Product manual | 08.09.2023

ABB i-bus® KNX

SD/U12.55.1-825 2.4" Display Balance

SD/U12.63.1-825 2.4" (6.10 cm) Display

SD/U12.70.1-4015 ABB SmartTouch® 2.4"

RT/U12.86.1-811 4" RoomTouch®

RT/U12.86.1-825 ABB RoomTouch® 4"

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 include this manual along with it.

ABB 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 ABB or visit our Internet site at:

https://new.abb.com/en

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.

ABB 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 displays are multifunctional room control displays for visualizing and operating building functions in ABB i-bus® KNX and ABB-free@home® systems.

The devices are available as frame-based and single displays (ranging from 2.4" to 4.0"). The frame of the design range must be installed with the 2.4'' display (e.g. solo, future, axcent, etc.).

The devices are 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 14 is deemed improper use and can lead to personal injury and damage to property.

ABB 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, ABB 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. ABB 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 safe 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.:

- Safe 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 display. 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 7.6.1 “Basic settings (system settings) of the panel“ on page 44.

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 ABB is accepted.

Password rules

Preset passwords should be changed by the user during the first use of the device.

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 displays are multifunctional room control displays for visualizing and operating building functions in ABB i-bus® KNX and ABB-free@home® systems.

- The devices are available in frame-bound form and single displays (2.4" and 4.0").
- The displays have a capacitive touchdisplay with a resolution of 240 x 240 points.
- The control is connected with a haptic feedback (vibration) and signals specific operating statuses to the user.
- Up to 4 functions per page, up to a total of 12 functions on several pages.
- The 2.4" displays can be combined with existing design lines (e.g. solo, future, axcent, etc.).

The displays are compatible with both bus systems of ABB i-bus® KNX and free@home Bus. The signals are transmitted and the power for the device is supplied via the ABB i-bus® KNX or the free@home Bus. An additional power supply is required.

The device can also be used for the display of fault and alarm messages.

KNX configuration

The displays are configured with commissioning tool "ETS" and an ETS app.The commissioning tool is integrated in the ETS and makes possible the direct access to group addresses and flags of communication objects. The control elements consist of freely programmable touch surfaces.

The ETS app must be loaded from the KNX online shop and installed in the ETS.

- The ETS app for the 2.4" display is called ABB DCA LC-Display.
- The ETS app for the 4" display is called ABB Touch DCA.

4.1 Scope of supply

– Display
– 2 Connecting terminals
– Support ring

Notice

- The connection with the ABB i-bus® KNX is established by means of the enclosed bus connection terminal.
- The connection of the necessary auxiliary power supply and optional temperature sensors is made via an enclosed connecting terminal.
- The connections of the power supply and the temperature sensor must not be switched. Otherwise the device will be damaged.

4.2 Accessories

Not included in the scope of delivery, please order separately

– Power supply via a separate power adaptor, e.g. CP-D 24/2.5
– Temperature sensor Pt1000 or DP4-T-1

4.3 Overview of types

Article no.	Product name	Colour	Dimension	Display diagonal
SD/U12.55.1-825	2.4" Display Balance	Black	55 mm x 55 mm	6.1 cm (2.4“)
SD/U12.63.1-825	2.4" (6.10 cm) Display	Black	63 mm x 63 mm	6.1 cm (2.4“)
SD/U12.70.1-4015	ABB SmartTouch® 2.4"	Black	70 mm x 70 mm	6.1 cm (2.4")
RT/U12.86.1-811	4" RoomTouch®	Black	86 mm x 86 mm	10.16 cm (4“)
RT/U12.86.1-825	ABB RoomTouch® 4"	White	86 mm x 86 mm	10.16 cm (4“)

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 ▪ Venetian blind control ▪ RGBW operation ▪ Fan control (step switch) ▪ Scene control ▪ Display functions (display elements) ▪ Internal room temperature controller (RTC) ▪ Room temperature controller operation (RTC) ▪ Split Unit Control ▪ Audio control	▪ Fault and alarm messages ▪ Scene actuator ▪ Logic functions ▪ Internal room temperature controller (RTC)

Table 2: Overview of functions

4.5 Device overview

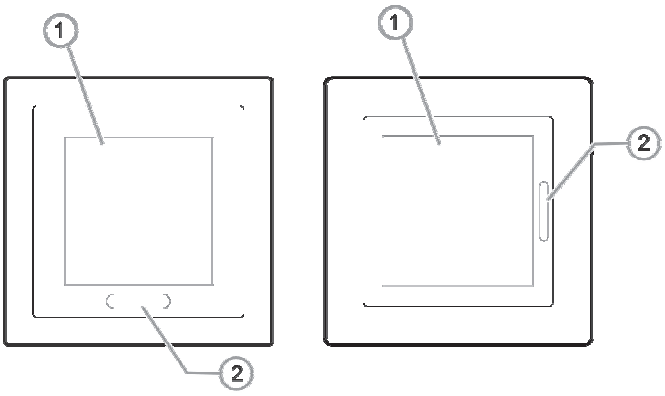


Fig. 2: Device overview of 2.4" display front side

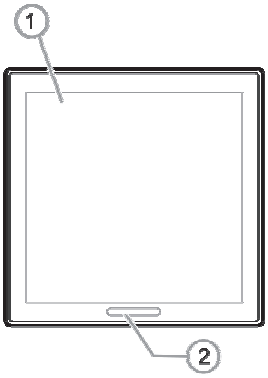


Fig. 3: Device overview of 4" display front side

Pos.	Description
1	Touch screen
2	Proximity and brightness sensor

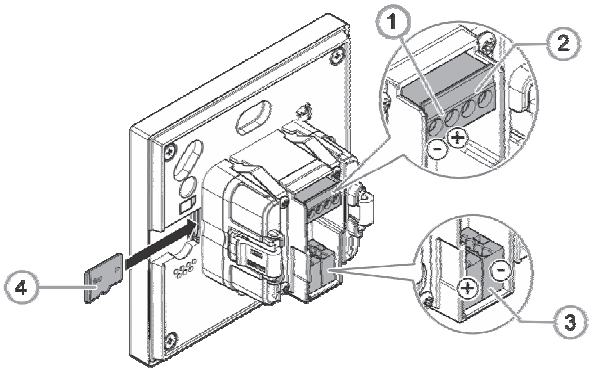


Fig. 4: Device overview of display rear side

Pos.	Description
1	Connection of auxiliary power supply
2	Temperature sensor connection
3	Bus connection
4	SD card insertion position

5 Technical data

Designation	Value
Display resolution:	240 x 240 pixel (HD)
Aspect ratio:	1:1
Colour resolution:	16 million colours
Display size:	6.10 cm (2.4") 10.16 cm (4")
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 Automatic
Bus voltage: ▪ ABB i-bus® KNX ▪ ABB-free@home®	21 V - 32 V DC
Bus participants:	1 (7.5 mA)
Power supply (SELV): (e.g. MDRC power adapter CP-D 24/2.5)	20 - 32 V DC
Nominal current:	24 V DC, 75 mA for 2.4" 24 V DC, 100 mA for 4"
Bus and power supply connection Bus connection terminal Line type: Wire stripping:	 0.6 - 0.8 mm J-Y(St)Y, 2 x 2 x 0.8 mm 5 - 6 mm
Transmission protocol:	KNX (TP, S) ABB-free@home® (TP)
micro SD card reader File System:	microSD, microSDHC, microSDXC (SD card not included in delivery) FAT32
Internal temperature sensor:	Yes
External temperature sensor:	Pt1000 or DP4-T-1 (not included in the scope of delivery)
Protection type:	IP20
Operating temperature:	-5°C - +45°C

Storage temperature:	-20°C - +70°C
Dimensions:	See “Dimensional drawings“ on page 27
Startup: – Parameter setting (KNX) – Programming	 ETS 5.7.7 or ETS 6 or web-interface System Access Point via KNX bus or micro SD card

Table 3: Technical data

5.1 Dimensional drawings

Notice
All dimensions are in millimetres.

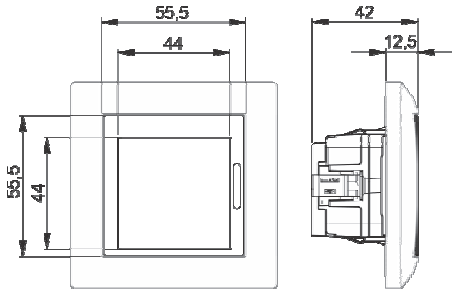


Fig. 5: 2.4" Display Balance SD/U12.55.1-825

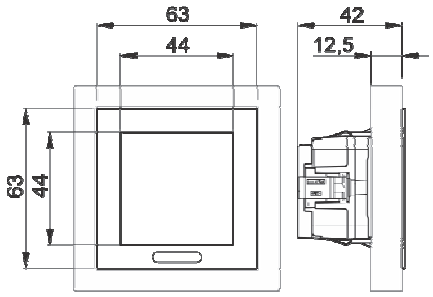


Fig. 6: 2.4" (6.10 cm) Display SD/U12.63.1-825

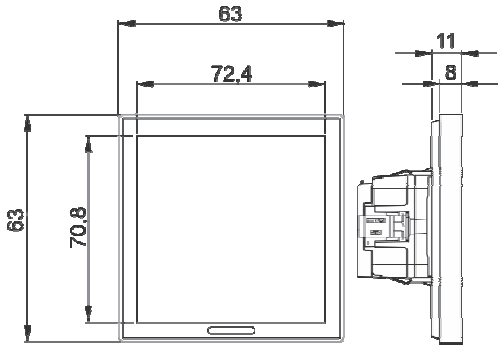


Fig. 7: 4" RoomTouch® RT/U12.86.1-811

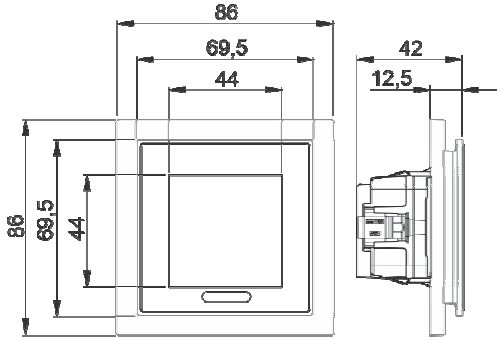


Fig. 8: ABB SmartTouch® 2.4" SD/U12.70.1-4015

5.2 Circuit diagrams

Attention! - Risk of damaging the device

- Observe the correct polarity!
- The power input connector [1] and the temperature sensor/binary input connector [2] must under no circumstances be mismatched. Otherwise, the device may be damaged.
- Apply only passive signals without own power supply to temperature sensor/binary input socket [2].

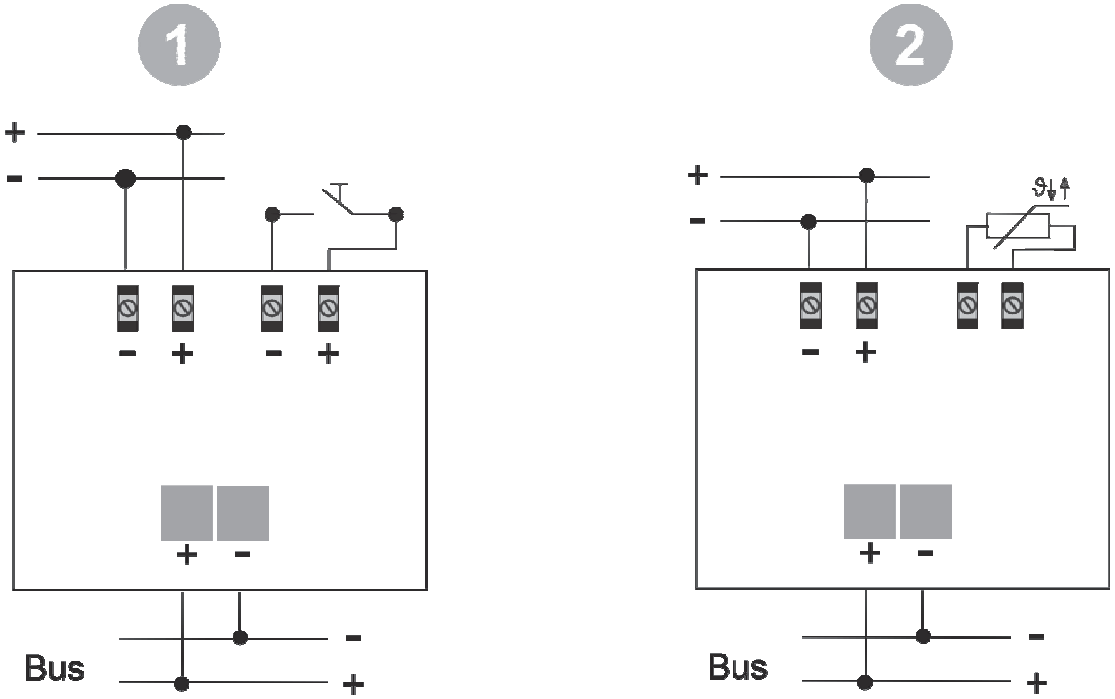


Fig. 9: Electrical connection

No.	Function
1	Connection with external binary input
2	Connection with room temperature sensor

Table 4: Electrical connection

6 Connection, installation / mounting

6.1 Planning instructions

Notice

Planning and application instructions for the system are available in the system manuals for ABB i-bus® KNX and ABB-free@home®. These can be downloaded via https://abb.com/knx or https://abb.com/freeathome.

6.2 Safety instructions

Danger - Electric shock due to short-circuit!

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

– Low-voltage and 100 - 240 V lines must not be installed together in a flush-mounted box!
– Observe the spatial division during installation (> 10 mm) of SELV electric circuits to other electric circuits.
– If the minimum distance is insufficient, use electronic boxes and insulating tubes.
– Observe the correct polarity.
– Observe the relevant standards.

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 Electrical connection

6.4.1 Connection

Attention! - Risk of damaging the device

Observe the floating isolation of the control and working power circuit. Non-observance can cause damage to the device.

Attention! - Risk of damaging the device

– Observe the correct polarity!
– The power input connector [1] and the temperature sensor/binary input connector [2] must under no circumstances be mismatched. Otherwise, the device may be damaged.
– Apply only passive signals without own power supply to temperature sensor/binary input socket [2].

