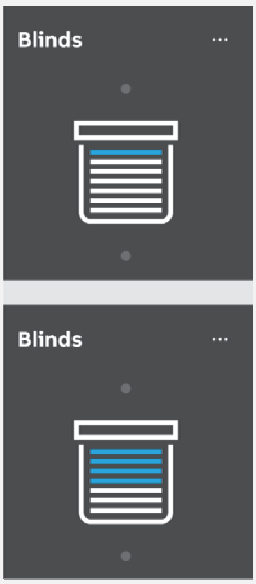
Dimmer (basic version can be further adjusted, e.g. with value display)

Dimmers can be used to implement convenient light switches with dimming functions.

Control	Status	Function
Dimmer without slider		The version without slider has a push-button surface for switching On/Off in the middle and via two buttons top and bottom for stepwise dimming (brighter/darker).
Dimmer with slider		The version with slider has a push-button surface for switching On/Off on the left side and via a slider for dimming.

Blind (basic version can be further adjusted, e.g. with value display)

Blind control elements can be used to implement the activation of blinds, awnings, doors and other motor-driven actuators.

Control	Status	Function
Blind		Stopping/starting in the middle (depending on the operating mode). The button in the middle can display the status. A corresponding animation is displayed during the movement. Operating procedure: – Icons for Up/Down **Brief press of the button** Moving by a step (the icon in the middle does not change). **Long press of the button** Moving up to stop (the icon in the middle changes): **Stop** When the end stop has been reached or a brief press on icon "Up / Down" (depending on the direction of movement). **Change** Change in the direction of travel with a brief press on icon "Up/Down". Followed by a long press on icon "Up / Down" (depending on the desired direction of movement). – Icons in the middle (blind) **Brief press of the button** Moving up to stop (the icon in the middle changes): **Stop** When reaching the limit stop or a brief press of the button on the icon it stops in **intermediate position**.

Scenes (basic version)

With control element "Scene" the user can start so-called scenes. Several actions can be combined in "Scenes" so that the user can create a certain light atmosphere with only one press of the button for example (several dimming actions).

Control	Status	Function
Scene (List)		The control element "Scene (List)" has a pop-up button for calling up a list with different scenes. The list closes automatically after a few seconds if no selection has been made. The scene must be selected in the list. The selected scene is then started via the push-button. **Notice** The scene to be called up must be allocated correspondingly in the commissioning software of the panel.

Fan switch (basic version)

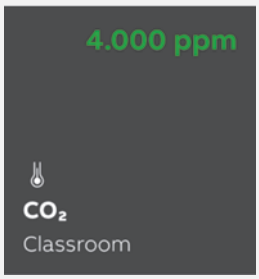
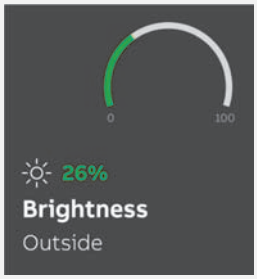
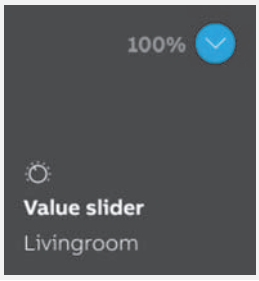
Fan switches (step switches) can be used to implement switching sequences. A step switch, so to speak, combines several push-buttons into one control element.

Control	Status	Function
Fan switch (step switch)		The version has two buttons top and bottom for calling up the next or previous step and a button in the middle. By pressing the top/bottom button several times, one reaches a further step higher or lower. The button in the middle returns the step switch to the bottom step (= "Off"). The icon in the middle can be animated during adjusting. It is also possible to display the steps.

Value display elements / value sending elements (basic version)

– Value display elements are used to display values as text or graphic information. They cannot be operated (exception is the value slider), but serve for the display of values.

– Value sending elements can be used to display values in different formats and to send them to other devices.

Control	Status	Function
Value or status display		The "Value or status display" version can display values and texts which are sent from a temperature sensor for example. There are no direct control elements here!
Graphics display		The "Graphics display" version can display values graphically, which are sent from a temperature sensor. The values are also displayed as a number. With graphic display elements you can also choose between a wind rose and a round instrument. This must have been allocated correspondingly in the commissioning software of the Busch-SmartTouch®. There are no direct control elements here!
Value sending element (value slider)		Value sending elements can be used to display values in different formats and to send them to other devices. With "Value slider" the slider can be used to change values. The changed values are then sent. Text displays can be made here. In this case, a corresponding text can be displayed at the different slider positions.

Room temperature controller (basic version)

Air conditioners can be controlled with the control element for room temperature controllers.

Control	Status	Function
RTC control element (extension unit)		The current operating mode and the mode of the controller (e.g. heating) are displayed in the control element. Additional operating modes can be called up with swiping movements. Control is carried out via the buttons.

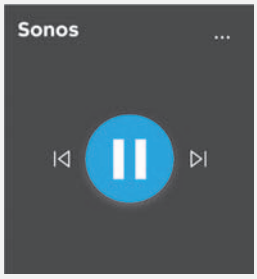
RGBW operation (basic version)

Specific settings can be made for corresponding lamps (LEDs, Philips Hue, etc.) with the RGBW control elements. For example, the colours can be changed or the warm-white component can be adjusted.

Control	Status	Function
RGBW operation		The lamp is switched on or off with a press of the control element. It can also be used to make a preset. The value display indicates the brightness component. In line with the lamp types and presets in the commissioning software, additional functions can be called up (in the example via the arrow), e.g. colour or white control. **Preset adjustment:** The lamp must first be set as desired. Then the lamp is switched on. Then follows a long press of the control element. This saves the lamp setting as preset. Now the preset is called up with each activation (long press). This process must be repeated for each adjustment. The lamp is switched on and off normally with a brief press.

Audio control (basic version)

All audio settings for connected audio devices can be easily controlled with the aid of this control element.

Control	Status	Function
Audio control		Corresponding to the default settings in the commissioning software, a variety of audio functions can be called up directly via the buttons. Lists can be opened via the arrow buttons

Page link (basic version)

Here a link can be directly established on a created page. This opens it.

Control	Status	Function
Page link		The link is used to call up available pages directly in the panel.

Split Unit Control

Split Unit control elements can be used to make settings for climate control devices. This, for example, allows the setpoint temperature to be adjusted in cooling mode.

Control	Status	Function
Split Unit control element		The current operating mode and the mode (e.g. "Heating") of the controller are displayed in the control element. Additional operating modes can be called up with swiping movements. Control is carried out via the buttons.

VRV control

VRV control elements can be used to make settings for climate control devices. This, for example, allows the setpoint temperature to be adjusted in cooling mode.

Control	Status	Function
VRV control element		The current operating mode and the mode (e.g. "Heating") of the controller are displayed in the control element. Additional operating modes can be called up with swiping movements. Control is carried out via the buttons.

Door communication control

Door communication control elements can be used to make settings for door communication systems.

Control	Status	Function
Welcome Control		The control element for door communication can be configured so that the functions of the door communication can be called up fast and carried out. The control element can, among others, be used as door opener or light switch.

12.3 Special functions

12.3.1 Editing

Different changes can be made to control elements via the "Edit" function. The "Edit" function can only be called up via the main operating page and the operating pages.

Moving / deleting control elements:

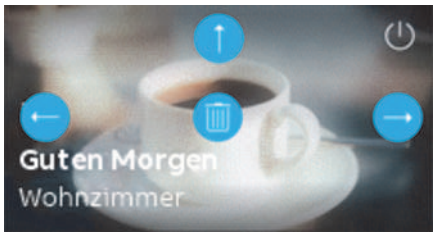
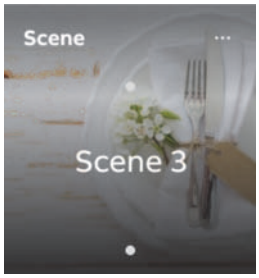


Fig. 48: Moving / deleting control element

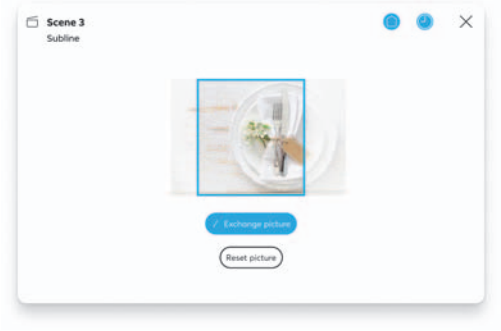
1. Tap on the pin icon at the bottom left edge of the screen.
2. Then tap on a control element.
3. Change the position via the arrow buttons
4. Delete the control element via the dustbin icon.

Notice
This function is available for control elements that have been stored on the dashboard as favourites.

Changing the background image of the control element



1. Tap on the corresponding control element.
2. Tap on the three points at the top right in the control element.
3. Changing the screen cutout.



4. Tap on the change picture button to upload a different graphic.
5. Select a picture from the available graphics.
   – The picture is uploaded.
6. If necessary, adjust the picture cutout.

Notice
This function is available for the "Scene" control element.

12.3.2 Adding control elements to the dashboard

Especially constantly used control elements can be added to the dashboard. In this way favourite control elements can be positioned centrally and made available via the dashboard. Devices can then be switched directly via the dashboard without the corresponding pages or rooms having to be called up. The take-up of control elements into the dashboard is carried out either via the commissioning software or directly via the device (see chapter 12.3.1 “Editing“ on page 318).

Adding control elements to the dashboard

1. Change to any operating page.
2. Select control element.
3. Tap on the three points at the top right.
4. Tap on the house icon.
5. Change to the dashboard.
   – The control element is now displayed on the dashboard.

12.3.3 Access to pages

There is the option of protecting applications or access to pages (e.g. on operating pages) against unauthorized access with a password (PIN code).

This is displayed by means of a closed padlock at the top right screen edge of the dashboard. The entry of the PIN code input is opened by tapping on this icon. After entering the PIN code and confirming it, all functions of the page or application can be accessed.

The **PIN code level** can be specified via the commissioning software (see chapter 9.6.1 “Basic settings (system settings) of the panel“ on page 78). Here it can also be decided whether the end user can change the PIN code directly on the device. This application can also be protected by a PIN code.

Notice

If an application or a page has been opened by the user in the device, all other applications of this level can be accessed.

The renewed disabling of the application takes place automatically after a few seconds of non-use, it can, however, also be carried out manually with a logout of the user. For this the opened padlock in the bottom bar is used.

12.3.4 Return to the previous page

The previous page can be opened again by swiping to the left.

12.4 Operating actions of the "Door communication" application

Via the door communication application different functions of the door communication can be used. This also includes:

- Video Surveillance
- Video call
- Audio call
- Door opener

The callup of the "Door communication" application is described in the following.

