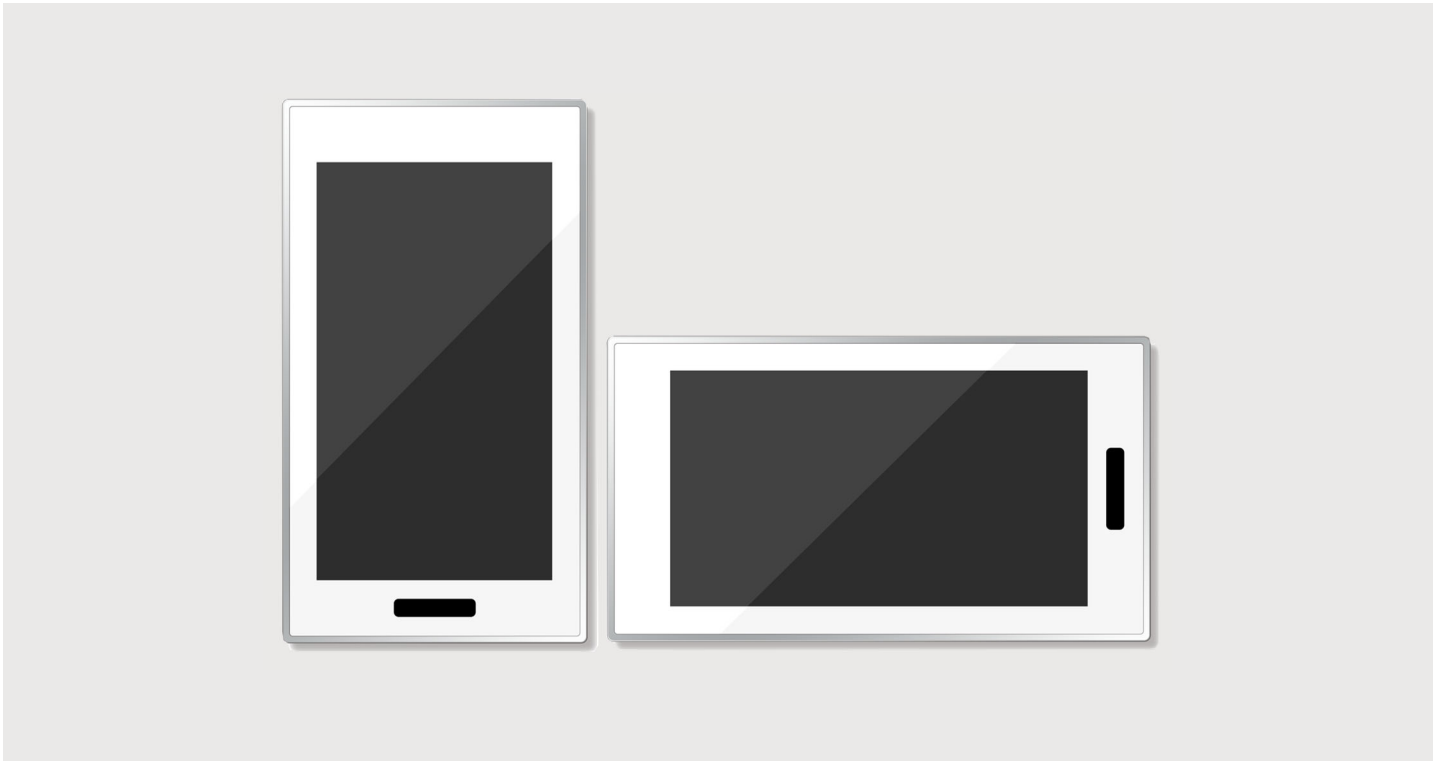
Product manual | 27.07.2023

ABB-RoomTouch®

ABB RoomTouch® 5, FM

RT/U30.0.1-xxx



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 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 ABB RoomTouch® 5, FM. 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 11.1 “Firmware update “ on page 134.

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

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

2.2.1 6 rules for choosing good passwords

- A password should consist of at least ten characters.
- It should consist of small and capital letters, numbers and special characters (e.g. § & ? * ! ?) and not be found in a dictionary or have a connection with you or your family. Also do not use names, birth dates, telephone numbers or similar.
- It should indicate consecutive numbers (12345...), alphabetical sequence (abcdef...) or a row of neighbouring buttons on the keyboard (qwertz...).
- The more sensitive an output (for online banking for instance) the more care should be taken in the selection of a strong password. If a supplier does not limit the number of characters for the password, the following applies: the longer the better!
- Do not select a password for all portals, but create a password for at least the most important and most used services.
- Change a password if it has been transmitted by a supplier and you have registered yourself there for the first time. Additional reasons for changing the code would be that your online service provider requests you to do this, large data leaks have become known or your device has been infected with malware.

(Source: verbraucherzentrale.de)

2.2.2 Anti-malware software

ABB recommends the following applications for repelling and removing malware:

McAfee https://www.mcafee.com
Microsoft Security Essentials https://de.wikipedia.org/wiki/Microsoft_Security_Essentials
Avira https://www.avira.com
Clamscan for Win/Mac/OS2/Linux systems https://de.wikipedia.org/wiki/ClamAV
Calmwin https://de.wikipedia.org/wiki/ClamAV
MetaDefender (used by EPPC) https://www.opswat.com/products/metadefender
AVG Anti-Virus https://www.avg.com

2.3 Intended use

The ABB RoomTouch® 5, FM is a freely programmable HD IPS KNX touchdisplay. The device serves as a room-bound control, signalling and monitoring unit for use in the KNX system.

The touchdisplay is a multifunctional room control unit for operating a room. It is used for the visualization and operation of a large number of building functions.

The device is intended for the following:

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

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

2.4 Improper use

Each use not listed in Chapter 2.3 “Intended use“ on page 16 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

2.5 Target group / Qualifications of personnel

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

2.6 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 description

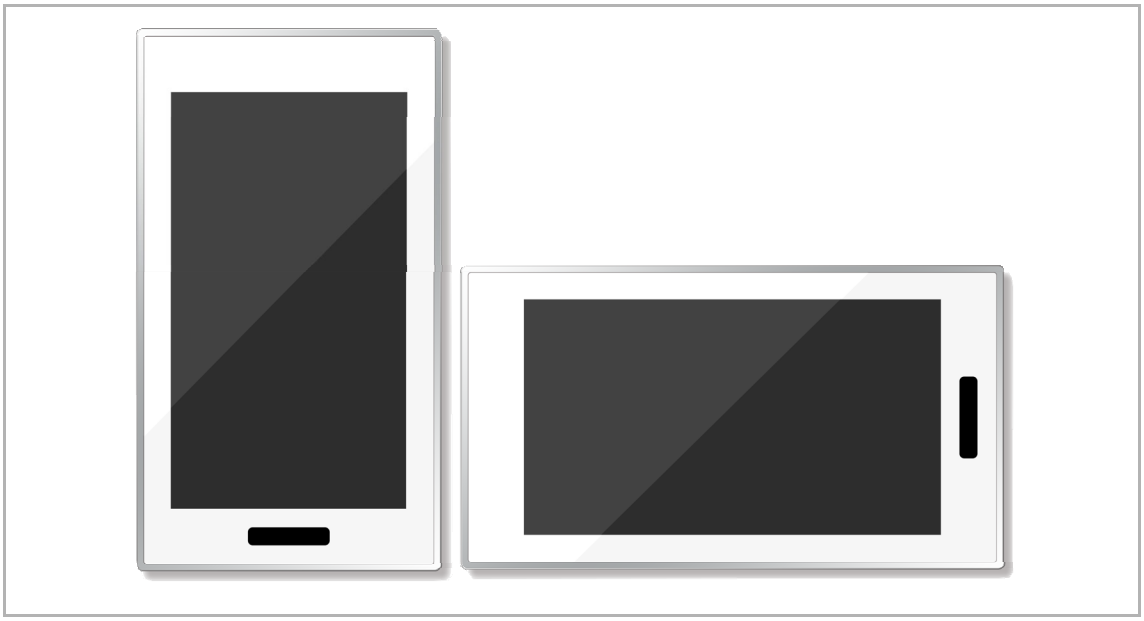


Fig. 1: Product overview

The ABB RoomTouch® 5, FM is a multifunctional room control unit for visualising and operating a large number of building functions in the KNX system.

Further functions: 20 fault and alarm messages, 10 logic functions, 10 timers with 6 switching times each, 4 scene actuators, 1 room temperature controller.

It has a capacitive 5" touchdisplay with a resolution of (RGB) 720 x 1280 pixels.

An auxiliary power supply is to be provided for the KNX touchdisplay.

The KNX touchdisplay can be mounted horizontally or vertically.

– In portrait format (vertical), up to 6 operating pages with a total of 30 control elements are possible.
– In landscape format (horizontal), up to 30 control elements can be positioned on up to 10 operating pages.
– Individual pages can be protected with a PIN code.

The following control elements fill an entire operating page in landscape format (horizontal mounting). These can also be inserted on one page only, where the number of control elements is limited to 1.

– RTC
– Split Unit Control
– Audiocontrol

Notice
In portrait format, these elements are normally a control element and therefore each fills a functional space.

Additional functions:

Status display, display of date and time, and display of indoor and outdoor temperature.

The following sensors are available:

– Installed temperature sensor
– Proximity sensor
– Brightness sensor

The device also has a binary input and an external temperature sensor input.

The KNX touchdisplay is configured with the DCA commissioning tool. The commissioning tool is embedded in the ETS and allows direct access to group addresses and flags of communication objects. The control element consists of freely programmable touch surfaces.

The flush and/or hollow wall mounting is carried out via the separate flush-mounted mounting box BOX/U5.1.

4.1 Scope of supply

The scope of delivery includes the KNX touchdisplay.

The connection with the ABB i-bus® KNX is established by means of the enclosed bus connection terminal.

The special Flush-mounting box BOX/U5.1 is not included in the scope of delivery.

The power adaptor for the external voltage supply (e.g. CP-D 24/2.5) is also not included in the scope of delivery.

4.2 Additional necessary components

- Power adaptor for the 20 - 32 V DC (SELV) auxiliary voltage (external power supply).
- Associated Flush-mounting box BOX/U5.1.

4.3 Overview of types

Article no.	Product name	Colour	Display diagonal
RT/U30.0.1-811	ABB RoomTouch® 5, FM	White	12.7 cm (5“)
RT/U30.0.1-825	ABB RoomTouch® 5, FM	Black	12.7 cm (5“)

Table 1: Overview of types

Article no.	Product identity number (9ADA11)
RT/U30.0.1-811	2TMA200050W0007
RT/U30.0.1-825	2TMA200050B0005

Table 2: Product identity number

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
▪ Switches ▪ Rocker switch ▪ Dimmer (4-bit and 8-bit) ▪ Dimmer slider, function (dimmer, value) ▪ RGBW operation ▪ Slider value ▪ Blind control ▪ Fan control (step switch) ▪ Scene control ▪ Display functions (display elements) ▪ Room temperature controller (RTC) ▪ Split Unit functions (interface of air conditioners) ▪ Audio control	▪ Fault and alarm messages ▪ Scene actuator ▪ Time programs ▪ Logic functions ▪ Internal RTC ▪ External temperature sensor - Binary input

Table 3: Overview of functions

4.5 Device overview

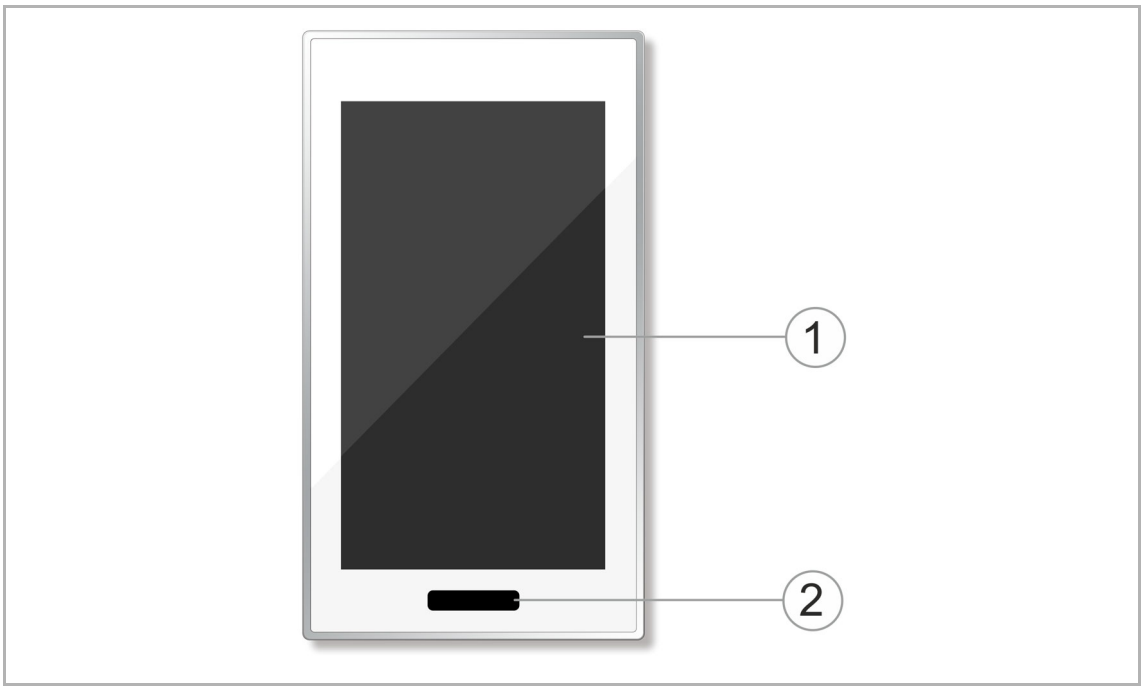


Fig. 2: Overview of device front ABB RoomTouch® 5, FM

[1] Touch screen

[2] Infrared proximity sensor and brightness sensor

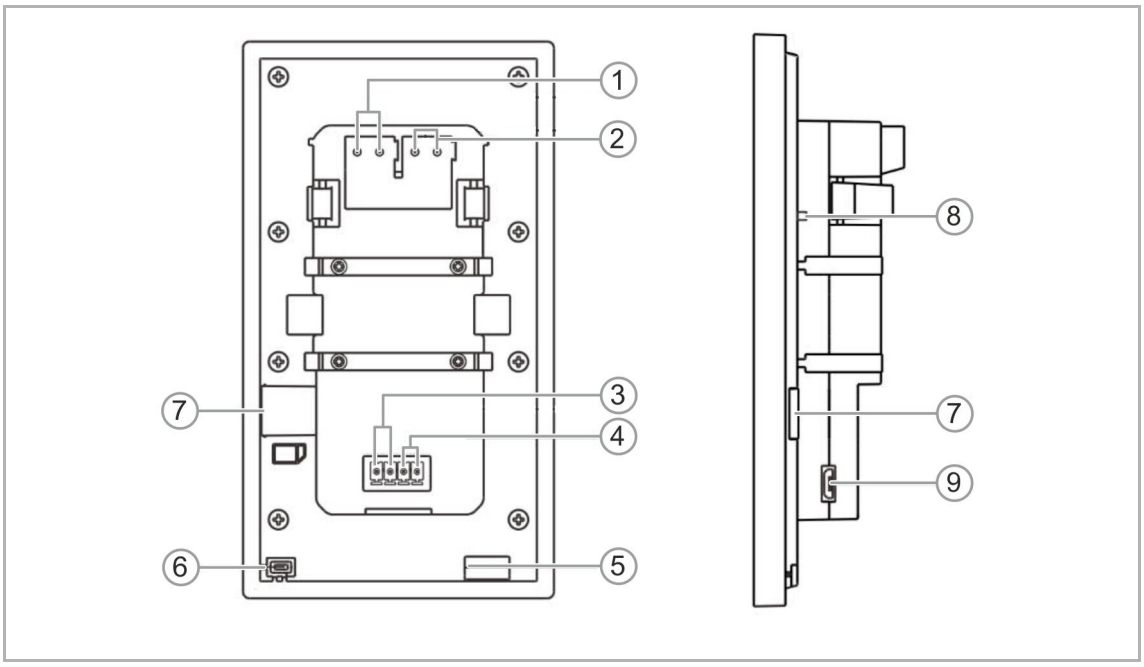


Fig. 3: Overview of device rear ABB RoomTouch® 5, FM

[1] KNX connection
[2] Auxiliary voltage connection (24 V DC)
[3] Temperature sensor connection
[4] Binary input connection, floating
[5] Loudspeaker
[6] Temperature sensor
[7] Micro SD card slot
[8] Upgrade button (only for factory use)
[9] USB connection for firmware upgrade (only for factory use)

5 Technical data

Designation	Value
Nominal voltage	24 VDC
Rating current	250 mA
Auxiliary voltage	20 V - 32 V DC
KNX bus voltage	21 V - 32 V DC
Energy consumption (power input) – Maximum: – Standby:	 < 6 W < 3 W
Wire cross-section Pin1 and Pin2 Pin3 and Pin4	 0.6 mm^2 - 0.8 mm^2 0.42 mm^2 - 1.38 mm^2
Display resolution	720 x 1280 pixel
Aspect ratio	16:9
Colour resolution	16.7 million colours
Display size	12.7 cm (5")
Viewing angle – Horizontal: – Vertical:	 160° 160°
Backgroung illumination	LED
Maximum brightness	Approx. 390 cd/m^2
Service life	Approx. 30000 h (at maximum brightness of > 300cd/m^2)
Touch technology – Calibration:	Capacitive Automatic
Working temperature	-5°C - +45°C
Storage temperature	-20°C - +70°C
Protection rating	IP20
Micro SD card (SDHC)	Slot for micro SD card
Commissioning – Parameter setting: – Programming:	 ETS 5 via DCA Via KNX bus or micro SD card

Table 4: Technical data

6 Circuit diagrams and dimensional drawings

6.1 Dimensional drawings

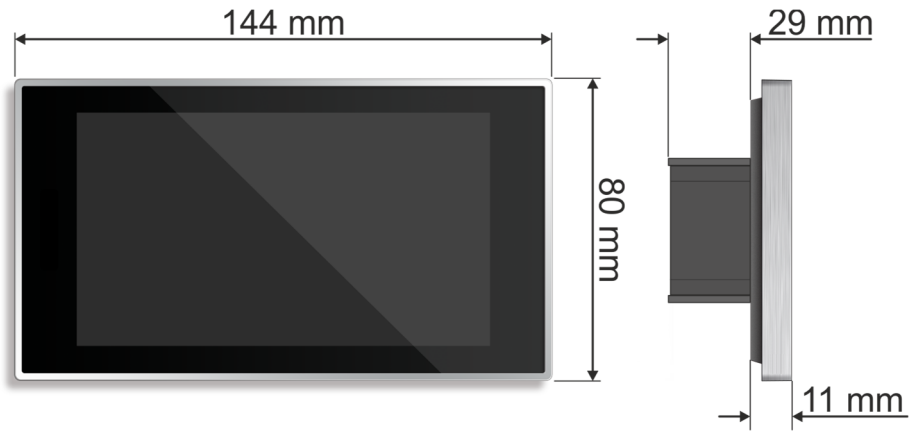


Fig. 4: Dimensions

- All dimensions are in millimetres.
- The mounting height of the device is 11 mm.
- The installation depth is 29 mm.

Notice

The dimensions of the associated Flush-mounting box (not included in the scope of supply) are as follows:

- Dimension for flush-mounting (H x W x D): 124 x 58 x 50.
- Dimension for hollow wall mounting (H x W x D): 121 x 58 x 50.

6.2 Circuit diagrams

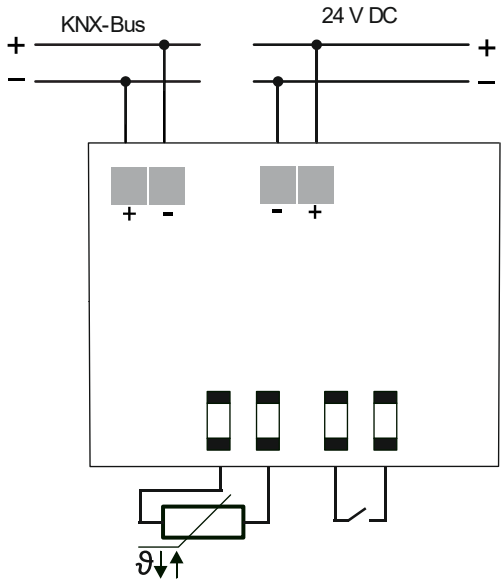


Fig. 5: Connection ABB RoomTouch® 5, FM

7 Connection, installation / mounting

7.1 Planning instructions

7.2 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.

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.).

7.3 Preparatory steps

The device is suitable for flush-mounted installation on the Flush-mounting box BOX/U5.1 .

The associated Flush-mounting box BOX/U5.1 (not included in the scope of supply) can be used in hollow walls. The Flush-mounting box can also be used in solid walls. For this, however, the box must first be flush-mounted.

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

7.4 Mounting

The device is suitable for flush-mounted installation on the Flush-mounting box BOX/U5.1 .

The associated Flush-mounting box BOX/U5.1 (not included in the scope of supply) can be used in hollow walls. The Flush-mounting box can also be used in solid walls. For this, however, the box must first be flush-mounted.

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

7.4.1 Installation sites

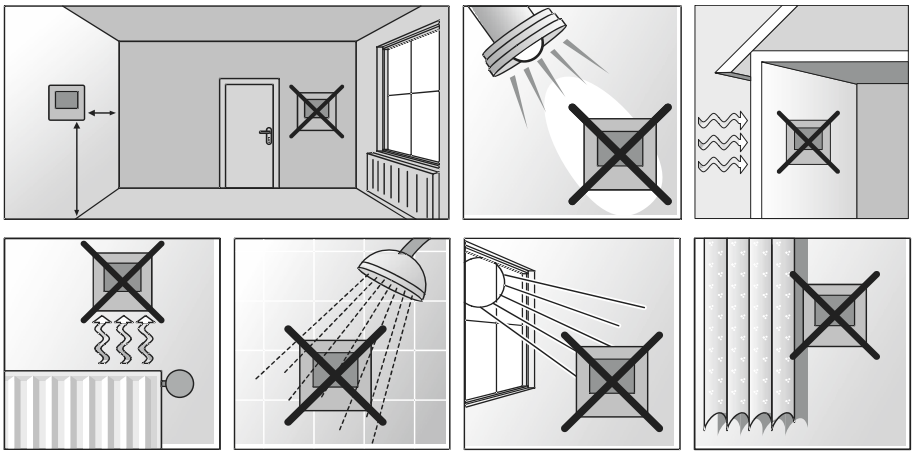


Fig. 6: Installation sites

7.4.1.1 Mounting height

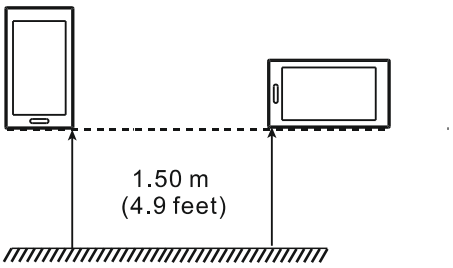


Fig. 7: Mounting height

Notice
The mounting height is 1.50 m, both for vertical and horizontal mounting.

7.4.1.2 Mounting alignment

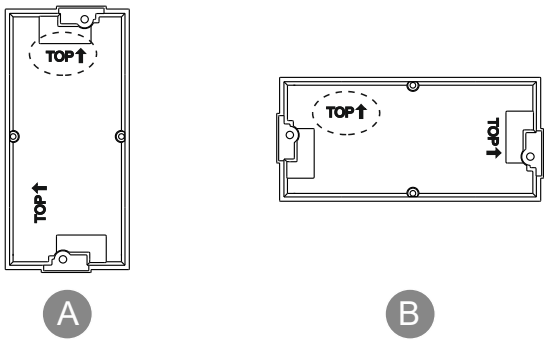


Fig. 8: Flush-mounting box alignment / marking

[A] Vertical alignment
[B] Horizontal alignment

7.4.2 Mounting / Installation in Flush-mounting box

7.4.3 Mounting in flush-mounted installation box in hollow wall

Notice
Observe the enclosed plaster and drilling template.
Illustration of mounting in vertical alignment serves only as an example.

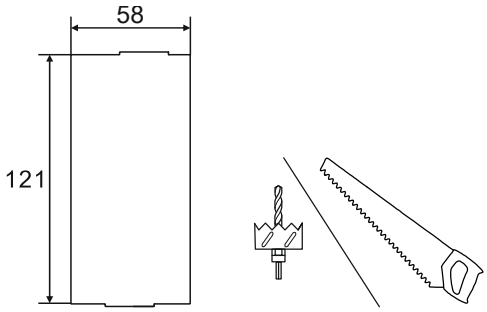


Fig. 9: Dimensions for mounting in hollow wall

1. Make the opening in the hollow wall with the appropriate tool, such as a hole saw or plasterboard saw.

Preparing the Flush-mounting box for the installation.

