Product manual | **03.04.2024**

IP touch 7 LAN/LAN | LAN/WLAN

IP touch 10 LAN/LAN | LAN/WLAN

Busch-Installationsbus® KNX

DCA ETS-App

BUSCH-JAEGER

1 Commissioning of the KNX Function via DCA (from ETS5)

Commissioning the KNX function of the IP touch via the plug-in ETS5 commissioning tool DCA.

Notice
For further commissioning, the configuration and automation software ETS5 must be installed and ready for operation on the computer used for configuration and commissioning.

1.1 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.

1.1.1 Prerequisites

DCA version

The minimum requirement is the use of DCA from version 1.1.1.4.

ETS version

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

Physical connection in KNX

The physical connection is made by means of a KNX IPR/S, IPS/S or IPR/S (Secure) or IPS/S (Secure).

SD card

The following SD card types are supported:

Type:	Micro SDHC
Capacity:	4 … 32 G
Speed:	Class 10
File system:	Fat32

Notice

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

1.1.2 KNXnet/IP Secure

Availability of KNXnet/IP Secure

For secure IP communication, the KNX IP interface is extended by the KNXnet/IP Secure standard. Through the optional use of KNXnet/IP Secure, all incoming and outgoing telegrams and data are fully encrypted. By default, KNX IP Secure is always activated in the factory settings of the IP touch.

Notice

- In the ETS or DCA, the IP touch is always integrated into one of the TP lines with the media type "TP". This happens regardless of whether KNXnet/IP Secure is activated or deactivated in the IP touch.
  - This is due to the fact that the IP touch establishes a tunnelling connection and the media type TP must be set for this purpose.
  - KNXnet/IP Secure is always deactivated on the ETS/IP backbone.

From which firmware version KNX and KNXnet/IP Secure is available depends on the panel used:

IP Touch	From version 1.70
IP touch 10	From version 2.10

1.1.3 KNX-Secure ETS

KNX Secure encrypts the data additionally on the bus line (Twisted Pair) or via the wireless communication.

It is a method for safe communication within the KNX installation, and it includes the areas “KNX IP Secure” on the IP-network level and “KNX Data Secure” on the telegram level. Prerequisite for this are KNX Secure-capable devices.

KNX IP Secure

Access (parameter setting) and IP communication of the devices is possible only for authorized participants.

KNX Data Secure

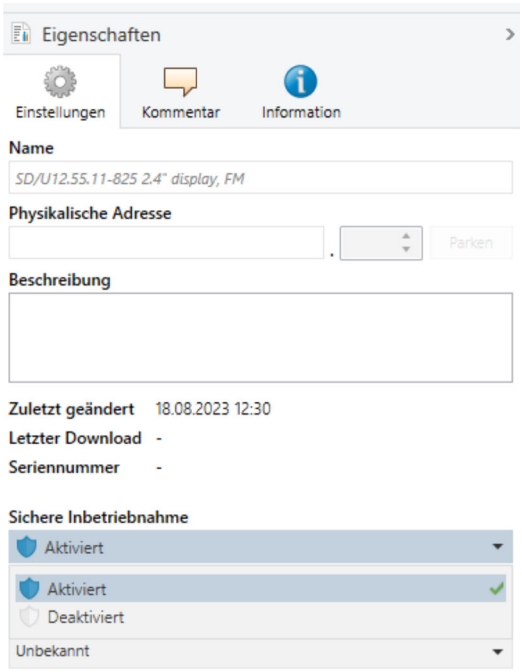
Access (parameter setting) and editing of KNX telegrams for users is possible only for authorized participants.

Prerequisite:

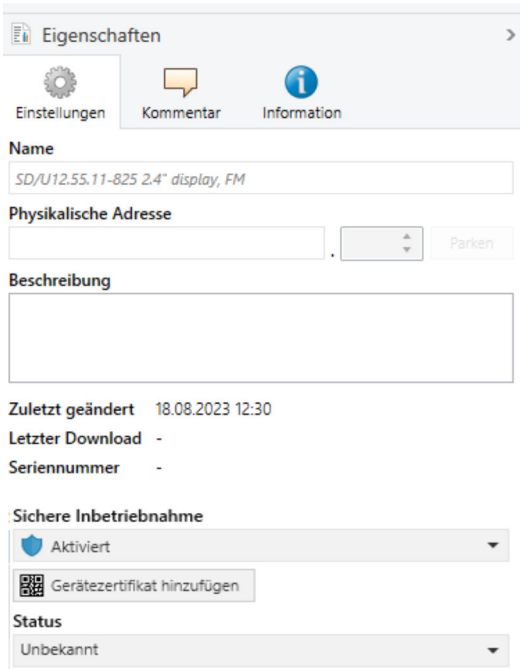
– The project must be created and fitted with a password.

– The KNX Secure device must be imported.

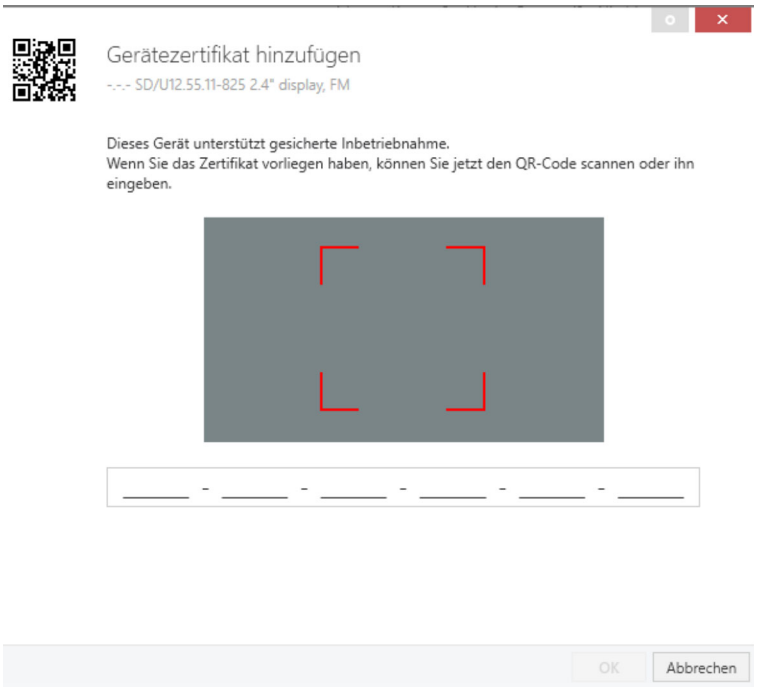
To encrypt the data with KNX Secure, proceed as follows:



1. In the project under "Characteristics/settings" activate "Safe commissioning".



2. Click on button "Add device certificate".
   The Add device certificate window opens.



3. Add the device certificate (Factory Device Setup Key) by scanning the QR code or by entering it manually and confirm with OK.

   The device is now in safe mode and can be parameterized.

Notice
The QR code and the device-specific key (Factory Device Setup Key) are located on the rear side of the insert.

To cancel the encryption with KNX Secure, proceed as follows:

1. Interrupt the bus voltage on the device.
2. Press the programming button .

   The LED flashes and then starts to flash fast.
3. Reconnect the device with the bus voltage.

   The encryption of the device is cancelled.

Use the physical address and application in ETS, and then one can also use it for other projects -> always reprogram all devices when ETS indicates this (in flag overview!)!

1.1.4 Special features during commissioning

When using KNX with KNXnet/IP Secure, there are a number of special features that must be taken into account during commissioning:

IP router

The following KNX IP interfaces are compatible with KNXnet/IP Secure:

Article Number	Product name	Type
IPS/S3.1.11	IP Interface, MDRC	IP interface (IP/S)
IPS/S3.5.11	IP Interface Secure, MDRC	IP interface (IP/S)
IPS/S2.11	IP Inteface, MDRC	IP interface (IP/S)
IPR/S3.1.11	IP Router, MDRC	IP router (IP/R)
IPR/S3.5.11	IP Router Secure, MDRC	IP router (IP/R)

- IPR/S and IPS/S offer up to 5 tunnelling servers
- If an IPR/S or IPS/S is added to the KNX line, the ETS automatically reserves the first five free addresses of this KNX line for the tunnelling servers of the interface.
- The tunnelling server is selected automatically or depending on the password (in case of using KNXnet/IP Secure).
- The connection setup may take up to 1 minute during regular use, because the IP touch checks all available tunnelling servers individually and the IP server has a certain latency.

Notice
For the commissioning of the IPR/S and IPS/S devices, there is a separate commissioning password that can only be used for the purpose of commissioning.

Notice
ETS has preset passwords. They can be changed manually.

Password for the tunnelling servers

The password for the tunnelling server is a mandatory password that is set in the ETS for the respective IP/R.

Authentication code

The authentication code is an optional password that is set in the ETS for the respective IPR/S.

This is an additional security level for the IP touch with which the IPR/S is authenticated.

1.1.5 Network settings

To use the KNX IP interface, the network settings must be changed. To do this, enter the IP address of the KNX IP interface in the IP touch.

- KNX IP interfaces should always have a fixed IP address. This can either be a static address or a fixed DHCP address.
- The IP touch used must be in the same IP address range as the KNX IP interface.

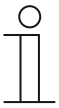
Notice

When using a router or level 3 switch, no separate port release is required. If VLAN is used on a router or level 3 switch, please ensure that IP touch and IPS/S are in a common VLAN.

1.1.6 Installation of the IP touch ETS app

For the assembly of the control elements, the initial commissioning of the IP touch 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).

1.1.7 Installation sequence

The ETS5 app (etsapp file, Busch-Jaeger Touch DCA) for the IP touch is installed via the ETS.

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

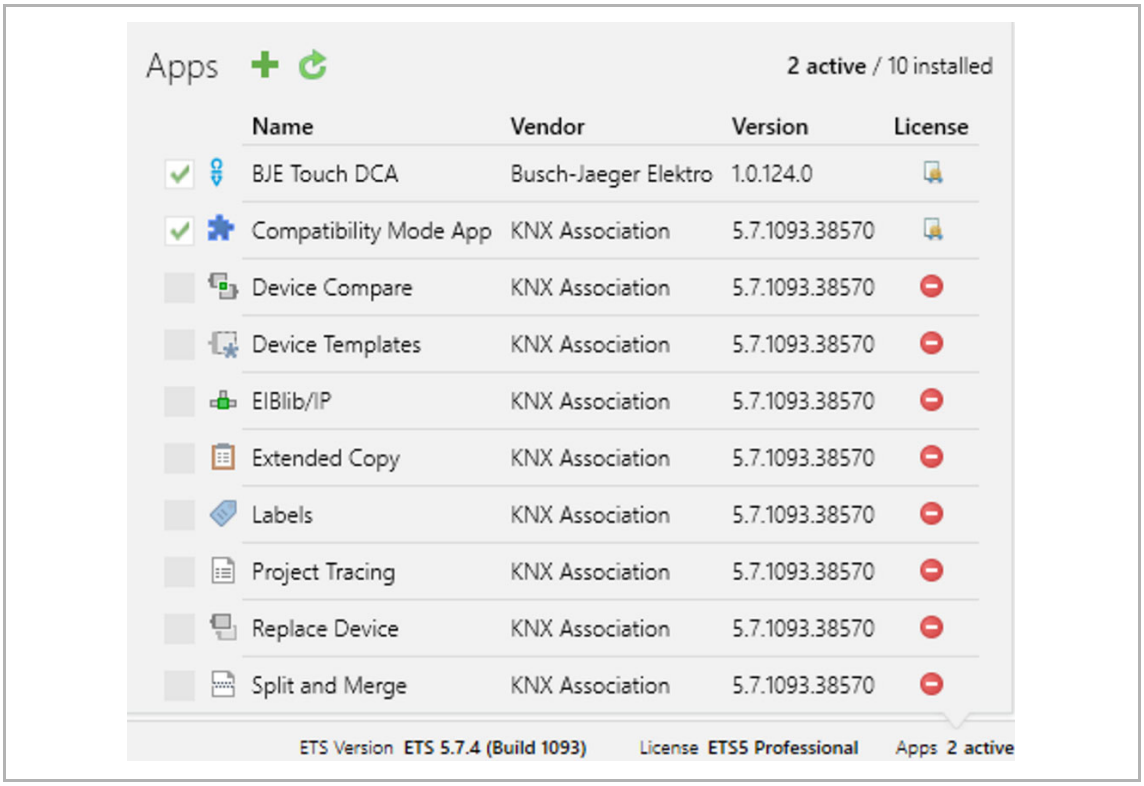


Fig. 1: App installation

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

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

1.1.8 Integrating the IP touch into the ETS

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

1.1.9 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 ETS app (see above).

The "Smarthome mode" in the IP touch must additionally be set on KNX under menu "Technical settings"->"Smart Home settings".

The transmission of the ETS data is made via the SD card. As soon as an SD card is available with the KNX settings, the data can be imported in menu "Technical settings"->"Smart Home Settings".

1.2 Overview of the DCA commissioning tool

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

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

Essential tasks during project planning with DCA are:

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

1.2.1 Starting the DCA

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

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

Notice
Detailed knowledge of ETS operation is assumed for project planning.
It is recommended to first import the product data into the project database (see chapter 1.1.8 “Integrating the IP touch into the ETS “ on page 18). The ETS requires Internet access to load the project data.

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

1.3 Screen areas of the DCA

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

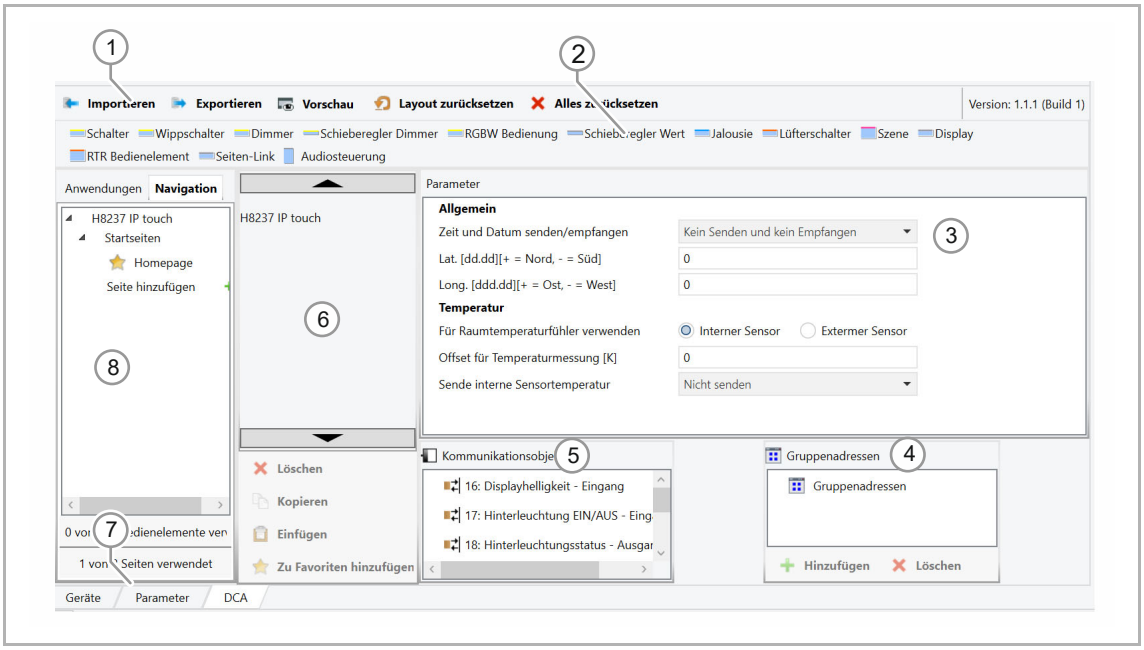


Fig. 2: DCA screen areas

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 IP touch 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 IP touch. 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 IP touch
[7]	Device menu bar	Opens the lists of the "Communication objects", "Channels" and "Parameters" for the device
[8]	Library area	"Navigation" tab: Includes a tree structure of the entire project. Here floors, rooms and operating pages can be added. Also general settings for the IP touch can be selected here and configured in the "Parameter" area. The same applies to the "Applications" tab. Here the available applications can be selected and configured in the "Parameter" area

Table 1: 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.

1.4 Explanation of the basic structure (Terms)

The panel comprises:

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

Fig. 3: IP Touch / IP touch 10 with control elements

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

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

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. Additional operating pages can be displayed via the "Page link" control element. The bottom bar of the IP touch shows whether there are multiple pages.

To call up preferred control elements directly, you can create favourites in a favourites list.

Maximum number of pages and control elements

IP Touch	▪ Number of pages: 8 ▪ Number of control elements: 64
IP touch 10	▪ Number of pages: 8 ▪ Number of control elements: 100

Navigation

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

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

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

Notice

Additional explanations are available in Page 202.

1.5 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 1.2.1 “Starting the DCA“ on page 20).
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 1.7 “Creating the navigation structure“ on page 31).
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. Copy the project to an SD card and transmit it locally onto the IP touch.
    – A detailed description of the DCA export procedure is available in see chapter 1.13.2 “Export“ on page 48.

1.6 Configuring basic settings for the panel

The basic settings for the IP touch 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 1.6.1 “Basic settings (system settings) of the panel“ on page 26).
    – 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 only be adjusted directly in the panel, e.g. the panel language, PIN code level, etc..

1.6.1 Basic settings (system settings) of the panel

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

Common

- **Sending/receiving time and date**

Options:	No sending and no receiving
	Only sending
	Only receiving

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

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

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

– *Only receiving*: The device receives date and time from a separate KNX-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.

- **Sending time and date**

Options:	Every minute
	Every hour
	Every 12 hours
	At 00:00
	At 00:02

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.

- **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, i.e., the angular minutes are specified as number of decimal places.
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.

Temperature

Notice
The temperature parameters refer to the temperature display in the bottom bar of the display.
In the "Basic KNX settings" it can be specified directly in the device that the temperature values are displayed in the bottom bar of the panel.

- **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.

- **Offset for temperature measurement [K]**

Options:	Setting option from -12.8 - +12.7 K

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

- **Send indoor sensor temperature**

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

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

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

Options:	Setting option from 5 - 3600 seconds

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

KNX IP interface settings

- **The settings of the KNX IP interface remain unchanged**

Options:	Activated
	Deactivated

The setting of the KNX IP interface can be changed by deactivating the parameter. When deactivated, all subordinate parameters are enabled.

The following parameters are only available when parameter "Settings of the KNX IP interface remain unchanged" is deactivated.

- **IP address of the KNX interface**

Options:	<Text>

The parameter is used to assign the IP address of the KNX interface.

- **KNXnet/IP Secure**

Options:	Activated
	Deactivated

The setting for KNXnet/IP Secure can be changed by deactivating the parameter. When deactivated, all subordinate parameters are enabled.

The following parameters are only available when parameter "KNX/IP Secure" is deactivated.

- **Password for tunnelling**

Options:	<Text>

The parameter is used to assign the password for tunnelling via KNXnet/IP Secure.

- **Authentication code**

Options:	<Text>

The parameter is used to specify the authentication code for tunnelling via KNXnet/IP Secure.

Setting for online download of the PID file

- **Settings for PID downloads remain unchanged**

Options:	Activated
	Deactivated

The setting for online downloads of PID files can be changed by deactivating the parameter. When deactivated, all subordinate parameters are enabled.

The following parameters are only available when parameter "Settings of the KNX IP interface remain unchanged" is deactivated.

- **Device name**

Options:	<Text>

The parameter is used to specify the device name for the display at downloads of PID files.

- **Password**

Options:	<Text>

The parameter is used to specify the device password for the input at downloads of PID files.

- **Secure communication**

Options:	Activated
	Deactivated

The communication via KNX Secure is enabled by activating the parameter.

1.7 Creating the navigation structure

The panel contains operating pages (start pages) for operating the IP touch. These pages must be created beforehand. Generally a main start page is created (see chapter 1.4 “Explanation of the basic structure (Terms)“ on page 23).

A total of 8 operating pages can be created. The number of the created pages is displayed in the bottom part of the library area.

1.7.1 Creating operating pages (start pages)

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

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

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

A total of 7 operating pages (start pages) can be created in addition to the main operating page (marked with a star). The number of the created pages is displayed in the bottom part of the library area.

1.7.2 Editing operating pages

Adjusting name of the page

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

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

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

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

Moving page within the tree structure

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

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

Copying the page and pasting it again

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

Deleting Page

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

Notice
The main operating page cannot be deleted.

1.8 Configuration of the operating pages

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

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

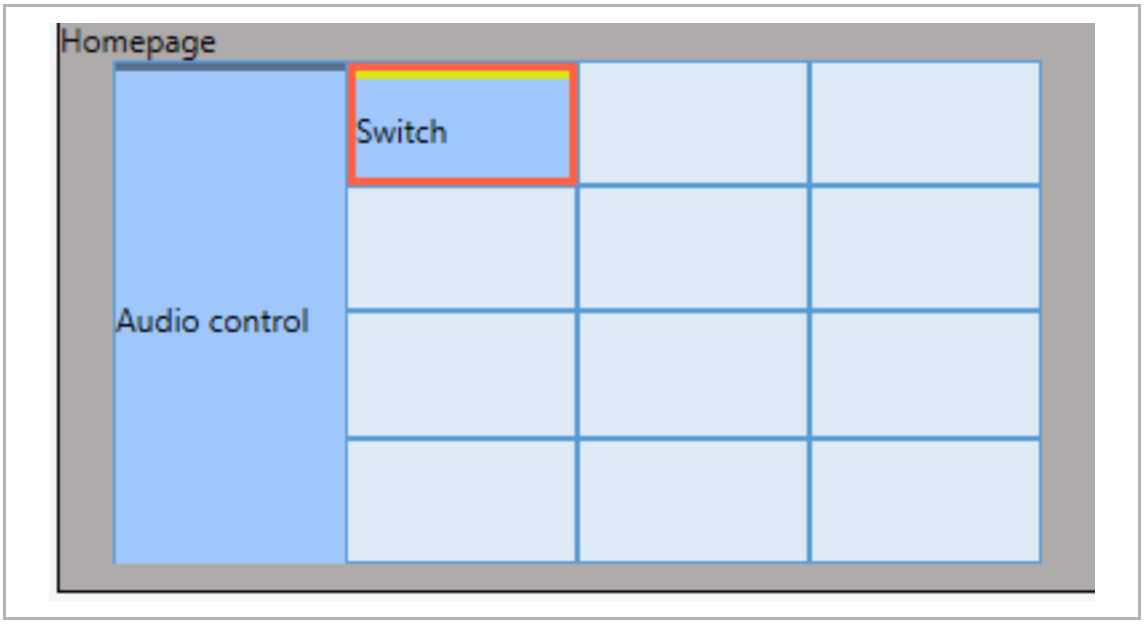


Fig. 4: Operating page with control elements

Parameterising control elements

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

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

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

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

The control elements are described in the following sections. For the description of the respective control elements see chapter 1.10 “Configuration of applications and application pages“ on page 39

1.8.1 "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 2.1 “"Switch" control element“ on page 49.

1.8.2 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 2.2 “Control element "Rocker switch"“ on page 56.

1.8.3 "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 2.3 “"Dimmer" control element“ on page 62.

1.8.4 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 2.4 “Control element: "Dimmer slider"“ on page 66.

1.8.5 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 2.5 “Operation of "RGBW" control element““ on page 70.

1.8.6 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 2.6 “Control element: "Value slider"“ on page 75.

1.8.7 "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 2.7 “"Blind" control element“ on page 79.

1.8.8 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 2.8 “Control element "Fan switch"“ on page 84.

1.8.9 "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 2.9 “"Scene" control element“ on page 90.

1.8.10 "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 2.10 “"Display" control element“ on page 92.

1.8.11 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 2.11 “Control element "RTC control element"“ on page 104.

1.8.12 "Page link" control element

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

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

This opens the linked pages.

Setting and selection options via the "Parameter" area of the DCA, see chapter 2.12 “"Page link" control element“ on page 109.

1.8.13 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 2.13 “Control element "Audio control"“ on page 111.

1.9 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.

1.9.1 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.

1.9.2 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.

1.9.3 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.

1.10 Configuration of applications and application pages

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

Note

Basic settings for the panel, see chapter 1.6 “Configuring basic settings for the panel“ on page 25.

1.10.1 Application "Door communication"

This application has an application page.

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

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

Further setting and selection options via the "Parameter" area, see chapter 2.14 “Application "Door communication"“ on page 119.

1.10.2 Application "Fault and alarm messages"

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

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

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

Notice

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

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

- For further setting/selection options via the "Parameter" area for the general settings of the application page, see chapter 2.15 “Application "Fault and alarm messages" - Global settings“ on page 121.
- For further setting/selection options via the "Parameter" area for the settings of the individual message, see chapter 2.16 “Application "Fault and alarm messages" - Settings of the individual messages“ on page 123

1.10.3 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 2.19 “Application "Time programs"“ on page 132.

1.10.4 Application "Presence simulation"

This application (function) has no application page. However, the function can be called up via application page "Time programs" in the panel. For an explanation see chapter 2.19 “Application "Time programs"“ on page 132.

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

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

Further setting/selection options via the "Parameter" area for the general settings of the function, see chapter 2.18 “Application "Presence simulation"“ on page 130.

1.10.5 Application "Time programs"

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

The general settings can be made via the DCA.

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

Further setting/selection options via the "Parameter" area for the general settings of the time programs, see chapter 2.19 “Application "Time programs"“ on page 132.

1.10.6 Application "Logical functions"

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

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

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

Notice

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

– You can add more channels via the page with the plus. A maximum of 10 channels can be added.
– If such a channel is called up via the tree structure, the settings can be adjusted for the individual logic functions in the "Parameter" area.
– By clicking the arrow next to "Logic functions", all available channels are displayed in the tree structure.

For further setting/selection options via the "Parameter" area for the settings of the logic functions, see chapter 2.20 “Application "Logical functions"“ on page 133.

1.10.7 Application "Internal RTC"

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

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

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

Notice

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

- Here a page with a plus is displayed. This page must be clicked. This is how a further internal RTC is added and displayed in the tree structure.
- If it is called up via the tree structure, the settings can be adjusted for the individual internal RTCs in the "Parameter" area.
- By clicking the arrow next to "Internal RTC", all available internal RTCs (a maximum of 5 internal RTCs) are displayed.

For further setting or selection options via the "Parameter" area for the general settings of the function of the internal RTC, see chapter 2.21 “Application "Internal RTC"“ on page 145.

1.10.8 "Favourite control elements"

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

Note

Favourites must first be added to the favourites list, see chapter 1.10.8 “"Favourite control elements"“ on page 43.

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.

1.11 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.

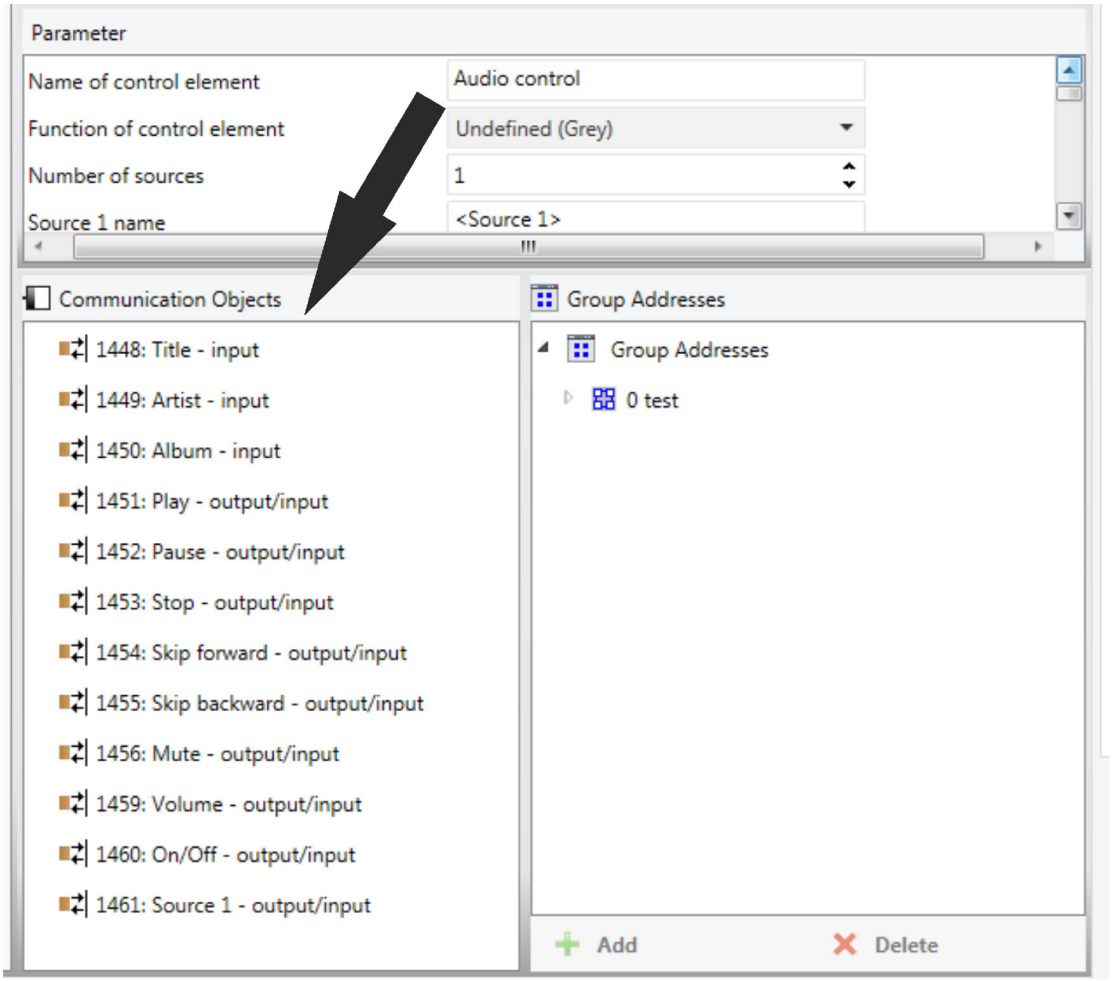


Fig. 5: Communication objects area

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.

1.12 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.

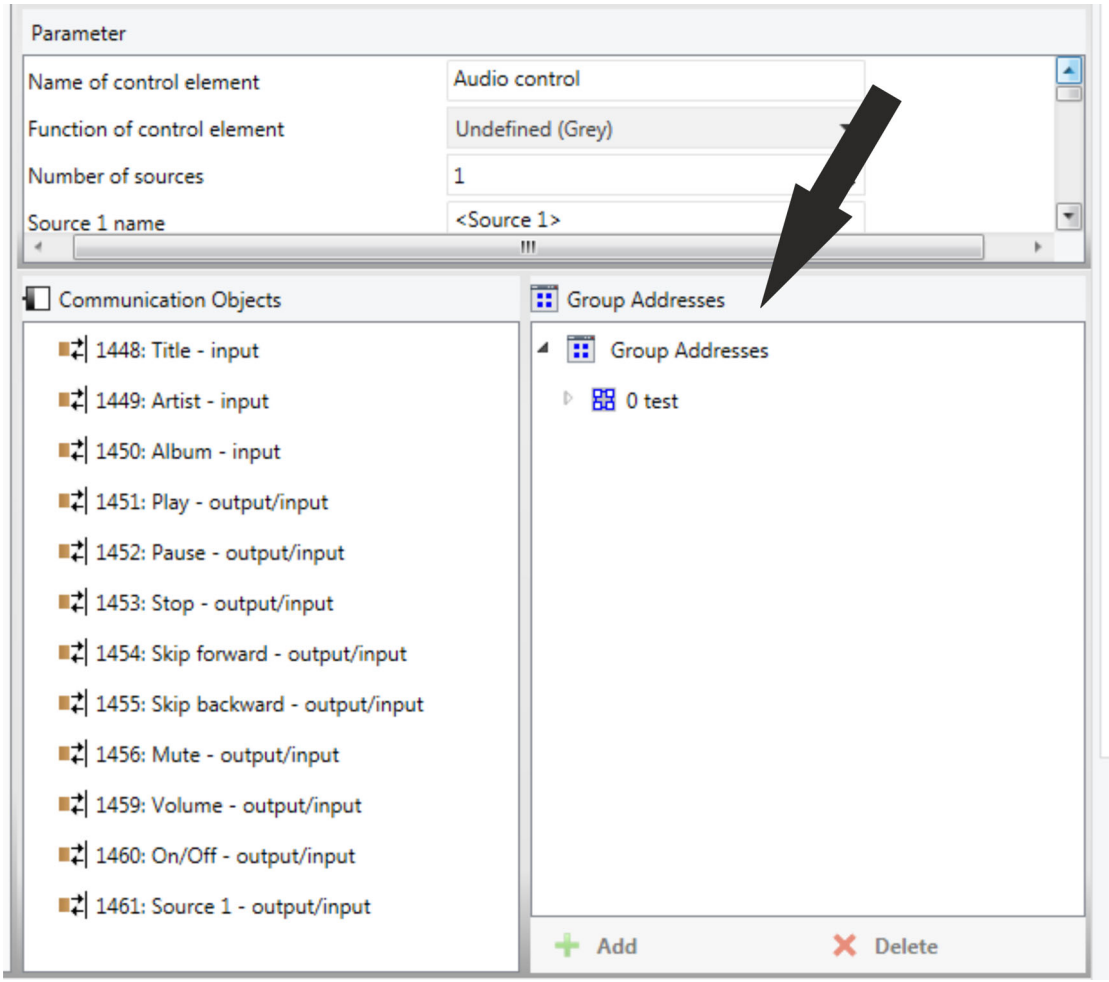


Fig. 6: "Group addresses" area

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.