1. Call up the control element for the door communication on the corresponding operating page by tapping.

The basic setup of the application is almost identical for all applications. The following graphic provides an overview of the basic functions:

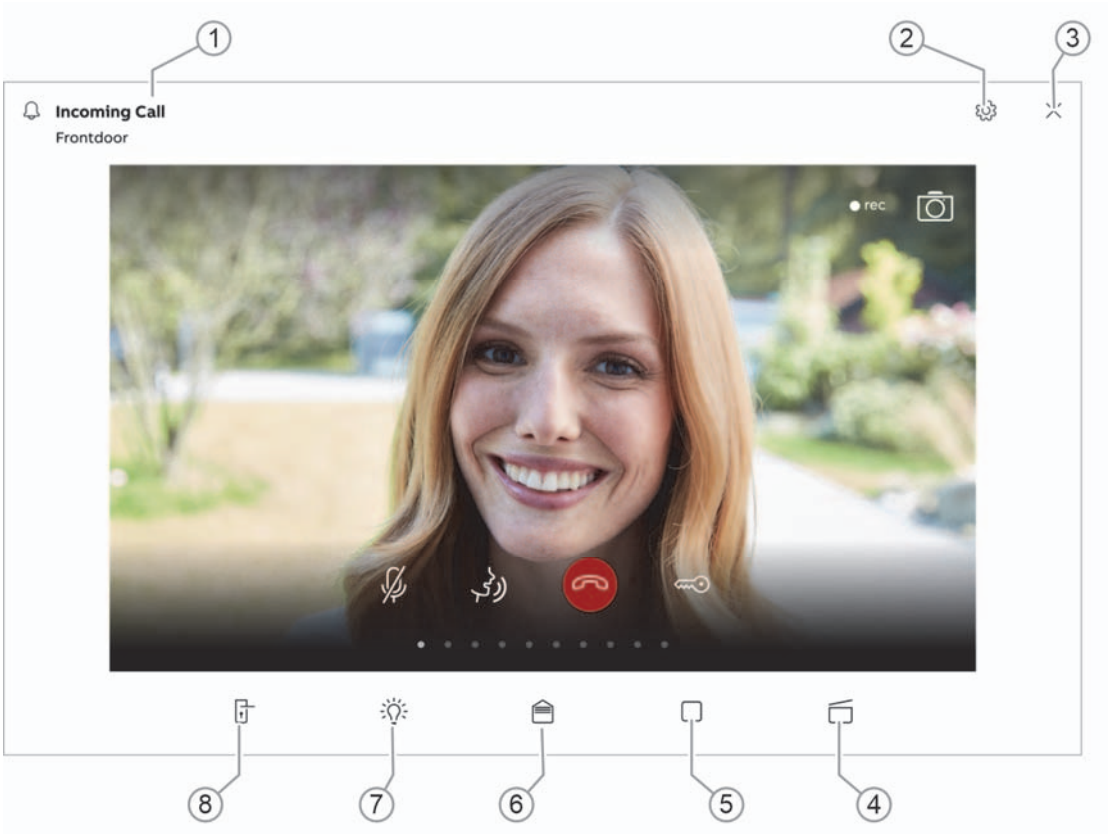


Fig. 49: "Door communication" operating actions

Pos.	Description
[1]	Designation of door communication function
[2]	Perform panel settings (brightness, contrast, bell volume)
[3]	Exit door communication
[4]	Activate scene
[5]	Program button
[6]	Notifications
[7]	Switching light
[8]	Pressing the door opener

Notice
The functions displayed on the panel always depend on the system configuration and the actuators available in the door communication.

12.4.1 Setting up of video surveillance

All areas in which a surveillance camera is available can be viewed via the control elements for video surveillance.

1. The function is called up by tapping on the control element of the respective surveillance camera.

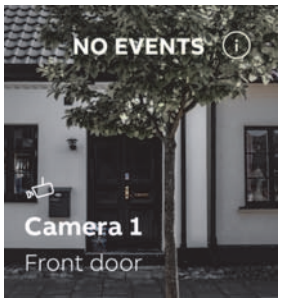


Fig. 50: Receiver button

The name and the positioning of the respective surveillance camera are displayed on the control element. If no incidents occur, this is appropriately noted at the top right in the control unit.

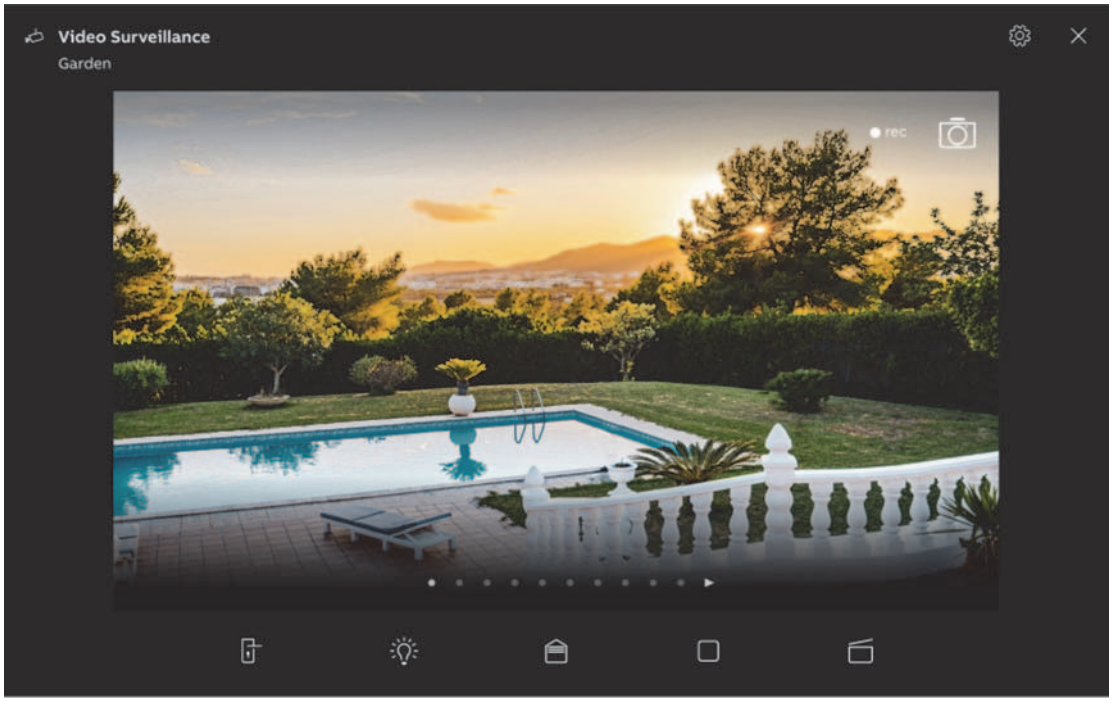


Fig. 51: Surveillance camera - current area

1. The current picture of the camera is displayed at the start of the video area.
2. A switch between the different cameras can take place via swiping over the points in the video area (swiping left and right).

If there is a person in a camera area, an audio or video connection can be established.

12.4.2 Establishing a speech and video connection

As soon as a visitor presses the bell of a station, this is signalled on the panel as a bell call (Display of the telephone receiver icon in the monitor of the bell call). The device then changes automatically to the "Door communication" application.

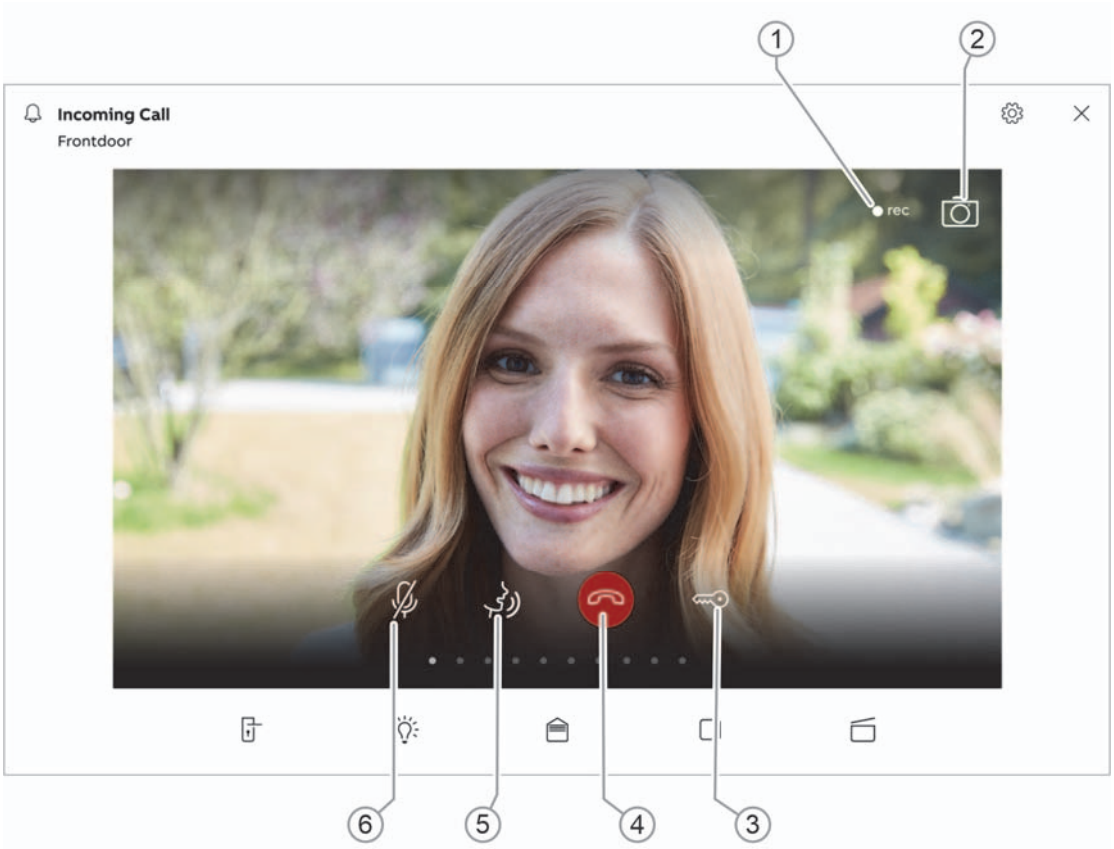


Fig. 52: Setting up the voice and video connection

Pos.	Description
[1]	**Recording a short video** Press during a call to record audio and video files on the SD card (requirement is an inserted SD card).
[2]	**Creating a snapshot** Press during a call to store a snapshot in the local image storage.
[3]	**Pressing the door opener** Opening the door during a call.
[4]	**Accepting/concluding a call**
[5]	**Press to talk** Press and hold for 3 s to switch the speech facility for the device.
[6]	**Microphone** Press during a call to mute the microphone.