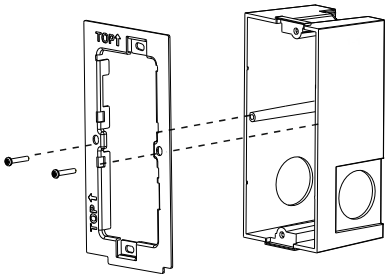


Fig. 10: Installing the frame

2. Mount the frame, making sure it is correctly aligned.

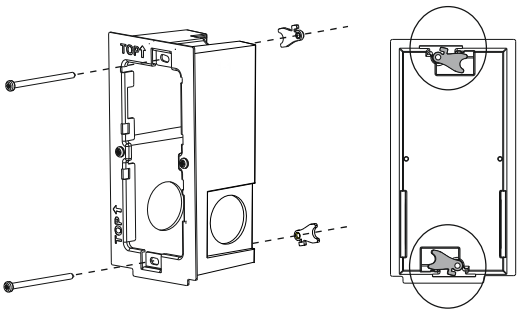


Fig. 11: Mounting the fixing claws

3. Install the fixing claws for hollow wall mounting.

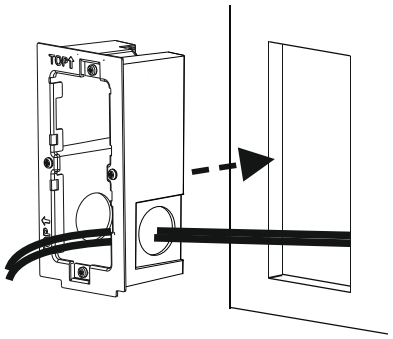


Fig. 12: Inserting the cable

4. Insert the cable through the appropriate opening in the boxes and insert the box.

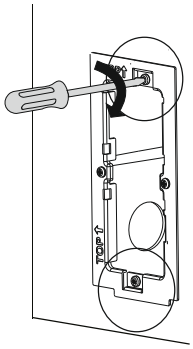


Fig. 13: Fixing the hollow wall box

5. Fasten the hollow wall box in the wall. Ensure that the box is flush and correctly aligned.

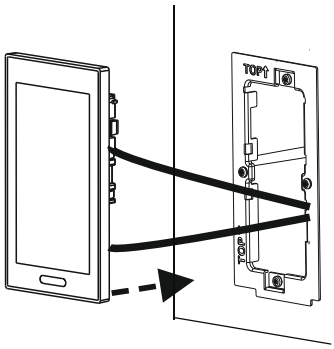


Abb. 14: Inserting the ABB RoomTouch® 5, FM

6.Connect the ABB RoomTouch® 5, FM and insert it in the Flush-mounting box.

Continue with the connection and installation Chapter 7.4.5 “Connection and installation“ on page 37.

7.4.4 Mounting in flush-mounted installation box in solid wall

Notice
See enclosed plaster and drilling template.
Illustration of mounting in vertical alignment serves only as an example.

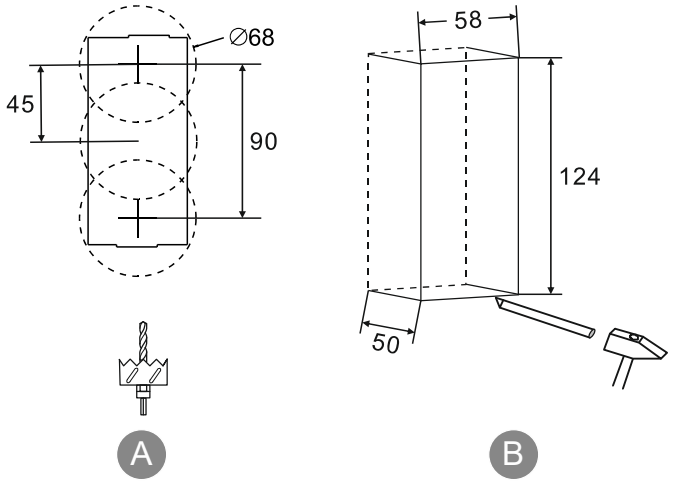


Fig. 15: Dimensions for mounting in solid wall

1. Make the opening in the wall with the appropriate tool, such as a [A] can drill or [B] chisel.

Preparing the Flush-mounting box for the installation.

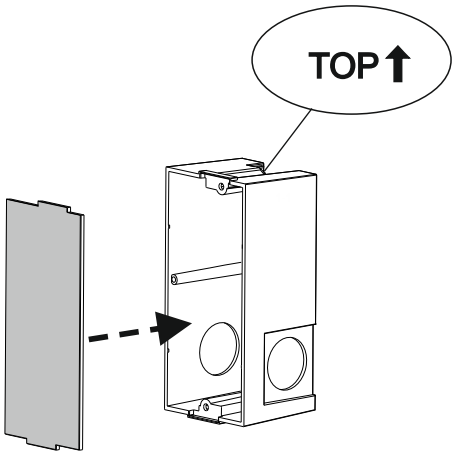


Fig. 16: Putting on the plaster cover.

2. Put the plastering cover on the box.

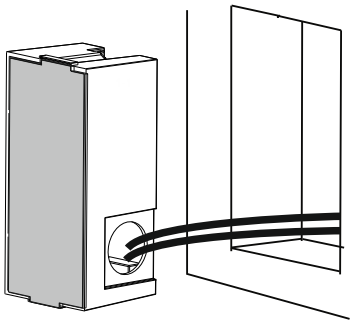


Abb. 17: Inserting the Flush-mounting box

3. Insert the cable through the appropriate opening in the boxes and insert the box. Ensure that the box is flush and correctly aligned.

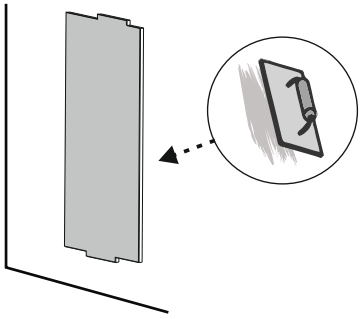


Fig. 18: Plastering in boxes

4. Plaster the boxes, making sure that the box is flush and correctly aligned.

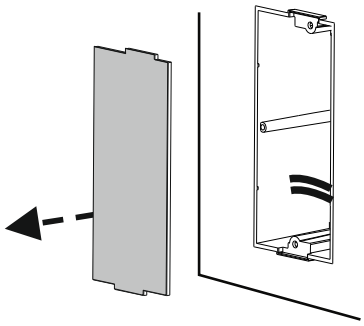


Fig. 19: Removing the plaster cover

5. Remove the plaster cover

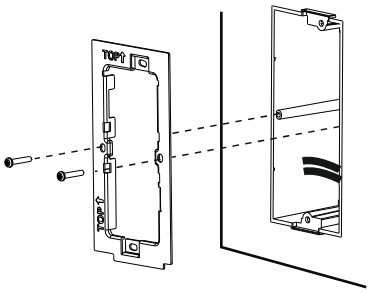


Fig. 20: Mounting the frame

6. Mount the frame, making sure it is correctly aligned.

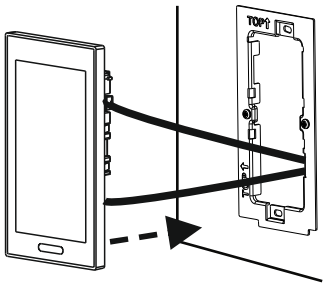


Fig. 21: Insert the ABB RoomTouch® 5, FM

7. Connect the ABB RoomTouch® 5, FM and insert it in the hollow wall box.

Continue with connection and installation Chapter 7.4.5 “Connection and installation“ on page 37.

7.4.5 Connection and installation

1. Connect the device according to the graphics (see chapter “Circuit diagrams“ on page 27).

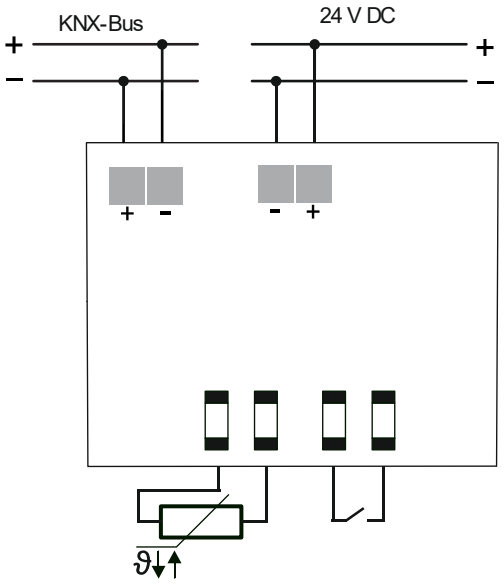


Fig. 22: Connection of mains supply / KNX bus

The device is now fully mounted.

Continue with Chapter 8 “Initial commissioning“ on page 39

7.5 Dismantling

Dismantling of the ABB RoomTouch® 5, FM is carried out with the Removal protection tool TZW/U.0.1.CK in the following steps:

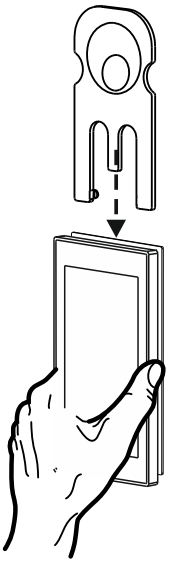


Fig. 23: Dismantling tool

1. Insert the Removal protection tool

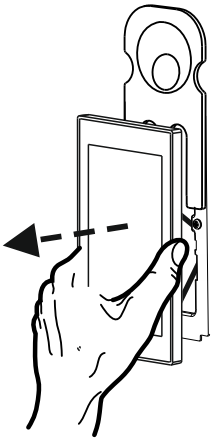
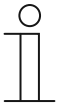


Fig. 24: Removing the ABB RoomTouch® 5, FM

2. Remove the ABB RoomTouch® 5, FM from the flush-mounted box
3. Unplug the connections

8 Initial commissioning

Initial commissioning follows the successful mounting and installation. For this the current firmware must be installed, see chapter 11.1 “Firmware update “ on page 134



Notice

– For the transfer of data to the device via the micro SD card both power supplies must be switched on!
– The micro SD card must be formatted with FAT32 before use.

After switching on the power supply the device starts automatically and the application is being prepared.

9 Commissioning via DCA (from ETS5)

Commissioning the ABB RoomTouch® 5, FM via the plug-in ETS5 commissioning tool DCA.

Notice
For further commissioning, the configuration and automation software ETS5 (from version 5.7.2) and the DCA commissioning tool must be installed and ready for operation on the computer used for the configuration and commissioning.

9.1 Integration into the KNX system (ETS)

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

9.1.1 Installing the BJE Touch DCA ETS app

For the correct assembly of the control elements, the initial commissioning of the ABB RoomTouch® 5, FM and for the display of the DCA commissioning tool, a special app must be installed.

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

Notice
- The app for the ETS5 can be downloaded via the electronic catalogue (www.busch-jaeger-catalogue.com).
- The app for the ETS5 can also be downloaded directly via the homepage of the KNX organisation (https://knx.org).
- The apps are called up on the start page of the ETS via "App" (bottom right).

9.1.2 Installation sequence

The ETS5 app (etsapp file, BJE Touch DCA) for the ABB RoomTouch® 5, FM is installed via the ETS.

The app can be downloaded either via www.busch-jaeger-catalogue.com or via the My KNX access.

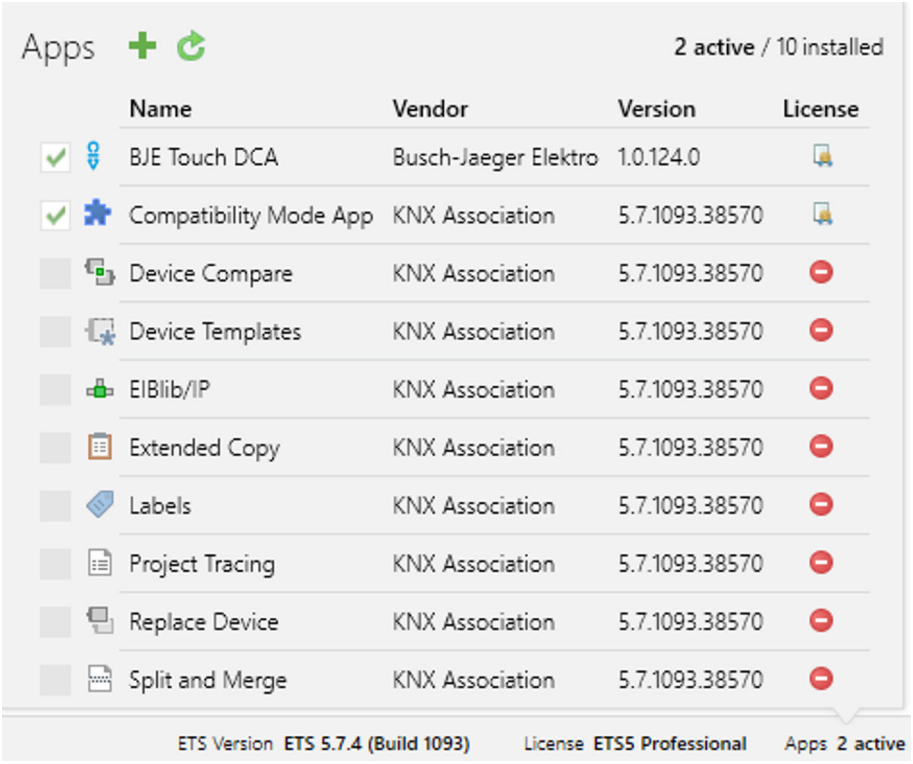


Fig. 25: Installation of the app

Notice

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

9.1.3 Integrating the ABB RoomTouch® 5, FM into the ETS

1. Start the ETS.
2. Import the product data of the ABB RoomTouch® 5, FM into the project database via the import function of the ETS (File type: *.knxprod).

9.1.4 Further KNX settings in the device

All KNX settings for the device are made via the commissioning tool DCA, which is part of the special ETSx app (see above).

Only for the transmission of KNX settings from the DCA via the KNX bus must the programming mode be activated directly in the device.

9.2 Overview of the DCA commissioning tool

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

DCA is a project planning software with which you can configure the ABB RoomTouch® 5, FM for the ABB building automation. Every ABB RoomTouch® 5, FM can be set up individually. DCA leads you through the configuration during project planning.

Essential tasks during project planning with DCA are:

- Specifying fundamental settings, e.g. display language for the ABB RoomTouch® 5, FM (basic settings).
- Configuration of existing applications.
- Configuration of pages, e.g. arrangement of buttons.
- Configuration of control elements, e.g. selection of button icons.
- Linking with group addresses to establish the connection to actuators and sensors via the bus.

9.2.1 Starting the DCA

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

Notice
Detailed knowledge of ETS operation is assumed for project planning.
It is recommended to first import the product data into the project database (see chapter 9.1.3 “Integrating the ABB RoomTouch® 5, FM into the ETS “ on page 41).

3. Integrate the device into the project via the catalogue.
4. Select the device.

Notice
The decision for landscape or portrait format must always be made in advance. This **cannot** be changed afterwards!
The DCA is only opened after the selection.

5. Click on "DCA" above the status bar.
   – The DCA tool opens inside the list view of the ETS.

9.3 Screen areas of the DCA tool

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.

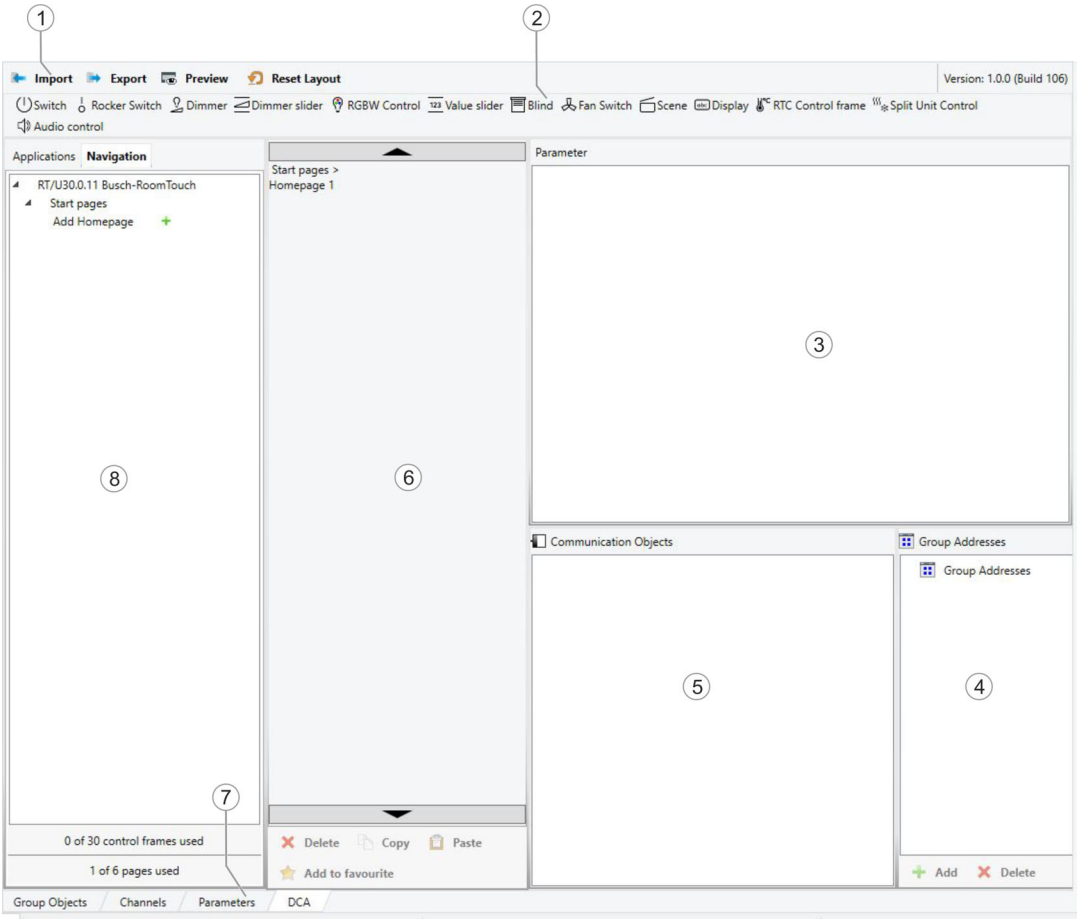


Fig. 26: DCA screen areas

Pos.	Screen area	Function
[1]	DCA icon bar	Quick access to different DCA tools, e.g. "Importing" or "Exporting"
[2]	"Control elements" area	The desired "Control elements" can be pulled via drag and drop from this area onto the operating pages in the work area. Only the available control elements are displayed.
[3]	"Parameter" area	Makes available corresponding input and output options in the work area depending on the selected control element. The applications and general settings for the ABB RoomTouch® 5, FM can be configured here (see library area).
[4]	"Group addresses" area	Area for managing and creating group addresses
[5]	"Communication objects" area	Listing of available communication objects of the marked control elements (see work area). Here communication objects can be selected and edited via the ETS. The same applies to several applications (see library area)
[6]	Work area with icon bar	Graphically displays the operating pages created in the library area. In this way the pages are also displayed on the ABB RoomTouch® 5, FM. Control elements can be pulled via drag and drop from the "Control elements" area onto the operating pages and marked there. The setting options for marked elements are displayed in the "Parameter" area. Direct functions can be carried out for the marked elements via the icon bar. The arrow buttons can be used to "swipe" up or down, as on the ABB RoomTouch® 5, FM
[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 ABB RoomTouch® 5, FM can be selected here and configured in the "Parameter" area. The same applies to "Applications" tab. Here the available applications can be selected and configured in the "Parameter" area

Table 5: DCA screen areas

Notice

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

9.4 Explanation of the basic structure (Terms)

The panel comprises:

- A menu page
- Additional pages

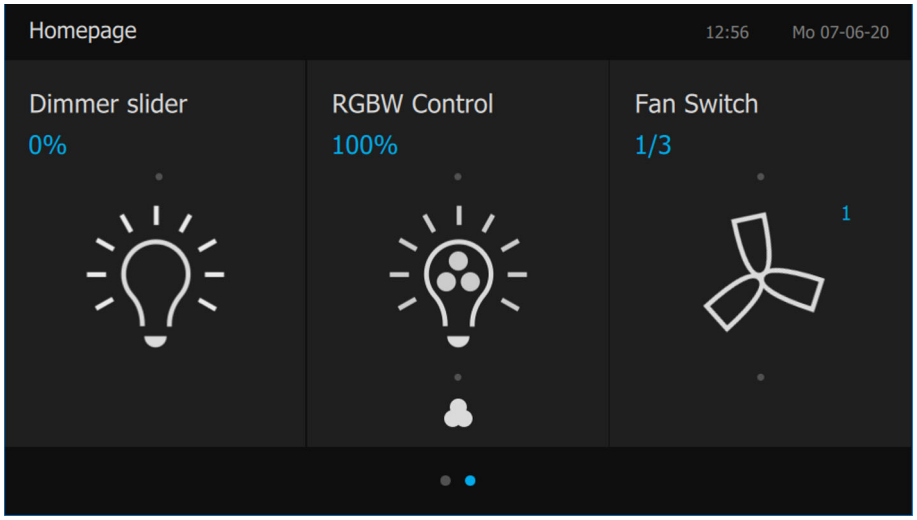


Fig. 27: ABB RoomTouch® 5, FM with control elements

The menu page is displayed when the device is started and contains references to applications such as fault and alarm messages and system settings. Also other information can be displayed here. If there is not enough space here, another menu page is inserted.

The additional pages contain the control elements such as switches, dimmers or scenes.

Basically, all operating pages (start pages) can be configured as required.

You can position control elements (homepage, start pages) on all operating pages to carry out house and device functions. The bottom bar of the ABB RoomTouch® 5, FM shows whether there are multiple pages.

Navigation

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

If several pages have been created on a level, you can call them up by swiping to the left or to the right.

The menu page can be recalled by swiping through all pages to the left.

Notice

Additional explanations are available in see chapter 10 “Operation“ on page 96.

9.5 Commissioning sequence

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

1. Start the ETS software (see chapter 9.2.1 “Starting the DCA“ on page 42).
2. Create a new project or open an existing one.
3. Open the configuration surface via the DCA tab.
4. Configure basic settings for the touchdisplay.
5. Create the navigation structure (see chapter 9.7 “Creation of the navigation structure“ on page 75).
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).
10. Transfer the project to the panel and start operation.

9.6 Configuration of the basic settings for the touchdisplay

The basic settings for the ABB RoomTouch® 5, FM can be specified beforehand.

1. Open the "Applications" tab in the library area.
2. Open "System settings".
   - The basic settings are displayed in the "Parameter" area and can be edited (see chapter 9.6.1 “Basic settings (system settings) Touchdisplay “ on page 47).
   - 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.

Notice

Some basic settings can also be adjusted directly or subsequently in the touchdisplay. For this the setting "Enable system settings for end customers" must be set on "Yes".

9.6.1 Basic settings (system settings) Touchdisplay

General

- **The touchdisplay is mounted**

Options:	Horizontal
	Vertical

This parameter defines the alignment of the touchdisplay on the wall.

Notice
The alignment determines the type of display and the number of control elements that are displayed on an operating page.

- **Language of the touchdisplay**

Options:	<Selection of language from a list>

The parameter is used to specify the language of the user interface.

Selection:

1. Click on the arrow.
   – The list with available languages opens.
2. Select the language.

- **Name of the main page**

Entry:	<Text name>

This parameter defines the name of the main operating page.

Notice
The parameter is only available if the parameter "The panel is mounted" is set on "Vertical".

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

Options:	Setting option from 5 - 3000 min.

The "In operation" communication object serves to inform you that the controller is still in operation. Value "1" is sent cyclic. This parameter is used to set the cycle for sending. If there is no cyclic telegram, the function of the device is disturbed and can be maintained via forced control. However, for this the system and/or actuator must have a "Forced operation" function.

Entry:

1. Click in the input field and enter a time value (in minutes).

Or:

1. Click on the arrows.

- **Acoustic signal at press of button**

Options:	Deactivated
	Activated

The parameter is used to specify whether an acoustic signal is issued by the device when a button is pressed.

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

Options:	Setting option from 10 - 100%

The parameter is used to set the volume for the acoustic signal when a button is pressed.

Entry:

1. Click in the input field and enter a percentage.

Or:

1. Click on the arrows.

Notice
The parameter is available only if the "Acoustic signal at press of button" is activated.

- **Decimal separator**

Options:	Comma
	Dot

The parameter is used to specify whether a comma or a dot is used as decimal separator.