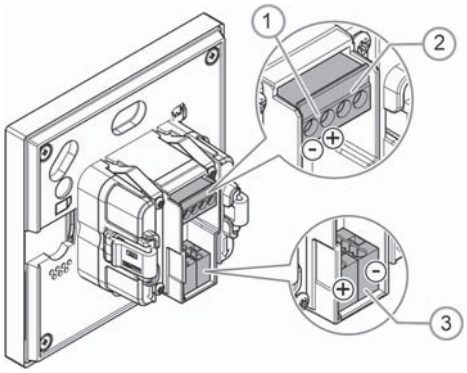


Fig. 10: Function of connection

No.	Function
1	Power supply connection
2	Temperature sensor/binary input connection
3	KNX bus connection

Table 5: Function of connection

1. Connecting the device See “Circuit diagrams“ on page 28.

6.5 Mounting / dismantling

6.5.1 Installation sites

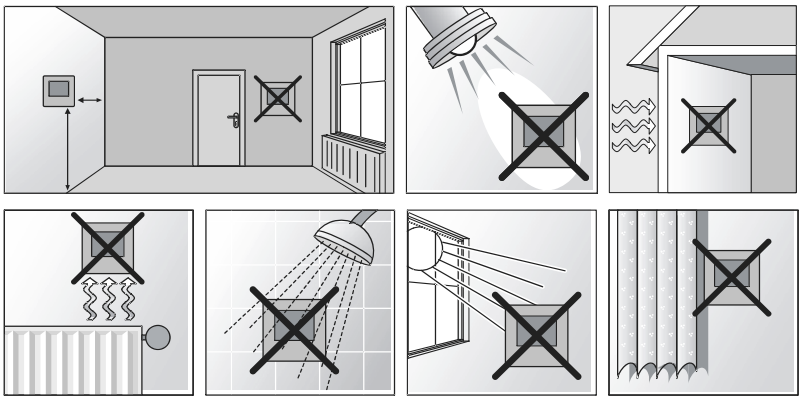


Fig. 11: Installation sites

- 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

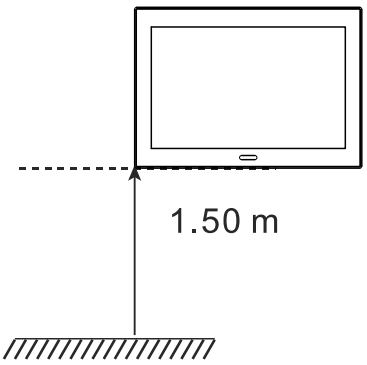


Fig. 12: Mounting height

- The mounting height is 1.50 m.

6.5.2 Removal protection

Removal protection (optional)

Notice
The removal protection TZE/U.0.1.CK is available as an option.

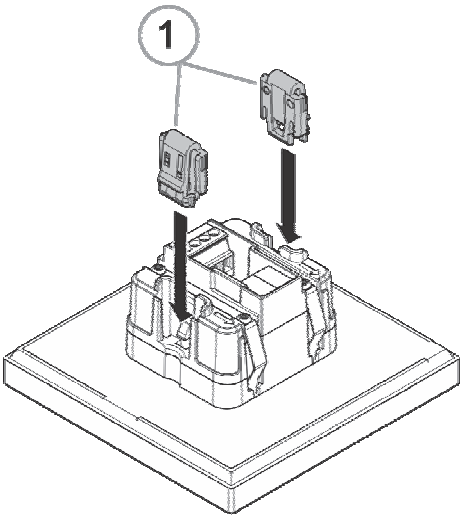


Fig. 13: Installation of the removal protection

For removal protection, the clamps [1] must be inserted before installation.

6.5.3 Mounting

Fig. : Mounting with cover frame

Mounting with cover frame is possible with the following displays:

- SD/U12.55.1-825 2.4" Display Balance
- SD/U12.63.1-825 2.4" (6.10 cm) Display
- SD/U12.70.1-4015 ABB SmartTouch® 2.4"

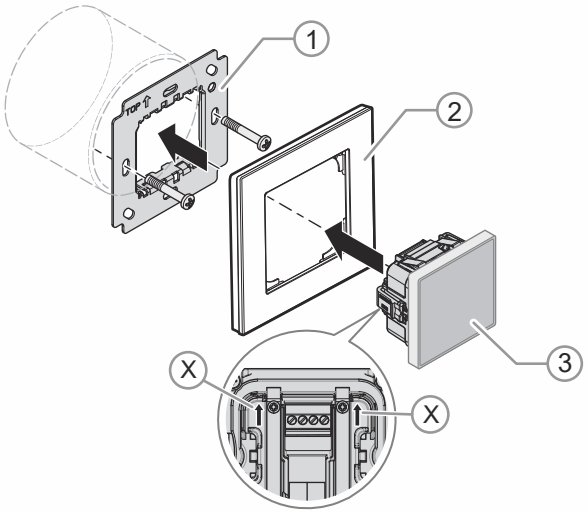


Fig. 14: Mounting with cover fame

For mounting with cover frame the following steps are necessary:

1. Install the support ring [1] .
2. Insert the device in the cover frame [2].
3. Connect the wires to the connecting terminals, See “Circuit diagrams“ on page 28.
4. Snap the device [3] into the support ring [1] by hand.
   – Observe the correct alignment [X]!

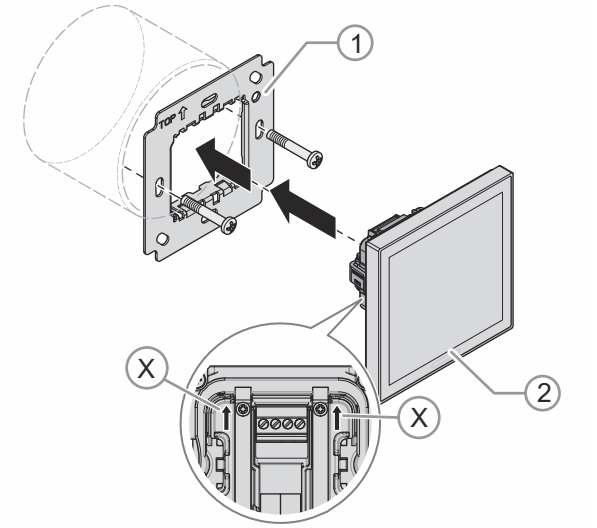
Notice
The arrows [X] on the back must point upwards.

The device is now fully mounted.

Mounting without cover frame

Mounting without cover frame is possible with the following displays:

- RT/U12.86.1-811 4" RoomTouch®
- RT/U12.86.1-825 ABB RoomTouch® 4"



For mounting without cover frame the following steps are necessary:

1. Install the support ring [1] .
2. Connect the wires to the connecting terminals, see chapter 6.4 “Electrical connection“ on page 30.
3. Snap the device [2] into the support ring [1] by hand.
   – Observe the correct alignment [X]!

Notice
The arrows [X] on the back must point upwards.

The device is now fully mounted.

6.6 Dismantling

Dismantling is carried out in the reverse order to mounting.

Notice
After mounting with Removal protection for control elements, (See “Removal protection“ on page 32), removal protection, dismantling is then only possible with Removal protection tool TZW/U.0.1.CK!

For dismantling with Removal protection for control elements, carry out the following steps:

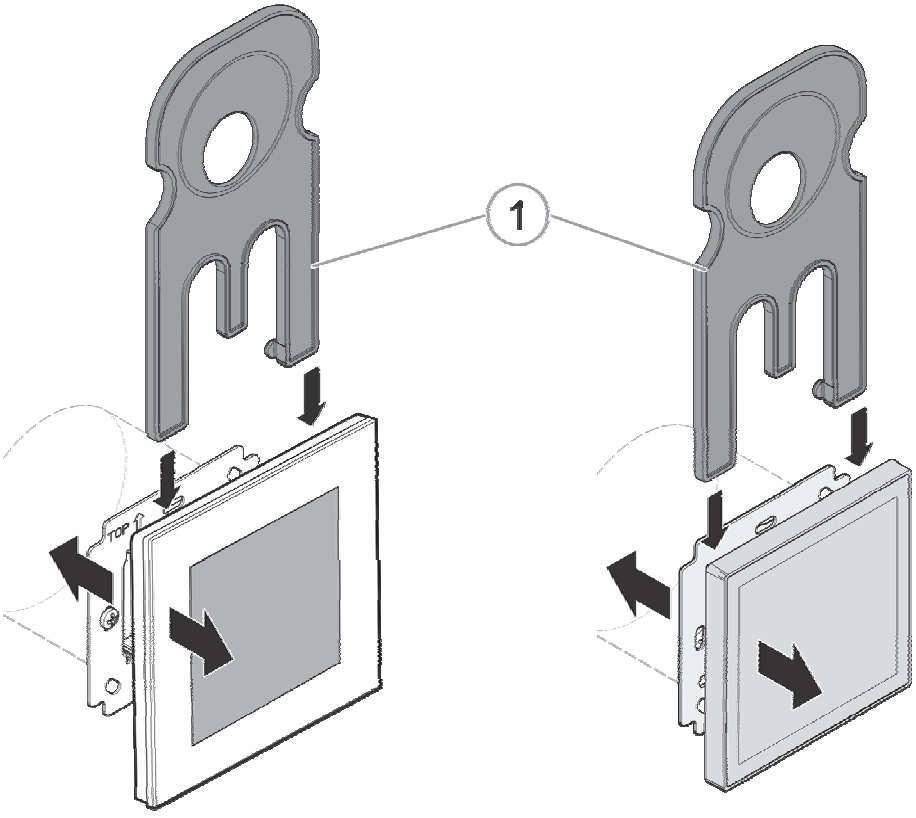


Fig. 15: Dismantling with removal tool

1. Guide the Removal protection tool tool down behind the device to the limit stop.
2. Remove the device.

7 Commissioning of the KNX function via DCA

Commissioning the display for KNX TP takes place via the Engineering Tool Software (ETS) in connection with the respective device control app (DCA).

– ABB Touch DCA for the 4" RoomTouch® or the 4" display
– ABB DCA LC-Display for the 2.4" display

7.1 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.

7.1.1 Prerequisites

DCA version

The minimum requirement is the use of following software with the ETS app:

– ABB Touch DCA for the 4" RoomTouch® or the 4" display
– ABB DCA LC-Display for the 2.4" display

ETS version

The minimum requirement is the use of ETS from version 5.7.7.

SD card

The following SD card types are supported:

Type:	Micro SD
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.
- ABB is not liable for the performance of an SD card.
- The SD card is not included in the scope of delivery.

7.1.2 Installation of the ETS app

A special Device Control App (DCA) is to be installed in the ETS for the configuration and parameter setting of the control elements. The DCA is called up in the device settings of the ETS. There it can be called up as additional tab. The app can only be used with a licensed ETS professional. At least version ETS5 version 5.7.7 is required.

Notice

- Also ETS6 can be used.
- The ETS can be downloaded directly via the homepage of the KNX organisation (https://knx.org).
- The apps are called up as follows:
  - From ETS5 version 5.7.7: on the ETS start page via "App" (bottom right).
  - From ETS6: via the ETS settings.

Notice

For the displays Busch-SmartTouch® 2.4" the DCA "LC-Display" is to be loaded, for the displays RT/U12.xx.1-xxx the DCA „ABB Touch DCA".

7.1.3 Installation sequence

Notice
The following description of the installation sequence is made on the basis of version ETS 5.7.7.

The ETS app (*.etsapp file) for the Display is installed and licensed via the ETS. The app can be downloaded via your My KNX access.

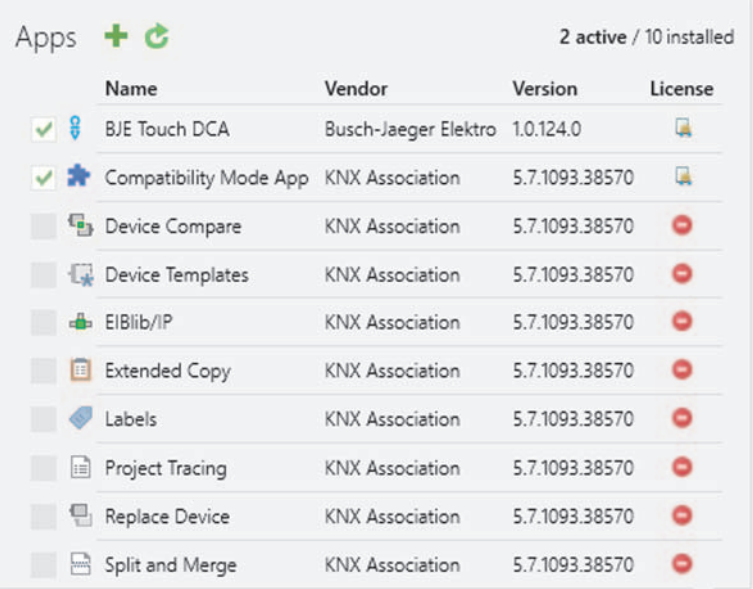


Fig. 16: ETS app (example illustration)

1. Open the ETS5.
2. Navigate to "Apps" at the bottom right next to "License".
3. Install the desired app via the green plus icon.
   – The app is added to the ETS.

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

7.1.4 Integrating the display into the ETS

The following steps describe how to integrate the display into the ETS.

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

7.2 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 plan the KNX functions of the display. Every display 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.

7.2.1 Starting the DCA

Notice
The installation on the target computer functions only with a licensed version of the ETS Professional Software. At least Version ETS 5.7.7 is required (see chapter 5 “Technical data“ on page 25). 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 -> ETS 5.7.7)).
   – 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 7.1 “Integration into the KNX system (ETS)“ on page 36). The ETS requires Internet access to load the project data.

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.

7.3 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.