1.13 Additional tools (functions)

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

1.13.1 Import

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

– Import master

Import master

Import of masters of a different panel via stpl file.

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

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

1.13.2 Export

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

– Export image in pid file

– Export in project file

Export image in pid file

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

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

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

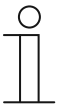
Export in project file

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

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

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

1.13.3 Preview



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

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

1.13.4 Reset layout

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

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

1.13.5 Reset all

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

2 Control elements and application parameter

2.1 "Switch" control element

2.1.1 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.

2.1.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Light (yellow)" has been made available for functions of this type.

2.1.3 Size of the button

Options:	1 column
	2 columns

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

2.1.4 Type of switch

Options:	Toggle
	Press/release
	Short/long

Notice
The selection depends on the type of switch.

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

– *Switchover*: No additional parameters available.
– *Pressing/releasing*: Pressing = value 1; releasing = value 2.
The following supplementary parameters are available, :

  - *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, :
  - *Long operation after...*:

Options:	Setting option from 0.3 - 0.6 - 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.

2.1.5 Object type 1 / value 2

Options:	Inactive
	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".

- **Object type value x - inactive**:

  No additional parameters.

- **Object type value x - switch**:

  The following supplementary parameters are available:

  Sent value 1:

Options:	Toggle
	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.

- **Object type value x - forced operation**:

  Management systems can access the device directly via KNX. However, it can additionally be specified that one can select manually 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

- **Object type value x - 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

- **Object type value x - 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

- **Object type value x - 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

- **Object type value x - 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).

- **Object type value x** - *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

- **Object type value x - 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

- **Object type value x - 2-byte value [-32768 - +32767]:**

  A value is sent as 2-byte value with a sign, e.g. an actuating value or time difference. The following supplementary parameter is available:

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

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

- **Object type value x - 2-byte value [0 - 65535]:**

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

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

Options:	Setting option from 0 - 65535

- **Object type value x - 2-byte floating point**

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

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

Options:	Setting option from -671088.64 - +670760.96

- **Object type value x - 4-byte value [-2147483648 - 2147483647]:**

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

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

Options:	Setting option from -2147483648 - 2147483647

- **Object type value x - 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

- **Object type value x - 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.

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

Options:	No
	Yes

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

When the object has been enabled, the status display of the control element indicates the current status of the object. The feedback 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.

2.1.7 Type of icon

Options:	Icons
	Text

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

Icons for On:

Options:	<Selection of an icon from the list>

This parameter is only available if parameter "Type of icon" has been parameterized to "Icons".

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

Icons for Off:

Options:	<Selection of an icon from the list>

This parameter is only available if parameter "Type of icon" has been parameterized to "Icons".

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

Text for On:

Options:	<Text>

This parameter is only available if parameter "Type of icon" has been parameterized to "Text".

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

Text for Off:

Options:	<Text>

This parameter is only available if parameter "Type of icon" has been parameterized to "Text".

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

2.1.8 Icon for On

Options:	<Icon>

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

2.1.9 Icon for Off

Options:	<Icon>

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

2.1.10 Enable 1-bit communication object "Disable"

Options:	No
	Yes

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

2.2 Control element "Rocker switch"

2.2.1 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.

2.2.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Light (yellow)" has been made available for functions of this type.

2.2.3 Size of the button

Options:	1 column
	2 columns

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

2.2.4 Icon type

Options:	Icons
	text

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

– *Icons*:

Icon for left / value 1:

Options:	<Selection of an icon from the list>

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

Icon for right / value 2:

Options:	<Selection of an icon from the list>

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

– *Text*:

Text for left / value 1:

Options:	<text>

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

Text for right / value 2:

Options:	<text>

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

2.2.5 Icon for left

Options:	<Icon>

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

2.2.6 Icon for right

Options:	<Icon>

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

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

Options:	Activated
	Deactivated

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

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

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

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

2.2.8 Object type

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

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

Notice
Value 1 is assigned to the top button.
Value 2 is assigned to the bottom button.

- **Object type 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.

- **Object type 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

- **Object type 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

- **Object type 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

- **Object type 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

- **Object type 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).

- **Object type 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

- **Object type 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

- **Object type 2-byte value [-32768 - +32767]:**

  A value is sent as 2-byte value with a sign, e.g. an actuating value or time difference. The following supplementary parameter is available:

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

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

- **Object type 2-byte value [0 - 65535]:**

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

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

Options:	Setting option from 0 - 65535

- **Object type - 2-byte floating point:**

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

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

Options:	Setting option from -671088.64 - +670760.96

- **Object type 4-byte value [-2147483648 - 2147483647]:**

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

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

Options:	Setting option from -2147483648 - +2147483647

- **Object type 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

- **Object type 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.

2.2.9 Enable 1-bit communication object "Disable"

Options:	No
	Yes

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

2.3 "Dimmer" control element

2.3.1 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.

2.3.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Light (yellow)" has been made available for functions of this type.

2.3.3 Size of the button

Options:	1 column
	2 columns

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

2.3.4 Type of icon

Options:	Default
	User-defined

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

2.3.5 Icon for On / icon for Off

Icon for On

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

Options:	<Icon>

Icon for Off

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

Options:	<Icon>

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

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

2.3.6 Position for dim up icon

Options:	Left
	Right

The parameter is used to set whether the icon for "Dim up" is positioned on the right or left side.

2.3.7 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.

2.3.8 Status control element (icon) 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.

2.3.9 Status of dimming value is controlled by a separate object

Options:	No
	Yes

– *No*: No additional parameters available.
– *Yes*: The brightness value signalled by the dimmer 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. The following parameter appears:

Display value in control element:

Options:	No
	Yes

– *No*: No additional parameters available.
– *Yes*: The following parameter appears:

Unit:

Options:	<text>

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

The length of the text is limited to 20 characters.

2.3.10 Long operation after...

Options:	0.3 seconds
	0.4 seconds
	0.5 seconds
	0.6 seconds
	0.8 seconds
	1 s
	1.2 seconds
	1.5 seconds
	2 s
	3 s
	4 seconds
	5 seconds
	6 seconds
	7 seconds
	8 seconds
	9 seconds
	10 s

The parameter specifies the function of the dimmer at long operation after the expiry of a seconds number.

2.3.11 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

2.4 Control element: "Dimmer slider"

2.4.1 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.

2.4.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Light (yellow)" has been made available for functions of this type.

2.4.3 Size of the button

Options:	2 columns
	3 columns

The parameter is used to specify whether the control element occupies two columns (two buttons or control frames) or three columns (three buttons or control frames).

2.4.4 Type of icon

Options:	Default
	User-defined

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

2.4.5 Icon for On / icon for Off

Icon for On

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

Options:	<Icon>

Icon for Off

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

Options:	<Icon>

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

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

2.4.6 Slider from

Options:	Left to right
	Right to left

The parameter is used to specify whether the slider is to shift from left to right or from right to left.

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

Options:	Deactivated
	Activated

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

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

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

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

2.4.8 Display value in control element

Options:	Deactivated
	Activated

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

Status of dimming value is controlled by a separate object:

Options:	Deactivated
	Activated

The parameter is available only when parameter "Display value in control element" is 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 directly from the control element. The value is received via a separate feedback object.

Unit:

Options:	<Text>

The parameter is available only when parameter "Display value in control element" is activated.

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

The length of the text is limited to 15 characters, the standard value is "%".

2.4.9 Slider sends

Options:	When releasing the slider
	Cyclic

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

Telegram is repeated every [sec.]:

Options:	Setting option from 0.25 - 0.5 - 1.25 seconds

This parameter is only available if parameter "Slider sends" has been parameterized to "Cyclic".

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

2.4.10 Brightness change [%]

Options:	Setting option from 1 - 20

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

Notice
As long as the slider (at every brightness adjustment or cyclic after every repeat time) sends telegrams, the received telegrams are ignored.

2.4.11 Telegram is repeated every [sec.]

Options:	0.25 seconds
	0.5 seconds
	0.75 seconds
	1.0 seconds
	1.25 seconds

The parameter specifies the number of seconds after which a telegram is to be repeated.

2.4.12 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

2.5 Operation of "RGBW" control element“

2.5.1 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.

2.5.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line. "Light (yellow)" has been made available for functions of this type.

2.5.3 Display value in control element

Options:	Deactivated
	Activated

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

2.5.4 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:	Deactivated
	Activated

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

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

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

Options:	Deactivated
	Activated

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

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

– *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:

Switching On/Off via:

Options:	1 object
	2 objects

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

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

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

Switched On -> preset value:

Options:	Deactivated
	Activated

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

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

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

Options:	Deactivated
	Activated

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

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

- *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:	Deactivated
	Activated

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

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

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

Options:	Deactivated
	Activated

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

– *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 (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).

2.5.5 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.

2.5.6 Telegram is repeated every [sec.]:

Options:	0.25 seconds
	0.5 seconds
	0.75 seconds
	1.0 seconds
	1.25 seconds

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

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

Options:	Deactivated
	Activated

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

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

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

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

2.5.8 Switched On -> preset value:

Options:	Activated
	Deactivated

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

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

Options:	Activated
	Deactivated

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

2.5.10 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

2.6 Control element: "Value slider"

2.6.1 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.

2.6.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Not defined (grey)" has been made available for functions of this type.

2.6.3 Size of the button

Options:	2 columns
	3 columns

The parameter is used to specify whether the control element occupies two columns (two buttons or control frames) or three columns (three buttons or control frames).

2.6.4 Slider from

Options:	Left to right
	Right to left

The parameter is used to specify whether the slider is to shift from left to right or from right to left.

2.6.5 Telegram is repeated every [sec.]:

Options:	0.25 seconds
	0.5 seconds
	0.75 seconds
	1.0 seconds
	1.25 seconds

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

2.6.6 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".

2.6.7 Value change [%]

Options:	Setting option from 1 - 100

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

2.6.8 Minimum object value

Options:	Setting option from 1 - 100

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

2.6.9 Maximum object value

Options:	Setting option from 0 - 100

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

2.6.10 Displayed minimum value

Options:	Setting option from 0 - 100

The parameter is used to specify the displayed minimum value.

2.6.11 Displayed maximum value

Options:	Setting option from 0 - 100

The parameter is used to specify the displayed maximum value.

2.6.12 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

2.7 "Blind" control element

2.7.1 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.

2.7.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Blind (blue)" has been made available for functions of this type.

2.7.3 Size of the button

Options:	1 column
	2 columns

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

2.7.4 Type of control

Options:	Short = stepwise/stop, long = moving
	Short = moving/stop, long = stepwise
	Short = moving/stop

The parameter is used to specify whether commands to move the blinds and adjust the slats are sent to linked blind actuators via short or long actuations of the the buttons.

– *Short = stepwise/stop, long = move*: A short press of the button triggers a command to adjust the slats or a stop command. A long press of the button triggers a move command. The following supplementary parameter is available:

Long operation after ...:

Options:	Setting option from 0.3 - 10 seconds

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

– *Short* = *move/stop, long* = *stepwise*: A short press of the button triggers a move command. A long press of the button triggers a command to adjust the slats or a stop command. The following supplementary parameter is available:

Long operation after ...:

Options:	Setting option from 0.3 - 10 seconds

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

Repeat of all "Stepwise/stop" telegrams:

Options:	Setting option from 0.3 - 10 seconds

The parameter is used to set the space of time between two "Stepwise/stop" telegrams.

– *Short* = *move/stop*: At each short actuation the following commands are sent consecutively to linked blind actuators:
  - Move command
  - Stop command
  - Move command
  - Stop command
  - etc.

2.7.5 Icon type

Options:	Blind animation
	Shutter animation
	Marquee animation
	Hang 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 up/open icon:

Options:	Left
	Right

The parameter is used to specify whether the icon for "Up/Open" 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.

Icon for intermediate position:

Options:	<Selection of an icon from the list>

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

2.7.6 Position for "Up/Open" icon

Options:	Left
	Right

The parameter is used to specify the position at which the icon for "Up/Open" is to be displayed in the control element.

2.7.7 Position for the "Down/Close" icon

Options:	Down
	Close

The parameter is used to specify the position at which the icon for "Down/Close" is to be displayed in the control element.

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

Options:	Deactivated
	Activated

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

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

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

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

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

Type of feedback signal:

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

The parameter is available only when parameter "Status control element (icon) ..." is activated.

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

2.7.9 Long operation after...

Options:	0.3 seconds
	0.4 seconds
	0.5 seconds
	0.6 seconds
	0.8 seconds
	1 s
	1.2 seconds
	1.5 seconds
	2 s
	3 s
	4 seconds
	5 seconds
	6 seconds
	7 seconds
	8 seconds
	9 seconds
	10 s

The parameter specifies the function of the dimmer at long operation after the expiry of a seconds number.

2.7.10 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

2.8 Control element "Fan switch"

2.8.1 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.

2.8.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Temperature (orange)" has been made available for functions of this type.

2.8.3 Size of the button

Options:	1 column
	2 columns

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

2.8.4 Deactivation of switch-off option

Options:	Deactivated
	Activated

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

2.8.5 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.

2.8.6 Position for the "Up" icon

Options:	Left
	Right

The parameter is used to specify the position at which the icon for "Up" is to be displayed in the control element.

2.8.7 Icon for Up:

Options:	<Icon>

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

2.8.8 Icon for Down

Options:	<Icon>

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

2.8.9 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.

2.8.10 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.

2.8.11 Object type

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

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

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

Also sending bits with value 0:

Options:	Deactivated
	Activated

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

Switch pattern:

Options:	1 of n
	x of n
	Gray code

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

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

  (For 5 objects, object 1 to 5):

  00000
  10000
  01000
  00100
  00010
  00001

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

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

  00000 > send all objects "0"
  10000 > Object 1 sends "1" (also sends the 0 bit = Yes), objects 2 to 5 send "0"
  11000 > Objects 1 and 2 send "1", objects 3 to 5 send "0"
  11100 etc.
  11110
  11111

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

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

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

Value Off:

Options:	Setting option from 0 - 255

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

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

Value level x (1 - 8):

Options:	Setting option from 0 - 255

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

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

2.8.12 Value Off

Options:	0 - 255

The parameter is used to specify the criteria according to which the value for "Off" is indicated.

2.8.13 Value step x

Options:	0 - 255

The parameter is used to specify the criteria according to which the value for steps 1 to 3 is indicated.

2.8.14 Display status

Options:	User-defined
	Standard
	No

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

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

Text Off:

Options:	<Text for "Off">

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

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

Text level x (1 - 8):

Options:	<Text for switching level>

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

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

Text beyond reach:

Options:	<Text for "beyond reach">

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

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

Text beyond reach:

Options:	<Text for "beyond reach">

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

– *No*: No texts are displayed.

2.8.15 Text beyond reach

Options:	<Name>

Specifying the text that is displayed on the control element when the fan switch is outside transmission range.

The length of the name is limited to 36 characters.

2.8.16 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

2.9 "Scene" control element

2.9.1 Name of the control element

Options:	<Name>

Naming of the scene control element.

The length of the name is limited to 36 characters.

2.9.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Scene (magenta)" has been made available for functions of this type.

2.9.3 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.

2.9.4 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.

2.9.5 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.

2.9.6 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.

2.9.7 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.

2.9.8 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.

2.9.9 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

2.10 "Display" control element

2.10.1 Name of the control element

Options:	<Name>

Naming of the display control element.

The length of the name is limited to 36 characters.

2.10.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Not defined (grey)" has been made available for functions of this type.

2.10.3 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.

2.10.4 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).

2.10.5 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.

2.10.6 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).

2.10.7 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".

2.10.8 Type of display element — Linear measurement display — Measurement display with colour display

Options:	Deactivated
	Activated

The parameter is used to specify whether a colour display follows. For this the communication objects "Switch alarm", "Switch warning", and "Switch information" are enabled.

2.10.9 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.

2.10.10 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".

2.10.11 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 chapter 2.10.8 “Type of display element — Linear measurement display — Measurement display with colour display“ on page 96.

2.10.12 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 chapter 2.10.8 “Type of display element — Linear measurement display — Measurement display with colour display“ on page 96.
Parameter "Measurement display with colour display" is not available.

2.10.13 Type of display element — Wind force — 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).

2.10.14 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.

2.10.15 Type of display element — Temperature — 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).

2.10.16 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.

2.10.17 Type of display element — Rain — 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).

2.10.18 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.

2.10.19 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.

2.10.20 Type of display element — Twilight — 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).

2.10.21 Type of display element — Twilight — Unit

Options:	Lux
	kLux

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

2.10.22 Type of display element — Brightness

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

2.10.23 Type of display element — CO_2 — 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).

2.10.24 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.

2.10.25 Type of display element — Moisture — 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).

2.10.26 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.

2.10.27 Type of display element — Air pressure — 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).

2.10.28 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.

2.10.29 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

2.11 Control element "RTC control element"

2.11.1 Name of the control element

Options:	<Name>

Naming of the RTC control element.

The length of the name is limited to 36 characters.

2.11.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Temperature (orange)" has been made available for functions of this type.

2.11.3 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.

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

Options:	1 - 5 - 255 seconds

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

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

2.11.5 Inputs of temperature reading

Options:	Internal measurement
	External measurement

The parameter is used to specify whether the temperature is read via an internal or external temperature sensor.

– *Internal measurement*: The following supplementary parameters are available:

Cyclic sending of the current actual temperature [min.]:

Options:	Setting option from 5 - 240

The parameter is used to set the time intervals at which current temperature used by the device is sent to the bus.

Difference of value for sending the actual temperature [x 0.1°C]:

Options:	Setting option from 1 - 100

The parameter is used to set the temperature difference from which the current temperature is to be sent. The temperature difference is calculated from the measured temperature and the actual temperature sent last.

Compensating value for internal temperature measurement [x 0.1°C]:

Options:	Setting option from -127 - +127

Each installation site exhibits different physical conditions, e.g. interior or exterior wall, lightweight or solid wall. To ensure that the device displays the correct temperature, measure the current temperature at the installation site with an aligned and/or calibrated thermometer. The parameter is used to specify the difference between thermometer and the actual temperature displayed on the device as "Adjustment value".

Notice
To prevent faulty measurements, carry out the adjustment measurement only after the device has adjusted itself to he environmental temperature.
It is recommended to repeat the adjustment measurement just prior to or after occupying the room.

– *External measurement*: No additional parameters available.

2.11.6 Display actual temperature

Options:	Deactivated
	Activated

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

2.11.7 Hide temperature unit

Options:	Deactivated
	Activated

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

2.11.8 Unit of temperature

Options:	°C
	°F

The parameter is available only when parameter "Hide temperature unit" has been deactivated.

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

2.11.9 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.

2.11.10 Fan coil control during heating mode

Options:	Deactivated
	Activated

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

2.11.11 Fan coil control during cooling mode

Options:	Deactivated
	Activated

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

2.11.12 Step size of manual 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.

2.11.13 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.

2.11.14 Number of fans

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

The parameter is used to specify the number of fans.

2.11.15 Fan speed level data format of master/slave

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

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

2.11.16 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.

2.11.17 Lowest manually adjustable fan speed level

Options:	Speed 0
	Speed 1

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

2.11.18 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.

2.11.19 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

2.12 "Page link" control element

2.12.1 Name of the control element

Options:	<Name>

Naming of the page link control element.

The length of the name is limited to 36 characters.

2.12.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Not defined (grey)" has been made available for functions of this type.

2.12.3 Size of the button

Options:	1 column
	2 columns

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

2.12.4 Linked with page

Options:	<Main operating page>
	<Operating page x>
	<Application page x>

The parameter is used to specify with which operating or application page the page link control element is linked.

– <*Main operating page*>: Start page or homepage.

– <*Operating page x*>: All operating pages (start pages and operating pages for rooms) which were created via the DCA commissioning tool can be selected.

– <*Application page x*>: The following application pages can be selected: system settings, door communication, fault and alarm messages or time programs.

2.12.5 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

2.13 Control element "Audio control"

2.13.1 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.

2.13.2 Function of the control element

Options:	Not defined (grey)
	Light (yellow)
	Blind (blue)
	Temperature (orange)
	Scene (magenta)
	Alarm (red)
	Feedback (green)

The parameter is used to specify the colour of the function line.

"Not defined (grey)" has been made available for functions of this type.

2.13.3 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.

2.13.4 Use of play button

Options:	Deactivated
	Activated

– *Deactivated*: No playback button is enabled. No additional parameters available.

– *Activated*: The playback button is enabled. The following supplementary parameter is available:

Object type play 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 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-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.

2.13.5 Use of pause button

Options:	Deactivated
	Activated

– *Deactivated*: No pause button is enabled. No additional parameters available.

– *Activated*: The pause button is enabled. The following supplementary parameter is available:

Object type pause 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 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 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.

2.13.6 Use of stop button

Options:	Deactivated
	Activated

– *Deactivated*: No stop button is enabled. No additional parameters available.

– *Activated*: The stop button is enabled. The following supplementary parameter is available:

Object type stop 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 a stop button are sent with 1 bit (0 or 1). The following supplementary parameter is available:

Value for stop:

Options:	0
	1

The parameter is used to send the command of the stop button with "0" or "1".

- *1-byte value [0 - 255]*: The value of a stop button is sent as 1-byte value without a sign. The following supplementary parameter is available:

  Value for stop:

Options:	Setting option from 0 - 255

The parameter is used to send the value of the stop button as absolute value.

2.13.7 Use of forward button

Options:	Deactivated
	Activated

– *Deactivated*: No forward button is enabled. No additional parameters available.

– *Activated*: The forward button is enabled. The following supplementary parameter is available:

Object type forward 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 a forward button 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 of the forward button with "0" or "1".

- *1-byte value [0 - 255]*: The value of a forward button is sent as 1-byte value without a sign. The following supplementary parameter is available:

Value for forward:

Options:	Setting option from 0 - 255

The parameter is used to send the value of the forward button as absolute value.

2.13.8 Use of return key

Options:	Deactivated
	Activated

– *Deactivated*: No backspace key is enabled. No additional parameters available.

– *Activated*: The backspace key is enabled. The following supplementary parameter is available:

Object type backspace key:

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 backspace key are sent with 1 bit (0 or 1). The following supplementary parameter is available:

Value for return:

Options:	0
	1

The parameter is used to send the command of the backspace key with "0" or "1".

- *1-byte value [0 - 255]*: The value of a backspace key is sent as 1-byte value without a sign. The following supplementary parameter is available:

  Value for return:

Options:	Setting option from 0 - 255

The parameter is used to send the value of the backspace key as absolute value.

2.13.9 Use of button for mute

Options:	Deactivated
	Activated

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

– *Activated*: The mute button is enabled. The following supplementary parameter is available:

Object type mute:

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

The parameter is used to specify the size of the communication object for sending telegrams.

– *1 bit*: Commands of a mute button are sent with 1 bit (0 or 1). The following supplementary parameters are available:

Value for mute:

Options:	0
	1

The parameter is used to send the command for "Mute" with "0" or "1".

Value for unmute:

Options:	0
	1

The parameter is used to send the command for "Unmute" with "0" or "1".

- *1-byte value [0 - 255]*: The value of a mute button is sent as 1-byte value without a sign. The following supplementary parameters are available:

Value for mute:

Options:	Setting option from 0 - 255

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

Value for unmute:

Options:	Setting option from 0 - 255

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

2.13.10 Use of volume button

Options:	Deactivated
	Activated

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

– *Activated*: The volume button is enabled. The following supplementary parameter is available:

Object type volume button:

Options:	2 x 1 Bit
	1 x 4 Bit
	1-byte value [0 - 100%]

The parameter is used to specify the size of the communication object for sending telegrams.

– *2 x 1 bit*: Commands of a volume button are sent with 2 x 1 bit (0 or 1). The following supplementary parameters are available:

Value for increase:

Options:	0
	1

The parameter is used to send the command for "Increase volume" with "0" or "1".

Value for decrease:

Options:	0
	1

The parameter is used to send the command for "Decrease volume" with "0" or "1".

– *1 x 4 bit*: Commands of a volume button are sent with 4 bit. No additional parameters available.

- *1-byte value [0 - 255]*: The value of a volume button is sent as 1-byte value without a sign. The following supplementary parameters are available:

Change of volume [%]:

Options:	Setting option from 1 - 50

The parameter is used to specify in which step widths the volume is raised or lowered.

Telegram is repeated every [sec.]:

Options:	Setting option from 0.25 - 1.25 seconds

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

2.13.11 Use of ON/OFF button

Options:	Deactivated
	Activated

– *Deactivated*: No ON/OFF button is enabled. No additional parameters available.

– *Activated*: The ON/OFF button is enabled. The following supplementary parameter is available:

Object type ON/OFF button:

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

The parameter is used to specify the size of the communication object for sending telegrams.

– *1 bit*: Commands of an ON/OFF button are sent with 1 bit (0 or 1). The following supplementary parameters are available:

Value for ON:

Options:	0
	1

The parameter is used to send the command for "ON" with "0" or "1".

Value for OFF:

Options:	0
	1

The parameter is used to send the command for "OFF" with "0" or "1".

- *1-byte value [0 - 255]*: The value of an ON/OFF button is sent as 1-byte value without a sign. The following supplementary parameters are available:

Value for ON:

Options:	Setting option from 0 - 255

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

Value for OFF:

Options:	Setting option from 0 - 255

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

2.13.12 Enable 1-bit communication object "Disable"

Options:	Deactivated
	Activated

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

2.14 Application "Door communication"

2.14.1 Use of door communication

Options:	No
	Yes

The parameter is used to specify whether an application page is displayed in the panel for the door communication.

– *No*: No application page is displayed. No additional parameters available.

– *Yes*: An application page is displayed. The following supplementary parameters are displayed:

2.14.2 Page PIN-protected

Options:	No
	Yes

The parameter is used to specify whether the application page for the door communication 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
	Level 4
	Level 5

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

Note
Details about the PIN code, or .

2.14.3 Ring tone volume preset [%]

Options:	Setting option from 10 - 100

Preset of ringtone volume in percent.

2.14.4 Speech volume preset [%]

Options:	Setting option from 10 - 100

Preset of speech volume in percent.

2.15 Application "Fault and alarm messages" - Global settings

2.15.1 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:

2.15.2 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

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

Notice
Details about the PIN code, .

2.15.3 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.

2.15.4 Automatic archiving at an acknowledgement

Options:	Deactivated
	Activated

The parameter is used to specify that after acknowledgement in the application page the message is archived immediately and is no longer displayed in the alarm list.

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

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

Options:	Deactivated
	Activated

  – *Deactivated*: No automatic archiving when the alarm is no longer active.
  – *Activated*: The message is archived and displayed as soon as the alarm is no longer active.

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

2.15.5 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.

2.15.6 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.

2.15.7 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.

2.15.8 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.

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

2.16.1 Name of message

Options:	<Name>

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

2.16.2 Type of message

Options:	Alarm
	Notice
	Error

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

2.16.3 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 .

– *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 .

  - *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).

2.17 Application "Scene actuator"

2.17.1 Name of scene actuator

Options:	<Text>

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

2.17.2 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.

2.17.3 Number of scenes

Options:	Setting options from 1 - 10

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

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

2.17.4 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.

2.17.5 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.

2.17.6 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".

2.17.7 Name of scene

Options:	<Text>

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

2.17.8 Scene number

Options:	Setting option from 1 - 64

The number of the scene is set via the parameter.

2.17.9 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.

2.17.10 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.

2.17.11 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".

2.17.12 Value for object x

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

2.18 Application "Presence simulation"

2.18.1 Use of presence simulation

Options:	Deactivated
	Activated

The parameter is used to specify whether presence simulation is displayed.

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

– *Activated*: An entry on the application page "Time programs" is displayed for activating and deactivating the function on the panel. The following parameters are displayed:

2.18.2 Page PIN-protected

Options:	Deactivated
	Activated

The parameter is used to specify whether the presence simulation application is protected by a PIN code.

– *Deactivated*: The application is not protected.

– *Activated*: The application can only be activated or deactivated by entering a PIN code (replay or record). The following supplementary parameter is available:

PIN code level:

Options:	Level 1
	Level 2
	Level 3

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

Notice
Details about the PIN code, .

2.18.3 Enable export

Options:	Deactivated
	Activated

The parameter is used to specify that the recorded telegrams can be exported under the fixed file name in CSV format.

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

– *Activated*: The following parameter appears:

File name [.CSV]:

Options:	<Text>

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

The length of the name is limited to 60 characters.

2.18.4 Delay time up to activation [min.]

Options:	Setting option from 1 - 60

The parameter is used to specify the minutes after which the recorded telegrams are played.

2.18.5 Object type 1-20

Options:	1 bit
	Value (1 byte)

The parameter is used to specify the object types that are to be recorded via the telegrams.

– *1 bit*: Switch, blind, etc.

– *Value (1 byte)*: Dimmer, scene number, etc.

2.19 Application "Time programs"

2.19.1 Page PIN-protected

Options:	No
	Yes

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

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

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

PIN code level:

Options:	Level 1
	Level 2
	Level 3

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

Notice
Details about the PIN code, .

2.19.2 Overwriting time programs during download

Options:	No
	Yes

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

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

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

2.20 Application "Logical functions"

2.20.1 Channel x — 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:

  Name of channel:

Options:	<Name>

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

  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.

  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".

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 parameters are displayed:

Name of channel:

Options:	<Name>

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

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:

Name of channel:

Options:	<Name>

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

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:

Name of channel:

Options:	<Name>

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

Direction of data flow:

Options:	Input -> Output
	Output -> Input
	Input <-> Output

The parameter is used to specify the direction data are sent via the channel. See the explanation above.

Sending an output telegram:

Options:	At every receipt
	At changed values

The parameter is used to specify when the output telegram is sent.

Control input:

Options:	Activation at OFF
	Activation at ON

See the explanation above.

Object type input/output:

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

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

– *Switch*: The following supplementary parameters are available:

Inverting an input:

Options:	Deactivated
	Activated

The parameter is used to specify whether the switching input is inverted.

Filter function:

Options:	Do not filter
	Filter 0
	Filter 1

See the explanation above.

– *Forced operation*: Management systems can access the device directly via KNX. However, it can also be specified that one can select manually (forced operation) via buttons. No additional parameters available.

– *1-byte value [0% - 100%]*: A value is sent as 1-byte value without a sign (percentage value). No additional parameters available.

– *1-byte value [0 - 255]*: A value is sent as 1-byte value without a sign, e.g. actuating value, angle or brightness value. No additional parameters available.

– *1-byte value [-128 - 127]*: A value is sent as 1-byte value with a sign, e.g. actuating value. No additional parameters available.

– *Scene number*: The parameter is used to link the channel with a scene number. No additional parameters available.

– *RTC operating mode*: After actuating the control element the device switches to the parameterized operating mode. No additional parameters available.

– *Temperature*: After the control element is actuated, the device sends the parameterized temperature value. No additional parameters available.

– *2-byte value [-32768 - +32767]*: A value is sent as 2-byte value with a sign, e.g. actuating value or time difference. No additional parameters available.
– *2-byte value [0 - 65535]*: A value is sent as 2-byte value without a sign, e.g. actuating value or time interval. No additional parameters available.
– *2-byte floating point*: A value is sent as 2-byte floating point value, e.g. a temperature value, a time duration, a 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:	Deactivated
	Activated

See the explanation above.