- **Thousands separator**

Options:	Comma
	Dot

The parameter is used to specify whether thousands are separated with a comma or a dot.

- **Time format**

Options:	12 h
	24 h

The parameter is used to specify in which format the time is displayed. The default setting is the 24-hour display.

- **Date format**

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

The parameter is used to specify the date format.

Selection:

1. Click on the arrow.
   – The list with available date formats opens.
2. Select date format.

DD: Day, MM: Month, YY: Year. Example: 01-12-17 (DD-MM-YY)

- **Sending/receiving time and date**

Options:	No sending and no receiving
	Only sending
	Only receiving

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

– *No sending and no receiving*: The device uses date and time only internal.

– *Only sending*: The device synchronizes additional KNX components in the system.

– *Only receiving*: The device receives date and time from a different device, e.g. a KNX-DCF module.

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

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

Selection:

1. Click on the arrow.
   – The list with available settings opens.
2. Select the setting.

- **Automatic summer/winter time changeover**

Options:	Deactivated
	Activated

The parameter is used to specify whether the changeover to summer/winter time is automatic.

- **Sending time and date**

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

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

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

Selection:

1. Click on the arrow.
   – The list with available time intervals opens.
2. Select time interval.

- **First day of the week**

Options:	Saturday
	Sunday
	Monday

The parameter is used to specify the weekday with which the week starts.

Selection:

1. Click on the arrow.
   – The list with available weekdays opens.
2. Select 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. The entry is made in decimal degrees. The minutes and seconds must be converted for the entry.

One 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)

Entry:

1. Click in the input field.
2. Enter the coordinates according to the example.

- **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. The entry is made in decimal degrees. The minutes and seconds must be converted for the entry.

One degree corresponds to 60 minutes.

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)

Entry:

1. Click in the input field.
2. Enter the coordinates according to the example.

Display

- **Colour theme**

Options:	Dark
	Light

This parameter is used to specify whether a light or dark colour scheme is used for the panel.

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

Options:	Deactivated
	Activated

The parameter is used to specify whether the panel returns automatically to the main operating page (homepage). If the function is activated, the return takes place during inactivity on the device after a preset rest period.

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

Options:	Setting option from 10 - 3600 seconds

The parameter is used to set the rest period after which the device returns to the main operating page (homepage).

Entry:

1. Click in the input field and enter a time value (in seconds).

Or:

2. Click on the arrows.

Notice
The parameter is only available if the parameter "**Enable automatic return to home screen**" is activated.

The brightness is adjusted to the ambient light

Options:	Deactivated
	Activated

This parameter is used to specify whether the system switches to the dark colour scheme during darkness.

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

Options:	1
	2
	5
	10
	15
	30

The parameter is used to specify whether or when the display switches off after the last actuation. The display switches back on after a renewed actuation of the touch screen.

Selection:

1. Click on the arrow.
   – The list with available time intervals (in minutes) opens.
2. Select time interval.

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

Options:	Deactivated
	Activated

This parameter is used to specify whether the panel is automatically inactive in the dark.

- **Brightness level for interpretation as dark (1 = bright ... 5 = dark)**

Options:	1
	2
	3
	4
	5

This parameter is used to specify at which brightness level the panel automatically becomes inactive in the dark.

Selection:

1. Click on the arrow.
   – The list with available time intervals (in minutes) opens.
2. Select time interval.

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

This parameter is used to specify the period of time after which the panel automatically becomes inactive in the dark.

Selection:

1. Click on the arrow.
   – The list with available time intervals (in minutes) opens.
2. Select time interval.

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

- **The colour theme is switched to dark mode during darkness**

Options:	Deactivated
	Activated

This parameter is used to specify whether the system switches to the dark colour scheme during darkness.

Notice
The parameter is only available if the "Colour theme" parameter is set on "Bright".

- **Brightness for switching to dark mode (1 = dark ... 5 = bright)**

Options:	Setting option from 1 - 5

This parameter is used to specify whether the system switches to the dark colour scheme during darkness.

Notice
The parameter is only available if the parameter "**The colour theme is switched to dark mode when it is dark**" is activated.

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

Options:	Setting option from 1 - 5

This parameter is used to specify whether the system switches to the dark colour scheme during darkness.

Notice
The parameter is only available if the parameter "**The colour theme is switched to dark mode when it is dark**" is activated.

- **Display brightness [%]**

Options:	Setting option from 10 - 100%

The brightness of the display is set via the parameter.

Entry:

1. Click in the input field and enter a percentage.

Or:

1. Click on the arrows.

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

Proximity sensor

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

Options:	Deactivated
	Activated

This parameter is used to specify whether the panel is automatically activated by the proximity sensor.

- **Sensitivity of the proximity function (1 = near ... 3 = max. distance)**

Options:	1
	2
	3

This parameter is used to specify whether the panel is automatically activated by the proximity sensor.

1. Click on the arrows.
   – Set the desired sensitivity.

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:	Deactivated
	Activated

This parameter is used to specify whether the panel is automatically activated by the proximity sensor.

- **Switch-on value**

Options:	Off
	On

The parameter is used to switch the switch-on value on or off.

Notice
The parameter is only available if the parameter "**Use 1-bit output object of proximity function**" is activated.

- **Switch-off value**

Options:	Off
	On

The parameter is used to switch the switch-off value on or off.

Notice
The parameter is only available if the parameter "**Use 1-bit output object of proximity function**" is activated.

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

Options:	Deactivated
	Activated

The parameter is used to specify whether the **"Activate proximity"** communication object is activated.

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

Haptic feedback

- **Sensitivity of the haptic feedback**

Options:	Inactive
	Soft
	Middle
	Hard

This parameter is used to set the sensitivity of the haptic feedback.

Screensaver

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

Options:	No screen saver
	5
	10
	15
	30
	60
	120

The parameter is used to specify whether or when the screen saver is displayed after the last actuation. The screen saver is faded out again after a renewed actuation of the touch screen.

Selection:

1. Click on the arrow.
   – The list with available time intervals (in minutes) opens.
2. Select time interval.

- **Screen saver mode**

Options:	Timer
	Slide show
	Weather data

The parameter is used to specify the visualization that is displayed as screen saver. Depending on the mode, there are additional tailor-made setting options.

Notice
For selecting the "Slide show": The images for the screen saver must be located on the micro SD card in the "Slide" folder. The card must remain inserted in the device. Additional details on the screen saver are available in see chapter 10.5 “System settings“ on page 130.

Selection:

1. Click on the arrow.
   – The list with available modes opens.
2. Select the mode.

- **Type of clock**

Options:	Analog
	Digital

The parameter is used to specify the visualization of the clock.

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

- **Display of seconds**

Options:	Deactivated
	Activated

During the analogue visualization a seconds hand and during digital visualization the seconds are displayed via the parameter.

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

Picture folder: Photo

- **Effect of picture transfer**

Options:	Shift from the right
	Fade out

The parameter is used to specify the slide transition effect for the display of slides.

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

- **Slide show interval**

Options:	Setting option from 5 - 120 seconds

The parameter is used to specify how long an image of the screen saver is displayed before the next image appears.

Entry:

1. Click in the input field and enter a time value (in seconds).

Or:

1. Click on the arrows.

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

- **Order of slides**

Options:	At random
	Alphabetically

The parameter is used to specify whether the slides of the screen saver are displayed in an alphabetical sequence according to file name or at random.

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

- **Display of outside temperature**

Options:	Deactivated
	Activated

This parameter is used to display the outside temperature in the screen saver. For this, link the associated communication object with one group address respectively.

Notice
The parameter is available only when parameter "Screen saver mode" is set on "Weather data".

- **Display rain**

Options:	Deactivated
	Activated

This parameter is used to display the rain data in the screen saver. For this, link the associated communication object with one group address respectively.

Notice
The parameter is available only when parameter "Screen saver mode" is set on "Weather data".

- **Display wind force**

Options:	Deactivated
	Activated

The parameter is used to display weather data and environmental data in screen saver mode, e.g. the wind force. For this, link the associated communication object with one group address respectively.

Notice
The parameter is available only when parameter "Screen saver mode" is set on "Weather data".

- **Display brightness**

Options:	Deactivated
	Activated

The parameter is used to display weather data and environmental data in screen saver mode, e.g. the brightness. For this, link the associated communication object with one group address respectively.

Notice
The parameter is available only when parameter "Screen saver mode" is set on "Weather data".

Information start page

- **Use information start page**

Options:	Deactivated
	Activated

This parameter is used to activate the output of information on the menu page.

Notice
This page is displayed only once.
– After deactivation of the screen saver
– After activation of the panel
Options for application in the hotel room or in meeting rooms, e.g to welcome someone.

- **Use line 1**

Options:	No
	Static text
	14-byte text

The parameter is used to display information on the menu page.

Notice
The parameter is only available if the parameter "**Use information start page**" is activated.

- **Use line 2**

Options:	No
	Static text
	14-byte text

The parameter is used to display information on the menu page.

Notice
The parameter is only available if the parameter "**Use information start page**" is activated.

- **Use line 3**

Options:	No
	Static text
	14-byte text

The parameter is used to display information on the menu page.

Notice
The parameter is only available if the parameter "**Use information start page**" is activated.

- **Use line 4**

Options:	No
	Static text
	14-byte text

The parameter is used to display information on the menu page.

Notice
The parameter is only available if the parameter "**Use information start page**" is activated.

- **Static text line 1**

Options:	<Text line 1>

This parameter is used to define the text that is displayed on the menu page.

Notice
The parameter is only available if the parameter "**Use line 1**" is set on "static text".

- **Static text line 2**

Options:	<Text line 2>

This parameter is used to define the text that is displayed on the menu page.

Notice
The parameter is only available if the parameter "**Use line 2**" is set on "static text".

- **Static text line 3**

Options:	<Text line 3>

This parameter is used to define the text that is displayed on the menu page.

Notice
The parameter is only available if the parameter "**Use line 3**" is set on "static text".

- **Static text line 4**

Options:	<Text line 4>

This parameter is used to define the text that is displayed on the menu page.

Notice
The parameter is only available if the parameter "**Use line 4**" is set on "static text".

Primary function

- **Use primary function**

Options:	Deactivated
	Activated

The parameter is used to activate the primary function.

Notice
This is the first function of the device which is carried out when the user touches the display with at least 3 fingers at the same time, see chapter 10.3 “Control actions of additional applications “ on page 122

- **Icon for primary function**

Options:	<Selection of an icon from the list>

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

- **Object type**

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

The object type is selected via the parameter.

- **Reaction to pressing**

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

The parameter is used to select the reaction when pressed.

- **Reaction to release**

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

The parameter is used to select the reaction on release.

- **Value 1**

Options:	Off
	On

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
	On

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 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 light 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 light 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**".

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 display of the temperature in units of °C (Celsius) or °F (Fahrenheit).

- **Display room temperature**

Options:	Deactivated
	Activated

The parameter is used to specify whether the current measured temperature value of the indoor temperature sensor is displayed.

Notice
Room and outdoor temperature share a display location in the top bar of the display. They are displayed alternately when both parameters are activated.

- **Display of outside temperature**

Options:	Deactivated
	Activated

The parameter is used to specify whether the current measured temperature value of an outdoor temperature sensor, which has been allocated via a group address, is displayed.

Notice
Room and outdoor temperature share a display location in the top bar of the display. They are displayed alternately when both parameters are activated.

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

Options:	Setting option from 3 - 10 seconds

Room and outdoor temperature share a display location in the top bar of the display. The parameter is used to specify the time after which the display of the temperatures changes.

Entry:

1. Click in the input field and enter a time interval (in seconds).

Or:

2. Click on the arrows.

Notice
The parameter is available only when parameter "Display room temperature" is activated.

- **Use for room temperature sensor**

Options:	Indoor sensor
	Outdoor sensor

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

The outdoor sensor must be allocated via a group address.

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

Options:	Setting option from -127 - +127 K

The parameter is used to specify the value by which the measured temperature is raised or lowered. This compensating value ensures that the correct temperature is displayed and, if necessary, passed on to other devices. A compensation, for example, is necessary when adjoining heat sources distort the measured result.

Entry:

1. Click in the input field and enter a compensating value (in Kelvin).

Or:

1. Click on the arrows.

Notice
The parameter is available only when parameter "Use for room temperature sensor" is set on "Indoor sensor".

- **Send indoor sensor temperature**

Options:	Do not send
	During change
	Cyclic
	During 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.

Safety

Certain areas of the ABB RoomTouch® 5, FM, e.g. operating pages, can be protected against unauthorized access. The access protection is indicated in the display by means of a lock icon in the top bar.

When actuating a control element or an application when the access protection is activated, the user must first enter a security number (PIN code) to enable the function.

- **Length of the PIN code**

Options:	4 digits
	5 digits
	6 digits

The parameter is used to specify the number of digits of the PIN code.

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

Options:	Deactivated
	Activated

The parameter is used to specify whether the PIN codes can be changed by the end customer. They can then be changed by the customer directly on the device. This function can be protected by a code (see parameter "Enable system settings for end customers").

- **Enable system settings for end customer**

Options:	Yes
	With code

The parameter is used to specify how the end customer can access the system settings of the device. The access can be protected by a code.

– *Yes*: Access to the system settings without code.

– *With code*: Access to the system settings with code. The code is specified in parameter "Code for system settings [0000xx - 9999xx]".

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

Options:	Setting option from 0000xx - 9999xx

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

Entry:

1. Click in the input field and enter a 4-, 5-, or 6-digit code.

Notice
The length of the code is specified via parameter "Length of PIN code".

- **PIN code level 1-3**

Options:	Setting option from 0000xx - 9999xx

Security numbers can be assigned for up to 3 access levels. A separate security number (PIN code) can be specified for each access level. This makes 3 access levels with 3 different security numbers possible.

An access level can then be assigned to a specific area of the ABB RoomTouch® 5, FM .

Example: If access level 1 has been assigned to an operating page, the PIN code of access level 1 must be entered to gain access.

Entry:

1. Click in the input field of the access levels and enter a 4-, 5- or 6-digit code.

Notice
The length of the code is specified via parameter "Length of PIN code".

9.7 Creation of the navigation structure

The touchdisplay contains operating pages (start pages) which are used to operate the ABB RoomTouch® 5, FM. These pages must be created beforehand.

The number of possible operating pages varies depending on the horizontal or vertical alignment of the touchdisplay.

– Horizontal: 10 operating pages
– Vertical: 6 operating pages

The number of the created pages is displayed in the bottom part of the library area.

9.7.1 Creating operating pages (start pages)

1. Open the "Navigation" tab in the library area.
2. Click on the arrow to the left of the device details.
3. Click on the arrow to the left of "Start pages".
   – The home page is displayed as standard.
4. Click on the homepage 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.

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

In total, depending on the alignment, further operating pages can be created in addition to the homepage. The number of the created pages is displayed in the bottom part of the library area.

9.7.2 Editing operating pages

Adjust name of the page

1. Open the "Navigation" tab in the library area.
2. Select the operating page in the tree structure.
3. In the "Parameter" area, click in the name input field and enter a new name. The length of the name is limited to 36 characters.

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

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

Move page within the tree structure

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

Notice
As alternative, select an opeating page and then move it up or down with the Alt and arrow button combination.

Copy the page and paste it again

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

Delete page

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

Adjust access to pages

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

Notice
The PIN code is specified via the system settings.

9.8 Configuration of the operating pages

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

The alignment of the operating pages can be changed between horizontal and vertical in the system settings.

Notice
If the installation position / alignment of the touchdisplay is changed, all settings are deleted!

The layout of the buttons on the touchdisplay is determined by a grid in the side view.

Horizontal alignment	Vertical alignment
10 pages are available!	6 pages are available!
Maximum of 30 control elements	Maximum of 30 control elements

Table 6: Number of available pages and control elements

If the touchdisplay is vertically aligned, up to 10 control elements can be inserted on 10 buttons per page.

When the touchdisplay is aligned horizontally, the number of controls depends on the parameter "Number of controls per page" of the respective pages. Depending on the selection, up to 3 control elements can be inserted per page.

Some control elements require more space and can only be created on a page if the parameter "Number of control elements per page" is set on 1 or 2.

Number of possible control elements per side with horizontal alignment

	1 control element	2 control elements	3 control elements
Switch	X	X	X
RockerSwitch	X	X	X
Dimmer	X	X	X
Dimmer slider	X	X	X
RGBW operation	X	X	X
Slider value	X	X	X
Blind	X	X	X
Fan switch	X	X	X
Scene	X	X	–
Display	X	X	X
RTC control element	X	–	–
Split Unit Control	X	–	–
Audio control	X	–	–

Table 7: Number of control elements with horizontal alignment

Example of the operating page with control elements

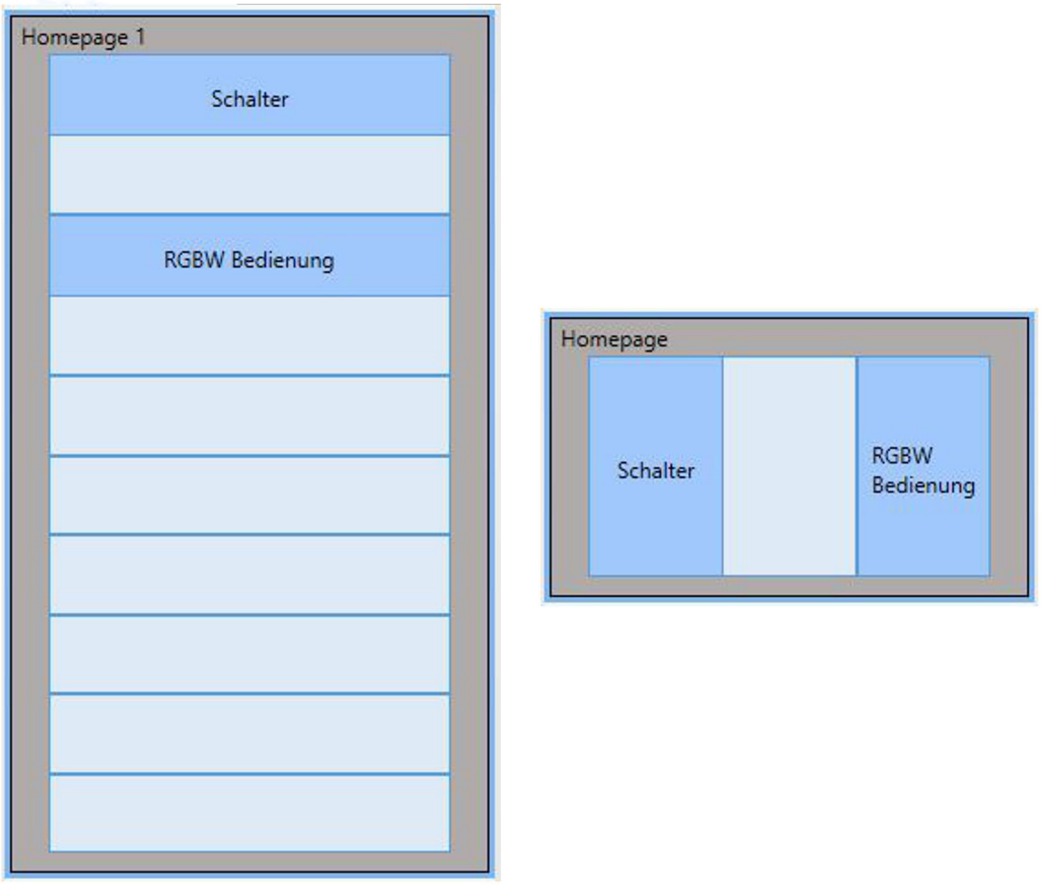


Fig. 28: Example of operating page with control elements, vertical and horizontal

Parameterising control elements

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

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

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

The control elements are described in detail in the following sections.

For the description of the parameters of the respective control elements see chapter 13 “Control elements and application parameter“ on page 138.

9.8.1 "Switch" control element

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

Setting and selection options via the "Parameter" area of the DCA, see chapter 13.1 “"Switch" control element“ on page 138.

9.8.2 Control element "Rocker switch"

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

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

Setting and selection options via the "Parameter" area of the DCA, see chapter 13.2 “Control element "Rocker switch"“ on page 144.

9.8.3 "Dimmer" control element

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

Setting and selection options via the "Parameter" area of the DCA, see chapter 13.4 “Control element: "Dimmer slider"“ on page 153.

9.8.4 Control element: "Dimmer slider"

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

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

Setting and selection options via the "Parameter" area of the DCA, see chapter 13.4 “Control element: "Dimmer slider"“ on page 153.

9.8.5 Operation of "RGBW" control element“

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

Setting and selection options via the "Parameter" area of the DCA, see chapter 13.5 “Operation of "RGBW" control element““ on page 156.

9.8.6 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 13.6 “Control element: "Value slider"“ on page 161.

9.8.7 "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 13.7 “"Blind" control element“ on page 164.

9.8.8 Control element "Fan switch"

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

Setting and selection options via the "Parameter" area of the DCA, see chapter 13.8 “Control element "Fan switch"“ on page 167.

9.8.9 "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 13.9 “"Scene" control element“ on page 173.

9.8.10 "Display" control element

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

Setting and selection options via the "Parameter" area of the DCA, see chapter 13.10 “"Display" control element“ on page 175.

9.8.11 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 13.11 “Control element "RTC control element"“ on page 187.

9.8.12 Control element "Split Unit Control"

Using the "Split Unit Control" control element, a control system can be set up for corresponding air conditioning units from many manufacturers, so-called Split Units. The allocation is made via the selected elements (group addresses).

Setting or selection options via the "Parameter" area of the DCA, see chapter 13.12 “Control "Split Unit Control"“ on page 193.

9.8.13 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 13.13 “Control element "Audio control"“ on page 198.

9.9 Editing control elements

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

9.9.1 Delete control element

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

9.9.2 Copy control element

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

9.9.3 Add control element to favourites list

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

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

9.10 Configuration of applications and application pages

The touchdisplay can contain applications with defined functions (e.g. fault and alarm messages). 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.

9.10.1 Application "Inputs

This application has an application page where the following inputs can be selected and configured:

– Binary input
– Temperature sensor input

The general settings can be made via the DCA.

1. Open the "Inputs" 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 13.14 “Application "Inputs" “ on page 206.

9.10.2 Application "Fault and alarm messages"

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

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

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

Notice

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

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

- For further setting/selection options via the "Parameter" area for the general settings of the application page, see chapter 13.15 “Application "Fault and alarm messages" - Global settings“ on page 212.
- For further setting/selection options via the "Parameter" area for the settings of the individual message, see chapter 13.16 “Application "Fault and alarm messages" - Settings of the individual messages“ on page 215

9.10.3 Application "Scene actuator"

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

The scene actuators can be created via the DCA.

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

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 13.17 “Application "Scene actuator"“ on page 217.

9.10.4 Application "Time programs"

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

The general settings can be made via the DCA.

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

Further setting/selection options via the "Parameter" area for the general settings of the time programs, see chapter 13.18 “Application "Time programs"“ on page 221.

9.10.5 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, a channel will be added and displayed in the tree structure.

Notice

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

– You can add more channels via the page with the plus.
– If it 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.

Foe further setting/selection options via the "Parameter" area for the settings of the logic functions, see chapter 13.19 “Application "Logical functions"“ on page 222.

9.10.6 Application "Internal RTC"

This application has no application page. The internal 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.

Further setting or selection options via the "Parameter" area for the general settings of the function of the internal RTC, see chapter 13.20 “Application "Internal RTC"“ on page 236.

9.10.7 "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 13.17 “Application "Scene actuator"“ on page 217.

Renaming favourites

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

Deleting favourites

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

– The favourite is deleted from the favourites list.

