

System Manual

Busch-free@home®



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1 System requirements

The contents of this system manual relate to the functions of the System Access Point and the free@home devices starting from firmware version 2.1.4.

1.1 User interface

To open the Web-based user interface of the System Access Point you require a computer with a LAN or WLAN network adaptor and an installed Internet browser.

The recommended browsers are:

- Firefox (from version 9)
- Google Chrome
- Safari

1.2 free@home app

For the installation of the free@home app you require a smartphone or tablet with an Android (from 4.2) or iOS (from iOS 7) operating system.

1.3 Home network

To be able to access the free@home app and Internet services (e.g. e-mail) at the same time during standard operation, the System Access Point must be integrated into the existing home network after commissioning. For this, a router with Ethernet or WLAN interface is required.

2 Performance features

The free@home system is both a twisted-pair-based bus system as well as a wireless system for home automation. A combination of both variations is possible.

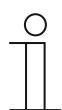
The free@home system enables the control and automation of lighting, heating and sun protection (e.g. blinds, roof windows, awnings) and also provides integration of the Busch-Welcome® door communication system. Control takes place on site using permanently installed control elements or mobile via the smartphone or tablet.

Functions are allocated only via software; i.e., if the use of a room changes in future, the function of the light switch can also be easily changed.

No special software is required for commissioning. Configuration takes place using the available Internet browser of the computer, or the free free@home app of your smartphone or tablet (Android/iOS).

A free@home system is made up of the following devices:

- a System Access Point,
- a power supply (only if bus devices are used),
- sensors for local operation,
- actuators for switching loads.



Notice

No bus power supply is required for pure wireless systems.

2.1 Device versions

Depending on the System Access Point used, between 128 and 150 Busch-free@home® participants are supported.

System Access Point	Participants
SAP/S.13	Up to 150 (irrespective of whether Wireless or Twisted Pair) (power supply is not counted)
6200 AP-101	Up to 64 Twisted Pair and 64 Wireless devices (Power supply is not counted)

Table .1: Number of participants

The following versions of devices are available:

System devices	Sensors	Actuators
System Access Point	Controls	Switch actuators
Power supply	Panels	Dimming actuators
External antenna	Binary inputs	Blind actuators
	Room temperature controller (RTC)	Heating actuators
	Motion detectors	Fan coil actuators
	Weather station	Radiator thermostats
	Window sensor	
	Universal detector	

Table 2: Device versions

Sensors and actuators are available in construction types **flush-mounted**, **pellet** and **rail-mounting**. The devices can be combined as required according to application.

2.2 Limits of performance

The web-based user interface of the System Access Point can be called up and operated simultaneously by several participants (computers and/or mobile devices with the free@home-app). This can, depending on the changes made, lead to losses in performance (the changes take longer to implement). That is why it is recommended to operate the user interface with only four participants at the same time. However, more participants can be registered.

3 Planning and installation

The free@home is a hybrid system that makes the combination of wired and wireless devices possible.

Wired devices communicate with each other via Twisted Pair bus lines, and wireless devices via radio signal.

Aside from wireless devices with 230 V mains supply, also battery-operated devices such as radiator thermostats can be operated in the free@homesystem. However, due to the missing repeater function the system cannot consist exclusively of battery-operated wireless components. At least one 230 V wireless device is required as repeater.

3.1 Twisted pair version

3.1.1 System Access Point

The System Access Point [01] offers the opportunity for accessing the free@home system with the PC or mobile terminal devices. This allows the functions of the system to be programmed and remote controlled.

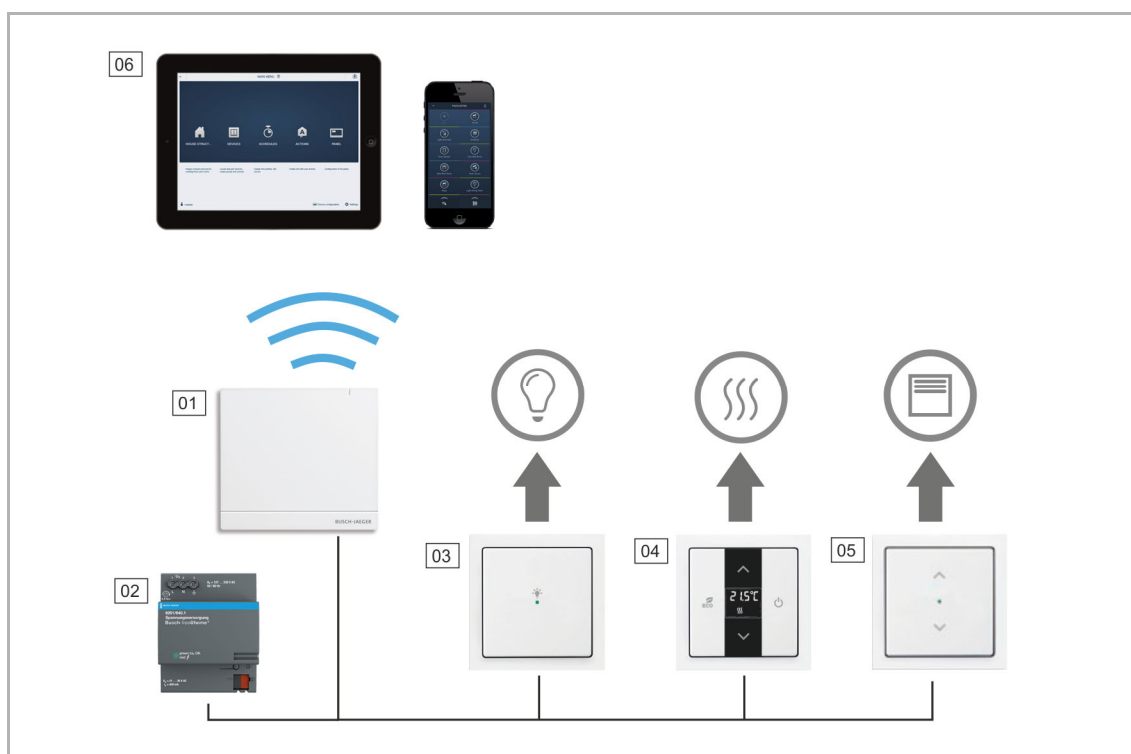


Fig. 1: Twisted-Pair system plan

01 – System Access Point

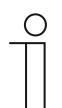
02 - Power supply

03 - Sensor/switching actuator unit

04 – Room temperature controller

05 - Sensor/blind actuator unit

06 - Mobile terminal devices



Notice

The System Access Point 2.0 SAP/S.13 is displayed in the illustrations of this system manual.

3.1.2 Power supply

Each system requires a power supply [2] (see Fig. 1). It uses the voltage required by the bus subscribers for supplying the bus communication part of the devices.

3.1.3 Installation of actuators

The free@home system offers both rail-mounting actuators for central installation in the switch cabinet as well as sensor/actuator units for decentralized flush-mounted installation.

Both types of installation can be mixed within the system as desired.

Advantages of the decentralized installation:

- "All-in-one": sensor and actuator are located in the one device.
- Function does not need programming since sensor and actuator have been pre-configured.
- Usual manner of wiring of the 230 V line.

Advantages of the central installation:

- Inexpensive channel price due to multiple actuators.
- Easy installation of the sensor technology since only the bus line is installed in the flush-mounted box.

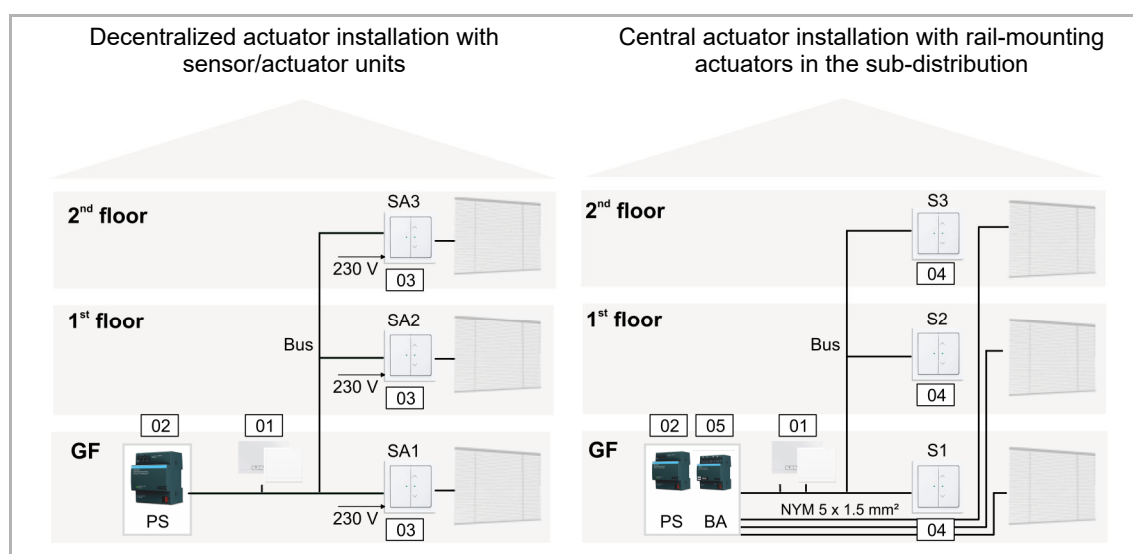


Fig. 2: Planning of the Twisted Pair actuators

- 01 – System Access Point
- 02 – Power supply
- 03 – Sensor/blind actuator unit
- 04 – Sensor unit
- 05 – Blind actuator

3.1.4 Topology of line participants

The free@home system communicates via a data bus. This means that each device must be connected to the bus. Only then can the device communicate with other participants.

Participants

Each free@home device, with the exception of the power supply, counts as a participant. Also the System Access Point is a participant.

Up to 64 participants can be connected to the bus with the System Access Point 6200 AP-101.

Up to 150 participants can be connected to the bus with the System Access Point 2.0 SAP/S.13.



Notice

When operating with more than 64 wired participants, a second power supply must be used.

Line topologies

The free@home bus line can be installed in almost any manner desired.

- Mixing the line topologies (linear, star and tree) is permitted.
- Only rings must not be set up.
- No terminal resistors are required.

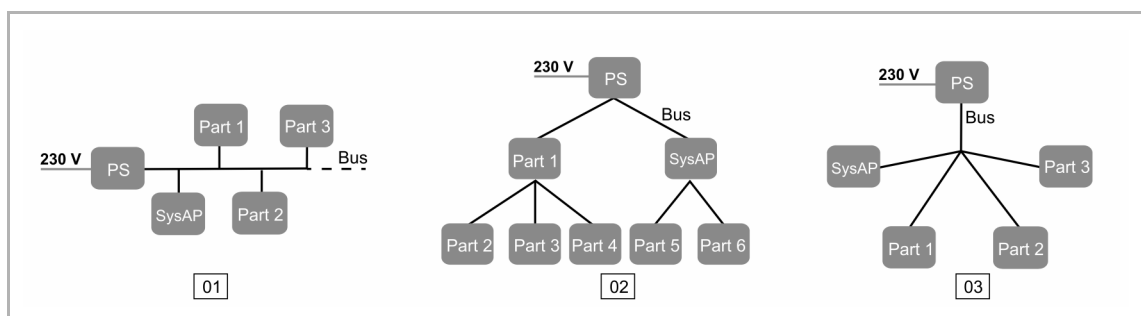


Fig. 3: Possible topologies

01 - Linear topology

02 - Tree topology

03 - Star topology

PS - Power supply

Part - Participant

SysAP - System Access Point

3.1.5 Lengths and distances of lines

[A] The lengths of lines within a line are limited to a total length of max. 1,000 m.

[B] The distance between power supply and the last participant: max. 350 m.

[C] The distance between two participants: max. 700 m.

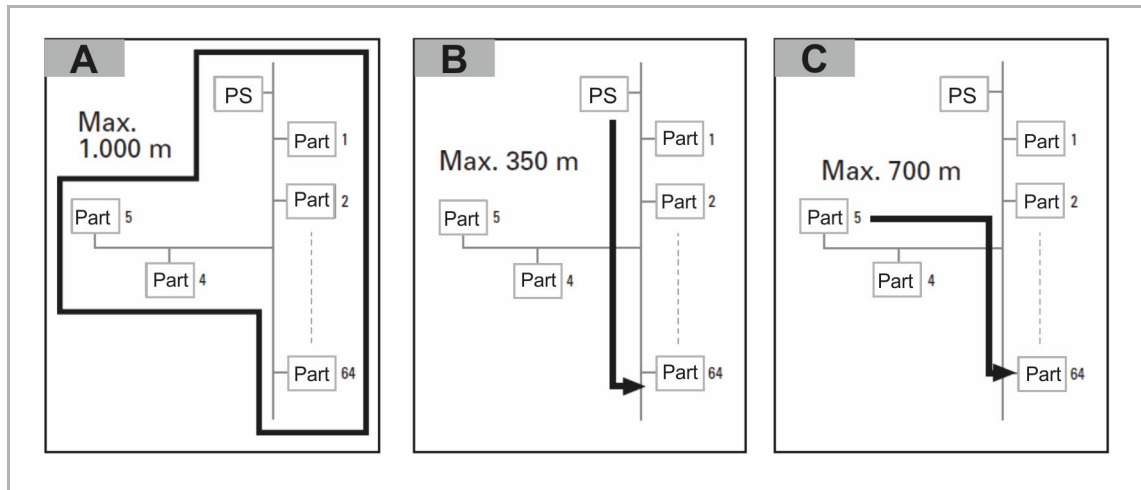


Fig. 4: Lengths and distances of lines

PS – Power supply

Part – Participant

3.1.6 Bus line

The bus line leads to the participants.

- A KNX-certified bus line (J-Y(ST)Y 2x2x0.8) is to be used.
- Aside from the necessary physical characteristics (number of wires, cross-section, insulating voltage, etc.) the bus line can be differentiated immediately from other low-current lines.



NOTE

Applications and devices should be permanently installed to prevent their easy removal and thereby allow access of unauthorized persons to the system.

- The cable ends should not be visible or project out from the wall, neither inside nor outside the building.

Bus lines in outdoor areas represent an increased security risk. Here the physical access to the bus cable should be made exceptionally difficult.

- If possible, no network lines should be laid outdoors.
- Outdoor devices should be protected against unauthorized dismantling.

3.2 Wireless version

3.2.1 System Access Point

The System Access Point [01] offers the opportunity for accessing the free@home system with the PC or mobile terminal devices. This allows the functions of the system to be programmed and remote controlled.



Fig. 5: Plan of wireless system

- 01 – System Access Point
- 02 - Sensor/switching actuator unit
- 03 – Room temperature controller
- 04 - Sensor/blind actuator unit
- 05 - Mobile terminal devices

3.2.2 Power supply

No separate power supply is required for pure wireless systems. The power is supplied directly from the 230 V network via the connection of the devices.

3.2.3 Installation of actuators

Sensor/actuator units are available for the free@home system for decentralized flush-mounted installation.

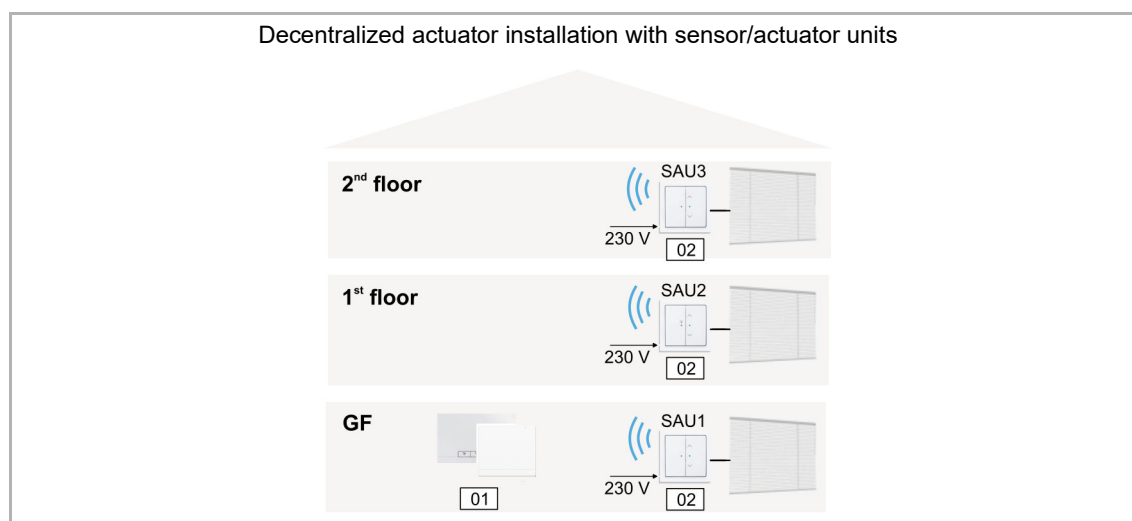


Fig. 6: Planning of the wireless actuators

01 – System Access Point

02 - Sensor/blind actuator unit

3.2.4 System features

Radio frequency	2.4 GHz
Radio protocol	free@home wireless
Encryption	AES-128
Transmission range in the building	Typically 15 - 20 m (can vary greatly depending on structural conditions)
Participants in the one system	System Access Point 6200 AP-101 Maximum of 64 wireless participants and 64 Twisted Pair participants
	System Access Point 2.0 SAP/S.13 Maximum of 150 participants (irrespective of whether wireless or Twisted Pair). When operating with more than 64 Twisted Pair participants, an additional bus power supply is required.

Table 3: System features

- All free@home wireless devices support the well-known free@home functions.
- Robust communication through "mesh network".
- Simple replacement of existing switches thanks to combined "sensor/actuator" devices.
- Immediate function without programming (devices are pre-configured).
- A system can include wireless and wired devices.
- Integration in the switch ranges future® linear, solo®, carat®, Busch-axcent®, Busch-balance® SI, Busch-dynasty®, pure stainless steel and basic55®.

3.2.4.1 Mesh network

All wireless network technologies have a physically limited transmission range. In a smart home, the participants of the network, such as the light switches and blind switches, are distributed over a large area but must still be able to reliably communicate with each other.

free@home uses the mesh network topology to increase the maximum expansion of the network.

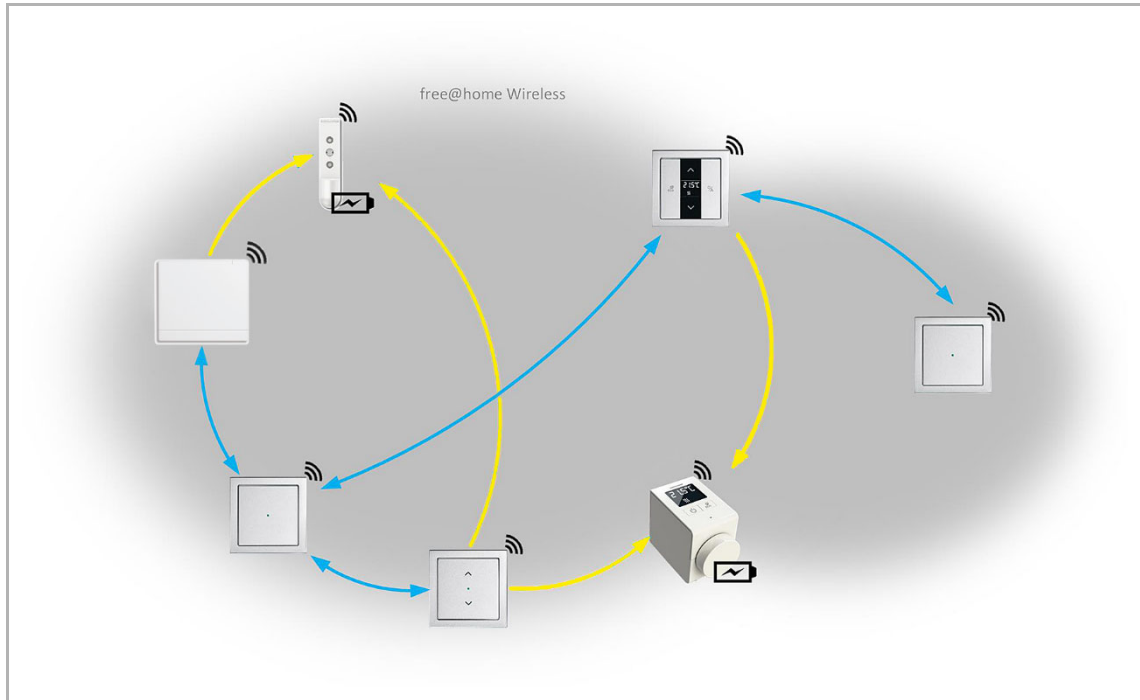


Fig. 7: free@home Mesh network

In the mesh-network topology each participant communicates with every other network participant. This happens either directly, if they are within range of each other, or indirectly via one or several communication nodes.

Other network types often use only central nodes through which the entire data traffic flows. Mesh networks do not have such a central transmission path. They find several ways to send data from one device to another.

The free@home mesh network uses the so-called routing process. During this process, the System Access Point automatically determines the most efficient way to send a message from one point in the network to the correct receiver via several nodes. This information is stored in routing tables and distributed to all 230 V network participants.

The routing process is implemented on an ongoing basis so that the system can also react to subsequent changes, e.g. in the event of individual devices failing, new devices being added or constructional changes that impair the reception.

3.2.4.2 Transmission range

Take the mounting location of the free@home devices into consideration already during planning. In a free-field test a transmission range of 100 meters was reached. In buildings, however, this transmission range is not possible.

The local circumstances have large effect on the quality of reception or the transmission range of the devices, which dampens the signal. That is why a general statement cannot be made about the transmission range, e.g. reinforced concrete ceilings dampen more than wooden ceilings; metal racks dampen more than wooden racks.

Observe the following general rules:

1. At least one networked wireless device per corridor or floor in the stairwell is required. This means that there must not be more than one storey ceiling between two devices.

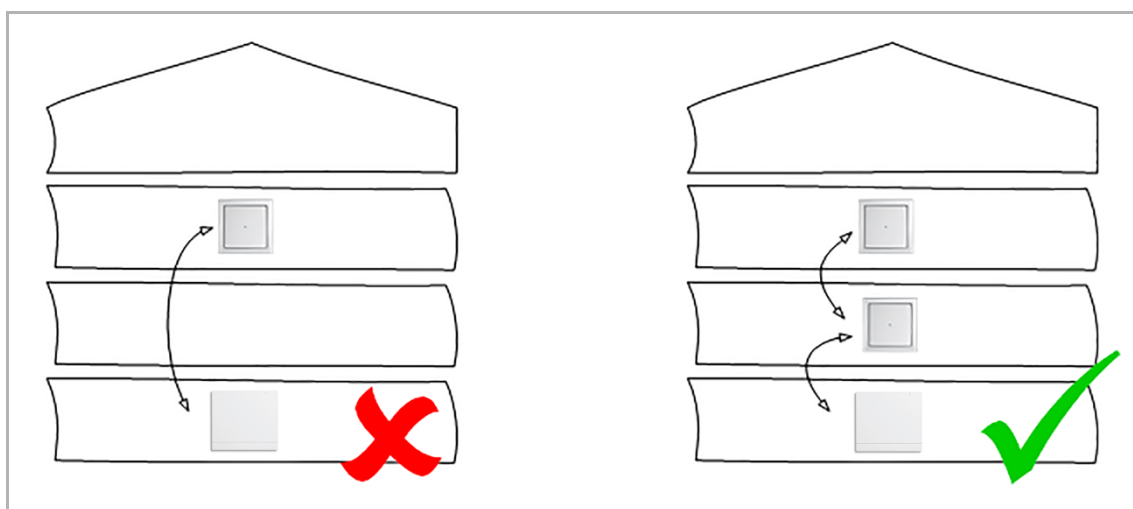


Fig. 8: Transmission range of storey barrier

2. At least one networked wireless device per room is required. This means that there must not be more than one wall between two devices.

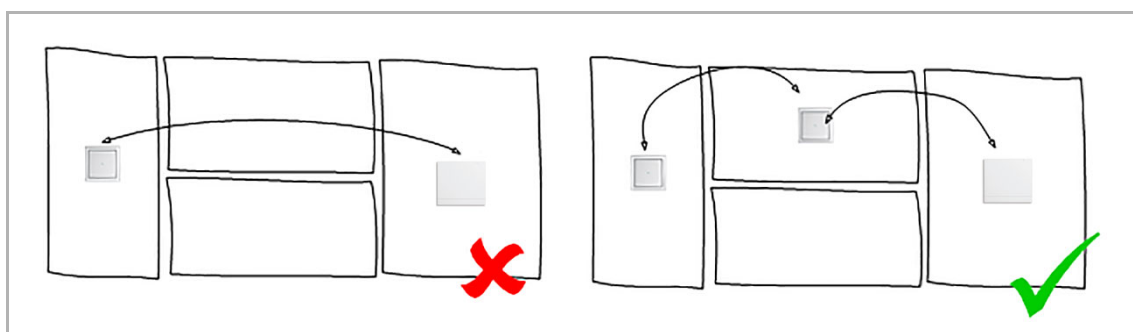


Fig. 9: Transmission range of wall barrier

3. The devices should not be installed directly next to large metal surfaces.



Notice

Battery-operated wireless devices, e.g. radiator thermostats do not function as repeaters in the mesh network since they cannot transfer signals. That is why they cannot be operated by themselves in a system.

3.2.4.3 Interference of radio signal

The radio signal of the free@home devices should not be interfered with by other radio transmitters. Possible sources of interference are especially transmitters which transmit in a similar frequency range. This could include:

- WLAN routers (2.4 GHz)
- Microwaves
- Fluorescent lamps
- Cheap or defective electronic products

2.4 GHz WLAN devices represent the highest interference potential since they transmit in the same frequency range as free@home.

Effects of interference

The interference of the radio signal can have the following effect:

1. Delayed response
2. Disconnection to a participant

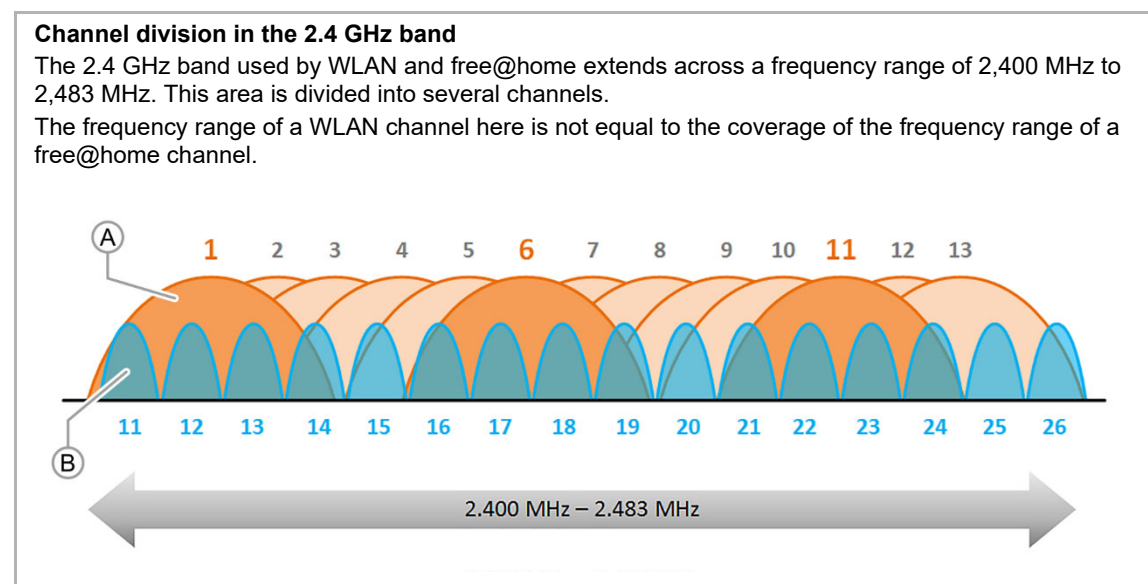


Fig. 10: Channel division in the 2.4 GHz band

[A] WLAN channels (1 - 13)

[B] free@home channels (11 - 26)

Avoiding interferences caused by 2.4 GHz WLAN

To prevent interference from the 2.4-GHz WLAN devices it would be best to remove the sources of interference, e.g. with the use of 5 GHz WLAN. Since this is often not possible, the following should be observed:

- Use channels for the local WLAN and for the free@home network that lie in different frequency ranges, see "Channel division in the 2.4 GHz band". You can set the WLAN channel in the user interface of the router, or the free@home channel in the user interface of the System Access Point.