– *Temperature comparator*: This function can be used to compare temperature values. The following parameters are displayed:

Name of channel:

Options:	<Name>

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

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 at:

Options:	Change output
	Output 1 is larger than input 2
	Output 1 is smaller than input 2

A telegram is sent when the selected condition is met.

Cyclic sending of output:

Options:	Deactivated
	Activated

The parameter is used to specify whether the output telegram is sent in cycles.

– *Deactivated*: No additional parameters available.

– *Activated*: The following parameter appears:

Cycle time:

Options:	Setting options from 00:00:01 - 00:30:00

The parameter is used to specify the cycle time (hh:mm:ss).

– *Status converter*: This function is used to convert an input value into a 14-byte text or divide it into several 1-bit telegrams. The following parameters are displayed:

Name of channel:

Options:	<Name>

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

Type of converter:

Options:	1 bit -> text
	1 byte -> text
	1 byte -> 8x1 bit
	2 byte -> 16x1 bit

See the explanation above.

– 1 bit -> text: A 1-bit value is converted into text. The following parameter appears:

Number of inputs:

Options:	Setting options from 1 - 4

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

Using value xxxx:

Options:	Deactivated
	Activated

The parameter is used to specify whether the signal is used for the conversion into text.

– *Deactivated*: No additional parameters available.

– *Activated*: The following parameter appears:

Text for value xxxx:

Options:	<Text>

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

Notice
How many "Use value xxxxx" parameters and "Text for value xxxx" are displayed depends on the setting of the "Number of inputs" parameter.

– 1 byte -> text: A 1-byte value is converted into text. The following parameter appears:

Number of texts:

Options:	Setting options from 1 - 16

The parameter is used to set the number of values to be converted into text. The following parameters are displayed:

Text x for value [0 - 255]:

Options:	Setting options from 0 - 255

The parameter is used to set which value is to be converted into text x.

Text x:

Options:	<Text>

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

– 1 byte -> 8x1 bit: A 1-byte value is converted into eight 1-bit values. The following parameter appears:

Sending output values:

Options:	At every receipt
	At changed values

The parameter is used to specify when the 1-byte value is converted and sent.

– 2 byte -> 16x1 bit: A 1-byte value is converted into sixteen 1-bit values. The following parameter appears:

Sending output values:

Options:	At every receipt
	At changed values

The parameter is used to specify when the 1-byte value is converted and sent.

– *Time function*: The 1-bit communication objects "Input" and "Output" are available for the time function.

When an ON telegram is received via 1-bit communication object "Input", the staircase light period is triggered and an ON telegram is sent on the 1-bit communication object "Output". After the set period has expired, an OFF telegram is sent via the output object.

If an OFF telegram is received during the staircase light period, the staircase light period is reset and an OFF telegram is sent on the output.

If an ON telegram is received again during the staircase light period, the delay time can be restarted again (retrigger). If this behaviour is desired, the "Retrigger" parameter is to be set on "Yes". A switch-on delay time can be additionally activated. This means that the start of the staircase light period and the sending of an ON telegram on the output object can happen only after the switch-on delay time has expired.

The following parameters are displayed:

Name of channel:

Options:	<Name>

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

Type of time function:

Options:	Staircase lighting
	ON/OFF delay

The parameter is used to select between a staircase light function and an On/Off delay.

– *Staircase lighting*: The following parameters are displayed:

Staircase light period [hh:mm:ss]:

Options:	Setting options from 00:00:01 - 12:00:00

The time of the switch-off delay (hh:mm:ss) is set via the parameter.

Use of switch-on delay time:

Options:	Deactivated
	Activated

The parameter is used to specify whether the staircase light is switched with a switch-on delay.

– *Deactivated*: No additional parameters available.

– *Activated*: The following parameter appears:

Switch-on delay time [hh:mm:ss]:

Options:	Setting options from 00:00:01 - 12:00:00

The time of the switch-off delay (hh:mm:ss) is set via the parameter.

Retriggerable:

Options:	Deactivated
	Activated

The parameter is used to specify whether the delay times are reset or restarted with renewed switching of the staircase light.

– *ON/OFF delay*: The following parameters are displayed:

Use of switch-on delay time:

Options:	Deactivated
	Activated

The parameter is used to specify whether the time function is switched with a switch-on delay.

– *Deactivated*: No additional parameters available.

– *Activated*: The following parameter appears:

Switch-on delay time [hh:mm:ss]:

Options:	Setting options from 00:00:01 - 12:00:00

The time of the switch-on delay (hh:mm:ss) is set via the parameter.

Use of switch-off delay time:

Options:	Deactivated
	Activated

The parameter is used to specify whether the time function is switched with a switch-off delay.

– *Deactivated*: No additional parameters available.

– *Activated*: The following parameter appears:

Switch-off delay time [hh:mm:ss]:

Options:	Setting options from 00:00:01 - 12:00:00

The time of the switch-off delay (hh:mm:ss) is set via the parameter.

2.20.2 Temperature limiter - Hysteresis

Options:	Setting option between 0.5 - 5

The hysteresis specifies the fluctuation range of the controller around the setpoint. The lower switching point is located at "Setpoint minus hysteresis" and the upper point is at "Setpoint plus hysteresis".

Notice
This parameter is only available when one or several of the following parameters are activated.
"Temperature limit heating"
"Temperature limit additional heating stage"
"Temperature limit cooling"
"Temperature limit additional cooling stage"

2.21 Application "Internal RTC"

2.21.1 General — Device function

Options:	Single device
	Master device
	Slave device

- *Single device*: The device is used individually in a room for temperature control with fixed temperature values.
- *Master device*: At least two room temperature controllers are located in one room. One device must be set up as a master device, while the others must be programmed as slave devices/temperature sensors. The master device must be linked to the slave devices using the appropriately labelled communication objects. The master device regulates the temperature.
- *Slave device:* The device only sends the measured temperature to the KNX bus.

2.21.2 General - Control function

Options:	Heating
	Heating with additional stage
	Cooling
	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 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 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.

Notice
This parameter is only available if the "Device function" parameter is set on "Single device" or "Master device".

2.21.3 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.

Notice
This parameter is only available if the "Device function" parameter is set on "Single device" or "Master device".

2.21.4 General - Send cyclic "In operation" (min)

Options:	Setting option between 5 - 3000 minutes

– 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 the air-conditioning of the room can be maintained via forced control. However, for this the system and/or actuator must have a "Forced operation" function.

2.21.5 General - Additional functions/objects

Options:	Deactivated
	Activated

– This parameter enables additional functions and communication objects.

2.21.6 General — Delay time for read telegrams after reset [s]

Options:	Setting option from 1 - 5 - 255 seconds

This parameter is only available if the "Additional functions" parameter is set on "Yes".

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.

2.21.7 General - "Current HVAC operating mode" object active

Options:	Deactivated
	Activated

– When activated, this parameter enables the setpoint settings "Comfort heating setpoint" and "Economy heating setpoint". Also the communication object "Current HVAC operating mode" is enabled.

2.21.8 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 sent as 1-bit commands.

– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).

– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint and enables a precise regulation of the room temperature to the setpoint. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. In addition, the control value can be sent cyclically.

– *PI PWM, On/Off*: This also is a PI controller. The output is as a 1-bit command. For this, the calculated control value is converted into a pulse-interval signal.

– *Fan coil*: The fan coil controller functions similar to the PI continuous controller. In addition, it allows the separate control of the fan in the fan coil unit (e.g. fan speed levels 1 - 3).

Note
Only available when the "Device function" parameter is set either on "Single device" or "Master device". In case of controller functions with an additional stage, this parameter is displayed twice.

Note
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%".

2.21.9 Heating control - 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 unit:
	Fan coil unit 4°C 90 min
	▪ Free configuration

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 unit".

Multiple heating types (panel heating, convector heating or fan coil) with preset parameters are available to the user.

Notice
If the required heating type is not available, individual parameters can be specified via the free configuration.

2.21.10 Heating control — P-component (x 0.1°C)

Options:	Setting option between 10 - 100 (default 0.1)

The P-component stands for the proportional range in a control. It fluctuates around the setpoint and can be used to influence control speed of a PI controller. The smaller the value set, the faster the control reacts. However, the value should not be set too small because otherwise there may be a risk of an overshoot. A P-component from 0.1 to 25.5 K can be set.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil unit". In addition, the "Heating type" parameter must be set on "Free configuration".

2.21.11 Heating control - I-component (min.)

Options:	Setting option between 0 - 255 (default 5)

The I-component refers to the readjust time of a control. The integral component has the effect of moving the room temperature slowly toward, and ultimately reaching, the setpoint. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the readjust time.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%,"PI PWM, On/Off“ or "Fan coil". In addition, the "Heating type" parameter must be set on "Free configuration".

2.21.12 Heating control — Extended settings

Options:	Deactivated
	Activated

– This parameter enables additional functions, e.g. "Status object heating".

2.21.13 Basic stage heating

Note
Only available when the "Extended settings" parameter under "Heating control" is set on "Yes".

2.21.14 Basic stage heating — Status object heating

Options:	Deactivated
	Activated

The parameter enables the "Status heating" communication object.

2.21.15 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"

2.21.16 Basic stage heating — Hysteresis (x 0.1°C)

Options:	Setting option between 3 - 255 (default 5)

The hysteresis of the two-point controller specifies the fluctuation range of the controller around the setpoint. The lower switching point is located at "Setpoint minus hysteresis" and the upper point is at "Setpoint plus hysteresis".

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On" or "2-point 1 Byte, 0/100%".

2.21.17 Basic stage heating - Control value difference for sending of heating control value

Options:	2 %
	5 %
	10 %
	Send cyclic only

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".

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.

2.21.18 Basic stage heating — Cyclic sending of the control value (min)

Options:	Setting option between 1 - 60 minutes (default 15 minutes)

The current control value used by the device can be cyclically transmitted to the bus.

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 bit, Off/On", 2-point 1 byte, 0/100%", "PI continuous, 0-100%" or "Fan coil".

2.21.19 Basic stage heating — PWM cycle heating (min)

Options:	Setting option between 1 - 60 minutes (default 15 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.

Notice
This parameter is only available when the "Control value type" parameter is set on "PI PWM, Off/On“.

2.21.20 Basic stage heating - Maximum control value (0 - 255)

Options:	Setting option between 0 - 255

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 unit".

The maximum control value from the PI controller specifies the maximum value that the controller outputs. If a maximum value below 255 is selected, then this value is not exceeded even if the controller calculates a higher control value.

2.21.21 Basic stage heating - Minimum control value for basic load (0 to 255)

Options:	Setting option between 0 - 255

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 unit".

The minimum control value from the PI controller specifies the minimum value that the controller outputs. If a minimum value greater than zero is selected, then this value is not dropped below even if the controller calculates a lower control value. 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
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.

2.21.22 Control of additional heating stage - Control value type

Options:	2-point 1 bit, Off/On
	2-point 1 byte, (0/100%)
	PI continuous, 0-100%
	PI PWM, On/Off
	Fan coil unit

The actuation of the control valve is determined by the selection of the controller type.

– *2-Point 1 Bit, Off/On*: The 2-point control is the simplest type of control. The controller switches on when the room temperature drops below a certain level (setpoint temperature value minus hysteresis) and switches off when a particular value (setpoint temperature value plus hysteresis) is exceeded. The switch-on and switch-off commands are sent as 1-bit commands.

– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).

– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint and enables a precise regulation of the room temperature to the setpoint. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. In addition, the control value can be sent cyclically.
– *PI PWM, On/Off*: This also is a PI controller. The output is as a 1-bit command. For this, the calculated control value is converted into a pulse-interval signal.
– *Fan coil unit*: The fan coil controller 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).

2.21.23 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 unit:
	▪ Fan coil unit 4°C 90 min
	▪ Free configuration

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 unit".

Multiple heating types (panel heating, convector heating or fan coil unit) with preset parameters are available to the user.

Notice
If the required heating type is not available, individual parameters can be specified via the free configuration.

2.21.24 Control of additional heating stage - P-component (x 0.1°C)

Options:	Setting option between 1.5 - 25

The P-component stands for the proportional range in a control. It fluctuates around the setpoint and can be used to influence control speed of a PI controller. The smaller the value set, the faster the control reacts. However, the value should not be set too small because otherwise there may be a risk of an overshoot. A P-component from 0.1 to 25.5 K can be set.

Notice
This parameter is only available when "Control value type" parameter for the additional stage is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil unit". The "Additional heating type" parameter must be set on "Free configuration".

2.21.25 Control of additional heating stage - I-component (min)

Options:	Setting option between 0 - 255

The I-component refers to the readjust time of a control. The integral component has the effect of moving the room temperature slowly toward, and ultimately reaching, the setpoint. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the readjust time.

Notice
This parameter is only available when "Control value type" parameter for the additional stage is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". The "Additional heating type" parameter must be set on "Free configuration".

2.21.26 Control of additional heating stage - Temperature difference to basic stage (x 0.1°C)

Options:	Setting option between 0 - 255 (default 2)

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 starting at which the additional stage will operate.

2.21.27 Control of additional heating stage - Extended settings

Options:	No
	Yes

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

2.21.28 Cooling control

Note
Only available when the "Device function" parameter is set on either "Single device" or "Master device" and the control function parameter is set on either "Cooling", "Cooling with additional stage", "Heating and cooling" or "Heating and cooling with additional stages".

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%".

2.21.29 Cooling control - Control value type

Options:	2-point 1 bit, Off/On
	2-point 1 byte, (0/100%)
	PI continuous, 0-100%
	PI PWM, On/Off
	Fan coil unit

The actuation of the control valve is determined by the selection of the controller type.

– *2-Point 1 Bit, Off/On*: The 2-point control is the simplest type of control. The controller switches on when the room temperature drops below a certain level (setpoint temperature value minus hysteresis) and switches off when a particular value (setpoint temperature value plus hysteresis) is exceeded. The switch-on and switch-off commands are sent as 1-bit commands.

– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).

– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint and enables a precise regulation of the room temperature to the setpoint. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. In addition, the control value can be sent cyclically.

– *PI PWM, On/Off*: This also is a PI controller. The output is as a 1-bit command. For this, the calculated control value is converted into a pulse-interval signal.

– *Fan coil unit*: The fan coil controller 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).

2.21.30 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 unit:
	▪ Fan coil unit 4°C 90 min
	▪ Free configuration

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 unit".

Two cooling types (area or fan coil unit) with preset parameters are available to the user.

If the required cooling type is not available, individual parameters can be specified in free configuration.

2.21.31 Cooling control - P-component (x 0.1°C)

Options:	Setting option between 10 - 100 (default 10)

The P-component stands for the proportional range in a control. It fluctuates around the setpoint and can be used to influence control speed of a PI controller. The smaller the value set, the faster the control reacts. However, the value should not be set too small because otherwise there may be a risk of an overshoot. A P-component from 0.1 to 25.5 K can be set.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Cooling type" parameter must be set on "Free configuration".

2.21.32 Cooling control - I-component (min.)

Options:	Setting option between 0 - 255 (default 5)

The I-component refers to the readjust time of a control. The integral component has the effect of moving the room temperature slowly toward, and ultimately reaching, the setpoint. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the readjust time.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil". In addition, the "Cooling type" parameter must be set on "Free configuration".

2.21.33 Cooling control - Extended settings

Options:	Deactivated
	Activated

This parameter enables additional functions, e.g. "Status object cooling".

2.21.34 Basic stage cooling

Note
Only available when the "Extended settings" parameter under "Cooling control" is set on "Yes".

2.21.35 Basic stage cooling — Status object cooling

Options:	Deactivated
	Activated

This parameter enables the "Status cooling" communication object.

2.21.36 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.

– *Normal*: Value 0 means "Valve closed"
– *Inverse*: Value 0 means "Valve open"

2.21.37 Basic stage cooling — Hysteresis (x 0.1°C)

Options:	Setting option between 3 - 255 (default 3)

The hysteresis of the two-point controller specifies the fluctuation range of the controller around the setpoint. The lower switching point is located at "Setpoint minus hysteresis" and the upper point is at "Setpoint plus hysteresis".

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 Bit, Off/On" or "2-point 1 Byte, 0/100%".

2.21.38 Basic stage cooling — Cyclic sending of the control value (min)

Options:	Setting option between 1 - 60 minutes (default 15 minutes)

The current control value used by the device can be cyclically transmitted to the bus.

Notice
This parameter is only available when the "Control value type" parameter is set either on "2-point 1 bit, Off/On", 2-point 1 byte, 0/100%", "PI continuous, 0-100%" or "Fan coil unit".

2.21.39 Basic stage cooling — PWM cycle cooling (min)

Options:	Setting option between 1 - 60 minutes (default 5 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.

Notice
This parameter is only available when the "Control value type" parameter is set on "PI PWM, Off/On“.

2.21.40 Basic stage cooling — Maximum control value (0 - 255)

Options:	Setting option between 0 - 255

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 unit".

The maximum control value from the PI controller specifies the maximum value that the controller outputs. If a maximum value below 255 is selected, then this value is not exceeded even if the controller calculates a higher control value.

2.21.41 Basic stage cooling — Minimum control value for basic load (0 to 255)

Options:	Setting option between 0 - 255

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 unit".

The minimum control value from the PI controller specifies the minimum value that the controller outputs. If a minimum value greater than zero is selected, then this value is not dropped below even if the controller calculates a lower control value. 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
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.

2.21.42 Control of additional heating stage - Control value type

Options:	2-point 1 bit, Off/On
	2-point 1 byte, (0/100%)
	PI continuous, 0-100%
	PI PWM, On/Off
	Fan coil unit

The actuation of the control valve is determined by the selection of the controller type.

– *2-Point 1 Bit, Off/On*: The 2-point control is the simplest type of control. The controller switches on when the room temperature drops below a certain level (setpoint temperature value minus hysteresis) and switches off when a particular value (setpoint temperature value plus hysteresis) is exceeded. The switch-on and switch-off commands are sent as 1-bit commands.
– *2-Point 1 Byte, 0/100%*: This is another two-point control as described above. In this case, however, the switch-on and switch-off commands are transmitted as 1-byte values (0% / 100%).
– *PI continuous, 0-100%*: The PI controller adjusts its output value between 0% and 100% to match the difference between the actual value and the setpoint and enables a precise regulation of the room temperature to the setpoint. It sends the control value to the bus as a 1-byte value (0% - 100%). To reduce the bus load, the control value is only transmitted if it has changed by a predefined percentage in relation to the previous sent value. In addition, the control value can be sent cyclically.
– *PI PWM, On/Off*: This also is a PI controller. The output is as a 1-bit command. For this, the calculated control value is converted into a pulse-interval signal.
– *Fan coil unit*: The fan coil controller 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).

2.21.43 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 unit:
	▪ Fan coil unit 4°C 90 min
	▪ Free configuration

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 unit".

Two cooling types (area or fan coil unit) with preset parameters are available to the user.

If the required cooling type is not available, individual parameters can be specified in free configuration.

2.21.44 Control of additional cooling stage — P-component (x 0.1°C)

Options:	Setting option between 1 - 25 (default 2)

The P-component stands for the proportional range in a control. It fluctuates around the setpoint and can be used to influence control speed of a PI controller. The smaller the value set, the faster the control reacts. However, the value should not be set too small because otherwise there may be a risk of an overshoot. A P-component from 0.1 to 25.5 K can be set.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil unit". In addition, the "Cooling type" parameter must be set on "Free configuration".

2.21.45 Control of additional cooling stage — I-component (min)

Options:	Setting option between 0 - 600 (default 100)

The I-component refers to the readjust time of a control. The integral component has the effect of moving the room temperature slowly toward, and ultimately reaching, the setpoint. Depending on the type of system used, the reset time has to have different values. In general, the more inactive the overall system, the greater the readjust time.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil unit". In addition, the "Cooling type" parameter must be set on "Free configuration".

2.21.46 Control of additional cooling stage - Temperature difference to basic stage (x 0.1°C)

Options:	Setting option between 0 - 25 (default 2)

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 starting at which the additional stage will operate.

2.21.47 Control of additional cooling stage — Extended settings

Options:	No
	Yes

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

2.21.48 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%".

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".

2.21.49 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.

2.21.50 Combined heating and cooling modes — Operating mode after reset

Options:	Cooling
	Heating

After a bus voltage failure, a system reset, or the attachment of the device to the bus coupler, the device starts in the parameterised "Operating mode after reset". The operating mode can be changed when the system is running using the options set under "Switchover heating/cooling".

2.21.51 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. If the single actuator only has one object, which receives both the heating and cooling control value, then option "Via 1 object" is to be selected.

2.21.52 Combined heating and cooling modes — Additional heating/cooling stage control value output

Options:	Via 1 object
	Via 2 objects

This parameter is only available when the "Control function" parameter is set on "Heating and cooling with additional stages".

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. If the single actuator only has one object, which receives both the heating and cooling control value, then option "Via 1 object" is to be selected.

2.21.53 Settings of basic load — Minimum control value for basic load > 0

Options:	Always active
	Activate via object

The function is, for example, used if the floor in the required area must have a basic warmth, e.g. floor heating. 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 (0) using the "Basic load" object. 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 by 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".

2.21.54 Basic load settings — Basic load active when controller is off

Options:	Yes
	No

– This parameter switches the basic load active when the controller is off.

Notice
This parameter is only available when "Control value type" parameter is set either on "PI continuous, 0 – 100%", "PI PWM, On/Off“ or "Fan coil".

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

2.21.55 Basic load settings - Setpoints for standby and Eco are absolute values

Options:	Deactivated
	Activated

– When activated, this parameter enables the parameter "Standby heating setpoint" and "Economy heating setpoint".

2.21.56 Settings of basic load - Comfort heating setpoint

Options:	Setting option between 10 - 40 (default 25)

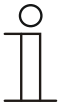
Specifies the comfort temperature for heating when people are present.

Notice
This parameter is only available when the "Control function" parameter is set on "Heating, "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stage" and parameter "Setpoint heating comfort = setpoint cooling comfort" is set on "No".

2.21.57 Settings of basic load - Standby heating setpoint

Options:	Setting option between 5 - 45 (default 27)

Specifies the comfort temperature for heating at standby.



Notice
This parameter is only available when parameter "Setpoints for standby and Eco are absolute values" has been activated.

2.21.58 Settings of basic load - Economy heating setpoint

Options:	Setting option between 5 - 45 (default 29)

Specifies the comfort temperature at heating economy.

Notice
This parameter is only available when parameter "Setpoints for standby and Eco are absolute values" has been activated.

2.21.59 Settings of basic load - Building protection heating setpoint

Options:	Setting option between 5 - 45 (default 35)

Specifies the comfort temperature at building protection.

2.21.60 Settings of basic load - Reduction of Standby heating by

Options:	Setting option between 0 - 15

Specifying the temperature at standby in heating mode. On devices with a display, this mode is indicated by the standby icon.

Notice
This parameter is only available when parameter "Setpoints for standby and Eco are absolute values" has been deactivated.

2.21.61 Settings of basic load - Reduction of Economy heating by

Options:	Setting option between 5 - 15

Specifying the temperature at Economy in heating mode. On devices with a display, this mode is indicated by the Economy icon.

Notice
This parameter is only available when parameter "Setpoints for standby and Eco are absolute values" has been deactivated.

2.21.62 Settings of basic load — Setpoint setting via communication object (DPT 9.001)

Options:	No
	For comfort, standby, Eco
	For comfort, standby, Eco, building protection

The parameter is used to specify that data point 9.001 is used to send the setpoint settings.

– *No*: The communication object specifies no setpoint settings.
– *For Comfort, Standby*, Eco: The communication object specifies the setpoint settings for operating modes Comfort, Standby and Eco.
– *For Comfort, Standby, Eco, Building protection:* The communication object specifies the setpoint settings for operating modes Comfort, Standby and Eco as well as Building protection.

2.21.63 Settings of basic load - Display

Options:	Absolute setpoint
	Relative set value

– *Absolute setpoint:* This parameter specifies the basic load to the absolute setpoint when the controller is switched off.
– *Relative setpoint:* This parameter specifies the basic load to the relative setpoint when the controller is switched 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 unit".

2.21.64 Basic load settings — Hide temperature unit

Options:	Deactivated
	Activated

– The temperature unit is hidden when the parameter is activated.

2.21.65 Settings of basic load - Sending current setpoint

Options:	Only for change
	Cyclic and during change

– *Only at change:* When this setting is configured, the current setpoint is only sent at a change.
– *Cyclic and at change:* When this setting is configured, the current setpoint is only sent cyclic and at a change.

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 unit".

2.21.66 Setpoint settings — Setpoint for heating comfort = setpoint for cooling comfort

Options:	Deactivated
	Activated

This parameter is only available when the "Control function" parameter is set on "Heating and cooling" or "Heating and cooling with additional stages".

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 is parameterizable.
– *Deactivated*: The function has two separate setpoints for heating and cooling in the comfort mode. The device will display the currently active setpoint. Switching between heating and cooling occurs via the "Switchover heating/cooling" parameter setting.

2.21.67 Setpoint settings - Setpoint for standby and Eco are absolute values

Options:	Deactivated
	Activated

The parameter is used to specify whether the setpoints for standby and Eco are absolute or relative values.

2.21.68 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 mode. If the room temperature falls below the setpoint temperature value minus hysteresis, the system switches to heating mode.

Notice
This parameter is only available when the "Setpoint heating comfort = Setpoint cooling comfort" parameter is set on "Yes".

2.21.69 Setpoint settings — Setpoint for heating and cooling comfort

Options:	10 - 21 - 40

This parameter is only available when the "Control function" parameter is set on "Heating and cooling" or "Heating and cooling with additional stages" and the "Setpoint for heating comfort = Setpoint for cooling comfort" parameter is "activated".

Specifies the comfort temperature for heating and cooling when people are present.

2.21.70 Setpoint settings — Setpoint for heating standby

Options:	5 - 19 - 45

This parameter is only available when the "Control function" parameter is set on "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stage" and parameter "Setpoint for standby and Eco are absolute values" is set on "activated".

Specifies the comfort temperature for heating during standby.

2.21.71 Setpoint settings — Setpoint for heating economy

Options:	5 - 17 - 45

This parameter is only available when the "Control function" parameter is set on "Heating", "Heating with additional stage", "Heating and cooling" or "Heating and cooling with additional stage" and parameter "Setpoint for standby and Eco are absolute values" is set on "activated".

Specifies the comfort temperature for heating economy.

2.21.72 Setpoint settings — Heating setpoint for building protection

Options:	5 - 7 - 15

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".

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.

2.21.73 Setpoint settings — Setpoint for cooling standby

Options:	Setting option between 10 - 27 - 40

This parameter is only available when the "Control function" parameter is set on "Cooling" or "Cooling with additional stage" and parameter "Setpoint heating comfort = setpoint cooling comfort" is set on "deactivated".

Specifies the comfort temperature for cooling during standby.

2.21.74 Setpoint settings — Setpoint for cooling economy

Options:	10 - 29 - 40

This parameter is only available when the "Control function" parameter is set on "Cooling" or "Cooling with additional stage" and parameter "Setpoint heating comfort = setpoint cooling comfort" is set on "deactivated".

Specifies the comfort temperature for cooling economy.

2.21.75 Setpoint settings — Cooling setpoint for building protection

Options:	27 - 35 - 45

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".

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.

2.21.76 Setpoint settings — Reduction for ECO heating (°C)

Options:	Setting option between 0 - 15 (default 3)

Specifies the temperature in heating mode when nobody is present. On devices with a display, this mode is indicated by the Eco icon.

2.21.77 Setpoint settings — Setpoint temperature for frost protection (°C)

Options:	Setting option between 5 - 15 (default 3)

Function for protecting the building against the cold. On devices with a display, this mode is indicated by the frost protection icon. Manual operation is blocked.

Notice
This parameter is only available when the "Control function" parameter is set on "Heating," "Heating with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

2.21.78 Setpoint settings — Setpoint temperature for cooling comfort (°C)

Options:	Setting option between 10 - 40

Specifies the comfort temperature for cooling when people are present.

Notice
This parameter is only available when the "Control function" parameter is set on "Cooling" or "Cooling with additional stage".

2.21.79 Setpoint settings — Setpoint setting via communication object (DPT 9.001)

Options:	No
	For comfort, standby, Eco
	For comfort, standby, Eco, building protection

The parameter is used to specify that data point 9.001 is used to send the setpoint settings.

– *No*: The communication object specifies no setpoint settings.

– *For Comfort, Standby*, Eco: The communication object specifies the setpoint settings for operating modes Comfort, Standby and Eco.

– *For Comfort, Standby, Eco, Building protection:* The communication object specifies the setpoint settings for operating modes Comfort, Standby and Eco as well as Building protection.

2.21.80 Setpoint settings — Display

Options:	Absolute setpoint
	Relative set value

The display can indicate either the absolute or relative setpoint.

– *Current setpoint*: On devices with a display, the setpoint is shown as an absolute temperature, e.g. 21.0°C.

– *Relative setpoint*: On devices with display, the setpoint is indicated as a relative value, e.g. -5°C - + 5°C.

2.21.81 Setpoint settings - Hide temperature unit

Options:	Deactivated
	Activated

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

2.21.82 Setpoint settings — Send current setpoint

Options:	Cyclic and during change
	Only for change

The current setpoint can be sent to the bus either cyclically and after a change, or only after a change.

2.21.83 Setpoint settings — Cyclic sending of the current setpoint 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 is automatically transmitted.

Notice
This parameter is only available when the "Send current setpoint" is set on "Only during change".

2.21.84 Setpoint adjustment — Maximum manual increase during heating mode (0 - 9°C)

Options:	0 - 3 - 9 (default 3)

This parameter is only available when parameter "Controller function" is set on "Heating" and parameter "Control value type" on "2-point 1 bit, Off/On" or "2-point 1 byte, 0/100%".

This preset can be used to limit the manual increase during heating.

2.21.85 Setpoint adjustment — Maximum manual reduction during heating mode (0 - 9°C)

Options:	0 - 3 - 9

This parameter is only available when parameter "Controller function" is set on "Heating" and parameter "Control value type" on "2-point 1 bit, Off/On" or "2-point 1 byte, 0/100%".

This preset can be used to limit the manual decrease during heating mode.

2.21.86 Setpoint adjustment — Maximum manual increase during cooling mode (0 - 9°C)

Options:	0 - 3 - 9

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".

This preset can be used to limit the manual increase during cooling mode.

2.21.87 Setpoint adjustment — Maximum manual reduction during cooling mode (0 - 9°C)

Options:	0 - 3 - 9

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".

This preset can be used to limit the manual decrease during cooling mode.

2.21.88 Setpoint adjustment - Step size of manual setpoint adjustment

Options:	0.1°C
	0.2°C
	0.5 °C
	1.0°C

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

2.21.89 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.

2.21.90 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.

2.21.91 Setpoint adjustment — Resetting the manual adjustment via object

Options:	No
	Yes

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.

2.21.92 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.

2.21.93 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.

2.21.94 Temperature reading — Inputs of weighted temperature reading

Options:	Internal and external measurement
	2x external measurement
	Internal and 2x external measurement

This parameter is only available when the "Inputs of temperature reading" parameter is set on "Weighted 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.

2.21.95 Temperature reading — Weighting of internal measurement (0 to 100%)

Options:	Setting option between 0 - 100

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".

Specifying the weighting of the internal measurement from 0 to 100%.

2.21.96 Temperature reading — Weighting of external measurement (0 to 100%)

Options:	Setting option between 0 - 100

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".

Specifying the weighting of the external measurement from 0 to 100%.

2.21.97 Temperature reading — Weighting of external measurement 2 (0 to 100%)

Options:	0 - 100

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".

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%.

2.21.98 Temperature reading — Monitoring of temperature reading

Options:	Deactivated
	Activated

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

2.21.99 Temperature reading — Monitoring time for temperature reading (0 = no monitoring) (min)

Options:	Setting option between 00:00:00 -18:12:15

If no temperature is read within the parameterised time period, the device switches to error mode. It transmits a telegram to the bus via the "Actual temperature error" object and stops the operating mode and control value at error.

2.21.100 Temperature reading — Cyclic sending of the actual temperature (min)

Options:	Setting option between 5 - 15 - 240

This parameter is only available when the "Inputs of temperature reading" parameter is set on "Internal measurement" or "Weighted measurement".

The current actual temperature used by the device can be cyclically transmitted to the bus.

2.21.101 Temperature reading — Difference of value for sending the actual temperature (x 0.1°C)

Options:	Setting option between 0.1 - 10 (default 0.5)

If the change in temperature exceeds the parameterised difference between the measured actual temperature and the previous actual temperature that was sent, the changed value will be transmitted.