9.11 Editing communication objects

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

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

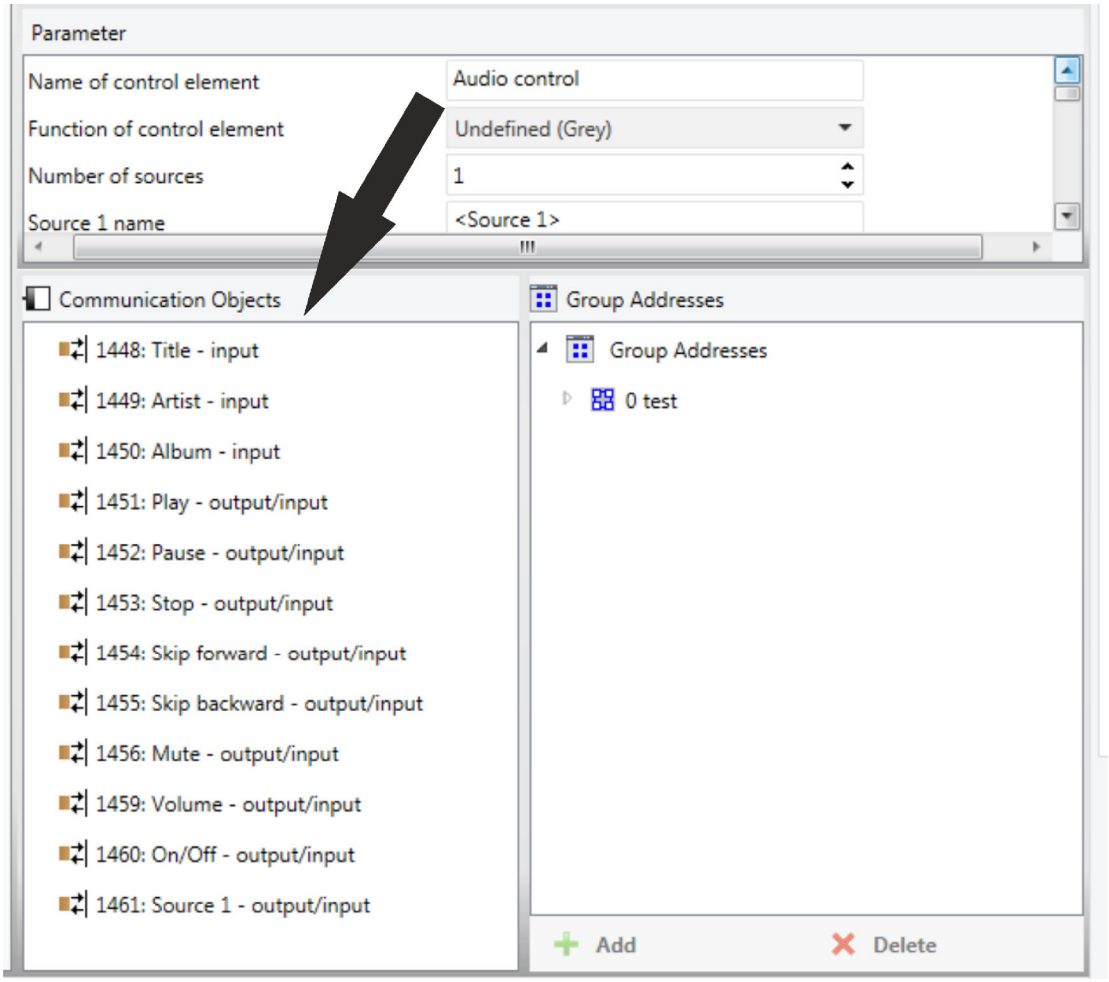


Fig. 29: Communication objects area

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.

9.12 Editing group addresses

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

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

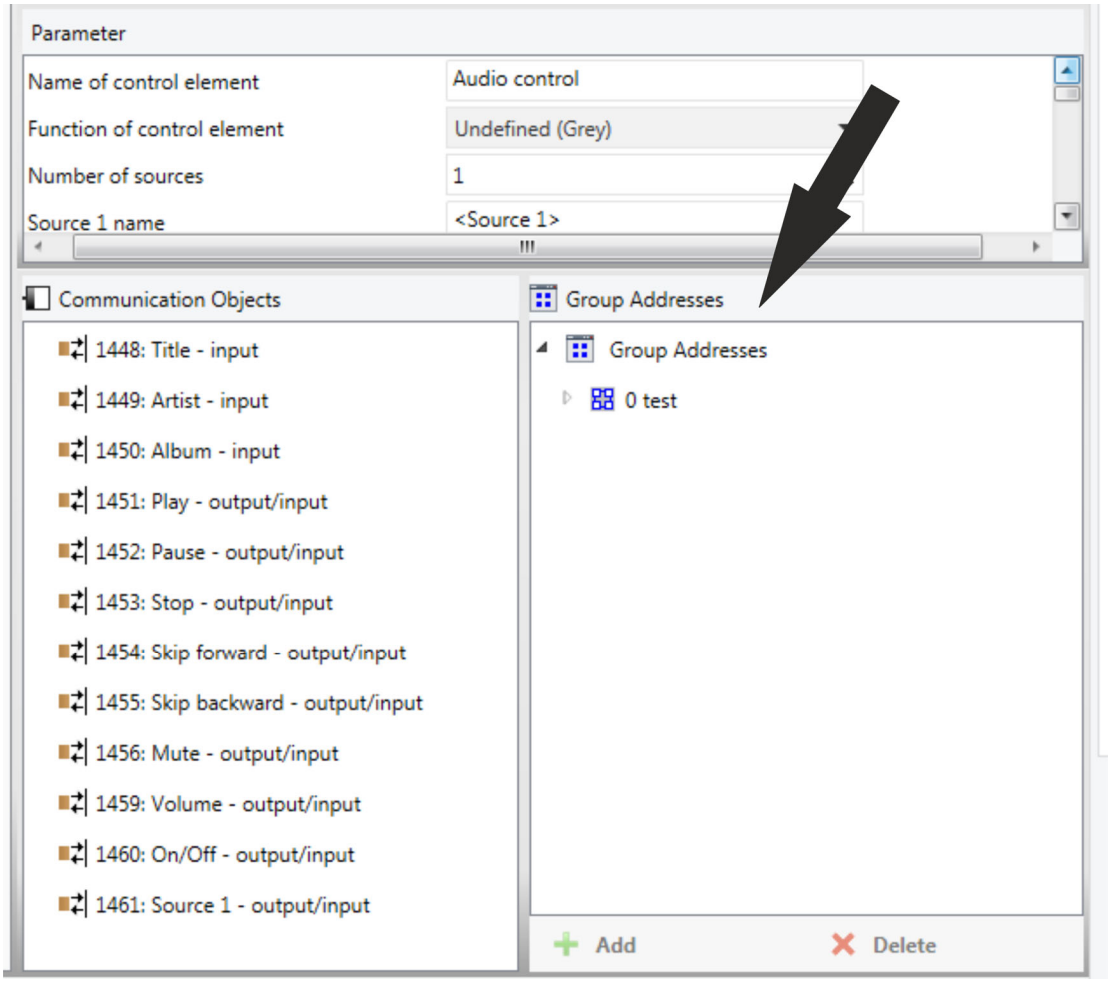


Fig. 30: "Group addresses" area

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

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

9.13 Additional tools (functions)

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

9.13.1 Import

1. Click on "Import" in the DCA toolbar, a dialog window with the following entries appears.

– Import master

Import master

Import of masters from another touchdisplay 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 DCA.

9.13.2 Export

1. Click on "Export" in the DCA toolbar, 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 transferred to the touchdisplay.
– The micro SD card must be formatted with FAT32 before its first use.

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 into the commissioning tool.
– The micro SD card must be formatted with FAT32 before its first use.

9.13.3 Preview

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

9.13.4 Reset layout

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

9.13.5 Reset all

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

10 Operation

10.1 General control and display functions

After the device has been connected to the power supply, the boot-up process starts. The parameterized menu page (homepage) then appears.

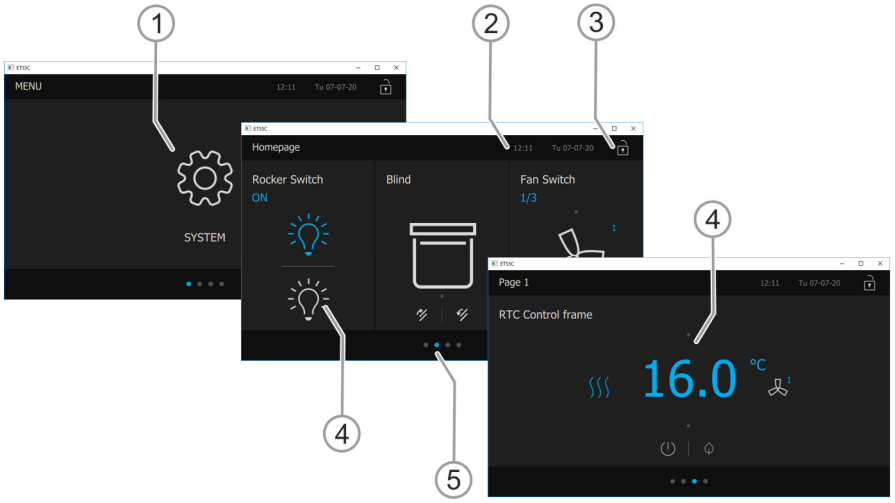


Fig. 31: Overview of operation

[1] Page menu with system setting, alarm and timer

– System settings may be protected by a PIN code

[2] Display of the current time and date

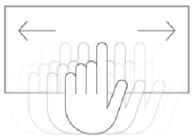
– Also display of current room temperature alternately with the outdoor temperature (when parameterized)

[3] Access to page via PIN code.

– Enabled page displays an open lock, see chapter “Control elements“ on page 97.

[4] Touch-sensitive user interface

[5] Display of available operating pages:



– Call up by swiping the user interface to the left or right.

10.2 Control elements

Control elements are used in the ABB RoomTouch® 5, FM to fulfil the basic functions:

– Switch
– Rocker switch
– Dimmer
– Dimmer slider
– RGBW operation
– Slider value
– Blind
– Fan switch
– Scenes
– Display
– RTC control element
– Split Unit Control
– Audio control

Notice

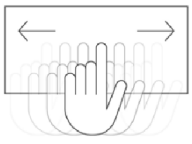
- The elements can contain switches, buttons and sliders.
- The different display and type of operation depends on the horizontal or vertical installation of the touchdisplay.
- The touch-sensitive surface of the touchdisplay is controlled by means of gestures. The individual functions can be operated with the aid of gestures.

The following touch gestures can be used on the touchdisplay:

Button operation	Tapping	Execution of function with a single press
Tapping operation	Pressing and holding	Execution of function by pressing and holding
Control operation	Pulling / pushing	Shifting of a slider

Notice

Additional functions can be called up or operated within some control elements by swiping.



10.2.1 Basic structures of control elements

Notice

- The control elements and functions displayed in the following are exemplary illustrations to explain the basic functions.
- The control elements and functions can vary and, depending on the mounting method and selected functions, can occur in different combinations as illustrated.

Example of vertical mounting of the touchdisplay

Mounting direction: vertical / portrait format

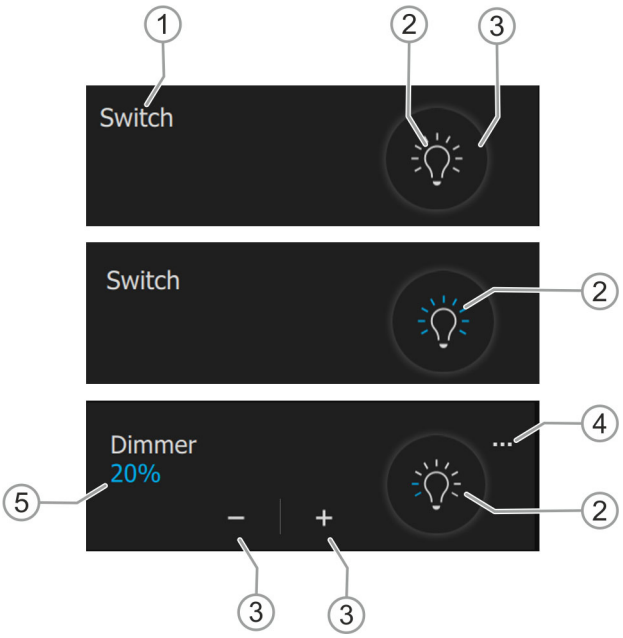


Fig. 32: Different states and functions of control elements

[1] Designation of function
[2] Status display "Icon"
[3] Function button / switch / push-button
[4] Additional operating function
[5] Value display

Control	Description
Designation of Function [1]	– The name of the control element is displayed here
Status display of "Device" [2]	– The device is dimmed, switched off or on (depending on the icon selected and the function chosen for it).
Function button / switch / push-button [3]	– Pushing, for example, triggers the function or changes a value – Depending on the selected control element, the status can also be displayed additionally. – The function button can depict different elements, such as switches or push-buttons.
Submenu / additional operating function [4]	– A submenu / additional operating function are only available if the touchdisplay is mounted vertically. – Using the three points, a submenu can be called up. – This function is not available on all control elements.
Value display [5]	– The set value is displayed here. – This display is not available for all control elements.

Table 8: Basic structure of control elements

Example of horizontal mounting of the touchdisplay

Mounting direction: horizontal / landscape format

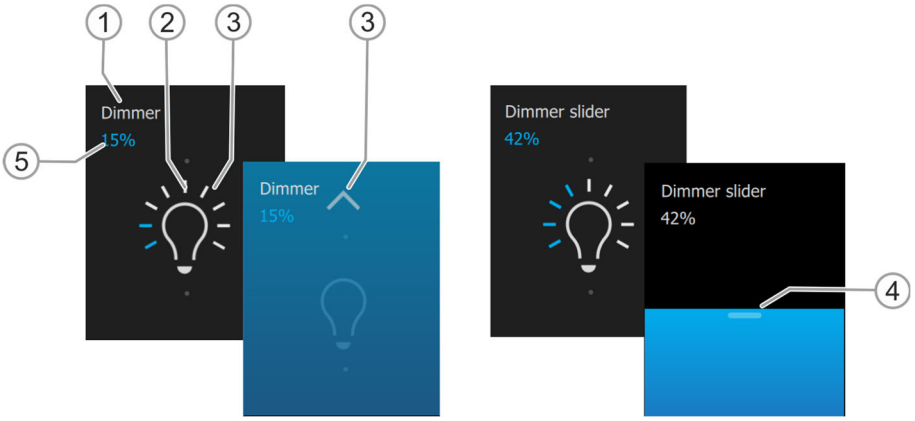


Fig. 33: Different states and functions of control elements

[1] Designation of function
[2] Status display of "Device"
[3] Function button / switch / push-button
[4] Slider / sliding function
[5] Value display

Control element	Description
Designation of Function [1]	– The name of the control element is displayed here
Status display of "Device" [2]	– The device is dimmed, switched off or on (depending on the icon selected and the function chosen for it).
Function button / switch / push-button [3]	– Pushing or pressing and holding, for example, triggers the function or changes a value – Depending on the selected control element, the status can also be displayed additionally. – The function button can depict different elements, such as switches or push-buttons.
Slider / sliding function [4]	– The value can be changed by pressing and swiping.
Value display [5]	– The set value is displayed here. – This display is not available for all control elements.

Table 9: Basic structure of control elements

10.2.2 Additional basic principles

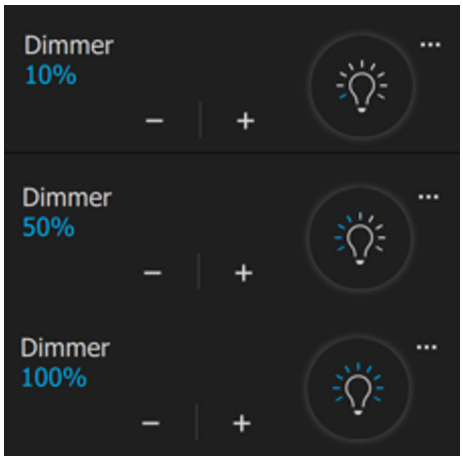


Fig. 34: Basic principles

Functional surfaces of dimming control elements can display the different dimming levels by means of changing icons (e.g. gradual colour change of the light ring around the lamp icon).

Fig. 35: Basic principles

Default settings of steps or levels (e.g. dimming steps, fan speed levels) are shown in the value display. In the following example the dimming step is preset at "20%").

10.2.3 Adjustable control elements

Basic versions of control elements at vertical installation of the touchdisplay

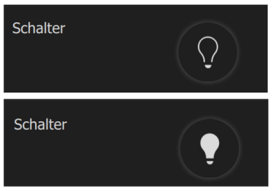
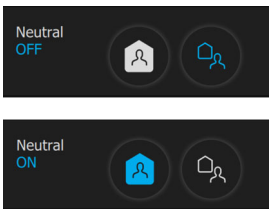
Notice

- The basic versions described here can be further adjusted.
- The figures are an example and only show the illustration of the vertical installation. For the basic version of horizontal mounting, See “Basic versions of control elements at horizontal installation of the touchdisplay“ on page 112

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.

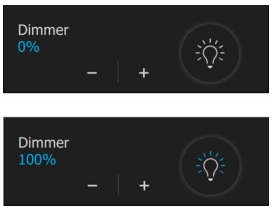
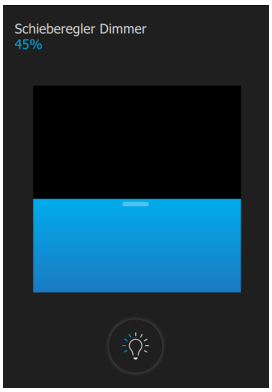
Mounting direction: vertical / portrait format

Status	Control element	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"). Pushing the button triggers the function or changes a value depending on the parameter setting.
	Rocker switch	A neutral push-button with rocker function when actuated on the right or left side of the rocker sends out a switching telegram. A differentiation is made between whether the rocker is actuated on the left or on the right side. This allows one of two versions of a function to be selected. The two icons represent the function of the rocker switch. A neutral push-button with rocker function can be used to call up two different scenes for example (in the example: "Presence" or "Absence"). Pushing the button triggers the function or changes a value depending on the parameter setting.

Dimmer (basic version can be further adjusted, e.g. with value display)

Dimmers can be used to implement convenient light switches with dimming functions.

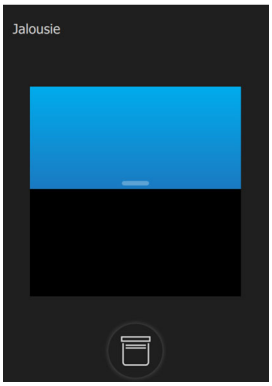
Mounting direction: vertical / portrait format

Status	Control element	Function
	Dimmer without slider	The version without slider has a function button for switching on/off and two buttons in the centre +/- for stepwise dimming (brighter/darker). The icons and the function can be parameterized. For use of the additional function: Dimming (brighter/darker) is carried out with tapping operation (pressing/sliding up/down and holding).
	Dimmer with slider	The version with slider has a function button for switching on/off. For use of the additional function: Dimming (brighter/darker) is carried out with the slider (pressing/holding and sliding up/down).

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.

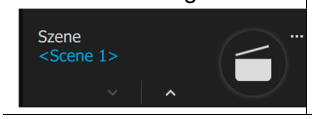
Mounting direction: vertical / portrait format

Status	Control element	Function
   	Blind	Stopping/starting with the function button (depending on the selected operating mode). The status is displayed on the status display (icon). During the process, a corresponding animation is displayed (depending on the selected configuration). Operating procedure: – Up / down **Button press** Each press of the button calls up the next function. For example: 1. Press of the button: The blind moves down 2. Press of the button: The blind stops 3. Press of the button: The blind moves up 4. Press of the button: The blind stops 5. Press of the button: The blind moves down 6. Press of the button: ... **Stop** When reaching the limit stop or press of the button. **Change** The blind stops with a press on the icon. A renewed press on the icon changes the direction of movement. - Up/down via the slider (blind) **Set the slider by swiping (additional function)** Move the blind into the desired position by swiping the slider Depending on the setting, also the slats can be adjusted. To do this, press the corresponding icon. For use of the additional function: The adjustment of the position is carried out with the slider (pressing/holding and sliding up/down). Release the slider and press on it when the position is reached.

Scenes (basic version)

With control element "Scene" the user can start so-called scenes. Several actions can be combined in a scene so that the user can create a certain light atmosphere with only one press of the button for example (several dimming actions).

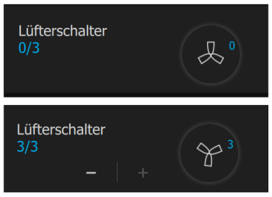
Mounting direction: vertical / portrait format

Status	Control element	Function
Scene can be called up/ Scene selection:   	Scene (List)	The desired "Scene" can be selected either via buttons (arrows) or by scrolling in the list. (For this, first select additional functions). For horizontal alignment: The scene is selected with a swiping movement on the function button. Start the selected scene via the function button. The selected scene can also be started depending on the parameter setting. **Notice** – The scene to be called up must be allocated correspondingly in the commissioning software of the ABB RoomTouch® 5, FM . – Buttons only appear if several scenes have been parameterized. – The scene can be stored with a long press of the button (parameterizable).
Scene is running:  		

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.

Mounting direction: vertical / portrait format

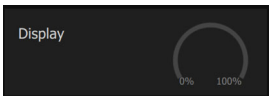
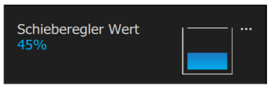
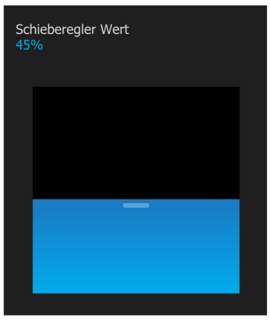
Status	Control element	Function
	Fan switch (step switch)	The version has two buttons in the middle for calling up the next or previous step (only available after the fan has been switched on) and a button on the right for On and Off. By pressing the right/left button several times, one reaches a further step higher or lower. The icon on the function button can be animated. It is also possible to display the steps.

Display and slider value / value sending element (Basic version)

– With display, values are displayed as text or graphical information. They cannot be operated (exception is the value slider), but serve for the display of values.

– Value sending elements can be used to display values in different formats and to send them to other devices.

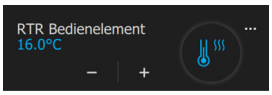
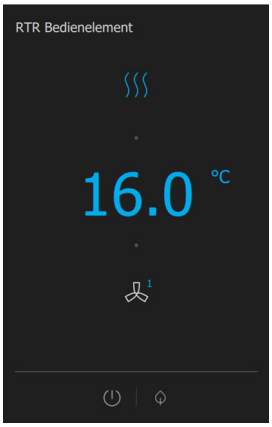
Mounting direction: vertical / portrait format

Status	Control element	Function
	Value or status display	The "Value or status display" version can display values and texts which are sent from a temperature sensor for example. There are no direct control elements here!
	Graphics display	The "Graphics display" version can display values graphically, which are sent from a temperature sensor. The values are also displayed as a number. With graphic display elements you can also choose between a wind rose and a round instrument. This must have been allocated correspondingly in the commissioning software of the ABB RoomTouch® 5, FM. There are no direct control elements here!
 	Value sending element (value slider)	Value sending elements can be used to display values in different formats and to send them to other devices. With "Value slider" the slider can be used to change values. The changed values are then sent. Text displays can be made here. In this case, a corresponding text can be displayed at the different slider positions. For use of the additional function: The adjustment of the position is carried out with the slider (pressing/holding and sliding up/down).

Room temperature controller (basic version)

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

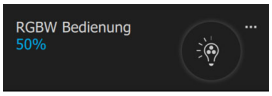
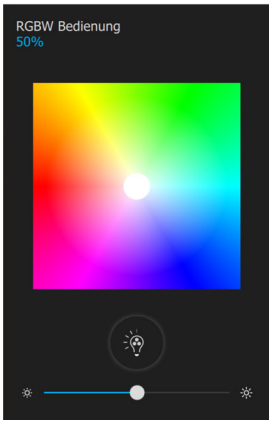
Mounting direction: vertical / portrait format

Status	Control element	Function
 	RTC control element (extension unit)	The current operating mode and the mode (e.g. "Heating") of the controller are displayed in the control element. If the RTC is switched on, then additional buttons are available for the adjustment. For use of the additional function: Additional operating modes can be called up with swiping movements. Operation is is carried out via buttons and by swiping. Also the adjustment of the fan speed levels and the temperature is made with swiping movements. **Notice** The parameter setting can be used to specify different setting options.

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.

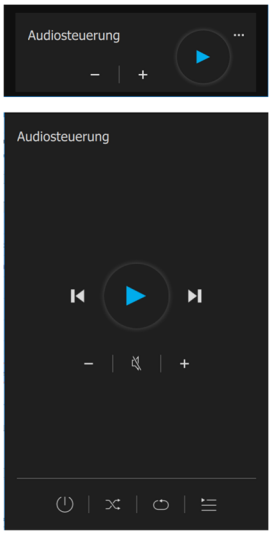
Mounting direction: vertical / portrait format

Status	Control element	Function
 	RGBW operation	The lamp is switched on or off with a press on the function button. For use of the additional function: The colour values can be changed by wiping over the color field. The brightness values can be set with the slider. It can also be used to make a preset. The value display indicates the brightness component. In line with the lamp types and default settings in the commissioning software, additional functions can be called up, e.g. colour or white activation. **Preset adjustment:** The lamp must first be set as desired. Then the lamp is switched on. Then follows a long press on the function button. This saves the lamp setting as default setting. Now the preset is called up with each activation (long press). This process must be repeated for each adjustment. The lamp is switched on and off normally with a brief press.