Accepting calls (establishing speech and video connection)

Calls can be accepted with or without video. The acceptance of calls is descibed in the following:

1. The function is called up via the receiver button [4].

The following functions are available while establishing the speech and video connection:

- Set the volume by tapping the toothed wheel icon (move the controller to the right or left).

If several outdoor stations or external cameras are connected:

- Select the camera from the list by tapping the arrow button.
  - The designation of the camera is then displayed.
  - The current picture of the camera appears in the video area.

2. The connection can be terminated by pressing the call button [4] again.

Notice
The application remains open for a certain time until it is closed automatically. If the time amounts to only 10 seconds, the expiring time appears in the camera image (video area).

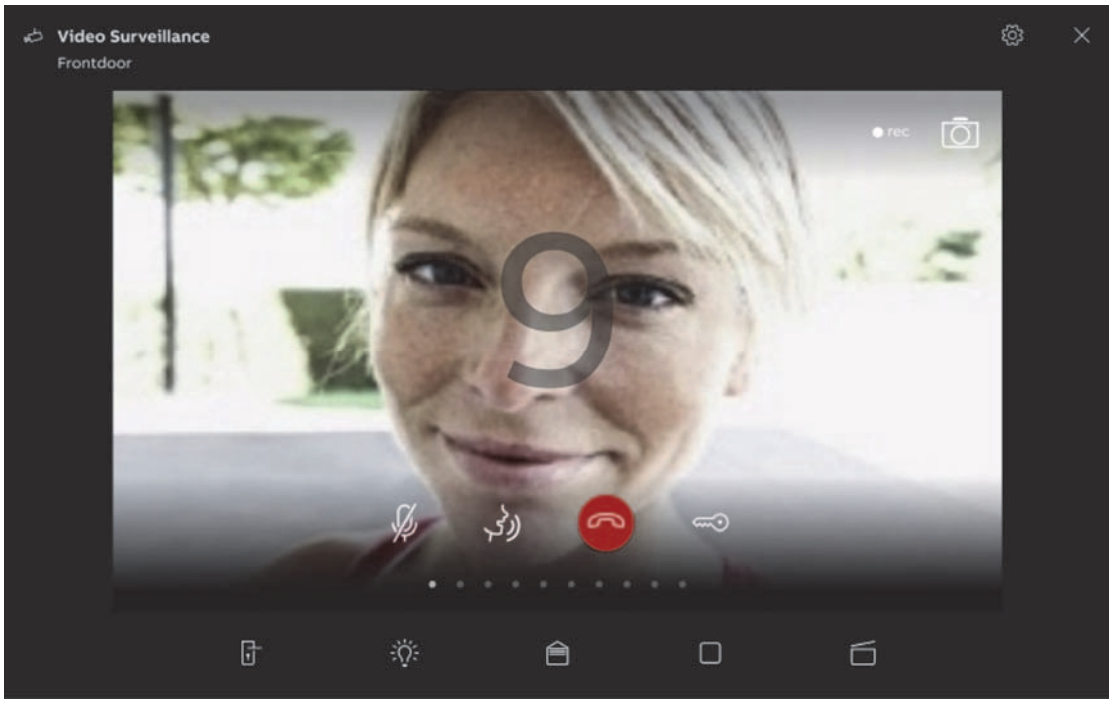


Fig. 53: Accepting a call

12.4.3 Opening the door

The door can be opened by actuating the key switch within an active audio or video call.

1. Tap on the key button.
   - Door opener is actuated or the "Automatic door opener" is active.
   - The door opener is activated.

12.4.4 Activating mute (mite timer)

The call tone of the panel can be switched on and off. This setting has a time limit.

1. The function is called up via the bell button.

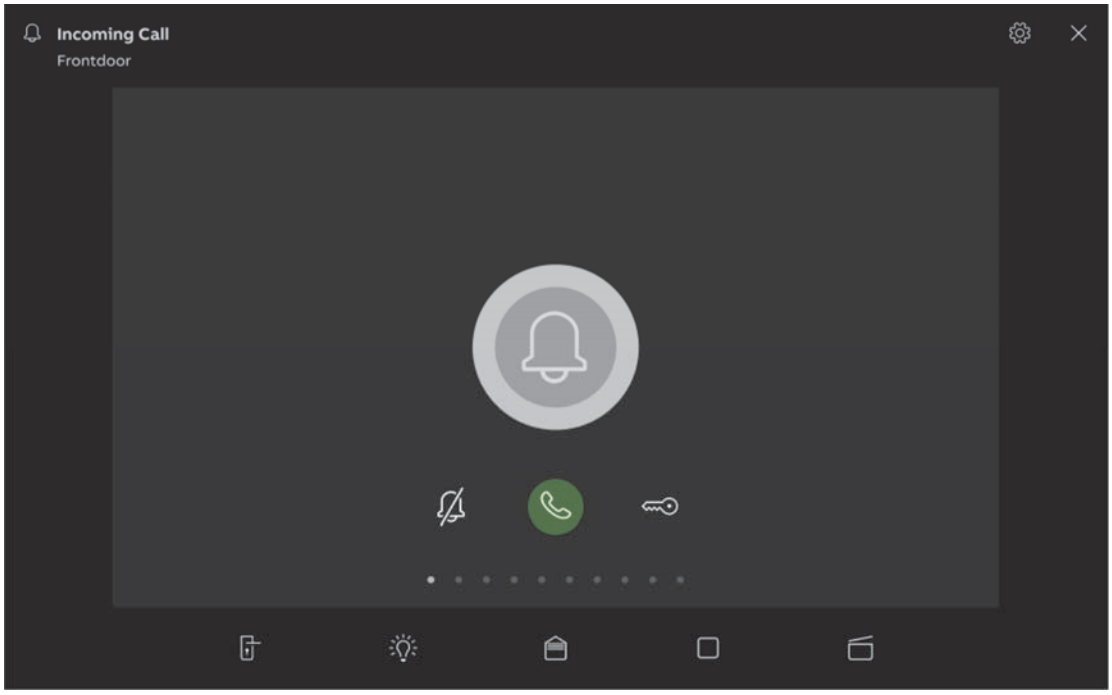


Fig. 54: Muting

For mute activation (mute timer) the following functions are available:

No call is pending:

- "Mute" button (bell icon) is actuated:
  - The ring tone of the panel is deactivated for a certain time. This is also indicated as icon in the bottom bar.
  - If calls are received during this time, only the video image is displayed.
  - Missed calls are recorded in the events and image storage.
  - The presets for this can be adjusted.

A call is pending, a speech connection is activated.

- "Mute" button (microphone icon) is actuated
  - The microphone of the device is switched off until the bell is pressed again.

Notice
The mute timer (settings) can also be called up via the bell icon at the top right edge of the screen of the dashboard.

12.4.5 Switching light

The lamp of the outdoor station can be switched via the lamp button.

1. The function is called up via the lamp button.
2. Press the lamp button for the following function ("Switch light" button actuated):
   - The "White lamp" icon is displayed.
   - The lamp of the outdoor station is switched.

12.4.6 Events and image storage / history

The device records all events. When actuating the "History" button the last 100 events are displayed (previous events are overwritten).

1. The function is called up via the history button.

Fig. 55: History

Function

- The "Auto snapshots" function is activated in the settings for the door communication.
  - The flashing icon in the bottom bar signals a newly recorded snapshot.
  - The icon stops flashing when you call up the events and image storage.

Notice
When a speech connection is established, a snapshot can be created at any time by pressing the history button, even if the "Auto snapshot" function is not active.
  - The history button is only visible when the full-screen is reduced.

- For the function "Events and image storage / history" the following functions are available:
  - When the "Auto snapshots" function is activated in the settings for the door communication, a miniature view is displayed in the events list for missed calls.
  - Date, time and the type of the event are recorded together with the snapshot.
  - If no automatic snapshots are active, a camera icon is displayed in place of the miniature view.
  - Individual entries or the entire list can be deleted at any time. For this, tap on the pin icon. A dustbin icon appears next to the entry. This can be used to delete every single entry. Or all entries can be deleted via "Delete all".
  - Select an event by tapping on the corresponding entry.
  - Select single recordings by tapping on the corresponding entry. The list can be scrolled.

12.5 Control actions of additional applications

12.5.1 Presence simulation

The absence of the residents in a building can be fairly realistically simulated via the presence simulation, to increase the protection against unauthorized access. For this purpose the Busch-SmartTouch® specifically records all actions for up to 20 objects every minute of the whole day (up to 0 o'clock) and can then replay them again.

Notice

- Please note that you must always create a presence simulation beforehand, so that the simulation can be played back later!
- For this the device must have been active once for at least one day (up to 0 o'clock) and have recorded telegrams (per minute). Otherwise the message that no data are available is displayed at the start of the application.
- The application always uses the telegrams of the previous day. If no data are available on the previous day, the data of previous days are used.

The presence simulation application is called up as follows:

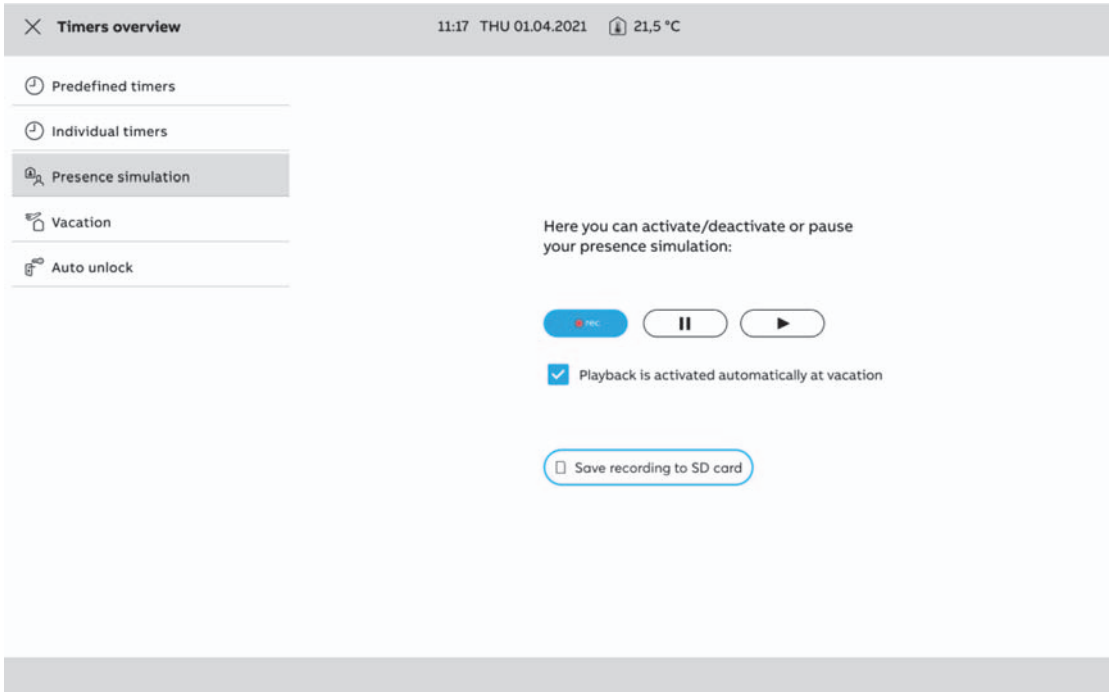


Fig. 56: Overview of presence simulation

1. Tap on the hamburger menu at the top left.
2. Tap on the clock icon at the bottom left of the dashboard.
   – The time programmes are opened.
3. Switch to the "Presence simulation" section.
4. Tap on the recording button.
   – This starts the recording.
5. Activate the checkbox to automatically play the presence simulation during absence.