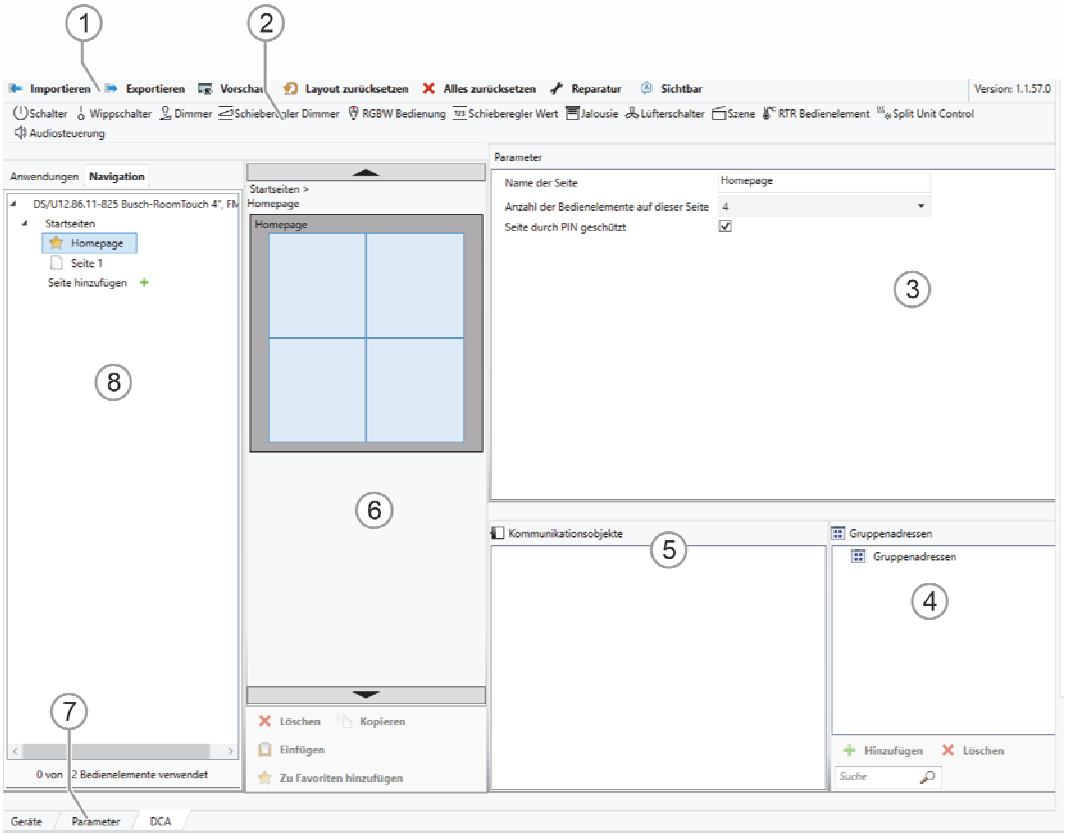


Fig. 17: DCA screen areas (the figure shows the display in the configuration as 4gang version)

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 display 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	Prototypically displays the operating pages created in the library area. This is also the way the pages are arranged on the display. 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, the same as on the display
[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, operating pages can be added. Also general settings for the display 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 6: 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.

7.4 Explanation of the basic structure (Terms)

The display comprises:

- A main operating page (homepage)
- Operating pages
- Application pages

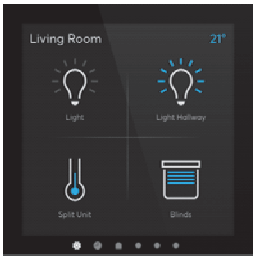


Fig. 18: Display with control elements

The main operating page is displayed after the device has started and is marked with a star in the navigation structure in the library area.

The additional pages contain the control elements such as switches, dimmers or scenes and applications such as fault and alarm messages.

Basically, all operating pages can be configured as required.

You can position control elements on all operating pages to carry out house and device functions. The bottom bar indicates whether several pages are available.

Maximum number of pages and control elements

Frame Touch Sensor (FTS) Display	▪ Number of pages: 12 ▪ Number of control elements: 12

Navigation

If you swipe to the right on the main operating page of the display, the configured application pages and basic settings are displayed in a menu.

If you swipe to the left on the main operating page, the created operating pages are displayed.

Notice

Additional explanations are available in see chapter 10 “Operation“ on page 240.

7.5 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 7.2.1 “Starting the DCA“ on page 39).
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 display.
5. Create the navigation structure (see chapter 7.7 “Creating the navigation structure“ on page 55).
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.

7.6 Configuration of system settings of the display

The basic settings for the display 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 7.6.1 “Basic settings (system settings) of the panel“ on page 44).
   – 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.

7.6.1 Basic settings (system settings) of the panel

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

Time and date

- **Automatic summer/winter time changeover**

Options:	Activated
	Deactivated

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

- **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.

- **Select the time zone**

Options:	(UTC - 12:00) International Date Line West
	…
	(UTC+01:00) Amsterdam, Berlin, Bern, Rome, Bern, Stockholm, Vienna
	…

The parameter is used to specify which time zone is valid for the display.

General

- **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.

- **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.

Show

- **Activating the automatic return to the start screen**

Options:	Activated
	Deactivated

When the checkbox is activated, there is an automatic return to the start 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 home screen" was 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 level 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 parameters "Use approximation to switch on the display" and "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 parameters "Use approximation to switch on the display" and "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).

- **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 feedback

- **Activate haptic feedback**

Options:	Inactive
	Active

The parameter can be used to switch the haptic feedback on or off.

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:	Clock
	Picture display
	Information page

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

- **Type of clock**

Options:	Analogue
	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:	Random
	Alphabetical

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".

Primary function

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

- **Use of 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 Off / On**

Options:	Off
	On

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

Notice

The parameter is only available,

– when the parameter "Response to pressing" and "Response to releasing" has been activated and the response is at least "Value 1"

– when parameter "Object type" has the "1 bit" value

- **Value x (0 - 100%)**

Options:	0 - 100

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

Notice

The parameter is only available,

– when the parameter "Response to pressing" and "Response to releasing" has been activated and the response is at least "Value 1"

– when parameter "Object type" has the "1 byte" value (0 - 100%)

- **Value x (1 - 64)**

Options:	1 - 64

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

Notice

The parameter is only available,

– when the parameter "Response to pressing" and "Response to releasing" has been activated and the response is at least "Value 1"

– when parameter "Object type" has the "Number of scene (1 - 64)" value

- **Value x RTC operating mode**

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,

– when the parameter "Response to pressing" and "Response to releasing" has been activated and the response is at least "Value 1"

– when parameter "Object type" has the "RTC operating mode (1 byte)" value

Safety

- **Enabling system settings for end customer**

Options:	Always
	With code

The parameter is used to specify whether the end customer can change the system settings independently, or whether he requires a code.

- **Length of the PIN code**

Options:	4 digits
	5 digits
	6 digits

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

- **PIN codes can be changed on the device**

Options:	Activated
	Deactivated

The checkbox is used to specify whether the PIN codes can be changed directly on the device.

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

Options:	0000 - 9999
	00000 - 99999
	000000 - 999999

The parameter is used to specify the code for access to the system settings in dependence of the selected length of the PIN code.

7.7 Creating the navigation structure

The display has operating pages via which functions can be operated. These pages must be created beforehand. Generally a main start page is created (see chapter 7.4 “Explanation of the basic structure (Terms)“ on page 42).

A total of 12 operating pages can be created if 12 operating functions are available that cover the entire page. The number of the operating pages is displayed below in the library area.

7.7.1 Creating operating 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 "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 "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 "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 12 operating functions can be set. The individual pages can take on up to 4 operating functions. The number of still available operating functions are displayed in the bottom part of the library area.

7.7.2 Editing operating pages

Adjusting 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.

Notice
The name of the page serves for better orientation during configuration. It is not displayed in the device.

Moving 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.

Copying the page and pasting 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.

Deleting 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.

7.8 Configuration of the operating pages

Control elements can be inserted into all operating 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.

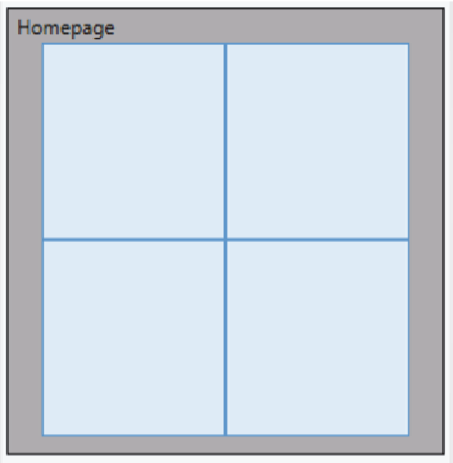


Fig. 19: Operating page with control elements (example arrangement)

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. As long as the page has no control elements, it can be set whether its layout can be designed 1gang, 2gang horizontal, 2gang vertical or 4gang.
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 8 “Control elements and application parameter“ on page 73.

7.8.1 "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 8.1 “"Switch" control element“ on page 73.

7.8.2 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 8.2 “Control element "Rocker switch"“ on page 80.

7.8.3 "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 8.3 “"Dimmer" control element“ on page 85.

7.8.4 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 8.4 “Control element: "Dimmer slider"“ on page 87.

7.8.5 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 8.5 “Operation of "RGBW" control element““ on page 89.

7.8.6 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 8.6 “Control element: "Value slider"“ on page 95.

7.8.7 "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 8.7 “"Blind" control element“ on page 101.

7.8.8 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 8.8 “Control element "Fan switch"“ on page 104.

7.8.9 "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 8.9 “"Scene" control element“ on page 108.

7.8.10 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 8.10 “Control element "RTC control element"“ on page 110.

7.8.11 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 8.11 “Control "Split Unit Control"“ on page 115.

7.8.12 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 8.12 “"VRV control element"“ on page 121.

7.8.13 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 8.13 “Control element "Audio control"“ on page 127.

7.9 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.

7.9.1 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.

7.9.2 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.

7.9.3 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.

7.10 Configuration of applications and application pages

The display can contain applications with specified functions (e.g. scene actuator). 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.

Notice

Basic settings for the display,see chapter 7.6 “Configuration of system settings of the display“ on page 43 .

7.10.1 Application "Information page"

This application has an information page via which the following messages can be activated and configured:

The general settings can be made via the DCA.

1. Open the "Information page" tab in the library area.
2. Activate/deactivate the desired messages.
   – In the "Parameters" area, the general settings for this application are displayed. They can be edited here.

For further setting/selection options via the "Parameter" area for setting the information page, see chapter 8.15 “Application "Internal RTC"“ on page 144.

7.10.2 Application "Input"

This application has an information page for selecting and configuring the following inputs:

– Binary input
– Temperature sensor input

The general settings can be made via the DCA.

1. Open the "Input" tab in the library area.
2. Activate/deactivate the desired inputs.
   – In the "Parameters" area, the general settings for this application are displayed. They can be edited here.

For further settings/selections via the "Parameter" area for setting the inputs, see chapter 8.14 “Application "Inputs" “ on page 136.

7.10.3 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".

Notice

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 the scene actuator 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 8.16 “Application "Scene actuator"“ on page 149.

7.10.4 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.
- A maximum of 10 channels can be added.
- 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 8.17 “Application "Logical functions"“ on page 154.

7.10.5 Application "Internal RTC"

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 8.18 “Application "Internal RTC"“ on page 167.

7.10.6 "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 7.9.3 “Add control element to favourites list“ on page 62.

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.

7.11 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.

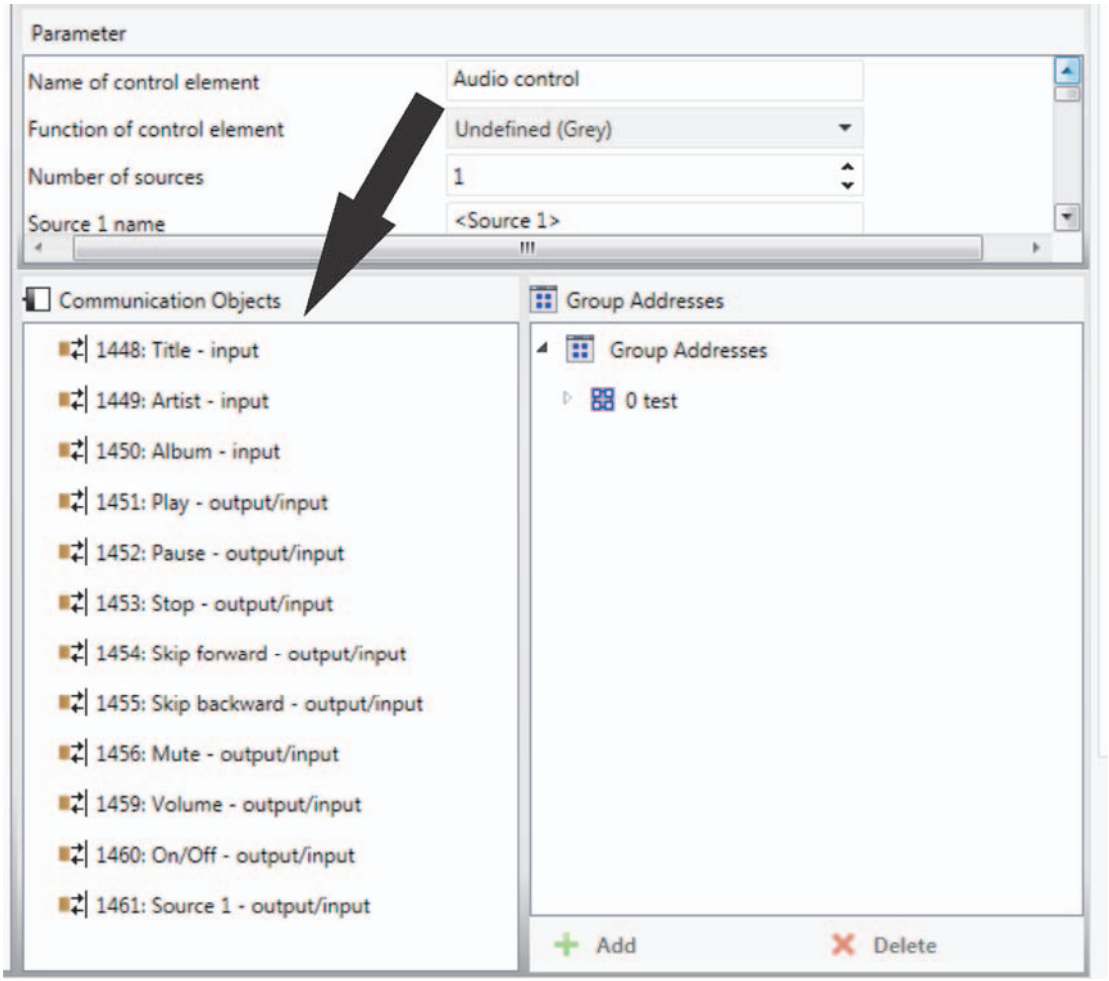


Fig. 20: Communication objects area

To establish the connection between a control element and a sequence, for example, you must assign a group address to the communication object 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.

7.12 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.