Audio control (basic version)

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

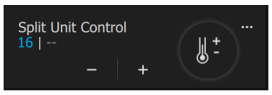
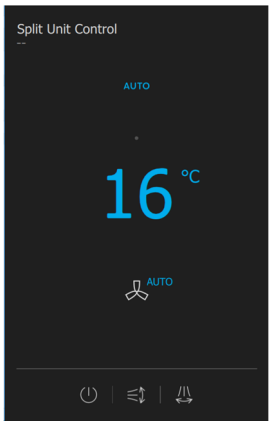
Mounting direction: vertical / portrait format

Status	Control element	Function
	Audio control	Corresponding to the default setting in the commissioning software, a variety of audio functions can be called up directly via the buttons. Lists can be opened via the arrow buttons. If the device is switched on via the function button, then additional buttons are available for the adjustment. When using an additional function or at horizontal alignment, additional buttons are available, such as lists. **Notice** The parameter setting can be used to specify different setting options.

Split Unit Control

This control element can be used to control all settings for connected air conditioners.

Mounting direction: vertical / portrait format

Status	Control element	Function
 	Split Unit Control	The control element displays the current operating mode and the mode of the Split Unit Control. If the device is switched on via the function button, then additional buttons are available for the adjustment. For use of the additional function, additional buttons are available: Additional operating modes can be called up with swiping movements. Operation is is carried out via buttons and by swiping.

Basic versions of control elements at horizontal installation of the touchdisplay

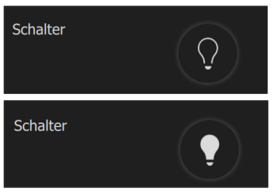
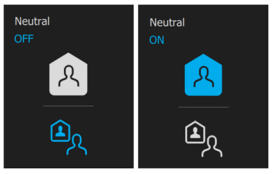
Notice

- The basic versions described here can be further adjusted.
- The figures are an example and only show the illustration of the vertical installation. For the basic version of vertical mounting, See “Basic versions of control elements at vertical installation of the touchdisplay“ on page 102

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.

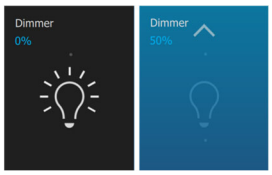
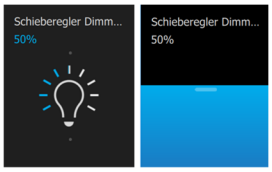
Mounting direction: horizontal / landscape format

Status	Control	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"). Pushing the button triggers the function or changes a value depending on the parameter setting.
	Rocker switch	A neutral push-button with rocker function when actuated on the right or left side of the rocker sends out a switching telegram. A differentiation is made between whether the rocker is actuated on the left or on the right side. This allows one of two versions of a function to be selected. The two icons represent the function of the rocker switch. A neutral push-button with rocker function can be used to call up two different scenes for example (in the example: "Presence" or "Absence"). Pushing the function button triggers the function or changes a value depending on the parameter setting.

Dimmer (basic version can be further adjusted, e.g. with value display)

Dimmers can be used to implement convenient light switches with dimming functions.

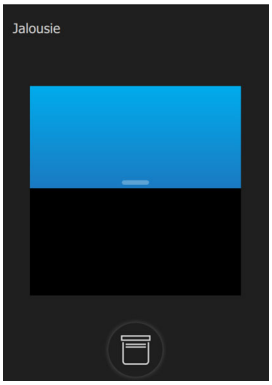
Mounting direction: horizontal / landscape format

Status	Control	Function
	Dimmer without slider	The version without slider has a function button for switching on/off and two buttons (swiping to the top/bottom and holding) in the upper and lower area of the control element. **Notice** – When the button is used, the last set value is used. – The buttons for dimming become visible only when they are touched. – The icons and the function can be parameterized.
	Dimmer with slider	The version with slider has a function button for switching on/off and a slider (pressing and moving). The slider can be activated by pressing and swiping any area of the control element. **Notice** – When the button is used, the last set value is used. – The slider only becomes visible when the control element is touched, – The icons and the function can be parameterized.

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.

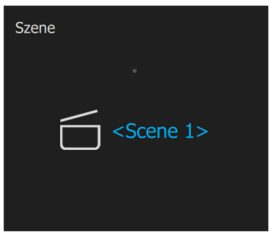
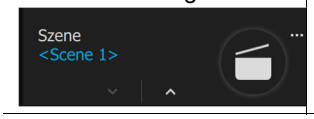
Mounting direction: horizontal / landscape format

Status	Control	Function
   	Blind	The status is displayed on the operating field. (Depending on the selected configuration). Operating procedure: **Up/down via the slider (blind)** Move the blind into the desired position by swiping the slider The slider can be activated by pressing and swiping any area of the control element. **Notice** – The slider only becomes visible when the control element is touched and at a slight push to the top or bottom, – The icons and the function can be parameterized. – Depending on the setting, also the slats can be adjusted. To do this, press the corresponding icon.

Scenes (basic version)

With control element "Scene" the user can start so-called scenes. Several actions can be combined in a scene so that the user can create a certain light atmosphere with only one press of the button for example (several dimming actions).

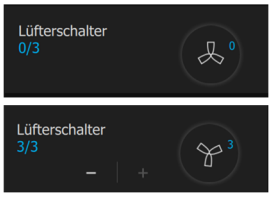
Mounting direction: horizontal / landscape format

Status	Control	Function
Scene can be called up/ Scene selection:  	Scene (List)	The desired "Scene" can be selected in the list by scrolling with swiping movements. Start the selected scene via the function button. The selected scene can also be started depending on the parameter setting. **Notice** – Scenes can only be selected if several scenes have been parameterized. – The scene to be called up must be allocated correspondingly in the commissioning software of the ABB RoomTouch® 5, FM . – The scene can be stored with a long press of the button (parameterizable).
Scene is running: 		

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.

Mounting direction: horizontal / landscape format

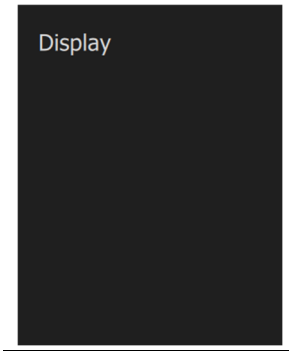
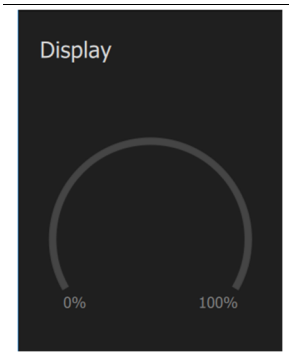
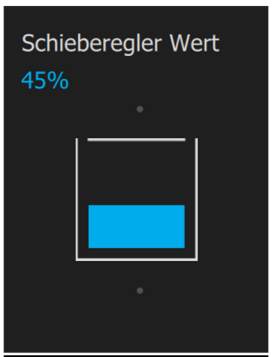
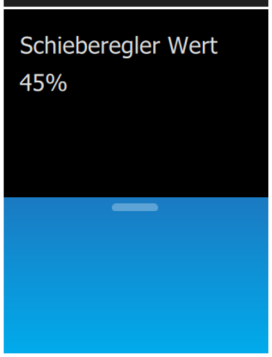
Status	Control	Function
	Fan switch (step switch)	The version has a button for switching on/off. The fan speed level can be selected by pressing and swiping the control element. The selection of the fan speed levels can be activated by pressing and swiping any area of the control element. **Notice** – When switching on, the last set value is used. – The selection of the fan speed levels only becomes visible when the control element is touched, – The icons and the function can be parameterized.

Display (basic version)

– With display, values are displayed as text or graphical information. They cannot be operated (exception is the value slider), but serve for the display of values.

– Value sending elements can be used to display values in different formats and to send them to other devices.

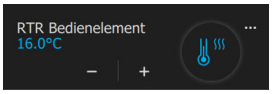
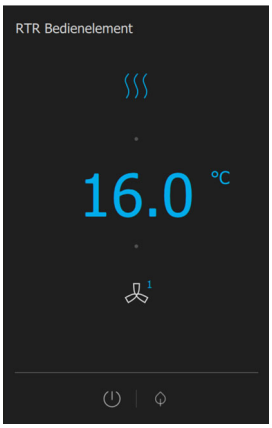
Mounting direction: horizontal / landscape format

Status	Control	Function
	Value or status display	The "Value or status display" version can display values and texts which are sent from a temperature sensor for example. There are no direct control elements here!
	Graphics display	The "Graphics display" version can display values graphically, which are sent from a temperature sensor. The values are also displayed as a number. With graphic display elements you can also choose between a linear display, a wind rose and a round instrument. This must have been allocated correspondingly in the commissioning software of the ABB RoomTouch® 5, FM. There are no direct control elements here!
 	Value sending element (value slider)	Value sending elements can be used to display values in different formats and to send them to other devices. With "Value slider" the slider can be used to change values. The changed values are then sent. Text displays can be made here. In this case, a corresponding text can be displayed at the different slider positions.

Room temperature controller (basic version)

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

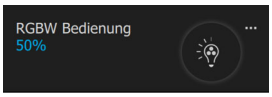
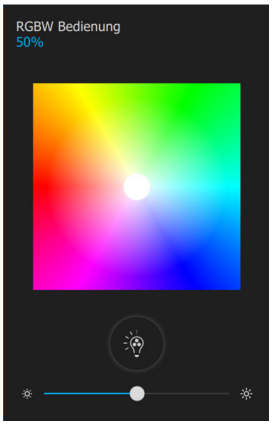
Mounting direction: horizontal / landscape format

Status	Control	Function
 	RTC control element (extension unit)	The current operating mode and the mode (e.g. "Heating") of the controller are displayed in the control element. If the RTC is switched on, then function buttons are available for the adjustment. Additional operating modes can be called up with swiping movements. Operation is is carried out via buttons and by swiping. Also the adjustment of the fan speed levels and the temperature is made with swiping movements. **Notice** – When switching on, the last set values are used. – The selection of the fan speed levels or the temperature only becomes visible when the control element is touched, – The icons and the function can be parameterized.

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.

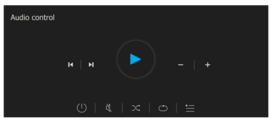
Mounting direction: horizontal / landscape format

Status	Control	Function
 	RGBW operation	The lamp is switched on or off with a press on the function button. The brightness is changed by swiping (pressing and sliding up/down) over the control element. The colour field is opened by pressing on the three points below the lamp. The colour values can be changed by swiping over the colour field. It can also be used to make a preset. **Notice** The value display indicates the brightness component. In line with the lamp types and default settings in the commissioning software, additional functions can be called up, e.g. colour or white activation. **Preset adjustment**: The lamp must first be set as desired. Then the lamp is switched on. Then follows a long press on the function button. This saves the lamp setting as default setting. Now the preset is called up with each activation (long press). This process must be repeated for each adjustments. The lamp is switched on and off normally with a brief press.

Audio control (basic version)

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

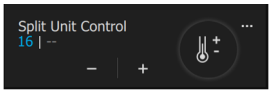
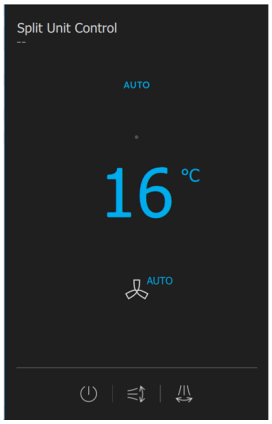
Mounting direction: horizontal / landscape format

Status	Control	Function
	Audio control	Corresponding to the default settings in the commissioning software, a variety of audio functions can be called up directly via the buttons. If the device is switched on via the function button, then additional buttons are available for the adjustment, such as lists. **Notice** The parameter setting can be used to specify different setting options.

Split Unit Control

This control element can be used to control all settings for connected air conditioners.

Mounting direction: horizontal / landscape format

Status	Control	Function
 	Split Unit Control	The control element displays the current operating mode and the mode of the Split Unit Control. If the device is switched on via the function button, then additional buttons are available for the adjustment. Additional operating modes can be called up with swiping movements. Operation is is carried out via buttons and by swiping. Also the adjustment of the fan speed levels and the temperature is made with swiping movements. **Notice** The parameter setting can be used to specify different setting options.

10.2.4 Access to pages

There is the option of protecting applications or access to pages (e.g. on operating pages) against unauthorized access with a password (PIN code). This is displayed by means of a closed padlock in the top bar. The PIN code input is opened by tapping on this icon. After entering the PIN code and confirming it, all functions of the page or application can be accessed.

The **PIN code level** can be specified via the commissioning software. Here it can also be decided whether the end user can change the PIN code directly on the device. This application can also be protected by a PIN code.

Notice

If an application or a page has been opened by the user in the ABB RoomTouch® 5, FM, all other applications of this level can be accessed.

The renewed disabling of the application takes place automatically after a few seconds of non-use, it can, however, also be carried out manually with a logout of the user. For this the opened padlock in the bottom bar is used.

10.3 Control actions of additional applications

The device has a primary function (for activation see chapter 10.3 “Control actions of additional applications “ on page 122). This is the first function of the device which is carried out when the user touches the display with at least 3 fingers at the same time. The primary function should be a function that the user would use when entering the room for example (e.g. "switching the ceiling light").

10.3.1 Fault and alarm messages

The ABB RoomTouch® 5, FM offers protection and information during malfunctions or faults. Message contacts, sensors and their functionality can be monitored. The messages desired in case of a fault or an alarm can be set individually (see chapter “Application "Fault and alarm messages" - Settings of the individual messages“ on page 215).

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

This allows the user to see via the "Fault and alarm messages" which messages have appeared in the ABB RoomTouch® 5, FM. This application can also be used to acknowledge, export and delete the messages.

The "Fault and alarm messages" application is called up as follows:

1. Call up the menu page.
2. Tap on "Alarm".

Here the current and archived messages (notifications) can be displayed and edited.

Confirming and archiving messages (notifications):

3. Tap on a message in the list.
   – The message can now be confirmed.

Archiving messages (notifications):

Notice
– The message is shifted into the archive automatically only if this function has been activated in the DCA.
– An alarm is not shifted automatically into the archive; for this the automatic activation must be enabled in the DCA, See “Enable export“ on page 213.
– Alarm messages can also be stored on the SD card as CSV file. For this the export must be enabled in the DCA and a file name assigned, See “Enable export“ on page 213.

Deleting messages (notifications):

Notice
Only archived messages can be deleted.

Deleting archived messages (notifications):

1. Tap on archive.
2. Select the message to be deleted from the list.
3. Tap on the adjacent dustbin icon.

– The message is deleted.

Notice
Also the entire list can be deleted.
- For this, tap on "Delete all".

10.3.2 Time programs (timer)

Time programs can be used call up functions according to the time automatically. This allows the holiday function to be started and set up.

The time programs application (timer) is called up as follows:

1. Call up the menu page.
2. Select "Timer".
   – Here corresponding time programs can be programmed.

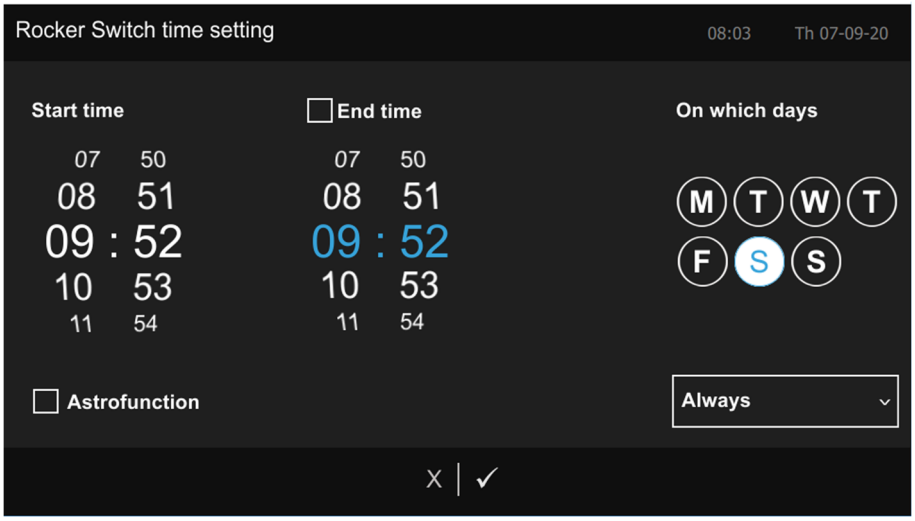


Fig. 36: Time programs

Creating a new time program:

1. Use the"**+**" to create a new time program.
2. Select the control element that is to become part of a time program
   – Continue with the arrow.
3. Defining the function of the control element
   – Continue with the arrow.
4. Specify time parameters:

– Specify weekdays during which the function of the control element is to be carried out. To do this, tap on the days.
  – Tap again to deactivate the day.
– Specify the starting time. Use the scrolling element for this.
  – An end time can be additionally activated for some control elements. For this the time can also be set via the scrolling element.
– Activate the optional 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.

Notice
The correct coordinates of the device location must be set for the astro function. This is done via the system settings of the commissioning tool.

– Select the desired holiday function from the pull-down menu at the bottom right:
  - Always
  - During holiday
  - Not during holiday

5. Complete the time program setup with a tick.

– The time program is then taken up into the time program list and can be edited there.

Editing time programs

1. In the list, tap on the time program to be edited.
2. The editing view for this time program opens.

– For the sequence of editing, see see chapter 10.3.2 “Time programs (timer) “ on page 125.

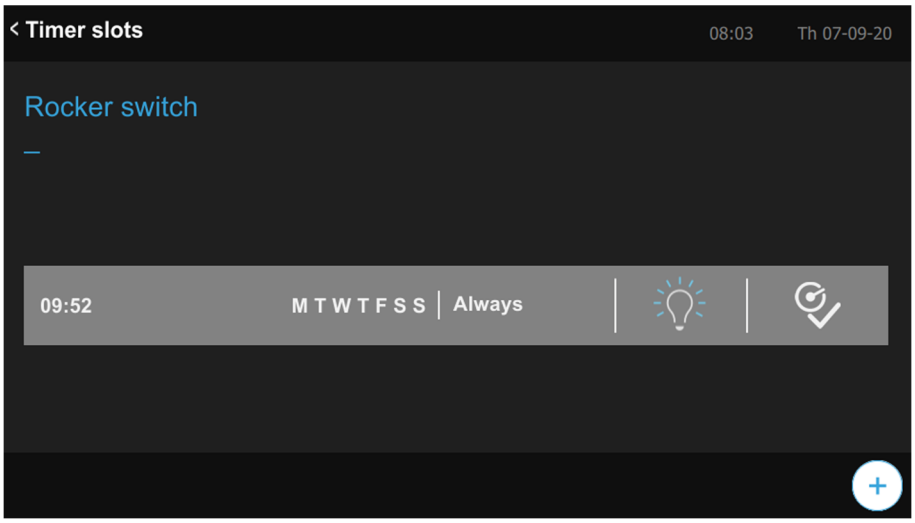


Fig. 37: Editing view of time program

Editing options:

- Adjustment of function (e.g. switch on or off).
- Adjusting the times
- Specify the execution (always; on holiday; not on holiday).
  – Tap on the tick.
- Deactivation/activation of the time program.
  – Tap on the time program icon in the time program line. The icon changes accordingly

Deleting time programs

1. Select a time program from the list.
2. Then in the list, tap on the dustbin icon next to the time program which is to be deleted.
3. Confirm the displayed message.

Setup of holiday function

1. Tap on the "Set holiday / holiday not set" icon.
   – The window "Set holiday" opens.
2. Activate the function "Activate holiday" with the slider.
3. Specify the start and the end of the holiday. Use the scrolling element for this.
4. Tap on the tick.
   – The overview list with the updated holiday entry is displayed.
5. Tap on the entry.
   – The lettering turns white. The holiday function is now activated.
   – Now the editing function of the individual time programs can be used to specify the time programs that are to run during the holiday.

10.4 Inserting the micro SD card (SDHC)

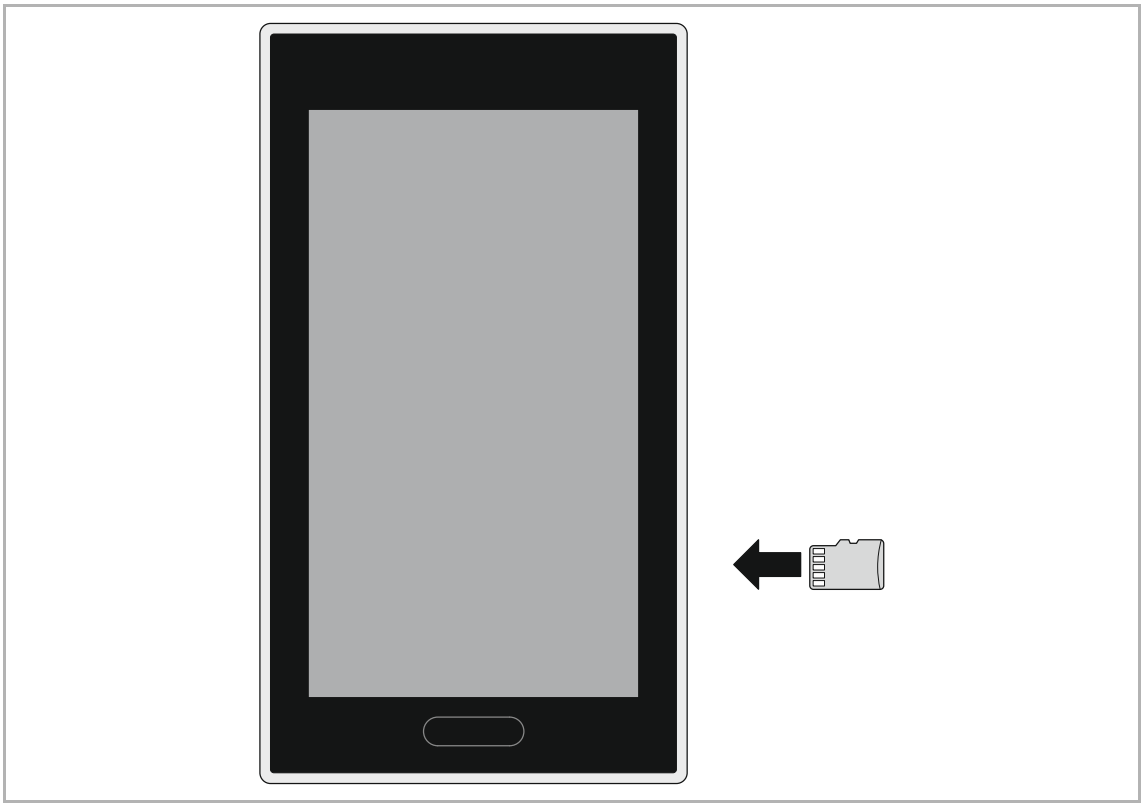


Fig. 38: Inserting the micro SD card (SDHC)

Notice

– For the transfer of data to the device via the micro SD card the KNX bus and the auxiliary voltage must be available.
– The micro SD card must be formatted with FAT32 before its first use.

10.5 System settings

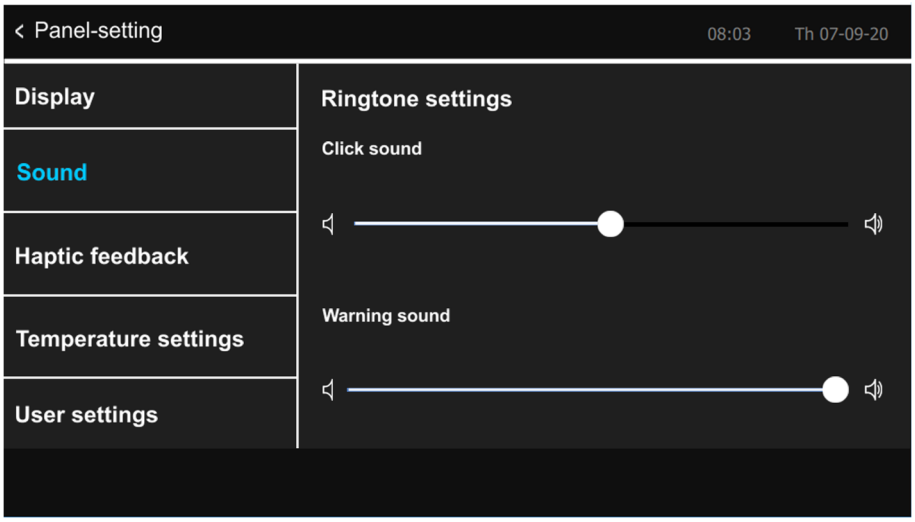


Fig. 39: Panel settings

The system settings are called up as follows:

1. Call up the menu page.
2. Tap on "System".

– The following areas are available in the system settings:
  - Date and time
  - Panel setting
  - Screen saver
  - Pin code
  - Commissioning

Date and time

– The following setting options are available:
  - Time
  - Date
  - Start of week

Panel-Einstellung - Display

Cleaning blockage

To ensure that no function is triggered unintentionally during cleaning of the device, the control elements can be disabled for a certain time.