At the point of delivery of the System Access Point, free@home channel 26 is set. In this case all WLAN channels from 1 to 11 can be used without any overlapping with the free@home frequency range.

- With several, adjacently located free@home wireless systems operated as island solution, it should be observed that different channels are used, e.g. in residential buildings with several parties.
- If there are adjacent WLAN networks on which you have no influence with regard to the selection of channels, position the free@home channel in a frequency range with the least load.

You can set a different free@home channel in the user interface of the System Access Point under "System settings" > „free@home-Wireless" > "Change channel".

After selecting the function, the automatic channel recommendation suggests a channel with the least interferences. The System Access Point then scans its surroundings for available WLANs, their channels and signal levels.

Used WLAN channels

In operating mode "WLAN Access Point" (during commissioning) the System Access Point uses WLAN channel 1. The channel cannot be changed.

The channel for the free@home communication is set on 26 as standard. This prevents the overlapping of the frequency ranges of the two radio protocols. The free@home channel in the "WLAN Access Point" should not be changed.

Automatic channel recommendation

During the boot-up process of the System Access Point all adjacent WLAN networks are scanned and analyzed for their frequency range and signal strength. If you confirm the "change channel" function, the automatic channel recommendation is output.



Fig. 11: Automatic channel recommendation

The available WLAN networks in the vicinity and their used channels can be determined with the free app/programs, such as:

- **Wifi Analyzer** from farproc for Android (<http://wifianalyzer.mobi>)
- **WiFi Scanner** from AccessAgility for Mac OS and Windows (<http://wifiscanner.com>)

Example:

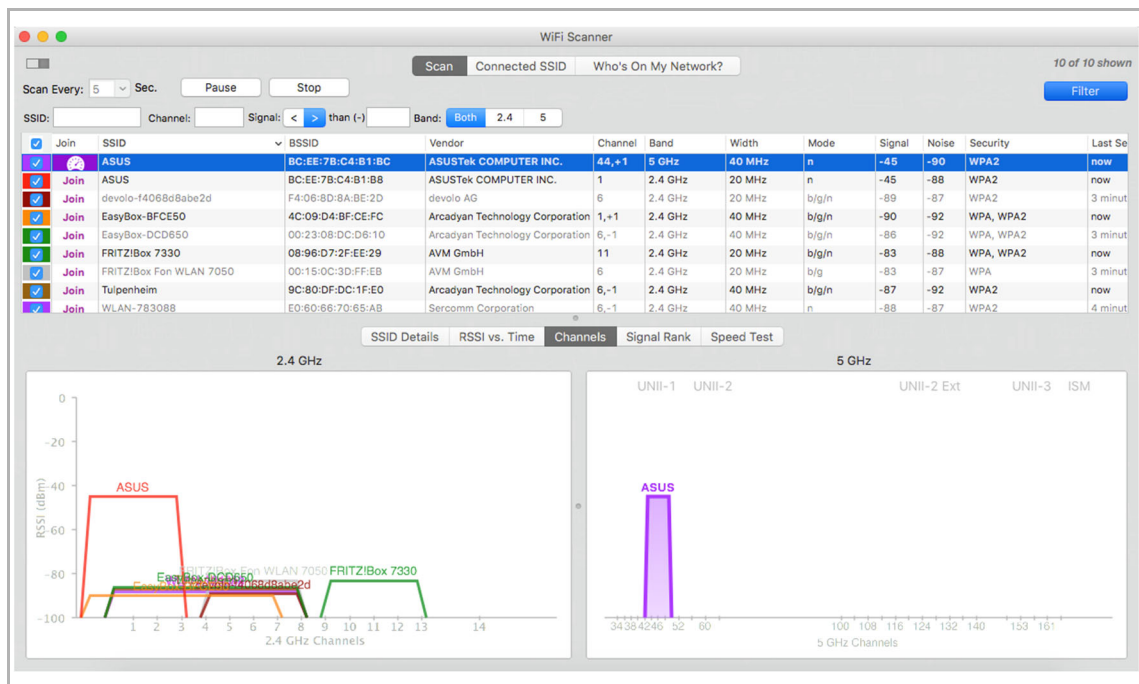


Fig. 12: Example of WiFi scanner

In Fig. 12 the local network "ASUS" occupies WLAN channel 1. All other frequencies of the 2.4-GHz frequency range are occupied by adjacent networks. However, these networks are damped to such an extent that no interferences of the free@home signal can be expected on channel 26.

3.3 Planning of the System Access Point

The System Access Point makes available its own WLAN during commissioning. This allows it to be comfortably programmed in mobile mode, even when no network infrastructure is available.

However, in the final state the System Access Point should be set up as participant within the available network infrastructure.

The System Access Point can be connected to the available network infrastructure of the apartment either via the installed Ethernet port or the installed WLAN antenna.

Connection via WLAN

If the System Access Point cannot be connected to the Internet router via cable, it can be logged into the existing WLAN network via WLAN as client.

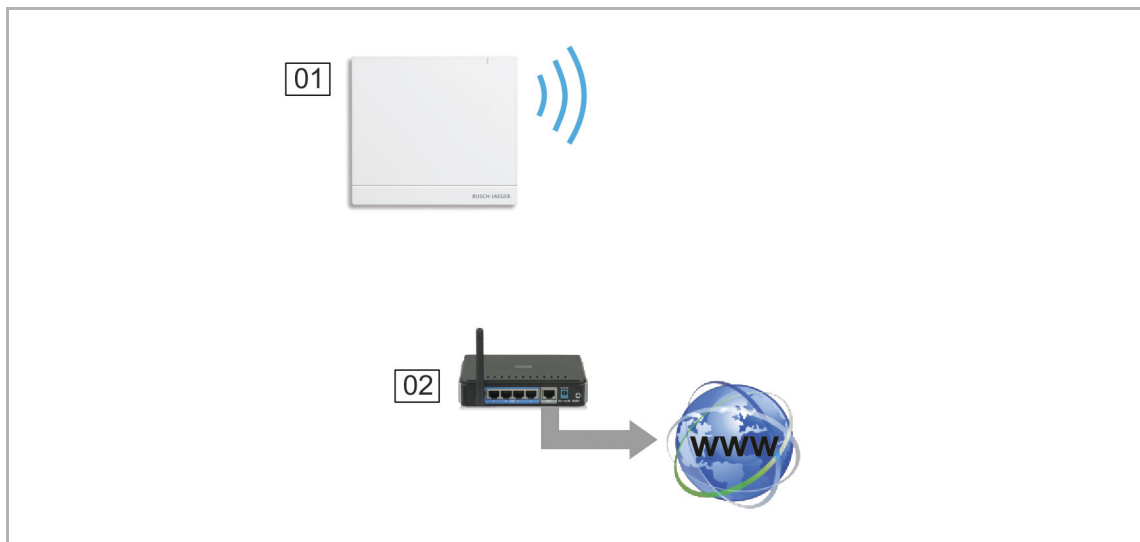


Fig. 13: Connection via WLAN

01 – System Access Point

02 – IP router

Connection via patch cable

If the System Access Point and Internet router are installed side by side, they can be connected via a patch cable.

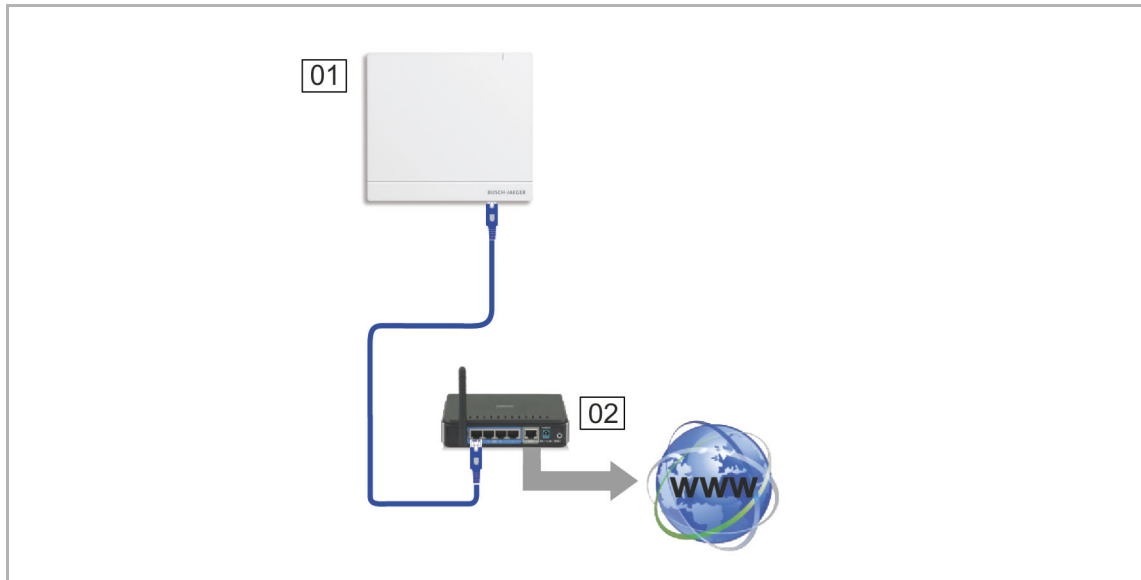


Fig. 14: Connection via patch cable

01 – System Access Point

02 – IP router

Connection via installation cable in case of structured cabling

If the System Access Point is to be connected via a CAT installation cable, it can be connected via the RJ-45 socket with an LSA adapter.

The System Access Point switches over automatically to cable operation when a cable is plugged in.

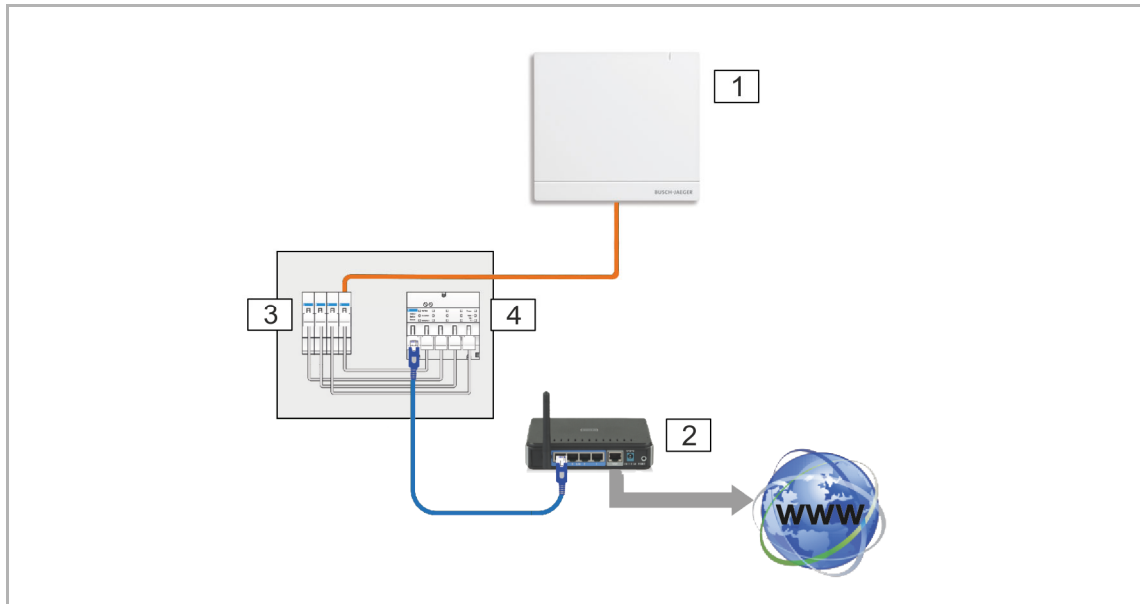


Fig. 15: Connection via installation cable in case of structured cabling

- 01 – System Access Point
- 02 – IP router
- 03 – Ethernet Patch-Terminal
- 04 - Switch

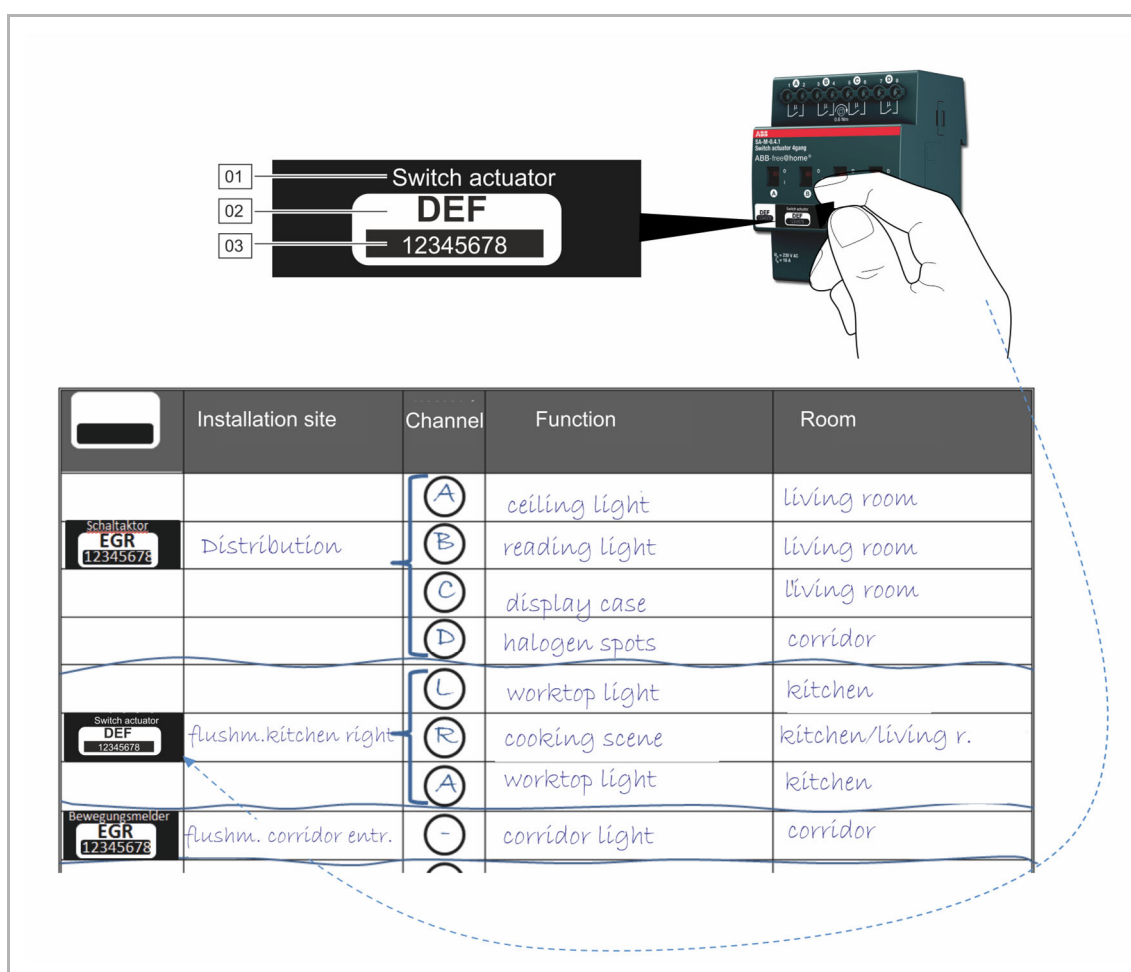
3.4 Creating a plan for devices

Each free@home device has a clear, eight-digit serial number. It is affixed permanently to each device as well as on a removable identification label. The serial number serves as an aid for identifying the devices during commissioning.

To facilitate the input, a three-digit character code, which is generated from the specific serial number, is additionally available. Although it does not clearly identify the device, its accuracy, however, is sufficient to make it unique in the system.

To be able to identify the devices and channels more clearly during commissioning, document the three-digit character code of the devices, their function and location already during their installation.

- To do this, pull off the removable labels from the devices and document the associated functions on the enclosed master (see chapter 8.10 “Device plan master” on page 231).



The diagram illustrates the process of creating a device plan. A hand is shown pulling a label from a device. The label contains a three-digit character code (DEF) and an eight-digit serial number (12345678). Below the diagram is a table with handwritten entries for device planning.

	Installation site	Channel	Function	Room
		(A)	ceiling light	living room
Schaltaktor EGR 12345678	Distribution	(B)	reading light	living room
		(C)	display case	living room
		(D)	halogen spots	corridor
		(L)	worktop light	kitchen
Switch aktuator DEF 12345678	flushm. kitchen right	(R)	cooking scene	kitchen/living r.
		(A)	worktop light	kitchen
Bewegungsmelder EGR 12345678	flushm. corridor entr.	(-)	corridor light	corridor

Fig. 16: Plan of devices

- 01 – Description of device
- 02 – Character code
- 03 – Serial number

4 Commissioning

4.1 Prerequisites

Commissioning is always carried out via the System Access Point.

- A PC is required for initial commissioning. Later changes can also be made with a tablet. Commissioning with a smartphone is not possible.
- No additional software is required.

The use of the free@home app is recommended for setting via the tablet, which can be downloaded free of charge from the App Store (for iOS) or from the Google Play Store (for Android).

4.2 Establishing the connection to user interface of the System Access Point

Use one of the following options to open the user interface of the System Access Point:

Option A: Establishing the connection with the PC via patch cable and router

1. Connect the System Access Point and the PC with the router.
Energize the System Access Point. Ensure that the access point mode has not been activated. If it is activated, press the Access Point button to deactivate it.



Notice

The System Access Point now operates as "DHCP Client", this means that it can only be reached under the IP address that is assigned to it automatically by the router.

2. Call up the user interface of the System Access Point. For this there are two options:
 - [A] Open the Windows Explorer of your PC. The System Access Point is displayed as device under "Network". Double click on the device to open the user interface (prerequisite: the computer must support UPnP).
 - [B] Enter the IP address that is automatically assigned by the router in the address line of your browser. You find the assigned IP in the user interface of your router. Example FRITZ!Box: under "Home network > Network". Set the view on "Extended" to fade in the IP addresses.

3. The connection to the System Access Point has been established.

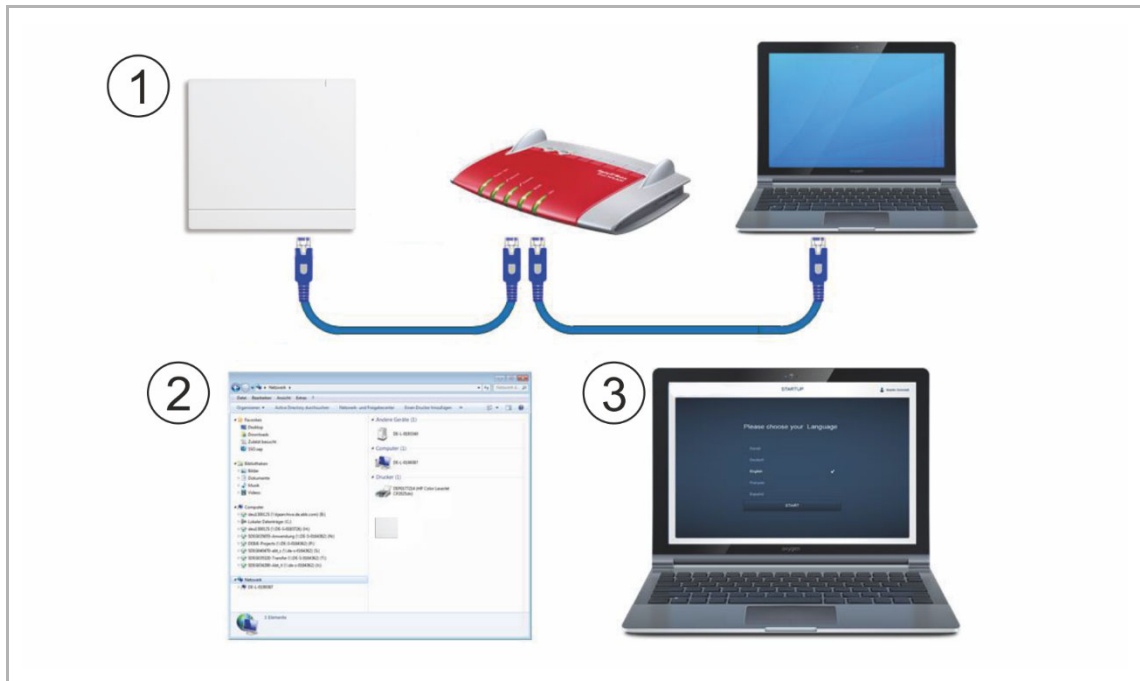


Fig. 17: Connection via patch cable and router

Option B: Establishing the connection with the PC via patch cable and without router

(Available from System Access Point Firmware Version 2.0)

1. Connect the System Access Point and the PC with a patch cable (no special crossover cable is required)

Energize the System Access Point. Ensure that the access point mode has not been activated. If it is activated, press the Access Point button to deactivate it.

**Notice**

The System Access Point now operates as "DHCP Client", this means that it can only be reached under the IP address that is assigned to it automatically by the PC.

2. Call up the user interface of the System Access Point.

Open the Windows Explorer of your PC. The System Access Point is displayed as device under "Network". Double click on the device to open the user interface (prerequisite: the computer must support UPnP).

3. The connection to the System Access Point has been established.

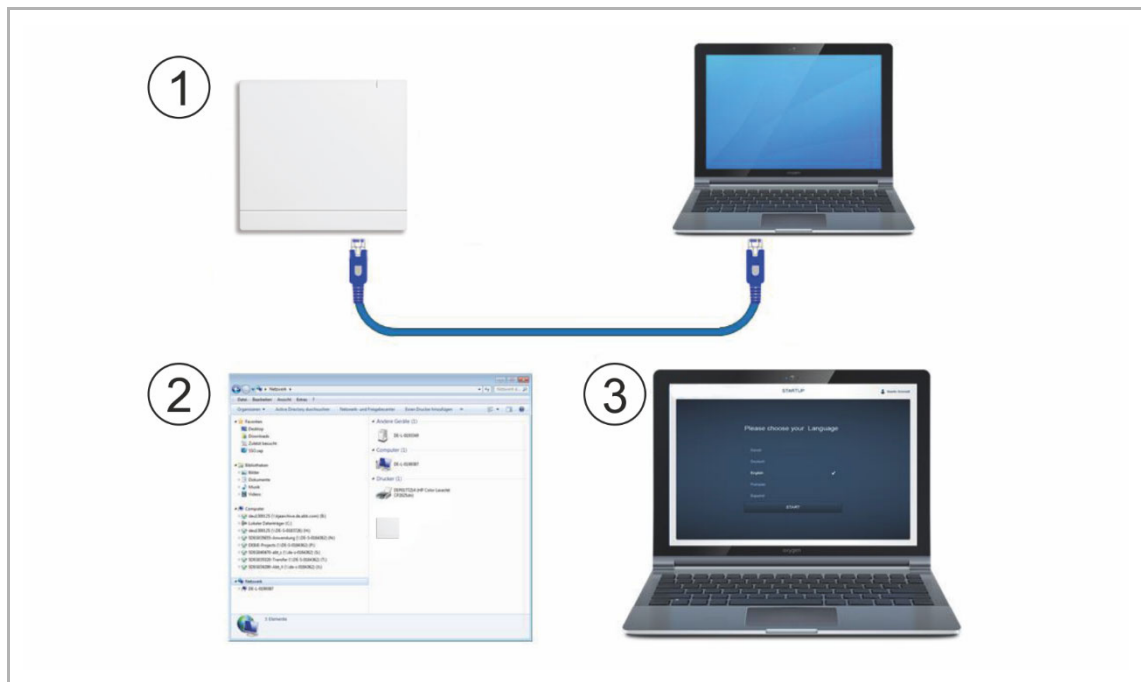


Fig. 18: Connection via patch cable and without router

Option C: Establishing the connection with smartphone or tablet

1. Install the free free@home app for Android or iOS.
2. Energize the System Access Point. Ensure that the access point mode has been activated (SAP/S.13: status LED lights up blue / 6200 AP-101: left button lights up). If not, press the access point button to activate it (Access point button and status LED, see chapter 5.8.6 "Control and display elements" on page 123).
3. Connect the terminal device with the WLAN of the System Access Point (SSID: SysAPXXXX). Enter the password, see text on the rear side of the System Access Point (Fig. 19 or Fig. 20).

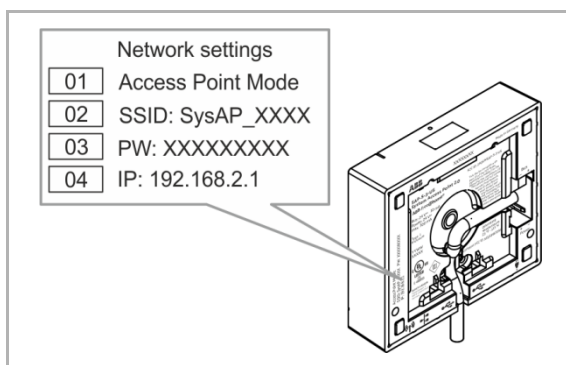
Text on System Access Point

Fig. 19: Text on rear side of System Access Point SAP/S.13

- 01 - Access point mode
- 02 - WLAN password (SSID)
- 03 - Password
- 04 - IP Device address

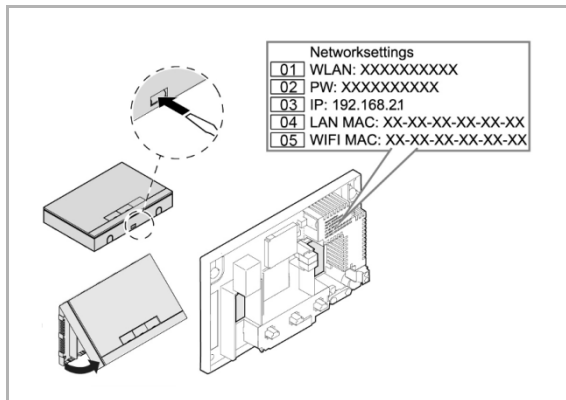


Fig. 20: Text on the interior side of the System Access Point 6200 AP-101

- 01 - WLAN password (SSID)
- 02 - Password
- 03 - IP address
- 04 - LAN MAC address
- 05 - WIFI MAC address

4. Start the app.

5. The app establishes a connection to the System Access Point automatically.



Fig. 21: Connection with smartphone or tablet



Notice

Commissioning of the system with the smartphone is not possible.