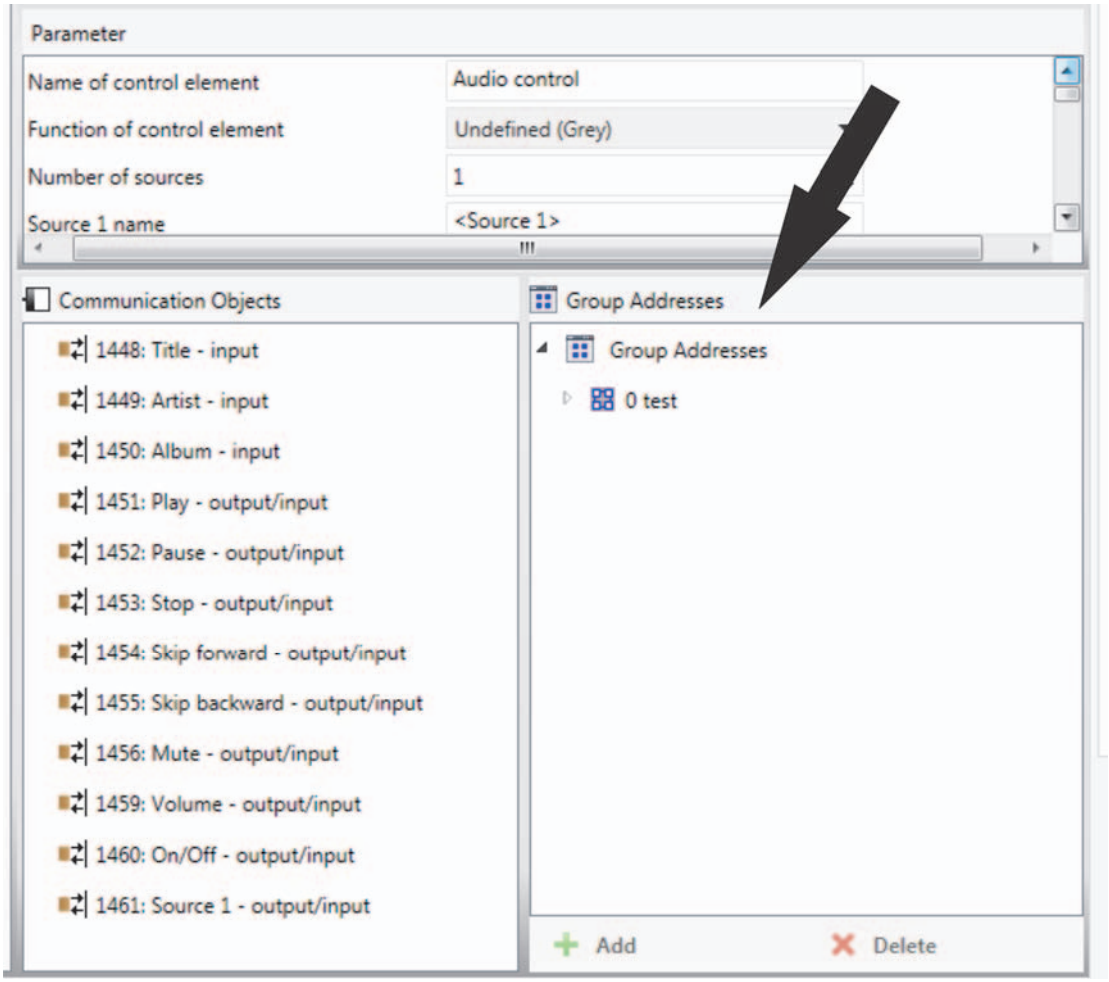


Fig. 21: "Group addresses" area

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.

7.13 Additional tools (functions)

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

7.13.1 Import

1. Click on "Import" in the DCA icon bar, a dialog window with the following entries opens.
   – Import master
   – Import icon file

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.

7.13.2 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.

7.13.3 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.

7.13.4 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.

7.13.5 Reset all

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

7.13.6 Repair

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

With this function you can initiate a consistency test of the data with the cleanup of errors when during the opening of the DCA the displayed data do not match those in the previously configured devices.

7.13.7 Visible / Not visible

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

With this function, notice fields can be faded in or out.

– Visible, the notice fields are faded in.
– Not visible, the notice fields are faded out.

8 Control elements and application parameter

8.1 "Switch" control element

8.1.1 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.

8.1.2 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.1.3 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.1.4 Type of switch

Options:	Toggle
	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.

– *Press/release*:

Notice
– Press = value 1
– Release = value 2

– *Short/long*:

Notice
– Short press = value 1
– Long press = value 2

The following supplementary parameters are available.

8.1.5 Object type value 1/2

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.

8.1.6 Type of icon

Options:	Icons
	Text
	None

The parameter is used to set whether an icon or a text is displayed or there is no display.

– *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.

– *None*:

Only the name of the control element is displayed.

8.1.7 Status control element (icon/text) is operated via 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.

8.1.8 Icon for On

Options:	<Icon>

The parameter is used to specify the icon for On that is shown on the display.

8.1.9 Icon for Off

Options:	<Icon>

The parameter is used to specify the icon for Off that is shown on the display.

8.1.10 Enable 1-bit communication object "Disable"

Options:	No
	Yes

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

8.2 Control element "Rocker switch"

8.2.1 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.

8.2.2 Optional label of control element is active

Options:	Deactivated
	Activated

Optional designation of the switch control element is available.

Optional designation of the control element

Options:	<Label>

Additional designation of the switch control element.

The length of the designation is limited to 60 characters.

Notice
The parameter is only available if the parameter "Optional designation of control element is active" has been activated.

8.2.3 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.

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

Options:	Activated
	Deactivated

An additional 1-byte 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.

8.2.5 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.

8.2.6 Enable 1-bit communication object "Disable"

Options:	No
	Yes

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

8.3 "Dimmer" control element

8.3.1 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.

8.3.2 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.3.3 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.3.4 Additional value of status object

Options:	Activated
	Deactivated

- Deactivated:
  - No additional status object available.
- Activated:
  - 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.

8.3.5 Additional switch status object

Options:	Activated
	Deactivated

- Deactivated:
  - No additional status object available.
- Activated:
  - An additional 1-bit communication object "Status switch" is enabled. The displayed value does not originate from the control element. The value is received via a separate feedback object.

8.3.6 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.

– *Value*: The following parameters are displayed:

Brightness change [%]:

Options:	Setting option in % from 1 - 20

The parameter is used to specify in how many stepless steps dimming takes place.

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.

8.3.7 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

8.4 Control element: "Dimmer slider"

8.4.1 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.

8.4.2 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.4.3 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.4.4 Additional value of status object

Options:	Activated
	Deactivated

- Deactivated:
  - No additional status object available.
- Activated:
  - 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.

8.4.5 Additional switch status object

Options:	Activated
	Deactivated

- Deactivated:
  - No additional status object available.
- Activated:
  - An additional 1-bit communication object "Status switch" is enabled. The displayed value does not originate from the control element. The value is received via a separate feedback object.

8.4.6 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 dimming telegrams.

8.4.7 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.

8.4.8 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

8.5 Operation of "RGBW" control element“

8.5.1 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.

8.5.2 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.5.3 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.5.4 Additional switch status object

Options:	Activated
	Deactivated

- Deactivated:
  - No additional status object available.
- Activated:
  - An additional 1-bit communication object "Status switch" is enabled. The displayed value does not originate from the control element. The value is received via a separate feedback object.

8.5.5 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.

8.5.6 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.

8.5.7 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.

8.5.8 Switched On -> preset value:

Options:	Activated

	Deactivated

When activating the parameter the RGBW Illumination uses the preset value.

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

Options:	Activated
	Deactivated

When activating the parameter the RGBW Illumination is switched off when all colour channels are 0,0,0.

8.5.10 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

8.6 Control element: "Value slider"

8.6.1 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.

8.6.2 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.6.3 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.6.4 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.

8.6.5 Status value 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.

8.6.6 Unit

Options:	Text field

The parameter is used to specify the unit of measurement in which the information pages are displayed. The unit can be freely inserted via a text field.

8.6.7 Decimals

Options:	Setting option from 0 - 2

The parameter is used to specify the decimal places that can be controlled and set via the slide controller.

8.6.8 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.

8.6.9 Value change

Options:	Setting option from 1 to 100%

The parameter is used to specify the value change in percent.

8.6.10 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".

8.6.11 Minimum object value

Options:	Setting option from 1 - 100

The parameter is used to specify the minimum adjustable object value.

8.6.12 Maximum object value

Options:	Setting option from 0 - 100

The parameter is used to specify the maximum adjustable object value.

8.6.13 Displayed minimum value

Options:	Setting option from 0 - 100

The parameter is used to specify the displayed minimum value.

8.6.14 Displayed maximum value

Options:	Setting option from 0 - 100

The parameter is used to specify the displayed maximum value.

8.6.15 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

8.7 "Blind" control element

8.7.1 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.

8.7.2 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.7.3 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.7.4 Using 1-byte positioning

Options:	Deactivated
	Activated

The parameter is used to specify the 1-byte positioning. Here the move and step are added as value objects. With this the allocation is made to the actuator, such as indication of control element and activation of actuator.

- 1 bit button operation
- 1 byte operation via slider

8.7.1 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.

8.7.2 Time limit for displaying stop icon after movement [s]

Options:	Setting option 0 - 255 s

The parameter is used to specify for which time in seconds the stop icon is displayed after movement.

Notice
The parameter is available only when parameter "Use 1-byte positioning" has been deactivated.

8.7.3 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.

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

Options:	Deactivated
	Activated

An additional 1-bit communication object 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.

Status height curtain and status slat [1 byte] is enabled.

The following supplementary parameter is available when parameter "Status control element..." is 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.

8.7.5 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

8.8 Control element "Fan switch"

8.8.1 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.

8.8.2 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.8.3 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.8.4 Deactivation of switch-off option

Options:	Deactivated
	Activated

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

8.8.5 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.

8.8.6 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.

8.8.7 Status control element (icon/text) is operated via 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.

8.8.8 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

8.9 "Scene" control element

8.9.1 Name of the control element

Options:	<Name>

Naming of the scene control element.

The length of the name is limited to 36 characters.

8.9.2 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.9.3 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.9.4 Function icon

Options:	<Icon>

Specifies an icon for the function of the button.

8.9.5 Status of control is controlled by a separate object

Options:	Deactivated
	Activated

An additional 1-bit communication object "Switch scene number" 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.

8.9.6 Number of the scene x [1-64]

Options:	Setting option from 1 - 64

A scene with an individual number is set via the parameter.

8.9.7 Store scene with long press of button

Options:	Deactivated
	Activated

The parameter is used to specify whether the scene can be saved only with a long press of the button.

8.9.8 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.

8.9.9 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

8.10 Control element "RTC control element"

8.10.1 Name of the control element

Options:	<Name>

Naming of the RTC control element.

The length of the name is limited to 36 characters.

8.10.2 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.10.3 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.10.4 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.

8.10.5 Delay time for read 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 activated.

8.10.6 Main displayed temperature is

Options:	Set-point temperature
	Actual temperature

The parameter is used to display whether the setpoint or the actual temperature is to be used and displayed.

8.10.7 Display optional temperature

Options:	Deactivated
	Activated

The parameter is used to specify whether the type of temperature not selected in parameter "Main displayed temperature is" is to be additionally shown on the display.

Notice
The optional temperature can only be shown on full screen control elements.

Optional displayed temperature is

Options:	<Set-point temperature > / <actual temperature>

Optional displayed temperature.

Notice
The parameter is only available if the parameter "Display optional temperature" has been activated.

8.10.8 Main RTC operates

Options:	Heating only
	Cooling only
	Heating and cooling

The parameter is used to set the function for the main RTC.

8.10.9 Hide temperature unit

Options:	Disabled
	Activated

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

8.10.10 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.

8.10.11 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.

8.10.12 Use condensate alarm (via extra 1-bit comm. object)

Options:	Deactivated
	Activated

The parameter is used to specify whether an additional communication object "Condensation water/fill level alarm" is to be used during the heating and cooling operation.

8.10.13 Comfort mode setting

The parameter is activated as standard and is displayed greyed in the surface of the DCA.

8.10.14 Setting of Standby mode

Options:	Deactivated
	Activated

Activates or deactivates the standby mode setting.

8.10.15 Setting of Economy mode

Options:	Deactivated
	Activated

Activates or deactivates the economy mode setting.

8.10.16 Setting of Building Protection mode

Options:	Deactivated
	Activated

Activates or deactivates the building protection mode setting.

8.10.17 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.

8.10.18 Setpoint adjustment main/secondary via communication object

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

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

8.10.19 Upper limit for setpoint adjustment

Options:	Setting option from -671088.64 to 670760.96

The parameter is used to specify the lower limit for the setpoint adjustment.

8.10.20 Lower limit for setpoint adjustment

Options:	Setting option from -671088.64 to 670760.96

The parameter is used to specify the lower limit for the setpoint adjustment.

8.10.21 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

8.11 Control "Split Unit Control"

8.11.1 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.

8.11.2 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.11.3 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.11.4 Displayed main temperature is

Options:	Set-point temperature
	Actual temperature

The parameter is used to display whether the setpoint or the actual temperature is to be used and displayed as main temperature.

8.11.5 Display optional designation

Options:	Deactivated
	Activated

When activated, the type (setpoint temperature / actual temperature) of temperature is shown on the display.

Optional displayed temperature is

Options:	<Set-point temperature > / <actual temperature>

Optional displayed designation of the temperature.

The length of the designation is limited to 60 characters.

Notice
The parameter is only available if the parameter "Display optional designation" has been activated.

8.11.6 Minimum setpoint

Options:	Setting option from 16 to 32

The parameter is used to specify the minimum setpoint.

8.11.7 Maximum setpoint

Options:	Setting option from 16 to 32

The parameter is used to specify the maximum setpoint.

8.11.8 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.

8.11.9 Number of fan speed levels (without AUTO)

Options:	1
	2
	3

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

8.11.10 Use automatic mode for fans

Options:	Disabled
	Activated

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

8.11.11 Use mode: Automatic

Options:	Disabled
	Activated

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

8.11.12 Use mode: Heating

Options:	Disabled
	Activated

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

8.11.13 Use mode: Cooling

Options:	Disabled
	Activated

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

8.11.14 Use mode: Drying

Options:	Disabled
	Activated

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

8.11.15 Use mode: Fan

Options:	Disabled
	Activated

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

8.11.16 Use horizontal oscillation

Options:	Disabled
	Activated

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

8.11.17 Use vertical oscillation

Options:	Disabled
	Activated

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

8.11.18 Use extra mode: Silence Mode

Options:	Disabled
	Activated

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

8.11.19 Use additional mode: Boost

Options:	Disabled
	Activated

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

8.11.20 Use additional mode: Forced operation

Options:	Disabled
	Activated

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

8.11.21 Use additional mode: Scene

Options:	Disabled
	Activated

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

8.11.22 Additional mode Use window contact

Options:	Disabled
	Activated

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

8.11.23 Use additional Presence mode

Options:	Disabled
	Activated

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

8.11.24 Enable 1-bit communication object "Disable"

Options:	No
	Yes

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

8.12 "VRV control element"

8.12.1 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.

8.12.2 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.12.3 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.12.4 Displayed main temperature is

Options:	Setpoint temperature
	Room temperature

The parameter is used to specify whether the displayed main temperature is to reproduce the setpoint temperature or room temperature.

- Setpoint temperature:
  - The displayed main temperature reproduces the setpoint temperature.
- Room temperature:
  - The displayed main temperature reproduces the room temperature.

8.12.5 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.

8.12.6 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.