– The cleaning blockage is activated with a press of the button. It is automatically deactivated after 30 seconds.

Display

– Automatic brightness adjustment of background lighting"
  - This function can be activated or deactivated via the checkbox.
– Display brightness
  - The setting can be made with the slider

Proximity sensor

– "Proximity sensor"
  - The proximity sensor can be activated or deactivated via the checkbox.
– "Proximity sensor distance"

  The distance to which the proximity sensor responds can be selected via the pull-down menu.
  - Wide
  - Medium
  - Close

Panel setting - Sound

– The following adjustment options for the volume of the tones are available; the setting can be made via the respective slider.
  - Click sound
  - Warning sound
  - Fault sound

– Also a selection of sounds for different types of messages can be made.
  - Available for selection are 5 notification sounds
  - If a micro SD card (SDHC) with suitable sound files is in the slot, you can also select a sound from the card.

    For this, click on the micro SD card and select the desired sound file.

Notice
– The sound files must be available in "mp3" format.
– The micro SD card must remain inserted in the device for this function!

Panel setting - Haptic feedback

– The haptic feedback can be activated or deactivated using the checkbox.
– For the sensitivity of the haptic feedback, three different intensity levels can be selected from a pull-down menu:
  - Soft
  - Medium
  - Hard

Panel setting - Temperature setting

– The following setting options are available:
  - Unit in °C or °F
  - Wall type, solid wall or hollow wall

Panel setting - User setting

– The following setting options are available:
  - Language - System language
  - Separator and thousand digit

Screen saver

Different settings for the specified screen saver are possible.

- Start after (time)
- Display off after (time)

Select a screen-saver mode via the drop-down menu.

- Display as clock (default setting)
- Slide show (electronic picture frame)
  - Prerequisite for a slide show is that a micro SD card (SDHC) with suitable pictures is located in the device.
  - If there are several pictures on the micro SD card (SDHC), they are displayed as a slide show.
  - With the commissioning tool you can set how long each picture is displayed. Other slide show settings such as transitions etc. are also possible.
  - Picture requirements:

    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 following formats are supported, "jpg", "png" and "bmp".
- Display of weather data

Pin code

If it was specified in the commissioning software that the end user can change the PIN code directly on the device, this page then becomes visible.

- Here the PIN codes for the different levels can be specified and adjusted.

Commissioning

Here different commissioning processes can be started:

- Display of the current KNX address
- Programming mode
  - This sets the device into the programming mode.

    In the programming mode a physical address in the device can be changed via the ETS.

    The programming mode is deactivated again by tapping on the "Programming mode" button.
- Read SD card
  - (Start the read process when the micro SD card is inserted): A PID file can be selected from the list. The file is transferred to the device by confirming the message.
- Reboot
  - This reboots the device.
- Update firmware
  - (Start the read process when the micro SD card is inserted): A firmware file (*.img) can be selected from the list. The file is transferred to the device by confirming the message.

11 Update

11.1 Firmware update

The Firmware updates are made available on the Internet at www.busch-jaeger-catalogue.com.

Notice

– For the transfer of data to the device via the micro SD card the KNX bus and the auxiliary voltage must be available.
– The micro SD card must be formatted with FAT32 before its first use.

If the Firmware of your device is to be updated, carry out the following steps:

1. On page www.busch-jaeger-catalogue.com in area "Search" enter the article number of the device.
   – The page switches to the device area.
   – If an update of the Firmware is available, it is ready to be downloaded in this area.
2. Transfer the firmware file (.img) and the signature file (.sig) into the main directory of the micro SD card.

Notice

If necessary, use an adapter for the micro SD card to transfer the data from the PC to the card.

3. Insert the micro SD card into the device.

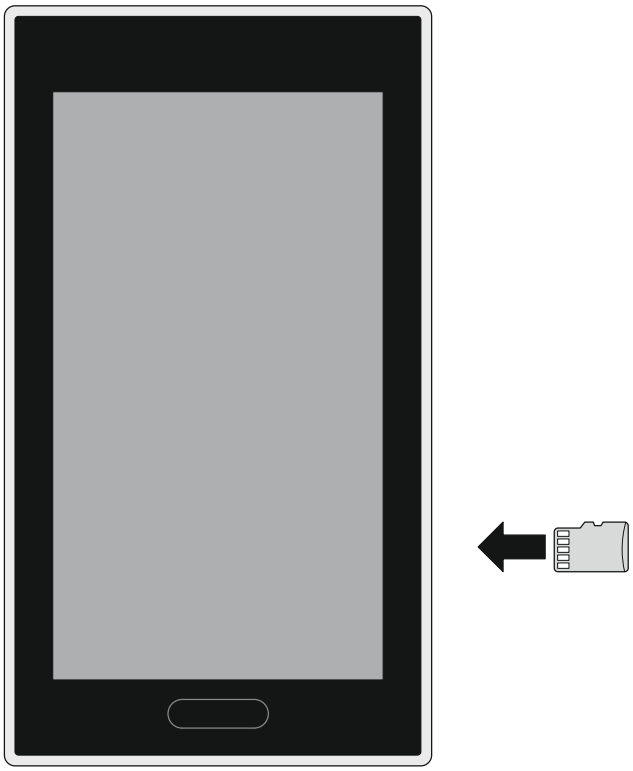


Fig. 40: Inserting the micro SD card

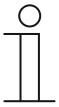
4. Confirm the message "SD card detected".
5. Tap on "System".
6. Go to "Commissioning" and there tap on "Update firmware".
   – A Firmware file (*.img) can be selected from the list.
7. Confirm the message.

– The following queries appear:
  - Language
  - EULA
  - Licensing terms
  - Date and time

8. Make your selection and move to the next page with the arrow.
   – The selected file is transferred to the device.
   – A progress indicator and the approximate time is shown in the touchdisplay.
   – The successful installation is indicated by a white tick on a green background and the touchdisplay is restarted.
9. Remove the micro SD card after rebooting.

11.2 Transfer of PID file (Configuration file)

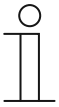
The image file can be transferred to a micro SD card, See “Inserting the micro SD card (SDHC)“ on page 129. This micro SD card can be inserted into the touchdisplay and the data is transferred to the touchdisplay.



Notice

– For the transfer of data to the device via the micro SD card both power supplies must be switched on!
– The micro SD card must be formatted with FAT32 before use.

1. Transfer the PID file to the micro SD card.



Notice

If necessary, use an adapter for the micro SD card to transfer the data from the PC to the card.

2. Insert the micro SD card into the device.
3. Confirm the message "SD card detected".
4. Call up the menu page.
5. Tap on "System settings".
6. Tap on "Commissioning" and select "Read SD card".
7. Select the appropriate PID file in the list.
8. Confirm the displayed message.
   – -A progress bar appears and the data are read in.
9. Remove the micro SD card after the successful transfer.

12 Maintenance

The device is maintenance-free. In case of damage, e.g. during transport or storage), do not perform repairs. Once the device is opened, the warranty is void.

Access to the device must be guaranteed for operation, testing, inspection, maintenance and repairs (according to DIN VDE 0100-520).

12.1 Cleaning

Caution! Risk of damage to the screen surface

The screen surface is sensitive to scratches. Damage to the surface will inhibit the function.

- Never touch the screen surface with hard objects.
  - Use your finger or a plastic stylus.

The screen surface can be damaged by cleaning fluids or abrasive agents!

- Never use abrasive cleaning agents.
  - Clean the surfaces using a soft cloth and commercially available glass cleaner.

Note

Observe the "Cleaning blockage" function, See “Panel-Einstellung - Display“ on page 131.

13 Control elements and application parameter

13.1 "Switch" control element

13.1.1 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.

13.1.2 Type of switch

Options:	Switchover
	Press/release
	Short/long

Notice
The selection depends on the type of switch.

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

– *Switchover*: No additional parameters available.

– *Pressing/releasing*: Pressing = value 1; releasing = value 2.
The following supplementary parameters are available, See “Object type value 1/2“ on page 139:

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

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

– *Short/long*: Short press = value 1; long press = value 2.
The following supplementary parameters are available, See “Object type value 1/2“ on page 139:

  – *Long operation after...*:

Options:	Setting option from 0.3 - 10 seconds

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

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

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

13.1.3 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.

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

Options:	No
	Yes

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

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

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

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

13.1.5 Icon type

Options:	Icons
	Text

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

– *Icons*:

Icons for On:

Options:	<Selection of an icon from the list>

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

Icons for Off:

Options:	<Selection of an icon from the list>

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

– *Text*:

Text for On:

Options:	<Text>

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

Text for Off:

Options:	<Text>

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

13.1.6 Enable 1-bit communication object "Disable"

Options:	No
	Yes

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

13.2 Control element "Rocker switch"

13.2.1 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.

13.2.2 Icon type

Options:	Icons
	Text

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

– *Icons*:

Icon for top / value 1:

Options:	<Selection of an icon from the list>

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

Icon for bottom/ value 2:

Options:	<Selection of an icon from the list>

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

– *Text*:

Text for top / Value 1:

Options:	<Text>

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

Text for bottom / value 2:

Options:	<Text>

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

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

Options:	Disabled
	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.

13.2.4 Status text for value

Status text for value 1:

Options:	<Text>

The entered text is displayed for value 1.

Status text for value 2:

Options:	<Text>

The entered text is displayed for value 2.

Notice
Value 1 corresponds to button on the left
Value 2 corresponds to button on the right

13.2.5 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.

13.2.6 Enable 1-bit communication object "Disable"

Options:	No
	Yes

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

13.3 "Dimmer" control element

13.3.1 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.

13.3.2 Icon type

Options:	Standard
	User-defined

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

13.3.3 Icon for On / icon for Off

Options:	Icon for On
	Icon for Off

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

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

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

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

13.3.4 Icon for dimming up / icon for dimming down

Options:	Icon for dimming up
	Icon for dimming down

The parameter is used to set the icon that is to be displayed when the light is dimmed up or down.

– *Icon for dimming up*: The selected icon is displayed when the light is dimmed up.

– *Icon for dimming down*: The selected icon is displayed when the light is dimmed down.

13.3.5 Use full screen to set the 1-byte value

Options:	Disabled
	Activated

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

Options:	Disabled
	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.

13.3.7 Display value in control element

Options:	Disabled
	Activated

– The parameter is used to specify whether the 1-byte value is displayed in the control element.

Unit:

Options:	<Text>

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

The length of the text is limited to 15 characters.

13.3.8 Manner of dimming

Options:	Start/stop
	Stepwise
	Value

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

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.

– *Stepwise*: The following parameters are displayed:

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.

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:

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.

Brightness change [%]:

Options:	Setting option in % from 1 - 20

The parameter is used to specify the step size for dimming.

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.

13.3.9 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

13.4 Control element: "Dimmer slider"

13.4.1 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.

13.4.2 Icon type

Options:	Standard
	User-defined

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

13.4.3 Icon for On / icon for Off

Options:	Icon for On
	Icon for Off

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

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

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

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

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

Options:	Disabled
	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.

13.4.5 Display value in control element

Options:	Disabled
	Activated

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

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

– *Yes*: The following parameters are displayed:

Status of dimming value is controlled by a separate object:

Options:	Disabled
	Activated

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

Unit:

Options:	<Text>

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

The length of the text is limited to 15 characters.

13.4.6 Dimming value status is controlled by a separate object

Options:	Disabled
	Activated

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

When the object has been enabled, the status display of the dimming value 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.

13.4.7 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.

13.4.8 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.

13.4.9 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

13.5 Operation of "RGBW" control element“

13.5.1 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.

13.5.2 Display value in control element

Options:	Deactivated
	Activated

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

13.5.3 Type of colour/white lamp

Options:	RGB
	RGB+W
	RGB+WW/CW
	WW/CW

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:	Disabled
	Activated

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

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

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

Options:	Disabled
	Activated

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

– *Yes*: 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.

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

Switched On -> preset value:

Options:	Disabled
	Activated

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

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

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

Options:	Disabled
	Activated

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

– *Yes*: 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:

White activation via:

Options:	Warm/cold objects
	Temperature/brightness (Hue) 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 (Hue)*: 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).

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:	No
	Yes

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

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

Options:	No
	Yes

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

– *WW/CW*: 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, 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).

Temperature object:

Options:	DPT 1 byte
	DPT 7.6 2-byte

The parameter is used to specify the value the object temperature receives.

Minimum colour temperature:

Options:	1500 - 10000

The parameter determines which value is assigned to the minimum colour temperature.

Maximum colour temperature:

Options:	1500 - 10000

The parameter determines which value is assigned to the maximum colour temperature.

13.5.4 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.

13.5.5 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.

13.5.6 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

13.6 Control element: "Value slider"

13.6.1 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.

13.6.2 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.

13.6.3 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.

13.6.4 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]

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 performance 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.

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 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 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".

13.6.5 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

13.7 "Blind" control element

13.7.1 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.

13.7.2 Type of control

Options:	With slat adjustment
	Without slat adjustment

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

The following additional parameter is available if "With slat adjustment" is selected:

Repeat telegram "Slat adjustment" all:

Options:	Setting option from 0.3 - 10 seconds

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

13.7.3 Icon type

Options:	Blind animation
	Roller blind animation
	Awning animation
	Curtain animation
	User-defined

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

The following supplementary parameters are available for all options:

Position for icon "Slat up":

Options:	Left
	Right

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

Icon for up/open:

Options:	<Selection of an icon from the list>

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

Icon for down/close:

Options:	<Selection of an icon from the list>

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

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.

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

Options:	No
	Yes

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

– *No*: The communication object is not available.

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

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

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

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

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.

The following supplementary parameter is available for selection "1 byte xxx":

Display value in control element:

Options:	Disabled
	Activated

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

13.7.5 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

13.8 Control element "Fan switch"

13.8.1 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.

13.8.2 Deactivation of switch-off option

Options:	Deactivated
	Activated

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

13.8.3 Icon type

Options:	Default
	User-defined

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

The following supplementary parameters are available for all options:

Position of the Up icon:

Options:	Left
	Right

The parameter is used to specify whether the icon for "Up" (Switching the fan speed level up) is positioned on the right or left side of the control element.

Icon for Up:

Options:	<Selection of an icon from the list>

The parameter is used to select the icon that is to be displayed in the control element for switching the fan speed level up.

Icon for Down:

Options:	<Selection of an icon from the list>

The parameter is used to select the icon that is to be displayed in the control element for switching the fan speed level down.

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

Icon for On:

Options:	<Selection of an icon from the list>

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

The following parameter can only be set when parameter "Icon type" is set on "User-defined" and the parameter "Deactivation of switch-off option" is set on "No".

Icon for Off:

Options:	<Selection of an icon from the list>

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

13.8.4 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.

13.8.5 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.

13.8.6 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:	No
	Yes

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
00001
00011
00010
00110
00111

– *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"
  00001 > Object 1 sends "1" (also sends the 0 bit = Yes), objects 2 to 5 send "0"
  00011 > Objects 1 and 2 send "1", objects 3 to 5 send "0"
  00111 etc.
  01111
  11111

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

00000	00101	01010
00001	00100	usw.
00011	01100	
00010	01101	
00110	01111	
00111	01110	

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

Value level x (1 - 3):

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.

13.8.7 Display status

Options:	User-defined
	Default
	No

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

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

Text Off:

Options:	<Text for "Off">

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

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

Text level x (1 - 3):

Options:	<Text for switching level>

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

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

Text beyond reach:

Options:	<Text for "beyond reach">

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

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

Text beyond reach:

Options:	<Text for "beyond reach">

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

– *No*: No texts are displayed.

13.8.8 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

13.9 "Scene" control element

13.9.1 Name of the control element

Options:	<Name>

Naming of the scene control element.

The length of the name is limited to 36 characters.

13.9.2 Start scene at selection

Options:	Deactivated
	Activated

The parameter is used to specify whether the scene is executed directly with a click on the control element or whether it must be started again separately.

13.9.3 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.

13.9.4 Number of scenes [1 - 10]

Options:	Setting option from 1 - 10

The parameter is used to specify the number of scenes available in the selection list.

13.9.5 Scene number x [1 - 64]

Options:	Setting option from 1 - 64

The parameter is used to specify which scenes are to be started.

Notice
How many "Scene number x [1 - 64]" parameters are available depends on the setting of the "Number of scenes [1 - 10]" parameter.

13.9.6 Name of scene x

Options:	<Name>

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

Notice
How many "Name of scene x" parameters are available depends on the setting of the "Number of scenes [1 - 10]" parameter.

13.9.7 Saving scene x with a long press

Options:	Deactivated
	Activated

The parameter is used to specify whether the scene x can be saved only with a long press of the button. Adjustment of the button pressure, see parameter "Long operation after...".

Notice
How many "Save scene x with a long press" parameters are available depends on the setting of the "Number of scenes [1 - 10]" parameter.

13.9.8 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

13.10 "Display" control element

13.10.1 Name of the control element

Options:	<Name>

Naming of the display control element.

The length of the name is limited to 36 characters.

13.10.2 Type of display element

Options:	Status display
	Value display
	Linear measurement display
	Round measurement display
	Wind rose
	Wind force
	Temperature
	Rain
	Twilight
	Brightness
	CO_2
	Moisture
	Air pressure

- *Status display*: The status of an allocated element is displayed as text.
- *Value display*: The value of an allocated element is displayed.
- *Linear measurement display*: The measured values of an allocated element are displayed in linear form.
- *Round measurement display*: The measured values of an allocated element are displayed in round form.
- *Wind rose*: The measured values (wind direction) of an allocated element are displayed as wind rose.
- *Wind force*: The wind force values of an allocated element are displayed.
- *Temperature*: The temperature values of an allocated element are displayed.
- *Rain*: The rain values of an allocated element are displayed.
- *Twilight*: The twilight values of an allocated element are displayed.
- *Brightness*: The brightness values of an allocated element are displayed.
- *CO_2*: The carbon dioxide values of an allocated element are displayed.
- *Moisture*: The moisture values of an allocated element are displayed.
- *Air pressure*: The air pressure values of an allocated element are displayed.

Notice
Supplementary parameters are available for all options. The parameters that are displayed depends on the setting of the "Type of display element" parameter.

13.10.3 Type of display element — Status display — Size of the button

Options:	1 column
	2 columns

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

13.10.4 Type of display element — Status display — Object type

Options:	1 bit
	1-byte value [0 - 255]

Parameter "Object type" is used to specify the size of the communication object.

– *1 bit*: Status commands are sent with 1 bit (0 or 1). The following supplementary parameters are available:

Text for value 0:

Options:	<Text>

The parameter is used to specify the text that is displayed for value 0.

The length of the text is limited to 60 characters.

Text for value 1:

Options:	<Text>

The parameter is used to specify the text that is displayed for value 1.

The length of the text is limited to 60 characters.

– *1-byte value [0 - 255]*: A status value is sent as 1-byte value without a sign. The following supplementary parameters are available:

Text x for value [0 - 255]:

Options:	Setting option from 0 - 255

The parameter is used to set the status value at which text x is displayed.

Notice
8 parameters "Text x at value [0 - 255]" are available which can be set as required.

Text x:

Options:	<Text>

The parameter is used to specify the text that is displayed.

The length of the text is limited to 60 characters.

Notice
8 parameters "Text x" are available which can be set as required.

13.10.5 Type of display element — Value display — Size of the button

Options:	1 column
	2 columns

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

13.10.6 Type of display element — Value display — Object type

Options:	1-byte value [0% - 100%]
	1-byte value [0 - 255]
	1-byte value [-128 - 127]
	2-byte value [0 - 65535]
	2-byte value [-32768 - +32767]
	2-byte floating point
	4-byte value [0 - 4294967295]
	4-byte value [-2147483648 - 2147483647]
	4-byte floating point
	14-byte text

Parameter "Object type" is used to specify the size of the communication object.

- *1-byte value [0% - 100%]*: A value is sent as 1-byte value without a sign (percentage value).
- *1-byte value [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. actuating value, angle or brightness value.
- *1-byte value [-128 - 127]*: A value is sent as 1-byte value with a sign, e.g. actuating value.
- *2-byte value [0 - 65535]*: A value is sent as 2-byte value without a sign, e.g. actuating value or time interval.
- *2-byte value [-32768 - +32767]*: A value is sent as 2-byte value with a sign, e.g. actuating value or time difference.
- *2-byte floating point*: A value is sent as 2-byte floating point value, e.g. a temperature value, a time duration, a performance or a consumption value.
- *4-byte value [0 - 4294967295]*: A value is sent as 4-byte value without a sign, e.g. actuating value.
- *4-byte value [-2147483648 - 2147483647]*: A value is sent as 4-byte value with a sign, e.g. actuating value or time difference.
- *4-byte floating point*: A value is sent as 4-byte floating point value, e.g. an energy display, electric current (A), electric power (W), DTP 14.
- *14-byte value*: Makes it possible to send any text with a maximum of 14 characters.

The following supplementary parameters are available for all options, except for option "14-byte value":

Notice
Different values can be preset or set, depending on the selected option.

Unit:

Options:	<Text>

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

The length of the text is limited to 60 characters.

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.

Thousands separator:

Options:	Deactivated
	Activated

The parameter is used to specify whether a thousands separator is displayed in the value.

Minimum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value that is sent via telegrams to the display element.

Any value within the limits specified by the object type and its value range can be entered.

Maximum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value that is sent via telegrams to the display element.

Any value within the limits specified by the object type and its value range can be entered.

Displayed minimum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value that is displayed in the display element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Minimum object value".

Displayed maximum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value that is displayed in the display element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Maximum object value".

13.10.7 Type of display element — Linear measurement display — Measurement display with colour display (red, orange, green)

Options:	No
	Yes

The parameter is used to specify whether a colour display with traffic light colours is carried out.

For this the communication objects "Switch red", "Switch orange", and "Switch green" are enabled. When "1" is received on one of the three communication objects, the colour of the display element changes correspondingly.

If a "0" is received, the display element changes back to the standard colour.

13.10.8 Type of display element — Linear measurement display — Display value in control element

Options:	Deactivated
	Activated

The parameter is used to specify whether the value of the selected element is displayed in the display element.

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

– *Activated*: The following supplementary parameters are displayed:

Unit:

Options:	<Text>

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

The length of the text is limited to 60 characters.

Decimal places:

Options:	Setting option from 0 - 2

The parameter is used to specify the number of decimal places of the displayed measured value.

The number is limited to 2 places.

Thousands separator:

Options:	Deactivated
	Activated

The parameter is used to specify whether a thousands separator is displayed in the measured value.

13.10.9 Type of display element — Linear measurement display — Object type

Options:	1-byte value [0% - 100%]
	1-byte value [0 - 255]
	1-byte value [-128 - 127]
	2-byte value [0 - 65535]
	2-byte value [-32768 - +32767]
	2-byte floating point
	4-byte value [0 - 4294967295]
	4-byte floating point
	4-byte value [-2147483648 - 2147483647]

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 performance 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 floating point*: A value is sent as 4-byte floating point value, e.g. an energy display, electric current (A), electric power (W), DTP 14.
– *4-byte value [-2147483648 - 2147483647]*: A value is sent as 4-byte value with a sign, e.g. actuating value or time difference.

The following supplementary parameters are available for all options:

Notice
Different values can be preset or set, depending on the selected option.

Minimum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value that is sent via telegrams to the display element.

Any value within the limits specified by the object type and its value range can be entered.

Maximum object value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value that is sent via telegrams to the display element.

Any value within the limits specified by the object type and its value range can be entered.

Displayed minimum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the smallest value that is displayed in the display element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Minimum object value".

Displayed maximum value:

Options:	Setting option depends on the selected object type.

The parameter is used to specify the largest value that is displayed in the display element.

Any value within the limits specified by the object type and its value range can be entered. The value can deviate from the setting of parameter "Maximum object value".

13.10.10 Type of display element — Round measurement display

Note

For option "Round measurement display" of parameter "Type of display element" the same supplementary parameters are available, such as for option "Linear measurement display", See “Type of display element — Linear measurement display — Measurement display with colour display (red, orange, green)“ on page 180.

13.10.11 Type of display element — Wind rose

Note

For option "Wind rose" of parameter "Type of display element" the same supplementary parameters are available, such as for option "Linear measurement display", See “Type of display element — Linear measurement display — Measurement display with colour display (red, orange, green)“ on page 180.

Parameter "Measurement display with colour display" is not available.

13.10.12 Type of display element — Wind force — Unit

Options:	m/s
	Bft
	km/h

The parameter is used to specify the unit with which the wind force is displayed in the display element.