Option D: Establishing the connection with the PC via WLAN

1. Energize the System Access Point. Ensure that the access point mode has been activated (SAP/S.13: status LED lights up blue / 6200 AP-101: left button lights up). If not, press the access point button to activate it (Access point button and status LED, see chapter 5.8.6 "Control and display elements" on page 123).
2. Connect the PC with the WLAN of the System Access Point (SSID: SysAPXXXX). Enter the password, See "Text on System Access Point" on page 26.
3. Start your Internet browser. Enter the IP address "192.168.2.1" in the address line of your browser and confirm it.
4. The connection to the System Access Point has been established.

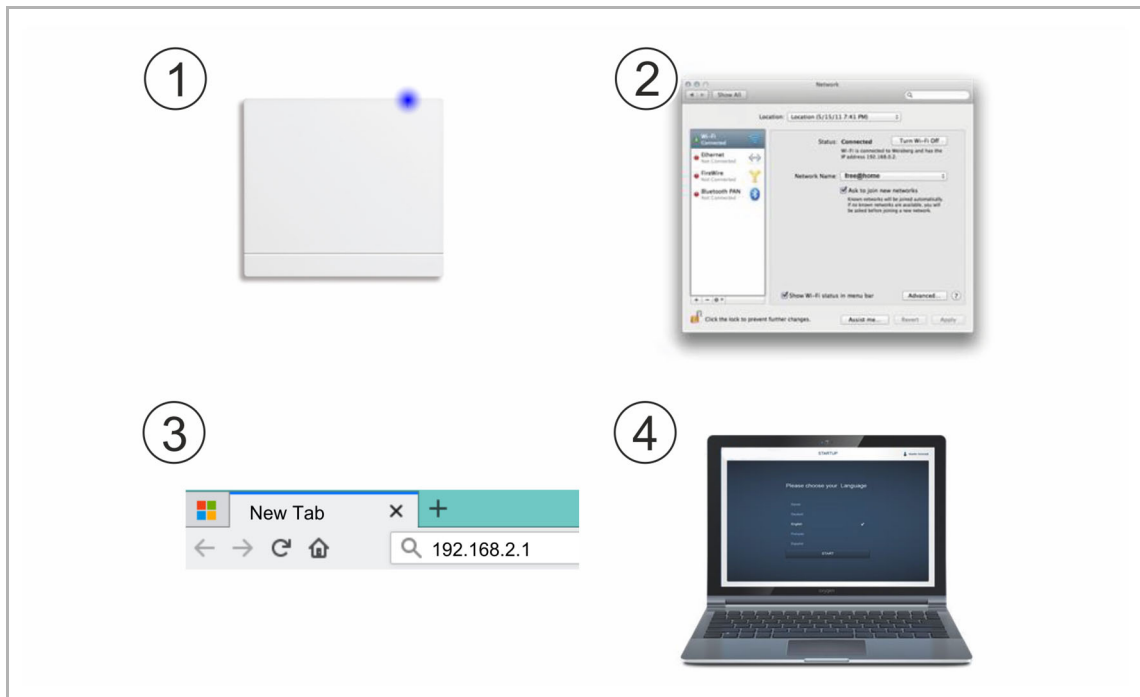


Fig. 22: Connection with PC via WLAN

4.3 Basic settings



Notice

Detailed descriptions are available via the interactive Help.

When you require Help or information:

1. Press the Help button on the current user interface.
2. Select one of the highlighted elements.
The Help information for this element is displayed.
3. Click on any position of the user interface to end the interactive Help mode.



During initial commissioning you will be asked to supply the following basic data:

Language

Selects the language of the display text. The following languages are available:

German	French	Portuguese	Turkish
Danish	Italian	Russian	Czech
English	Norwegian	Swedish	
Spanish	Dutch	Chinese	
Finnish	Polish	Greek	

Table 4: Languages

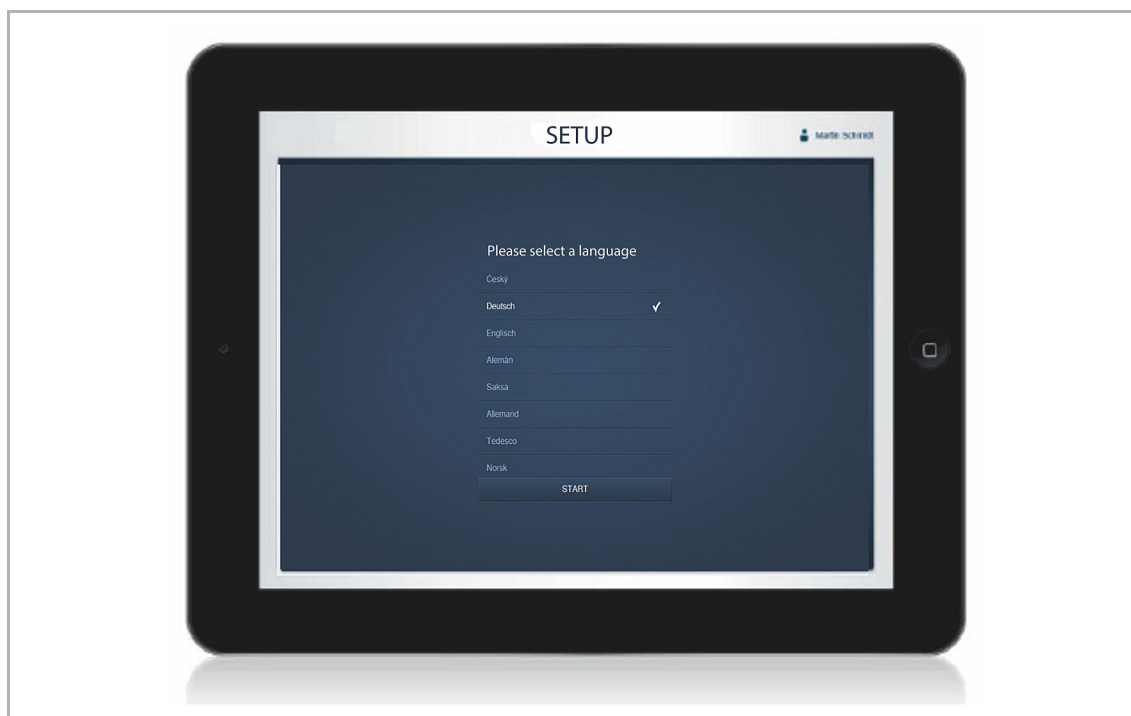


Fig. 23: Basic settings

Location

Basis for the astro function.

Time / Date

Sets the system time (the time will be synchronized automatically when the connection to the Internet is established).

User name / Password

Ensures protection against faulty configuration and misuse.

Additional users can be added later.

**Notice**

The password must consist of at least 4 characters. Passwords such as "12345" or "Password" are weak passwords and should not be used.

Name of installation

Display name of device within the IP network.

The data are saved on the System Access Point. The entry of the data can be skipped, which, however, can lead to the restriction of functions.

However, the data can also be entered at a later point in time.

4.4 User rights

The system differentiates between three types of users with different access rights:

'Installation'

- Has all access rights (Master reset, creation of data protection).

'Configuration'

- Cannot make changes critical to the system (changing settings related to the bundling of channels for dimmers, re-configuration of binary inputs).

'Operation'

- Cannot make changes to the system, but only operate the devices.

'Observer'

- Cannot make changes to the system and cannot initially operate devices. The rights for operation can be enabled for selected devices.

4.5 Coupling of wireless devices with the System Access Point

free@home wireless devices must first be coupled with the System Access Point before they can be used in a project. The devices exchange a security key during the coupling process.

Communication between devices is carried out encrypted after coupling and they are firmly connected with the System Access Point. Coupled devices cannot be connected with a different System Access Point. They must first be reset to the factory settings.

Carry out the following steps to couple one or several devices with the system.

1. Install the free@home wireless device(s).
2. Use your tablet or PC to call up the user interface of the System Access Point that is ready for use.
3. Switch on the mains power supply of the free@home wireless devices.

The devices are now in programming mode for 30 minutes.

4. In the user interface of the System Access Point select "System settings" > "free@home radio" > "Search for wireless devices".

The System Access Point consecutively scans all free@home wireless devices. Devices that are in programming mode are integrated automatically into the system. The scanning process ends 10 minutes after the last device has been integrated.

Integrated devices are listed in the "Device configuration" of the user interface.

5. Use the serial numbers to check whether all installed devices have been found. If a device has not been found, reset it to the factory settings and start a new scanning process.

Possible reasons for not finding devices:

- The device is outside the wireless range of the System Access Point.
- The device is not in programming mode.
- The 30-minute programming time has expired.
- The device has already been coupled with a different system.

4.5.1.1 Resetting the wireless device to the factory settings

1. De-energize the free@home wireless device. Alternative: Pull off the control element of the device.
2. Keep the button at the bottom left pressed.
3. Switch the device on again.
Alternative: Plug on the control element while keeping the button on the bottom left pressed and keep it pressed.

The LED flashes slowly for 10 seconds, then fast for 5 seconds and then goes out.

The factory settings are restored and the device can now be programmed again.

4.6 Structure of the main menu

The main menu is the starting base for all the steps to follow.

Located in the central area are the menu items that are to be processed step by step (from left to right) for the configuration.

Since the steps follow each other consecutively, they remain deactivated until the preceding step has been executed.

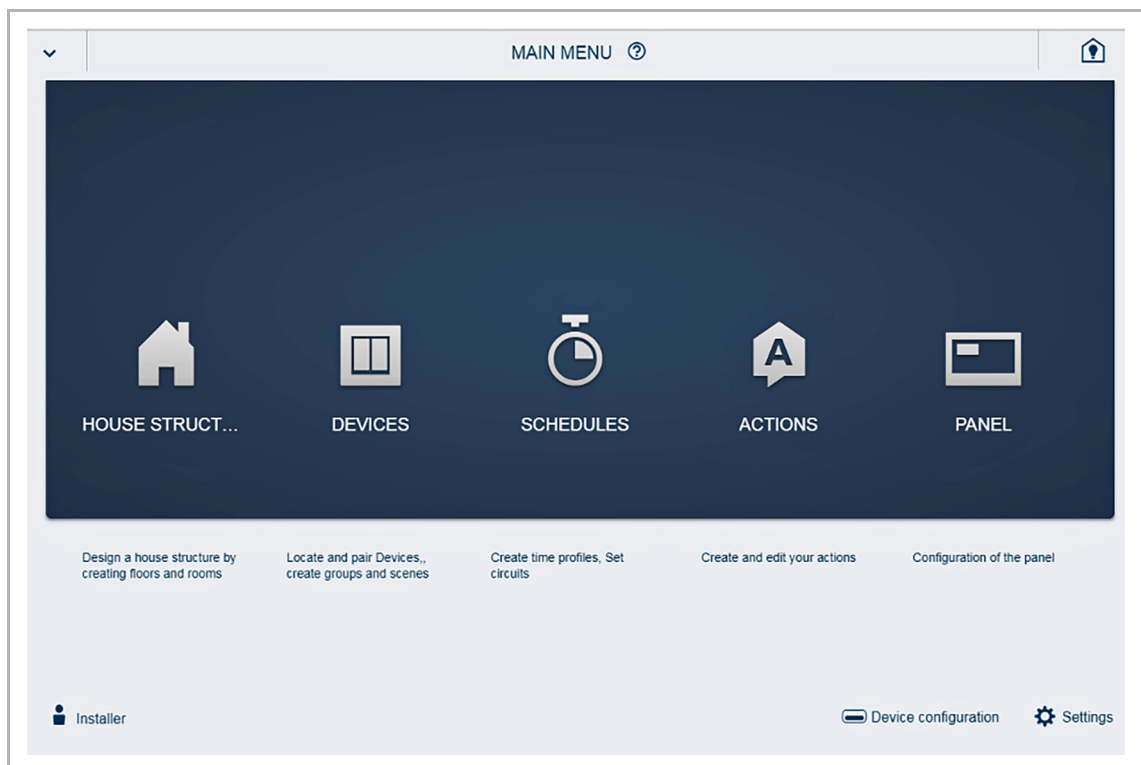


Fig. 24: Setup of the main menu

4.7 Structure of the working area

The working area of menu items "House structure" and "Devices" is divided into two areas: the floor plan (working area) on the left side and the list view on the right side.

- Each area can be enlarged or reduced via the title bar.
- All actions can be carried out both in the floor plan and in the list view.
- When a change is made in the floor plan, this change is also made in the list view and in reverse.
- Both areas represent different views of the same configuration.
- While the floor plan represents the graphical view and allows operation via drag and drop, the list view offers a clear tabular view.

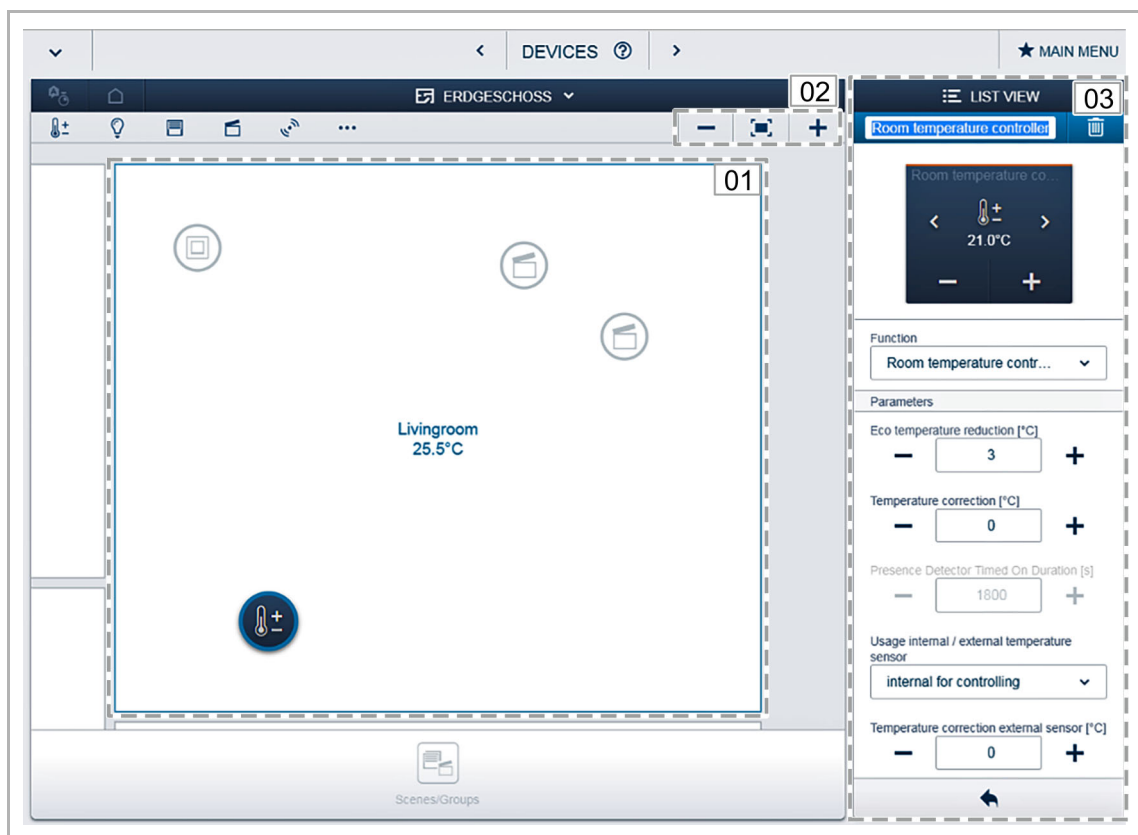


Fig. 25: Setup of the working area

01 - Floor plan

02 - Enlarge/Reduce

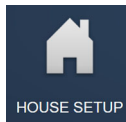
03 - List view

4.8 Creating the house structure

The first step of the configuration is the creation of the house setup. Here a digital image of the apartment or the house with all its floors and rooms is created.

This information is used during the next step to allocate the devices available in the house to a function and to their mounting position. After commissioning has been completed the created floor plan is also used for the visualization of the installation and as orientation for the switchable loads.

1. To open the "House setup" menu, click/tap on the following icon in the main menu.



To allocate devices in the outdoor area, e.g. lights on the terrace or in the garden, create a "Terrace" or "Garden" room.

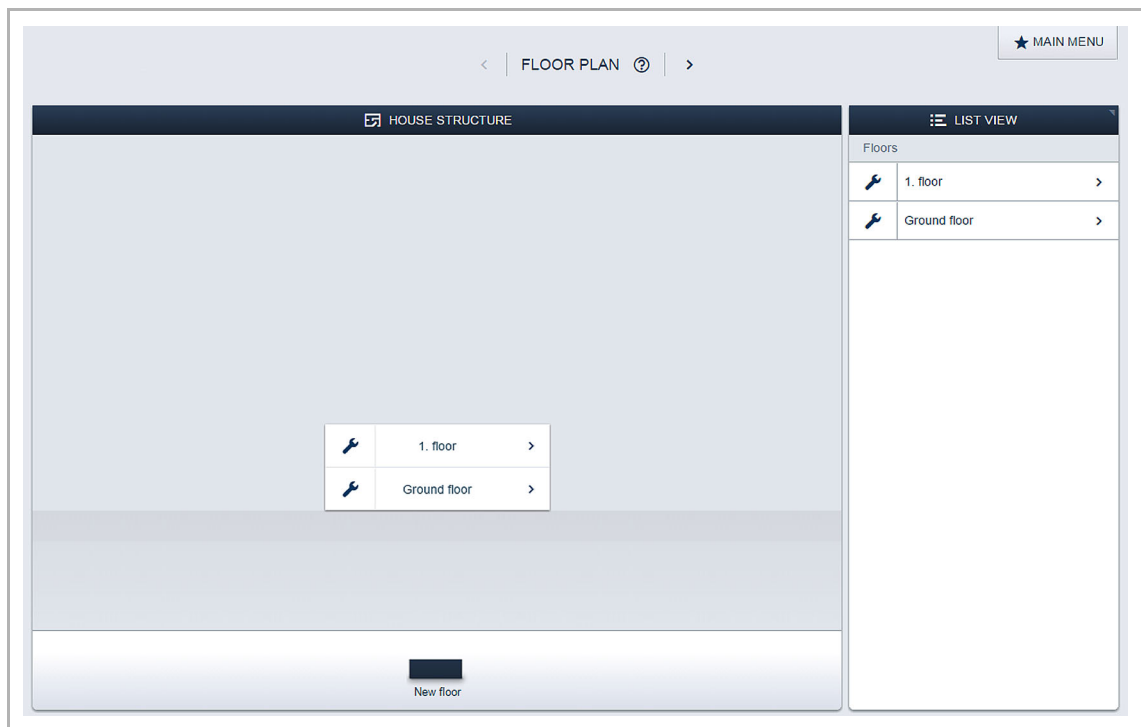


Fig. 26: Creating the house setup - View of all floors

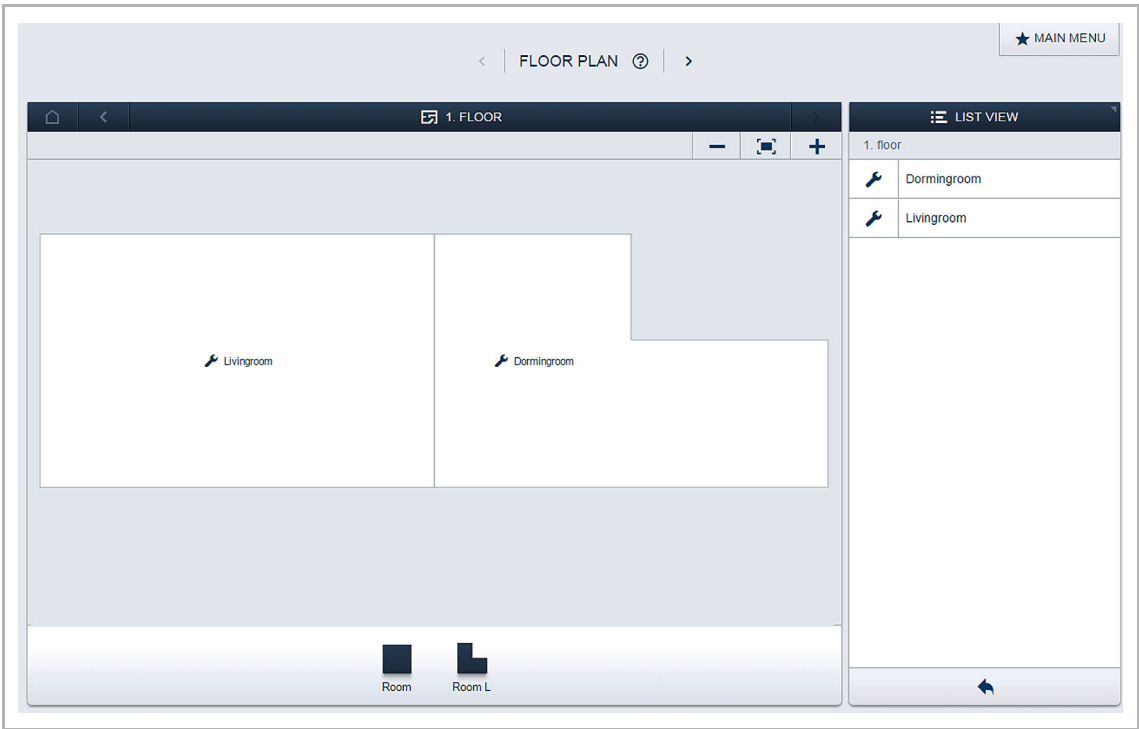


Fig. 27: Creating the house setup - View of one floor

4.9 Allocating devices to rooms

In the next step the devices connected to the system must be identified. For this the devices are allocated to a room according to their function and are given a descriptive name. Then you can configure simple switch-on/switch-off functions, 2-way circuits and scenes with links.

A table with all available applications is located in Chapter 6 "Device Functions" on page 127. The application that is actually available depends on the devices connected to the system.

1. To open the "Devices" menu, click/tap on the following icon in the main menu.



In the "Add device" bar only the devices/functions that are connected with the system are displayed. They remain in the bar until they are shifted onto the floor plan. This means that the list keeps getting shorter as the devices are being positioned.

- In the "Add devices" bar select the desired application and pull it via drag-and-drop into the floor plan, see Abb. 28.
 - A pop-up window opens which lists all the devices that are connected to the bus and suitable for the selected application (e.g. all blind actuators, if the blind application has been selected, see Fig. 29).

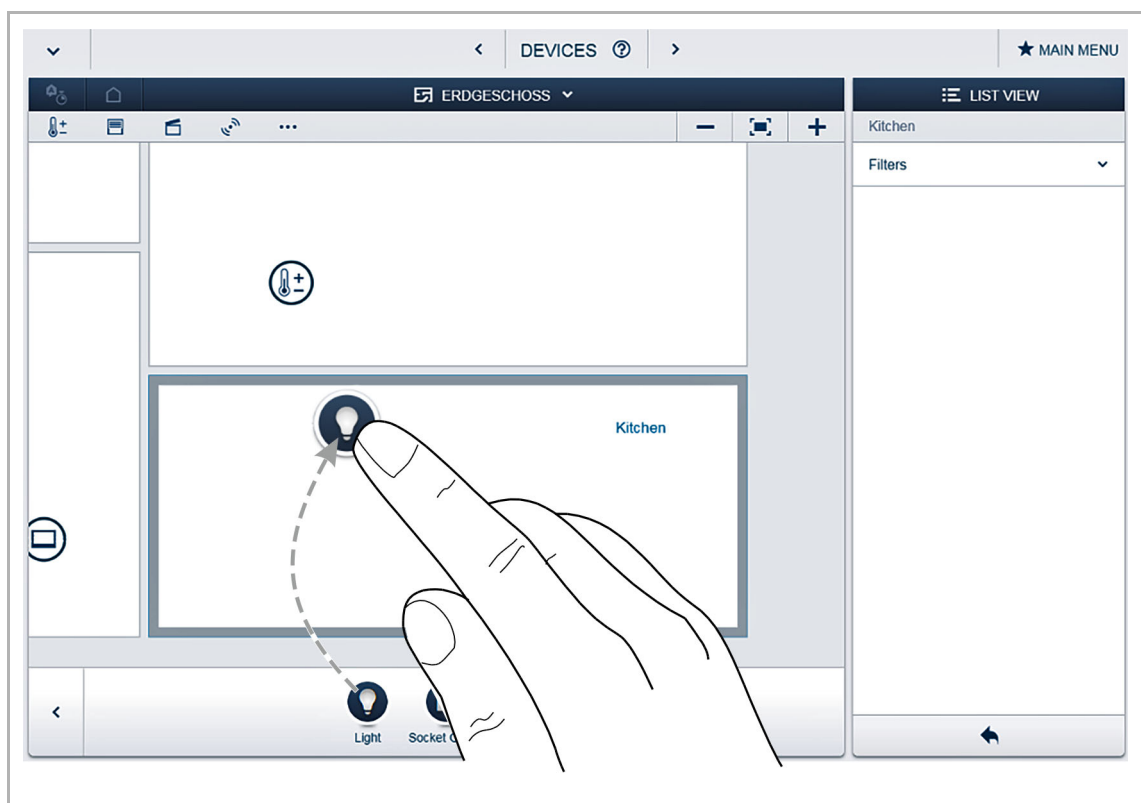


Abb. 28: Dragging the application from the add bar

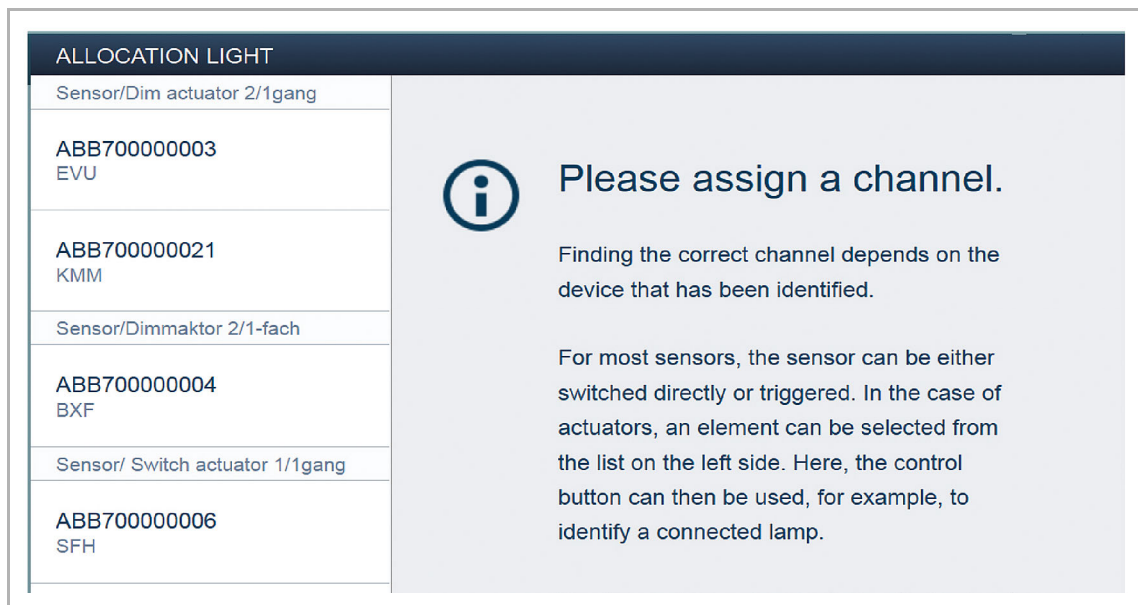


Fig. 29: Pop-up window with the suitable devices

4.9.1 Identification

If after positioning on the floor plan there are several possible devices in the pop-up window for selection, the device which switches the desired function must now be selected.