8.12.7 Using only fan operation

Options:	deactivated
	activated

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

8.12.8 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.

8.12.9 Using dehumidification operation

Options:	deactivated
	activated

The dehumidification operation is activated when the parameter is activated.

8.12.10 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.

8.12.11 Using automatic operation

Options:	deactivated
	activated

The automatic operation is activated when the parameter is activated.

8.12.12 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.

8.12.13 Fan speed levels

Options:	1
	2
	3
	4
	5

The parameter is used to set the fan speed level.

8.12.14 Value for the speed x

Options:	Setting option from 0 to 255

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

8.12.15 Using automatic fan speed control

Options:	deactivated
	activated

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

8.12.16 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.

8.12.17 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.

8.12.18 Maximum setpoint [°C]

Options:	Setting option from 0 to 40

The parameter is used to specify the maximum adjustable temperature setpoint.

8.12.19 Minimum setpoint [°C]

Options:	Setting option from 0 to 40

The parameter is used to specify the minimum adjustable temperature setpoint.

8.12.20 Using VRV temperature sensor error display

Options:	deactivated
	activated

The parameter is used to activate the use of the VRV temperature sensor error display.

8.12.21 Using VRV error display

Options:	deactivated
	activated

The parameter is used to activate the use of the VRV error display.

8.12.22 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.

8.12.23 Enable 1-bit communication object "Disable"

Options:	No
	Yes

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

8.13 Control element "Audio control"

8.13.1 Title of control element

Options:	Specified text
	Audio album
	Audio artist
	Audio title

Specification of a title for the control element of audio control.

- Specified text
- Audio album
- Audio artist
- Audio title

8.13.2 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.

8.13.3 Subtitle of the control element

Options:	Fixed text
	Audio album
	Audio artist
	Audio title

An optional subtitle of the control element for audio control can be specified via the parameter. Depending on the option selected, this can be a fixed text, the title of the album, the name of the artist or the name of the played title.

8.13.4 Activating optional designation for control elements

Options:	Activate
	Deactivate

With the activation of the parameter an optional designation can be specified for the control element.

Notice
When activated, the "Optional designation of control element" parameter is enabled.

8.13.5 Optional designation of the control element

Options:	Text input

An optional designation of the control element can be specified via the parameter.

Notice
The parameter is only available if the parameter "Activate optional designation for control element" has been activated.

8.13.6 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.

8.13.7 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.

8.13.8 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:

8.13.9 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.

8.13.10 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.

8.13.1 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:

8.13.2 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.

8.13.3 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.

8.13.4 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.

8.13.5 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

8.14 Application "Inputs"

8.14.1 Use binary input

Options:	No
	As binary input
	As temperature input

The parameter is used to specify whether the input is to be used as binary input or as temperature input.

- No:
  - No display on the panel. No additional parameters available.
- As binary input:
  - The parameters relevant for the binary input are adjustable.
- As temperature input:
  - The parameters relevant for the temperature input are adjustable.

- **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 object type is selected via the parameter.

Notice
The parameter is only available when the setting "As binary input" is used during the parameterization of binary input under "Use binary input".

- **Reaction to pressing/closing**

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

– The parameter is used to select the reaction when pressing/closing.

Notice
The parameter is only available when the setting "As binary input" is used during the parameterization of binary input under "Use binary input".

- **Reaction to releasing/opening**

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

– The parameter is used to select the reaction on releasing/opening.

Notice
The parameter is only available when the setting "As binary input" is used during the parameterization of binary input under "Use binary input".

- **Value 1**

Options:	Off
	One

The parameter is used to switch value 1 on.

Notice
– The parameter is only available if the "**Object type**" parameter is set on "**1-bit**".
– The parameter is only available if the "**Response to pressing**" or "**Response to releasing**" parameter is set on "Value 1" or on "**Alternating value 1/value 2**".

- **Value 2**

Options:	Off
	One

The parameter is used to switch value 2 on.

Notice
– The parameter is only available if the "**Object type**" parameter is set on "**1-bit**".
– The parameter is only available if the "**Response to pressing**" or "**Response to releasing**" parameter is set on "**Value 2**" or on "**Alternating value 1/value 2**".

- **Value 1**

Options:	Setting option from 0 - 100%

The parameter is used to select the percentage value for the value 1.

Notice

– The parameter is only available if the "**Object type**" parameter is set on "**1-byte value [0..100]**".
– The parameter is only available if the "**Response to pressing**" or "**Response to releasing**" parameter is set on "**Value 1**" or on "**Alternating value 1/value 2**".

- **Value 2**

Options:	Setting option from 0 - 100%

The parameter is used to select the percentage value for the value 21.

Notice

– The parameter is only available if the "**Object type**" parameter is set on "**1-byte value [0..100]**".
– The parameter is only available if the "**Response to pressing**" or "**Response to releasing**" parameter is set on "**Value 2**" or on "**Alternating value 1/value 2**".

- **Value 1**

Options:	Setting option from 0 - 255

The parameter is used to select the byte value for value 1.

Notice
– The parameter is only available if the "**Object type**" parameter is set on "**1-byte value [0..255]**".
– The parameter is only available if the "**Response to pressing**" or "**Response to releasing**" parameter is set on "**Value 1**" or on "**Alternating value 1/value 2**".

- **Value 2**

Options:	Setting option from 0 - 255

The parameter is used to select the byte value for value 2.

Notice
– The parameter is only available if the "**Object type**" parameter is set on "**1-byte value [0..255]**".
– The parameter is only available if the "**Response to pressing**" or "**Response to releasing**" parameter is set on "**Value 2**" or on "**Alternating value 1/value 2**".

- **Value 1**

Options:	Setting option from 1 - 64

This parameter is used to select the scene for value 1.

Notice
– The parameter is only available if the "**Object type**" parameter is set on "**Scene number [1..64]**".
– The parameter is only available if the "**Response to pressing**" or "**Response to releasing**" parameter is set on "**Value 1**" or on "**Alternating value 1/value 2**".

- **Value 2**

Options:	Setting option from 1 - 64

This parameter is used to select the scene for value 2.

Notice
– The parameter is only available if the "**Object type**" parameter is set on "**Scene number [1..64]**".
– The parameter is only available if the "**Response to pressing**" or "**Response to releasing**" parameter is set on "**Value 2**" or on "**Alternating value 1/value 2**".

- **Value 1**

Options:	Auto
	Comfort
	Standby
	ECO
	Frost/heat protection

This parameter is used to select the RTC operating mode for value 1.

Notice

– The parameter is only available if the "**Object type**" parameter is set on "**RTC operating mode [1-byte]**".
– The parameter is only available if the "**Response to pressing**" or "**Response to releasing**" parameter is set on "**Value 1**" or on "**Alternating value 1/value 2**".

- **Value 2**

Options:	Auto
	Comfort
	Standby
	ECO
	Frost/heat protection

This parameter is used to select the RTC operating mode for value 2.

Notice

– The parameter is only available if the "**Object type**" parameter is set on "**RTC operating mode [1-byte]**".
– The parameter is only available if the "**Response to pressing**" or "**Response to releasing**" parameter is set on "**Value 2**" or on "**Alternating value 1/value 2**".

Notice

The parameter is only available when the setting "As binary input" is used during the parameterization of binary input under "Use binary input".

- Sensor type

Options:	Pt1000
	6226/T

The temperature sensor type is selected via the parameter.

Notice
The parameter is only available when the setting "As temperature input" is used during the parameterization of binary input under "Use binary input".

- **Temperature offset [x0.1°C]**

Options:	Setting option from -5 - 5

The temperature offset is selected via the parameter.

Notice
The parameter is only available when the setting "As temperature input" is used during the parameterization of binary input under "Use binary input".

- **Line fault compensation**

Options:	Resistance
	Length
	None

The line fault compensation is selected via the parameter.

- **Line resistance (sum of forward and return conductor) [mOhm]**

Options:	Setting option from 0 - 10000

Notice
– The parameter is only available if the parameter "**Line fault compensation**" is set on "**Resistance**".

- **Line length, single distance [m]**

Options:	Setting option from 1 - 30

Notice
– The parameter is only available if the parameter "**Line fault compensation**" is set on "**Length**".

- **Cross section of wires, value x 0.01 [mm2]**

Options:	Setting option from 1 - 150

Notice
– The parameter is only available if the parameter "**Line fault compensation**" is set on "**Length**".

Notice
The parameter is only available when the setting "As temperature input" is used during the parameterization of binary input under "Use binary input".

- **Filter**

Options:	Inactive
	Low (mean value of 4 measurements)
	Medium (mean value of 16 measurements)
	High (mean value of 64 measurements)

The filter is selected via the parameter.

Notice
The parameter is only available when the setting "As temperature input" is used during the parameterization of binary input under "Use binary input".

- **Send output value**

Options:	Cyclic and during change
	Only during change
	Only cyclic

– The parameter is used to select how the output value is sent.

- **The output value must change before sending [x0.1°C]**

Options:	Setting option from 1 - 50

The parameter is used to select how the output value must change before sending.

Notice

– The parameter is only available if the parameter "**The output value must change before sending**" is set on "**Only on change**" or "**Cyclic and on change**".

- **Send the output value cyclic [SS:MM:SS]**

Options:	Setting option from 00:01:00 - 18:12:15

The parameter is used to select the output value for cyclic sending.

Notice

– The parameter is only available if the parameter "**The output value must change before sending**" is set on "**Only cyclic**" or "**Cyclic and on change**".

Notice

The parameter is only available when the setting "As temperature input" is used during the parameterization of binary input under "Use binary input".

- **Output value must be change before sending [°C]**

Options:	Setting option from 0 - 9.99

The parameter is used to specify the degree by which the output value is to reduce or rise prior to the sending of the changed temperature.

Notice

The parameter is only available when the setting "As temperature input" is used during the parameterization of binary input under "Use binary input".

8.15 Application "Internal RTC"

8.15.1 Number of notifications

Options:	Setting option from 1 - 12

The parameter is used to specify the number of notifications that are displayed on the information page. A maximum of 12 notifications can be placed on the information page.

8.15.2 Notification x active

Options:	Yes
	No

The parameter is used to specify the number of possible notifications for the display that are enabled on the information page.

The parameters described in the following are available only when the notification has been set on "Yes" in the parameter setting.

8.15.3 Title

Options:	Text input

The parameter is used to specify the title of the notification. The notification is displayed on the information page under this title.

Notice
The parameter is only available if the "**Notification x active**" parameter is set on "**Yes**".

8.15.4 Icon

Options:	Icon selection

The parameter is used to specify the icon the notification receives on the information page.

Notice
The parameter is only available if the "**Notification x active**" parameter is set on "**Yes**".

- **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 object type is selected via the parameter.

8.15.5 Unit

Options:	Text field

The parameter is used to specify the unit of measurement in which the information pages are displayed. The unit can be freely inserted via a text field.

8.15.6 Minimum object value

Options:	Setting option from 1 - 100

The parameter is used to specify the minimum adjustable object value.

Notice
The parameter is only available if the "**Notification x active**" parameter is set on "**Yes**".

8.15.7 Maximum object value

Options:	Setting option from 0 - 100

The parameter is used to specify the maximum adjustable object value.

Notice
The parameter is only available if the "**Notification x active**" parameter is set on "**Yes**".

8.15.8 Displayed minimum value

Options:	Setting option from 0 - 100

The parameter is used to specify the displayed minimum value.

Notice
The parameter is only available if the "**Notification x active**" parameter is set on "**Yes**".

8.15.9 Displayed maximum value

Options:	Setting option from 0 - 100

The parameter is used to specify the displayed maximum value.

Notice
The parameter is only available if the "**Notification x active**" parameter is set on "**Yes**".

8.15.10 Number of coloured status indication levels

Options:	Setting option from 0 - 6

The parameter is used to specify the number of coloured status display steps.

Notice
The parameter is only available if the "**Notification x active**" parameter is set on "**Yes**".

8.15.11 Activating red text highlighting for alarms

Options:	Setting option from 0 - 6

The parameter is used to activate the highlighting of red text for alarms on the information page.

Notice
The parameter is only available if the "**Notification x active**" parameter is set on "**Yes**".

8.15.12 Activating popup notification window

Options:	Yes
	No

This parameter is used to activate the display of the popup notification window.

Notice
The parameter is only available if the "**Notification x active**" parameter is set on "**Yes**".

8.15.13 Type of the notification window

Options:	Information
	Warning
	Error

This parameter is used to specify the type of the notification window. Depending on the parameter setting, it shows information, warnings or errors.

Notice
The parameter is only available if the "**Popup notification window**" parameter is set on "**Yes**".

8.15.14 Closing the notification window automatically

Options:	Yes
	No

If the parameter is set on "Yes" the notification window closes automatically.

Notice
The parameter is only available if the "**Popup notification window**" parameter is set on "**Yes**".

8.15.15 Value for activating the notification window

Options:	Setting option from 0 - 100

The parameter is used the specify the unit value from which the notification window is opened.

Notice
The parameter is only available if the "**Popup notification window**" parameter is set on "**Yes**".

8.15.16 Activating notification window at current value

Options:	greater or equal to activation value
	lower or equal to activation value

- greater or equal to activation value:
  - The notification window is activated when the current value is larger or equal to the activation value.
- lower or equal to activation value
  - The notification window is activated when the current value is smaller or equal to the activation value.

Notice
The parameter is only available if the "Notification x active" parameter is set on "Yes".

8.15.17 Value at which the notification window is deactivated automatically

Options:	Setting option from 0 - 100

The parameter is used to specify the value at which the notification window is deactivated automatically.

Notice
The parameter is only available if the "**Popup notification window**" parameter is set on "**Yes**".

8.15.18 Deactivating notification window at current value

Options:	greater or equal to activation value
	lower or equal to activation value

- greater or equal to activation value:
  - The notification window is deactivated when the current value is larger or equal to the activation value.
- lower or equal to activation value
  - The notification window is deactivated when the current value is smaller or equal to the activation value.

Notice
The parameter is only available if the "**Notification x active**" parameter is set on "**Yes**".

8.15.19 Notification text

Options:	Text input

The parameter is used to specify the notification text to be displayed.

Notice
The parameter is only available if the "**Popup notification window**" parameter is set on "**Yes**".

8.16 Application "Scene actuator"

8.16.1 Name of scene actuator

Options:	<Text>

Naming of scene actuator. The length of the name is limited to 60 characters.

8.16.2 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.

8.16.3 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.

8.16.4 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.

8.16.5 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.

8.16.6 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".

8.16.7 Name of scene

Options:	<Text>

Designation of scene. The length of the name is limited to 60 characters.

8.16.8 Scene number

Options:	Setting option from 1 - 64

The number of the scene is set via the parameter.