13.10.13 Type of display element — Temperature — Unit

Options:	°C
	°F

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

13.10.14 Type of display element — Rain — Text for rain

Options:	<Text>

The parameter is used to specify the text that is displayed for rain.

The length of the text is limited to 60 characters.

13.10.15 Type of display element — Rain — Text for no rain

Options:	<Text>

The parameter is used to specify the text that is displayed for dry weather.

The length of the text is limited to 60 characters.

13.10.16 Type of display element — Twilight — Unit

Options:	Lux
	kLux

The parameter is used to specify the unit with which the twilight is displayed in the display element.

13.10.17 Type of display element — Brightness

Notice
For option "Brightness" of parameter "Type of display element" the same supplementary parameters are available, such as for option "Twilight".

13.10.18 Type of display element — CO_2 — Unit

Options:	Fixed at ppm

The parameter is used to specify the unit with which the concentration of carbon dioxide (CO_2) in the air is displayed in the display element.

13.10.19 Type of display element — Moisture — Unit

Options:	Fixed at %

The parameter is used to specify the unit with which the air moisture is displayed in the display element.

13.10.20 Type of display element — Air pressure — Unit

Options:	Fixed at Pa

The parameter is used to specify the unit with which the air pressure is displayed in the display element.

13.10.21 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

13.11 Control element "RTC control element"

13.11.1 Name of the control element

Options:	<Name>

Naming of the RTC control element.

The length of the name is limited to 36 characters.

13.11.2 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.

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

Options:	Setting option from 1 - 255 seconds

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

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

13.11.4 Operating function

13.11.5 Display current temperature

Options:	Disabled
	Activated

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

13.11.6 Hide temperature unit

Options:	Disabled
	Activated

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

13.11.7 Unit of temperature

Options:	°C
	°F

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

13.11.8 Adjusting the temperature unit via object

Options:	Disabled
	Activated

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

13.11.9 Heating/cooling switchover

Options:	Deactivated
	Activated

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

13.11.10 Fan coil control during heating mode

Options:	No
	Yes

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

13.11.11 Fan coil control during cooling mode

Options:	No
	Yes

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

13.11.12 Change setpoint

13.11.13 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.

13.11.14 Setpoint adjustment master/slave via communication object

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

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

13.11.15 Master uses "Summer compensation"

Options:	Disabled
	Activated

The parameter is used to specify how the master uses summer compensation.

13.11.16 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

13.11.17 Fan coil settings

13.11.18 Number of fan devices

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

The parameter is used to specify the number of fan devices.

13.11.19 Master-Slave fan speed data format

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

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

13.11.20 Fan speed levels

13.11.21 Number of fan speed levels

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

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

13.11.22 Lowest manually adjustable fan speed level

Options:	Speed 0
	Speed 1

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

13.11.23 Fan coil settings

13.11.24 Level values

Options:	According to standard values table
	Specify single value

The parameter is used to specify the criteria according to which the level values are indicated.

13.12 Control "Split Unit Control"

13.12.1 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.

13.12.2 Minimum setpoint

Options:	Setting option from 16 to 32

The parameter is used to specify the minimum setpoint.

13.12.3 Maximum setpoint

Options:	Setting option from 16 to 32

The parameter is used to specify the maximum setpoint.

13.12.4 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.

13.12.5 Display actual temperature

Options:	Disabled
	Activated

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

13.12.6 Number of fan speed levels (without AUTO)

Options:	1
	2
	3

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

13.12.7 Use automatic mode for fans

Options:	Disabled
	Activated

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

13.12.8 Use mode: Automatic

Options:	Disabled
	Activated

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

13.12.9 Use mode: Heating

Options:	Disabled
	Activated

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

13.12.10 Use mode: Cooling

Options:	Disabled
	Activated

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

13.12.11 Use mode: Drying

Options:	Disabled
	Activated

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

13.12.12 Use mode: Fan

Options:	Disabled
	Activated

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

13.12.13 Use horizontal oscillation

Options:	Disabled
	Activated

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

13.12.14 Use vertical oscillation

Options:	Disabled
	Activated

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

13.12.15 Use extra mode: Silence Mode

Options:	Disabled
	Activated

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

13.12.16 Use additional mode: Boost

Options:	Disabled
	Activated

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

13.12.17 Use additional mode: Forced operation

Options:	Disabled
	Activated

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

13.12.18 Use additional mode: Scene

Options:	Disabled
	Activated

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

13.12.19 Additional mode Use window contact

Options:	Disabled
	Activated

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

13.12.20 Use additional Presence mode

Options:	Disabled
	Activated

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

13.12.21 Enable 1-bit communication object "Disable"

Options:	No
	Yes

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

13.13 Control element "Audio control"

13.13.1 Name of the control element

Options:	<Name>

Naming of the control element for audio control.

The length of the name is limited to 36 characters.

13.13.2 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.

13.13.3 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.

13.13.4 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:

13.13.5 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 "Reverse" are sent with 1 bit (0 or 1). The following supplementary parameter is available:

  Value for reverse:

Options:	0
	1

The parameter is used to send the command for "Reverse" 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 "Reverse" is sent as a 1-byte value without sign. The following supplementary parameter is available:

  Value for forward:

Options:	Setting option from 0 - 255

The parameter is used to send the value for "Reverse" as absolute value.

13.13.6 Use of button for mute

Options:	Disabled
	Activated

– Deactivated: No mute button is enabled. No additional parameters available.
– Activated: The mute button is enabled.

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.

13.13.1 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:

13.13.2 Use repeat control

Options:	Disabled
	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 command with repetition 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 not repeating:

Options:	Setting option from 0 - 255

The parameter is used to send the value as an absolute value without repetition.

- *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 command with repetition 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 not repeating:

Options:	Setting option from 0 - 255

The parameter is used to send the value as an absolute value without repetition.

13.13.3 Use of volume button

Options:	No
	Yes

– *No*: No volume button is enabled. No additional parameters available.

– *Yes*: 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.

13.13.4 Use of ON/OFF button

Options:	Disabled
	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.

13.13.5 Enable 1-bit communication object "Disable"

Options:	Disabled
	Activated

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

13.14 Application "Inputs"

13.14.1 Use binary input

Options:	Disabled
	Activated

The parameter is used to specify whether the binary input is used.

– Disabled: No display in the panel. No additional parameters available.

– Activated: The following parameters appear:

- **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.

- **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.

- **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.

- **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**".

Use temperature sensor input

Options:	Disabled
	Activated

The parameter is used to select whether the temperature sensor input is activated or deactivated.

- Sensor type

Options:	Pt1000
	6226/T

The temperature sensor type is selected via the parameter.

- **Temperature offset [x0.1°C]**

Options:	Setting option from -5 - 5

The temperature offset is selected via the parameter.

- **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**".

- **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.

- **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**".

13.15 Application "Fault and alarm messages" - Global settings

13.15.1 Use of fault and alarm messages

Options:	Deactivated
	Activated

The parameter is used to specify whether the fault and alarm messages are displayed.

– *Disabled*: No display in the panel. No additional parameters available.
– *Activated*: The following parameters appear:

13.15.2 Page PIN-protected

Options:	Deactivated
	Activated

The parameter is used to specify whether the fault and alarm messages application page is protected by a PIN code.

– *Deactivated*: The application page is not protected.
– *Activated*: The application page can only be called up by entering a PIN code. The following supplementary parameter is available:

PIN code level:

Options:	Level 1
	Level 2
	Level 3
	Level 4
	Level 5

The parameter is used to specify the PIN code level for the application page.

Notice
Details about the PIN code, .

13.15.3 Enable export

Options:	Deactivated
	Activated

The parameter is used to specify whether the messages can be exported under the fixed file name in CSV format. The messages can then be exported via the application page.

– *Deactivated*: No export. No additional parameters available.

– *Activated*: The following parameter appears:

File name [.CSV]:

Options:	<Text>

The parameter is used to change the file name of the export file.

The length of the name is limited to 60 characters.

13.15.4 Automatic archiving at an acknowledgement

Options:	No
	Yes

The parameter is used to specify that the message is immediately archived and is no longer displayed in the alarm list as soon as it is confirmed in the application page or via the communication object.

– *No*: No automatic archiving after acknowledgement. The following supplementary parameter is available:

Automatic archiving as soon as the alarm is no longer active.

Options:	No
	Yes

– *No*: No automatic archiving when the alarm is no longer active.

– *Yes*: The message is archived and displayed as soon as the alarm is no longer active.

– *Yes*: The message is archived in the application page automatically after the acknowledgement.

13.15.5 Sound for alarm

Options:	Setting option from 1 - 5

The parameter is used to specify which signal tone is to be played during the display of the message. Five different signal tones are available for selection.

13.15.6 Sound for Notice

Options:	Setting option from 1 - 5

The parameter is used to specify which signal tone is to be played during the display of the message. Five different signal tones are available for selection.

13.15.7 Signal tone for error

Options:	Setting option from 1 - 5

The parameter is used to specify which signal tone is to be played during the display of the message. Five different signal tones are available for selection.

13.15.8 Default setting for signal tone volume [%]

Options:	Setting option from 10 - 100

The volume of the signal tones is preset in percent via the parameter.

13.16 Application "Fault and alarm messages" - Settings of the individual messages

13.16.1 Name of message

Options:	<Name>

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

13.16.2 Type of message

Options:	Alarm
	Notice
	Error

The parameter is used to specify the type of message that is displayed.

13.16.3 Type of alarm

Options:	1 bit
	14 bytes

The parameter is used to specify whether the alarm is displayed and sent with or without text.

– *1 bit*: No text is displayed and sent when acknowledging the alarm. The following supplementary parameters are available:

Text for alarm message:

Options:	<Text>

The parameter is used to specify the text that is displayed when this message appears. The length of the text is limited to 60 characters.

Sending 0 at acknowledgement:

Options:	Deactivated
	Activated

The parameter is used to specify whether "0" is sent at acknowledgement.

Acoustic alarm signal:

Options:	Deactivated
	Activated

The parameter is used to specify whether the signal tone specified under the global settings is played See “Application "Fault and alarm messages" - Global settings“ on page 212.

– *Deactivated*: No acoustic alarm signal. No additional parameters available.

– *Activated*: The signal tone is played at an alarm signal. The following supplementary parameter is available:

Duration of audio signal [min.]:

Options:	Setting option from 1 - 60

The parameter is used to specify how long the specified signal tone is to be played (in minutes).

Repeat of alarm as long as it is active:

Options:	Deactivated
	Activated

– *Deactivated*: In the active state the acoustic alarm signal is not repeated. No additional parameters available.

– *Activated*: The signal tone is repeated as long as the alarm is active. The following supplementary parameter is available:

Repeat time [min.]:

Options:	Setting option from 1 - 60

The parameter is used to specify the cycle (in minutes) with which the alarm is repeated.

– *14 byte*: A text is displayed and sent when acknowledging the alarm. The following supplementary parameters are available:

Sending text at acknowledgement:

Options:	Deactivated
	Activated

– *Deactivated*: No text is sent at acknowledgement. No additional parameters available.

– *Activated*: The text that was specified via the following parameters is sent at acknowledgement:

Text at acknowledgement:

Options:	<Text>

The parameter is used to specify the text that is sent at acknowledgement of the alarm. The length of the text is limited to 60 characters.

Acoustic alarm signal:

Options:	Deactivated
	Activated

The parameter is used to specify whether the signal tone specified under the global settings is played See “Application "Fault and alarm messages" - Global settings“ on page 212.

– *Deactivated*: No acoustic alarm signal. No additional parameters available.

– *Activated*: The signal tone is played at an alarm signal. The following supplementary parameter is available:

Duration of audio signal [min.]:

Options:	Setting option from 1 - 60

The parameter is used to specify how long the specified signal tone is to be played (in minutes).

13.17 Application "Scene actuator"

13.17.1 Name of scene actuator

Options:	<Text>

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

13.17.2 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.

13.17.3 Number of scenes

Options:	Setting options from 1 - 4

The parameter is used to specify the number of scenes involved.

Notice
A separate parameter set "**Scene x**" appears for each scene.

13.17.4 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.

13.17.5 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.

13.17.6 Object type x

Options:	Switch
	Roller blind
	Forced operation
	1-byte value [0 - 100%]
	1-byte value [0 - 255]
	RGB colour
	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 1-byte value. The following supplementary parameter is available:

Value for object x:

Options:	Setting option from 000;000;000 - 255;255;255

The entered colour value (red, green, blue) is displayed as colour pattern next to the parameter.

– *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".

13.17.7 Name of scene

Options:	<Text>

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

13.17.8 Scene number

Options:	Setting option from 1 - 64

The number of the scene is set via the parameter.

13.17.9 Light scenes can be started with

Options:	0
	1
	Both (0 or 1)

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

13.17.10 Light scene can be stored

Options:	Disabled
	Activated

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

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

13.17.11 Object x is to be changed

Options:	Deactivated
	Activated

– *Deactivated*: No additional parameters available.
– *Activated*: Parameter "Value for object x" appears.

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

13.17.12 Value for object x

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

13.18 Application "Time programs"

13.18.1 Use of time programs

Options:	Disabled
	Activated

The parameter is used to specify whether the time program is used.

13.18.2 Page PIN-protected

Options:	No
	Yes

The parameter is used to specify whether the time programs application page is protected by a PIN code.

– *No*: The application page is not protected.

– *Yes*: The application page can only be called up by entering a PIN code. The following supplementary parameter is available:

PIN code level:

Options:	Level 1
	Level 2
	Level 3

The parameter is used to specify the PIN code level for the application page.

Notice
Details about the PIN code, .

13.18.3 Overwriting time programs during download

Options:	No
	Yes

The parameter is used to specify whether the existing time programs are to be overwritten during the download.

– *No*: The existing time programs are not to be overwritten during the download.

– *Yes*: The existing time programs will be overwritten during the download.

13.19 Application "Logical functions"

13.19.1 Channel x — Application

Channel name

Options:	<Name>

Naming of the channel. The length of the name is limited to 30 characters.

Application

Options:	Inactive
	Logic gate
	Multiplexer
	Multiplier
	Gate
	Temperature comparator
	Status converter
	Time function

The parameter is used to specify the logic function that is allocated to channel x.

Depending on the selection, individual parameters appear for the respective logic function.

– *Inactive*: The logic functions are not active. No additional parameters available.

– *Logic gate*: If the function is specified with AND, OR, NAND, NOR, XOR or XNOR, up to ten input communication objects can be enabled per logic function. The size of the inputs can be specified either with 1 bit or with 1 byte. At the receipt of a new telegram at the input, they are switched according to the selected function. The inputs can also be individually inverted.

  Each function has an output object on which results determined from the inputs can be sent. The size of the output object can, depending on the parameterization, be 1 bit or 1 byte. The default value that is to be sent at a positive result can be adjusted.

  The following parameters are displayed:

  Number of input objects:

Options:	Setting options from 1 - 10

  The parameter is used to set 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 1", "Input 2" and "Output". The bit-size of the inputs and outputs can also be set on 1 byte or 2 byte via the "Object type input/output" parameter. The above functionality is retained. This means that only input 1 is visible on the output when the control input has the value "1". Input 2 is switched to the output as soon as the control input has the value "0".

Notice
The output is only sent when there is an actual change of the inputs. If, for example, the control input changes without a change of the input values, the output signal remains as it is. A new output value is sent only when an input signal changes.

The following parameter appears:

Object type input/output:

Options:	1 bit
	1 byte
	2 bytes

The parameter is used to specify the size of the communication object. See the explanation above.

– *Multiplier*: This function makes it possible to send up to ten output telegrams with one input telegram. The size of the input communication object is 1 bit or 1 byte. The size of the output communication objects can be either 1 bit or 1 byte. The size is adjusted via a corresponding parameter.

Whether a multiplier is triggered at an ON or OFF telegram or via a 1-byte value between 0 and 255, can be specified via the "Start command" setting. There is also the option of sending the output telegrams consecutively time-delayed. The default delay time is 200 ms.

The values for sending output telegrams can be set individually for each output via a corresponding parameter. "On" or "Off" can be set for 1-bit outputs. Values from 0 to 100% can be specified for 1-byte outputs.

The following parameters are displayed:

Start requirements:

Options:	1 bit
	1 byte

See the explanation above.

– *1 bit*: The following parameter appears:

Start command:

Options:	OFF - telegram
	ON - telegram

See the explanation above.

– *1 byte*: The following parameter appears:

Start command:

Options:	Setting options from 0 - 255

See the explanation above.

Telegram delay:

Options:	Setting option from 200 ms - 10 seconds

The parameter is used to set the time delay for telegrams.

Used outputs:

Options:	Setting options from 1 - 10

The parameter is used to set the number of output objects to be used in the "Multiplier" application.

Object type output x:

Options:	1 bit
	1 byte [0 - 100%]

The parameter is used to specify whether the output object consists of a 1-bit value (0/1) or a 1-byte value (in percent).

Notice
How many "Object type output x" parameters are displayed depends on the setting of the "Outputs used" parameter.

– *1 bit*: The following parameter appears:

Value of output x:

Options:	0
	1

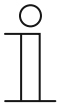
This parameter is used to specify the value the communication object has on output x.

– *1 byte [0 - 100%]*: The following parameter appears:

Value of output x:

Options:	Setting options from 0 - 100

This parameter is used to specify the value (in percent) the communication object has on output x.



Notice
How many "Value of output x" parameters are displayed depends on the setting of the "Outputs used" parameter.

– *Gate*: This logic function can be used to filter certain signals and block the flow of signals temporarily. The function has three communication objects "Control input", "Input" and "Output". The control input or output can take on size 1 bit, 2 bit, 1 byte, 2 byte, 4 byte or 14 byte. The control can take place from input to output, from output to input and in both directions. Enabling via the control input can take place via an ON or OFF telegram.

It can also be set as to whether the input signals are to be stored or not "during the blocking phase". If the setting "Store input signals during blocking" has been selected and if a telegram has been received on the input during the blocking phase, the output sends its value.

If the size of the input and output objects is 1 bit, the input can also be inverted. This allows an inverting member to be implemented via a gate. It is also possible to block signals via the "Filter function" setting. Either "Do not filter" or the signal "Filtered out ON" or the signal "Filtered out OFF" is sent.

The following parameters are displayed:

Direction of data flow:

Options:	Input -> Output
	Output -> Input
	Input <-> Output

The parameter is used to specify the direction data are sent via the channel. See the explanation above.

Sending an output telegram:

Options:	At every receipt
	At changed values

The parameter is used to specify when the output telegram is sent.

Control input:

Options:	Activation at OFF
	Activation at ON

See the explanation above.

Object type input/output:

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

The parameter is used to specify the size of the communication object.

– *Switch*: The following supplementary parameters are available:

Inverting an input:

Options:	No
	Yes

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 performance 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:	No
	Yes

See the explanation above.

– *Temperature comparator*: This function can be used to compare temperature values. The following parameters are displayed:

Type of comparator:

Options:	Temperature with a constant
	2 temperatures

This function can be used to compare two temperatures. Or a temperature can be compared with an internal specified temperature value (constant).

– *Temperature with a constant*: This function makes an input available with a 2-byte communication object. On this object temperature telegrams are received and compared, which are sent from a KNX temperature sensor for example.

The following parameters are displayed:

Input 2 [°C]:

Options:	Setting options from -30 - +70

This parameter is used to specify the value with which the temperature at input 1 is to be compared.

Hysteresis:

Options:	Setting options from 0.5 - 10

– *2 temperatures*: This function makes two separate inputs with 2-byte communication objects available. On these objects temperature telegrams are received and compared with each other, which are sent from KNX temperature sensors. No additional parameters available.

Object type of the output:

Options:	1 bit
	1 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 by:

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:	No
	Yes

The parameter is used to specify whether the output telegram is sent in cycles.

– *No*: No additional parameters available.

– *Yes*: The following parameter appears:

Cycle time:

Options:	Setting options from 00:00:01 - 00:30:00

The parameter is used to specify the cycle time (hh:mm:ss).

– *Status converter*: This function is used to convert an input value into a 14-byte text or divide it into several 1-bit telegrams. The following parameters are displayed:

Type of converter:

Options:	1 bit -> text
	1 byte -> text
	1 byte -> 8x1 bit
	2 byte -> 16x1 bit

See the explanation above.

– 1 bit -> text: A 1-bit value is converted into text. The following parameter appears:

Number of inputs:

Options:	Setting options from 1 - 4

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

Using value xxxx:

Options:	No
	Yes

The parameter is used to specify whether the signal is used for the conversion into text.

– *No*: No additional parameters available.

– *Yes*: The following parameter appears:

Text for value xxxx:

Options:	<Text>

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

Notice
How many "Use value xxxxx" parameters and "Text for value xxxx" are displayed depends on the setting of the "Number of inputs" parameter.

– 1 byte -> text: A 1-byte value is converted into text. The following parameter appears:

Number of texts:

Options:	Setting options from 1 - 16

The parameter is used to set the number of values to be converted into text. The following parameters are displayed:

Text x for value [0 - 255]:

Options:	Setting options from 0 - 255

The parameter is used to set which value is to be converted into text x.

Text x:

Options:	<Text>

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

– 1 byte -> 8x1 bit: A 1-byte value is converted into eight 1-bit values. The following parameter appears:

Sending output values:

Options:	At every receipt
	At changed values

The parameter is used to specify when the 1-byte value is converted and sent.

– 2 byte -> 16x1 bit: A 1-byte value is converted into sixteen 1-bit values. The following parameter appears:

Sending output values:

Options:	At every receipt
	At changed values

The parameter is used to specify when the 1-byte value is converted and sent.

– *Time function*: The 1-bit communication objects "Input" and "Output" are available for the time function.

  When an ON telegram is received via 1-bit communication object "Input", the staircase light period is triggered and an ON telegram is sent on the 1-bit communication object "Output". After the set period has expired, an OFF telegram is sent via the output object.

  If an OFF telegram is received during the staircase light period, the staircase light period is reset and an OFF telegram is sent on the output.

  If an ON telegram is received again during the staircase light period, the delay time can be restarted again (retrigger). If this behaviour is desired, the "Retrigger" parameter is to be set on "Yes". A switch-on delay time can be additionally activated. This means that the start of the staircase light period and the sending of an ON telegram on the output object can happen only after the switch-on delay time has expired.

  The following parameters are displayed:

  Type of time function:

Options:	Staircase lighting
	ON/OFF delay

  The parameter is used to select between a staircase light function and an On/Off delay.

  – *Staircase lighting*: The following parameters are displayed:

    Staircase light period [hh:mm:ss]:

Options:	Setting options from 00:00:01 - 12:00:00

    The time of the switch-off delay (hh:mm:ss) is set via the parameter.

    Use of switch-on delay time:

Options:	No
	Yes

    The parameter is used to specify whether the staircase light is switched with a switch-on delay.

    – *No*: No additional parameters available.

    – *Yes*: 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:	No
	Yes

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:	No
	Yes

The parameter is used to specify whether the time function is switched with a switch-on delay.

– *No*: No additional parameters available.

– *Yes*: 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:	No
	Yes

The parameter is used to specify whether the time function is switched with a switch-off delay.

– *No*: No additional parameters available.

– *Yes*: 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.

13.20 Application "Internal RTC"

13.20.1 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.

13.20.2 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.

13.20.3 General - Additional functions/objects

Options:	Deactivated
	Activated

– This parameter enables additional functions and communication objects.

13.20.4 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".

13.20.1 General - "Current HVAC operating mode" object active

Options:	Disabled
	Activated

The parameter is used to specify whether the "Current HVAC operating mode" object is activated.

13.20.2 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

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).

Notice
The following controller parameters are 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%".

13.20.3 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".

13.20.4 Heating control — P-component (x 0.1°C)

Options:	Setting option between 10 - 100

The P-component refers to the proportional band of a control. It fluctuates around the setpoint value and can be used to influence control speed with a PI controller. The smaller the setpoint, the faster it reacts to the control. However, to avoid the risk of an overshoot, this value should not be set too low. A P-component from 0.1 to 25.5 K can be set.

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". In addition, the "Heating type" parameter must be set on "Free configuration".

13.20.5 Heating control — I-component (min.)

Options:	Setting option between 0 - 255

The I-component refers to the reset 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 reset time.

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". In addition, the "Heating type" parameter must be set on "Free configuration".

13.20.6 Heating control — Extended settings

Options:	Deactivated
	Activated

– This parameter enables additional functions, e.g. "Status object heating".

13.20.7 Basic stage heating

Note
Only available when the "Extended settings" parameter under "Heating control" is set on "Yes".

13.20.8 Basic stage heating — Status object heating

Options:	Deactivated
	Activated

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

13.20.9 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".

13.20.10 Basic stage heating — Hysteresis (x 0.1°C)

Options:	Setting option between 3 - 255

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".

Note
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%".