The presence simulation application is deactivated as follows:

1. Tap on the activated presence simulation in the list.

Exporting presence simulation to micro SD card (via timer list):

1. Tap on the "Save recording on SD card" button.
2. Select the storage location on the SD card.
3. Tap on the card icon next to the presence simulation in the list.
   – The presence simulation is exported to the micro SD card in CSV format.
   – Via the data it can be determined whether the telegrams have been recorded.

12.5.2 Fault and alarm messages

The panel offers protection and information via the notification center. You can view the call history and information about malfunctions or faults. Message contacts, sensors and their functionality can be monitored. The messages desired in case of a fault or an alarm can be set individually (see chapter “Application "Fault and alarm messages"“ on page 103).

Notice
Depending on the parameterization, only certain functions are available in the application

The user can view the call history and messages via the notification center. This application can also be used to acknowledge, export and delete the messages.

The notification center is called up as follows:

1. Tap on the bell icon at the top right on the main operating page (homepage).
   – The application page with the call history and the notifications opens.

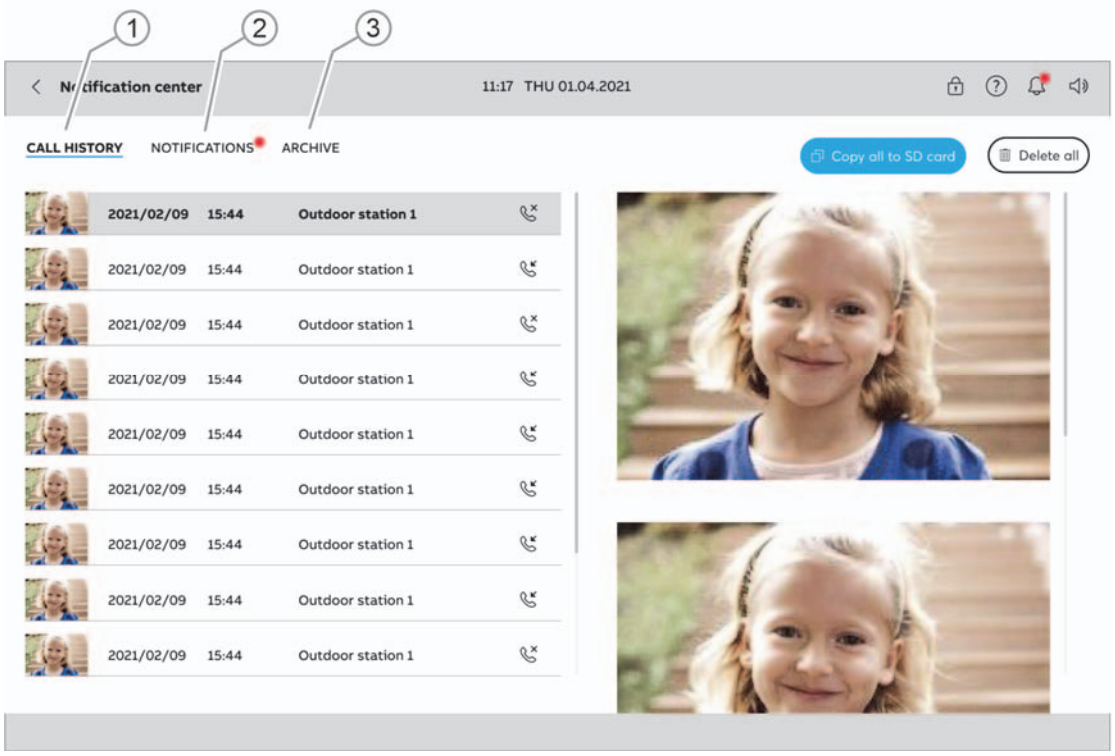


Fig. 57: Notification center

Pos.	Description
[1]	Call history
[2]	Fault and alarm messages
[3]	Archive

Call history

All the latest calls accepted and made are shown in the call history. Also snapshots available in the call history are displayed.

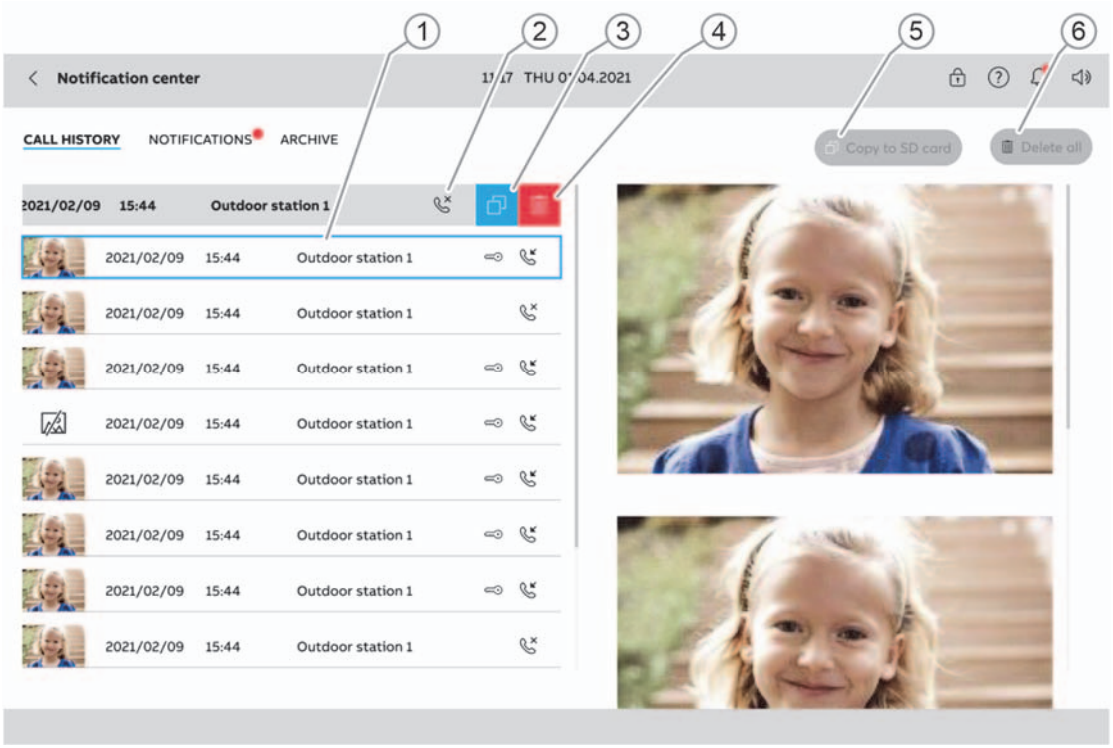


Fig. 58: Call history

Pos.	Description
[1]	Selected video call (blue frame)
[2]	Call status (missed, incoming, outgoing, internal, external call)
[3]	Copying video call from call history
[4]	Deleting video call from call history
[5]	Saving call history to SD card
[6]	Deleting the entire call history

1. With the use of the functions described above, the calls can be viewed, archived and deleted within the call history.

Notice - Encryption of videos

To save video calls, first an SD card must be inserted into the panel. Video calls saved on the SD card cannot be read directly from the SD card. If a video call is to be opened on an external device, it can be saved on the SD card. For this, the video call must be shifted into the history by swiping to the left and then copied.

Messages

Current and and archived messages can be displayed and edited in the fault and alarm messages. There are different types of messages:

- Notice
- Alarm
- Error

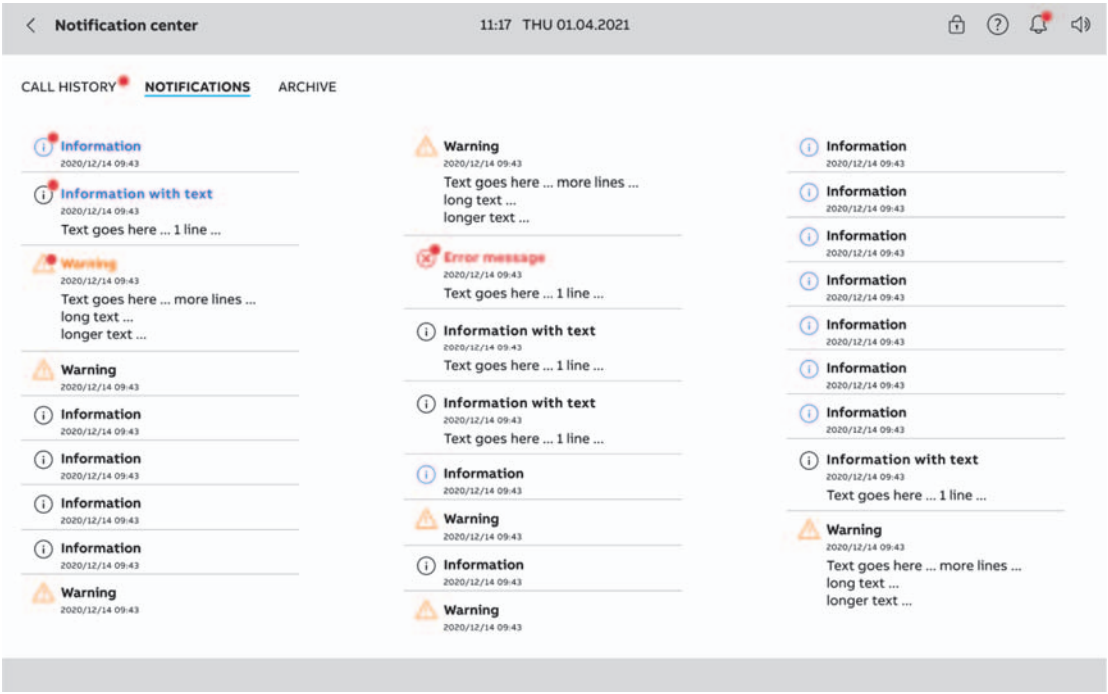


Fig. 59: Fault and alarm messages

Current fault or alarm messages are marked with a red dot next to the warning icon.