8.16.9 Scene can be started with a

Options:	0
	1
	Both

The parameter is used to specify with which separate 1-bit communication object the scene is started.

8.16.10 Scene can be saved

Options:	Disabled
	Activated

The parameter is used to specify whether the scene can be stored.

– *Deactivated*: The light scene will not be stored.

– *Activated*: The light scene can be stored.

8.16.11 Value for object x

Notice

The setting options for parameter "Value for object x" depend on the setting of parameter "Object type x".

8.17 Application "Logical functions"

8.17.1 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 enabled:

- **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 byte

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", "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" (corresponds to output 2). Input 2 is switched to the output as soon as the control input has the value "0" (corresponds to output 1).

The following parameters are enabled:

- **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 requirements" 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 255 can be specified for 1-byte outputs.

The following parameters are enabled:

- **Start requirements**:

Options:	1 bit
	1 bytes

See the explanation above.

- 1 Bit:
  - The following parameter is enabled:

- **Start command**:

Options:	OFF - telegram
	ON - telegram

See the explanation above.

- 1 byte:
  - The following parameter is enabled:

- **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 is enabled:

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. The value stored last is sent only after a renewed enable on the control input.

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 ON" or the signal "Filtered OFF" is sent.

The following parameters are enabled:

- **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 enabled:

- **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 enabled:

- **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 for example. No additional parameters available.
  - The maximum deviation of the constant temperature, for example, is specified via the hysteresis before the output changes.

- **Object type of the output**:

Options:	1 bit
	1 byte

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 is enabled:

- **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 enabled:

- **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 is enabled:

- **Number of inputs**:

Options:	Setting options from 1 - 4

The parameter is used to set the number of available inputs. The following parameter is enabled:

- **Using value x**:

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 x**:

Options:	<Text>

Naming of the value. The length of the text is limited to 15 characters.

Notice
How many "Use value x" parameters and "Text for value x" 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 is enabled:

- **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 enabled:

- **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.
- Enabled:
  - 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.
- Enabled:
  - 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.

8.18 Application "Internal RTC"

8.18.1 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.

8.18.2 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.

8.18.3 General - Additional functions/objects

Options:	Deactivated
	Activated

– This parameter enables additional functions and communication objects.

8.18.4 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".

8.18.1 General - "Current HVAC operating mode" object active

Options:	Deactivated
	Activated

The parameter activates the communication object "Current HVAC operating mode".

8.18.2 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".

8.18.3 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".

8.18.4 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".

8.18.5 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".

8.18.6 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".

8.18.7 Heating control — Extended settings

Options:	Deactivated
	Activated

– This parameter enables additional functions and communication objects, e.g. "Basic stage heating".

8.18.8 Basic stage heating

Notice
Only available when the "Extended settings" parameter under "Heating control" is activated.

8.18.9 Basic stage heating — Status object heating

Options:	Deactivated
	Activated

– The parameter enables the "Status heating" communication object.

8.18.10 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".

8.18.11 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%".

8.18.12 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".

8.18.13 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".

8.18.14 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“.

8.18.15 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".

8.18.16 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".

8.18.17 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".

8.18.18 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).

8.18.19 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".

8.18.20 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".

8.18.21 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".

8.18.22 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.

8.18.23 Control of additional heating stage - Extended settings

Options:	Deactivated
	Activated

This parameter enables additional functions and communication objects, e.g. "Additional heating stage".

8.18.24 Additional heating stage

Notice
Only available when the "Extended settings" parameter under "Control of additional heating stage" is activated.

8.18.25 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".

8.18.26 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“.

8.18.27 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".

8.18.28 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".

8.18.29 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".

8.18.30 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".

8.18.31 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%".

8.18.32 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".

8.18.33 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).

8.18.34 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".

8.18.35 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".

8.18.36 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".

8.18.37 Cooling control - Extended settings

Options:	Deactivated
	Activated

This parameter enables additional functions, e.g. "Basic stage cooling".

8.18.38 Basic stage cooling

Notice
Only available when the "Extended settings" parameter under "Cooling control" is activated.

8.18.39 Basic stage cooling — Status object cooling

Options:	Deactivated
	Activated

This parameter enables the "Status cooling" communication object.

8.18.40 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".

8.18.41 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".

8.18.42 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".

8.18.43 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%".

8.18.44 Basic 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, On/Off“.

8.18.45 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".

8.18.46 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".

8.18.47 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".

8.18.48 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).

8.18.49 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".

8.18.50 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".

8.18.51 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".

8.18.52 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.

8.18.53 Control of additional cooling stage — Extended settings

Options:	Deactivated
	Activated

This parameter enables additional functions and communication objects, e.g. "Additional cooling stage".

8.18.54 Additional cooling stage

Note
Only available when the "Extended settings" parameter under "Control of additional cooling stage" is set on "Yes".

8.18.55 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".

8.18.56 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“.

8.18.57 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".

8.18.58 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".

8.18.59 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".

8.18.60 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".

8.18.61 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%".

8.18.62 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".

8.18.63 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.

8.18.64 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".

8.18.65 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".

8.18.66 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.

8.18.67 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".

8.18.68 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.

8.18.69 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".

8.18.70 Setpoint settings

Note
The following parameters are available without enabling "Extended settings".

8.18.71 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".

8.18.72 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 or relative values.

8.18.73 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".

8.18.74 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".

8.18.75 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".

8.18.76 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".

8.18.77 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".

8.18.78 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".

8.18.79 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".

8.18.80 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".

8.18.81 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".

8.18.82 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".

8.18.83 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".

8.18.84 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".

8.18.85 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".

8.18.86 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".

8.18.87 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.

8.18.88 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.

8.18.89 Setpoint settings - Hide temperature unit

Options:	Deactivated
	Activated

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

8.18.90 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.

8.18.91 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".

8.18.92 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.

8.18.93 Setpoint adjustment

8.18.94 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%".

8.18.95 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%".

8.18.96 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".

8.18.97 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".

8.18.98 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.

8.18.99 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.

8.18.100 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.

8.18.101 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.

8.18.102 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.

8.18.103 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.

8.18.104 Temperature reading

8.18.105 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.

8.18.106 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".

8.18.107 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".

8.18.108 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".

8.18.109 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".

8.18.110 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.

8.18.111 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".

8.18.112 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".

8.18.113 Temperature reading — Adjustment value for internal temperature measurement via object

Options:	No
	Yes, with measured temperature value

When the parameter is activated the adjustment value for the internal temperature measurement is determined via communication object "Temperature calibration - input".

8.18.114 Temperature reading — Monitoring of temperature reading

Options:	Deactivated
	Activated

The parameter is used to specify whether parameter "Monitoring time of temperature reading" is available.

8.18.115 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.

8.18.116 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".

8.18.117 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.

8.18.118 Alarm functions

8.18.119 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".

8.18.120 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".

8.18.121 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.

8.18.122 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.

8.18.123 Temperature limiter

8.18.124 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

8.18.125 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

8.18.126 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".

8.18.127 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

8.18.128 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

8.18.129 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".

8.18.130 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

8.18.131 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.

8.18.132 Summer compensation

8.18.133 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.

8.18.134 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".

8.18.135 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".

8.18.136 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".

8.18.137 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".

8.18.138 Settings of fan coil unit

Notice
Only available only when parameter "Control value type" is set on "Fan coil unit".

8.18.139 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.

8.18.140 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.

8.18.141 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)"

Notice
The parameter is only available if the "Step values" parameter has been set on "Specify individually".

8.18.142 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.

8.18.143 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".

8.18.144 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".

8.18.145 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.

8.18.146 Fan speeds/- levels

8.18.147 Fan speeds/- levels heating

Notice
Only available when parameter "Number of fans" is set on "Heating/cooling via two systems".

8.18.148 Fan speeds/- levels cooling

Notice
Only available when parameter "Number of fans" is set on "Heating/cooling via two systems".

8.18.149 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.

8.18.150 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.

8.18.151 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.

8.18.152 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.

8.18.153 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.

9 Communication objects

For a quick overview of the function options of the displays, all communication objects are listed in an overview table. The detailed function can be read in the following description of 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:

System

Name	Object function	Length	Data type	Flags				
				K	L	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
Background illumination ON/OFF	Input	1 bit	[1.001] Switching	K	-	S	-	A
Background illumination status	Output	1 bit	[1.001] Switching	K	-	-	U	-
Proximity function	Output	1 bit	[1.001] Switching	K	-	-	U	-
Deactivate approximation	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Screen saver ON/OFF	Input	1 bit	[1.001] Switching	K	-	S	-	A
Screen saver status	Output	1 bit	[1.001] Switching	K	-	-	U	-
Primary function	Output	1 bit	[5.001] Switching	K	-	S	U	A
		1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
		1 byte	[18.001] Scene control	K	-	S	U	A
		1 byte	[20.102] HVAC mode	K	-	S	U	A
Selection of temperature unit	Input	1 bit	[1.001] Switching	K	-	S	-	A
Inside temperature	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
In operation	Output	1 bit	[1.001] Switching	K	-	-	U	-
Vacation	Input/ Output	1 bit	[1.003] Enable	K	-	S	U	A

Inputs

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Temperature sensor	Output	2 bytes	[9.001] Temperature	K	-	S	U	A
Binary input	Output	1 bit	[1.001] Switching	K	-	S	U	A
		1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
		1 byte	[18.001] Scene control	K	-	S	U	A
		1 byte	[20.102] HVAC mode	K	-	S	U	A

Information page

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
INFO - Value input x	Input	1 bit	[9.001] Percent (0 - 100%)	K	-	S	-	A
		1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
		2 bytes	[7.001] Pulse	K	-	S	-	A
		2 bytes	[8.001] Pulse difference	K	-	S	-	A
		2 bytes	[9.001] Temperature	K	-	S	-	A
		4 bytes	[12.001] Counting pulses (unsigned)	K	-	S	-	A
		4 bytes	[13,013] Effective work (kwh)	K	-	S	-	A
		4 bytes	[14.031] Energy (J)	K	-	S	-	A
		4 bytes	[14.031] Energy (J)	K	-	S	-	A
		14 bytes	[16.001] Character (ISO 8859-1)	K	-	S	-	A
INFO - Red text highlighting x	Input	1 bit	[1.001] Switching	K	-	S	-	A

Logic functions

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Logic channel x - Control input	Input	1 bit	[1.003] Enable	K	-	S	-	A
	Input	1 bit	[1.003] Enable	K	-	S	U	A
Logic channel x - Input x (LSB) - Input	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Logic channel x - Input x	Input	1 bit	[1.001] Switching	K	-	S	-	A
	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
	Input/Output	1 bit	[1.001] Switching	K	-	S	U	A
	Input/Output	1 bit	[2.001] Prio. switching	K	-	S	U	A
	Input/Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
	Input/Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
	Input/Output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	U	A
	Input/Output	1 byte	[18.001] Scene control	K	-	S	U	A
	Input/Output	1 byte	[20.102] HVAC mode	K	-	S	U	A
	Input/Output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
	Input/Output	2 bytes	[8.001] Pulse difference	K	-	S	U	A
	Input/Output	2 bytes	[7.001] Pulses	K	-	S	U	A
	Input/Output	4 bytes	[13.001] Counting pulses (unsigned)	K	-	S	U	A
	Input/Output	4 bytes	[12.001] Counting pulses (unsigned)	K	-	S	U	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Logic channel x - Input x	Input/Output	14 bytes	[16.001] Characters (ISO 8859-1)	K	-	S	U	A
Logic channel x - Output x (LSB) - Output	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Logic channel x - Output x (MSB) - Output	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Logic channel x - Output	Output	1 bit	[1.001] Switching	K	L	-	U	-
	Output	1 bit	[1.001] Switching	K	-	S	U	A
	Output	1 bit	[1.002] Boolean	K	-	S	U	A
	Output	1 byte	[5.001] Percent (0 - 100%)	K	L	-	U	-
	Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	-	U	-
	Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
	Output	14 bytes	[16.001] Characters (ISO 8859-1)	K	-	S	U	A
	Input/Output	1 bit	[1.001] Switching	K	-	S	U	A
	Input/Output	1 bit	[2.001] Prio. switching	K	-	S	U	A
	Input/Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
	Input/Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
	Input/Output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	U	A
	Input/Output	1 byte	[18.001] Scene control	K	-	S	U	A
	Input/Output	1 byte	[20.102] HVAC mode	K	-	S	U	A
	Input/Output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
	Input/Output	2 bytes	[8.001] Pulse difference	K	-	S	U	A
	Input/Output	2 bytes	[7.001] Pulses	K	-	S	U	A
	Input/Output	4 bytes	[13.001] Counting pulses	K	-	S	U	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
	Input/Output	14 bytes	[16.001] Characters (ISO 8859-1)	K	-	S	U	A
Staircase light [sec.]	Input	2 bytes	[7.005] Time (s)	K	-	S	U	A
Switch-on delay time [sec.]	Input	2 bytes	[7.005] Time (s)	K	-	S	U	A

Scene actuator

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Actuator x - Object x [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Actuator x - Object x [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Actuator x - Scene number	Input/output	1 byte	[18.001] Scene control	K	-	S	U	A
Actuator x - Activate scene x	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Actuator x - Dimming scene x	Input	4 bit	[3.007] Dimmer/ Step	K	-	S	-	A

Internal RTC

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Heating control value	Output	1 bit	[1.001] Switching	K	-	-	U	-
		1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
Cooling control value	Output	1 bit	[1.001] Switching	K	-	-	U	-
		1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
Heating / cooling control value	Output	1 bit	[1.001] Switching	K	-	-	U	-
		1 bit	[5.001] Percent (0 - 100%)	K	-	-	U	-
Additional heating stage	Output	1 byte	[1.001] Switching	K	-	-	U	-
		1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
Additional cooling stage	Output	1 byte	[1.001] Switching	K	-	-	U	-
		1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
On/off confirmation (Master)	Output	1 bit	[1.001] Switching	K	L	S	U	A
Actual temperature	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
External actual temperature x	Input	2 bytes	[9.001] Temperature (°C)	K	S	-	U	A
Actual temperature weighted	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
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	1 bit	[1.001] Switching	K	-	S	U	A
Presence detector (master/slave)	Input	1 bit	[1.001] Switching	K	-	S	U	A
Heating status	Output	1 bit	[1.001] Switching	K	-	-	U	-