Notice
This parameter is only available when the "Inputs of temperature reading" parameter is set on "Internal measurement" or "Weighted measurement".

2.21.102 Temperature reading — Adjustment value for internal temperature measurement (x 0.1°C)

Options:	Setting option between -25 - 25 (default 0)

Every installation location has different physical conditions (interior or exterior wall, lightweight or solid wall, etc.). In order to use the actual temperature at the installation location as a measured value for the device, a temperature measurement must be performed by an external equalised and / or calibrated thermometer at the installation location. The difference between the actual temperature displayed on the device and the actual temperature determined by the external measurement device must be entered in the parameter field as an "Adjustment value".

Notice

- The calibration measurement should not be carried out immediately after the device has been installed. The device should first adjust to the ambient temperature before calibration is carried out. The calibration measurement should be repeated shortly before or after the room is occupied.
- This parameter is only available when the "Inputs of temperature reading" parameter is set on "Internal measurement" or "Weighted measurement".

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

Options:	No
	Yes, with measured temperature value
	Yes, with differential temperature value

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".

– *No*: The adjustment value for the internal temperature measurement is not called up.

– *Yes, with measured temperature value*: The adjustment value for the internal temperature measurement is determined on the basis of the measured temperature value.

– *Yes, with temperature difference value*: The adjustment value for the internal temperature measurement is determined on the basis of the measured temperature difference value.

Notice

- The calibration measurement should not be carried out immediately after the device has been installed. The device should first adjust to the ambient temperature before calibration is carried out. The calibration measurement should be repeated shortly before or after the room is occupied.
- This parameter is only available when the "Inputs of temperature reading" parameter is set on "Internal measurement" or "Weighted measurement".

2.21.104 Temperature reading — Operating mode at fault

Options:	Cooling
	Heating

This parameter is only available when the "Control function" parameter is set on "Heating and cooling" or "heating and cooling with additional stages".

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.

2.21.105 Temperature reading — Control value for fault (0 - 255)

Options:	Setting option between 0 - 25 - 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.

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".

2.21.106 Alarm functions - Condensate water alarm

Options:	Deactivated
	Activated

If a fan coil device is used, condensation may form during operation as a result of excessive cooling and/or humidity. The associated condensate is typically collected in a container. To protect the container against overflowing, and thus prevent potential damage to devices and/or the building, the container alerts the "Condensation alarm" object (receiving only) that the maximum fill level has been exceeded. This causes the controller to switch to a protective mode. This is indicated by the corresponding icon on devices that have a display. Local operation is blocked. Operation is only possible again after the alarm has been deactivated.

Notice
This parameter is only available when the "Control function" parameter is set either on "Cooling," "Cooling with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

2.21.107 Alarm functions — Dew point alarm

Options:	Deactivated
	Activated

When refrigerating machines are used, dew may appear on the refrigerant supply lines during operation as a result of excessive cooling and/or humidity. The dew indicator signals the dew formation via the "Dew point alarm" object (receiving only). This causes the controller to switch to a protective mode. This is indicated by the corresponding icon on devices that have a display. Local operation is blocked. Operation is only possible again after the alarm has been deactivated.

Notice
This parameter is only available when the "Control function" parameter is set either on "Cooling," "Cooling with additional stage," "Heating and cooling" or "Heating and cooling with additional stages".

2.21.108 Alarm functions - Frost alarm temperature for HVAC and RHCC status (°C)

Options:	Setting option between 0 - 20 (default 5)

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.

2.21.109 Alarm functions - Heat alarm temperature for RHCC status (°C)

Options:	Setting option between 20 - 70 (default 40)

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.

2.21.110 Temperature limiter - Temperature limit of heating

Options:	Deactivated
	Activated

The parameter is used to specify whether the following parameters are available for the "Temperature limit of heating".

– Setpoint temperature
– Hysteresis
– Integral component of PI controller

2.21.111 Temperature limiter - Temperature limit of cooling

Options:	Deactivated
	Activated

The parameter is used to specify whether the following parameters are available for the "Temperature limit of cooling".

– Setpoint temperature
– Hysteresis
– Integral component of PI controller

2.21.112 Temperature limiter - Temperature limit of additional heating stage

Options:	Deactivated
	Activated

The parameter is used to specify whether the following parameters are available for the "Temperature limit of additional heating stage".

– Setpoint temperature
– Hysteresis
– Integral component of PI controller

2.21.113 Temperature limiter - Temperature limit additional cooling stage

Options:	Deactivated
	Activated

The parameter is used to specify whether the following parameters are available for the "Temperature limit of additional cooling stage".

– Setpoint temperature
– Hysteresis
– Integral component of PI controller

2.21.114 Temperature limiter - Hysteresis

Options:	Setting option between 0.5 - 5

The hysteresis specifies the fluctuation range of the controller around the setpoint. The lower switching point is located at "Setpoint minus hysteresis" and the upper point is at "Setpoint plus hysteresis".

Notice
This parameter is only available when one or several of the following parameters are activated.
"Temperature limit heating"
"Temperature limit additional heating stage"
"Temperature limit cooling"
"Temperature limit additional cooling stage"

2.21.115 Temperature limiter - Integral component of PI controller

Options:	Keep
	Reset

The parameter is used to specify whether the integral component of the PI controller is retained or reset.

2.21.116 Settings of fan coil unit

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

2.21.117 Settings of fan coil unit - Number of fans

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

The parameter is used to specify the number of fans.

2.21.118 Settings of fan coil unit — Fan speed level data format of master/slave

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

The parameter is used to specify the data format.

2.21.119 Fan speeds/- levels - Number of fan speeds/- levels

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

This parameter is used to specify the number of fan speed levels the actuator will use to control the fan of the fan coil.

2.21.120 Fan speeds/- levels - Format of speeds-/ level output

Options:	0-5
	0-255
	1 bit m off n
	1 bit m 1 off n

– *0-5*: The level values (0-3 or 0-5) are output in the 1 byte format as counter values 0-3 or 0-5.
– *0-255*: The level values (0-3 or 0-5) are output as percentage values. Example 5-stage fan: The level value 1 is output as 20%, and 5 is output as 100%.
– *1 Bit 1 from n*: The level values (0-3 or 0-5) are output using 1-bit objects. The number of objects available is the same as the number of fan speed levels. For level 2, for example, the 1-bit fan speed level objects 1 and 2 are output as the value 1, while the other fan speed level objects use the value 0.
– *1 Bit 1 from n*: The level values (0-3 or 0-5) are output using 1-bit objects. The number of objects available is the same as the number of fan speed levels. For the level 2, for example, only the 1-bit fan speed level object 2 is output as the value 1. The other fan speed level objects use the value 0.

2.21.121 Fan speeds/- levels - Speeds-/ levels output

Options:	For manual operation and automatic
	Only for manual operation

This parameter is used to specify when the output of the fan speed level values will occur: either only when the fan speed levels are manually adjusted or also in automatic mode. This setting depends on the options for the fan coil actuator. If the actuator itself controls the fan speed levels in automatic mode based on a derivative of the control value, than the "Only for manual operation" option must be selected. Otherwise, the other option should be selected.

2.21.122 Fan speeds/- levels - Lowest manually adjustable speed-/ level

Options:	Speed level 0
	Speed level 1

This parameter is used to preselect the lowest fan speed level that can be set by an operation performed at the device. When level 0 is selected, the heating/cooling system will not be in operation (fan speed level and valve control 0) as long as the current operating mode and operation type are maintained. To avoid damage to the building, level 0 is deactivated after 18 hours and the device is returned to automatic mode.

2.21.123 Fan speeds/- levels Evaluation of fan speed/- level

Options:	Deactivated
	Activated

The controller obtains the current fan speed level for controlling a fan coil actuator either by calculating it from the table of level values under "Fan coil settings for heating" or "Fan coil settings for cooling," or by receiving feedback from the fan coil actuator. If the option is "activated" here, then the "Fan coil level status" object is activated for receiving the fan speed level from the fan coil actuator.

2.21.124 Summer compensation

Notice
Only available when the "Device function" parameter is set either on "Single device" or "Master device".

2.21.125 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.

2.21.126 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".

2.21.127 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".

2.21.128 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".

2.21.129 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".

3 Communication objects

For a quick overview of the options of the Busch-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
System setting								
Date	Output	3 bytes	[11.001] Date	K	-	S	U	A
Time of day	Output	3 bytes	[10.001] Daytime	K	-	S	U	A
Date	Input	3 bytes	[11.001] Date	K	-	S	U	A
Time of day	Input	3 bytes	[10.001] Daytime	K	-	S	U	A
Display brightness	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Switching between dark and bright (Dark = 1)	Input	1 bit	[1.001] Switching	K	-	S	-	A
Background illumination ON/OFF	Input	1 bit	[1.001] Switching	K	-	S	-	A
Background illumination status	Output	1 bit	[1.001] Switching	K	-	-	U	-
Screen saver ON/OFF	Input	1 bit	[1.001] Switching	K	-	S	-	A
Screen saver status	Output	1 bit	[1.001] Switching	K	-	-	U	-
External inside temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Outside temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Inside temperature	Output	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Door communication								
Volume of bell sound	Input / output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Increase/decrease volume of bell sound	Input	4 bit	[5.001] Percent (0 - 100%)	K	-	S	-	A
Voice volume	Input / output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Increase/decrease voice volume	Input	4 bit	[5.001] Percent (0 - 100%)	K	-	S	-	A
Ringing	Output	1 bit	[1.001] Switching	K	-	-	U	-

Name	Object function	Length	Data type	Flags				
Start of call	Output	1 bit	[1.001] Switching	K	-	-	U	-
End of call	Output	1 bit	[1.001] Switching	K	-	-	U	-
Mute incoming calls	Input / output	1 bit	[1.001] Switching	K	-	S	U	A
Switch Light	Input	1 bit	[1.001] Switching	K	-	S	U	A
Open door	Input	1 bit	[1.001] Switching	K	-	S	U	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Fault and alarm messages								
Signal tone volume	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Raise/lower signal tone volume	Input	1 byte	[3.007] Dimmer step	K	-	S	-	A
Confirm all [1 bit]	Input	1 bit	[1.016] Confirmation	K	-	S	-	A
Message [1bit]	Input / output	1 bit	[1.005] Alarm	K	-	S	U	A
Confirm the message [1bit]	Input / output	1 bit	[1.016] Confirmation	K	-	S	U	A
Scene actuator								
Object x [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Object x [receive]	Input	1 bit	[1.001] Switching	K	-	S	U	A
Scene number	Input / output	1 byte	[18.001] Scene control	K	-	S	U	A
Activate scene 1	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Scene 1 dimming	Input	3 bit	[3.007] Dimmer step	K	-	S	-	A
Presence simulation								
Activation	Input / output	1 bit	[1.010] Start/Stop	K	-	S	U	A
Object x	Input / output	1 bit	[1.001] Switching	K	-	S	U	A
Time programs								
Block all time programs	Input	1 bit	[1.003] Enable	K	-	S	-	A
Activate the holiday function	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A
Holiday status	Output	1 bit	[1.010] Start/Stop	K	-	S	U	A
Logic functions								
Logic gate - Output	Output	8 bit	[5.001] Percent (0 - 100%)	K	L	-	U	-
Logic gate - Input x	Input	1 bit	[1.001] Switching	K	-	S	-	A
Multplexer - Control input	Input	1 bit	[1.003] Enable	K	-	S	-	A
Multiplexer - Output								
Multiplexer - Input x	Input	1 bit	[1.001] Switching	K	-	S	-	A
Multiplier - Output	Output	1 bit	[1.001] Switching	K	-	-	U	-
Multiplier - Input x	Input	1 bit	[1.010] Start/Stop	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Gate - Control input	Input	1 bit	[1.003] Enable	K	-	S	-	A
Gate - Input	Input / output	1 bit	[1.001] Switching	K	-	S	-	A
Gate - Output	Input / output	1 bit	[1.001] Switching	K	-	S	-	A
Temperature comparator - Input x	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Temperature comparator - Output	Output	8 bit	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Status converter - Input 1 (LSB)	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Status converter - Input x	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Status converter - Output 1 (LSB)	Output	1 bit	[1.002] Boolean	K	-	S	U	Â
Status converter - Output x	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Status converter - Output 8 (MSB)	Output	1 bit	[1.002] Boolean	K	-	S	U	A
Time function - Input	Input	1 bit	[1.001] Switching	K	-	S	-	A
Time function - Output	Output	1 bit	[1.001] Switching	K	-	S	U	A
Time function - staircase lighting (sec.)	Input	2 bytes	[7.005] Time (s)	K	-	S	U	A
Time function - Switch-on delay (sec.)	Input	2 bytes	[7.005] Time (s)	K	-	S	U	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Internal RTC								
Heating control value	Output	1 bit	[1.001] Switching	K	-	-	U	-
Additional heating stage	Output	1 bit	[1.001] Switching	K	-	-	U	-
Cooling control value	Output	1 bit	[1.001] Switching	K	-	-	U	-
Additional cooling stage	Output	1 bit	[1.001] Switching	K	-	-	U	-
On/off confirmation (Master)	Output	1 bit	[1.001] Switching	K	L	S	U	A
Actual temperature weighted	Output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
External actual temperature x	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Fault, actual temperature (master)	Output	1 bit	[1.001] Switching	K	L	-	U	-
Current setpoint	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
Operating mode normal (master)	Input / output	1 byte	[20.102] HVAC mode	K	-	S	U	A
Override operating mode (Master/Slave)	Input	1 byte	[20.102] HVAC mode	K	-	S	U	A
Window contact (master/slave)	Input / output	1 bit	[1.001] Switching	K	-	S	U	A
Presence detector (master/slave)	Input / output	1 bit	[1.001] Switching	K	-	S	U	A
Status Heating	Output	1 bit	[1.001] Switching	K	-	-	U	-
Status Cooling	Output	1 bit	[1.001] Switching	K	-	-	U	-
Basic load	Input	1 bit	[1.001] Switching	K	-	S	U	A
Heating/cooling switchover	Output		[1.100] Heating / cooling					
Confirm fan manually (master)	Output	1 bit	[1.001] Switching	K	L	-	U	-
Fan speed / level	Output	1 byte	[5.001] Percent (0 - 100%)	K	-	-	U	-
Basic setpoint	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Resetting manual setpoints	Input	1 bit	[1.001] Switching	K	-	S	-	A
Dew point alarm	Input	1 bit	[1.001] Switching	K	-	S	U	A
Condensation / fill level alarm (Master/Slave)	Input	1 bit	[1.005] Alarm	K	-	S	U	A
Outside temperature for summer compensation	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Summer compensation active	Output	1 bit	[1.001] Switching	K	-	-	U	-
Temperature calibration	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Setpoint display (master)	Output	2 bytes	[9.001] Temperature (°C)	K	L	-	U	-
Request set value (master)	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Confirm setpoint (master)	Output	2 bytes	[9.001] Temperature (°C)	K	L	-	U	-
Request fan speed level manually (slave)	Output	1 bit	[1.010] Switching	K	-	-	U	-
Request fan speed level manually (master)	Input	1 bit	[1.001] Switching	K	-	S	-	A
Request fan speed level (slave)	Output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	-	U	-
Request fan speed level (master)	Input	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 RHCC status	Output	2 bytes	[22,101]	K	-	-	U	-
Controller HVAC status (master)	Output	1 byte	[5.001] Percent (0 - 100%)	K	L	-	U	-
Heating temperature limit basic stage	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Heating temperature limit additional stage	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Cooling temperature limit basic stage	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Cooling temperature limit additional stage	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Comfort heating setpoint	Output	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Standby heating setpoint	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Economy heating setpoint	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Heating setpoint for building protection	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Comfort cooling setpoint	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Economy cooling setpoint	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Cooling setpoint for building protection	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Setpoint error	Output	1 bit	[9.001] Temperature (°C)	K	-	-	U	-
Current HVAC operating mode	Output	1 byte	[20.102] HVAC mode	K	-	S	U	A
Switch								
Value 1 [send]	Input / output	1 bit	[1.001] Switching	K	-	S	U	A
Value 2 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Status value [receive]	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Rocker switch								
Value 1 [send]	Input / output	1 bit	[1.001] Switching	K	-	S	U	A
Value 2 [send]	Output	1 bit	[1.001] Switching	K	-	-	U	-
Status value [receive]	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Dimmer								
Switch	Input / output	1 bit	[1.001] Switching	K	-	S	U	A
Dimming	Output	3 bit	[3.007] Dimmer step	K	-	S	U	-
Value	Input / output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Switch status	Input	1 bit	[1.001] Switching	K	-	S	-	A
Status value	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Dimmer slider								
Switch	Input / output	1 bit	[1.001] Switching	K	-	S	U	A
Value	Input / output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Status value	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Switch status	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
RGBW operation								
Switch	Output	1 bit	[1.001] Switching	K	-	-	U	A
Switch status	Input	1 bit	[1.001] Switching	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Value red	Input / output	1 byte	[5.001] Counting pulses (0 - 255)	K	-	S	U	A
Value green	Input / output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value blue	Input / output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value white	Input / output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
Value RGB [3 bytes]	Output	3 bytes	[232.600] RGB value 3x (0 - 255)	K	-	-	U	-
Status value RGB [3 bytes]	Input	3 bytes	[232.600] RGB value 3x (0 - 255)	K	-	S	-	A
RGB value [6 bytes]	Output	4 bytes	[251.600] RGB value 4x (0 - 255)	K	-	-	U	-
Status value RGBW [6 bytes]	Input	4 bytes	[251.600] RGB value 4x (0 - 255)	K	-	S	-	A
Value cold white	Output	8 bit	[5.010] Counting pulses (0 - 255)	K	-	-	U	-
Status value cold white	Input	8 bit	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Value warm white	Input / output	8 bit	[5.010] Counting pulses (0 - 255)	K	-	-	U	-
Status value warm white	Input	8 bit	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Hue value	Input / output	1 byte	[5.001] Counting pulses (0 - 255)	K	-	S	U	A
Saturation value	Input / output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	U	A
HSV value [3 byte]	Output	3 bytes	[232.600] RGB value 3x (0 - 255)	K	-	-	U	-
Status value RGB [3 byte]	Input	3 bytes	[232.600] RGB value 3x (0 - 255)	K	-	S	-	A
Brightness value	Output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	-	U	-
Brightness status value	Input	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Temperature value	Output	2 bytes	[7.600] Absolute colour temperature (K)	K	-	-	U	-
Temperature status value	Input	2 bytes	[7.600] Absolute colour temperature (K)	K	-	S	-	A
Slider value								
Value [1 byte] unsigned	Input / output	1 byte	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Value [1 byte] signed	Input / output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	U	À
Status [1 byte] signed	Input	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	-	A
Value [2 byte] unsigned	Input / output	2 byte	[7.001] Counting pulses	K	-	S	U	A
Status [2 byte] unsigned	Input	2 byte	[7.001] Counting pulses	K	-	S	-	A
Value [2 byte] signed	Input / output	2 byte	[8.001] Pulse difference	K	-	S	U	Â
Status [2 byte] signed	Input	2 byte	[8.001] Pulse difference	K	-	S	-	A
Value [2 Byte] float	Input / output	2 byte	[9.001] Temperature (°C)	K	-	S	-	A
Status [2 byte] float	Input	2 byte	[9.001] Temperature (°C)	K	-	S	-	A
Status [4 byte] unsigned	Input	4 byte	[12.001] Counting pulses (unsigned)	K	-	S	-	A
Value [4 byte] signed	Input / output	4 byte	[13.001] Counting pulses (signed)	K	-	S	U	A
Status [4 byte] signed	Input	4 byte	[13.001] Counting pulses (signed)	K	-	S	-	A
Value [4 Byte] float	Input / output	4 byte	[13.001] Rotary acceleration (rad/s^2)	K	-	S	U	A
Status [4 byte] float	Input	4 byte	[13.001] Rotary acceleration (rad/s^2)	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Blind								
Moving UP/DOWN	Input / output	1 bit	[1.008] Up/Down	K	-	S	U	A
Stop / slat adjustment	Input / output	1 bit	[1.008] Up/Down	K	-	S	U	A
Height status [0 - 100%]	Input	1 byte	[5.001] Percent (0 - 100%)	K	-	S	-	A
Height status [0 - 255]	Input	8 bit	[5.010] Counting pulses (0 - 255)	K	-	S	-	A
Wind alarm	Input	1 bit	[1.005] Alarm	K	-	S	-	A
Move to position	Input / output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Slat position	Input / output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
Position status	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Upper end position status	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Bottom end position status	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
RTC control element								
Control On/Off (slave)	Input	1 bit	[1.001] Switching	K	-	S	U	A
External actual temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Fault, actual temperature (slave)	Input / output	1 bit	[1.001] Switching	K	-	S	-	A
Operating mode (slave)	Output	1 byte	[20.102] HVAC mode	K	-	S	U	A
Override operating mode (Master/Slave)	Input / output	1 byte	[20.102] HVAC mode	K	-	S	U	A
Window contact (master/slave)	Input / output	1 bit	[1.001] Switching	K	-	S	U	A
Presence detector (master/slave)	Input / output	1 bit	[1.001] Switching	K	-	S	U	A
Fan coil manual confirmation (Slave)	Input / output	1 bit	[1.011] Status	K	-	S	U	A
Fan coil manual (heating) confirmation (Slave)	Input / output	1 bit	[1.011] Status	K	-	S	U	A
Fan coil manual (cooling) confirmation (Slave)	Input / output	1 bit	[1.011] Status	K	-	S	U	A
Condensation / fill level alarm (Master/Slave)	Input / output	1 bit	[1.005] Alarm	K	-	S	U	A
Units switchover (slave)	Input / output	1 bit	[1.001] Switching	K	-	S	U	A
On/off request (slave)	Output	1 bit	[1.001] Switching	K	-	-	U	-
Setpoint display (slave)	Input / output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Request setpoint (slave)	Output	2 bytes	[9.001] Temperature (°C)	K	-	-	U	-
Confirm setpoint (slave)	Input / output	2 bytes	[9.001] Temperature (°C)	K	-	S	U	A
Heating/cooling request (slave)	Output	1 bit	[1.100] Heating / cooling	K	-	-	U	-
Request fan speed level manually (slave)	Output	1 bit	[1.001] Switching	K	-	-	U	-
Request fan speed level (slave)	Output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	-	U	-
Confirm fan speed level (slave)	Input / output	1 byte	[6.010] Counting pulses (-128 - 127)	K	-	S	U	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Fan switch								
Step output	Input / output	1 byte	[5.100] Fan speed level (0 - 255)	K	-	S	U	A
Output x	Input / output	1 bit	[1.002] Boolean	K	-	S	U	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Scene								
Scene number x	Output	1 byte	[18.001] Scene control	K	-	-	U	-
Scene number status	Input	1 byte	[18.001] Scene control	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Display								
Value input	Input	1 bit	[5.001] Percent (0 - 100%)	K	-	S	-	A
Switching alarm	Input	1 bit	[1.00.1] Switching	K	-	S	-	A
Switching warning	Input	1 bit	[1.001] Switching	K	-	S	-	A
Switching information	Input	1 bit	[1.001] Switching	K	-	S	-	A
Wind force	Input	1 bit	[1.001] Switching	K	-	S	-	A
Temperature	Input	2 bytes	[9.001] Temperature (°C)	K	-	S	-	A
Rain	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Twilight	Input	2 bytes	[9.004] Lux (lux)	K	-	S	-	A
Brightness	Input	2 bytes	[9.004] Lux (lux)	K	-	S	-	A
CO2	Input	2 bytes	[9.008] Parts/million (ppm)	K	-	S	-	A
Moisture	Input	2 bytes	[9.007] Moisture (%)	K	-	S	-	A
Air pressure	Input	2 bytes	[9.007] Pressure (Pa)	K	-	S	-	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

Name	Object function	Length	Data type	Flags				
				K	L	S	U	A
Audio control								
Title	Input	14 bytes	Marking (ASCII)	K	-	S	-	A
Artist	Input	14 bytes	Marking (ASCII)	K	-	S	-	A
Album	Input	14 bytes	Marking (ASCII)	K	-	S	-	A
Play	Input / output	1 bit	[1.010] Start/Stop	K	-	S	U	A
Pause	Input / output	1 bit	[1.001] Enable	K	-	S	U	A
Stop	Input / output	16 bit	[16.000] Marking (ASCII)	K	-	S	-	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
Volume	Input / output	1 byte	[5.001] Percent (0 - 100%)	K	-	S	U	A
On/Off	Input / output	1 bit	[1.002] Boolean	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
Source x	Input / output	1 bit	[1.017] Trigger	K	-	S	U	A
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A
Page link								
Block	Input	1 bit	[1.002] Boolean	K	-	S	-	A

4 Operation

4.1 General control and display functions

After the device has been connected to the power supply, the boot-up process starts. Then the parameterized main operating page (homepage) is displayed. This is marked with a star in the page display.

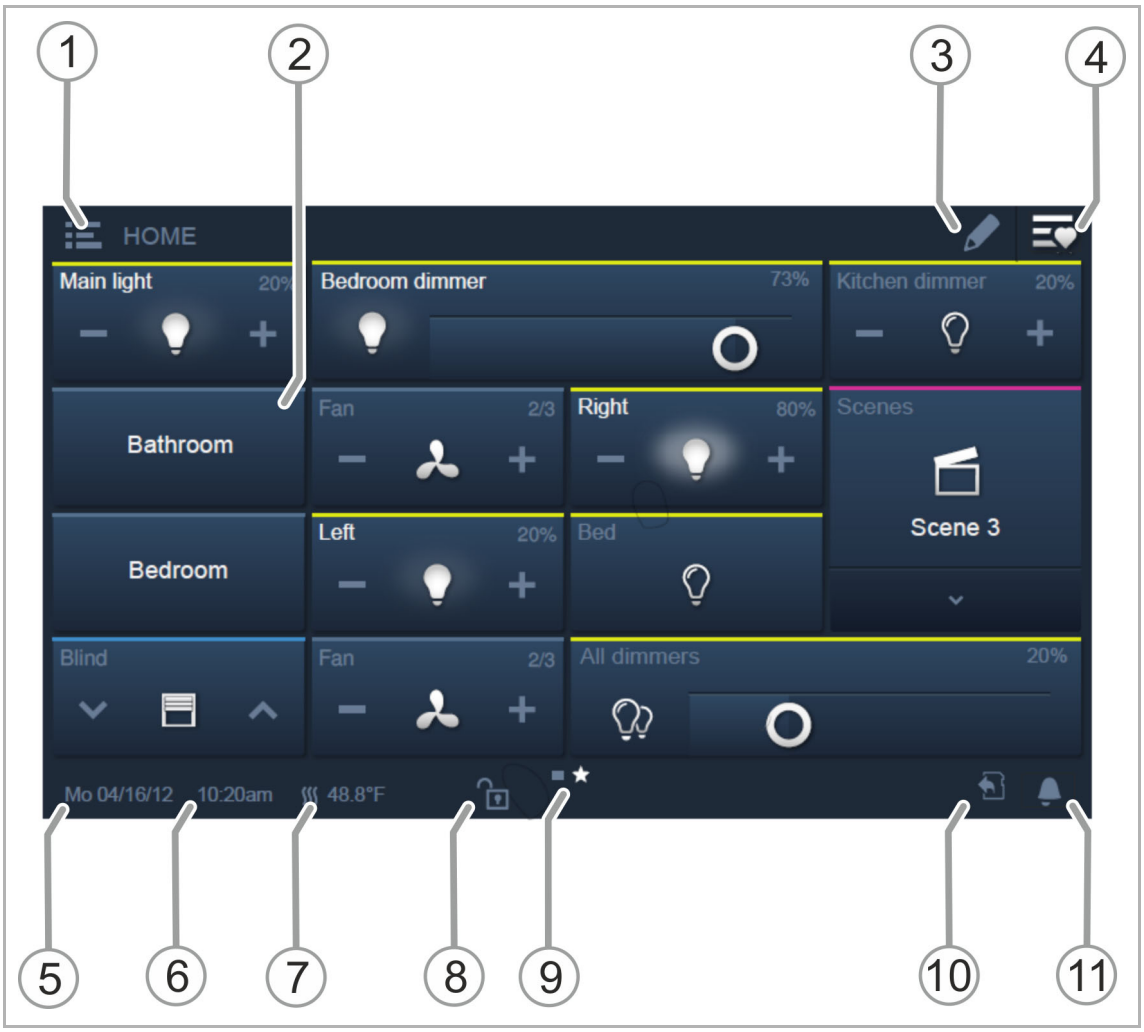


Fig. 7: Overview of operation

[1] Floors/rooms navigation

- When parameterized, this can be used to call up the operating pages which have been allocated to the floors/rooms.

[2] Touch-sensitive user interface

- For the IP touch up to 16 or 25 KNX functions can be positioned one one operating page. A total of 8 pages can be created.

[3] Editing function

- Next to each control element a heart icon (take-up into the favourites list) and a time program icon (take-up into the time program) is displayed.
- Reactivate the function by tapping on the tick, See “Update“ on page 237.

[4] Call-up of favourites list.

- Reactivate the function by tapping on the tick, see chapter 4 “Operation“ on page 202.

[5] Display of current date

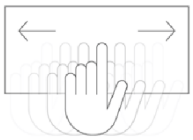
[6] Display of current time

[7] Display of current room temperature alternately with the outdoor temperature (if parameterized)

[8] Access to page via PIN code.

- Enabled page displays an open lock, see chapter 4 “Operation“ on page 202.

[9] Display of available operating pages:



- Call-up by swiping the user interface (swipe to the right = call-up of menu page with applications and system settings)
- Main operating page (homepage) marked with a star in the page display

[10] Display "Micro SD card inserted".

- The icon indicates whether you have inserted a micro SD card (SDHC). Update process, see chapter 4 “Operation“ on page 202.

[11] Mute function, see chapter 4 “Operation“ on page 202.

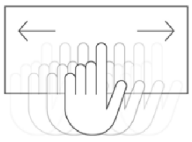
4.2 Control elements

Control elements in the IP touch are used for fulfilling the basic functions of "Switching", "Dimming", "Blind", "Scenes" and "RTC". The elements can contain switches, buttons and sliders.

Available are:

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

Notice
Additional functions can be called up within some control elements (e.g. RTC) by swiping.



4.2.1 Basic structures of control elements

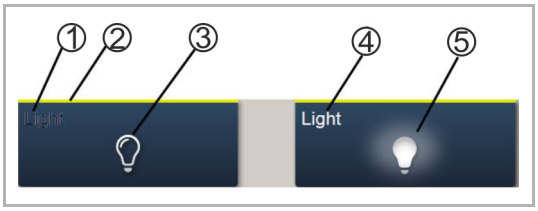


Fig. 8: Various conditions of the same control element

[1] Status display of "Device"
[2] Designation of "Control element"
[3] Function button
[4] Status display of "Device"
[5] Function button

Control element	Description	
Status display of "Device" [1] (both name or designation of channel!)	The device is switched off (lettering is dark).	
Designation of "Control element" [2]	Light control: Blind functions: Climate functions: Scenes: Alarm: Information: Not designated:	Yellow Blue Orange Magenta Red Green Grey
Function button (e.g. button) [3]	The function is triggered with a press for example (can also indicate the status, here "Device off").	
Status display of "Device" [4] (both name or designation of channel)	The device is switched on (lettering: white/bright).	
Function button (e.g. button) [5]	The function is triggered with a press for example (can also indicate the status, here "Device on").	

Table 2: Basic structure of control elements

4.2.2 Additional basic principles

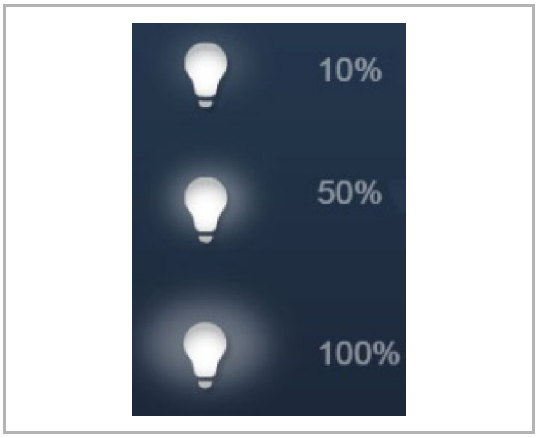


Fig. 9: Basic principles

Function buttons of dimming control elements can display different stages of dimming by means of alternating icons (e.g. larger light halo around the icon).