Identification via serial number

- Compare the three-digit character code and the serial number of the identification label on your device plan, or on the device with the numbers in the list, and in this way identify the device you are searching for and, if necessary, also the channel.

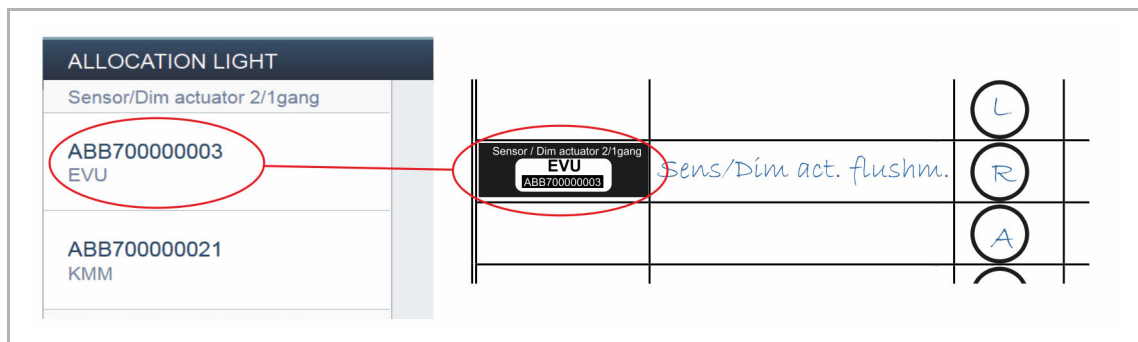


Fig. 30: Identification via serial number

Identification via local operation

Actuate the device that is to be linked with the selected application.

- Actuator: Press the "Ident" button on the device.
- Sensor: Press the rocker.
- Movement detector: Cover the lens with the hand.

The associated device is selected automatically. In case an actuator has several channels, you need to select the correct channel.

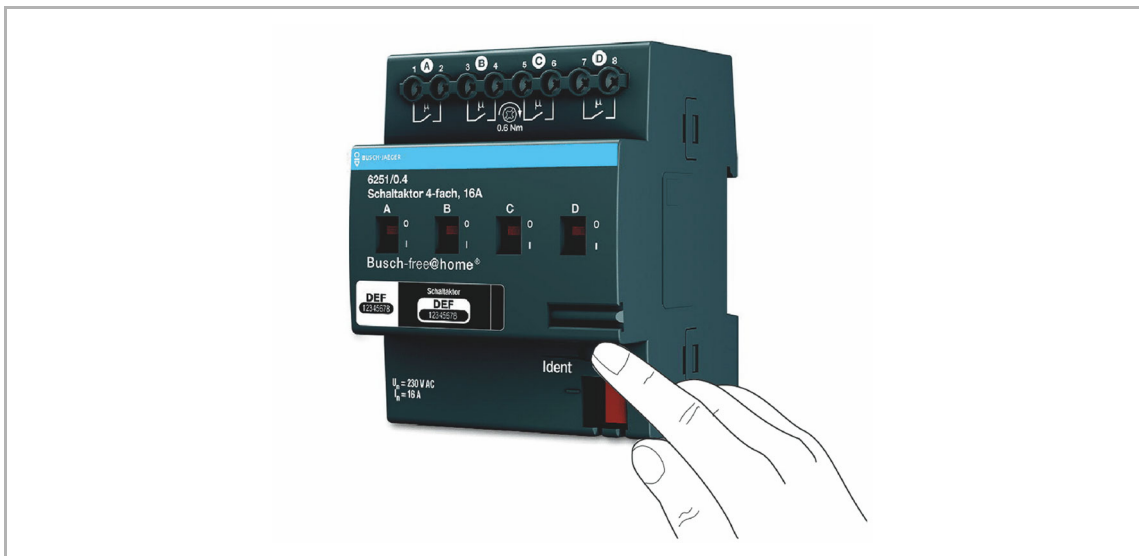


Fig. 31: Identification via local operation

Identification via switching (only suitable for actuators)

1. Select a device and a channel from the list.
2. Press the button in the detailed view of the device.
 - The connected load is switched.
3. Repeat steps 1 and 2 until you have located the searched for device.

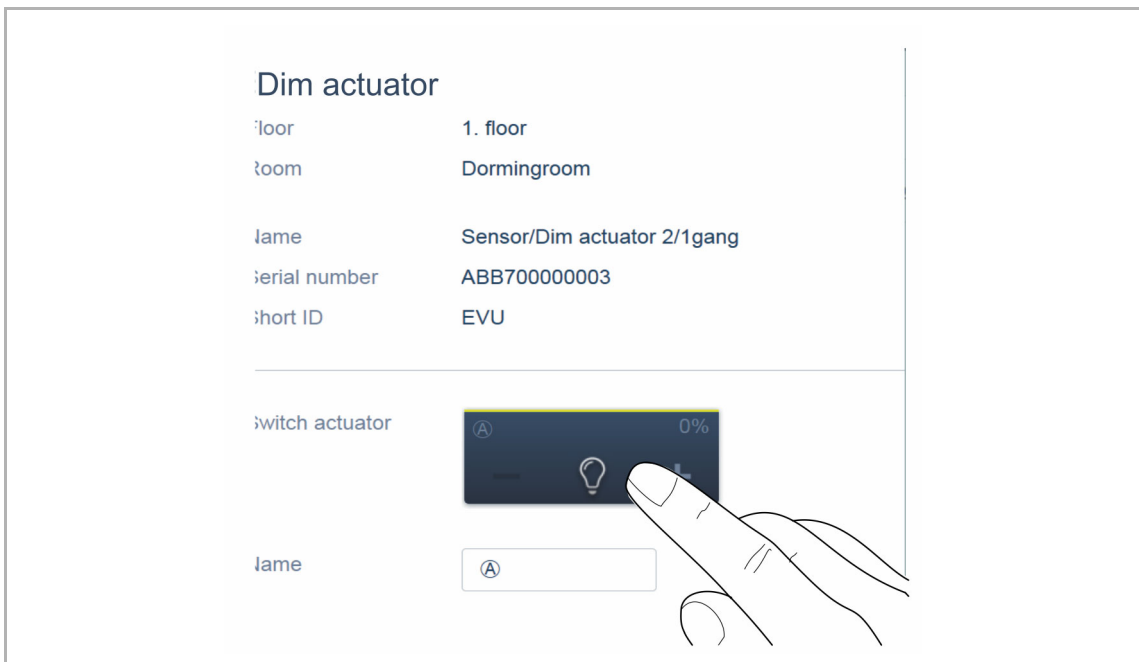


Fig. 32: Identification via switching

4.9.2 Specifying a name

- When the device has been found, enter a name that is easy to understand and under which the application is to be displayed later (e.g. "Ceiling light").
- Press the tick at the bottom right to take over the entries.

The screenshot displays a commissioning interface. On the left, a list of devices is shown in a table-like structure:

ABB700000006 SFH
ABB700000016 WDG
Movement detector/actuator 1g...

To the right of this list is a label "Name". Further right is a dark blue button with a lightbulb icon and a "+" sign. Below the "Name" label is a text input field containing the text "Ceiling light". At the bottom of the interface, there are two large buttons: a left-pointing arrow on the left and a checkmark on the right.

Fig. 33: Specifying a name

4.9.3 Linking sensors and actuators

The sensors and actuators created in step "Devices" can now be linked to implement simple On/Off circuits, two-way circuits, scenes, etc.

1. First click/tap on the desired sensor [1] which is to operate the actuator and then on the actuator [2].
2. Press the tick at the bottom right to take over the entries.
 - A blue connecting line indicates the link between the two devices.

The configuration is transmitted automatically to the devices. The transmission can, depending on the number of affected devices, take a number of seconds. During the transmission a progress bar is displayed around the devices affected.

After the transmission has been completed, the sensor can be operated directly locally.

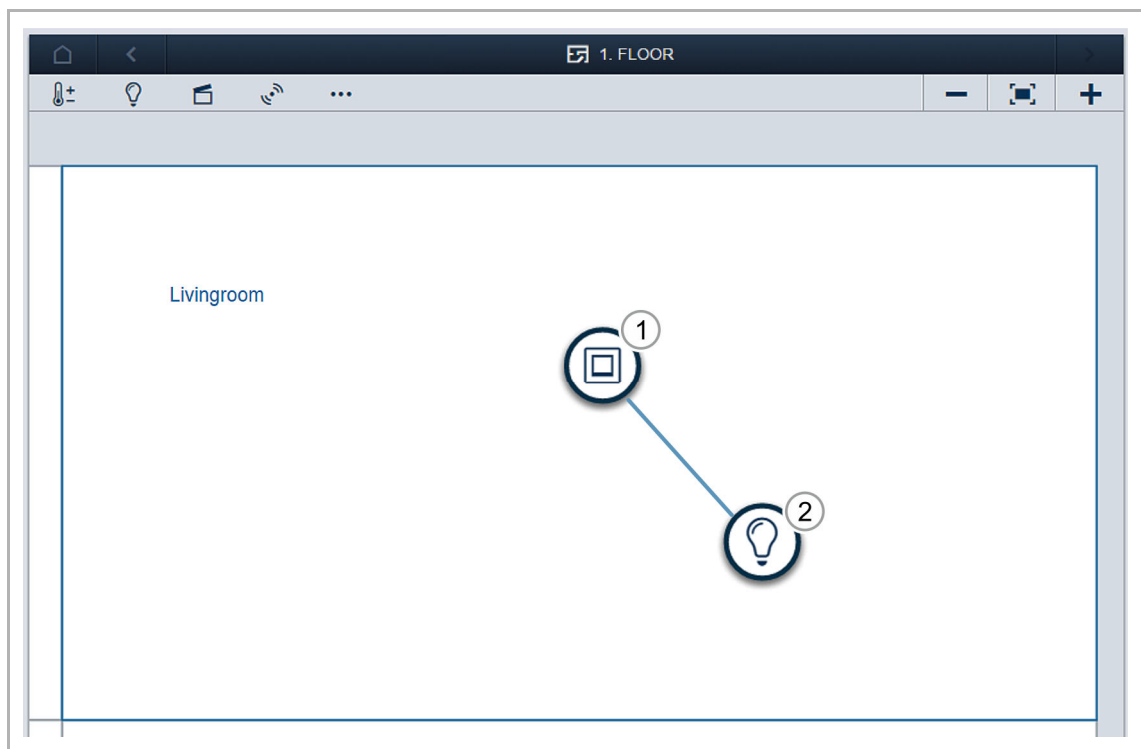


Fig. 34: "Devices" window

4.9.3.1 Switching options

Two-way circuit [01]

An actuator is connected with one or several sensors.

Group circuit [02]

Several actuators of the same type (e.g. all the lights in a corridor, all roller blinds of a room) are combined in a group. The group acts like a single actuator and can be connected with sensors or integrated into scenes (At "ON" all actuators of the group switch on. At "OFF" all actuators of the group switch off).

Scene [03]

A scene creates a state that can be defined by the user. This, for example, allows the user to create a "TV" scene that dims the living room light, switches off the lights in the corridor and dips the blinds. Scenes cannot be switched on or off. When a scene is called up, always the same, predefined state is established.

The states of the participants in a scene can be defined when the scene is created.

To switch a local scene, it can be linked with a sensor.

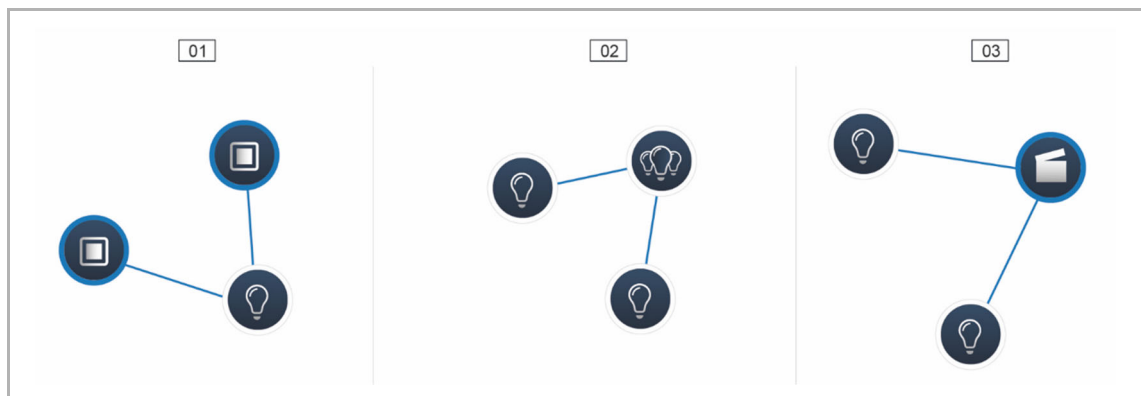


Fig. 35: Switching options

01 – Two-way circuit

02 – Group circuit

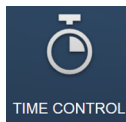
03 – Scene

4.10 Time control

In the "Timer" menu you can set and automate time-dependent processes. These can be functions, astro functions or presence simulations specified by time.

With the aid of time profiles you can set switching actions that are repeated daily or weekly. All configured devices and scenes can be switched via time profiles.

1. To open the "Timer" menu, click/tap on the following icon in the main menu.



4.10.1 Time profiles

A time profile defines a collection of switching times. Several time profiles can be created and switched active / inactive independent of each other (tick = time profile active, the saved switching actions are executed).

To obtain better visual clarity, for example, separate profiles for controlling blinds and lighting can be created. Or a special holiday profile can be created, which you only activate during your absence.

All time profiles are displayed in the profile view. When selecting a profile, all switching times for devices and scenes stored in this profile are indicated on a timeline in an overview display.

Additional profiles can be created and existing ones renamed or deleted via the spanner icon [04].

- First select the profile you wish to edit. Then click/tap on the spanner.

Contents from the profiles that have already been created can be taken over into the currently active profile via the arrow icon in the editing mode.

The base profile has already been created in the factory state.

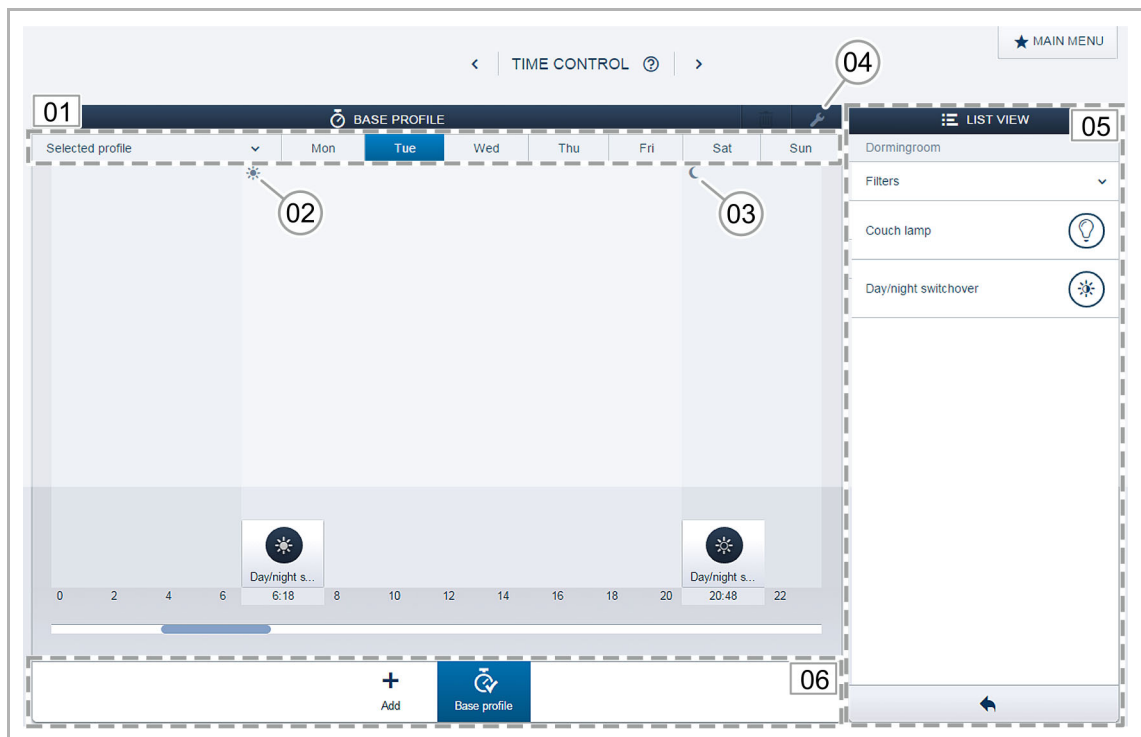


Fig. 36: Time profiles

01 – Selected profile - timeline

02 – Sunrise

03 – Sunset

04 – Edit profile

05 – List view

06 – Overview of profiles



Notice

Time profiles can also be linked with a sensor or panel via the floor plan. This allows the time profile to be easily activated by a button or panel.

Base profile

The base profile can be freely edited. It already contains the object "Day/night switchover" in astro mode. The day/night switchover serves the control elements and the dimmers as switchover time between bright and dark for the status LED, or for the switch-on brightness. The day/night switchover is settable in the parameters of the control element, the dimmer and the room temperature controller.

Examples of application:

- The light in the corridor is not to switch on with 100% brightness after 11 p.m., but with the reduced brightness of 40%.
- The light for orientation of the sensors in the bedroom is to be switched off after 11 p.m.

Presence profile

The presence profile is a special time profile with which presence simulation can be implemented.

The timeline of the presence simulation is filled with the desired switching actions, the same as a normal time profile. However, no switching time needs to be defined. Instead, the switching times are filled automatically with historical data of what actually took place.

The presence simulation therefore represents an image of customary use.

All the events of the last seven days are stored in the historical data. What is not stored are events that were switched on and off in quick succession.

The presence simulation can be edited, activated and deactivated the same as all other time profiles. This means that additional switching events can be added or certain events deleted.

4.10.2 Timeline

The timeline displays all the switching times of a selected weekday. Switching actions that take place at the same time are displayed stacked.

The sun and moon icons indicate the time for sunrise and sunset.

The selection of a certain switching event changes the view to a detailed view (Fig. 37). Here the switching time can be adjusted. Also, the weekdays can be defined at which the event is to be repeated. Or the circuit can be activated via the astro function.

Switching times can be linked with the times for sunrise and sunset via the astro function.

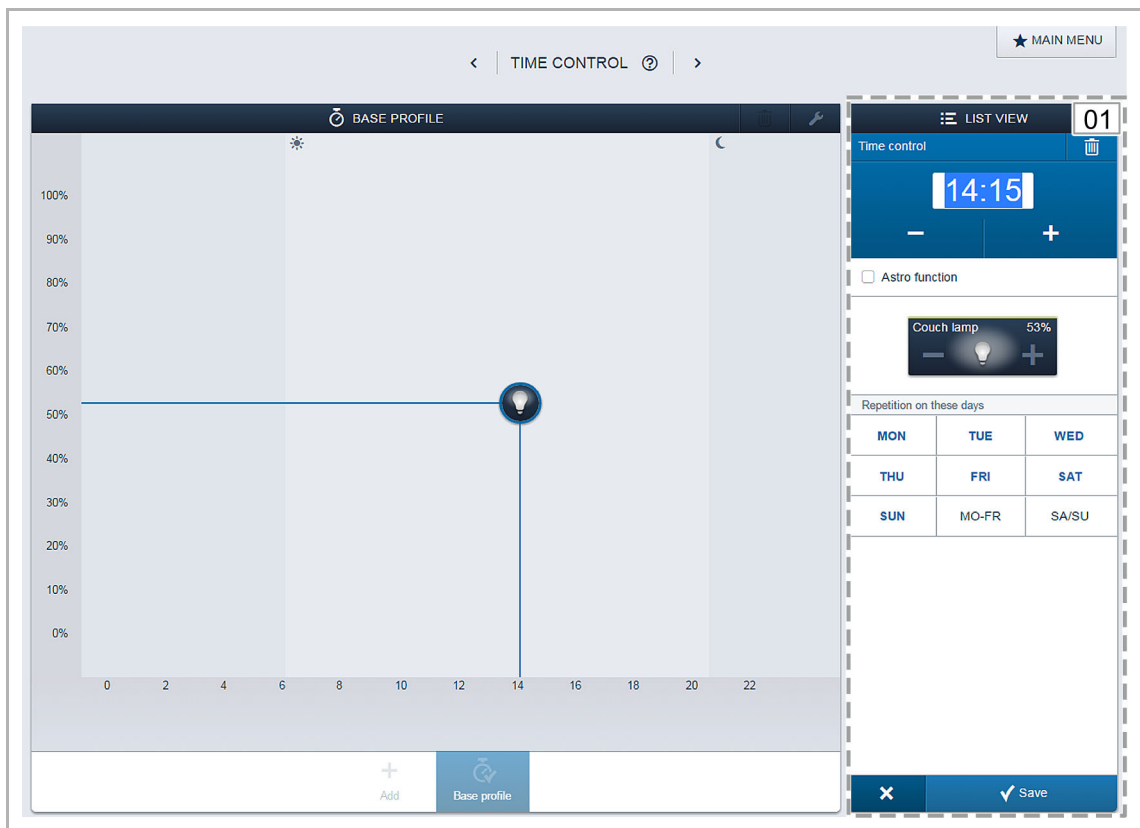


Fig. 37: Timeline - Detailed view

01 – Time setting

4.10.3 List view

All devices and scenes that have been programmed can be selected via the list view, sorted according to mounting position.

To define the switching times for a device or a scene, pull it onto the timeline via drag and drop (see Fig. 37).

4.11 Actions

In menu "Actions" you can configure simple "When-then" relationships.

This allows rules to be created, such as implementing an automatic shading function:

"Move the blind to 50% when the room temperature exceeds 25°C".

Or you can create an automatic notification, for example, for movement detectors in the house:

"Send an e-mail when the movement detector has triggered".

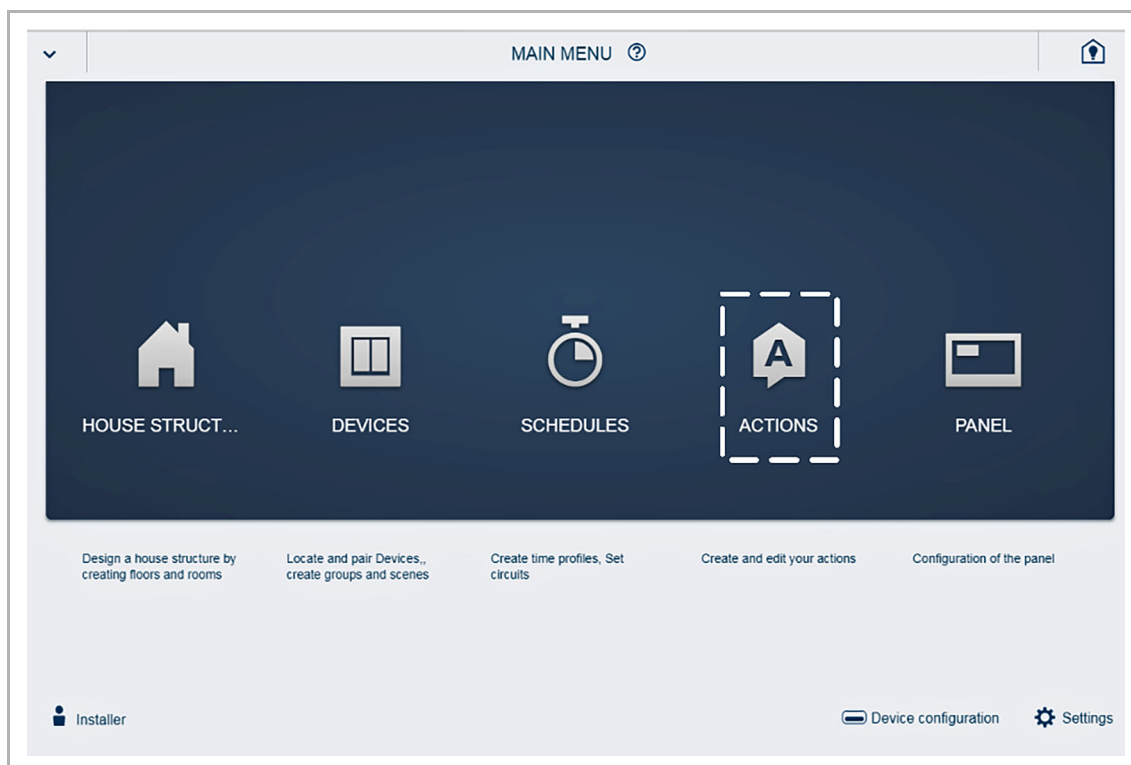


Fig. 38: Actions

4.11.1 Parts of an action

Precondition	Event	Action	Notification
A precondition defines when an action is to be active. Application examples: ▪ A shading function is to be activated only during the summer months. ▪ An automatic notification is to be sent only when no one is in the house. Preconditions are optional, which means that without a precondition the action becomes active directly.	An event defines the signal that is to start an action. One or several free@home sensors can be defined as signal generator. As soon as a sensor has been triggered (e.g. a push-button is pressed, a binary input contact is closed, a movement detector detects movement), the event is triggered and the action is started. At least one event must be configured for each action.	An action defines the actions that are to be carried out as soon as an event has occurred. Any number of free@home actuators can be defined (e.g. switching on living room lighting, dimming corridor lights to 50%, lowering the temperature in the bedroom to 19°C).	A notification is sent as soon as an event has occurred. A notification can be sent as e-mail or as push message (precondition is the registration at myBUSCH-JAEGER). The text of the message can be specified individually by the user. A message can be sent to several different receivers.
Several preconditions can be defined for each action. All preconditions must have been met before an action becomes "active" (logical AND link).	If several events are configured, the action is triggered already at the execution of an event (logical OR link).	One or several actuators can be configured for each action. All defined actuators switch if an event is triggered.	–



Notice

Actions are re-evaluated when they are activated.

When an event is active, the associated start action is carried out.

When an event is deactivated, the associated leave action is carried out.



Notice

For the time-based shading the internal UTC time (coordinated global time) is saved. This makes the switching time dependent on the sun and does not change when changing the clocks.