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Cooling status	Output	1 bit	[1.001] Switching	K	-	-	U	-
Heating/cooling switchover	Output	1 bit	[1.100] Heating/Cooling	K	-	S	U	A
	Input/ Output	1 bit	[1.100] Heating/Cooling	K	-	S	U	A
Basic setpoint	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Temperature calibration	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Dew point alarm	Input	1 bit	[1.001] Switching	K	-	S	U	A
Condensation water /fill level alarm (main/secondary)	Input/ Output	1 bit	[1.001] Alarm	K	-	S	U	A
On/off request (master)	Input	1 bit	[1.001] Switching	K	-	S	-	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	-
Controller RHCC status	Output	2 bytes	[22.101] RHCC Status	K	-	-	U	-
Controller HVAC status (master)	Output	1 byte	[5.001] Percent (0 - 100%)	K	L	-	U	-
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
Standby 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	[1.001] Switching	K	-	-	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
Current HVAC operating mode	Output	1 byte	[20.102] HVAC mode	K	-	S	U	A

Switch

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Value [send]	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Value x [send]	Input/ Output Output	1 bit	[1.001] Switching	K	-	S	U	A
		1 bit	[2.001] Prio. switching	K	-	S	U	A
		1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
		1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	U	A
		1 byte	[18.001] Scene control	K	-	S	U	A
		1 byte	[20.102] HVAC mode	K	-	S	U	A
		2 bytes	[9.001] Temperature (°C)	K	-	S	U	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Value x [send]	Input/ Output	2 bytes	[8.001] Pulse difference	K	-	S	U	A
		2 bytes	[7.001] Pulse	K	-	S	U	A
		4 bytes	[13.001] Counting pulses signed	K	-	S	U	A
	Output	4 bytes	[12.001] Counting pulses unsigned	K	-	S	U	A
		14 bytes	[16.001] Character (ISO 8859-1)	K	-	S	U	A
Status icon/text [receive]	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

Rocker switch

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Value [send]	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
		1 bit	[2.001] Prio. switching	K	-	S	U	A
		1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
		1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	U	A
		1 byte	[18.001] Scene control	K	-	S	U	A
		1 byte	[20.102] HVAC mode	K	-	S	U	A
		2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
		2 bytes	[8.001] Pulse difference	K	-	S	U	A
		2 bytes	[7.001] Pulse	K	-	S	U	A
		4 bytes	[13.001] Counting pulses (signed)	K	-	S	U	A
Value [send]	Input/ Output	4 bytes	[12.001] Counting pulses unsigned	K	-	S	U	A
		14 bytes	[16.001] Character (ISO 8859-1)	K	-	S	U	A
Status value [receive]	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

Dimmer

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Switch	Input/output	1 bit	[1.001] Switching	K	-	S	U	A
Dimming	Output	4 bit	[3.007] Dimmer step	K	-	S	U	A
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

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
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
Switch status	Input	1 bit	[1.001] Switching	K	-	S	-	A
Status value	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

RGBW operation

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Switch	Output	1 bit	[1.001] Switching	K	-	-	U	-
Switch status	Input	1 bit	[1.001] Switching	K	-	S	-	A
Hue value	Input/output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Saturation value	Input/output	1 byte	5.010 counting pulses (0 - 255)	K	-	S	U	A
HSV value [6 bytes]	Output	6 bytes	[251.600] RGB value 4x (0 - 255)	K	-	-	U	-
Value Value	Input/output	1 byte	5.010 counting pulses (0 - 255)	K	-	S	U	A
Status value HSV [6 byte]	Output	6 bytes	[251.600] RGB 4x (0 - 255)	K	-	S	-	A
Value red	Input/output	1 byte	5.010 Counting pulses (0 - 255)	K	-	S	-	A
Value green	Input/output	1 byte	5.010 counting pulses (0 - 255)	K	-	S	-	A
Value blue	Input/output	1 byte	5.010 counting pulses (0 - 255)	K	-	S	-	A
Value white	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
RGB value [3 bytes]	Output	3 bytes	232.600 RGB value 3x (0 - 255)	K	-	-	U	-
RGB dtatus value [3 bytes]	Input	3 bytes	232.600 RGB value 3x (0 - 255)	K	-	S	-	A
Value cold white	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value warm white	Input/ Output	1 byte	[5.010] Counting pulses (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
Block	Input	[1.002] Boolean	1 bit	K	-	S	-	A

Slider value

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Value [1 byte] unsigned	Input/ Output	1 byte	[5.010] Percent (0 - 100%)	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value [1 byte] signed		1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	U	A
Value [2 byte] unsigned		2 bytes	[7.001] Pulse	K	-	S	U	A
Value [2 byte] signed		2 bytes	[8.001] Pulse difference	K	-	S	U	A
Value [2 Byte] float		2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Value [4 byte] unsigned		4 bytes	[12.001] Counting pulses unsigned	K	-	S	U	A
Value [4 byte] signed		4 bytes	[13.001] Counting pulses (signed)	K	-	S	U	A
Value [4 Byte] float		4 bytes	[14.001] Rotary acceleration /rad/s^2)	K	-	S	U	A
Status [1 byte] unsigned	Input	1 byte	[5.010] Percent (0 - 100%)	K	-	S	-	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Status [1 byte] signed		1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	-	A
Status [2 byte] unsigned		2 bytes	[7.001] Pulse	K	-	S	-	A
Status [2 byte] signed		2 bytes	[8.001] Pulse difference	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Status [2 byte] float	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Status [4 byte] unsigned		4 bytes	[12.001] Counting pulses unsigned	K	-	S	-	A
Status [4 byte] signed		4 bytes	[13.001] Counting pulses (signed)	K	-	S	-	A
Status [4 byte] float		4 bytes	[14.001] Rotary accelleration (rad/s^2)	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

Blind

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Moving UP/DOWN	Input/output	1 bit	[1.008] Up/Down	K	-	S	U	A
Move to position	Input/output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Slat position	Input/output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Stop / slat adjustment	Input/output	1 bit	[1.008] Up/Down	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
Height status [0 - 255]	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Slats status [0 - 100%]	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Slats status [0 - 255]	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Wind alarm	Input	1 bit	[1.001] Alarm	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

Fan switch

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Output x	Input/Output	1 bit	[1.002] Boolean	K	-	S	U	A
Step output	Input/Output	1 byte	[5.100] Fan speed level (0 - 255)	K	-	S	U	A
	Output	1 byte	[5.100] Fan speed level (0 - 255)	K	-	-	U	-
Step output status	Input/	1 byte	[5.100] Fan speed level (0 - 255)	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

Scene

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Scene number	Input/ Output	1 byte	[18.001] Scene control	K	-	S	U	A
Scene number status	Input	1 byte	[18.001] Scene control	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

RTC control element

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Control On/Off (secondary)	Input	1 bit	[1.001] Switching	K	-	S	U	A
On/off request (secondary)	Output	1 bit	[1.001] Switching	K	-	-	U	-
External actual temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Fault, actual temperature (secondary)	Input/output	1 bit	[1.001] Switching	K	-	S	U	A
Operation mode (secondary)	Input/output	1 byte	[20.102] HVAC mode	K	-	S	U	A
Override operation mode (main/secondary)	Input	1 byte	[20.102] HVAC mode	K	-	S	U	A
Window contact (main/secondary)	Input/output	1 bit	[1.019] Window/door	K	-	S	U	A
Presence detector (main/secondary)	Input/output	1 bit	[1.018] Occupancy	K	-	S	U	A
Condensation water / fill level alarm (main/secondary)	Input/output	1 bit	[1.005] Alarm	K	-	S	U	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Setpoint display (secondary)	Input/output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Request setpoint (secondary)	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
Confirm setpoint (secondary)	Input/output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Heating/cooling request (secondary)	Output	1 bit	[5.010] Heating/Cooling	K	-	-	U	-
Request fan speed level manual (secondary)	Output	1 bit	[1.001] Switching	K	-	-	U	-
Request fan speed level (secondary)	Output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	-	U	-
Confirm fan speed level (secondary)	Input/ Output	1 byte	[6.010] Counting pulses (-128..127)	K	-	S	U	A
Fan coil manual confirmation (secondary)	Input/output	1 bit	[1.011] Status	K	-	S	U	A
Fan coil manual confirmation heating (secondary)	Input/output	1 bit	[1.011] Status	K	-	S	U	A
Fan coil manual confirmation cooling (secondary)	Input/output	1 bit	[1.011] Status	K	-	S	U	A
Controller status HVAC (secondary)	Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

Split Unit Control

Name	Object function	Length	Data type	Flags				
				K	**L**	**S**	**U**	**A**
Control On/Off	Input/output	1 bit	[1.001] Switching	K	-	S	U	A
Setpoint temperature	Input/output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Actual temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Fan speed/ level	Output	1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
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	-	A
Forced operation	Input	1 bit	[1.001] Switching	K	-	S	-	A
Scene	Input	1 bit	[1.001] Switching	K	-	S	-	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

Audio control

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Track	Input	14 bytes	[16.000] Sign (ASCII)	K	-	S	-	A
Artist	Input	14 bytes	[16.000] Sign (ASCII)	K	-	S	-	A
Album	Input	14 bytes	[16.000] Sign (ASCII)	K	-	S	-	A
Play	Input/output	1 bit	[1.010] Start/Stop	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Pause	Input/output	1 bit	[1.001] Enable	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Forward	Input/output	1 bit	[1.007] Step (0 - 100%)	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Backwards	Input/output	1 bit	[1.007] Step (0 - 100%)	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Tone off	Input/output	1 bit	[1.001] Enable	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Shuffle	Input/output	1 bit	[1.001] Enable	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Retry	Input/output	1 bit	[1.001] Enable	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Volume	Input/output	4 bit	[3.007] Dimmer step	K	-	S	U	A
		1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Volume up	Input/output	1 bit	[1.002] Boolean	K	-	S	U	A
Volume down	Input/output	1 bit	[1.002] Boolean	K	-	S	U	A
On/Off	Input/output	1 bit	[1.001] Switching	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Source x	Input/output	1 bit	[1.017] Trigger	K	-	S	U	A
		1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

VRV control element

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Request On/Off control	Output	1 bit	[1.001] Switching	K	-	-	U	-
Request fan speed level	Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	-	U	-
Request control mode	Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	-	U	-
Temperature setpoint request	Output	2 bytes	[9.010] Temperature (°C)	K	-	-	U	-
Confirm On/Off control	Input	1 bit	[1.001] Switching	K	-	S	-	A
Confirm fan speed level	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Confirm control mode	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Confirm temperature setpoint	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
Error alarm	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Temperature sensor error	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

10 Operation

10.1 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.

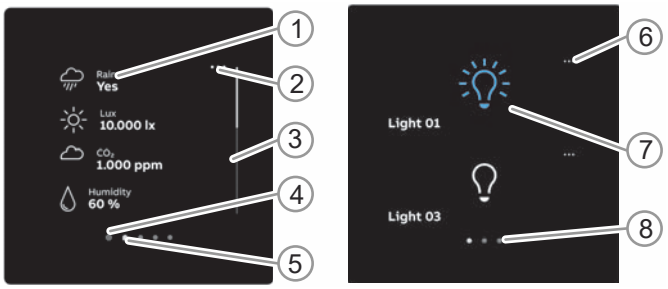


Fig. 22: Overview of operation

Pos.	Description
[1]	**Display of information** Display of all information recorded by the sensor, such as the weather.
[2]	**Overview menu**
[3]	**Scroll bar** By moving the scroll bar all recorded data can be viewed.
[4]	**Dashboard** All favoured control elements can be accessed via the dashboard.
[5]	Display of available operating pages
[6]	**Editing function** ▪ Next to each control element a heart icon (take-up into the favourites list) and a time program icon (take-up into the time program) is displayed. ▪ Next to each control element a heart icon (take-up into the favourites list) and a time program icon (take-up into the time program) is displayed. ▪ Reactivate the function by tapping on the tick, See “Control elements“ on page 241.
[7]	**Touch-sensitive user interface** Up to 4 functions per operating page can be positioned on the display. Aside from the start page, up to 11 further pages and up to 12 control elements can be created.
[8]	Display of available operating pages

- 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 functions are activated by tapping with three or more fingers

10.2 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.

10.2.1 Basic structures of control elements

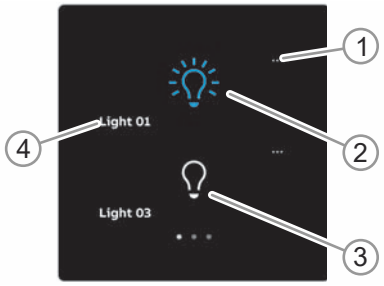


Fig. 23: Various statuses of the same control element

Pos.	Description
[1]	Control element settings
[2]	**Device is active** If the control element is active, the button is displayed in blue.
[3]	**Device inactive** If the control element is inactive, the button is displayed in white.
[4]	Name or channel designation of the device

10.2.2 Additional basic principles

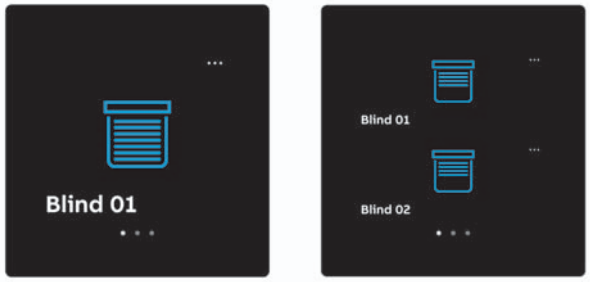


Fig. 24: Basic principles

Function buttons of blind control elements can, for example, display the different switching points by means of alternating icons (e.g. alternating colour marking in the icon).

Fig. 25: 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 following example, fan speed levels 1 and 3, as well as the automatic mode, are preset.

10.2.3 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	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		The rocker switch control element is graphically divided into two rocker switches. The rockers can be used to switch alternately between two values (e.g. "On" and "Off" for one lighting).

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 element	Status	Function
Blind		Blinds can be operated via the control element. The button in the middle can display the status. A corresponding animation is displayed during the movement. **Operating blind** The blind can be moved by tapping on middle of the button. Depending on the parameter setting, in the first view it can be set by pulling the slider or by tapping on the control element how wide the blind is to open. **Setting slats** The slats can be set in the second view. For this, move the slider accordingly. The icons on the left next to the slider indicate degree of inclination of the slats.

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	 	The dimmer control element has a push-button in the middle for switching on and off. In the control element settings (accessible via the three points at the top right) it additionally has two buttons at the top and bottom for stepwise dimming (brighter / darker).
Dimmer slider	 	The lighting control can also be switched stepwise with the dimmer slider control element. By tapping and holding with simultaneous swiping movement upwards or downwards the lighting can be dimmed stepwise (brighter / darker).

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 element	Status	Function
Scene (List)		Linked scenes can be switched via the control element. The scene must first be selected on the display. The selected scene is then started via the push-button. **Notice** The scene to be called up must be allocated correspondingly in the DCA.

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 element	Status	Function
Fan switch (step switch)		The fan switch has, dependant on the configuration, up to four buttons for the operation of functions. By pressing the top/bottom button several times, one reaches a further step higher or lower. The icon in the middle can be animated during adjusting. It is also possible to display the steps.