1. The message text can be viewed by tapping on a message.
2. The messages can be shifted into the archive by swiping to the left.

Archive

All archived messages are located in the archive. The setup of the archive is almost identical to the setup of the message overview. The difference is that archived messages can be copied to an SD card and completely deleted.

Exporting messages (notifications) to the micro SD card:

Confirmed and archived messages can be exported.

1. Tap in the archive on the button "Copy all to SD card".
   – The data are copied to an SD card.

Notice
Please note that an SD card must be in the device.

Notice
The export function must have been parameterized!

Deleting messages (notifications):

Notice
Only archived messages can be deleted.

1. Select a message.
2. Messages can be deleted by swiping to the left.

Deleting archived messages (notifications):

1. Select a message in the archive.
2. The message can be deleted by swiping to the left.
3. Tap on the "Delete all" button to delete all messages.
   – All messages are deleted.

Notice
Also the entire list can be deleted.
- For this, tap on "Delete all".

12.5.3 Time programs

Time programs can be used to call up functions according to the time automatically. This, for example, allows the holiday function to be started and set up.

The time programs application is called up as follows:

1. Tap on the hamburger menu at the top left on the main operating page (homepage).
2. Then tap on the clock icon at the bottom left.
   – The overview of the time program opens.

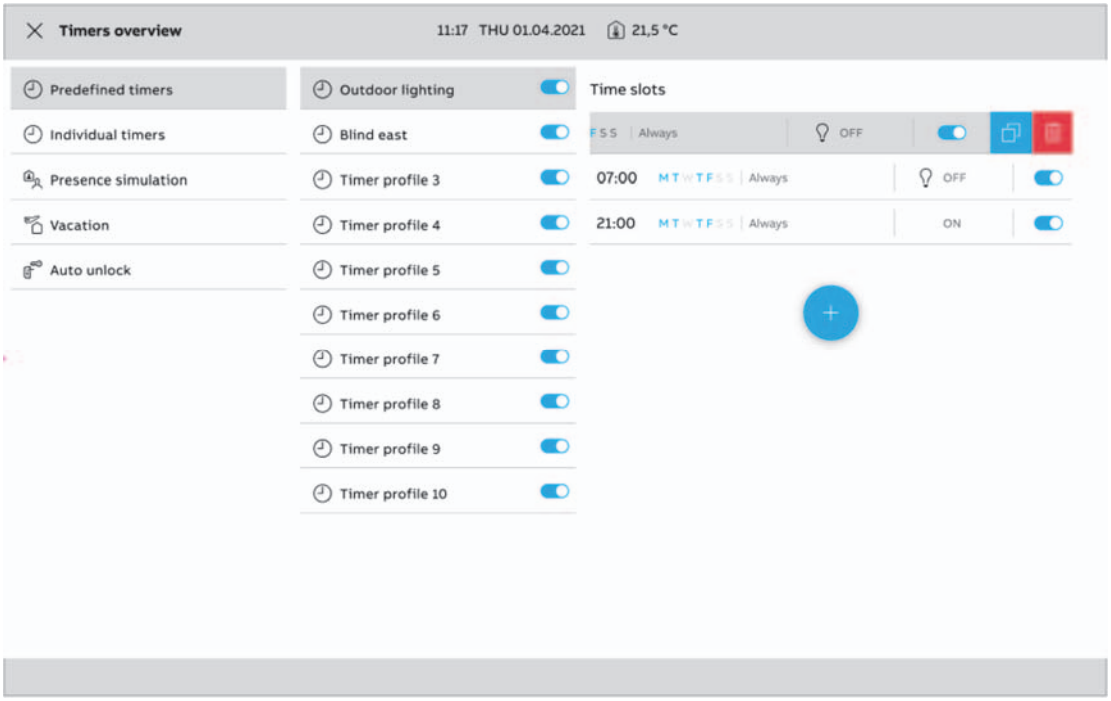


Fig. 60: Overview of the time program

A distinction is made between the following time programs in the overview:

- Predefined time programs
- Individual time programs
- Presence simulation
- Holiday mode
- Automatic opening

Active time programs are displayed in black lettering. Inactive time programs are greyed out. This can be activated or deactivated via the blue slider at the right next to each time program.

Creating an individual time program

1. Switch to the individual time programs.
   – Aside from the corresponding time programs, the conditions under which the time program becomes active are displayed in the time slots area.
2. Tap on the blue circle with the plus icon to create a new time program.
3. Select a control element.
4. Then, in the pop-up, select the start time, the end time and the affected weekdays.
5. If necessary, enable the astro function.
   – This function can be used, for example, to automatically raise or lower the blinds a few minutes earlier or later depending on the time of year.
   – The disabling function "Not before" and "Not after" fixes disabling times before or after which no functions are carried out. For this the time can also be set via the scrolling element.
6. Tap on the blue tick at the bottom right to confirm the settings.
   – The time program is then taken up into the time program list and can be edited there.

The available settings depend on the control element that is integrated in the time program. This, for example, also allows the setting of colour ranges for RGB lamps and corresponding values and steps for dimmers and fans.

Editing predefined time programs

If predefined time programs are used, they can be edited as follows:

- Adjustment of function (e.g. switch on or off).
  – Select time slot.
- Adjusting the times:
  – Select weekday(s).
- Specify the execution (always; on holiday; not on holiday).
- Deactivation/activation of the time program.
  – Tap on the blue tick at the bottom right to confirm the settings.

The adjustments become active immediately.

1. Select a predefined time program.
   – Aside from the corresponding time programs, the conditions under which the time program becomes active are displayed in the time slots area.
2. Select a time slot.
3. Then, in the pop-up, select the start time, the end time and the affected weekdays.
4. If necessary, open the astro function.
   – This function can be used, for example, to automatically raise or lower the blinds a few minutes earlier or later depending on the time of year.
   – The disabling function "Not before" and "Not after" fixes disabling times before or after which no functions are carried out. For this the time can also be set via the scrolling element.

5. Tap on the blue tick at the bottom right to confirm the settings.
   – The time program is then taken up into the time program list and can be edited there.

The available settings depend on the control element that is integrated in the time program. This, for example, also allows the setting of colour ranges for RGB lamps and corresponding values and steps for dimmers and fans.

Activating/deactivating time programs

1. Select a predefined or an individual time program.
2. Then actuate the slider in the list at the right next to the time program.
   – If the slider is moved to the right, the time program is active. If the slider is moved to the left, the time program is inactive.

Setup of holiday function

1. Select a predefined or an individual time program.
2. Change to the editing function of the respective time program.
   – Now the editing function of the individual time programs can be used to specify the time programs that are to run during the holiday.
3. Select the option "Only during holiday" at the bottom right in the editing function.
   – The time program is activated only when the holiday function is also active.
4. Then change to the submenu "Holiday" in the "Overview of the time" menu.
5. Activate the holiday function by activating the checkbox.
6. Specify the start and the end of the holiday. Use the scrolling element for this.
7. Tap on OK.
   – The overview list with the updated holiday entry is displayed.
8. Tap on the "Holiday" entry.
   – The lettering turns white. The holiday function is now activated.

Notice
The holiday function is deactivated by tapping on the activated entry.

Setup of presence simulation

1. Change to the ETS.
2. Define all group addresses in the ETS that are to be taken up, e.g. all lamps in the living room (see chapter “Editing group addresses“ on page 109).
3. Then link the group addresses with communication objects.
4. Then, via the "Take up" function in the panel, record the desired switching processes for a day.
5. Then specify the day and time on which the presence simulation is to be played.
6. With a tap on "Play", the presence simulations are carried out automatically on the selected days.

Setup of automatic opening

Via the "Automatic opening" function the door is opened automatically during a door call without having to press the door opener manually.

12.6 Inserting the micro SD card (SDHC)

Fig. 61: Inserting the micro SD card (SDHC)

Notice

For the transfer of data to the device via the micro SD card the power supply must be switched on.

12.7 System settings

Within the system settings general adjustments appropriate to the device can be made. These are described as follows.

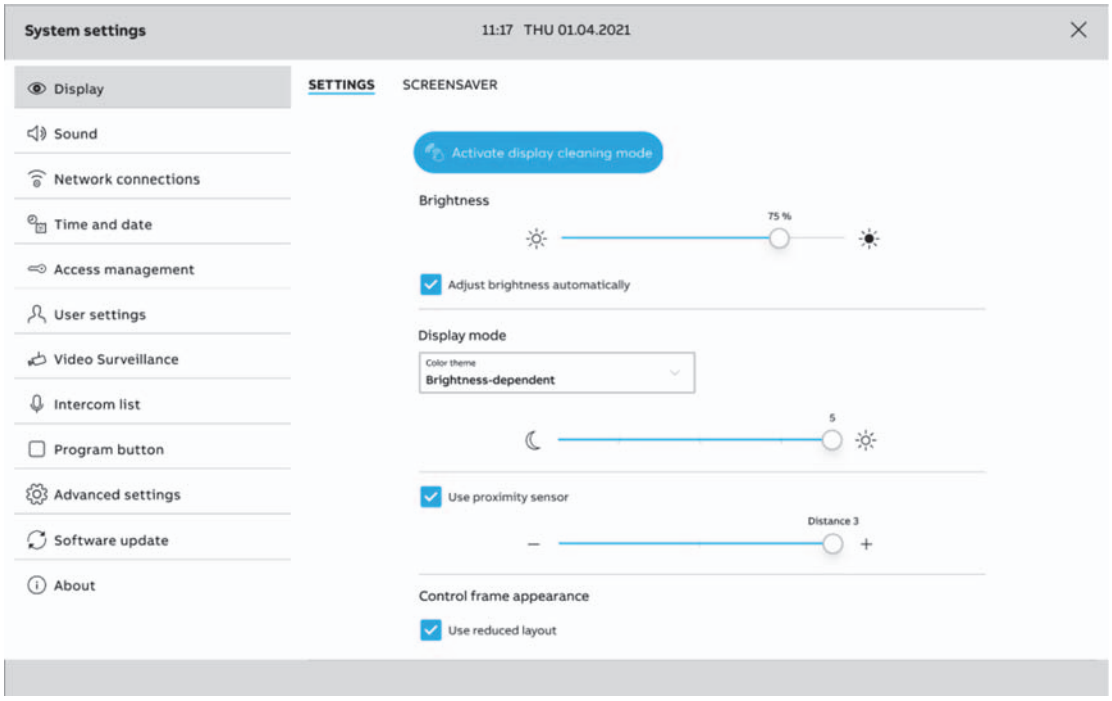


Fig. 62: System settings (example illustration)

The system settings are called up as follows:

1. Tap on the hamburger menu at the top left on the main operating page (homepage).
2. Then tap on the toothed wheel icon at the bottom left.
   – The system settings opens.