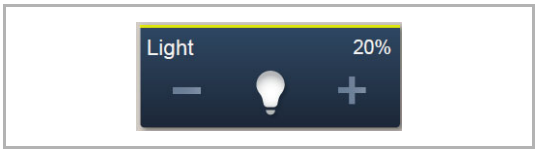


Fig. 10: Basic principles

Presets of steps or levels (e.g. dimming steps, fan speed levels) are displayed in white/bright lettering/icons. In the following example the dimming step is preset at "20%).

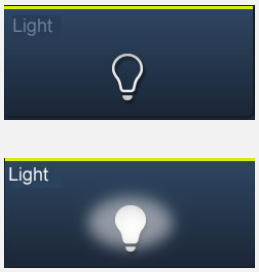
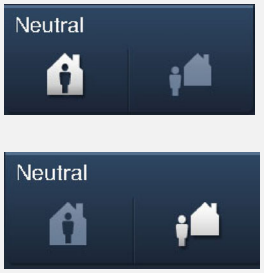
Active elements or functions are displayed in white/bright lettering/icons.

4.2.3 Adjustable control elements

Notice
The basic versions described here can be further adjusted.

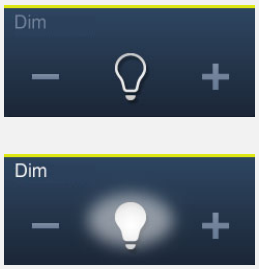
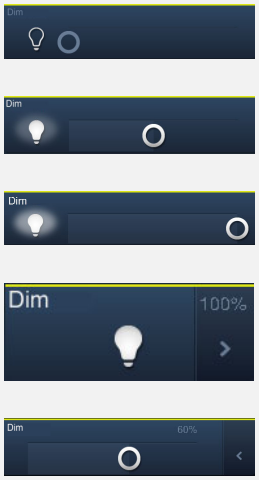
Push-buttons (basic version)

Simple switches can be implemented with push-buttons. This makes light switches or switches for simple switching processes based on push-buttons possible.

Control element	Status	Function
Switch		When operated, a changeover push-button sends out one of two values alternately and changes between two statuses (e.g. "On" and "Off").
Rocker switch		A neutral push-button with rocker function when actuated on the 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 bottom icons represent the function of the rocker switch. A neutral push-button with rocker function can be used to call up two different scenes for example (in the example: "Presence" or "Absence").

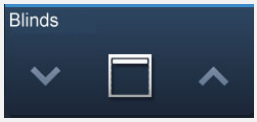
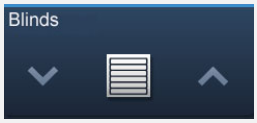
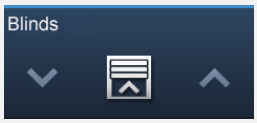
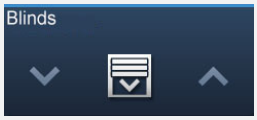
Dimmer (basic version can be further adjusted, e.g. with value display)

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

Control element	Status	Function
Dimmer without slider		The version without slider has a push-button surface for switching On/Off in the middle and via two buttons left and right for stepwise dimming (brighter/darker).
Dimmer with slider		The version with slider has a push-button surface for switching On/Off on the left side and via a slider for dimming.

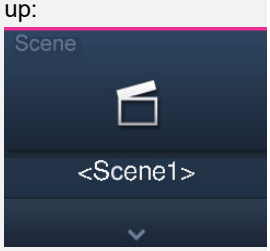
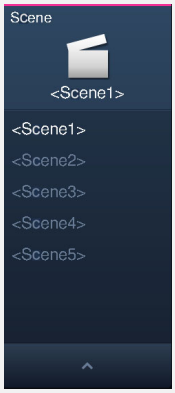
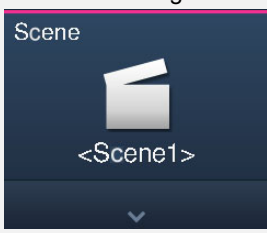
Blind (basic version can be further adjusted, e.g. with value display)

Blind control elements can be used to implement the activation of blinds, awnings, doors and other motor-driven actuators.

Control element	Status	Function
Blind	Top  Bottom  Intermediate positions  	Stopping/starting in the middle (depending on the operating mode). The button in the middle can display the status. A corresponding animation is displayed during the movement. Operating procedure: – Icons for Up/Down **Brief press of the button** Moving by a step (the icon in the middle does not change). **Long press of the button** Moving up to stop (the icon in the middle changes): **Stop** When the end stop has been reached or a brief press on icon "Up / Down" (depending on the direction of movement). **Change** Change in the direction of travel with a brief press on icon "Up/Down". Followed by a long press on icon "Up / Down" (depending on the desired direction of movement). – Icons in the middle (blind) **Brief press of the button** Moving up to stop (the icon in the middle changes): **Stop** When reaching the limit stop or a brief press of the button on the icon it stops in **intermediate position**.

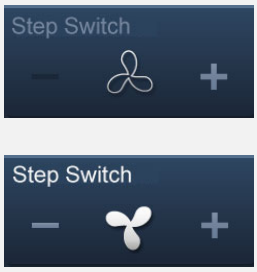
Scenes (basic version)

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

Control element	Status	Function
Scene (List)	Scene can be called up: 	The control element "Scene (List)" has a pop-up button for calling up a list with different scenes. The list closes automatically after a few seconds if no selection has been made. The scene must be selected in the list. The selected scene is then started via the push-button. **Notice** The scene to be called up must be allocated correspondingly in the commissioning software of the IP touch .
	Scene selection> 	
	Scene is running: 	

Fan switch (basic version)

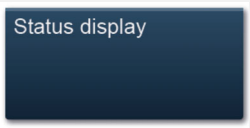
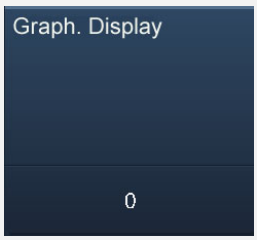
Fan switches (step switches) can be used to implement switching sequences. A step switch, so to speak, combines several push-buttons into one control element.

Control element	Status	Function
Fan switch (step switch)		The version has two buttons left and right for calling up the next or previous step and via a button in the middle. By pressing the right/left button several times, one reaches a further step higher or lower. The button in the middle returns the step switch to the bottom step (= "Off"). The icon in the middle can be animated during adjusting. It is also possible to display the steps.

Value display elements / value sending elements (basic version)

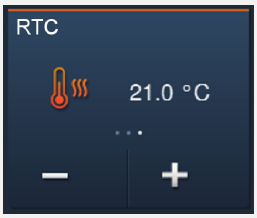
– Value display elements are used to display values as text or graphic information. They cannot be operated (exception is the value slider), but serve for the display of values.

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

Control element	Status	Function
Value or status display		The "Value or status display" version can display values and texts which are sent from a temperature sensor for example. There are no direct control elements here!
Graphics display		The "Graphics display" version can display values graphically, which are sent from a temperature sensor for example. 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 IP touch. There are no direct control elements here!
Value sending element (value slider)		Value sending elements can be used to display values in different formats and to send them to other devices. With "Value slider" the slider can be used to change values. The changed values are then sent. Text displays can be made here. In this case, a corresponding text can be displayed at the different slider positions.

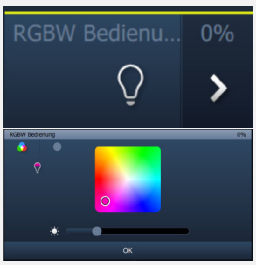
Room temperature controller (basic version)

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

Control element	Status	Function
RTC control element (extension unit)		The current operating mode and the mode of the controller (e.g. "heating") are displayed in the control element. Additional operating modes can be called up with swiping movements. Control is carried out via the buttons.

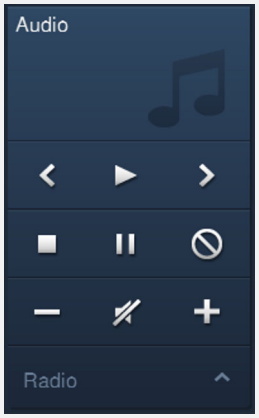
RGBW operation (basic version)

Specific settings can be made for corresponding lamps (LEDs, Philips Hue, etc.) with the RGBW control elements. For example, the colours can be changed or the warm-white component can be adjusted.

Control element	Status	Function
RGBW operation		The lamp is switched on or off with a press of the control element. It can also be used to make a preset. The value display indicates the brightness component. In line with the lamp types and presets in the commissioning software, additional functions can be called up (in the example via the arrow), e.g. colour or white control. The colour components and the brightness can be set directly on the panel. **Preset adjustment:** The lamp must first be set as desired. Then the lamp is switched on. Then follows a long press of the control element. This saves the lamp setting as preset. Now the preset is called up with each activation (long press). This process must be repeated for each adjustment. The lamp is switched on and off normally with a brief press.

Audio control (basic version)

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

Control element	Status	Function
Audio control		Corresponding to the default settings in the commissioning software, a variety of audio functions can be called up directly via the buttons. Lists can be opened via the arrow buttons

Page link (basic version)

Here a link can be directly established on a created page. This opens it.

Control element	Status	Function
Page link		The link is used to call up available pages directly in the IP touch.

4.3 Special functions

4.3.1 Editing

The "Edit" function can only be called up via the main operating page and the operating pages.

1. It is opened via this icon.

Fig. 11: Edit icon

– Next to each control element a heart icon (take-up into the favourites list) and a time program icon (take-up into the time program) is displayed.

Take-up into the favourites list:

1. Tap on a heart icon next to a control element which is to be taken up into the favourites list.
2. The heart icon now appears filled in, which means that the control element has been taken up into the favourites list.

Take-up into time programs:

1. Tap on a time program icon next to a control element which is to become part of a time program.
   – The window "Create new timer" opens.
2. Specify weekdays during which the function of the control element is to be carried out. To do this, tap on the days.
   – A renewed tap removes the day!
3. Specify the starting time. Use the scrolling element for this.
   – An end time can be additionally activated. For this the time can also be set via the scrolling element.
4. Activate the astro function (option).

– 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.

Note
The correct coordinates of the device location must be set. The coordinates are entered via the system settings of the commissioning software (DCA).

5. Tap on "Create".
   – The time program is then taken up into the time program list and can be edited there. (see chapter 4.5.3 “Time programs“ on page 228).
6. Finally tap on "OK".
   – A time program icon appears next to the control element with a digit (number of created time programs with this control element).
7. The "Edit" function can be closed by tapping on the tick in the top bar.

4.3.2 Call-up and editing of the favourites list

The favourites are, for example, actuators that are frequently used. These can then be switched directly via the favourites list, without the rooms having to be called up for example. The take-up of the elements into the favourites list is carried out either via the commissioning software or directly via the device (see chapter 4.3.1 “Editing“ on page 214). Also time programs can be taken up (see chapter 4.5.3 “Time programs“ on page 228)!

Operation via the favourites list:

The "Favourites list" function can only be called up via the main operating page (homepage) and the operating pages.

1. The "Favourites list" function is opened via this icon.

Fig. 12: Favourites list icon

2. Select either the time program icon or the lamp icon, depending on whether the favourites of the time program or the control elements are to be listed.
3. Carry out the functions of a control element directly in the list or activate a time program.

Editing the favourites list:

The "Favourites list" function can only be called up via the main operating page (homepage) and the operating pages.

1. The "Favourites list" function is opened via this icon.

Fig. 13: Favourites list icon

The elements of the favourites list can be deleted.

2. To do this, click on the icon in the top bar.

Fig. 14: Edit icon

3. Tap on the respective dustbin icon appearing next to the elements.

Fig. 15: Favourites list icon

   – The element is deleted from the list.

4. The "Favourites list" function can be closed by tapping on the cross in the top bar.

4.3.3 Access to pages

There is the option of protecting applications or access to pages (e.g. on operating pages) against unauthorized access with a password (PIN code). This is displayed by means of a closed padlock in the bottom bar. Tapping on this icon opens the PIN code input field. 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 IP touch, 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.

4.3.4 Return to the previous page

1. The previous page can be opened again by tapping on the icon in the top bar.

Fig. 16: Return icon

4.4 Operating actions of the "Door communication" application

The door communication application is called up as follows

1. Swipe to the right on the main operating page (homepage).
   – The menu page with applications and system settings opens.
2. Tap on "Communication".

As soon as a visitor presses the bell of a station, this is signalled on the IP touch as bell call (display of handset in the bottom bar). The device then changes automatically to the "Door communication" application.

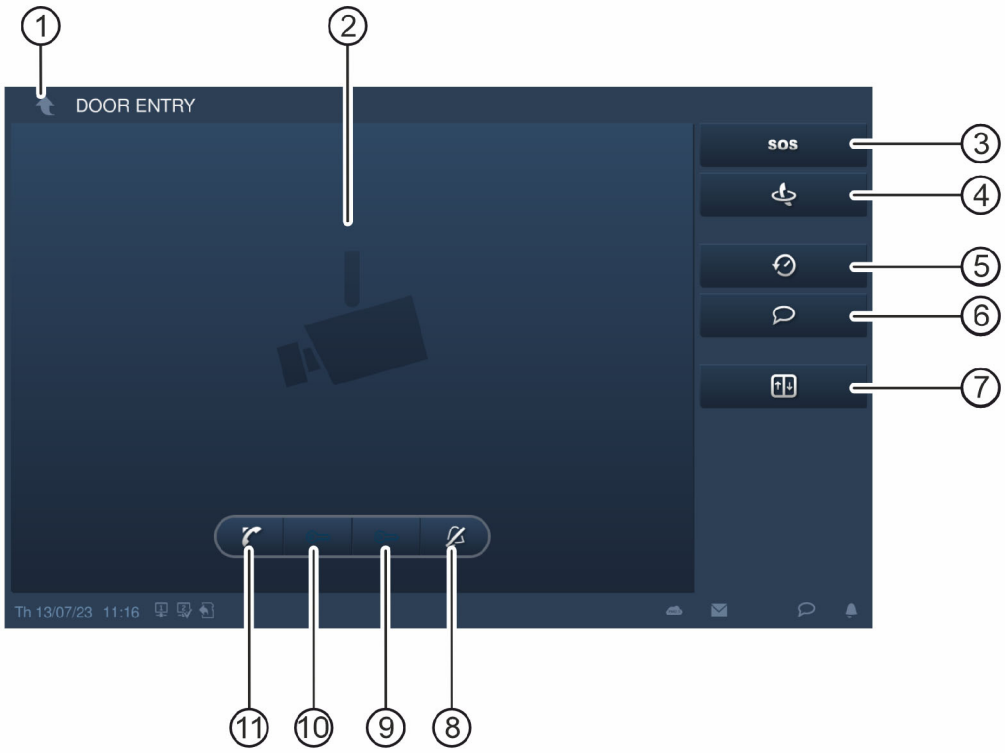


Fig. 17: Door communication

[1] Back arrow
[2] Video area
[3] SOS button
[4] Intercom button
[5] History
[6] News button during absence
[7] Switching the lighting
[8] Deactivating the door bell
[9] Program button
[10] Unlock button
[11] Accepting a call

Notice
The application remains open for a certain time until it is closed automatically. If the time amounts to only 10 seconds, the expiring time appears in the camera image (video area).

4.4.1 Establishing a speech and video connection

1. The function is called up via the receiver button.

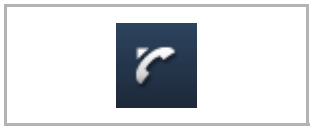


Fig. 18: Receiver button

The following functions are available while establishing the speech and video connection.

Function:

▪Setting the volume by tapping the corresponding buttons (plus and minus).

If several outdoor stations or external cameras are connected:

- Select the camera from the list by tapping the arrow button.
  - The designation of the camera is then displayed.
  - The current picture of the camera appears in the video area.

2. The connection can be terminated by pressing the button.

Fig. 19: Replacing the receiver button

4.4.2 Opening the door

1. The function is called up via the key button.

Fig. 20: Key button

Actuating the door opener makes the following function available.

Function:

- Door operner is actuated or the "Automatic door opener" is active.
  - A white key" icon is displayed.
  - The door opener is now switched on.

4.4.3 Activating mute (mite timer)

1. The function is called up via the bell button.

Fig. 21: Bell button

For mute activation (mute timer) the following functions are available.

Function

No call is pending:

- "Mute" button (bell icon) is actuated.
  - The ring tone of the panel is deactivated for a certain time. This is also indicated as icon in the bottom bar.
  - If calls are received during this time, only the video image is displayed.
  - Missed calls are recorded in the events and image storage.
  - The presets for this can be adjusted.

A call is pending, a speech connection is activated.

- "Mute" button (microphone icon) is actuated.
  - The microphone of the device is switched off until the bell is pressed again.

Note
The mute timer (settings) can also be called up via the push-button (bell icon) in the bottom bar.

4.4.4 Switching light

1. The function is called up via the lamp button.

Fig. 22: Lamp button

Actuating the light switch makes the following function available:

Function

- "Switching light" button actuated.
  - The "White lamp" icon is displayed.
  - The lamp of the outdoor station is switched.

4.4.5 Events and image storage / history

The device records all events. When actuating the "History" button the last 100 events are displayed (previous events are overwritten).

1. The function is called up via the history button.

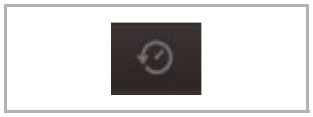


Fig. 23: History

Function

- The "Auto snapshots" function is activated in the settings for the door communication.
  - The flashing icon in the bottom bar signals a newly recorded snapshot.
  - The icon stops flashing when you call up the events and image storage.

Note
When a speech connection is activated, a snapshot can be created at any time by pressing the history button, even if the "Auto snapshot" function is not active.
  - The history button is only visible when the full-screen is reduced.

- For function "Events and image storage / history" the following functions are available:
  - When the "Auto snapshots" function is activated in the settings for the door communication, a miniature view is displayed in the events list for missed calls.
  - Date, time and the type of the event are recorded together with the snapshot.
  - If no automatic snapshots are active, a camera icon is displayed in place of the miniature view.
  - Individual entries or the entire list can be deleted at any time. For this, tap on the pen icon. A dustbin icon appears net to the entry. This can be used to delete every single entry. Or all entries can be delted via "Delete all".
  - Select an event by tapping on the corresponding entry.
  - Select single recordings by tapping on the corresponding entry. The list can be scrolled.

4.4.6 SOS

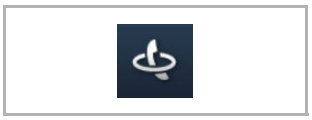


Fig. 24: SOS button

Is only used when the SOS function is activated and configured in Welcome IP via the Smart Access Point. All doors are unlocked in the event of an emergency.

4.4.7 News during absence

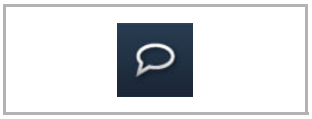


Fig. 25: News button during absence

The "Absence" button leads to the settings in order to create and listen to news for and from visitors when you are not at home.

4.4.8 Intercom

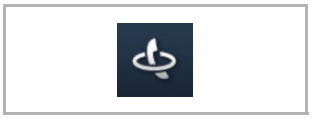


Fig. 26: Intercom button

To reach and call another indoor station, the intercom function must be activated and set up via the Welcome IP system.

4.5 Control actions of additional applications

4.5.1 Presence simulation

The absence of the residents in a building can be fairly realistically simulated via the presence simulation, to increase the protection against unauthorized access. For this purpose the Busch-SmartTouch® 7'' specifically records all actions for up to 20 objects every minute of the whole day (up to 0 o'clock) and can then replay them again.

Note

- Please note that you must always create a presence simulation beforehand, so that the simulation can be played back later!
- For this the device must have been active once for at least one day (up to 0 o'clock) and have recorded telegrams (per minute). Otherwise the message that no data are available is displayed at the start of the application.
- The application always uses the telegrams of the previous day. If no data are available on the previous day, the data of days before the previous day are used.

The presence simulation application is called up as follows:

1. Swipe to the right on the main operating page (homepage).
   - The application page with applications and system settings opens.
2. Tap on "Timer".

3. Select presence simulation in the list.

This starts the application. The icon for the activated presence simulation is displayed.

The presence simulation application is deactivated up as follows:

1. Tap on the activated presence simulation in the list.

Importing presence simulation into the favourites list (via timer list):

1. Tap on the pen icon.

2. Tap on the **heart icon** next to the presence simulation in the list.

   – The **heart icon** is now displayed filled in.

The presence simulation has been imported into the favourites list. Here it can be activated and deactivated.

Exporting presence simulation to micro SD card (via timer list):

1. Tap on the pen icon.

2. Insert the micro SD card into the device (see chapter 4.6 “Inserting the micro SD card (SDHC)“ on page 232).
3. Tap on the card icon next to the presence simulation in the list.

   – The presence simulation is exported to the micro SD card in CSV format.
   – Via the data it can be determined whether the telegrams have been recorded.

4.5.2 Fault and alarm messages

The Busch-SmartTouch® 7" 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 4.6 “Inserting the micro SD card (SDHC)“ on page 232).

Note
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 Busch-SmartTouch® 7". 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. Swipe to the right on the main operating page (homepage).
   – The application page with applications and system settings opens.
2. Tap on "Alarm".

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

Confirming and archiving messages (notifications):

1. Tap on the pen icon.

2. Then tap on a message in the list.
   – The message can now be confirmed.
   – Depending on the parameterization, the message is now automatically archived or it can be archived manually.

Exporting messages (notifications) to the micro SD card:

Confirmed and archived messages can be exported.

1. Confirming messages.
2. Tap on the archive icon.

3. Then tap on the pen icon.

4. Select the message to be copied from the list.
5. Insert the micro SD card into the device (see chapter 2.16 “Application "Fault and alarm messages" - Settings of the individual messages“ on page 123).
6. Then tap on "Copy to SD card".

Note
The export function must have been parameterized!

Deleting messages (notifications):

Note
Only archived messages can be deleted.

1. Tap on the pen icon.

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

– The message is deleted.

Deleting archived messages (notifications):

1. Tap on the archive icon.

2. Then tap on the pen icon.

3. Select the message to be deleted from the list.
4. Tap on the adjacent dustbin icon.

– The message is deleted.

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

4.5.3 Time programs

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 is called up as follows:

- Swipe to the right on the main operating page (homepage).
  - The application page with applications and system settings opens.
- Tap on "Timer".
  - Here corresponding time programs can be programmed.

Fig. 27: Time programs

Creating a new time program:

1. Tap on the pen icon.

2. Then tap on this icon.
   – The main operating page (homepage) opens.
   – Now the time program icon appears next to every control element.

Note
You can also call up every other page.

3. Tap on a time program icon next to a control element which is to become a component part of a time program.
   – The window "Create new timer" opens.
4. Specify weekdays during which the function of the control element is to be carried out. To do this, tap on the days.
   – A renewed tap removes the day!
5. 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.
6. 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.

Note
The correct coordinates of the device location must be set for the astro function.
– This is carried out via the system settings of the commissioning tool (DCA).

7. Tap on "Create".
   – The time program is then taken up into the time program list and can be edited there.
8. Finally tap on "OK".
   – A time program icon appears next to the control element with a digit (number of created time programs with this control element).

Note
For this, however, one must tap on the pen icon on the operating page.

Modification of time programmes

1. Tap on the pen icon.

2. Then in the list, tap on the arrow next to the time program that is to be edited.
3. The editing view for this time program opens.

Fig. 28: Editing view of time program

Editing options:

- Adjustment of function (e.g. switch on or off).
  – Use the arrow for the selection.
- Adjust the time.
  – Tap on the weekday. Then the time setting opens again.
- Specify the execution (always; on holiday; not on holiday).
  – Use the arrow for the selection.
- Deactivation/activation of the time program.
  – Use the slider.

– The adjustments become active immediately.

Importing time programs into the favourites list

1. Tap on the pen icon.

2. Then in the list, tap on the heart icon next to the time program which is to be taken up into the favourites list.
   – The heart icon is now displayed filled in.
   – The time program has been imported into the favourites list.

Deleting time programs

1. Tap on the pen icon.

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 "i" icon next to entry "Holiday".
   – The window "Set holiday" opens.
2. Specify the start and the end of the holiday. Use the scrolling element for this.
3. Tap on OK.
   – The overview list with the updated holiday entry is displayed.
4. Tap on the "Holiday" 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.

Note
The holiday function is deactivated by tapping on the activated entry.

4.6 Inserting the micro SD card (SDHC)

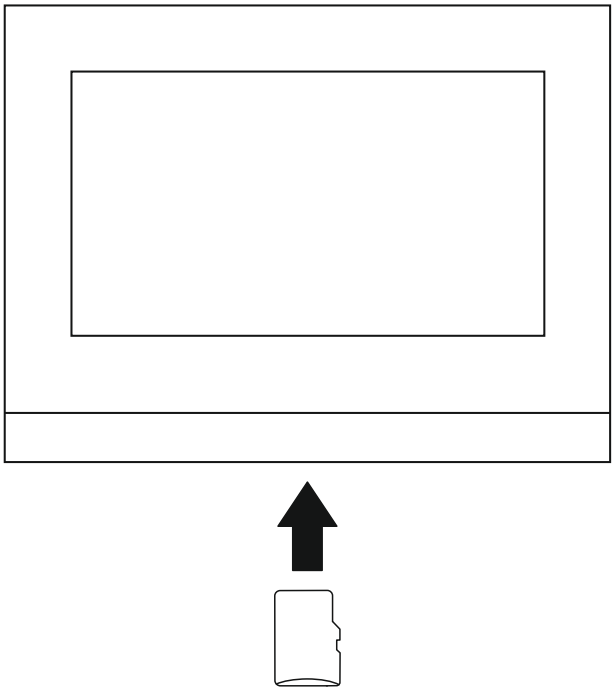


Fig. 29: Inserting the micro SD card (SDHC)

Notice
For the transfer of data to the device via the micro SD card the power supply must be switched on.

4.7 System settings

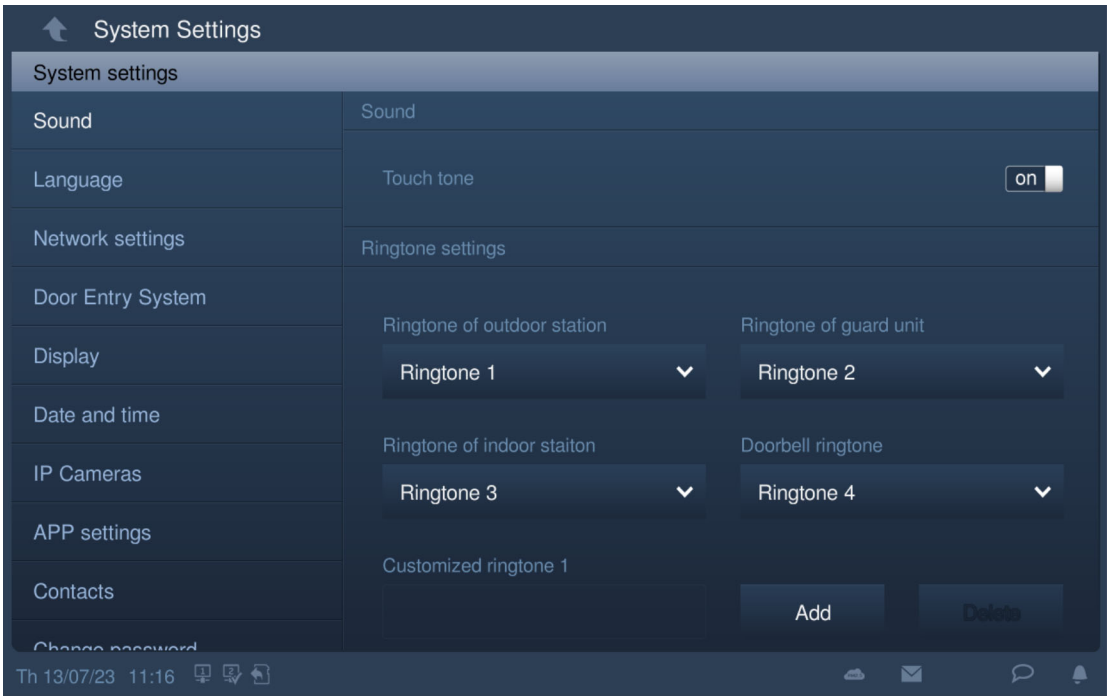
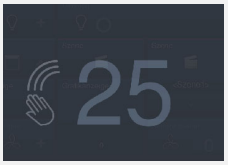


Fig. 30: System settings

The system settings are called up as follows:

1. Swipe to the right on the main operating page (homepage).
   – The application page with applications and system settings opens.
2. Tap on "System".

The following areas become available:

	Function
Sound	▪ Fixing the volume for the following sounds. – Click sound – Warning sound – Fault sound ▪ Also a selection of sounds for different types of messages can be made. ▪ If a micro SD card (SDHC) with suitable sound files is in the device, select a different sound from the card via the drop-down menu. The sound files should have format "mp3". Also wave files can be used. **Notice** The card must remain inserted in the device for this function!
Language	The system language can be changed in the language settings. ▪ German ▪ English ▪ …
Network settings	▪ WLAN settings – This menu item can be used to establish or disconnect a WLAN connection. ▪ Setting IP address – This menu item can be used to obtain the IP address automatically. Alternately, the IP address, subnet mask, standard gateway and DNS server can be stored manually.
Door Entry System	▪ Current snapshots ▪ Absence message Main door opener address Programming button setting Link with private IP switch actuator Card management
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. 
	Brightness Setting the brightness of the display via the slider.
	Screensaver ▪ Different settings for the specified screen saver. – The default setting is the display as digital clock. – If a micro SD card (SDHC) with suitable pictures is in the device, select a screen saver via the drop-down menu. If there are several pictures on the micro SD card (SDHC), they are displayed as a slide show. ▪ Slide show (electronic picture frame)

	Function
	– With the commissioning tool you can set how long each picture is displayed. ▪ 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 supported format is "*.jpg". Automatic full screen
Date and time	▪ Type of the time synchronisation – By activating the checkbox, the date and time are synchronised automatically via the management software or NTP ▪ Setting the date and time ▪ Daylight saving time – The daylight saving time is activated with a tick in the checkbox.
IP cameras	IP cameras are added and managed in this area.
App settings	Mobile terminal devices are paired or de-paired with the system under the app settings.
Contacts	Contacts can be added manually to the indoor station in the contacts. For this, contacts are stored in the system with their associated room number. Extensions are also added and created via the "Setting extension indoor" function via an alias.
Changing password	**User password** The system default user password is 123456. It can be used to set the following functions: ▪ Card management ▪ Reset user setting ▪ App setting ▪ Basic zone settings ▪ Alarm timer setting ▪ Activate or deactivate the indoor station **Unlock password** The password serves for unlocking the outdoor station. **Duress password** When threatened, the residents can deactivate the indoor station with the duress password and additionally send an alarm message to the guard unit and the management software. PIN code ▪ If it was specified in the commissioning software that the end user can change the PIN codes directly on the device, this page becomes visible. – Here the PIN code levels can be specified and adjusted.
Settings	The "Settings" area is password-protected. The system default password is 345678. The password of the fitter must be changed during the initial access to the settings. The following settings can be made here. ▪ Setting of call mode ▪ Setting of device mode: Rule hierarchy of the indoor station ▪ Setting of home network port ▪ Standard start page setting ▪ Management function setting ▪ Screensaver picture setting ▪ Standard guard unit setting

	Function
	▪ Export/Import of configuration file ▪ Compatible mode setting ▪ Remote control setting ▪ Delete all data
Reset settings	Here all settings made can be reset. Also the password of the fitter can be reset.
Info	Here different information about the device is displayed, such as the KNX address or the Firmware version. Also an error log can be exported here. Create error log process: 1. Insert the micro SD card. 2. Tap on the "Export error log" button. 3. Confirm message about the successful export. 4. Remove the micro SD card. 5. Read card into the PC. Use an adapter if necessary. 6. Send the log file (*.log) via e-mail (see rear page of the manual) to sales service.

Table 3: System settings

5 Update

5.1 Download PID file (configuration file)

To create an image of the configuration, a so-called PID file can be exported. This can be downloaded onto the local computer or on a device.

Export image in PID file

1. Open the DCA.
2. Select the option "Export".
3. Select the option "Export image in PID file".
4. Specify a memory location and a file name.
5. Confirm with "Save".
   – The PID file is being saved.