4.11.2 Time diagram

The time-related dependence between sensors and actuators of an action can be influenced via parameters. The relevant parameters and the influence they have on the switching behaviour is illustrated in the following graph:

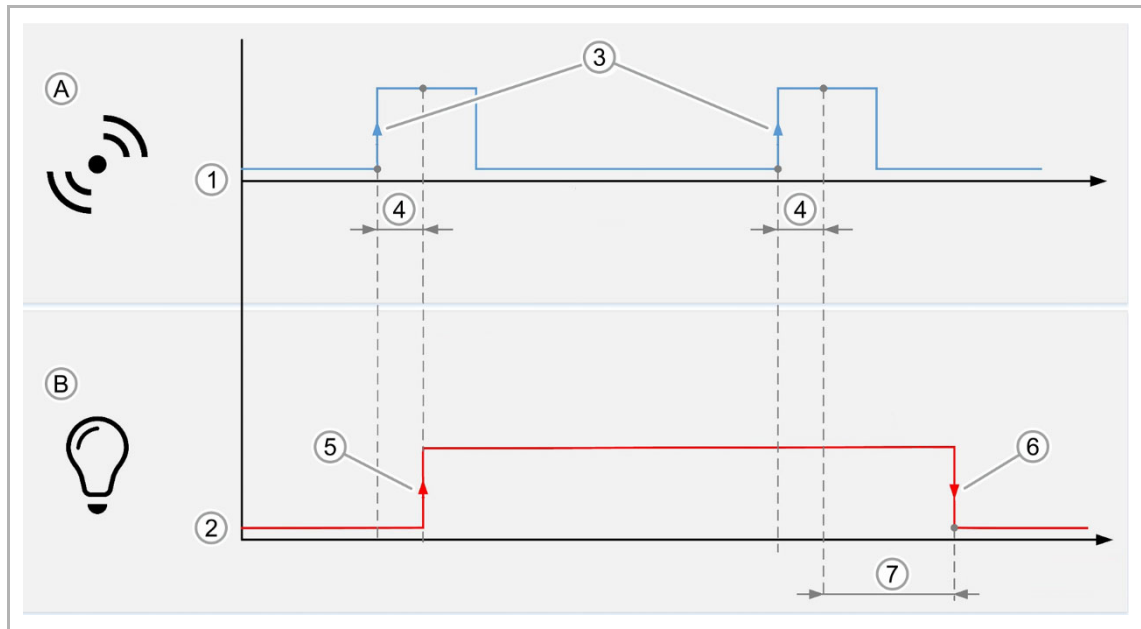


Fig. 39: Time diagram – Event/action

A – Event

B – Action

1 – Sensor- signal level

2 – Actuator behaviour

3 – The event is triggered at activation

4 – Switching delay

5 – Action during occurrence of the event

6 – Action during cancellation of the event

7 – Switch-off delay

4.11.3 Examples of possible actions:



Note

The stated examples require the implementation of, among others, special sensor technology/actuators (e.g. window contacts, weather station, etc.)

Example 1: Window open warning

If the window in the children's room is open longer than 15 minutes, the user is informed via a push message on the smartphone.

Necessary devices: Window contact with binary input.

Precondition	Event	Action	Notification
–	 Window contact Channel: Children's room Location: Upper floor > Children's room Event at: Window is being opened Delay: 900 seconds	–	 Window is not closed! The window in the children's room is open.

Example 2: Party function

When the terrace door is being opened, the roller blind, if necessary, moves up and is locked. The lock prevents an unintentional lockout when the roller blinds move down at a specified time.

Necessary devices: Window contact with binary input blind actuator.

Precondition	Event	Action	Notification
–	 Window contact Channel: Terrace door Location: Ground floor > kitchen Event at: Window is being opened	 Terrace door At: Occurrence of the event  Terrace door At: Cancellation of the event	–

Example 3: Automatic ventilation

If a window is opened while blind is closed, the blind is to move up a certain distance.

Preparation: Create a scene which moves the blind to the desired ventilation position.

Necessary devices: Window contact with binary input, blind actuator.

Precondition	Event	Action	Notification
Blind down	 Window contact Channel: Terrace door Location: Ground floor > kitchen Event at: Window is being opened	 Blind 50% At: Occurrence of the event	-

Example 4: Bathroom ventilation

The fan in the bathroom is to switch on three minutes after the light has been switched on and run on for five minutes after the light has been switched off.

Note: The switch-off delay defined in the event has the same effect as during the start of the event (the fan is switched on when the light is on for longer than 180 seconds) as during the end of the event (the fan is switched off 180 seconds after the light is switched off). If a switch-off delay has additionally been set in the actuator, the times are added until the actuator is actually switched off (in this case: 180 s + 120 s = 300 s = 5 minutes).

Necessary devices: Bathroom fan, switch actuator, sensor.

Precondition	Event	Action	Notification
-	 Sensor Channel: Left rocker Location: Upper floor > corridor Event at: Switch-on Delay: 180 seconds	 Fan At: Occurrence of the event  Fan At: Cancellation of the event Delay: 120 seconds	-

Example 5: Shading

If the outdoor temperature amounts to more than 27°C, and the brightness exceeds 50,000 lux, the blinds are to move to the shading position. As soon as the brightness value falls below the set value, the blinds move back to the UP position.

Preparation: Create a scene which moves the blind to the desired shading position.

Note: To prevent the blinds from moving too frequently, switching delays should be provided.

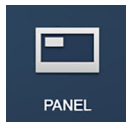
Necessary devices: Weather station, blind actuator.

Precondition	Event	Action	Notification
Outside temperature > 27°C	Brightness > 50,000 lx 5 minutes	 Shading At occurrence of the event  All blinds At cancellation of the event Delay: 900 seconds	-

4.12 Panels

In the panel configuration the buttons of the installed panels and the favourites bars (visible in the operating view of the app) can be freely equipped.

1. Click on the following icon in the main menu to open the PANEL menu.



2. Select a panel from the lower selection bar. All panels and favorites installed in the system can be selected.



Note

Only panels will appear which have been positioned beforehand on the floor plan in the DEVICES menu.

The Busch-Welcome IP® Touch 7" must be connected to the same home network as the system access point. For more information, .

3. Select an application from the list view.
4. Drag and drop an assigned actuator channel to the panel.
5. Click "Synchronize" in the list view below.

The configuration is saved and is visible on the device after a few seconds.

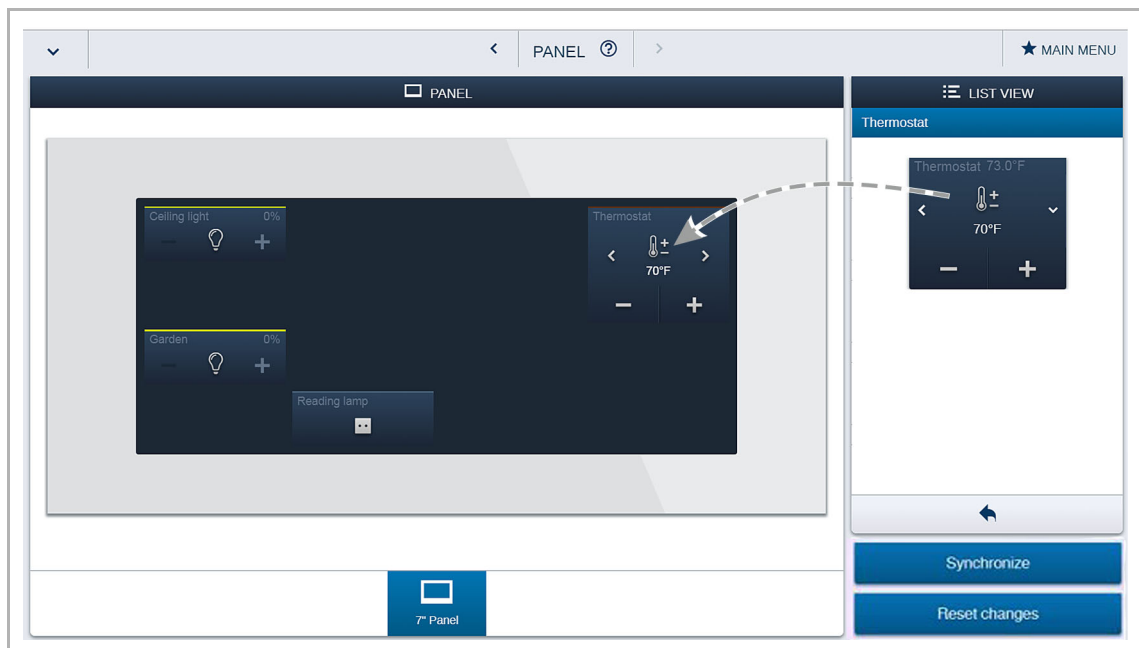


Fig. 40: Configuring the panel

4.13 myBUSCH-JAEGER

To operate the free@home outside of the local network, it can be connected to the myBUSCH-JAEGER portal. It can now be easily used to set up the system for mobile access.

The myBUSCH-JAEGER portal is a service from Busch-Jaeger. The portal offers the highest in operating comfort for remote access with a smartphone or tablet. The end customer does not need DynDNS access. A connection is established by registering and logging in at myBUSCH-JAEGER.

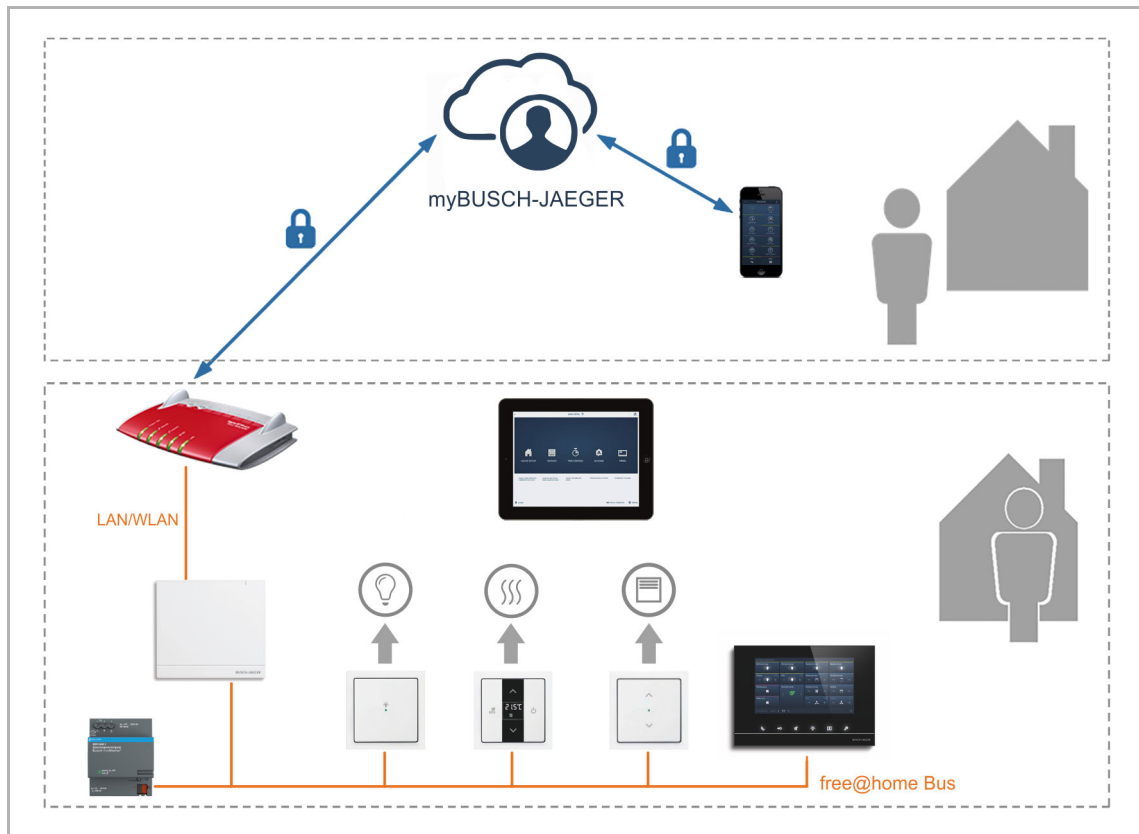


Fig. 41: myBUSCH-JAEGER Topology

myBUSCH-JAEGER serves as exchange between the local free@home installation and the mobile terminal device. Usage data and system states are neither stored nor can they be accessed by Busch-Jaeger. The communication between myBUSCH-JAEGER and the free@home, or the mobile terminal device is encrypted per TLS and the entire communication is additionally encrypted end-to-end.



Notice

To prevent internal communication becoming visible on the Internet, no ports of routers are to be opened in the direction of the Internet.

A VPN tunnel or the myBUSCH-JAEGER portal is suitable for secure remote control.

TLS (Transport Layer Security) is a protocol for protecting personal data during the communication of users with applications on the Internet. During communication between server and client, TLS ensures that no unauthorized third party can bug or change this communication. TLS is the successor of the Secure Sockets Layer (SSL). Source: searchsecurity.de

End-to-end encryption means the encryption of transmitted data via all transmission stations. The data to be transmitted are encrypted on the senders end and only decrypted on the receivers end. This means that side-channel information, such as that partly necessary for controlling the transmission process, is not encrypted; on the other hand, intermediate stations with co-knowledge at which the transmitted content is received in clear text, are eliminated. Source: Wikipedia

Prerequisites for the use of myBUSCH-JAEGER:

Registration at myBUSCH-JAEGER (not required if a Busch-Welcome® user account is already available).

Features:

- A free@home system can be coupled with a myBUSCH-JAEGER user account.
- A myBUSCH-JAEGER user account can be coupled with several free@home systems.
- A myBUSCH-JAEGER user account can be coupled with several mobile terminal devices (apps).
- Every user can receive individual user rights (installation, configuration, operation, observer).
- The free@home app can continue to be used without a myBUSCH-JAEGER user account (but then only with local access).

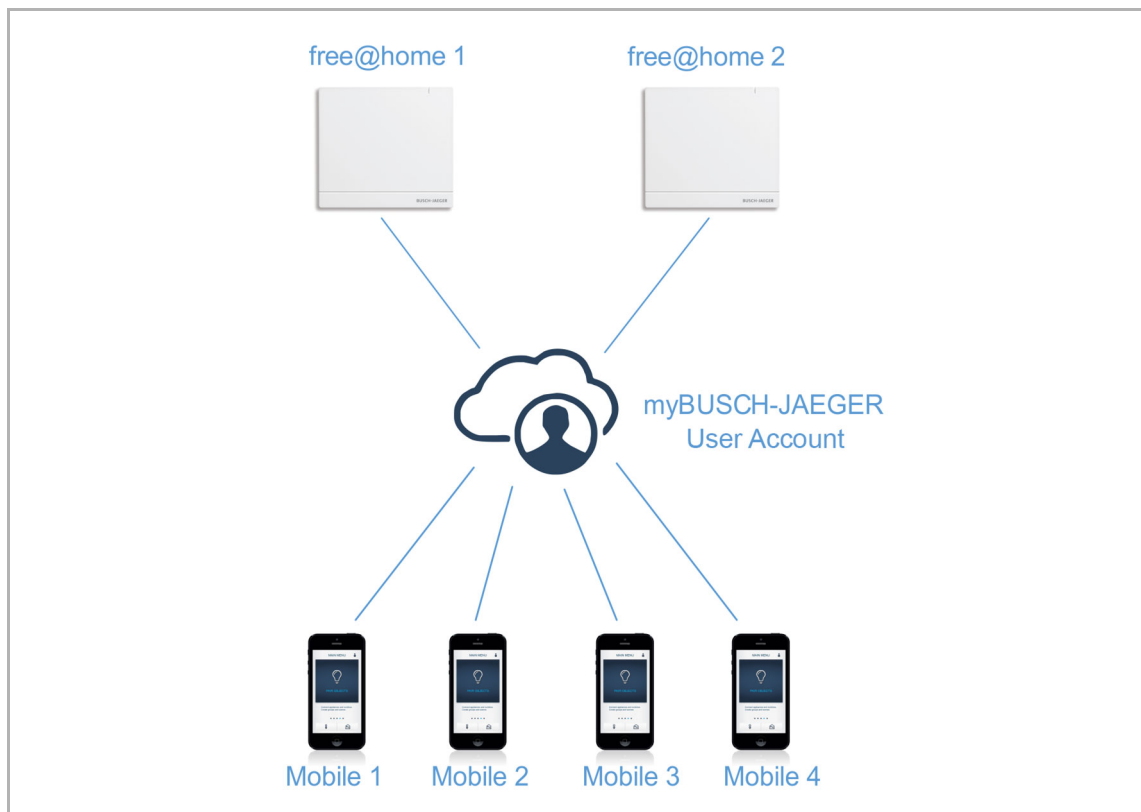


Fig. 42: Coupling with user account

Functions:

- All functions of the app, which can be used in the local network, are now available at every location with Internet access.
- The connection to myBUSCH-JAEGER makes it possible for the free@home system to send e-mails and push messages (see chapter 4.11 “Actions” on page 46).
- The authorization can be withdrawn from mobile terminal devices via the myBUSCH-JAEGER portal.
- Communication between the free@home system and a mobile terminal device is only transmitted via myBUSCH-JAEGER when the mobile terminal device is outside the local network.

Setup of myBUSCH-JAEGER:

1. Create a myBUSCH-JAEGER user account.
2. Couple the free@home system with the myBUSCH-JAEGER user account. Call up the free@home configuration user interface and enter the myBUSCH-JAEGER account data.
3. Couple the app of the mobile terminal device with the myBUSCH-JAEGER user account. Call up the free@home app and enter the myBUSCH-JAEGER account data.
4. Authorize the mobile terminal device on the free@home system (the authorization is carried out automatically when the mobile terminal device and the System Access Point are located in the same network).
5. Select the free@home system to be coupled in the app of the mobile terminal device.
 - The free@home configuration user interface displays a security token (electronic key).
6. Enter the security token in the free@home app (via manual input or by scanning a QR-code).

5 Types of devices

5.1 Sensors and control elements

5.1.1 Control elements

Control elements can be configured for the execution and use of different functions.

- Switching and dimming lights
- Opening doors
- Moving blinds
- Switching group functions and scenes
- Controlling Sonos loudspeakers
- Activating or deactivating time programs and actions

A control element consists of a 1gang or 2gang sensor unit, or a sensor/actuator unit and one or two rockers.

Sensor unit

A sensor unit serves as a pure control element, i.e. manual switching commands of the user are recorded and sent to the bus. Remote actuators can be switched via the configuration. Loads can not be switched directly.

Sensor/actuator unit

Aside from their function as control element, sensor/actuator units also serve as switch for the switching of loads. The sensors and switching channels are pre-programmed when supplied, i.e. after activating the bus line and connecting the load, the load can be switched directly on the control element.

Control element order items

The scope of delivery of a sensor unit, or a sensor/actuator unit, contains only the electronic insert. It must be completed with a suitable rocker and a cover frame.

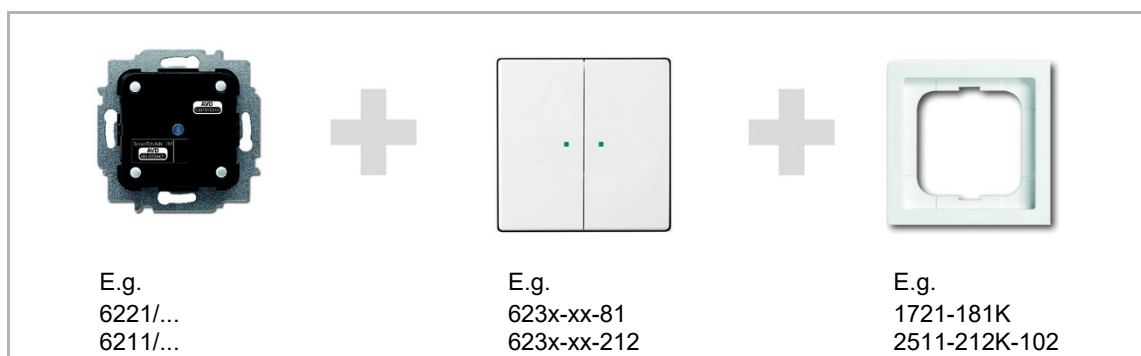


Fig. 43: Control element order items

Article no.	Product name	Sensor channels	
6221/1.0 6221/1.0-WL ^{*)}	Sensor unit, 1gang	1	
6221/2.0 6221/2.0-WL ^{*)}	Sensor unit, 2gang	2	

Table 5: Sensor units
^{*)} Wireless device

Article no.	Product name	Sensor channels	Actuator channels	Switching load
6211/1.1 6211/1.1-WL ^{*)}	Sensor/switch actuator 1/1gang	1 	1 	1 x 2300 W
6211/2.1 6211/2.1-WL ^{*)}	Sensor/switch actuator 2/1gang	2 	1 	1 x 2300 W
6211/2.2 6211/2.2-WL ^{*)}	Sensor/switch actuator 2/2gang	2 	2 	2 x 1200 W
6212/1.1 6212/1.1-WL ^{*)}	Sensor/dimming actuator 1/1gang	1 	1 	1 x 180 W
6212/2.1 6212/2.1-WL ^{*)}	Sensor/dimming actuator 2/1gang	2 	1 	1 x 180 W
6213/1.1 6213/1.1-WL ^{*)}	Sensor/blind actuator 1/1gang	1 	1 	4 A, $\cos\phi = 0.5$
6213/2.1 6213/1.1-WL ^{*)}	Sensor/blind actuator 2/1gang	2 	1 	4 A, $\cos\phi = 0.5$
6251/8.8	Sensor/switch actuator 8/8gang	8 	8 	8 x 6 A

Table 6: Sensor/actuator units
^{*)} Wireless device



Note

Please see the electronic catalogue for all possible switch ranges (www.busch-jaeger-catalogue.com).

Rockers for control elements

The rockers of the control elements are available for different switch ranges, e.g. solo®, future® linear, carat®, Busch-axcent® (and in studio white, alpine white, anthracite, aluminium silver).

Depending on their use, the rockers can be selected with different printing:

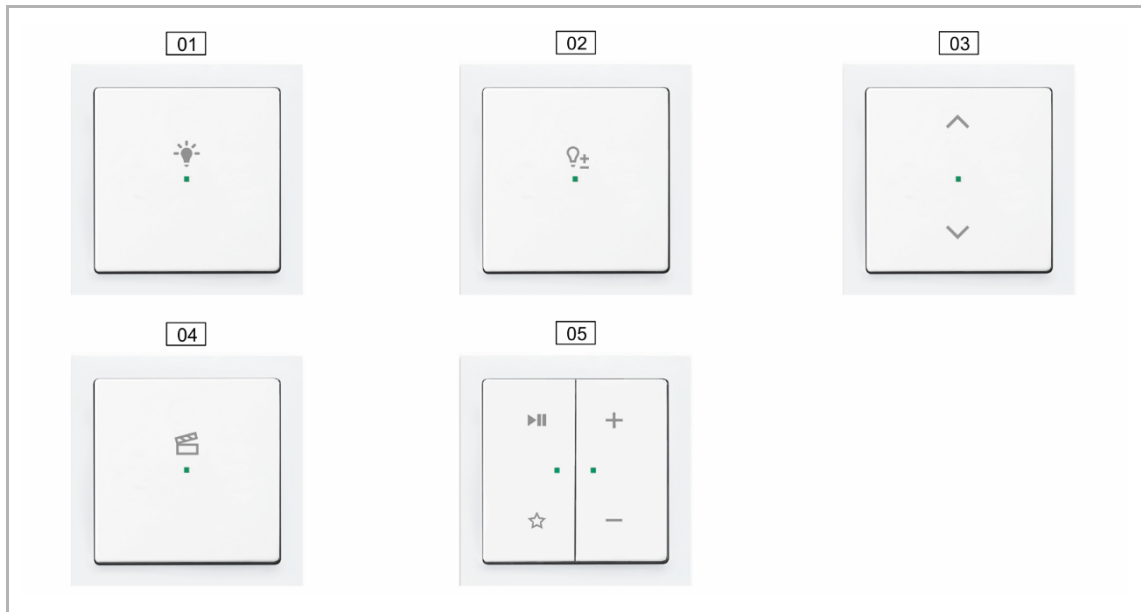


Fig. 44: Rockers for control elements

- 01 – Light icon
- 02 – Dimmer icon
- 03 – Blind icon
- 04 – Scene icon
- 05 – Media Player icons

Rocker order items

No.	Article no.	Product name
01	6231-10-...	Rocker, 1gang, with "Light" icon
02	6234-10-...	Rocker, 1gang, with "Dimmer" icon
03	6232-10-...	Rocker, 1gang, with "Blind" icon
04	6233-10-...	Rocker, 1gang, with "Scene" icon
05	6237-21-... 6237-22-...	Rocker/L 2gang, Play/Pause Rocker/R 2gang, Volume

Table 7: Printed rockers for control elements



Note

Please see the electronic catalogue for all possible switch ranges (www.busch-jaeger-catalogue.com).

5.1.1.1 Button function

All control elements are supplied in "Rocker" operating mode ex factory. This means:

- Operation on the top activates or gives a movement up command.
- Operation on the bottom deactivates or gives a movement down command.

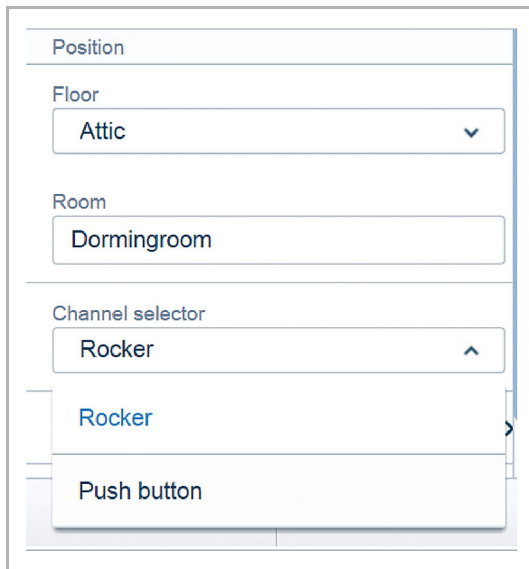


Fig. 45: Button function

Simple press of the button:

The operating mode can also be changed to "Push-button" mode via the channel selection of the respective sensor in the "Device settings". The control element then acts as two separate push-buttons. This means:

- .Operation on top switches on.
- Repeat of operation on top switches off.

Double press of the button: (only wireless sensors)

A scene can be triggered with a double press of the button (press twice within 0.4 seconds).

Example of application:

The control element is to switch a scene. A scene can only be triggered but not switched on and off. By parameterizing a sensor as push-button, it can activate two different scenes.



Notice

The setting becomes visible only after the sensor has been positioned in the working area of the "Devices" menu.

After the changeover a separate sensor channel icon is displayed on the floor plan for each of the push-buttons!

5.1.1.2 LED as light for orientation

Each rocker of a sensor has an LED. At the point of delivery this LED is configured as light for orientation. This means:

- The LED lights up permanently to ensure that the sensor is easy to locate in the dark.

The brightness of the LED can be changed or totally deactivated in the device settings.