The following areas become available:

Pos.	Designation	Description
[1]	**Display**	Setting the brightness of the display via the slider. Specifying a screensaver.
[2]	**Sound**	Specifying the volume for the following sounds: ▪ Click sound ▪ Warning sound ▪ Fault sound Also a selection of sounds for different types of messages can be made. ■ If a micro SD card (SDHC) with suitable sound files is in the device, select a different sound from the card via the drop-down menu. The sound files should have format "mp3". Also wave files can be used. **Notice** The card must remain inserted in the device for this function!
[3]	**Network connections**	Adjustment of the network settings. Setup of access to the Welcome app and the MyBuildings Portal.
[4]	**Time and date**	Different time and date settings: ▪ Time ▪ Time zone ▪ Date ▪ Start of week
[5]	**Access authorizations**	If it was specified in the commissioning software that the end user can change the PIN code directly on the device, this page then becomes visible. ▪ Here the PIN code levels can be specified and adjusted.
[6]	**User settings**	Here the following settings can be made: ▪ Language ▪ Sensors ▪ Door communication ▪ Reset options
[7]	**Video surveillance**	Management of the IP and Welcome cameras (preview, positioning, etc.).
[8]	**Programming button**	Here the programming button for the primary function is added and set.
[9]	**Advanced settings**	Here settings can be made and data can be deleted.
[10]	**Software update**	Via this area the software is updated (see chapter “System settings - Software update“ on page 352).
[11]	**About**	This page provides general system information.

12.7.1 System settings - Display

In the system settings under "Display", general settings such as screen brightness and the layout can be specified. Also the screen saver can be specified.

Activate display cleaning mode

To ensure that no function is triggered unintentionally during cleaning of the device, it can be disabled for a certain time. The cleaning blockage is activated with a press of the "Activate display cleaning mode" button. It is automatically deactivated after 30 seconds.

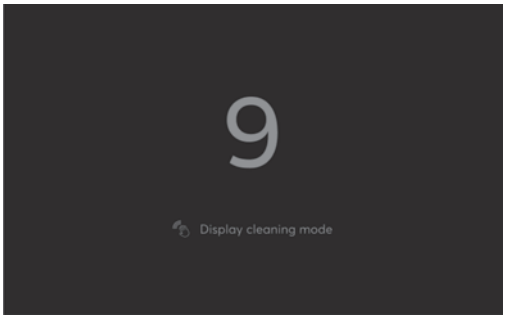


Fig. 63: Countdown at activated cleaning blockage

Brightness adjustment

- The brightness of the display can be adjusted by moving the slider from left to right.
- By activating the checkbox "Adjust brightness automatically", the adjustment is made automatically in dependence of the ambient brightness.

Specifying the start page

1. The drop-down menu "Start page" is used to specify whether the dashboard or the first homepage is to be used as start page.

Specifying the display mode

1. The drop-down menu "Colour scheme" is used to specify the colour scheme of the display (dependence on light, light theme, dark theme).
2. Step (1 - 5) can then be set with the slider below the menu.
3. The proximity function of the display is activated by activating checkbox "Use proximity sensor". Following this, the distance value must be specified (1 - 3).

If necessary, the appearance of the control elements can then also be specified. Here one can switch between a reduced and a detailed layout.

Setting the screen saver

A screen saver can be activated if the display is not used. Here you can select between a clock, slideshow and weather. If a micro SD card (SDHC) with suitable pictures is in the device, select a screen saver via the drop-down menu. If there are several pictures on the micro SD card (SDHC), they are displayed as a slide show.

1. Specifying the type of the screen saver.
2. Then, if necessary, a time delay up to the triggering of the screen saver can be set.
3. Then, if necessary, a time delay up to the switch-off of the display can be set.
   – Activate the checkbox additionally when the display is to switch off already after a brief period.

Notice

If the weather display is used as screen saver, the data are called up out of the Internet. The weather data are called up via myBUSCH-JAEGER.

Picture requirements for slideshow

- The pictures must be stored on the micro SD card (SDHC) on the first level in the "Picture" directory.
- The maximum permissible size of a picture is 3 MB.
- The supported format is "jpg".

12.7.2 System settings - Sound

In the system settings under Sound, general settings and adjustment of volume for the door communication and automation can be specified.

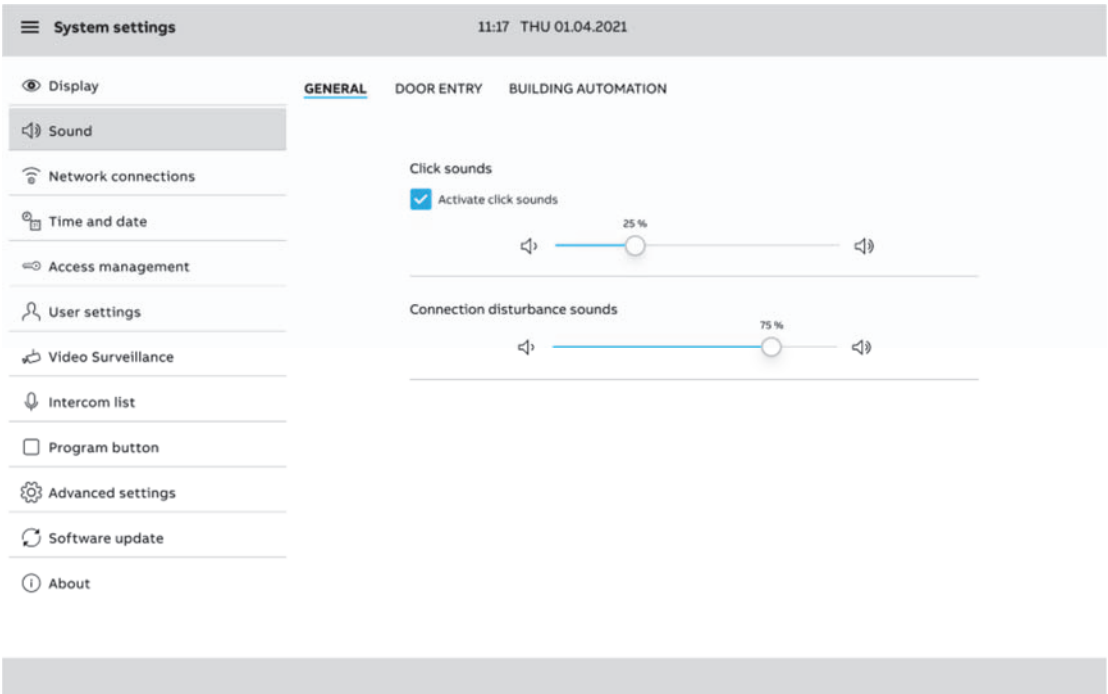


Fig. 64: Sound settings

Display sound

Under "General", the general sounds on the panel can be set. After activating the checkbox "Activate click sound", the percentage of volume for click sounds can be specified with the

slider.

The volume for connection faults can also be specified via a slider.

Door communication / Building automation

The tabs "Door communication" and "Building automation" can be used to set the bell and alarm tones for outdoor stations, intercom, door call and porters office. Also the volume of bell and alarm tones can be specified.

12.7.3 System settings - Network connections

System settings can be used to make adjustments to the network connections. In addition, a connection to the Busch-Welcome® App and the myBUSCH-JAEGER portal can be established.

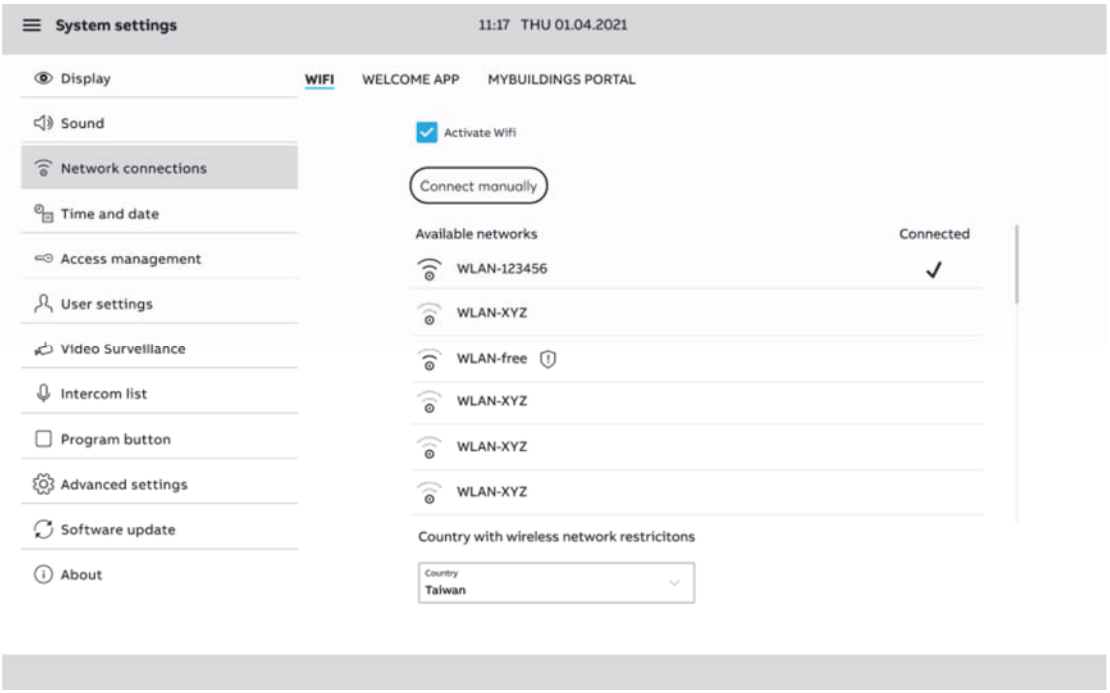


Fig. 65: Network settings

Establishing a WiFi connection

A WiFi connection can be established automatically or manually after activating the WiFi function.