Download PID to devices

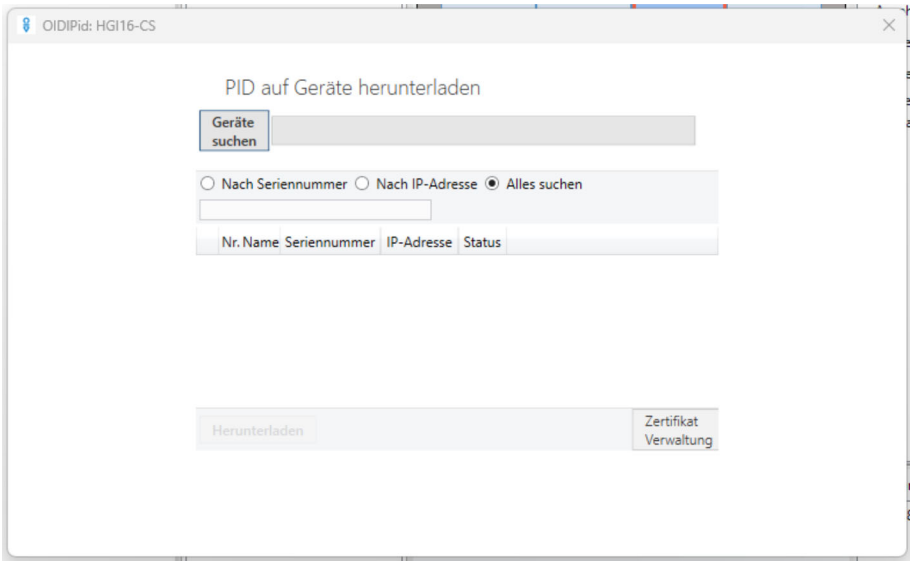


Fig. 31: Downloading PID to devices

1. Open the DCA.
2. Select the option "Export".
3. Select the option "Download PID to devices".
   – The dialogue "Download PID to devices" opens.
4. Search for devices.
5. Select a device.
6. Export the PID file to the desired device.
   – The PID file is being saved.

5.2 Transfer of PID file (Configuration file)

The image file can be transferred to a micro SD card, see chapter 4.6 “Inserting the micro SD card (SDHC)“ on page 232. This micro SD card can be inserted into the panel and the data are transferred to the IP touch.

Notice
The micro SD card must be formatted with FAT32 before use.

Transfer PID file to micro SD card.

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

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

2. Insert the micro SD card into the device.
   – When the micro SD card has been inserted correctly into the device, this is signaled by an icon in the status bar.
3. In the "System settings" menu, tap on option "Over".
4. Then tap on the "Firmware update" button.
5. Select the PID file and confirm with a tap on "OK".
   – The firmware update is transferred.

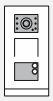
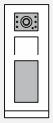
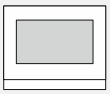
6 Case studies

Below you will find a number of different practical application examples for integration in a one-family house as well as a multifamily house.

Detailed information on IP Welcome, as well as explanations of the basics, can be found in the system manual for Busch-Welcome® IP.

6.1 Legend

Legends in the graphics:

	Outdoor station: IP pushbutton outdoor station
	Outdoor station: IP touch 5" outdoor station
	Smart Access Point: Smart Access Point Lite
	Indoor station: IP Touch LAN/LAN | LAN/WLAN IP touch 10 LAN/LAN | LAN/WLAN
	IP actuator: IP Actuator
	Switch: Commercially available
	Router: Commercially available
	IP interfaces: KNX IP interface / KNX IP interface Secure KNX IP router / KNX IP router Secure
	KNX Control touch
	Door opener: Commercially available
	Network cable (Cat cable or glass fibre cable)
	KNX line
	Power supply cable

6.2 Basic information

Please note the following information.

Assignment of the IP addresses

There are two different options for assigning IP addresses.

Assignment of static IP addresses	Assignment of dynamic IP addresses
The IP addresses are assigned directly in IP touch or for the KNX IP interface via the ETS.	The IP addresses are assigned via a local router (both the KNX IP interface and IP touch must be in DHCP mode).
When using statically assigned IP addresses, the Welcome app and an additional extension (IP touch) **cannot** be used.	When using dynamic IP addresses, the Welcome app and an additional extension (IP touch) cannot be used. ▪ The second extension (IP touch) must be in the same address range as the master unit.
When assigning new static and dynamic IP addresses, each new IP address must be entered in the IP touch.	

Notice
KNX integration is not possible via the LAN1 connection. For KNX integration, use the LAN2 connection or the WLAN connection of the IP touch. A router is mandatory when using a WLAN connection.

Subsequent router connection

Proceed as follows if you wish to connect a route subsequently:

1. Change the IP touch from static IP address assignment to DHCP mode.
2. Switch the IP interface from static IP address assignment to DHCP mode (in the ETS).
3. Enter the new IP address of the IP interface into the IP touch.

Notice
If a router is used as an option, fixed DHCP addresses for the IP touch and the IP interface should be assigned in the router.

6.3 Case studies

6.3.1 Multifamily house with door communication and KNX within the flat

The KNX IP interface forms the interface between the local unit network and the KNX installations and operates according to the KNXnet/IP specification.

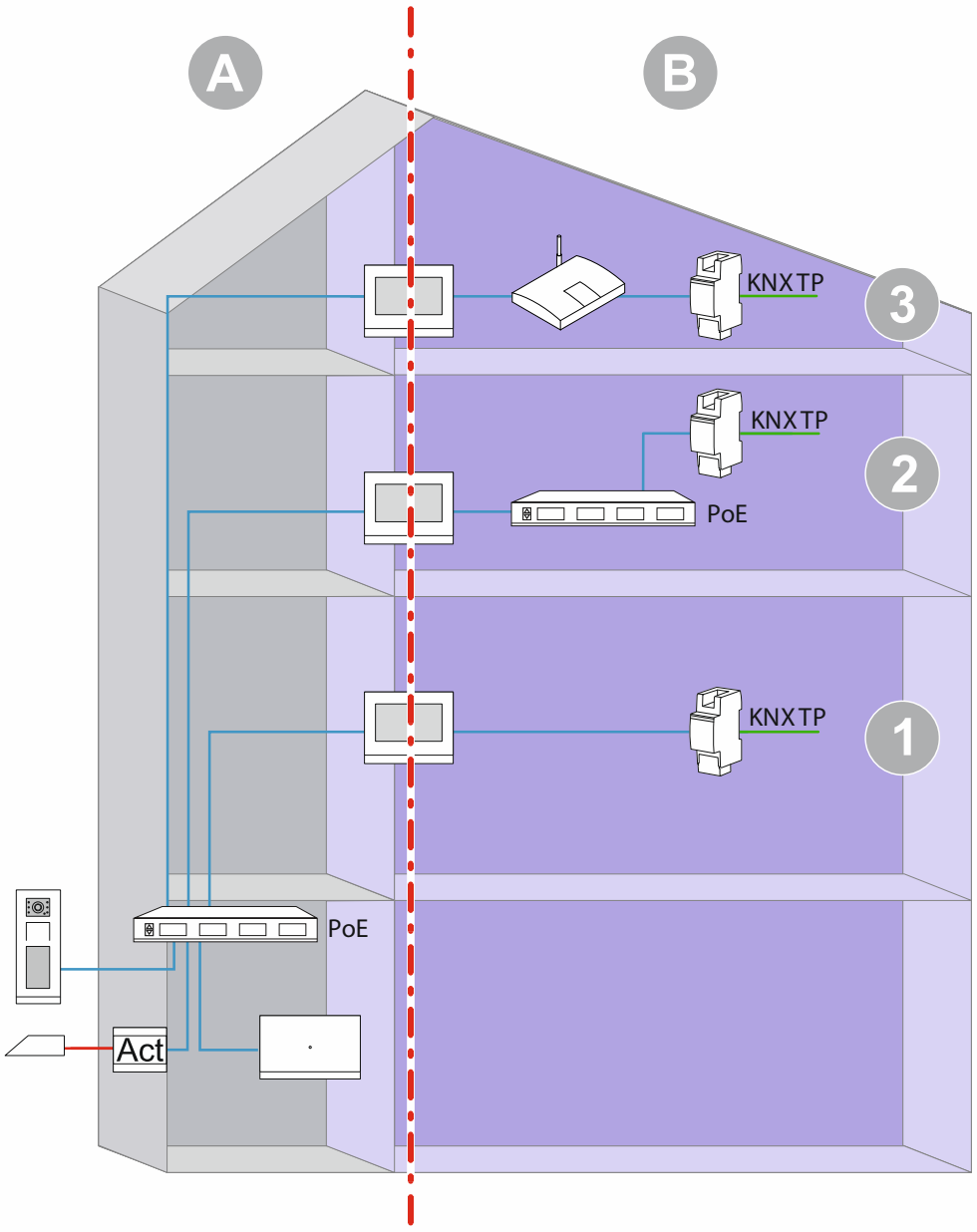


Fig. 32: Overview: multifamily house with door communication and KNX within the flats

Pos.	Description
1	Door communication and KNX within the flat. Direct connection between IP touch and KNX IP interface. Static IP address assignment for KNX IP interface via ETS. Static IP address assignment for LAN interface. An Internet connection is required for the use of Busch-Welcome® App.
2	Door communication and KNX in the flat Use of a common PoE switch Static IP address assignment for KNX IP interface via ETS. Static IP address assignment for the interface LAN. An Internet connection is required for the use of Busch-Welcome® App.
3	Door communication and KNX in the flat Use of a router (the IP addresses are assigned by the router) The assignment of fixed DHCP addresses is recommended.

[A] Welcome IP door communication

[B] Private area

For further information on IP address assignment, see see chapter 6.2 “Basic information“ on page 240.

6.3.2 One-family house with door communication and KNX

The KNX IP interface forms the interface between the local unit network and the KNX installations and operates according to the KNXnet/IP specification.

Notice
The IP addresses are assigned by the router.

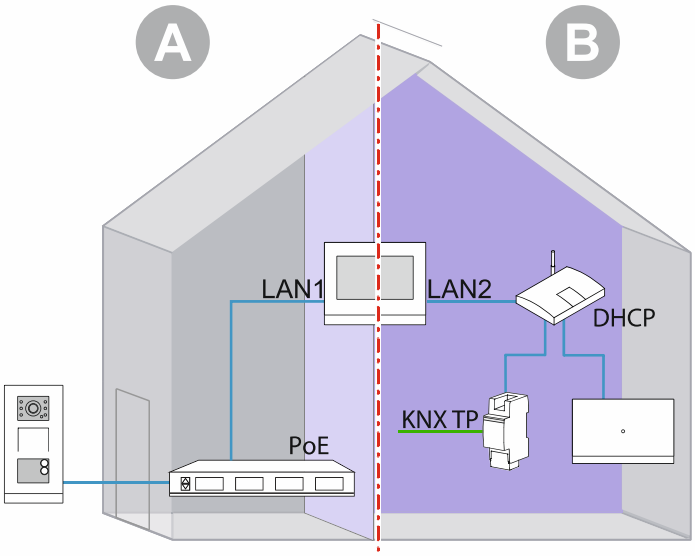


Fig. 33: Overview: one-family house with door communication and KNX

[A] Welcome IP door communication

[B] Private area

*) If Welcome IP door communication is not used, the Smart Access Point is not available under [B].

For further information on IP address assignment, see see chapter 6.2 “Basic information“ on page 240.

6.3.3 One-family house with door communication and KNX, including single residential unit

One outdoor station is installed for the building entrance.

In this type of installation, the Master IP touch also fulfils the function of an IP gateway.

The KNX IP interface forms the interface between the local unit network and the KNX installations and operates according to the KNXnet/IP specification.

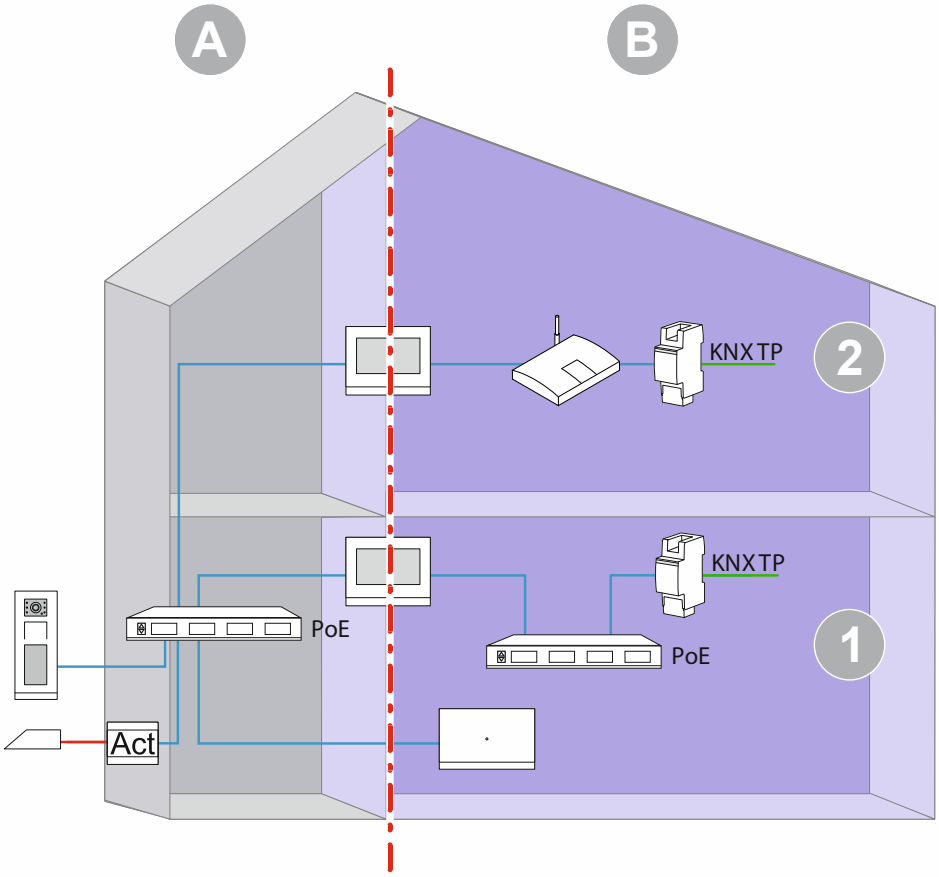


Fig. 34: Overview: one-family house with door communication, KNX and single residential unit

Pos.	Description
1	Door communication and KNX within the flat. Use of a common PoE switch. Static IP address assignment for KNX IP interface via ETS. Static IP address assignment for the interface LAN2. An Internet connection is required for the use of Busch-Welcome® App.
2	Door communication and KNX within the flat. Use of a router (the IP addresses are assigned by the router). The assignment of fixed DHCP addresses is recommended.

[A] Welcome IP door communication

[B] Private area

For further information on IP address assignment, see see chapter 6.2 “Basic information“ on page 240.

6.3.4 Apartment building with DES and KNX with only one IPR/S 3.5.1 (Secure on)

Topology

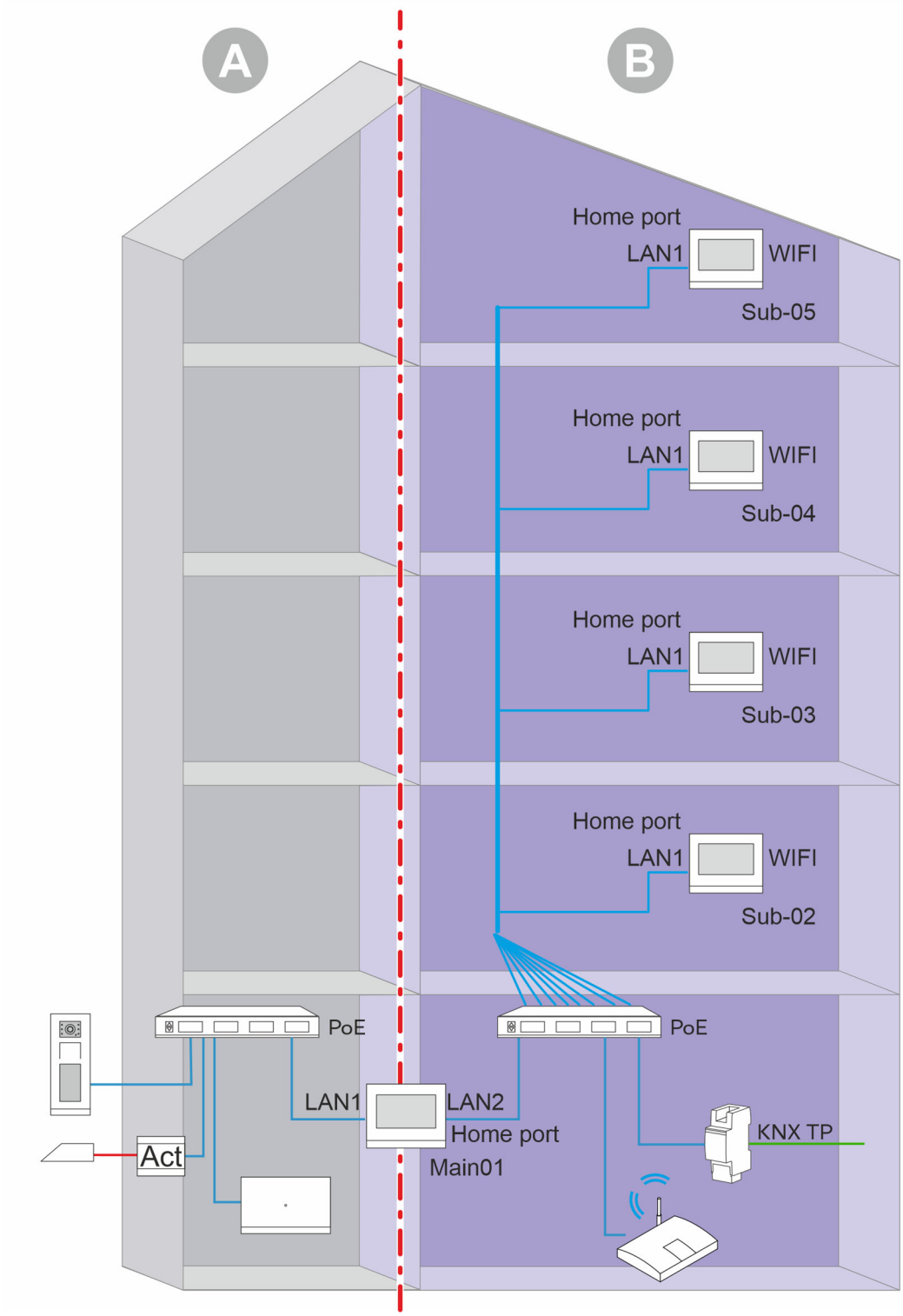


Fig. 35: All indoor stations are connected via the Lan1 port with the PoE switch.

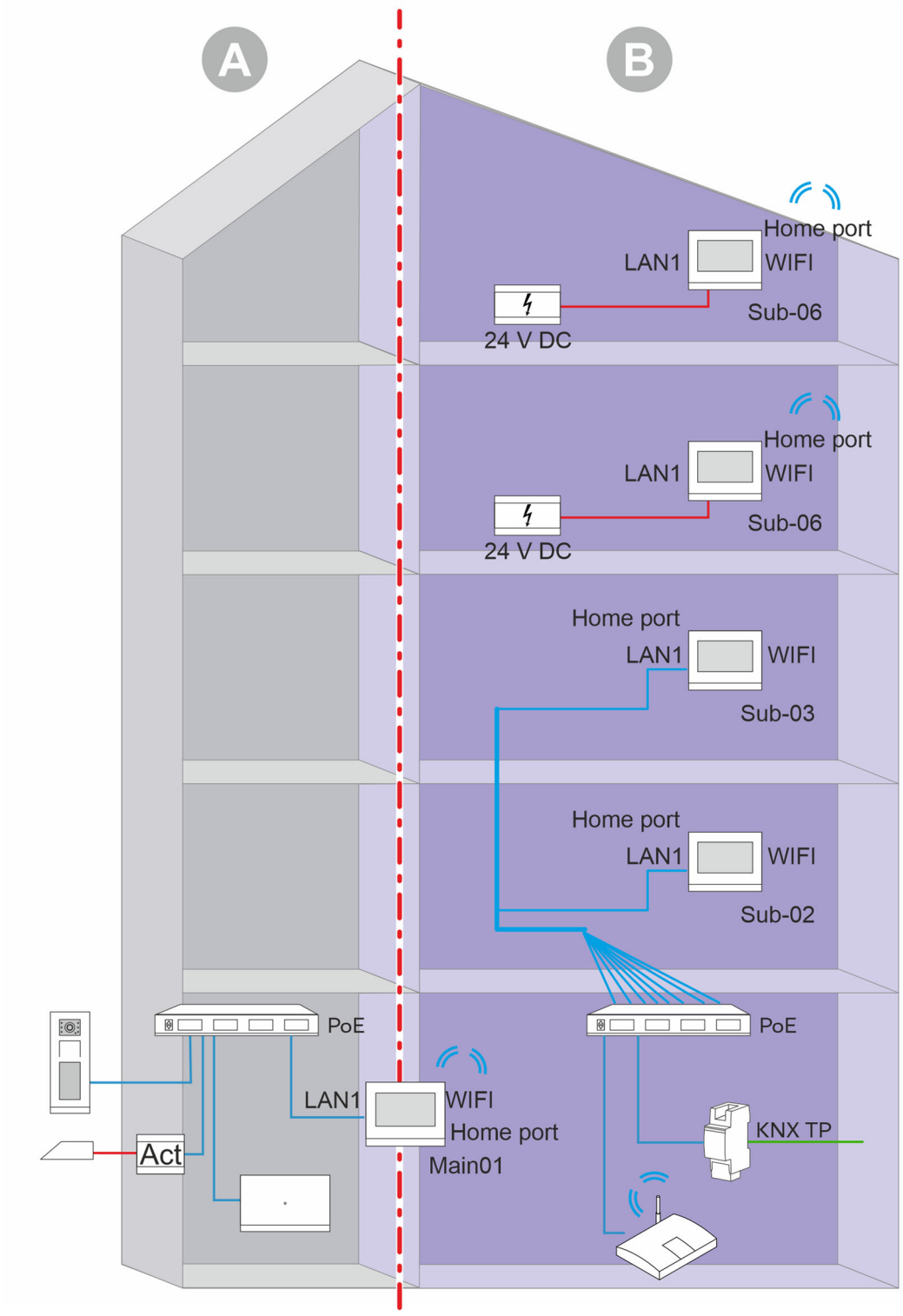


Fig. 36: Some indoor stations are connected via the Lan1 port with the PoE switch, and other indoor stations are connected with the router via the WIFI port.

[A] Welcome IP door communication

[B] Private area

IP touch settings

Master/slave	One panel is set on the master mode. All others are set on the slave mode. Ensure that there is no IP conflict between different panels with different device numbers.
Port for the home network	LAN1 or WLAN (up to power supply) Change the port for the home network in the following menu: Technical settings - local settings
Network settings	DHCP (192.168.61.X)

Table 4: IP touch settings

Smart home settings / KNX interface settings

KNXnet/IP secure	activate
Tunnelling password	Different tunnelling passwords from IPR/S 3.5.1 in different panels (one IPR/S can be used for five IP touch)
Authentication code	Leave empty (option)
KNX multicast/IP address	Static address IPR/S 3.5.1 (192.168.61.35)

Table 5: Smart home settings / KNX interface settings

IPR/S 3.5.1 settings

Secure commissioning	Activated
Secure tunneling	Activated
IP address setting	Use the static IP address (192.168.61.35)

Table 6: IPR/S 3.5.1 settings

6.3.5 Apartment building with DES and KNX with two IPR/S 3.5.1 (Secure on)

Topology

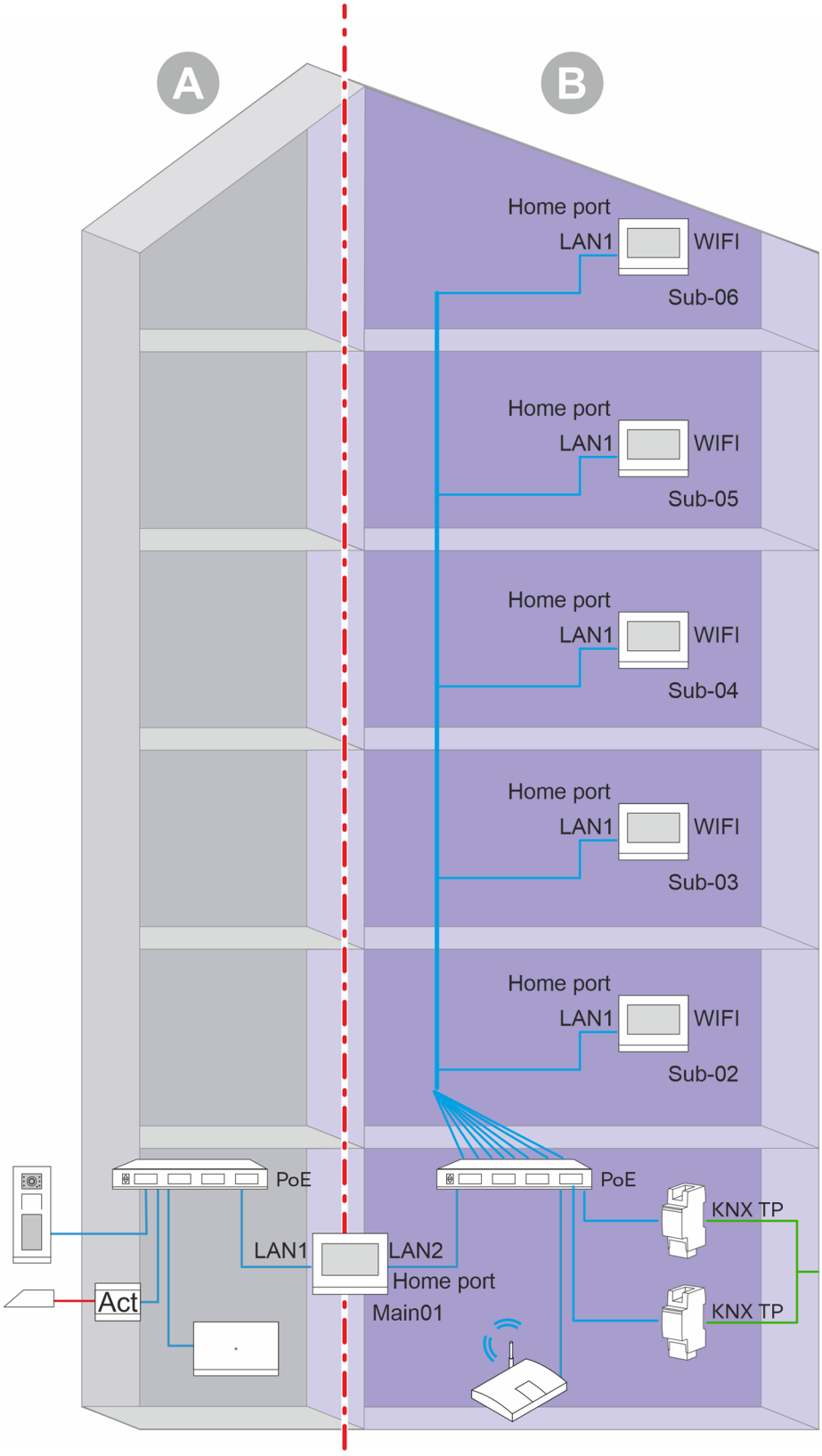


Fig. 37: All indoor stations are connected via the Lan1 port with the PoE switch.

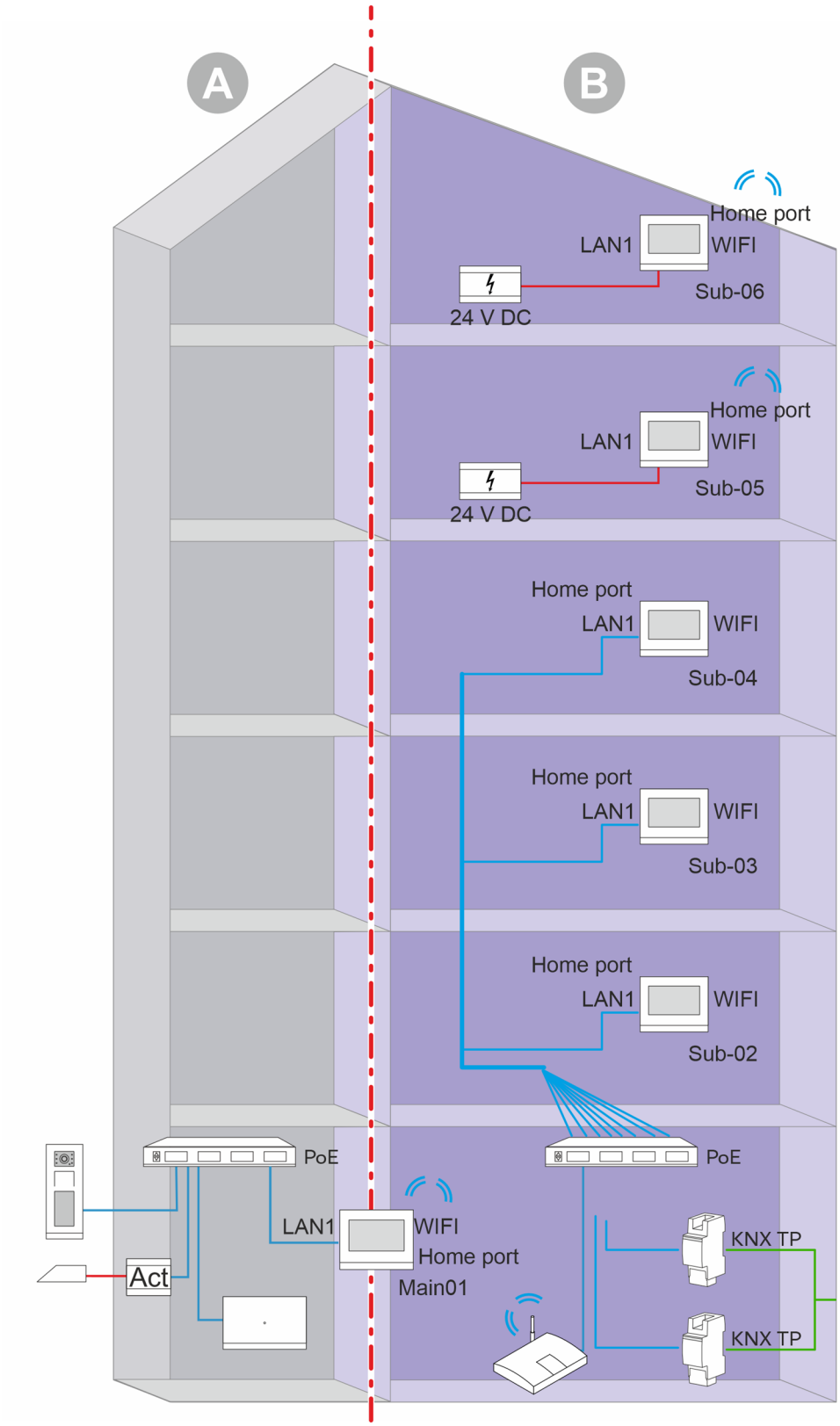


Fig. 38: Some indoor stations are connected via the Lan1 port with the PoE switch, and other indoor stations are connected with the router via the WIFI port.