Note

The LED flashes at forced movement or in case of an error.

5.1.1.3 LED as status display

For the status indication the LED of the rocker can be re-configured in the device settings. When the sensor is linked with an actuator, the LED signals whether the actuator is on or off.

The clear indication of the actuator status is guaranteed as long as only one sensor is linked with one or several actuators or several sensors activate an identical group of actuators.

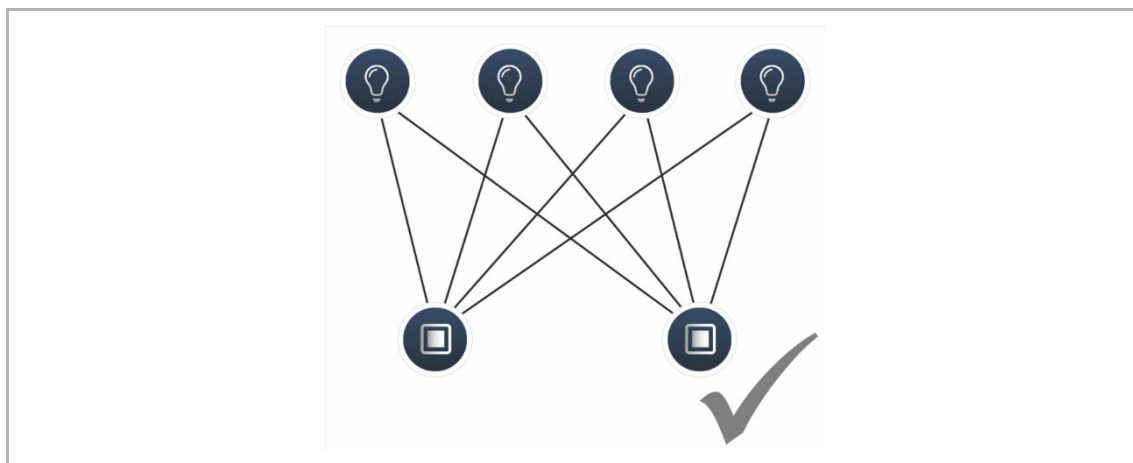


Fig. 46: LED function - Status indication possible

If several sensors activate different groups of actuators the correct indication of the actuator status is no longer guaranteed.

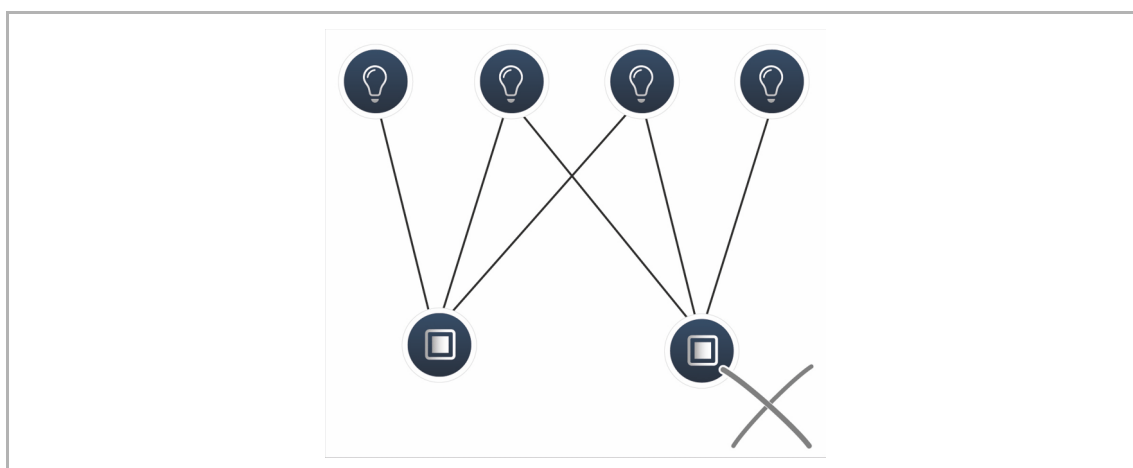


Fig. 47: LED function - Status indication is not possible

5.1.1.4 Parameter settings of 1/1gang sensor/switch actuator

Actuator settings

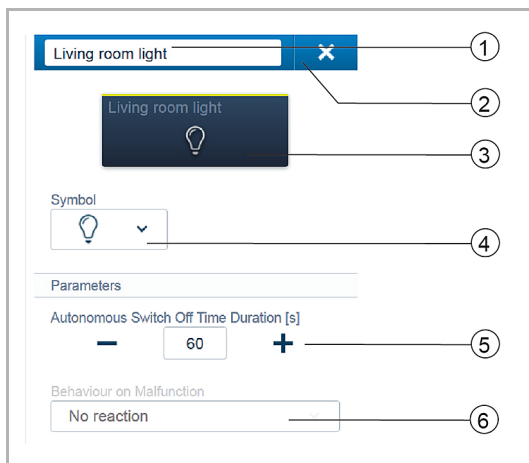


Fig. 48: Actuator settings

- [1] Changing the name
- [2] Deleting the channel
- [3] Switching the actuator via the button
- [4] Selection of a different icon
- [5] Setting the switch-off delay in seconds
 - The -/+ buttons can be used to specify, for example, how long the light remains switched on after the sensor has deactivated the load.
- [6] Behaviour during faults
 - Display of information only. No settings are possible.



Note

The function of the actuator can be specified after the allocation: Switch actuator, heating operation, additional heating stage or trigger.

Sensor settings



Fig. 49: Sensor settings

- [1] Changing the name
- [2] Deleting the channel
- [3] Selecting the rocker in the list view

Rocker settings

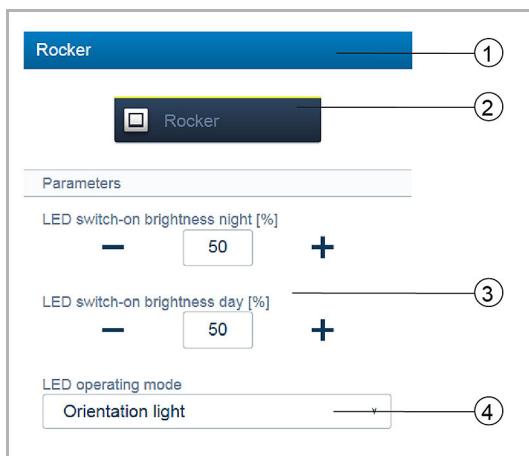


Fig. 50: Rocker settings

- [1] Changing the name
- [2] Switching the sensor via the button.
- [3] Setting the LED switch-on brightness night/day in % via the -/+ buttons
 - The parameter specifies how strong the LED lights up percentage-wise during night/day.
- [4] Selecting the LED operating mode:
 - Light for orientation: LED lights up permanent
 - Status display: LED lights up when pressed



Notice

The parameter only functions when a time profile with the application "LED day/night switchover" is available. The device (channel) must be linked with this application.

The following parameter is available immediately for pre-programmed devices. For all other devices it becomes available only after being linked with an actuator. The setting in the list view is then made via the linking function of the Web-based user interface of the System Access Point.



Fig. 51: Rocker setting after linking with actuator

[5] Selecting the function:

- Control element
- Dimming sensor
- Staircase light sensor
- Force-position sensor On/Off
- Blind sensor
- Blind force-position
- Scene sensor (only becomes visible when "Scene sensor" has been selected.
Long press of the button: "Overwrite scene"/"Retain scene")

5.1.1.5 Parameter settings of 2/1gang sensor/switch actuator

Actuator settings

As for 1/1gang.

Sensor settings

As for 1/1gang. However, two rockers (left and right rocker) are displayed in the list view.

Rocker settings

As for 1/1gang. However, the settings are made for two rockers (left rocker and right rocker).

5.1.1.6 Parameter settings of 2/2gang sensor/switch actuator

Actuator settings

As for 1/1gang. However, two actuator channels are available.

Sensor settings

As for 1/1gang. However, two rockers (left and right rocker) are displayed in the list view.

Rocker settings

As for 1/1gang. However, the settings are made for two rockers (left rocker and right rocker).

5.1.1.7 Parameter settings of 1/1gang sensor/dimming actuator

Actuator settings

Fig. 52: Actuator settings

- [1] Changing the name
- [2] Deleting the channel
- [3] Switching of the actuator via the button.
Dimming the actuator via the -/+ buttons
- [4] Setting of the load connected to the actuator.
Selecting the function:
 - Automatic load detection
 - Inductive load
 - Dimmable LED/KLL
 - Incandescent lamp
- [5] Setting the minimum brightness in % via the -/+ buttons
- [6] Setting the maximum switch-on brightness during the day in % via the -/+ buttons
- [7] Setting the maximum switch-on brightness during the night in % via the -/+ buttons
- [8] Setting the switch-off delay in seconds
 - The -/+ buttons can be used to specify, for example, how long the light remains switched on after the actuator has deactivated the load.
- [9] Setting the switch-on mode
 - The parameter specifies whether the lamp switches on with the previously set brightness or always with maximum brightness.

Sensor settings

Fig. 53: Sensor settings

- [1] Changing the name
- [2] Deleting the channel
- [3] Selecting the rocker in the list view

Rocker settings

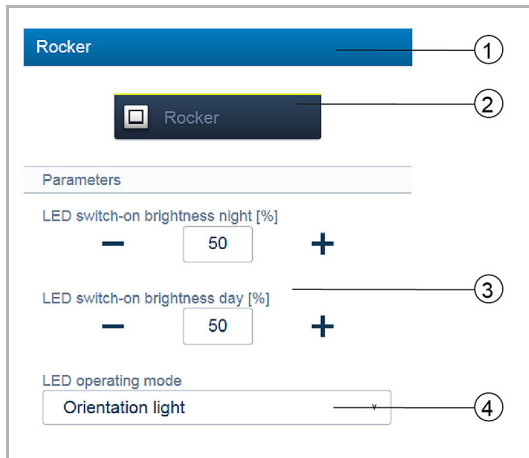


Fig. 54: Rocker settings



Notice

The parameter only functions when a time profile with the application "LED day/night switchover" is available. The device (channel) must be linked with this application.

- [1] Changing the name
- [2] Switching the sensor via the button.
- [3] Setting the LED switch-on brightness night/day in % via the -/+ buttons
 - The parameter specifies how strong the LED lights up percentage-wise during night/day.
- [4] Selecting the LED operating mode:
 - Light for orientation: LED lights up permanent
 - Status display: LED lights up when pressed

The following parameter is available immediately for pre-programmed devices. For all other devices it becomes available only after being linked with an actuator. The setting in the list view is then made via the linking function of the Web-based user interface of the System Access Point.

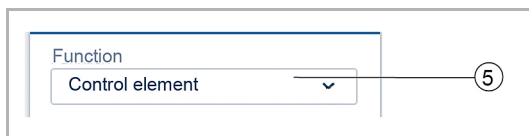


Fig. 55: Rocker setting after linking with actuator

- [5] Selecting the function:
 - Control element
 - Dimming sensor
 - Staircase light sensor
 - Force-position sensor On/Off
 - Blind sensor
 - Blind force-position
 - Scene sensor (only becomes visible when "Scene sensor" has been selected.
Long press of the button: "Overwrite scene"/"Retain scene")

5.1.1.8 **Parameter settings of 2/1gang sensor/dimming actuator**

Actuator settings

As for 1/1gang.

Sensor settings

As for 1/1gang. However, two rockers (left and right rocker) are displayed in the list view.

Rocker settings

As for 1/1gang. However, the settings are made for two rockers (left rocker and right rocker).

5.1.1.9 Parameter settings of 1/1gang sensor/blind actuator

Actuator settings

The screenshot shows the 'Actuator settings' screen. At the top, there is a header bar with a name field (1) and a delete icon (2). Below this is a control area with a question mark icon (3) and two arrow buttons. The main settings are organized into sections: 'Function' with a dropdown menu (4) currently set to 'Blind actuator'; a 'Calibration' button (5); a 'Parameter' section with three input fields: 'Movement time up [s]' (6) set to 3, 'Movement time down [s]' (7) set to 4, and 'Total slat movement time [ms]' (8) set to 1400; a 'Behaviour during faults' dropdown (9) set to 'No reaction'; and a 'Motor pause time' input field (10) set to 0. Each input field has minus and plus buttons for adjustment. A back arrow is at the bottom.

Fig. 56: Actuator settings

- [1] Changing the name
- [2] Deleting the channel
- [3] Switching the actuator via the ∇ Δ buttons
- [4] Selection of the type of actuator for optimizing the behaviour during different events.
Selecting the function:
 - Blind actuator
 - Roller blind actuator
 - Roof window actuator
 - Awning actuator
- [5] Button "Calibration"
 - A wizard guides you through the calibration process.
- [6] Setting the movement time up/down in seconds via the $-/+$ buttons
- [7] Setting the time in milliseconds via the $-/+$ buttons, which the slats require for a complete change in direction of their angle.
 - The time for an individual step is fixed at 200 ms and cannot be changed.
- [8] Behaviour during faults
 - Display of information only. No settings are possible.
- [9] Setting the motor pause time in milliseconds via the $-/+$ buttons
 - Please check the operating manual of the blind motor for specifying the correct pause time of the motor (period between switching the actuator and start-up of the motor). This value is required for the setting of the slats.

Sensor settings

The screenshot shows the 'Sensor settings' screen. It has a header bar with a name field (1) and a delete icon (2). Below is a list view showing 'Sensor / Blind actuator 1/1gang' and 'Rocker' (3). A right arrow is next to the 'Rocker' entry (4).

Fig. 57: Sensor settings

- [1] Changing the name
- [2] Deleting the channel
- [4] Selecting the rocker in the list view

Blind actuator functions

Blind actuators are used for numerous applications. They can, for example, control a roller blind motor, a motorized roof window or an awning. Each channel of a free@home blind actuator can be optimized for one of these applications via the "Function" parameter [4].

Depending on the type of actuator selected, a distinction is made between the displayed icon and the function:

Event		Behavior			
		Roller blind actuator	Blind actuator	Roof window actuator	Awning actuator
Wind alarm	Occurrence	Move up and lock	Move up and lock	Close and lock (v)	Retract and lock (^)
	Cancel	Selectable	Selectable	Selectable	Selectable
Rain alarm	Occurrence	Move down and lock	Move up and lock	Close and lock (v)	Retract and lock (^)
	Cancel	Selectable	Selectable	Selectable	Selectable
Frost alarm	Occurrence	Move and block	Move and block	Close and lock (v)	Retract and lock (^)
	Cancel	Selectable	Selectable	Selectable	Selectable
Force-position (in actions)	Occurrence	Selectable (up/down)	Selectable (up/down)	Selectable (up/down)	Selectable (up/down)
	Cancel	Back to position	Back to position	Back to position	Back to position
Window contact	Window tilted	–	–	–	–
	Window open	During movement in any direction, move to the top and block. Without movement, block immediately.	During movement in any direction, move to the top and block. Without movement, block immediately.	–	–
	Window closed	Retain position	Retain position	–	–

Table 8: Blind actuator functions

Alarm priorities:

Force-position > Wind alarm > Window contact > Frost alarm > Rain alarm.

The following methods can be selected for cancelling an alarm:

- Remain on the position.
- Go back to the previous position.

This method is not selected for every alarm type, but for all alarms of the blind actuator channel.

Rocker settings

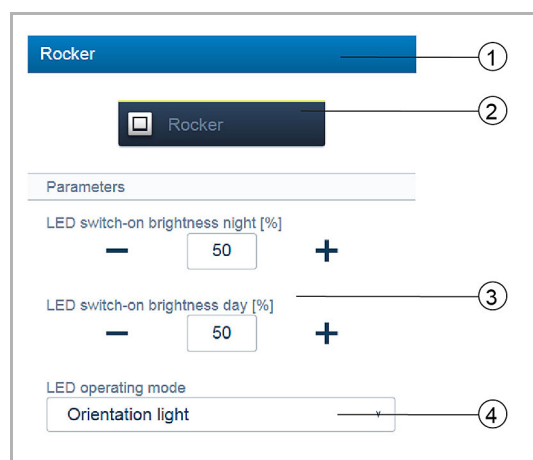


Fig. 58: Rocker settings

- [1] Changing the name
- [2] Switching the sensor via the button.
- [3] Setting the LED switch-on brightness night/day in % via the -/+ buttons
 - The parameter specifies how strong the LED lights up percentage-wise during night/day.
- [4] Selecting the LED operating mode:
 - Light for orientation: LED lights up permanent
 - Status display: LED lights up when pressed



Notice

The parameter only functions when a time profile with the application "LED day/night switchover" is available. The device (channel) must be linked with this application.

The following parameter is available immediately for pre-programmed devices. For all other devices it becomes available only after being linked with an actuator. The setting in the list view is then made via the linking function of the Web-based user interface of the System Access Point.



Fig. 59: Rocker setting after linking with actuator

- [5] Selecting the function:
 - Control element
 - Dimming sensor
 - Staircase light sensor
 - Force-position sensor On/Off
 - Blind sensor
 - Blind force-position
 - Scene sensor (only becomes visible when "Scene sensor" has been selected.
Long press of the button: "Overwrite scene"/"Retain scene")

5.1.1.10 Parameter settings of 2/1gang sensor/blind actuator

Actuator settings

As for 1/1gang.

Sensor settings

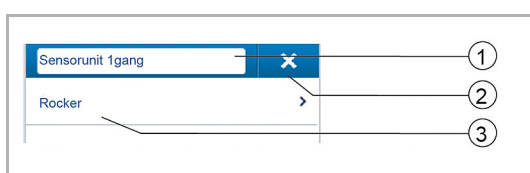
As for 1/1gang. However, two rockers (left and right rocker) are displayed in the list view.

Rocker settings

As for 1/1gang. However, the settings are made for two rockers (left rocker and right rocker).

5.1.1.11 Parameter settings of 1gang sensor unit

Sensor settings



- [1] Changing the name
- [2] Deleting the channel
- [3] Selecting the rocker in the list view

Fig. 60: Sensor settings

Rocker settings

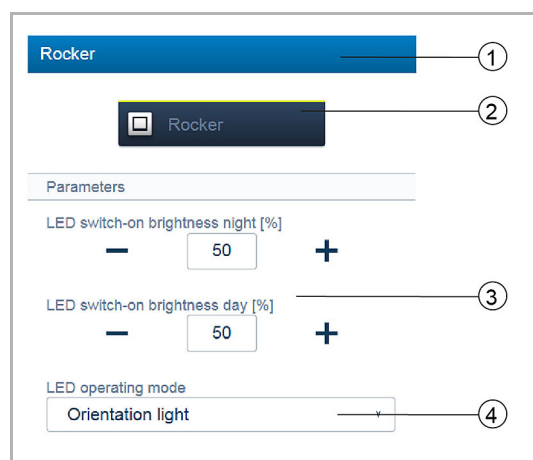
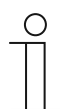


Fig. 61: Rocker settings



Notice

The parameter only functions when a time profile with the application "LED day/night switchover" is available. The device (channel) must be linked with this application.

- [1] Changing the name
- [2] Switching the sensor via the button.
- [3] Setting the LED switch-on brightness night/day in % via the -/+ buttons
 - The parameter specifies how strong the LED lights up percentage-wise during night/day.
- [4] Selecting the LED operating mode:
 - Light for orientation: LED lights up permanent
 - Status display: LED lights up when pressed

The following parameter is available immediately for pre-programmed devices. For all other devices it becomes available only after being linked with an actuator. The setting in the list view is then made via the linking function of the Web-based user interface of the System Access Point.



Fig. 62: Rocker setting after linking with actuator

- [5] Selecting the function:
 - Control element
 - Dimming sensor
 - Staircase light sensor
 - Force-position sensor On/Off
 - Blind sensor
 - Blind force-position
 - Scene sensor (only becomes visible when "Scene sensor" has been selected.
Long press of the button: "Overwrite scene"/"Retain scene")

5.1.1.12 Parameter settings of 2gang sensor unit

Sensor settings

As for 1/1gang. However, two rockers (left and right rocker) are displayed in the list view.

Rocker settings

As for 1/1gang. However, the settings are made for two rockers (left rocker and right rocker).

5.1.2 Movement detector

Movement detectors detect movement in their surveillance area and send this information to the free@home bus. This allows automated functions to be executed, e.g. switch a light or a scene.

The movement detector also has a brightness sensor, which measures the ambient brightness. This ensures, for example, that light is switched on only when it is actually required. The threshold value from which the movement detector is to switch can be programmed in the user interface.

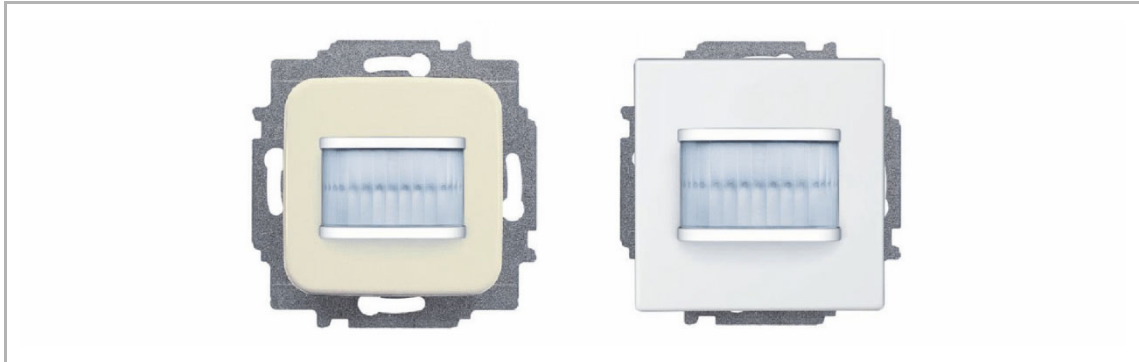


Fig. 63: Movement detector

Detection range

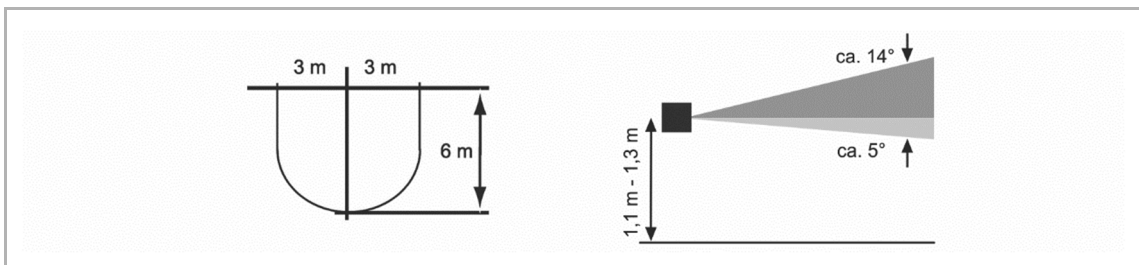


Fig. 64: Detection range

Movement detector (Sensor)

The movement detector (Sensor) serves only for the detection of movement, i.e. movements of the user are recorded and sent to the bus. Remote actuators can be switched via the configuration. Loads can not be switched directly.

Movement detector/actuator unit

Aside from their function as movement detector, movement detector/actuator units also serve as switch for the switching of loads. The sensors and switching channels are pre-programmed when supplied, i.e. after activating the bus line and connecting the load, the load can be switched directly via the movement detector.

When supplied, the movement detector operates dependent on brightness, i.e. it switches only in the dark. The switching behaviour can be changed in the user interface.

Movement detector order items

The scope of delivery of the movement detector contains only the electronic insert. It must still be completed with a cover frame.

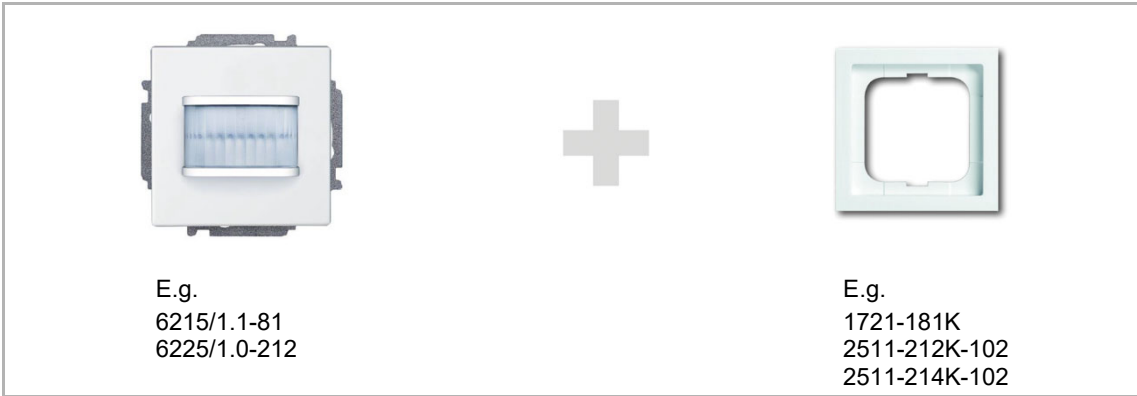


Fig. 65: Movement detector order items

Article no.	Product name	Program	Colour	Sensor channels
6225/1.0-...	Movement detectors	E.g. future® linear solo®, carat® Busch-axcent®	E.g. alpine white anthracite aluminium silver	1

Table 9: Movement detectors (Sensors)

Article no.	Product name	Program	Colour	Sensor channels	Actuator channels
6215/1.1-... 6215/1.1-...-WL*)	Movement detector/switch actuator, 1gang	E.g. future® linear solo®, carat® Busch-axcent®	E.g. alpine white anthracite aluminium silver	1	1

Table 10: Movement detector/actuator units
) Wireless device

Article no.	Product name	Switching load
6215/1.1-... 6215/1.1-...-WL*)	Movement detector/switch actuator, 1gang	1 x 2300 W

Table 11: Switching loads
) Wireless device



Notice

Please see the electronic catalogue for all possible switch ranges (www.busch-jaeger-catalogue.com).

5.1.2.1 Parameter settings of movement detectors/switch actuators, 1gang

Actuator settings

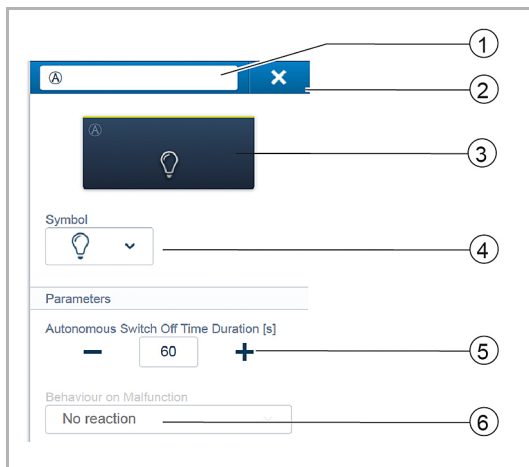


Fig. 66: Actuator settings

- [1] Changing the name
- [2] Deleting the channel
- [3] Switching of the actuator via the button
- [4] Selection of a different icon
 - The -/+ buttons can be used to specify, for example, how long the light remains switched on after the actuator has deactivated the load.
- [5] Setting the switch-off delay in seconds
 - The -/+ buttons can be used to specify, for example, how long the light remains switched on after the actuator has deactivated the load.
- [6] Behaviour during faults
 - Display of information only. No settings are possible.