1. Enable the WiFi function in the WiFi tab by activating the checkbox.
2. Establishing a network connection manually or automatic.
3. When establishing a manual network connection, enter the SSID and the password.
4. When activating DHCP, enter the IP address, subnet mask, DNS and default gateway.
5. Establish the connection with the "Connect" button.

Notice

If you are in a country with WLAN limitations (Taiwan, Israel, Japan), you can select this in the list below the available WLAN networks.

Connecting smartphone with Busch-Welcome® App

For remote access smartphones can be connected with the Welcome app.

1. Tap on the plus icon.
2. Scan the QR code.
3. Select the allocated device in the overview.
4. Specify the rights for remote access by activating the checkboxes.

Notice
A dustbin icon is displayed with a constant tap on a device in the overview. Here, if desired, the remote access of the respective device can be deleted.

Establishing a connection to the myBUSCH-JAEGER portal

For the remote access a connection must be established to the myBuildings portal.

1. Tap on "Login" in tab myBUSCH-JAEGER.
2. Enter the login data.
3. Confirm with a tap on "Login".
   – A successful login is confirmed with message "Connected". The name of the connected user is displayed in the overview.

12.7.4 System settings - Time and date

All relevant data can be specified in the time and data settings. Also an automatic time change can be defined. If the time and data settings were assigned automatically by the ETS, they cannot be adjusted (greyed-out options).

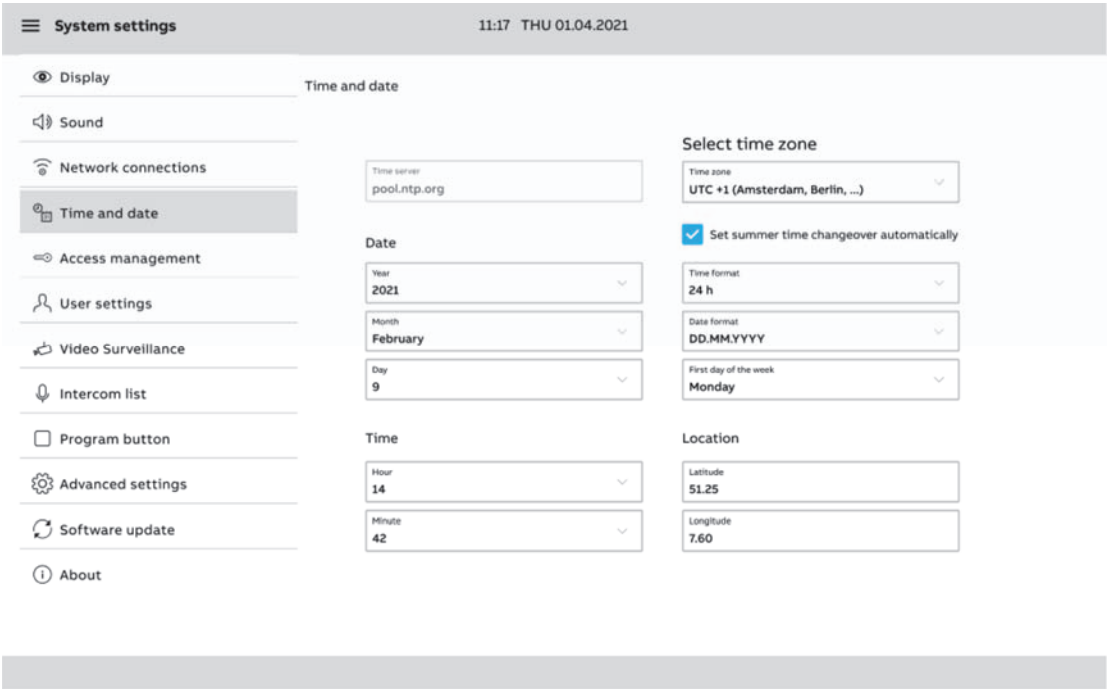


Fig. 66: Time and date settings

12.7.5 System settings - Access management

The settings of the access control make possible the specification of PIN codes for secured areas, outdoor stations and access modules. All available control mechanisms and devices are listed here and can be equipped with a PIN code. The possible digit length of the PIN code is defined via the ETS.

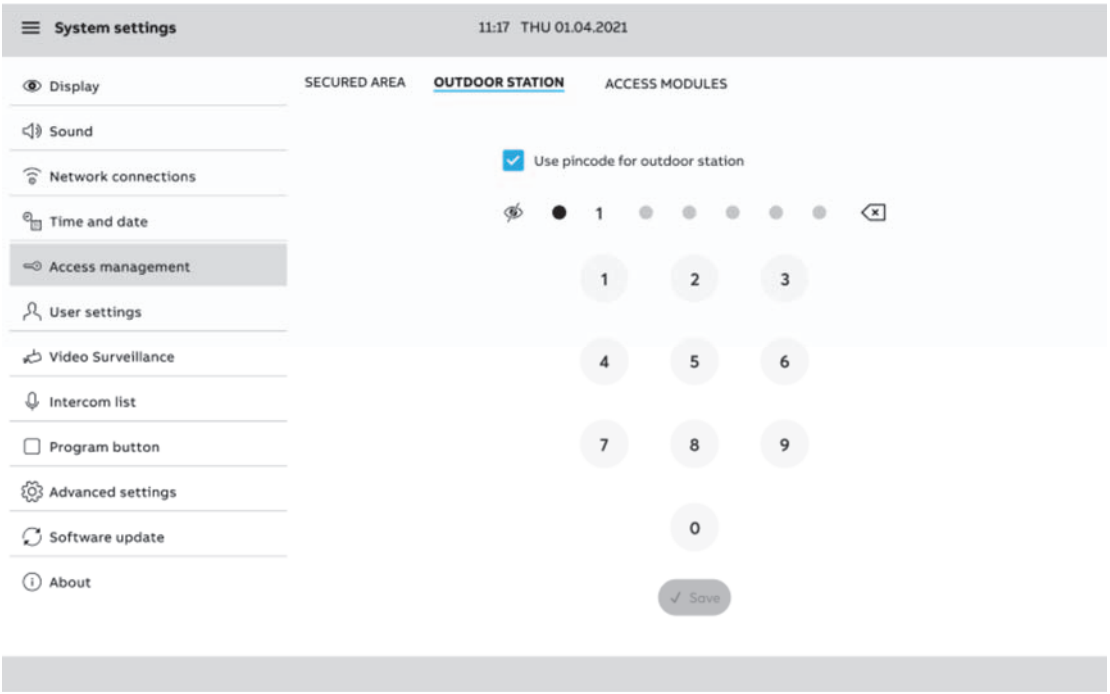


Fig. 67: Access control

Specifying a PIN code

1. Select an area for which a PIN code is to be assigned (e.g. extended settings).
2. Assign a PIN code in the menu in the screen area on the right.
3. Specify the PIN code by tapping on "Save".

Notice
Also the PIN code can be newly assigned in this way.

12.7.6 System settings - User settings

The panel language and the function of sensors and door communication can be set within the user settings. The user settings can also be reset.

Language

The language of the panel and the separators to be used can be specified via the "Language" tab. Here a selection can be made from the specified options within the drop-down menu.

- **Language**

Options:	<Language>

The parameter is used to specify the language of the panel.

- **Separator**

Options:	<Decimal separator>
	<Thousands separator>

The parameter is used to specify the type of the decimal (comma or full stop) and thousands separator (comma or full stop).

Sensors

The "Sensors" tab can be used to specify how strong the haptic feedback of the panel is to be when it is touched.

- **Activate haptic feedback**

Options:	Activate
	Deactivate

This parameter is use to activate or activate the haptic feedback. Then the vibration can be adjusted with the slider (left = weak, right = strong).

- **Temperature**

Options:	<Temperature>
	<Wall type>

The parameter is used to specify the temperature unit. Also the type of wall can be specified, since this has an effect on the temperature reading. The temperature is indicated in the status display on the dashboard by activating the "Show temperature in the status display" checkbox.

Door Entry System

The "Door communication" tab can be used to specify how the system is to respond during the recording of snapshots and missed door calls.

- **Automatic snapshots**

Options:	Deactivate
	Activate

When the checkbox is activated, the snapshots are taken automatically.

- **Temperature**

Options:	Deactivate
	Activate

When the checkbox is activated, notifications are sent automatically when door calls are missed.

Reset options

The "Reset options" tab can be used to reset the settings assigned to a user. For this the reset user settings button must be tapped. Then the reset of the settings must be confirmed with "Yes".

12.7.7 System settings - Video surveillance

New cameras can be added and existing cameras can be managed in the video surveillance area. Also the camera software can be updated.

Notice
The Busch-SmartTouch® only supports IP cameras of type ONVIF/RTSP. ONVIF is always set automatically.

Adding IP camera

IP cameras can be added and edited via the IP camera tab. The system can be searched automatically for existing cameras. Cameras can also be integrated manually into the system.

1. Tap on the plus icon.
2. Select whether cameras should be searched for automatically or added manually.
   – Cameras that are found are listed in the screen area on the right. Tap on the corresponding camera to select it.

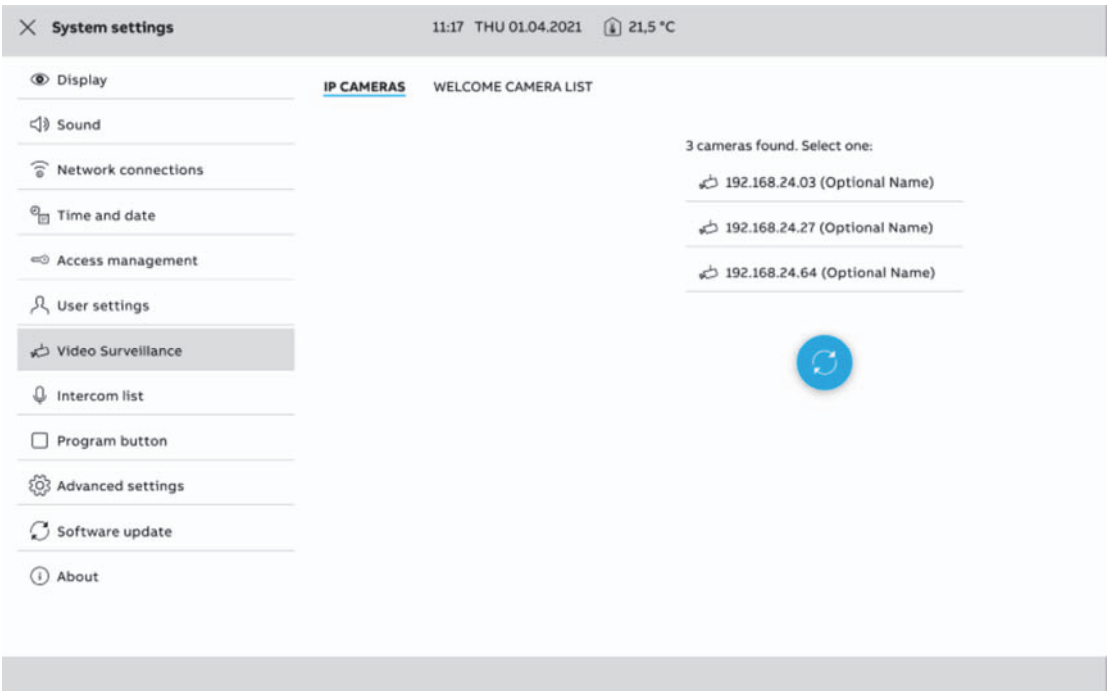


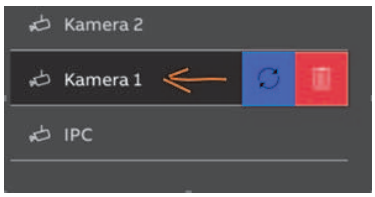
Fig. 68: Adding IP camera

– Select the camera protocol for the manually added camera, and enter the RTSP-URL as well as the user name and the password.