[A] Welcome IP door communication

[B] Private area

IP touch settings

Master/slave	Only one panel can be set as master. The other panels are all set on slave, different slave-centrals with different device numbers (ensure that no IP conflict exists).
Port for the home network	Master panel: LAN2 Slave panels: LAN1 or WLAN (up to power supply) Change the port for the home network in the following menu: Technical settings - local settings
Network settings	DHCP (192.168.61.X)

Table 7: IP touch settings

Smart home settings / KNX interface settings

KNXnet/IP safety:	Activated
Tunnelling password	**Notice:** The cases described in the following are examples, since the selection of the tunnel in IPR is made via the assignment of the respective tunnelling password in the different IP touch. Case 1: Three of the panels use password IPR/S 3.5.1-1 Three of the panels use password IPR/S 3.5.1-2 Case 2: Five of the panels use password IPR/S 3.5.1-1 One panel uses password IPR/S 3.5.1-2
Authentication code	Leave empty (option)
KNX multicast/IP address	Case 1: Three of the panels use the IP 192.168.61.35 Three of the panels use the IP 192.168.61.36 Case 2: Five of the panels use the IP 192.168.61.35 One panel uses the IP 192.168.61.36

Table 8: Smart home settings / KNX interface settings

IPR/S 3.5.1-1 settings

Secure commissioning	Activated
Safe tunneling	Activated
IP address setting	Use the static IP address (192.168.61.35)

Table 9: IPR/S 3.5.1-1 settings

IPR/S 3.5.1-2 settings

Secure commissioning	Activated
Secure tunneling	Activated
IP address setting	Use the static IP address (192.168.61.36)

Table 10: IPR/S 3.5.1-2 settings

6.3.6 Apartment building with DES and KNX with only one IPR/S 3.1.1

Topology

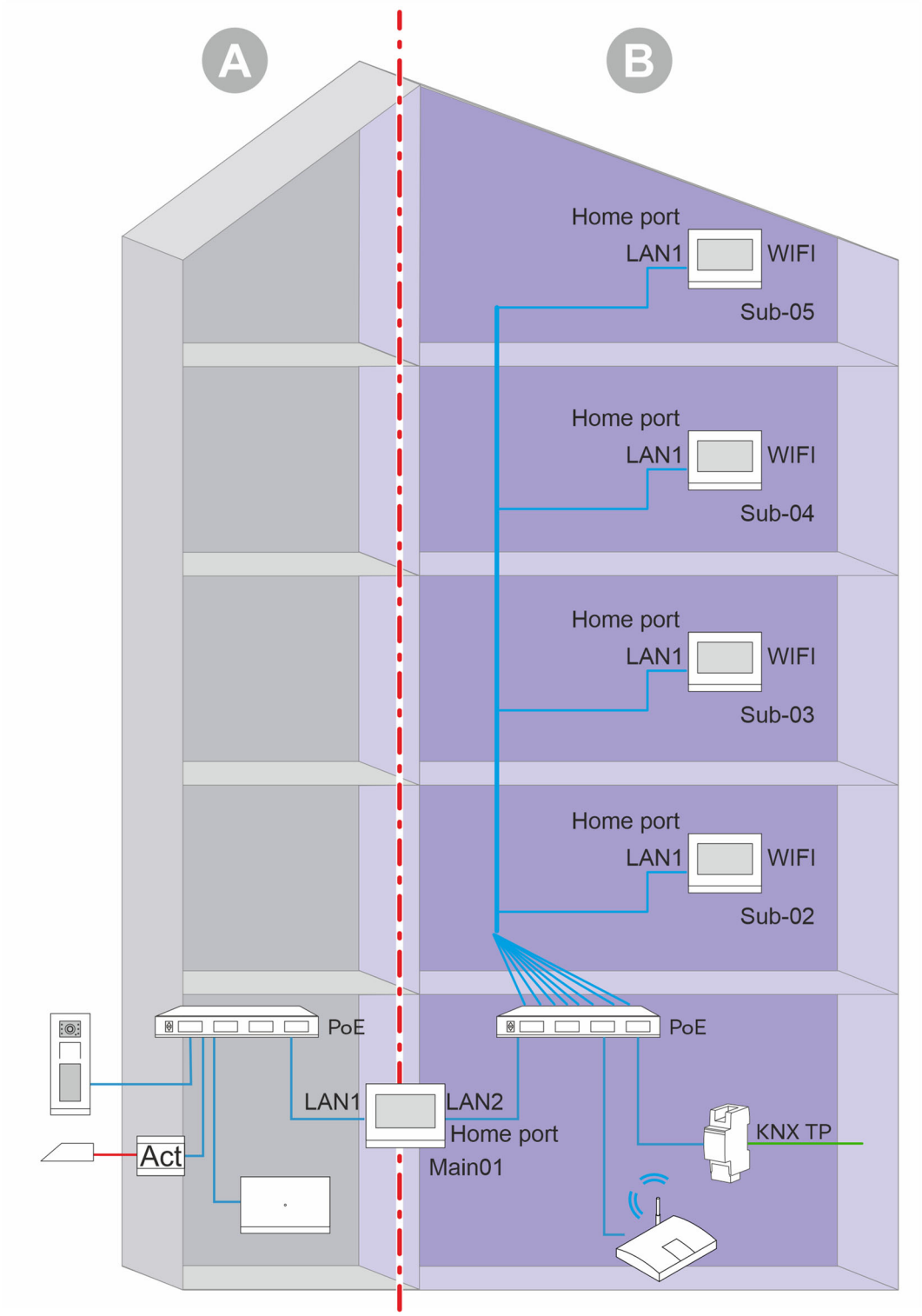


Fig. 39: All indoor stations are connected via the Lan1 port with the PoE switch.

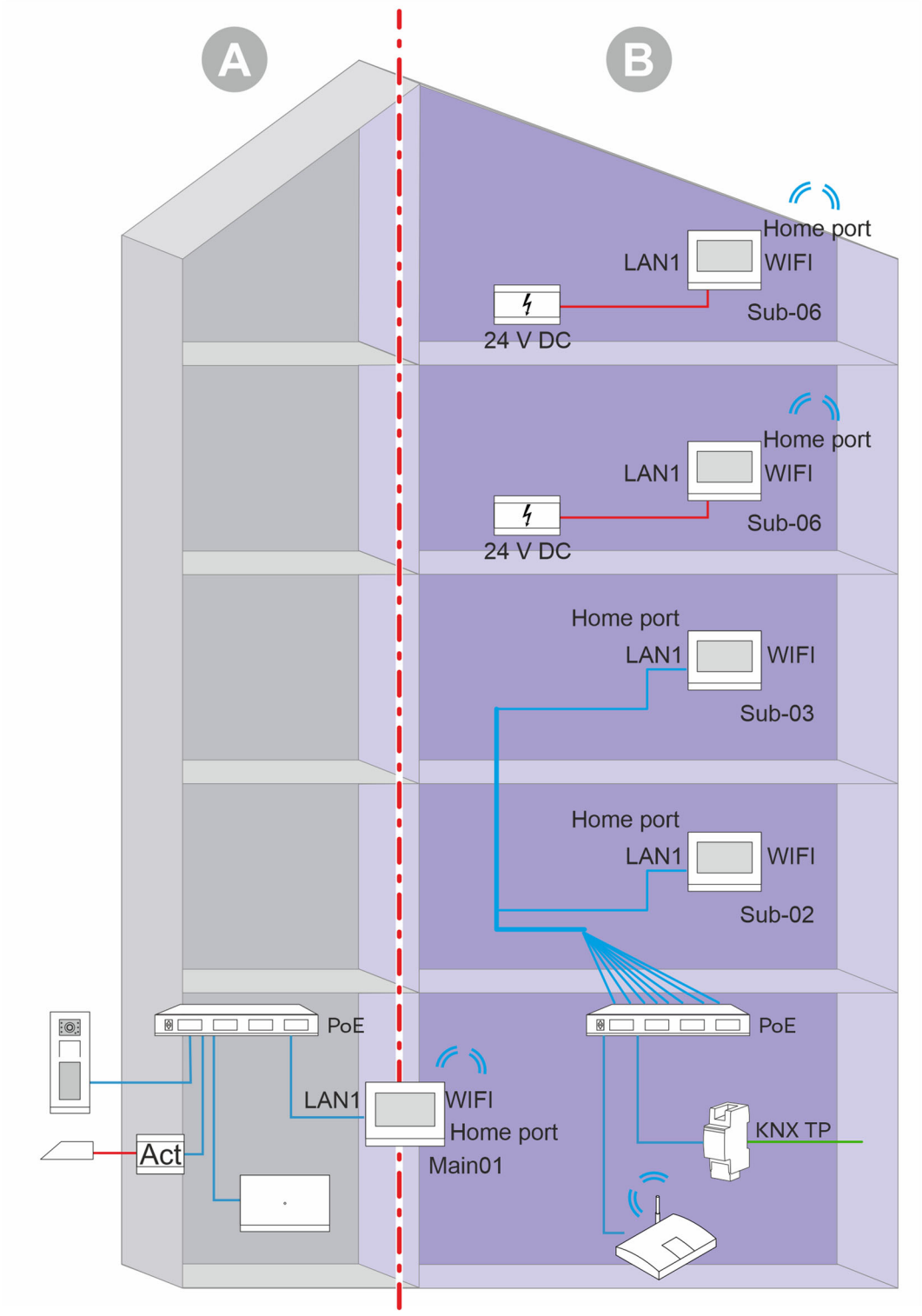


Fig. 40: Some indoor stations are connected via the Lan1 port with the PoE switch, and other indoor stations are connected with the router via the WIFI port.

[A] Welcome IP door communication

[B] Private area

IP touch settings

Master/slave	Only one panel can be set as master. The other panels are all set on slave, with different panels with different device numbers, ensure that no IP conflict exists.
Home network port	Master panel: LAN2 or WLAN Slave panels: LAN1 or WLAN (up to power supply) Change the port for the home network in the following menu: Technical settings - local settings
Network settings	DHCP (192.168.61.X)

Table 11: IP touch settings

Smart home settings / KNX interface settings

KNX multicast/IP address	Static address IPR/S 3.3.1 (192.168.61.31)

Table 12: Smart home settings / KNX interface settings

IPR/S 3.1.1 setting

KNXnet/IP secure	Deactivated
IP address setting	Use the static IP address (192.168.61.31)

Table 13: IPR/S 3.3.1 setting

6.3.7 Apartment building with DES and KNX with two IPR/S 3.1.1

Topology

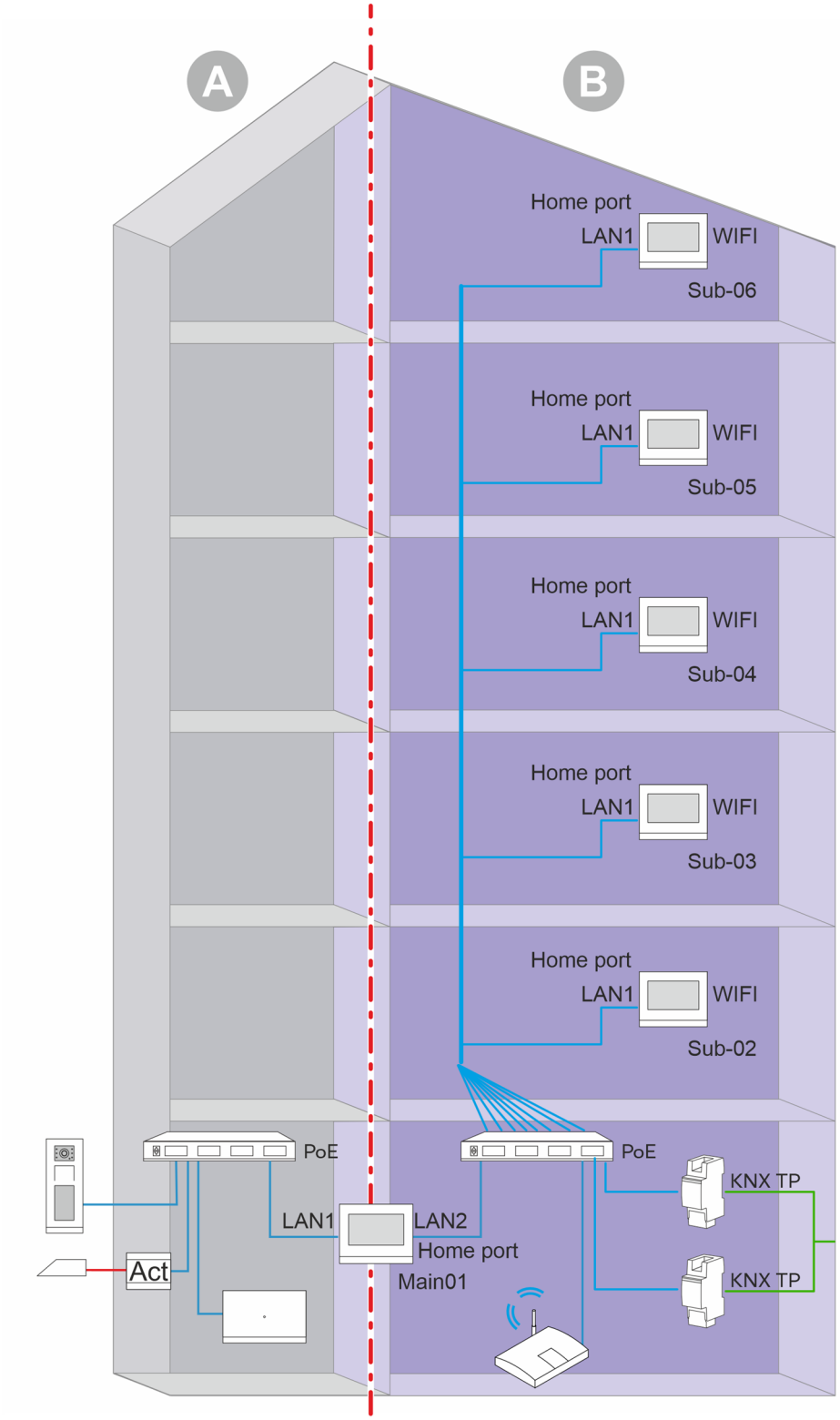


Fig. 41: All indoor stations are connected via the Lan1 port with the PoE switch.

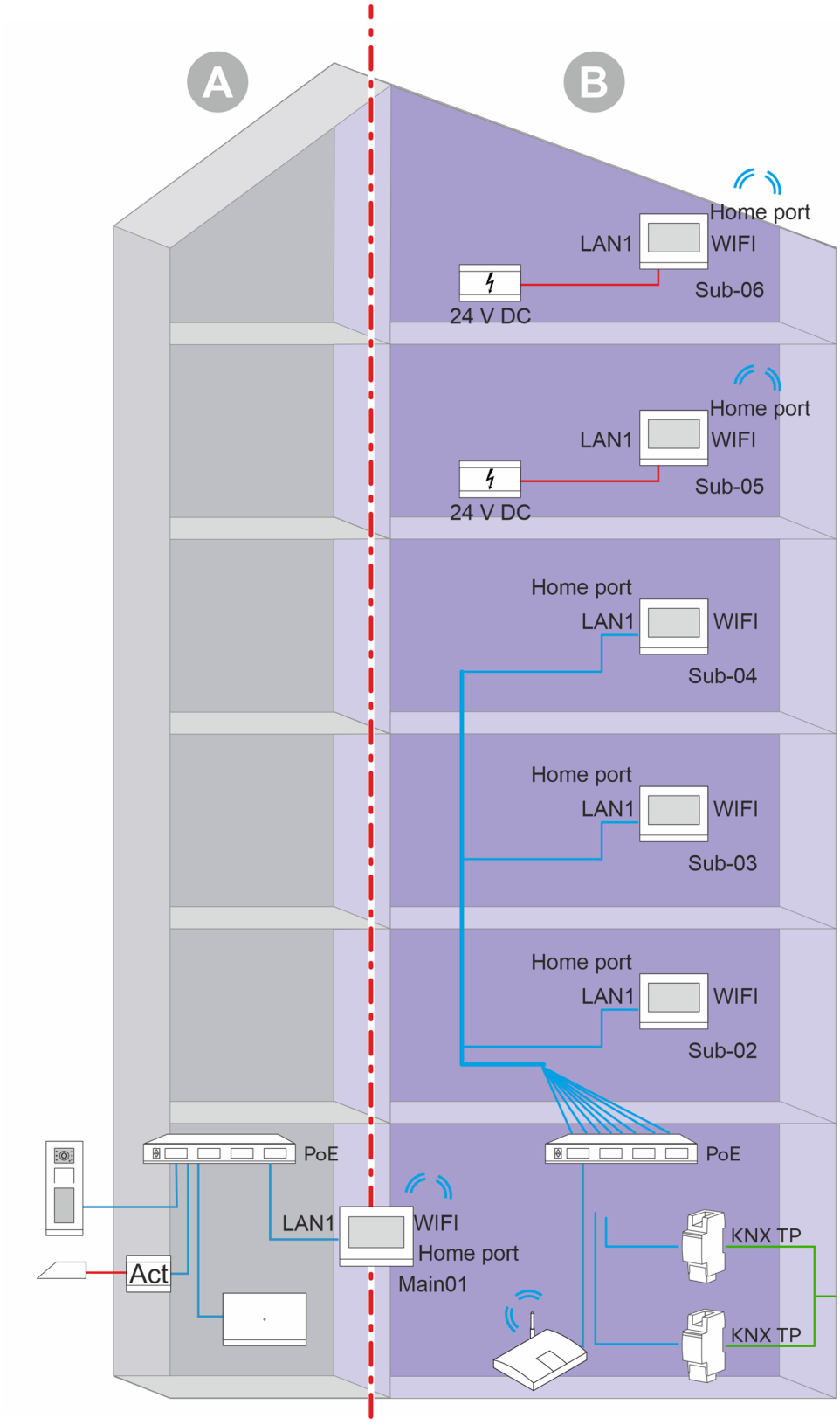


Fig. 42: Some indoor stations are connected via the Lan1 port with the PoE switch, and other indoor stations are connected with the router via the WIFI port.

[A] Welcome IP door communication

[B] Private area

IP touch settings

Master/slave	Only one panel can be set as master. The other panels are all set on slave, with different panels with different device numbers, ensure that no IP conflict exists.
Home network port	Master panel: LAN2 or WLAN Slave panels: LAN1 or WLAN (up to power supply) Change the port for the home network in the following menu: Technical settings - local settings
Network settings	DHCP (192.168.61.X)

Table 14: IP touch settings

Smart home settings / KNX interface settings

KNX multicast/IP address	Case 1： Three of the panels use the static IP address of IPR/S 3.3.1-1: 192.168.61.31. Three of the panels use the static IP address of IPR/S 3.3.1-2: 192.168.61.31. Case 2： Five of the panels use the static IP address of IPR/S 3.3.1-1: 192.168.61.31. A further panel uses the static IP address of IPR/S 3.3.1-2: 192.168.61.32.
KNXnet/IP secure	Deactivated

Table 15: Smart home settings / KNX interface settings

IPR/S 3.1.1-1 settings

IP address setting	Use the static IP address (192.168.61.31)

Table 16: IPR/S 3.1.1-1 settings

IPR/S 3.1.1-2 settings

IP address setting	Use the static IP address (192.168.61.32)

Table 17: IPR/S 3.1.1-2 settings

6.3.8 Two apartment buildings in the same DES community network and in the same KNX system with IPR/S 3.5.1 (Secure on)

Topology

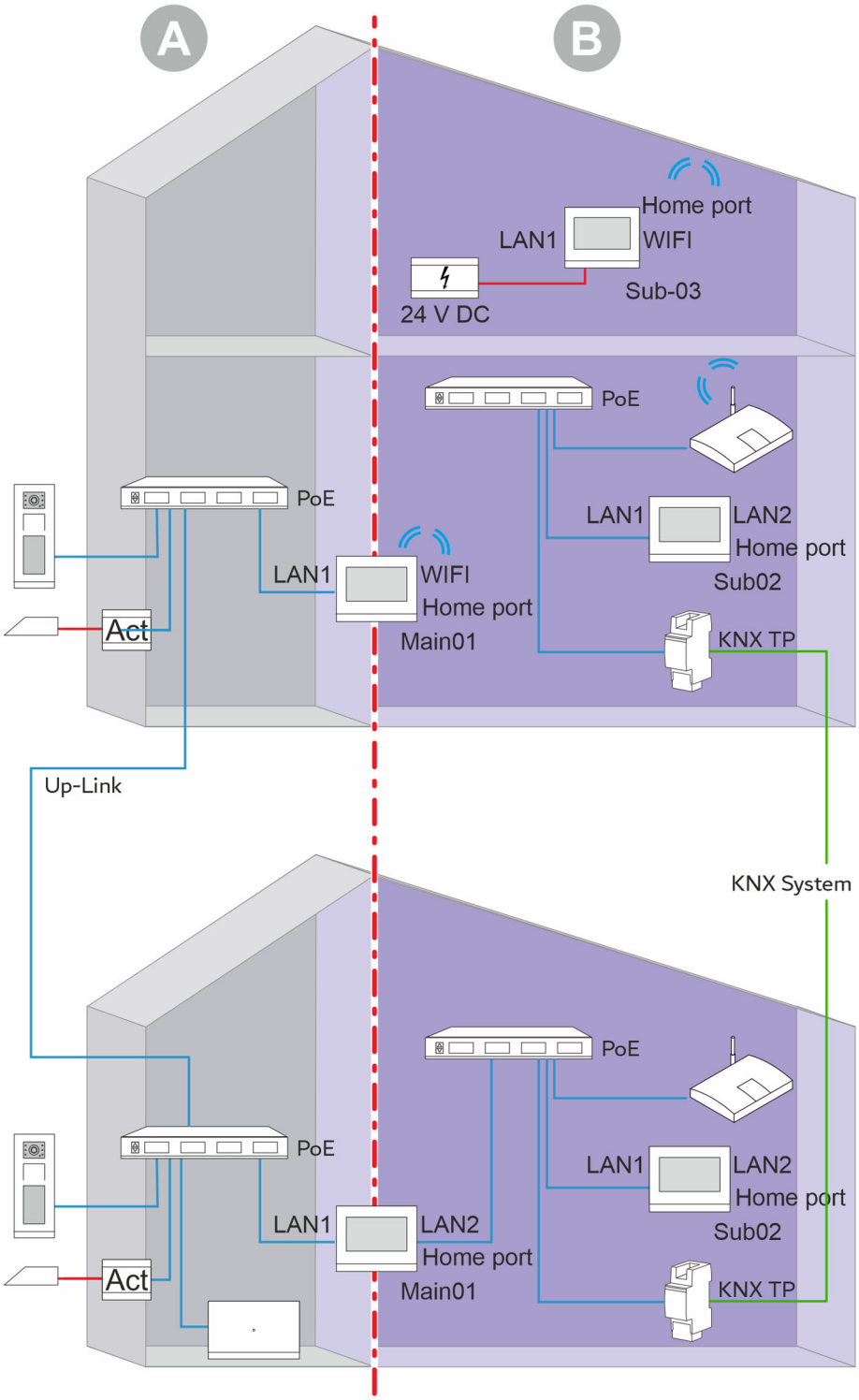


Fig. 43: Some indoor stations are connected via the Lan1 port with the PoE switch, and some indoor stations are connected with the router via the WLAN port.

[A] Welcome IP door communication

[B] Private area

IP touch settings in an apartment building

Master/slave	Only one panel can be set as master. The other panel is set on slave, ensure that there is no IP conflict between different panels with different device numbers.
Home network port	Master panel: LAN2 or WLAN Slave panel: LAN1 Change the port for the home network in the following menu: Technical settings - local settings
Network settings	DHCP (192.168.6X.X)

Table 18: IP touch settings in an apartment building

Smart home settings / KNX interface settings

KNXnet/IP secure	Activation
Tunnelling password	Different tunnelling password from IPR/S 3.5.1 in different panels (one IPR can be used for five IP touch)
Authentication code	Leave empty (option)
KNX multicast/IP address	Static IP address IPR/S 3.5.1

Table 19: Smart home settings / KNX interface settings

IPR/S 3.5.1-1 settings

Secure commissioning	Activated
Safe tunneling	Activated
IP address setting	Use the static IP address (192.168.61.35)

Table 20: IPR/S 3.5.1-1 settings

IPR/S 3.5.1-2 settings

Secure commissioning	Activated
Safe tunneling	Activated
IP address setting	Use the static IP address (192.168.60.35)

Table 21: IPR/S 3.5.1-2 settings

6.3.9 Two apartment buildings in the same DES community network and in the same KNX system with IPR/S 3.1.1

Topology

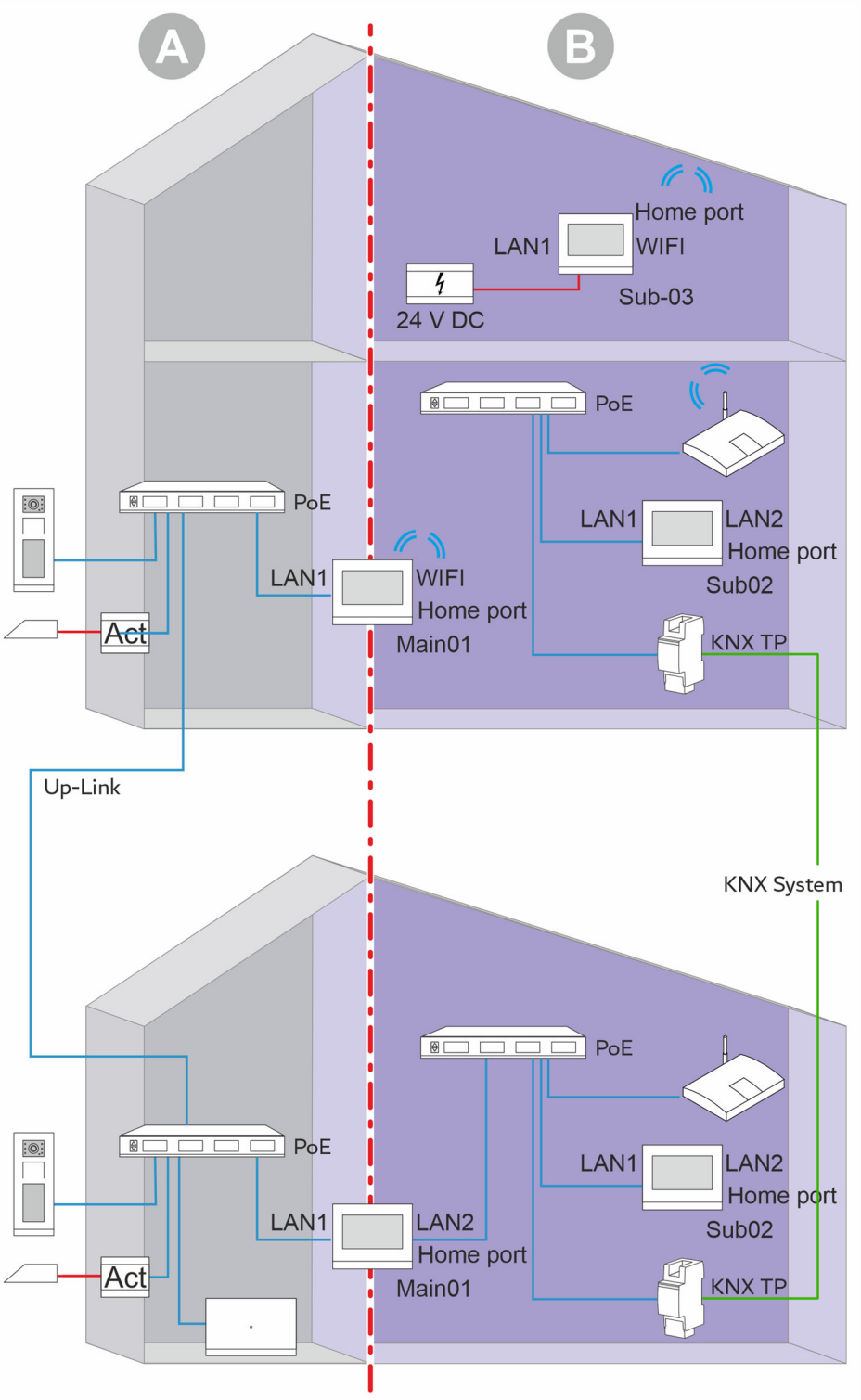


Fig. 44: Some indoor stations are connected via the Lan1 port with the PoE switch, and other indoor stations are connected with the router via the WLAN port.

[A] Welcome IP door communication

[B] Private area

IP touch settings

Master/slave	Only one panel can be set as master. The other panel is set on slave, ensure that there is no IP conflict between different panels with different device numbers.
Home network port	Master panel: LAN2 or WLAN Slave panel: LAN1 Change the port for the home network in the following menu: Technical settings - local settings
Network settings	DHCP (192.168.6X.X)

Table 22: IP touch settings

Smart home settings / KNX interface settings

KNX multicast/IP address	Static IP address IPR/S 3.3.1 (192.168.6X.31)
KNXnet/IP secure	Deactivate

Table 23: Smart home settings / KNX interface settings

IPR/S 3.1.1-1 settings

IP address setting	Use the static IP address (192.168.61.31)

Table 24: IPR/S 3.1.1-1 settings

IPR/S 3.1.1-2 settings

IP address setting	Use the static IP address (192.168.60.31)

Table 25: IPR/S 3.1.1-2 settings

6.3.10 Two apartment buildings in the same DES community network and in the same KNX system with Control touch

Topology

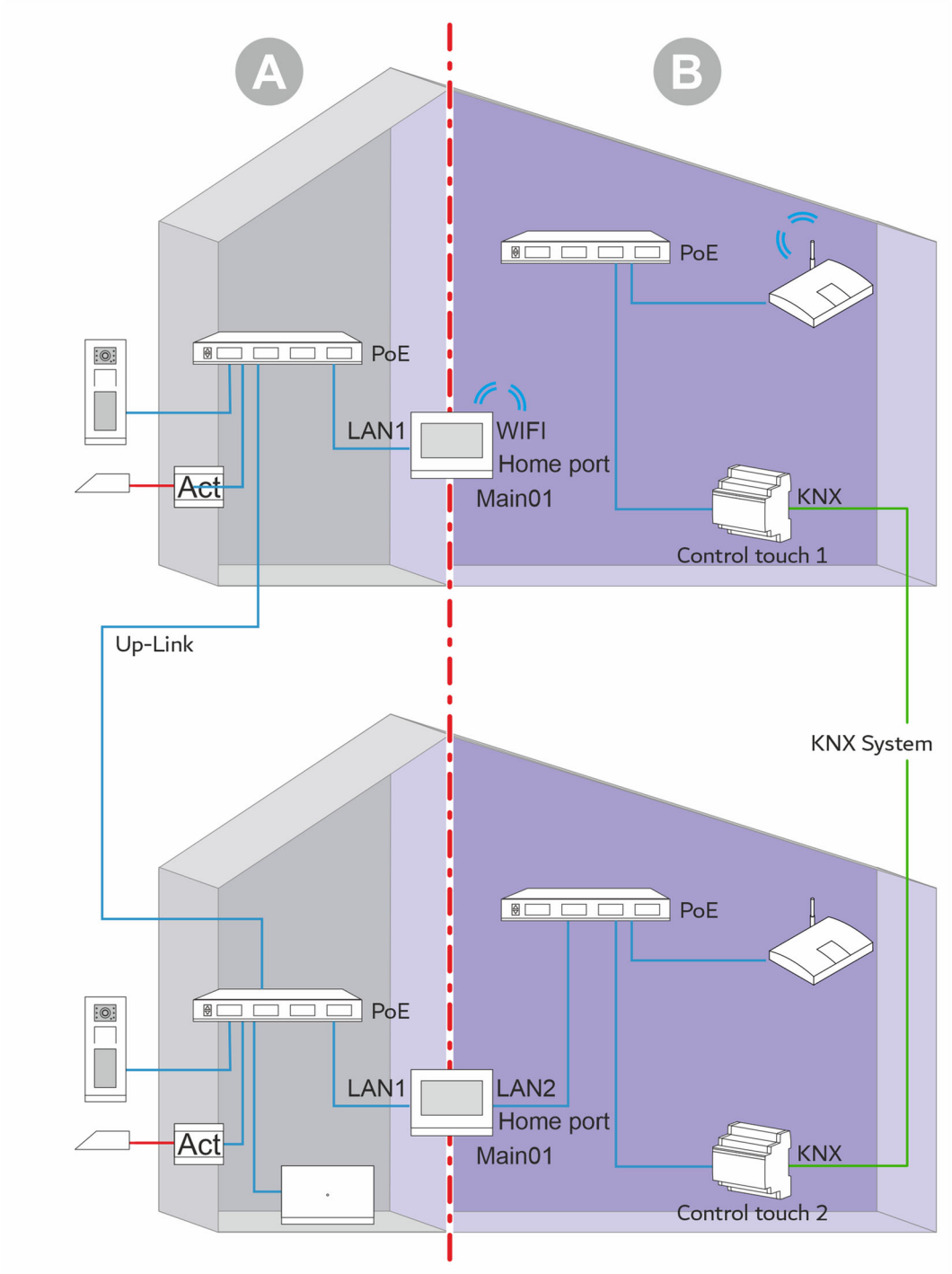


Fig. 45: One panel is connected via the Lan1 port via the PoE switch, a further panel is connected with the router via the WLAN port.