Sensor settings (movement detector)

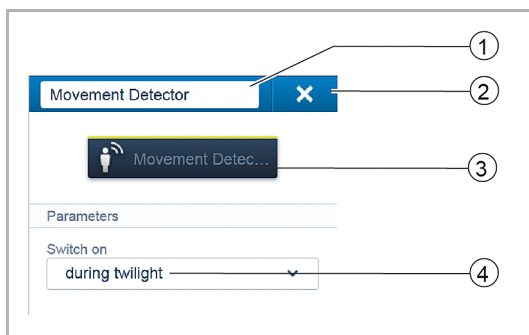


Fig. 67: Sensor settings - Movement detector

- [1] Changing the name
- [2] Deleting the channel
- [3] Switching of the actuator via the button
- [4] Selection of the brightness conditions at which the device is to respond. Activation:
 - independent of the brightness
 - during twilight
 - during darkness

5.1.2.2 Parameter settings of movement detector (sensor)

Sensor settings (movement detector)

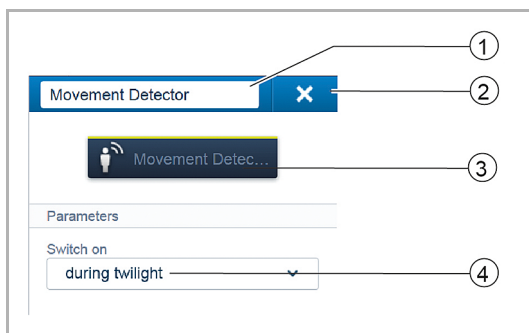


Fig. 68: Sensor settings - Movement detector

- [1] Changing the name
- [2] Deleting the channel
- [3] Switching the actuator via the button
- [4] Selection of the brightness conditions at which the device is to respond. Activation:
 - independent of the brightness
 - during twilight
 - during darkness
- [5] Switching the movement detector continuously on or off

5.1.3 Room temperature controller

The room temperature controller (RTC) always displays the set-point temperature. This can be changed via the arrow keys of the control element.

The RTC operates as PI controller and in time adjusts its control value also to the response of the room.

The device has four operating modes that can be adjusted locally:

Comfort operation

Application: You are in the room for a longer period of time. The comfort temperature is to be reached.

Behaviour of the RTC: The display indicates the set-point temperature that has been set. The controller aims at this temperature.

ECO mode

Application: You leave the room for a few hours. The room temperature is to be reduced to save energy. However, the room should not cool down completely.

Behaviour of the RTC: The display indicates "ECO". The temperature is reduced by 4°C (the reduction can be adjusted in the user interface).

OFF mode

Application: The room is not being used for a longer period of time.

Behaviour of the RTC: The display indicates "OFF". The heating valves are closed (frost protection is active).

Frost protection mode

Application: The frost protection switches on automatically when the window is opened (a window contact is required).

Behaviour of the RTC: The display indicates frost protection. The heating valves close. If the room temperature drops below 7°C, the heating is switched on. This is to prevent damage to the building.

Heating/cooling switchover

The RTC is suitable both for heating and cooling operation. The switchover of the two modes is made via a binary input. The input is configured as heating/cooling reverser and is connected with the room temperature controller in the user interface.

Extension unit operation

The RTC can be configured in the device settings as extension unit. In this setting only the temperature sensor of the main unit is evaluated. The extension unit serves only for selecting the operating modes or the set-point temperature.

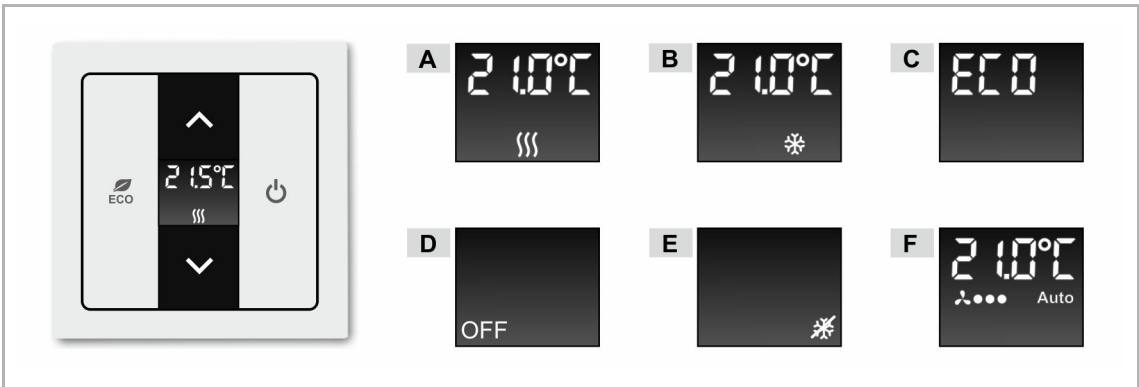


Fig. 69: Display of room temperature controller (RTC)

- A – Comfort mode heating active
- B – Comfort mode cooling active
- C – ECO mode
- D – OFF mode
- E – Frost protection mode
- F - Fan speed levels 1 - 3, automatic (if parameterized)

Order items of room temperature controller

The scope of delivery of the room temperature controller contains only the electronic insert. It must still be completed with a cover plate and a cover frame.

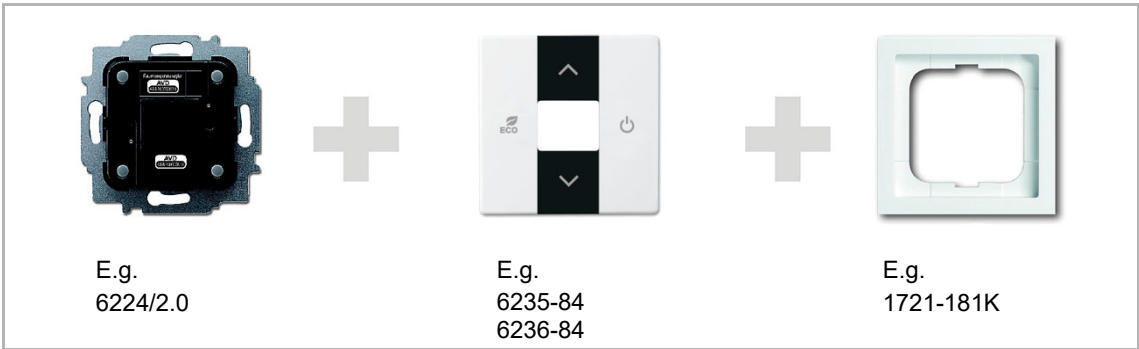


Fig. 70: Order items of room temperature controller

Article no.	Product name	Sensor channels
6224/2.0 6224/2.0-WL ^{*)}	Room temperature controller	1

Table 12: Room temperature controller (sensor)
^{*)} Wireless device

Article no.	Product name	Sensor channels	Actuator channels
6224/2.1-WL ^{*)}	Room temperature controller	1	1

Table 13: Room temperature controller (sensor/switch actuator)
^{*)} Wireless device

Article no.	Program	Colour
6235-...	E.g. future® linear solo®, carat® Busch-axcent®	E.g. alpine white anthracite aluminium silver

Fig. 14: Cover plates for room temperature controller

Article no.	Program	Colour
6236-...	E.g. future® linear solo®, carat® Busch-axcent®	E.g. alpine white anthracite aluminium silver

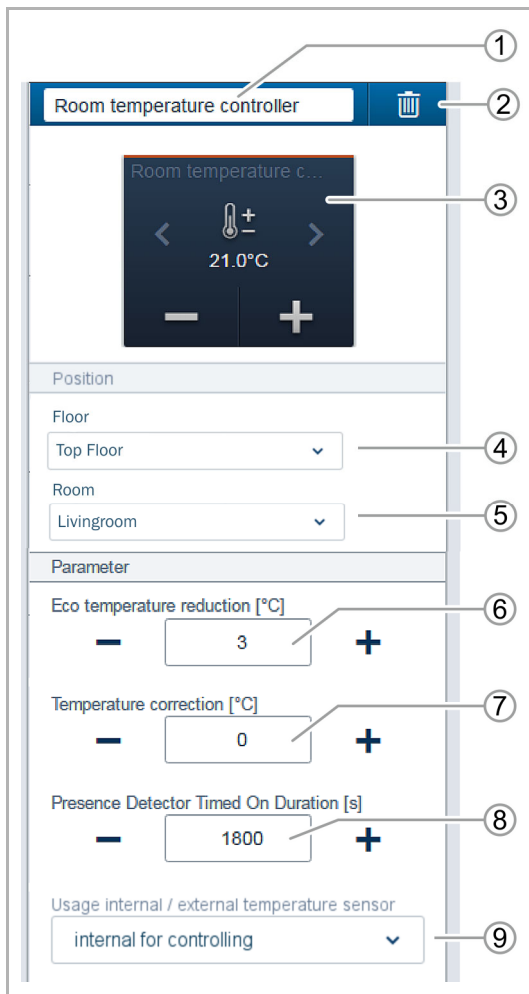
Table 15: Cover plate for fan coil controller



Notice

Please see the electronic catalogue for all possible switch ranges (www.busch-jaeger-catalogue.com).

5.1.3.1 Parameter settings of room temperature controller



- [1] Changing the name
- [2] Deleting the channel (dustbin icon)
- [3] Switching the actuator via the button
- [4] Selection of the floor
- [5] Selection of the room
- [6] Setting the Eco temperature reduction in °C
 - The +/- buttons can be used to specify the value the temperature is to be reduced to when ECO mode is activated.
- [7] Setting the temperature correction in °C via the +/- buttons
 - Manual increase/reduction of the temperature value if the temperature is repeatedly not reached automatically.
- [8] Setting the switch-off delay in seconds during presence via the +/- buttons
 - If the ECO mode is deactivated by a movement detector, the switch-off delay can be specified here when the ECO mode is to be re-activated after the room is exited.

Fig. 71: Actuator settings - RTC

- [9] Selection of the internal and/or external sensor for temperature regulation and, if necessary, the limiting function of the floor temperature.

Notice: Only available for Room temperature controller/heating actuator, wireless 6224/2.1-WL and Busch-free@homePanel 4.3" 6226-xxx in connection with an external temperature sensor.

Use of internal / external temperature reading:

- internal for regulating:
 - Use of the internal temperature sensor of the device for reading and regulating the room temperature.
- external for regulating:
 - Use of an external temperature sensor for reading and regulating the floor temperature. For this the external temperature sensor must be laid in the screed.
- internal and external for regulating:
 - Use of the internal and an external temperature sensor for reading and regulating the room temperature. Both measured values are used to create an average value. For this the external temperature sensor must be installed behind a ventilated cover plate (e.g. 6541-xx).
- internal for regulating and external for limiting:
 - Use of the internal and an external temperature sensor for reading temperature. The temperature is regulated via the internal temperature sensor. The external temperature sensor serves for limiting the temperature, generally the floor temperature (floor heating). As soon as the temperature measured on the external temperature sensor exceeds the set temperature, the relay is switched off.

Additional settings

- Extension unit operation:
 - Option 1: The room temperature controller can be configured in the device settings as extension unit (slave). In this setting only the temperature sensor of the main unit (master) is evaluated. The extension unit serves only for selecting the operating modes or the set-point temperature.
 - Option 2: A battery-operated radiator thermostat is configured as extension unit, which is activated via a room temperature controller (master).

5.2 Displays

The free@home panels serve for the central control of up to 16 configurable free@home functions, such as centrally moving all blinds, switching scenes, or controlling room temperature controllers (as extension unit).

There is also the option of displaying different data and statuses, e.g. the weather data of the free@home-Weather station, the opening status of windows and doors, the switch-on status of lighting for each room, as well as the charging status of the ABB solar storage REACT2.

5.2.1 Busch-free@homeTouch 7"

Aside from the central control of free@home functions, the Busch-free@homeTouch 7" serves as indoor video station for the Busch-Welcome® door communication system.



Fig. 72: Busch-free@homeTouch 7"

The panel is connected to both bus systems, the free@home bus and the Busch-Welcome® bus. The audio/video signals are transmitted and the power for the device is supplied exclusively via the Busch-Welcome® bus. The panel can therefore also be used as a pure indoor video station without a connection to the free@home system.

It is not possible to operate the panel without being connected to the Busch-Welcome® bus.

To ensure the power supply to the panel, at least one Busch-Welcome® system controller or one auxiliary power supply is required (e.g. MDRC power pack 6358-101).



Notice

Separate cabling is required from the Busch-Welcome® bus and free@home bus.

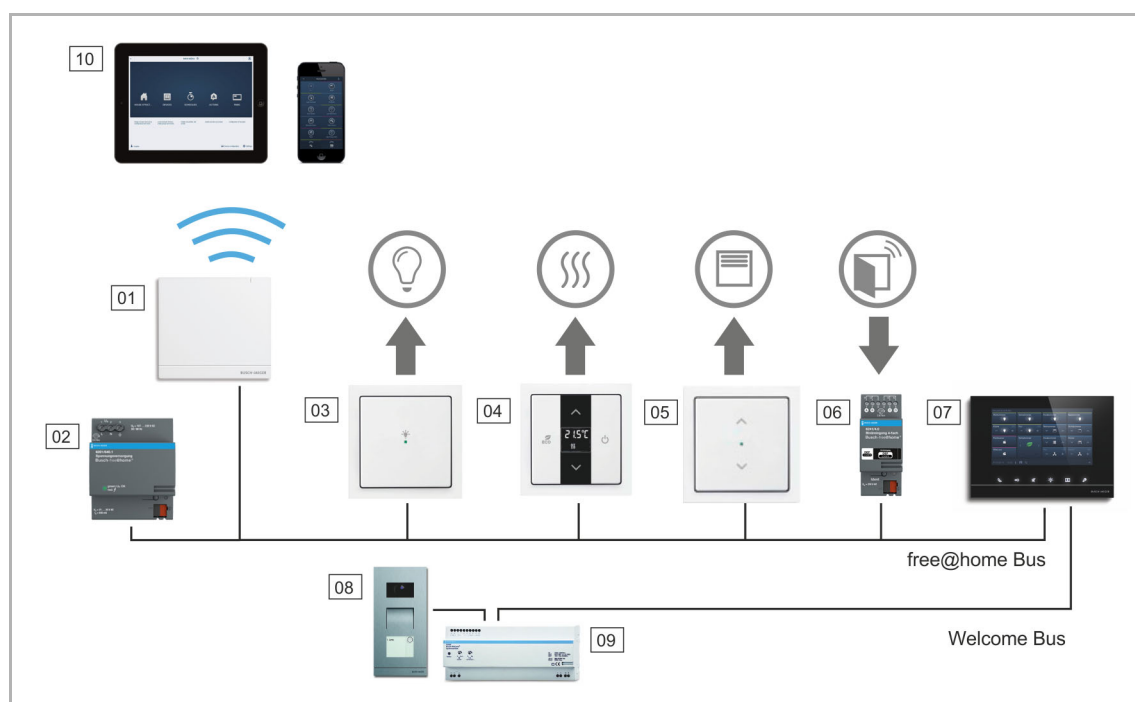


Fig. 73: System setup of Busch-free@home® with Busch-Welcome®

- 01 – System Access Point
- 02 – Power supply of free@home bus
- 03 – Sensor/switching actuator unit
- 04 – Room temperature controller
- 05 – Sensor/blind actuator unit
- 06 – Binary input (window contact)
- 07 – Busch-free@homeTouch 7"
- 08 – Outdoor station
- 09 – System controller Busch-Welcome® bus
- 10 – Tablet/smartphone

Up to 16 free@home functions can be positioned on the free@home operating page. The room temperature controller function occupies two function positions. Programming is carried out via the user interface of the System Access Point.

In addition, the panel acts as gateway which mutually compiles the telegrams of the two bus systems. This, for example, makes it possible to switch an actuator in the Busch-Welcome® system during an incoming door call of the free@home system, or to use a sensor in the free@home system to send an "Open door" command to the Busch-Welcome® system.

Each of these functions appears as a separate entry in the working area of the "Devices" menu. The functions can be positioned on the floor plan and then, like any other sensor or actuator, linked in the "Devices" area with other sensors and actuators of the system.

The "Door call" function offers four linking functions for each of the four possible Busch-Welcome® outdoor stations. This allows specific actions to be configured separately for each entrance of the house. These are triggered as soon as the visitor rings the bell at one of the outdoor stations.

Panel order items

Article no.	Product name	Colour	Display diagonal
83221AP-611	Busch-free@homeTouch 7"	white	17.8 cm (7")
83221AP-625	Busch-free@homeTouch 7"	black	17.8 cm (7")

Table 16: Busch-free@homeTouch 7"

5.2.2 Busch-free@homePanel 4.3"



Fig. 74: Busch-free@homePanel 4.3"

Up to 16 free@home functions can be positioned. The room temperature controller function occupies two function positions.

The device is not pre-programmed. Programming is carried out via the user interface of the System Access Point. The integrated bus coupler makes possible the connection to the free@home bus line.

One room temperature controller and one temperature sensor are integrated in the Busch-free@homePanel 4.3". The RTC can also be combined with the optionally available Temperature sensor 6226/T (remote sensor).

Scope of delivery

- Panel
- Bus connection terminal

The additionally necessary power adapter, e.g. 6358-101, the optional Temperature sensor 6226/T and the Flush-mounted installation box 6226 U necessary for the installation, must be ordered separately.

The connection with the free@home bus is established by means of the enclosed bus connection terminal.

Order items

Article no.	Product name	Colour	Display diagonal
6226-611	Busch-free@homePanel 4.3"	White	10.9 cm (4.3")
6226-625	Busch-free@homePanel 4.3"	Black	10.9 cm (4.3")

Table 17: DisplaysBusch-free@homePanel 4.3"

5.3 Binary inputs

With the aid of binary inputs, information of switch contacts can be used outside of the free@home system. For example, they can retract the awning at a wind alarm from a weather station, or integrate window contacts to switch off the heating in the room automatically. The type of sensor connected to the binary input must be defined in the user interface.

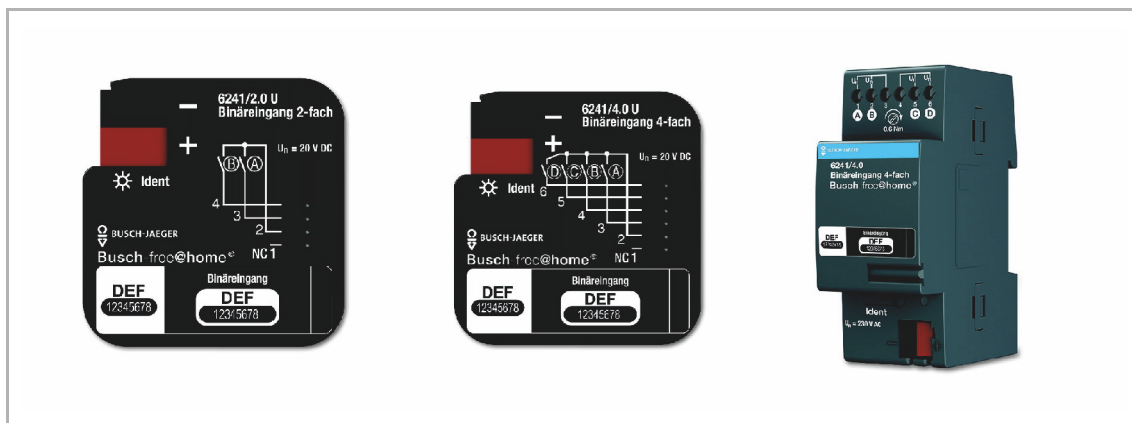


Fig. 75: Binary inputs

Each binary input makes the following types of sensors available for selection:

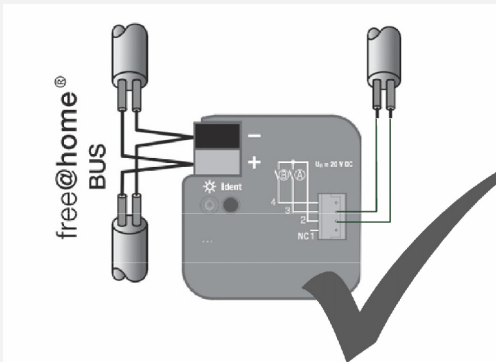
Push-button interface	Integrates a conventional switch or push-button.
Window contact	When connected with a room temperature controller the heating is shut off when the window is open. Routing the polling contacts in a separate conduit: 
Rain alarm	When connected with a blind actuator, it will retract the blind/awning at a rain alarm.
Frost alarm	When linked with a blind actuator, the blind/awning will be retracted or extended.
Wind alarm	When linked with a blind actuator, the blind/awning is retracted (with wire-break protection, i.e. the wind alarm is triggered when the contact is open).
Cold/warm switchover	When linked with a heating actuator the controller switches between heating and cooling operation.

Table 18: Sensor types at the binary inputs

Parameter settings

The functions of the binary inputs can be fixed as follows:

- Control element
- Dimming sensor
- Blind sensor
- Staircase light sensor
- Frost alarm
- Force-position sensor On/Off
- Blind force-position
- Switchover heating/cooling
- Wind alarm
- Scene sensor

Binary input order items

Article no.	Product name	Construction type	Input voltage	Input voltage
6241/2.0 U	Binary input, 2-gang	Pellet	20 V DC	0.5 mA
6241/4.0 U	Binary input, 4gang	Pellet	20 V DC	0.5 mA
6241/4.0	Binary input, 4gang	Rail-mounting	10 to 230 V AC/DC	1 mA

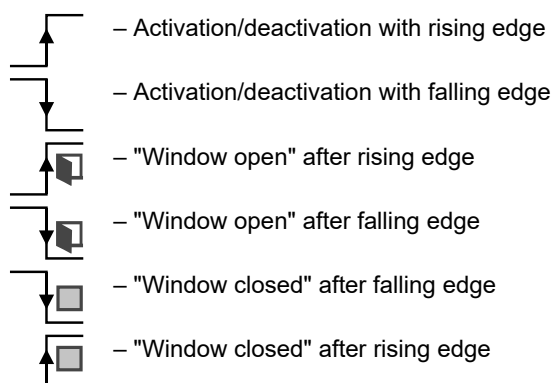
Table 19: Binary inputs

Settings free@home

Icon	Name/ Function	Contact type	Sensor type	Switching behaviour		
				On	Off	Description
	Rocker / control element	Normally open contact	Buttons			–
		Normally open contact	Switch			
		Normally closed contact	Buttons			
		Normally closed contact	Switch			
	Rocker/dimmin g sensor	Normally open contact	–			Dimming is triggered with a long press of the button
		Normally closed contact	–			
	Rocker/blind sensor	Normally open contact	–			Movement command is triggered with a long press of the button
		Normally closed contact	–			
	Rocker/stairca se light sensor	Normally open contact	–		After time	Setting switch-off delay for actuator parameters
		Normally closed contact	–		After time	
	Rocker/scene sensor	Normally open contact	–		–	–
		Normally closed contact	–		–	
	Rocker/force- position sensor	Normally open contact	Force-position On			The actuator is put into the "Activated" or "Deactivated" state and locked against any further operation. After cancelling the forced control, the actuator returns to its original state
		Normally open contact	Force-position Off			
		Normally closed contact	Force-position On			
		Normally closed contact	Force-position Off			

Icon	Name/ Function	Contact type	Sensor type	Switching behaviour		
				On	Off	Description
	Rocker/blind force-position	Normally open contact	Force-position top			The blind is put into the "Top" or "Bottom" state and locked against any further operation. After cancelling the forced control, the blind returns to its original state
		Normally open contact	Force-position bottom			
		Normally closed contact	Force-position top			
		Normally closed contact	Force-position bottom			
	Movement detector sensor	Normally open contact	–		After time	Setting switch-off delay for actuator parameters
		Normally closed contact	–		After time	
	Window contact	Normally open contact	–			–
		Normally closed contact	–			
	Wind alarm	Normally open contact	–			During a wind-, frost-, or rain alarm the linked blinds, roller blinds or awnings retract and are locked against manual operation. After cancelling the alarm the sun protection returns to the original position
		Normally closed contact	–			
	Frost alarm	Normally open contact	–			
		Normally closed contact	–			
	Rain alarm	Normally open contact	–			
		Normally closed contact	–			
	Heating/cooling switchover	Normally open contact	–			Serves for switchover between heating/cooling mode of the RTC. Activation via winter/summer mode. Switchover of heat pumps
		Normally closed contact	–			

Table 20: Switching behaviour of binary inputs



5.4 Weather station

The free@home weather station serves for the detection of brightness, temperature, rain and wind speed.

The weather station has three brightness sensors for detecting a value that is as precise as possible, even during different positions of the sun. The rain sensor is heated in order to prevent the formation of dew and to ensure rapid drying out after rain.

The weather station is surface-mounted and has a free@home bus connection, as well as a 230 V connection for heating the rain sensor (option).

To be able to move the blinds automatically during rain or a wind alarm, the sensors of the weather station can be firmly linked with the blind actuators. Or they can be used to define dynamic rules (e.g.: "When temperature > 27° and brightness, then move blind to position X") in menu item "Actions" (see Page 46).

The current measured values of the weather station are displayed in menu item "Status" of the user interface of the System Access Point and on the free@home panels.



Fig. 76: Weather station

free@home Weather station 6228	
Multifunctional sensor to detect brightness, temperature, rain and wind	
Icon of the user interface	
Operating voltage	110 V - 230 V AC, 50/60 Hz
Brightness sensors	3 x
Brightness measuring range	1 - 100,000 lux
Temperature measuring range	-30°C to +60°C
Rain sensor display	Rain / no rain
Measuring range of wind sensor	2 – 30 m/s
Protection rating	IP 44 according to EN 60529
Dimensions (L x W x H)	227 mm x 121 mm x 108 mm

Table 21: Weather station 6228

5.4.1 Allocation

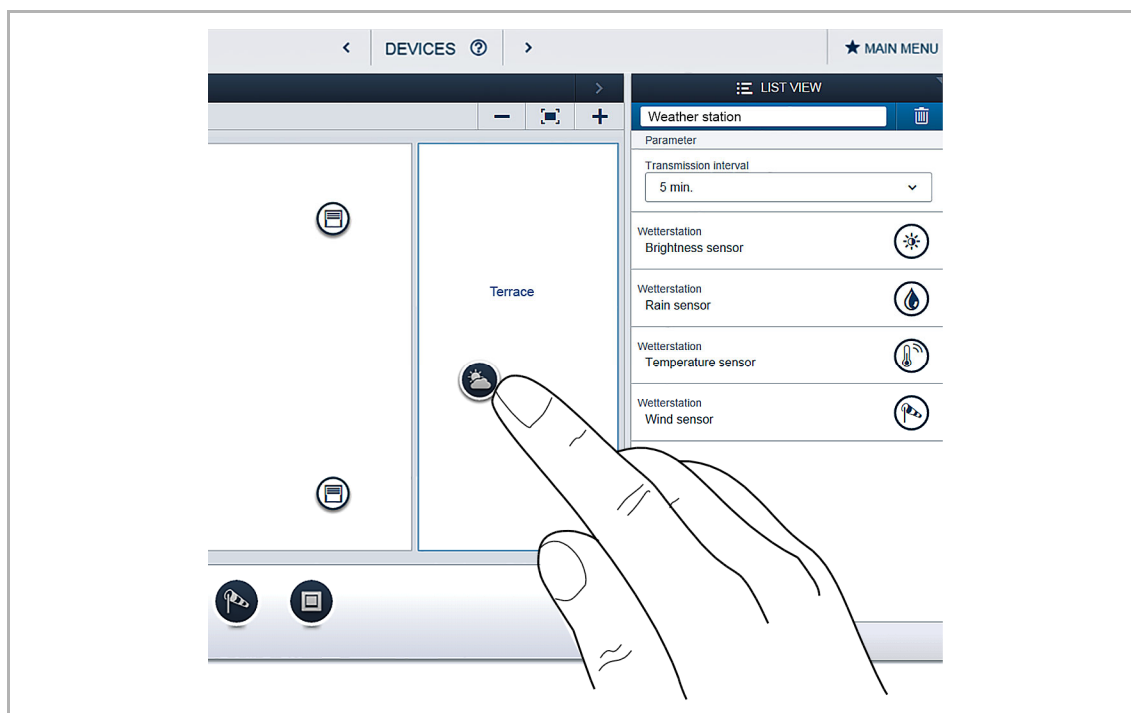


Fig. 77: Allocation of weather station

1. Position the icon of the weather station on the floor plan.
2. To display the parameters of the weather station, click/tap on the weather station icon.