Slider value

- Value sending elements (sliders) can be used to display values in different formats and to send them to other devices.

Control element	Status	Function
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.

Room temperature controller (basic version)

Air conditioners can be controlled with the control element for room temperature controllers.

Control element	Status	Function
RTC control element (extension unit)		A room temperature control can be switched via the control element (e.g. "Heating"). Setting options are called up by tapping. A switch between the setting options can be made by swiping to the left (temperature, mode, etc.).

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 element	Status	Function
RGBW operation		The lamp is switched on or off with a press of the control element. The icon shows the brightness content and the set colour. In line with the lamp types and presets in the DCA, additional functions can be called up (in the example via the arrow), e.g. colour or white control. The colour set last remains. Additional settings can be made by tapping on the three points in the top right area of the control element.

Audio control (basic version)

All audio settings for connected audio devices can be easily controlled with the aid of this control element.

Control element	Status	Function
Audio control		Corresponding to the default settings in the DCA, a variety of audio functions can be called up directly via the buttons. The audio control can be started/stopped by tapping. Additional functions such as forward winding and rewinding, volume settings and the playlist are available.

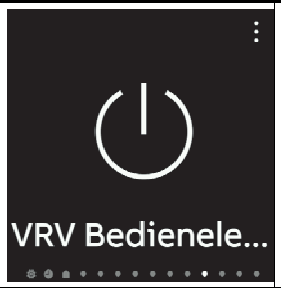
Split Unit Control

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 element	Status	Function
Split Unit control element		A Split Unit can be controlled via the control element (e.g. for heating and cooling functions). Setting options are called up by tapping. A switch between the setting options can be made by swiping to the left (temperature, mode, etc.).

VRV control element

VRV control elements can be used to make settings for heating and climate control devices. This, for example, allows the setpoint temperature to be adjusted in cooling mode.

Control element	Status	Function
VRV control element		A VRV can be controlled via the control element (e.g. for heating and cooling functions). Setting options are called up by tapping. A switch between the setting options can be made by swiping to the left (temperature, mode, etc.).

10.3 Special functions

10.3.1 Access to system settings

There is the option to limit the access to the system settings with a password (PIN code).

Notice
The PIN code is specified via the DCA.

10.3.2 Return to the previous page

The previous page can be opened again by swiping to the left.

10.3.3 Fault and alarm messages

The display offers protection and information via the notification center. This enables you to view 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 7.10 “Configuration of applications and application pages“ on page 63).

Notice
Depending on the parameterization, only certain functions are available in the application

The user can view, acknowledge and delete the call history and messages via the notification center.

The notification center is called up as follows:

1. Swipe to the right on the start page.
   – The application page with the call history and the notifications opens.

Messages

Current and and archived messages can be displayed and edited in the fault and alarm messages. There are different types of messages. Each category has its own icon.

- Information
- Warning
- Fault message

Fig. 26: 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.

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. Scroll completely down within the message.
3. Tap on the "Delete" button to delete messages.

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".

10.3.4 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 clock icon at the bottom on the main operating page (homepage).
   – The overview of the time program opens.

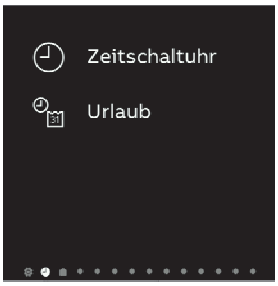


Fig. 27: Overview of the time program

Creating individual timers

1. Tap on the clock icon.
2. Change to the "Timer" view.
3. Select a control element in the pre-selection by tapping.
4. Tap on "Add new timer".
5. Specify the function of the control element.
6. Then, select the start time, the end time and the affected weekdays.
7. 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.
8. 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 there be activated and deactivated by actuating the blue slider.

Notice
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.

Deleting timer

1. Change to the "Timer" view.
2. Select a timer.
3. Swipe to the left.
   – A dustbin icon is displayed and the timer is deleted.

Setup of holiday function

1. Change to the "Holiday" view.
2. Activate the holiday function by actuating the tick.
3. Specify the start and end of the holiday. Use the scrolling element for this.
4. Tap on OK.
   – Now the editing function of the individual time programs can be used to specify the time programs that are to run during the holiday.

Notice
To make timers part of a holiday function,

10.4 Inserting the micro SD card (SDHC)

Notice

Access to the card slot is possible only in the installed status, See “Dismantling“ on page 35.

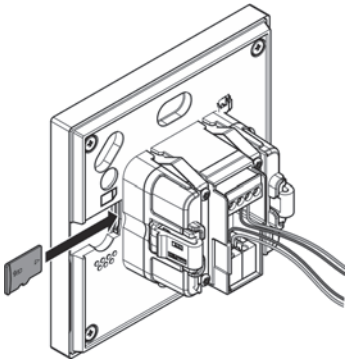


Fig. 28: Inserting the micro SD card (SDHC)

Notice

– The transfer of data to the device via the micro SD card is possible only with existing power supply.
– Supply ABB i-bus® KNX / free@home Bus must be connected!

10.5 System settings

within the system settings general adjustments appropriate to the device can be made. These are described as follows.

Fig. 29: System settings

The system settings are called up as follows:

1. Navigate to the toothed wheel icon from the start page.
   – You can navigate through the different system settings by scrolling.

The following areas become available:

Pos.	Designation	Description
[1]	**Display**	In this area all settings relevant to the display can be made: ▪ Brightness: ▪ Proximity sensor: ▪ Haptic feedback ▪ Cleaning blockage
[2]	**Topic**	Via option topic the visualisation of the display can be adjusted. The topic can be bright, dark and daylight-dependent.
[3]	**Date and time**	Different time and date settings: ▪ Year ▪ Date ▪ Time (time format) ▪ Start of week
[4]	**User settings**	The language of the display can be specified via the user settings.
[5]	**Screensaver**	Here the settings for the screensaver can be made.
[6]	**Commissioning**	This menu can be used to make different settings relevant to commissioning. ▪ Commissioning – The current physical address of the device can be viewed within the commissioning option. – The programming mode can be activated by activating the checkbox. ▪ Wall type ▪ Reboot ▪ Reset A switch between the different options can be made by swiping to the right.
[7]	**Update firmware**	Via this area the software is updated.
[8]	**Info**	This page provides general system information.

10.5.1 System settings - Display

In the system settings under "Display", general settings such as screen brightness and the layout can be specified.

Brightness adjustment

- The brightness of the display can be adjusted by moving the slider to the top and bottom.
- By activating the checkbox "Adjust brightness automatically", the adjustment is made automatically in dependence of the ambient brightness.

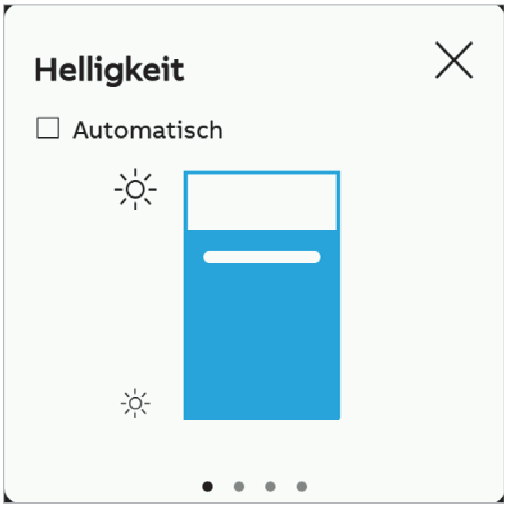


Fig. 30: Brightness

Setting proximity sensor

- This option can be used to set the sensitivity of the display for proximity

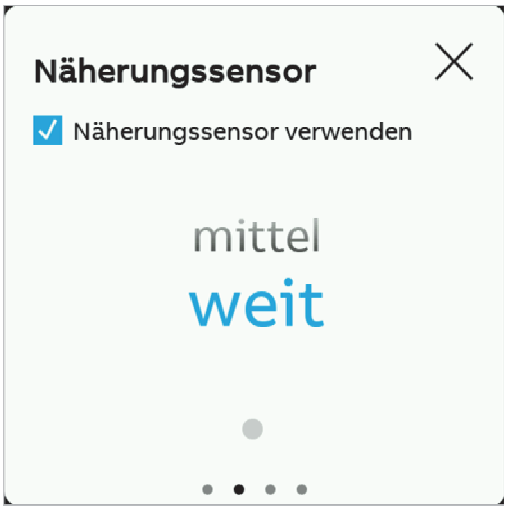


Fig. 31: Proximity sensor

Activating haptic feedback

- At activation the display gives a haptic feedback with vibration during use.

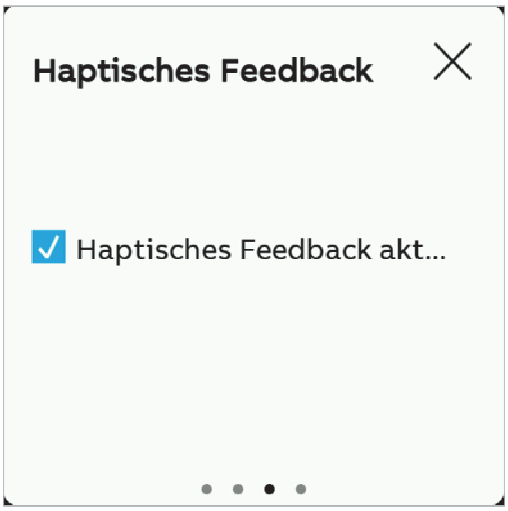


Fig. 32: Haptic feedback

Activating cleaning blockage

- To prevent undesired entries during cleaning of the display , the display can be set into a 30-second cleaning mode.

1. Tap on "Activate".
   – The cleaning blockage is activated, and the remaining time is counted down in the display.

Fig. 33: Cleaning blockage

10.5.2 System settings - Topic

The colour topic of the display is changed by swiping to the top and bottom (brightness-dependent, topic dark, topic bright).

With the selection of brightness-dependence the brightness level (1 - 5) can be set by swiping to the right with the slider.

10.5.3 System settings - Date and time

All relevant time and date details can be specified in the time and date settings. If the time and data settings were assigned automatically by the ETS, they cannot be adjusted (greyed-out options). The following details can be set.

- Year
- Date
- Time
- Start of week

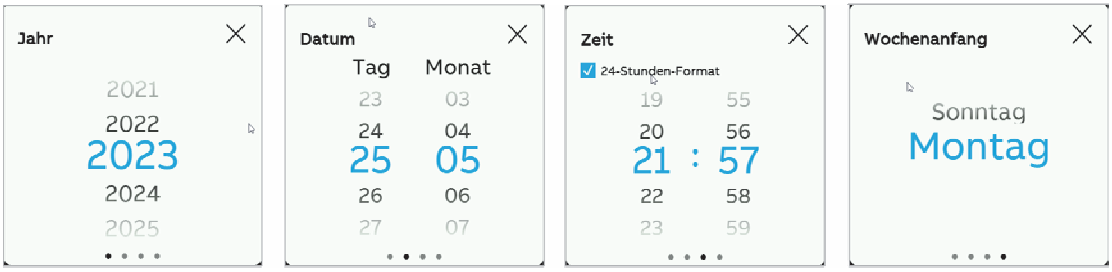


Fig. 34: System settings - Time and date

A switch between the different setting menus can be made by swiping from left to right. Individual details can be changed by swiping from top to bottom (selection of year, setting of day and month, setting of hours and minutes, specification of day for the beginning of the week).

10.5.4 System settings - User settings

The display language can be set within the user settings. For this, scroll from top to bottom to select one of the available languages.

10.5.5 System settings - Screen saver

Setting the screen saver

A screen saver can be activated if the display is not used. Here you can select between a clock, slideshow, weather and weather data. 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.

Fig. 35: Screen saver

1. The type of screen saver can be selected by swiping to the top and bottom. The following selection options are available:
   - Clock
   - Slide show
   - Information page
2. 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.

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".

Further setting options for the screen saver "Slide show".

- Transfer effect (press from right, fade out)
- Picture display interval (5 to 120 seconds)
- Display order (random, alphabetical)

10.5.6 System settings - Commissioning

All KNX settings for the device are made via the commissioning tool DCA, which is part of the special ETS app, See “Inserting the micro SD card (SDHC)“ on page 255. The transmission of the ETS data is made via the KNX interface.

Commissioning

Programming is only possible when the programming mode has be activated beforehand. Programming mode serves for assigning a physical address that is required for programming via the ETS.

Fig. 36: Commissioning

1. Change to the "Commissioning" menu.
2. Activate the checkbox "Activate programming mode".

Wall type

The wall-type can be specified by swiping to the right in which display is installed. The options "Solid wall" and "Hollow wall" are available.

Reboot

Tap on reboot to restart the display.

Reset

Tap on reset for resetting.

10.5.7 System settings - Firmware update

Software updates are performed with the aid of the SD card.

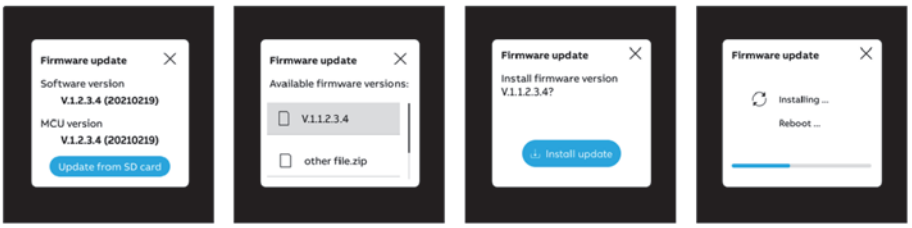


Fig. 37: Firmware update via SD card

1. Change to the "Firmware update" menu under system settings.
2. Tap on the "Update via SD card" button.
   – The system then searches for available updates. If there is a new update on the SD card, it will be listed in the dialogue.
3. Select the file by activating the checkbox.
4. Tap on the "Install update" button.
   – The update is carried out.
   – The successful installation is displayed in the dialogue. The display is then restarted independently.

10.5.8 System settings - Via

This page provides general system information.

11 Update

The update / configuration file can be transferred to a micro SD card, See “Inserting the micro SD card (SDHC)“ on page 255. This micro SD card can be inserted into the display to transfer the data.

Notice

- The micro SD card must be formatted with FAT32 before use.
- If necessary, use an adapter for the micro SD card to transfer the data from the PC to the card.

- Importing PID file, See “System settings - Firmware update“ on page 264
- Firmware update, see chapter 10.5.7 “System settings - Firmware update“ on page 264

12 Maintenance

12.1 Cleaning

Note
Observe the "Cleaning blockage" function, see chapter 10.5 “System settings“ on page 256.

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.

13 Notes

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