3. Then add the camera via "Add".
4. Then name the camera and position it accordingly. If necessary, add a preview image via the "Create preview image" button.

Deleting IP camera

Integrated IP cameras can be deleted via the IP camera tab. The system can be searched automatically for existing cameras.



1. Select a camera in the camera list.
2. Visualise the camera menu by swiping to the left on the menu entry of the affected camera.
3. Tap on the rubbish bin icon next to the camera to delete it.

Managing Welcome cameras

Cameras can be managed via the list of Welcome cameras. The system can be searched automatically for existing cameras. In addition, a camera name, the positioning and a preview on the dashboard can be specified.

1. Tap on the update button.
2. Select a camera from the overview list.
3. Then name the camera and position it accordingly. If necessary, add a preview image via the "Create preview image" button.
4. Tap on the house icon to add the camera to the dashboard.

12.7.8 System settings - Programming button

New programming buttons can be added via the "Programming button" menu and the door communication can be managed.

Adding new programming button

Programmable button functions can be added and managed via the programming button tab.

1. Add a new programming button via the plus icon
2. Assign a function to the programming button.
   – Light
   – Relay
   – Door
   – …
3. Assign a name.
4. Enter the address of the programming button.
5. Tap on the house icon to display the programming button on the dashboard.
6. Then tap on "Save".

Managing door communication

Functions of the door communication can be arranged or managed via the door communication tab. This serves to display the functions on the dashboard in the desired order.

1. Select the corresponding programming buttons and functions in the left area.
2. Then add via the arrows.
3. Adjust the order via the arrows in the right area.

12.7.9 System settings - Extended settings

Settings on the door communication can be made via the extended settings. In addition, a PID file with the configurations made in the ETS can be uploaded (see chapter “Transfer of PID file (Configuration file) “ on page 355). If required, the system can be reset to the factory settings.

The settings can only be made when the PIN code was entered successfully beforehand.

Managing door communication

Standard functions of the door communication can be activated and deactivated by activating the checkboxes. Also a door communication configuration can be imported or exported via an SD card.

Building automation

Here the current physical address of the Busch-SmartTouch® is displayed. The programming mode for the transmission of the physical address of the ETS can be activated by marking the white checkbox. A PID file with the configuration from the ETS can be read into the "Building automation" tab.

1. Tap on the "Read in PID file from SD card" button.
   – An overview of all PID files available on the SD card is displayed.
2. Select the appropriate PID file.

3. Confirm the installation of the PID file by tapping on the "Install PID file" button.

Resetting system to factory settings

The system can be reset to the factory settings in the "Reset options" tab.

1. Tap on the "Reset to factory settings" button.
   – An overview of all PID files available on the SD card is displayed.
2. Confirm the enquiry.
   – The system will be reset to the factory settings.

Notice
After a successful reset, the system is restarted.

12.7.10 System settings - Software update

Software updates are performed with the aid of the SD card. The firmware update can be made in two different ways.

- Update via the internet
- Update via the SD card

Update via the internet

1. Tap on the "Search for updates" button in the "Firmware update" tab.
   – The system then searches for available updates. A new available update is displayed in the dialogue.
2. Perform the update by tapping on "Install update".
   – The successful installation is displayed in the dialogue. If there was a problem during the update, it can be installed again.

Notice
If required, activate the checkbox "Check and download automatically". This is how updates are searched for and installed.

Update via SD card

1. Tap on the "Read SD card" button in the "Firmware update" tab.
   – The system then searches for available updates. If there is a new update on the SD card, this is displayed in the dialogue.
2. Perform the update by tapping on "Install update".
   – The successful installation is displayed in the dialogue. If there was a problem during the update, it can be installed again.

Performing a restart of the panel

1. Tap on the "Restart panel" button in the "Firmware update" tab.
2. Tap on the "Restart panel" button in the dialogue.
   – The panel is restarted.

Importing / exporting the backup of the panel

1. Tap on the "Read SD card" button or "Create backup manually" in the "Panel backup" tab.
2. Enter the PIN code.
   – The backup file will then be loaded into the panel, or created.

– The panel is restarted.

12.7.11 System settings - Via

From this page information about the WIFI connection, networked systems and licence requirements can be called up. You can switch between the different system information via the tabs at the upper edge of the screen.

Also log files can be exported to the SD card.

12.7.12 Terminal resistor

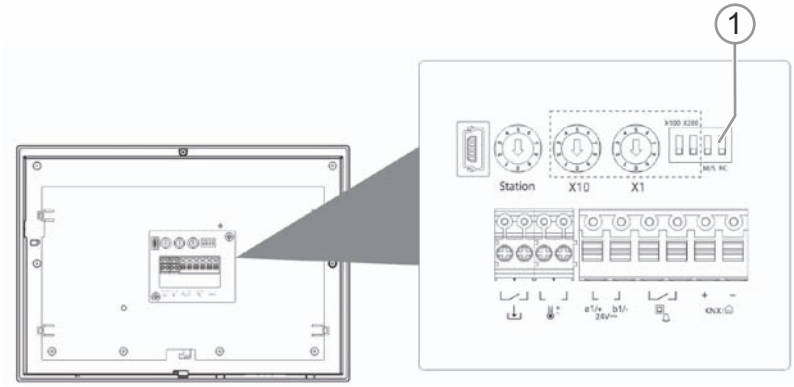


Fig. 69: Terminal resistor

In pure audio installations always set the terminal resistor [1] on "OFF". To do this, use switch 4 "RC".

In video installations or mixed audio and video installations set the terminal resistor for the last devices of a branch on "ON".

12.7.13 Setting master/slave switches

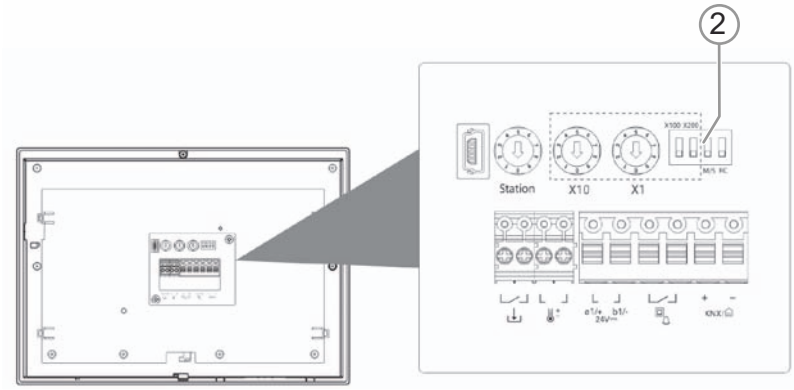


Fig. 70: Master/slave switches

One station "Master" must always be in each apartment. All other indoor stations in the same apartment must be "Slave".

Indoor station that is set up as "Master":

1. Set switch 3 "M/S" [2] on "ON".

All other indoor stations:

1. Set switch 3 "M/S" [2] on "OFF".

13 Update

13.1 Transfer of PID file (Configuration file)

The image file can be transferred to a micro SD card, see Chapter 12.6 “Inserting the micro SD card (SDHC)“ on page 339. This micro SD card can be inserted into the panel and the data are transferred to the Busch-SmartTouch®.

Notice
The micro SD card must be formatted with FAT32 before use.

1. Transfer the PID file to the micro SD card.

Notice
If necessary, use an adapter for the micro SD card to transfer the data from the PC to the card.

2. Insert the micro SD card into the device.
   – When the micro SD card has been inserted correctly into the device, this is signaled by an icon in the status bar.

14 Addressing

The individual stations or components are networked with each other in a Busch-Welcome® system.

An example: To ensure that the bell rings in a certain apartment when you press a specific doorbell button, they must be "programmed" together. In this case the indoor station of an apartment is assigned to a doorbell button of an outdoor station. This programming process is designated as "Addressing".

The process of addressing is generally the same for all devices of the Busch-Welcome® system. The addressing is performed via three trimmers and two Dip switches.

- Addressing is carried out on the trimmers and DIP switches.
- The trimmers and DIP switches are located on the rear of the device. To adjust the device it must be removed.

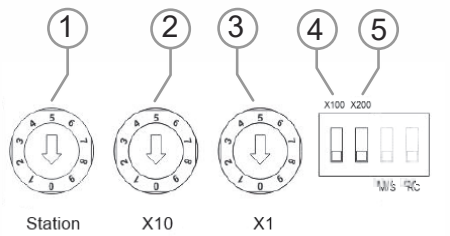


Fig. 71: Trimmers and Dip switches for addressing (Example)

Trimmer [1]:

- Address of outdoor station

Trimmers [2] and [3] and Dip switches [4] and [5]:

- Address of an indoor station.
- Tens digit [2], ones digit [3], [4] and [5] hundreds digits

15 Maintenance

15.1 Cleaning

Caution! - Risk of damaging the device!

- When spraying on cleaning agents, these can enter the device through crevices.
  - Do not spray cleaning agents directly onto the device.
- Aggressive cleaning agents can damage the surface of the device.
  - Never use caustic agents, abrasive agents or solvents.

Clean dirty devices with a soft dry cloth.

– If this is insufficient, the cloth can be moistened slightly with a soap solution.

16 Notes

17 Index

Busch-Jaeger Elektro GmbH
A member of the ABB Group

Freisenbergstraße 2
58513 Lüdenscheid

www.BUSCH-JAEGER.de
info.bje@de.abb.com

Central sales service:
Tel.: +49 2351 956-1600
Fax: +49 2351 956-1700

2CKA001473B5342

BUSCH-JAEGER