[A] Welcome IP door communication

[B] Private area

IP touch settings

Master/slave	Master
Home network port	Master panel: LAN2 or WLAN
Network settings	DHCP (192.168.6X.X)

Table 26: IP touch settings

Smart home settings / KNX interface settings

KNX multicast/IP address	Static IP address Control touch (192.168.61.15 or 192.168.60.18) in the same network.
KNXnet/IP secure	Deactivate

Table 27: Smart home settings / KNX interface settings

Control touch settings

DHCP	Deactivate
Set fixed IP address	192.168.60.18 / 192.168.61.15
KNX protocol	Activated
Type of connection	Direct
Active KNX tunnel input	No time limit

Table 28: Control touch settings

6.4 Practical examples, building or larger apartment without DES

6.4.1 Several IP touch are connected with an IPR/S 3.5.1 to a KNX system (Secure on)

Topology

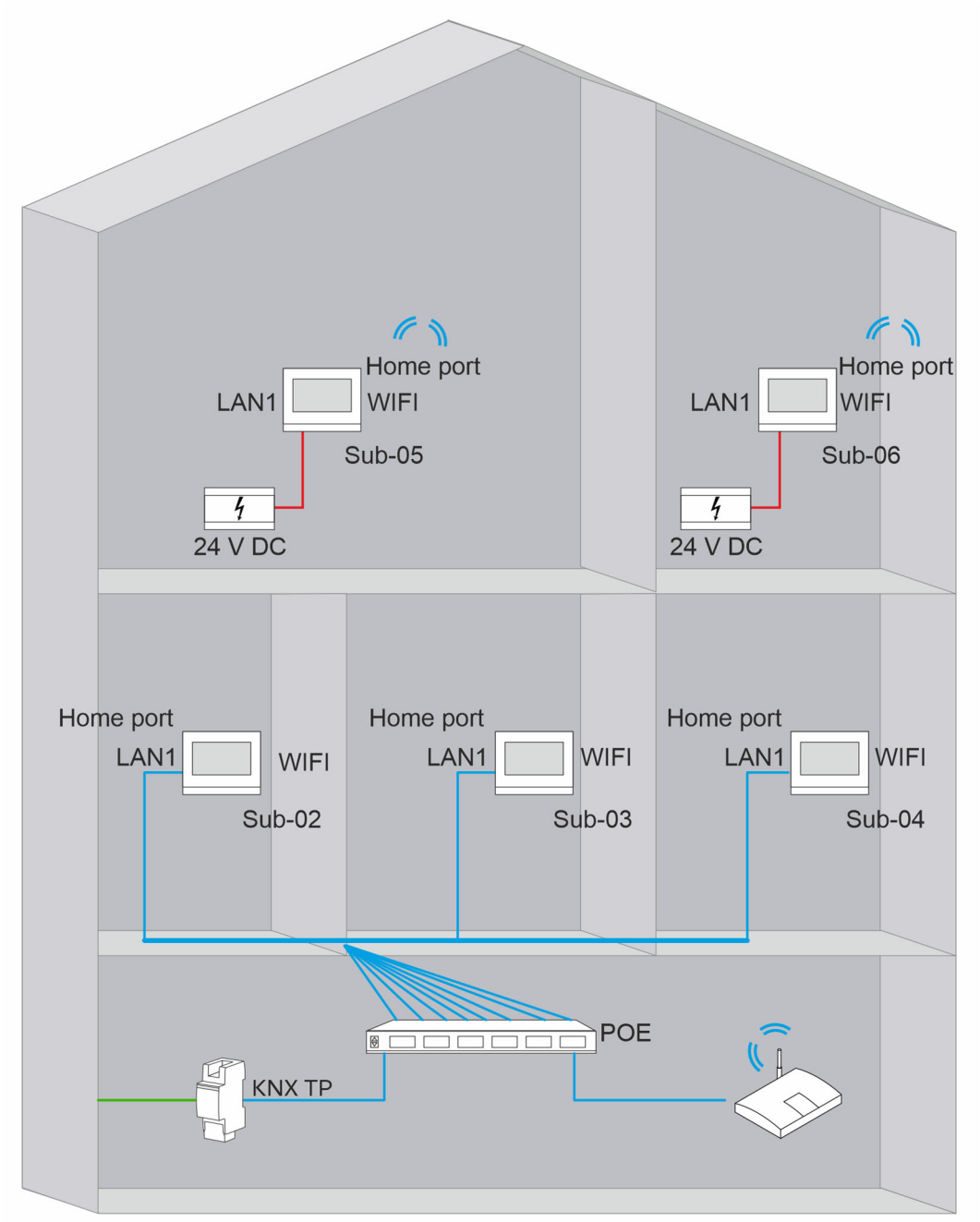


Fig. 46: Several IP touch panels are connected via the Lan1 port via the PoE switch, other IP touch panels are connected with the router via the WLAN port.

IP touch settings

Master/Slave	All five panels are set on slave mode, different panels with different device numbers. Ensure that no IP conflict exists.
Home network port	LAN1 or WLAN (up to power supply) Change the port for the home network in the following menu: Technical settings - local settings
Network settings	DHCP (192.168.61.X)

Table 29: IP touch settings

Smart home settings / KNX interface settings

KNXnet/IP secure	Activated
Tunnelling password	Different tunnelling password from IPR/S 3.5.1 in different panels (one IPR can be used for five IP touch)
Authentication code	Leave empty (option)
KNX multicast/IP address	Static address IPR/S 3.5.1 (192.168.61.35)

Table 30: Smart home settings / KNX interface settings

IPR/S 3.5.1 settings

Secure commissioning	Activated
Secure tunneling	Activated
IP address setting	Use the static IP address (192.168.61.35)

Table 31: IPR/S 3.5.1 settings

Notice

One IPR/S 3.5.1 has over 5 tunnel connections. This allows 5 IP touch panels to be operated at the same time. The connection option depends on how many tunnels the IP router makes available.

6.4.2 Several IP touch are connected with an IPR/S 3.1.1 to a KNX system

Topology

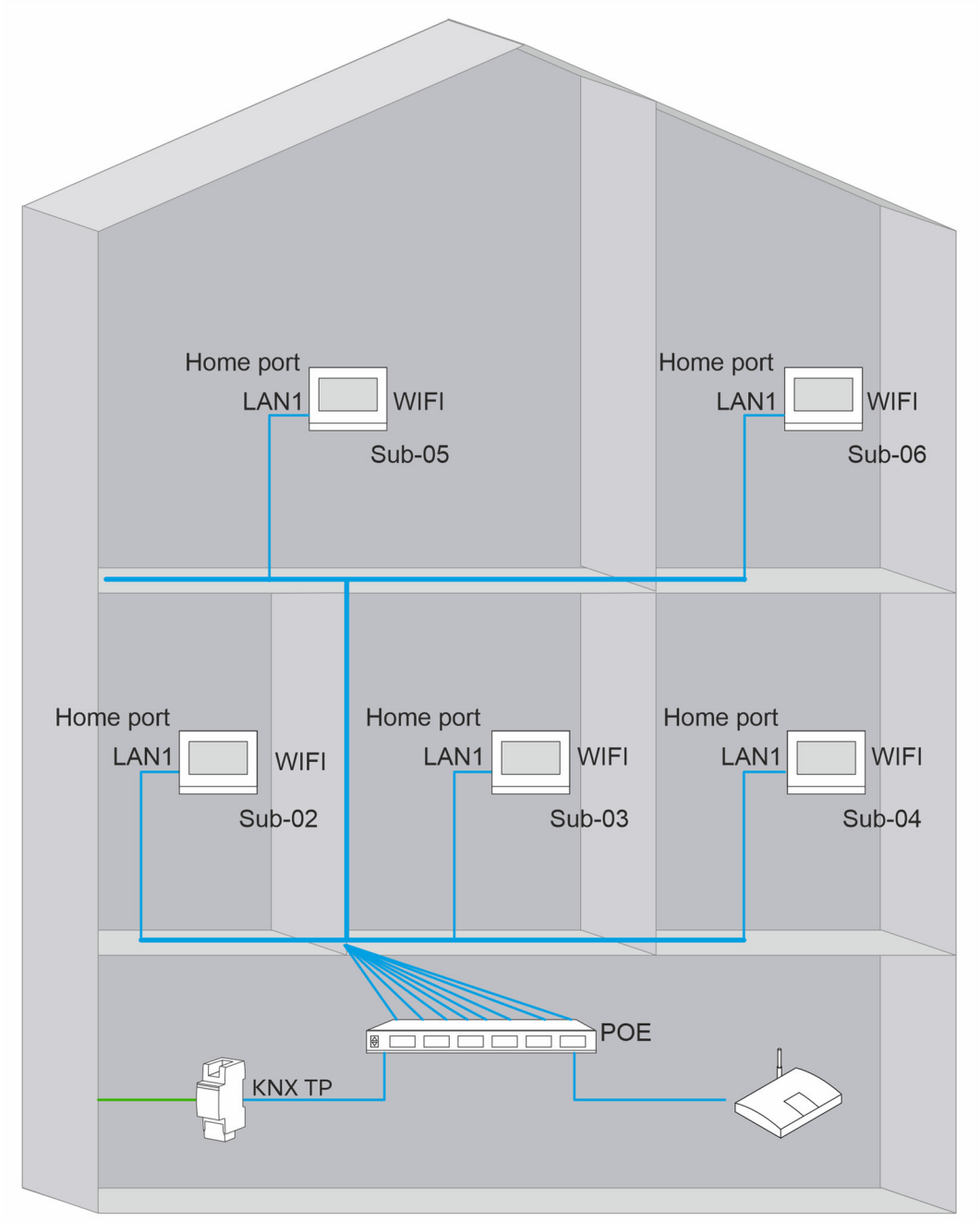


Fig. 47: All IP touch panels are connected via the Lan1 port with the PoE switch.

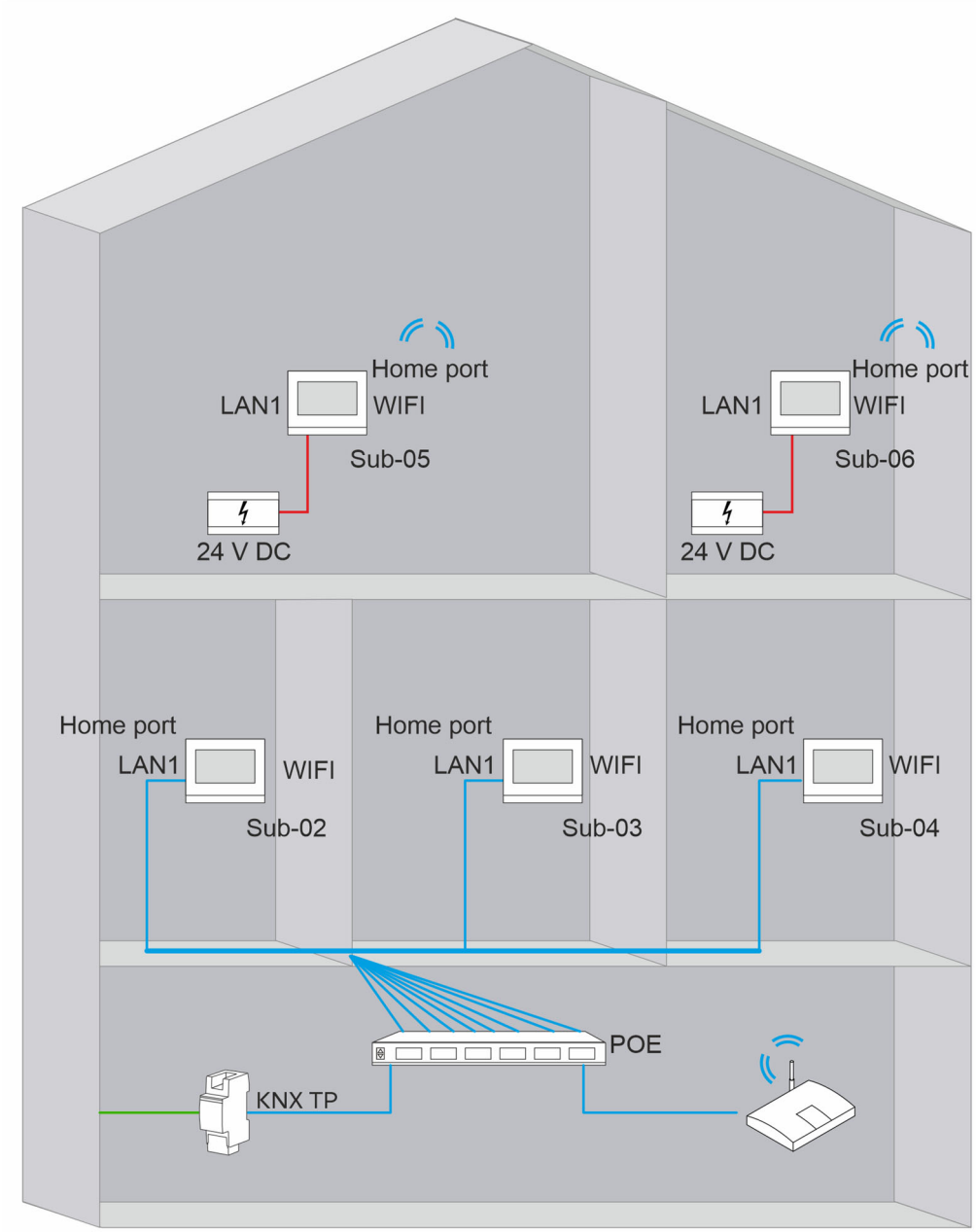


Fig. 48: Several IP touch panels are connected via the Lan1 port via the PoE switch, other IP touch panels are connected with the router via the WIFI port.

IP touch settings

Master/slave	All five operating fields are set on slave, different panels with different device numbers (ensure that no IP conflict exists).
Port for the home network	LAN1 or WLAN (up to power supply) Change the port for the home network in the following menu: Technical settings - local settings
Network settings	DHCP (192.168.61.X)

Table 32: IP touch settings

Smart home settings / KNX interface settings

KNXnet/IP secure	Deactivate
KNX multicast/IP address	Static IP address IPR/S 3.3.1 (192.168.61.31)

Table 33: Smart home settings / KNX interface settings

IPR/S 3.3.1 settings

IP address setting	Use the static IP address (192.168.61.31)

Table 34: IPR/S 3.3.1 settings

6.4.3 Several IP touch are connected to a KNX system with several IPR/S 3.5.1 (Secure on)

Topology

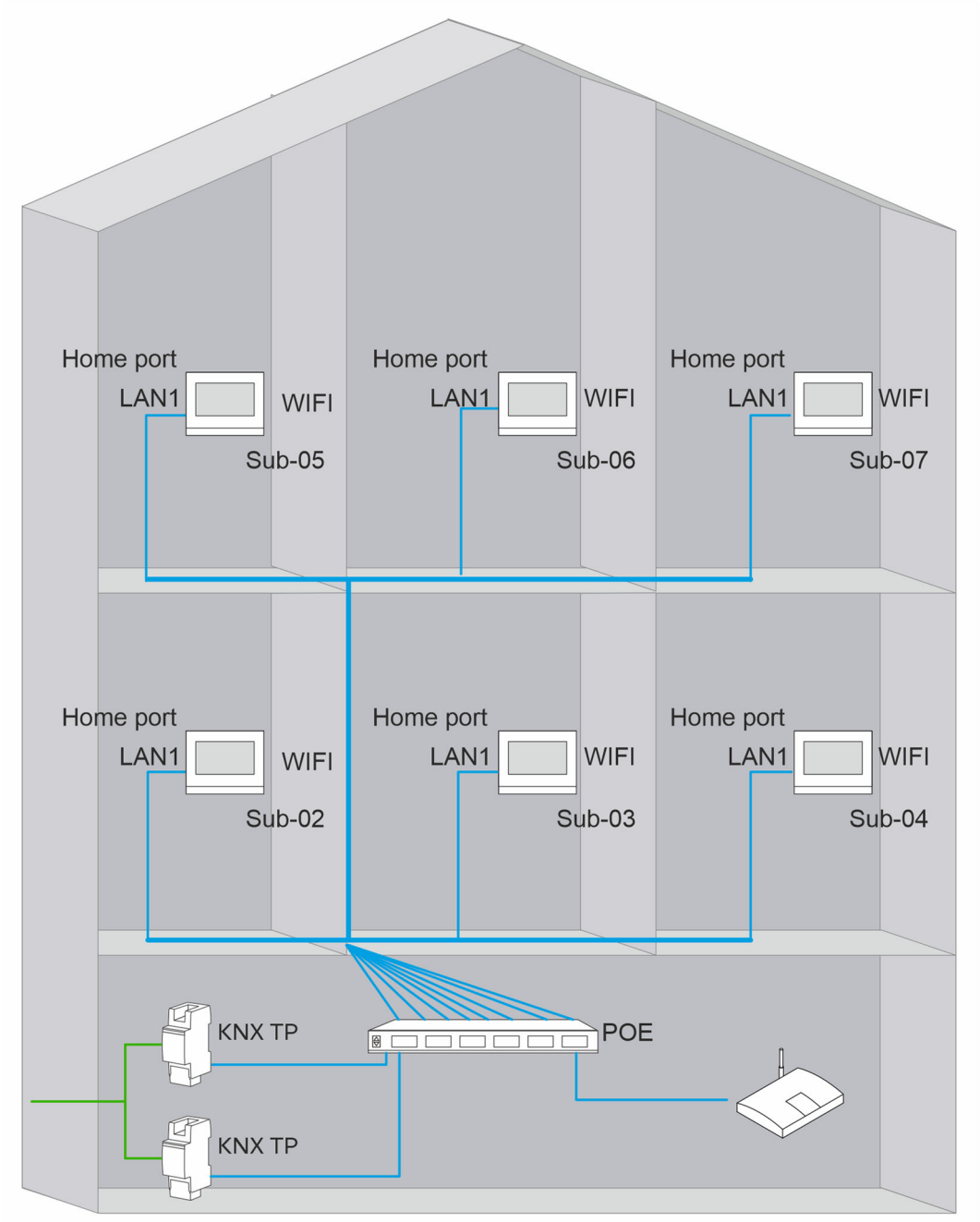


Fig. 49: All IP touch panels are connected via the Lan1 port with the PoE switch.

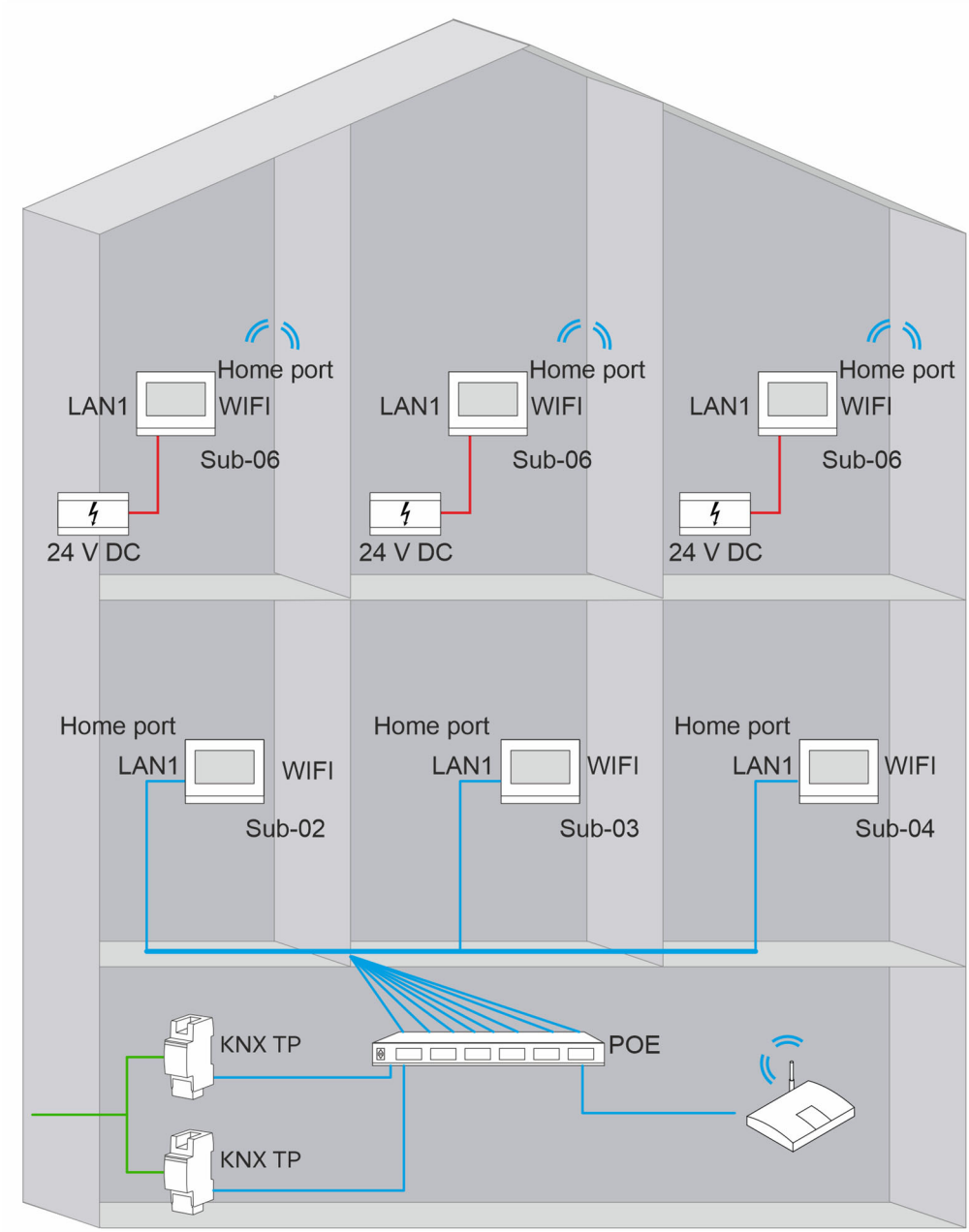


Fig. 50: Several IP touch panels are connected via the Lan1 port via the PoE switch, other IP touch panels are connected with the router via the WLAN port.

IP touch settings

Master/Slave	All six panels are set on slave mode, different panels with different device numbers, ensure that no IP conflict exists.
Home network port	LAN1 or WLAN (up to power supply) Change the port for the home network in the following menu: Technical settings - local settings
Network settings	DHCP (192.168.61.X)

Table 35: IP touch settings

Smart home settings / KNX interface settings

KNXnet/IP secure	Activated
Tunnelling password	**Notice:** The cases described in the following are examples, since the selection of the tunnel in IPR is made via the assignment of the respective tunnelling password in the different IP touch. Case 1： Three of the panels use the tunnelling password IPR/S 3.5.1-1 Three of the panels use the tunnelling password IPR/S 3.5.1-2 Case 2： Five of the panels use the tunnelling password IPR/S 3.5.1-1 One of the panels uses the tunnelling password IPR/S 3.5.1-2
Authentication code	Leave empty (option)
KNX multicast/IP address	Case 1： Three of the panels use the IP 192.168.61.35 of the IPR/S No. 1 Three of the panels use the IP 192.168.61.36 of the IPR/S No. 2 Case 2： Five of the panels use the IP 192.168.61.35 of the IPR/S No. 1 One of the panels uses the IP 192.168.61.36 of the IPR/S No. 1

Table 36: Smart home settings / KNX interface settings

IPR/S 3.5.1-1 settings

Secure commissioning	Activated
Secure tunneling	Activated
IP address setting	Use the static IP address (192.168.61.35)

Table 37: IPR/S 3.5.1 settings

IPR/S 3.5.1-2 settings

Secure commissioning	Activated
Secure tunneling	Activated
IP address setting	Use the static IP address (192.168.61.36)

Table 38: IPR/S 3.5.1 settings

6.4.4 Several IP touch are connected to a KNX system with several IPR/S 3.3.1

Topology

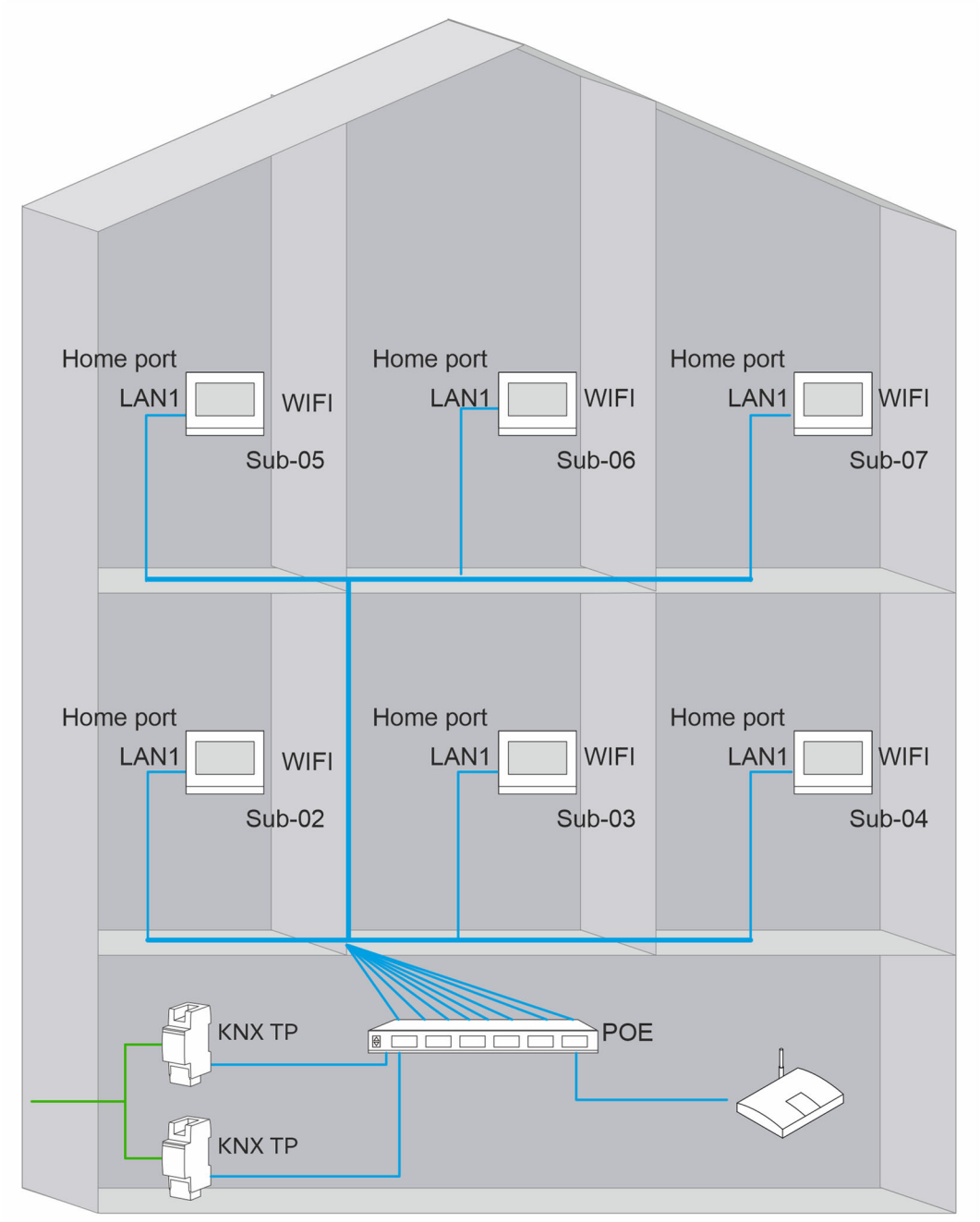


Fig. 51: All IP touch panels are connected via the Lan1 port with the PoE switch.

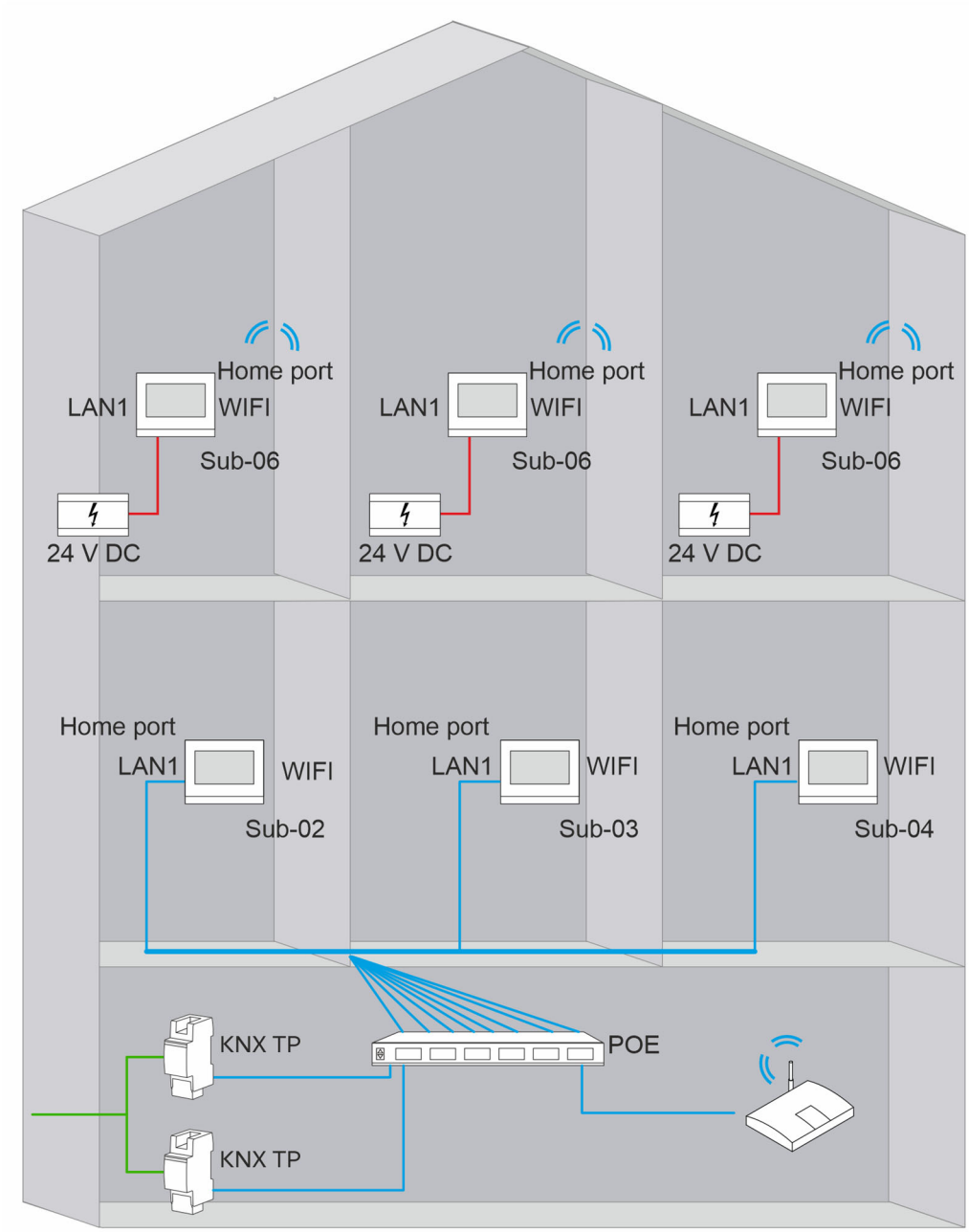


Fig. 52: Several IP touch panels are connected via the Lan1 port via the PoE switch, other IP touch panels are connected with the router via the WLAN port.

IP touch settings

Master/slave	All six panels are set on slave mode, different panels with different device numbers, ensure that no IP conflict exists.
Home network port	LAN1 Change the port for the home network in the following menu: Technical settings - local settings
Network settings	DHCP (192.168.61.X)

Table 39: IP touch settings

Smart home settings / KNX interface settings

KNX multicast/IP address:	Case 1： Three of the panels use the IP 192.168.61.31 of the IPR/S No. 1 Three of the panels use the IP 192.168.61.32 of the IPR/S No. 2 Case 2： Five of the panels use the IP 192.168.61.31 of the IPR/S No. 1 One of the panels uses the IP 192.168.61.32 of the IPR/S No. 1
KNXnet/IP secure	Deactivate

Table 40: Smart home settings / KNX interface settings

IPR/S 3.1.1-1 settings

IP address setting	Use the static IP address (192.168.61.31)

Table 41: IPR/S 3.1.1-1 settings

IPR/S 3.1.1-2 settings

IP address setting	Use the static IP address (192.168.61.32)

Table 42: IPR/S 3.1.1-2 settings

7 Notes

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