13.20.11 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".

13.20.12 Basic stage heating — Cyclic sending of the control value (min)

Options:	Setting option between 1 - 60 minutes

The current control value used by the device can be cyclically transmitted to the bus.

Note
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".

13.20.13 Basic stage heating — PWM cycle heating (min)

Options:	Setting option between 1 - 60 minutes

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.

Note
This parameter is only available when the "Control value type" parameter is set on "PI PWM, On/Off“.

13.20.14 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".

13.20.15 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".

13.20.16 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.

Note
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 bit, On/Off", "2-point 1 byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

13.20.17 Basic load settings — Basic load active when controller is off

Options:	Deactivated
	Activated

– 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".

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

13.20.18 Setpoint settings — Setpoint temperature for heating comfort (°C)

Options:	Setting option between 10 - 40

Specifies the comfort temperature for heating when people are present.

Note
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 "No".

13.20.19 Setpoint settings — Reduction for standby heating (°C)

Options:	Setting option between 10 - 40

Specifies the temperature in heating mode when nobody is present. On devices with a display, this mode is indicated by the standby icon.

Note
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".

13.20.20 Setpoint settings — Reduction for ECO heating (°C)

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.

13.20.21 Setpoint settings — Set-point temperature for frost protection (°C)

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.

Note
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".

13.20.22 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.

13.20.23 Setpoint settings — Cyclic sending of the current set-point temperature (min)

Options:	Setting option between 5 - 240

This parameter is used to specify the amount of time that will elapse before the current setpoint value is automatically transmitted.

Note
This parameter is only available when the "Send current setpoint" is set on "Only during change".

13.20.24 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%".

13.20.25 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%".

13.20.26 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.

13.20.27 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.

13.20.28 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.

13.20.29 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.

13.20.30 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.

13.20.31 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".

13.20.32 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".

13.20.33 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".

13.20.34 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".

13.20.35 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.

13.20.36 Temperature reading — Difference of value for sending the actual temperature (x 0.1°C)

Options:	Setting option between 1 - 100

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.

Note
This parameter is only available when the "Inputs of temperature reading" parameter is set on "Internal measurement" or "Weighted measurement".

13.20.37 Temperature reading — Adjustment value for internal temperature measurement (x 0.1°C)

Options:	Setting option between 1 - 100

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".

Note
- 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".

13.20.38 Temperature reading — Monitoring time for temperature reading (0 = no monitoring) (min)

Options:	Setting option between 0 - 120

If no temperature is read within the parameterized time period, the device switches to error mode. It transmits a telegram to the bus via the "Actual temperature error" object and applies the operating mode and control value for error (0 - 255) settings.

13.20.39 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.

13.20.40 Alarm functions — Frost alarm temperature for HVAC and RHCC status (°C)

Options:	Setting option between 0 - 15

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.

13.20.41 Alarm functions — Heat alarm temperature for RHCC status (°C)

Options:	Setting option between 25 - 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.

Note
The following parameters are available when the "Controller function" parameter is set on "Heating with additional stage".
The same parameters are available which are also 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%".

Note
The additional parameter "Control value type" is available for the additional stage.

13.20.42 Control of additional heating stage — Temperature difference to basic stage (x 0.1°C)

Options:	Setting option between 0 - 255

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.

13.20.43 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".

13.20.44 Control of additional heating stage — P-component (x 0.1°C)

Options:	Setting option between 10 - 100

The P-component refers to the proportional range of a control. It fluctuates around the setpoint value and can be used to influence control speed of a controller. The smaller the setpoint, the faster the controller responds. However, to avoid the risk of an overshoot, this value should not be set too low. A P-component from 0.1 to 25.5 K can be set.

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". The "Additional heating type" parameter must be set on "Free configuration".

13.20.45 Control of additional heating stage — I-component (min)

Options:	Setting option between 0 - 255

The I-component refers to the reset 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 reset time.

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". The "Additional heating type" parameter must be set on "Free configuration".

Note

The following parameters are available when parameter "Controller function" is set on "Cooling" and parameter "Control value type" on "2-point 1 bit, On/Off" or "2-point 1 byte, 0/100%".

13.20.46 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".

13.20.47 Cooling control — P-component (x 0.1°C)

Options:	Setting option between 10 - 100

The P-component refers to the proportional band of a control. It fluctuates around the setpoint value and can be used to influence control speed with a PI controller. The smaller the setpoint, the faster it reacts to the control. However, to avoid the risk of an overshoot, this value should not be set too low. A P-component from 0.1 to 25.5 K can be set.

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". In addition, the "Cooling type" parameter must be set on "Free configuration".

13.20.48 Cooling control — I-component (min.)

Options:	Setting option between 0 - 255

The I-component refers to the reset 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 reset time.

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". In addition, the "Cooling type" parameter must be set on "Free configuration".

13.20.49 Cooling control - Extended settings

Options:	Deactivated
	Activated

This parameter enables additional functions, e.g. "Status object cooling".

13.20.50 Basic stage cooling

Note
Only available when the "Extended settings" parameter under "Cooling control" is set on "Yes".

13.20.51 Basic stage cooling — Status object cooling

Options:	Deactivated
	Activated

This parameter enables the "Status cooling" communication object.

13.20.52 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".

13.20.53 Basic stage cooling — Hysteresis (x 0.1°C)

Options:	Setting option between 3 - 255

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".

Note
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%".

Basic stage cooling - 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".

13.20.54 Basic stage cooling — Cyclic sending of the control value (min)

Options:	Setting option between 1 - 60 minutes

The current control value used by the device can be cyclically transmitted to the bus.

NOTE
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Byte, Off/On", "2-point 1 Byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

13.20.55 Basic stage cooling - PWM cycle cooling (min)

Options:	Setting option between 1 - 60 minutes

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.

NOTE
This parameter is only available when the "Control value type" parameter is set on "PI PWM, On/Off“.

13.20.56 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".

13.20.57 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".

13.20.58 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.

Note
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 bit, On/Off", "2-point 1 byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

13.20.59 Basic load settings — Basic load active when controller is off

Options:	Deactivated
	Activated

– 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".

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

13.20.60 Setpoint settings — Setpoint temperature for cooling comfort (°C)

Options:	Setting option between 10 - 40

Specifies the comfort temperature for cooling when people are present.

Note
This parameter is only available when the "Control function" parameter is set on "Cooling" or "Cooling with additional stage".

13.20.61 Setpoint settings — Increase for standby cooling (°C)

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.

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".

13.20.62 Setpoint settings — Increase for ECO cooling (°C)

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.

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".

13.20.63 Setpoint settings — Set-point temperature for heat protection (°C)

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.

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".

13.20.64 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.

13.20.65 Setpoint settings — Cyclic sending of the current set-point temperature (min)

Options:	Setting option between 5 - 240

This parameter is used to specify the amount of time that will elapse before the current setpoint value is automatically transmitted.

Note
This parameter is only available when the "Send current setpoint" is set on "Only during change".

13.20.66 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".

13.20.67 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".

13.20.68 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.

13.20.69 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.

13.20.70 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.

13.20.71 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.

13.20.72 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.

13.20.73 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.

13.20.74 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".

13.20.75 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".

13.20.76 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".

13.20.77 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".

13.20.78 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.

13.20.79 Temperature reading — Difference of value for sending the actual temperature (x 0.1°C)

Options:	Setting option between 1 - 100

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.

Note
This parameter is only available when the "Inputs of temperature reading" parameter is set on "Internal measurement" or "Weighted measurement".

13.20.80 Temperature reading — Adjustment value for internal temperature measurement (x 0.1°C)

Options:	Setting option between 1 - 100

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".

Note

- 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".

13.20.81 Temperature reading — Monitoring time for temperature reading (0 = no monitoring) (min)

Options:	Setting option between 0 - 120

If no temperature is read within the parameterized time period, the device switches to error mode. It transmits a telegram to the bus via the "Actual temperature error" object and applies the operating mode and control value for error (0 - 255) settings.

13.20.82 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.

13.20.83 Alarm functions - Condensate water alarm

Options:	No
	Yes

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".

13.20.84 Alarm functions — Dew point alarm

Options:	No
	Yes

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".

13.20.85 Alarm functions — Frost alarm temperature for HVAC and RHCC status (°C)

Options:	Setting option between 0 - 15

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.

13.20.86 Alarm functions — Heat alarm temperature for RHCC status (°C)

Options:	Setting option between 25 - 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.

13.20.87 Summer compensation

13.20.88 Summer compensation — Summer compensation

Options:	No
	Yes

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 outside temperature value for summer compensation",
- "Upper outside temperature value for summer compensation",
- “Lower setpoint offset for summer compensation",
- “Upper setpoint offset for 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 parameterized 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.

13.20.89 Summer compensation -— (Lower) Starting temperature for summer compensation (°C)

Options:	Setting option between -127 - 127

The parameter defines the lower outside temperature value up to which temperature value the setpoint correction (summer compensation) is performed based on too high an outside temperature.

Note
This parameter is only available if the "Summer compensation" parameter is set to "Yes".

13.20.90 Summer compensation — Offset of the set-point temperature for the entry into summer compensation (x 0.1°C)

Options:	Setting option between -127 - 127

The parameter is used to define 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.

Note
This parameter is only available if the "Summer compensation" parameter is set to "Yes".

13.20.91 Summer compensation — (Upper) exit temperature for summer compensation (°C)

Options:	Setting option between -127 - 127

The parameter defines the upper outside temperature value up to which temperature value the setpoint correction (summer compensation) is performed based on too high an outside temperature.

Note
This parameter is only available if the "Summer compensation" parameter is set to "Yes".

13.20.92 Summer compensation — Offset of the set-point temperature for the exit from summer compensation (x 0.1°C)

Options:	Setting option between -127 - 127

The parameter is used to define 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.

Note
This parameter is only available if the "Summer compensation" parameter is set to "Yes".

Note
The following parameters are available when the "Controller function" parameter is set on "Cooling with additional stage".
The same parameters are available which are also available when parameter "Controller function" is set on "Cooling" and parameter "Control value type" on "2-point 1 bit, On/Off" or "2-point 1 byte, 0/100%".

Note
The additional parameter "Control value type" is available for the additional step.

13.20.93 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".

13.20.94 Control of additional cooling stage — P-component (x 0.1°C)

Options:	Setting option between 10 - 100

The P-component refers to the proportional band of a control. It fluctuates around the setpoint value and can be used to influence control speed with a PI controller. The smaller the setpoint, the faster it reacts to the control. However, to avoid the risk of an overshoot, this value should not be set too low. A P-component from 0.1 to 25.5 K can be set.

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". In addition, the "Cooling type" parameter must be set on "Free configuration".

13.20.95 Control of additional cooling stage — P-component (min)

Options:	Setting option between 0 - 255

The I-component refers to the reset time of a control. The integral component has the effect of moving the room temperature slowly toward, and to ultimately reaching, the setpoint. 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 reset time.

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". In addition, the "Cooling type" parameter must be set on "Free configuration".

13.20.96 Combined heating and cooling modes

Note
The following parameters are available when parameter "Controller function" is set on "Heating" or "Cooling" or "Heating and cooling" and parameter "Control value type" on "2-point 1 bit, On/Off" or "2-point 1 byte, 0/100%".

13.20.97 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.

13.20.98 Combined heating and cooling modes — Operating mode after reset

Options:	Cooling
	Heating

After a bus voltage failure, a system reset, or the attachment of a device to the bus coupler, the device starts in the parameterized "Operating mode after reset". The operating mode can be changed when the system is running using the options set under "Switchover heating/cooling".

13.20.99 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.

13.20.100 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".

13.20.101 Setpoint settings — Hysteresis for switchover heating/cooling (x 0.1°C)

Options:	Setting option between 5 - 100

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. If the room temperature falls below the setpoint temperature value minus hysteresis, the system switches to heating.

Note
This parameter is only available when the "Setpoint heating comfort = Setpoint cooling comfort" parameter is set on "Yes".

13.20.102 Setpoint settings — Setpoint temperature for heating and cooling comfort (°C)

Options:	Setting option between 10 - 40

Specifies the comfort temperature for heating and cooling when people are present.

Note
This parameter is only available when the "Control function" parameter is set on "Heating and cooling" or "heating and cooling with additional stages".

13.20.103 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".

Note
The following parameter is available when the "Control function" parameter is set on "Heating and cooling with additional stages".
The same parameter is available which is also available when the "Control function" parameter is set on "Heating and cooling".

13.20.104 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".

14 Communication objects

For a quick overview of the options of the ABB RoomTouch® 5, FM, all communication objects are listed in an overview table. The detailed function can be read in the description following the individual communication objects.

Notice
Some communication objects are dynamic and only visible when the corresponding parameters have been activated in the application program.

The communication objects are listed in the following overview:

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Binary input	Output	1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
Temperature sensor	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
Block all time programs	Entrance	1 bit	[1.003] Enable	K	-	S	-	A
Activate the holiday function	Entrance	1 bit	[1.010] Start/Stop	K	-	S	-	A
Holiday status	Output	1 bit	[1.010] Start/Stop	K	-	S	U	A
Display brightness	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Background illumination ON/OFF	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
Background illumination status	Output	1 bit	[1.001] Switching	K	-	-	U	A
Screen saver ON/OFF	Entrance	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
Selection of temperature unit	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
Inside temperature	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Outside temperature	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Commissioned	Output	1 bit	[1.001] Switching	K	-	-	U	-
Switching between dark and	Entrance	1 bit	[1.001]	K	-	S	-	A

bright (dark = 1)			Switching					
Signal tone volume	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Confirm all {1bit]	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
Heating control value	Output	1 bit	[5.001] Percent (0 - 100%)	K	-	-	U	-
Additional heating stage	Output	1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
Heating status	Output	1 bit	[1.001] Switching	K	-	-	U	-
Cooling control value	Output	1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
Additional cooling stage	Output	1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
Cooling status	Output	1 bit	[1.001] Switching	K	-	-	U	-
Basic load	Entrance	1 bit	[1.001] Switching	K	-	S	U	A
Heating/cooling switchover	Output	1 bit	[1.100] Heating/Cooling					
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	-
Local actual temperature	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
Fault, actual temperature (master)	Output	1 bit	[1.001] Switching	K	L	-	U	-
Actual 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)	Entrance	1 byte	[20.102] HVAC mode	K	-	S	U	A
On/off request (master)	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
Set value display (master)	Output	2 bytes	[9.001] Temperature (°C)	K	L	-	U	-
Request set value (master)	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Confirm setpoint (master)	Output	2 bytes	[9.001] Temperature (°C)	K	L	-	U	-
Controller status HVAC	Output	1 byte	[5.001]	K	L	-	U	-

(master)			Percent (0 - 100%)					
Value 1 [send]	Input Output	1 byte	[16.001] Scene control	K	-	S	U	A
Value 2 [send]	Output	1 byte	[16.001] Percent (0 - 100%)	K	-	-	U	-
Value	Input/ Output	1 byte	[16.001] Percent (0 - 100%)	K	-	S	U	A
Status value	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Status value [receive]	Entrance	1 bit	[16.000] Switching	K	-	S	-	A
Value [send]	Input/ Output	1 byte	[16.001] HVAC mode	K	-	S	U	A
Block	Entrance	1 bit	[1.002] Boolean	K	-	S	-	A
Block	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Block	Entrance	1 byte	[5.010} Value 1	K	-	S	-	A
Block	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Block	Entrance	1 byte	[5.100} Value 1	K	-	S	-	A
Global acknowledgement [1bit]	Entrance	1 bit	[1.016] Acknowledge	K	-	S	-	A
Dimming	Output	4 bit	[3.007] Dimming control	K	-	-	U	-
Switch	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Switch status	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
Moving UP/DOWN	Input/ Output	1 bit	[1.008] Up/Down	K	-	S	U	A
Stop / slat adjustment	Input/ Output	1 bit	[1.008] Up/Down	K	-	S	U	A
- Move to position	Input/ Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Height status [0 - 100%]	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Wind alarm	Entrance	1 bit	[1.001] Alarm	K	-	S	-	A
Air pressure	Entrance	2 bytes	[9.004] Value	K	-	S	-	A

Value red	Input/ Output	1 byte	[5.001] Counting pulses (0 - 255)	K	-	S	U	A
Value green	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value blue	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value RGB [3 bytes]	Input/ Output	3 bytes	[232.600] RGB value 3x (0 - 255)	K	-	S	U	A
Value white	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	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	U	A
Brightness	Entrance	2 bytes	[9.004] Value	K	-	S	-	A
Brightness value	Input/ Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Temperature value	Input/ Output	2 bytes	[7.001] Counting pulses (0 - 255)	K	-	S	U	A
Value (1 byte] unsigned	Input/ Output	1 byte	[5.010] Percent (0 - 100%)	K	-	S	U	A
Status [1 byte] unsigned	Entrance	1 byte	[5.010] Percent (0 - 100%)	K	-	S	-	A
Wind speed	Entrance	2 bytes	[9.005] Boolean	K	-	S	-	A
Rain	Entrance	1 bit	[1.002] Boolean	K	-	S	-	A
Output	Output	2 bytes	[9.001] Temperature (°C)	K	L	-	U	-
Output 1	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 2	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 3	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A

Output 8 (MSB)	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 9	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 10	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 11	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 12	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 13	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 14	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 15	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Output 16 (MSB)	Input/ Output	1 bit	[1.002] Boolean	K	-	S	U	A
Value input	Entrance	1 bit	[9.001] Percent (0 - 100%)	K	-	S	-	A
Input 1	Entrance	14 bytes	[16.001] Counting pulses	K	-	S	-	A
Input 2	Entrance	14 bytes	[16.001] Counting pulses	K	-	S	-	A
Input 3	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Input 4	Entrance	14 bytes	[16.001] Counting pulses	K	-	S	-	A
Input 5	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Input 6	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Input 7	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Input 8	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Input 9	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Input 10	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Scene number	Input/ Output	1 byte	[18.001] Scene control	K	-	S	U	A
Object 1 [send]	Output	14 bytes	[16.001] Counting pulses	K	-	-	U	-

Object 1 [receive]	Entrance	14 bytes	[16.001] Counting pulses	K	-	S	U	A
Object 2 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 2 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 3 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 3 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 4 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 4 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 5 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 5 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 6 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 6 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 7 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 7 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 8 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 8 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 9 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 9 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 10 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 10 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 11 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 11 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 12 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 12 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 13 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 13 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 14 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-

Object 14 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Object 15 [send]	Output	3 bytes	[232.600] Colour RGB	K	-	-	U	-
Object 15 [receive]	Entrance	3 bytes	[232.600] Colour RGB	K	-	S	U	A
Activate scene x	Entrance	1 bit	[1.010] Start	K	-	S	-	A
Dimming scene x	Entrance	4 bit	[3.007] Dimming control	K	-	S	-	A
Control On/Off (slave)	Entrance	1 bit	[1.001] Switching	K	-	S	U	A
External actual temperature	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Fault, actual temperature (slave)	Input/ Output	1 bit	[1.001] Switching	K	-	S	-	A
Operating mode (slave)	Output	1 byte	[20.102] HVAC mode	K	-	S	U	A
Override operating mode (Master/Slave)	Input/ Output	1 byte	[20.102] HVAC mode	K	-	S	U	A
Proximity function	Output	1 bit	[1.001] Switching	K	-	-	U	-
Deactivate proximity function	Entrance	1 bit	[1.002] Boolean	K		S		A
Window contact (master/slave)	Input/ Output	1 bit	[1.001] Window/door	K	-	S	U	A
Presence detector (master/slave)	Input/ Output	1 bit	[1.001] Occupancy	K	-	S	U	A
Window contact	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
Presence detectors	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
Condensation / fill level alarm (Master/Slave)	Input/ Output	1 bit	[1.001] Alarm	K	-	S	U	A
Units switchover (slave)	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
On/off request (slave)	Output	1 bit	[1.001] Switching	K	-	-	U	-
Setpoint display (slave)	Input/ Output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Request setpoint (slave)	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
Confirm setpoint (slave)	Input/ Output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Heating/cooling request (slave)	Output	1 bit	[5.010] Heating/Cooling	K	-	-	U	-
Heating/cooling request	Entrance	1 bit	[1.100] Heating/Cooling	K	-	S	-	A

Fan coil manual confirmation (Master)	Output	1 bit	[1.001] Switching	K	L	-	U	-
Fan coil manual confirmation (Slave)	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Request fan speed level manually (slave)	Output	1 bit	[5.010] Switching	K	-	-	U	-
Request fan speed level manually (master)	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
Request fan speed level (slave)	Output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	-	U	-
Request fan speed level (master)	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Confirm fan speed level (slave)	Input/ Output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	U	A
Confirm fan speed level (master)	Output	1 byte	[5.001] Percent (0 - 100%)	K	L	-	U	-
Controller status RHCC	Output	2 bytes	[22,101]	K	-	-	U	-
Commissioned	Output	1 bit	[1.001] Switching	K	-	-	U	-
Setpoint for heating comfort	Output	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Setpoint for heating standby	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Heating setpoint economy	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Heating setpoint for building protection	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Setpoint for cooling comfort	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Setpoint for cooling standby	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Cooling setpoint economy	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Cooling setpoint for building protection	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Setpoint error	Output	1 bit	[9.001] Temperature (°C)	K	-	-	U	-
Limit temperature basic heating stage	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A

Limit temperature additional heating stage	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Limit temperature basic cooling stage	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Limit temperature additional cooling stage	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Fan manual (cooling) confirmation (Master)	Output	1 bit	[1.001] Switching	K	-L	-	U	-
Fan coil step (cooling)	Output	1 byte	[1.001] Switching	K	-	-	U	-
Fan speed / level status (cooling)	Entrance	1 byte	[5.001] Percent (0..100%)	K	-	S	U	A
Fan speed / level x (Cooling)	Output	1 bit	[1.001] Switching	K	-	-	U	-
Fan speed / level	Output	1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
Fan speed / fan speed level	Entrance	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Fan speed/ level	Output	1 bit	[1.001] Switching	K	-	-	U	-
Controller status HVAC (slave)	Input/ Output	1 byte	[5.1] Percent (0 - 100%)	K	-	S	U	A
Control On/Off	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Resetting manual setpoints	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
Dew point alarm	Entrance	1 bit	[1.001] Switching	K	-	S	U	A
Outside temperature for summer compensation	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Summer compensation active	Output	1 bit	[1.001] Switching	K	-	-	U	-
Setpoint reached	Output	1 bit	[1.001] Switching	K	-	-	U	-
Units switchover (master)	Entrance	1 bit	[1.001] Switching	K	-	S	U	A
Units switchover	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Setpoint temperature	Input/ Output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Temperature calibration	Entrance	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A

Message	Input/ Output	14 bytes	[16.001] Counting pulses (-128 - 127)	K	-	S	U	A
Acknowledge message [14 bytes]	Output	14 bytes	[16.001] Counting pulses (-128 - 127)	K	-	S	U	A
Acknowledge message [1 bit]	Input/ Output	1 bit	[16.016] Acknowledge	K	-	S	U	A
Operating mode	Input/ Output	1 byte	[20.102] HVAC control mode	K	-	S	U	A
Horizontal oscillation	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Vertical oscillation	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Silent mode	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Boost	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
Forced operation	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
Scene	Entrance	1 bit	[1.001] Switching	K	-	S	-	A
title	Entrance	14 bytes	Sign (ASCII)	K	-	S	-	A
Artist	Entrance	14 bytes	Sign (ASCII)	K	-	S	-	A
Album	Entrance	14 bytes	Sign (ASCII)	K	-	S	-	A
Play	Input/ Output	1 bit	[1.001] Start/Stop	K	-	S	U	A
Pause	Input/ Output	1 bit	[1.001] Enable	K	-	S	U	A
Forward	Input/ Output	1 bit	Step (0 - 100%)	K	-	S	U	A
Backwards	Input/ Output	1 bit	Step (0 - 100%)	K	-	S	U	A
Tone off	Input/ Output	1 bit	[1.001] Enable	K	-	S	U	A
Shuffle	Input/ Output	1 bit	[1.001] Enable	K	-	S	U	A
Retry	Input/ Output	1 bit	[1.001] Enable	K	-	S	U	A
Volume	Input/ Output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
On/Off	Input/ Output	1 bit	[1.001] Switching	K	-	S	U	A
Activate information page	Entrance	1 bit	[1.002] Value	K	-	S	-	A

Information page line 1	Entrance	14 bytes	[16.001] Counting pulses (0 - 255)	K	-	S	-	A
Information page line 2	Entrance	14 bytes	[16.001] Counting pulses (0 - 255)	K	-	S	-	A
Information page line 3	Entrance	14 bytes	[16.001] Counting pulses (0 - 255)	K	-	S	-	A
Information page line 4	Entrance	14 bytes	[16.001] Counting pulses	K	-	S	-	A

15 Notes

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