Icon	Description
	Brightness sensor: The range of the brightness threshold value can be set between 1 and 100,000 lux. If the set brightness is exceeded, a shading scene is triggered after 5 minutes. If it falls below the set value, a second scene is triggered after a delay of 15 minutes.
	Rain sensor: At the detection of rain, a rain alarm is triggered. A connected blind is moved in without delay and locked in this position. It can not be moved manually in this state. Also movement commands programmed via a time profile are not carried out. After the sensor has dried, the blind is moved out again to the original position with a delay of 10 minutes. If a movement command has in the meantime been sent from a time profile, the blind is moved to the position programmed in it.
	Temperature sensor: If the temperature drops below the set value, a frost alarm is triggered. A connected blind is moved in with a delay of 5 minutes and locked in this position. It can not be moved manually in this state. Also movement commands programmed via a time profile are not carried out. If the set temperature is exceeded, the blind is moved again to the previous position with a delay of 15 minutes. If a movement command has in the meantime been sent from a time profile, the blind is moved to the position programmed in it.
	Wind sensor: If the wind speed defined here is exceeded, a wind alarm is triggered. A connected blind is moved in without delay and locked in this position. It can not be moved manually in this state. Also movement commands programmed via a time profile are not carried out. If the wind speed drops below the set value, the blind is moved again to the previous position with a delay of 10 minutes. If a movement command has in the meantime been sent from a time profile, the blind is moved to the position programmed in it.

Table 22: Sensor allocation for weather station

5.4.2 Linking sensors of the weather station

The sensors of the weather station can be linked with one or several actuators in the working area of the "Devices" menu. The actuators trigger when the values drop below or are exceeded. The brightness sensor can also be linked with two scenes. One scene becomes active when the value is exceeded, the other scene when the value drops below its setting.

The settings are stored directly in the individual bus subscribers and will still function even if the System Access Point breaks down due to a malfunction.

Linking brightness sensors

1. Create a "Shading" scene and link it with all blinds.
2. Move the blind to the position it is to occupy when shading becomes necessary and store the scene.
3. Create a "Blinds top" scene and link it also with all blinds.
4. Move the blinds to the top position and store the scene.
5. Link the brightness sensor with both scenes.

Linking rain sensors

1. Link the rain sensor with all blinds that are to be moved in during a rain alarm.

Linking temperature sensors

1. Link the temperature sensor with all blinds that are to be moved in during a frost alarm.
- The function is used generally with external blinds to prevent the slats from freezing solid.

Linking wind sensors

1. Link the wind sensor with all blinds that are to be moved in during a wind alarm.

5.5 Actuators

5.5.1 Switch actuators

Switch actuators receive the control commands from sensors and then switch their switching contacts. An actuator can be programmed via the user interface either as individual switching contact or with a timer function or a staircase light function with switch-off delay (retrigger).

Switch actuator channels can also be defined as central heating/cooling actuators. If none of the connected room temperature controllers signal a heating requirement, the central actuator is switched off (after an adjustable time delay from 6 to 60 minutes).



Fig. 78: Switch actuator and sensor/switch actuator

Article no.	Product name	Construction type	Input channels		Switching channels		Switching load
6251/0.4	Switch actuator, 4gang	Rail-mounting	0	—	4		4 x 16 A
6251/8.8	Sensor/switch actuator, 8/8gang	Rail-mounting	8		8		8 x 6 A

Table 23: Switch actuators

Function overview

Overview of the possible functions and applications of the devices.

Icon	Name	Function
	Rocker (sensor) - Control element push-button/switch - Dimming sensor - Blind sensor - Staircase light sensor - Scene sensor - Force-position sensor On/Off - Blind force position top/bottom	Control element for the control of free@home functions
	Light	Switches connected electric light circuits

	Switch actuator	Switches connected loads of electric circuits
	Socket outlet	Switches connected socket outlets of electric circuits
	Movement detectors	Sensor for movement- and brightness-dependent control of free@home functions
	Window contact	Signals an open window (Application: e.g. automatic deactivation of the heating when the window is open)
	Wind alarm	For detecting a wind alarm (Application: e.g. automatic retraction of the blinds, roller blinds or awnings)
	Frost alarm	Triggers a frost alarm (Application: e.g. automatic retraction of the blinds, roller blinds or awnings)
	Rain alarm	For detecting a rain alarm (Application: e.g. automatic retraction of the blinds, roller blinds or awnings)
	Heating/cooling switchover	Is used for the switchover of heating/cooling in two-pipe heating/cooling systems

Table 24: Functions of binary inputs

Parameter settings

see chapter 5.1.1.4 “Parameter settings of 1/1gang sensor/switch actuator“ on page 61 (only 4gang or 8/8gang possible)

5.5.2 Dimming actuators

Dimming actuators receive the control commands from sensors and then dim their dimming outputs. The dimmer can be programmed via the user interface either as individual switch or with a timer function or a staircase light function.



Fig. 79: Dimming actuators 4gang and 6gang (The figure shows devices with 210 W/VA)

Article no.	Product name	Construction type	Input channels		Switching channels		Switching load
DA/M.4.210.2.1x	Dimming actuator, 4gang	Rail-mounting	0	–	4		4 x 210 W/VA
DA/M.4.315.2.11	Dimming actuator, 4gang	Rail-mounting	0	–	4		4 x 310 W/VA
DA/M.6.210.2.11	Dimming actuator, 6gang	Rail-mounting	0	–	6		6 x 210 W/VA

Table 25: Dimming actuators

Parameter settings

see chapter 5.1.1.7 “Parameter settings of 1/1gang sensor/dimming actuator” on page 63.

Channels can be bundled via the device configuration in the System Access Point (only via user access "Installation").

Error states (flashing codes)

Errors are displayed via different flashing codes of the related green channel LEDs.

Error	Flashing cycle per 5 seconds	Cause
Excess temperature	1 flash	Too many loads are connected to the channel, or the temperature in the dimmer is too high. Derating is activated.
Short-circuit	2 flashes	Short-circuit in the dimming channel
Wire break or missing load	3 flashes	Cable break or defective load
Overvoltage	4 flashes	E.g.: An inductive transformer is being operated in the wrong operating mode (trailing edge control).
Internal protective circuits	5 flashes	Various critical errors that are based on a hardware defect, e.g. a defective output.

Table 26: Error states

5.5.3 Blind actuators

Blind actuators receive the control commands from sensors and then switch their switching outputs.

If the blind actuator is linked with a sensor, the blind can be moved with a long press of the button, and the slats adjusted with a brief press of the button.



Fig. 80 Blind actuator 6253/0.4

Wind alarm

As soon as a wind sensor is configured in the system (for description of function see chapter 5.3 “Binary inputs“ on page 83), all blind actuators are coupled to its output signal. This means that during a wind alarm all roller blinds/awnings and blinds move to their top end position and are locked. They can then no longer be moved manually via the control elements. A flashing LED on the control element indicates that the blind is locked.

All actuators which are not to respond to the wind alarm can be deactivated via the user interface. All actuators which are to respond to the wind alarm can be linked via the user interface.

Position fixing/calibrating

Aside from the top/bottom end positions, a blind can also move to intermediate positions, e.g. 50% top. The position is fixed on the basis of the movement time of the blind. Since this movement time varies individually, it must be set separately for each blind.

If the blind has not been calibrated, the visualization cannot display an actual position and only the top/bottom end points can be moved to. The movement time can be set in the device settings of the user interface.

The LED of a sensor, which is connected with a non-calibrated blind, flashes at the point of delivery until the calibration has been carried out.

Article no.	Product name	Construction type	Input channels		Switching channels	Switching load
6253/0.4	Blind actuator 4gang	Rail-mounting	0	–	4 	4 x 6 A

Table 27: Blind actuator

Parameter settings

see chapter “Parameter settings of 1/1gang sensor/blind actuator“ on page 66 (only 4gang possible).

5.5.4 Heating actuators

Heating actuators are suitable for the activation of thermoelectric servo valves. They can only be controlled by the room temperature controller (RTC). Three servo valves share one input voltage terminal. The current via this common terminal must not exceed $I_n = 0.5\text{ A}$.



Fig. 81: Heating actuators

Article no.	Product name	Construction type	Input channels		Switching channels	Switching load
6254/0.6	Heating actuator 6gang	Rail-mounting	0	—	6	 4 x 16 A
6254/0.12	Heating actuator 12gang	Rail-mounting	0	—	12	 8 x 6 A

Table 28: Heating actuators

Parameter settings

The following settings are possible:

- Function
 - Valve for heating
 - Valve for cooling
 - Valve for heating and cooling
- Contact type
 - Opened de-energized
 - Closed de-energized
- Specifying the valve opening in % during faults.

5.5.5 Fan coil actuators

The fan coil actuator is suitable for controlling blower convectors.

The device can activate a three-level fan via a two-way circuit or step switch, as well as two thermoelectric valves or a three-point valve. For this function the fan coil actuator must be linked with a free@home RTC. The RTC must be switched over beforehand to the "Room temperature controller with fan speed levels" function.



Fig. 82: Fan coil actuator

Benefits

- Support of 2-pipe systems for heating and cooling operating modes or heating and cooling with changeover object.
- Support of 4-pipe systems (only for the use of thermal valve actuators) for heating and cooling operating modes.
- Support of silent mode for low-noise operation during night time.

Article no.	Product name	Construction type	Input channels	Switching channels	Switching load
6255/2.3	Fan coil actuator, MDRC	Rail-mounting	2	3	AC3

Table 29: Fan coil actuator

Function overview

Overview of the possible functions and applications of the device.

Icon	Name	Function
	Fan with heating actuator	For the activation of a thermal or motor-driven (3-point) valve actuator for 2-pipe systems in "heating" operating mode
	Fan with cooling actuator	For the activation of a thermal or motor-driven (3-point) valve actuator for 2-pipe systems in "cooling" operating mode
	Fan with actuator for heating or cooling	For the activation of a thermal or motor-driven (3-point) valve actuator for 2-pipe systems in "heating or cooling" operating mode (depending on the changeover object)
	Fan with actuator for heating and cooling	For the activation of two thermal valve actuators for 4-pipe systems in "heating and cooling" operating mode

Table 30: Function overview of fan coil actuators

5.5.5.1 Parameter settings of fan coil actuator

Actuator settings

The screenshot shows the 'Fan coil actuator, PWM, MDRC' settings screen. At the top, there is a title bar with a name field (1) and a delete icon (2). Below is a 'Fan coil actuator..' button (3). The 'Function' section has a dropdown menu (4) currently set to 'Heating mode' and a 'Configuration' button (5). The 'Parameter' section includes: 'Fan mode' dropdown (6) set to 'Default'; 'Night mode' dropdown (7) set to 'None'; 'Behaviour on Malfunction [%]' with a value of 30 and +/- buttons (8); 'Valve control' dropdown (9) set to 'Thermal, closed de-energized'; 'Valve opening time [s]' with a value of 120 and +/- buttons (10); 'Fan mode' dropdown (11) set to 'Step switch'; 'Fan start-up time with full power [ms]' with a value of 0 and +/- buttons (12); 'Fan changeover delay [ms]' with a value of 500 and +/- buttons (13); 'Fill level sensor' dropdown (14) set to 'Not configured'; and 'Dew point sensor' dropdown (15) set to 'Not configured'. A back arrow is at the bottom.

- [1] Changing the name
- [2] Deleting the channel
- [3] Switching the actuator via the button
- [4] Selecting the actuator function
- [5] Calling up the wizard to configure the fan coil actuator
- [6] Selection of the fan mode
- [7] Activation and selection of night mode
- [8] Setting the control value of the valve for errors via the +/- buttons

The following parameters are visible only in wizard mode and can only be set via the wizard.

- [9] Valve configuration (de-energized closed, de-energized open)
- [10] Settings of movement time necessary to completely open the motor-driven valve actuator used
- [11] Selecting the fan mode "Step switch" or "2-way circuit"
- [12] Setting the time the fan must remain in the highest level to be able to start
- [13] Setting the time the fan must be deactivated between switchover of levels for the two-way circuit, to prevent damage to the fan
- [14] Selection of whether the fill level sensor is a floating NC contact or NO contact
- [15] Selection of whether the dew point sensor is a floating NC contact or NO contact

Fig. 83: Actuator settings



Note

After changing the function [4], always call up the wizard again to check all links manually and, if necessary, to restore them, to ensure that the fan coil actuator operates correctly.

5.6 Wireless battery devices

5.6.1 Radiator thermostats

The free@home radiator thermostats can be used to create a convenient single room control of radiators via radio signal.

The devices have an integrated temperature sensor, an integrated temperature control, as well as an electric motor with drive unit to move the heating valve to a desired position.

The thermostats are fully compatible with radiator valves with an M30 x1.5 thread. For other valves (e.g. Danfoss), one of the supplied adapters must be used. No additional accessories are required for commissioning.

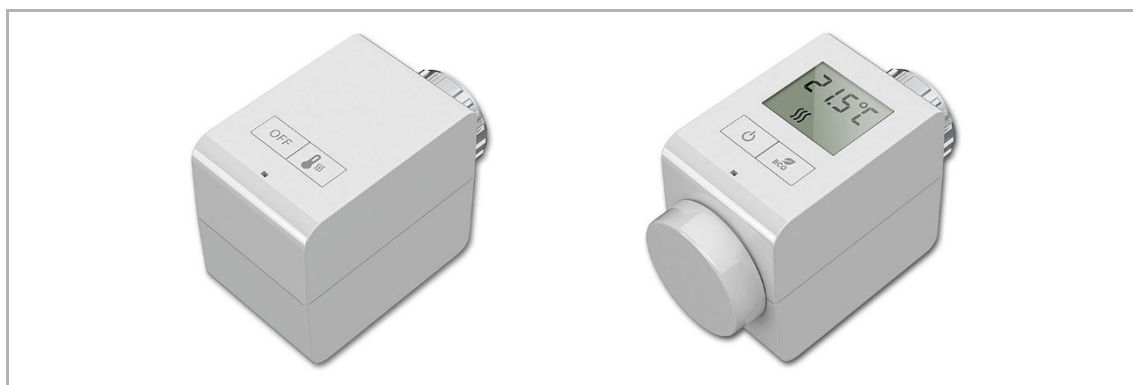


Fig. 84: Radiator thermostats

"Basic" version

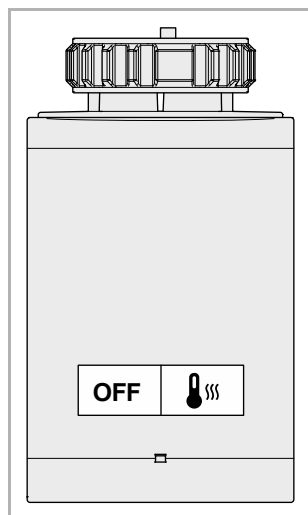


Fig. 85: "Basic" version

The "Basic" version of the device has two push-buttons on top of the device:

- **OFF:** Switches the device into the Off mode, i.e., no control of temperature. Frost protection function and valve protection function remain active.
- **Comfort:** Switches the device into comfort mode. The temperature is regulated to the set value. The set value can be set via a connected extension unit (see section "Extension unit operation").

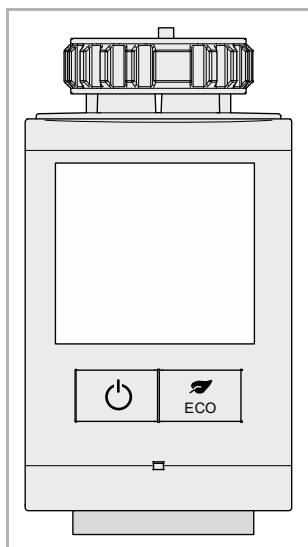
"Comfort" version

Fig. 86: "Comfort" version

The "Comfort" version has two push-buttons and a display on top of the device, as well as a rotary adjustment knob at the front of the device:

- **ON/OFF:** Switches the device off or into the previously set mode (Comfort or ECO).
The temperature is not regulated in the OFF mode. Only frost protection function and valve protection function are active.
In Comfort mode the temperature is regulated to the set value.
The set value can be set via the rotary adjustment knob or a linked extension unit (see section "Extension unit operation").
- **ECO:** Switches over between Comfort and ECO mode.

Extension unit operation

The radiator thermostats can be linked with other free@home devices, e.g. room temperature controllers (RTC). These devices then serve as extension units via which the thermostats can be remote controlled.

**Notice**

The thermostats also always regulate themselves during remote control. However, it is also possible to specify where the temperature measurement is carried out. As a rule, a measurement on the extension unit, e.g. on the RTC, is a better choice than the direct measurement on the thermostat.

The following devices can be linked with a thermostat as extension unit:

Busch-free@homeTouch 7"

Busch-free@homePanel 4.3"

Room temperature controller

Room temperature controller, wireless

free@home-App

**Notice**

The measured actual temperature value of a thermostat is not displayed in the visualization of the free@home-App.

Battery operation

The radiator thermostats are operated with two alkaline batteries type AA (Mignon).



Notice

Do not use rechargeable batteries since the voltage level of rechargeable batteries is too low for a faultless operation of the thermostats. A battery level that is too low could be incorrectly indicated. Also problems during a software update could occur.

The thermostats issue an early warning when the batteries need to be replaced. The devices still continue to function for a few days after the first warning is issued. However, replacement batteries should be kept ready.

When the battery is completely flat, the radiator thermostat remains in the position set last.

For additional information see:

- Chapter 5.6.3 “Radio range of battery devices” on page 107
- Chapter 5.6.4 “Battery service life” on page 107

Energy-saving mode

The radiator thermostats operate in energy-saving mode to guarantee a long service life of the batteries. For this reason the settings of the user are not implemented immediately:

- The implementation of a manual setpoint adjustment or a change in operating mode on the device can take up to two minutes.
- The transmission of a setpoint of a time program, an extension unit or a free@home-App to the device can take up to five minutes. The implementation of the setpoint adjustment can take an additional two minutes.

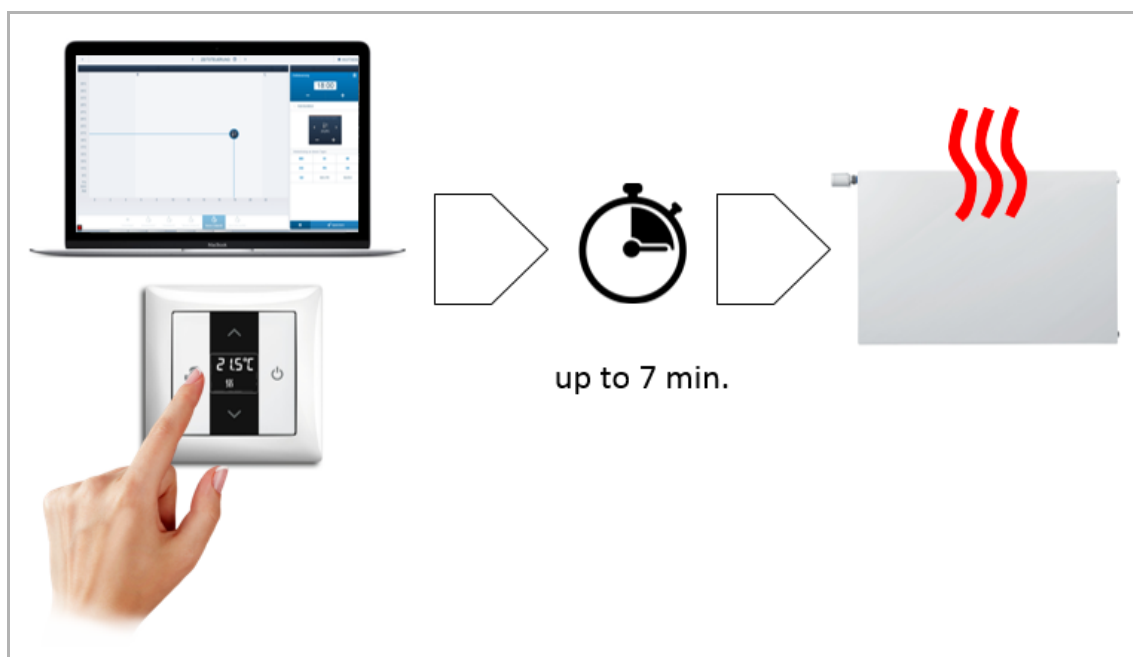


Fig. 87: Implementation time for setpoint adjustments

Sleep mode

If a radiator thermostat is out of operation for longer than seven days, sleep mode is activated. In this mode the response time extends up to one hour. At a manual setpoint adjustment or a change in operating mode on the device, the sleep mode is exited.

Valve adaptation

An adaptation movement is carried out during commissioning of the radiator thermostat. This determines whether the radiator valve can be actuated and the size of the stroke for calibrating the thermostat to this valve. A defective or non-existing valve leads to an error message. Have the defective valves replaced by your fitter.

Valve protection function

To protect the valve of the radiator thermostat, carry out a valve protection movement every two weeks. The valve is moved to the fully open and closed position once.

"Window open" detection

The radiator thermostat can be linked with a window contact in the free@home configuration interface. The thermostat automatically closes the radiator valve when the window is opened. The thermostat opens the valve again when the window is closed.

Motor noise

An electric motor operates inside the actuating drive. The motor changes the position of the valve tappet and generates a noise of minimal intensity. However, noise-sensitive customers could feel irritated.

A new valve position is then moved to,

- when the user manually specifies a new setpoint.
- when a time program specifies a new setpoint or
- when due to the temperature control an opening and closing of the valve is necessary to keep the temperature constant.

Movements of the motor are kept to a minimum to save power.

Order items of radiator thermostats (actuating drives)

Article no.	Product name	Sensor channels	Colour
6256/1-WL	Radiator thermostat, Basic		White
6256/2-WL	Radiator thermostat, Comfort		White

Table 31: Radiator thermostats (wireless devices)

5.6.1.1 Parameter settings of radiator thermostat

Actuator settings Radiator thermostat, Basic

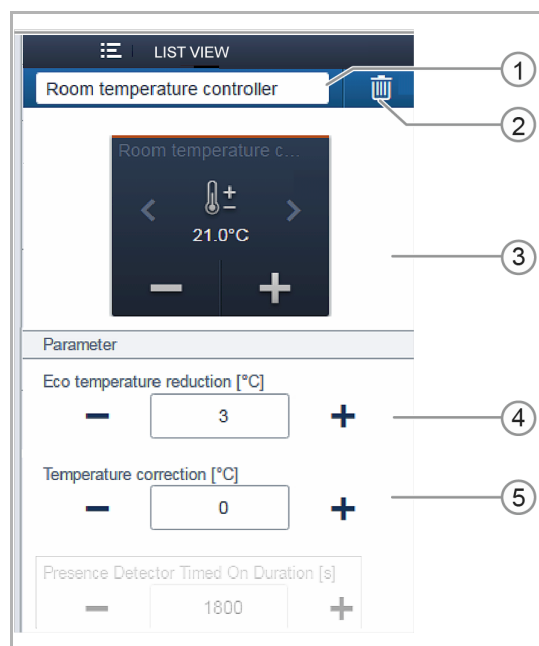
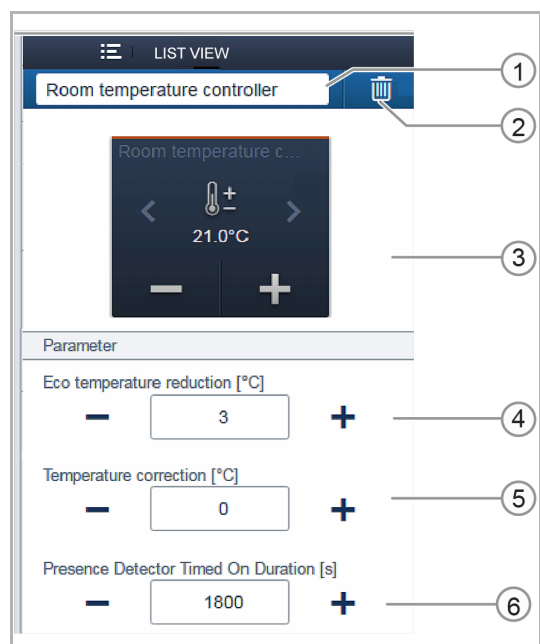


Fig. 88: Actuator settings of "Basic" version

- [1] Changing the name
- [2] Deleting the channel
- [3] Switching the actuator via the button
- [4] Setting the Eco temperature reduction in °C
 - The -/+ buttons can be used to specify the value the temperature is to be reduced to when ECO operation is activated.
- [5] Setting the temperature correction in °C via the -/+ buttons
 - Manual increase/reduction of the temperature value if the temperature is repeatedly not reached automatically.

Actuator settings Radiator thermostat, Comfort



- [1] Changing the name
 - [2] Deleting the channel
 - [3] Switching the actuator via the button
 - [4] Setting the Eco temperature reduction in °C
 - The +/- buttons can be used to specify the value the temperature is to be reduced to when ECO operation is activated.
 - [5] Setting the temperature correction in °C via the +/- buttons
 - Manual increase/reduction of the temperature value if the temperature is repeatedly not reached automatically.
 - [6] Setting the switch-off delay for absence in seconds
 - The +/- buttons can be used to specify when the ECO operation is to be activated after the room is exited.
- Note:** A movement detector that is linked with the thermostat is required for this function.

Fig. 89: Actuator settings of "Comfort" version

5.6.2 Window sensor/Universal detector

The status of windows (open, tilted and closed) can be monitored with the free@home window sensor, wireless. The window sensor is installed between the available window handle and the window frame. An existing window handle must not be replaced.

With free@home universal detector, wireless the state (open and closed) of roof windows, skylights, doors and gates can be monitored. The device is also suited for window monitoring in connection with an open fireplace and cooker hood according to fire ordinance § 4. An additional connecting option for an external sensor (optional floating normally closed or open contact) is available.

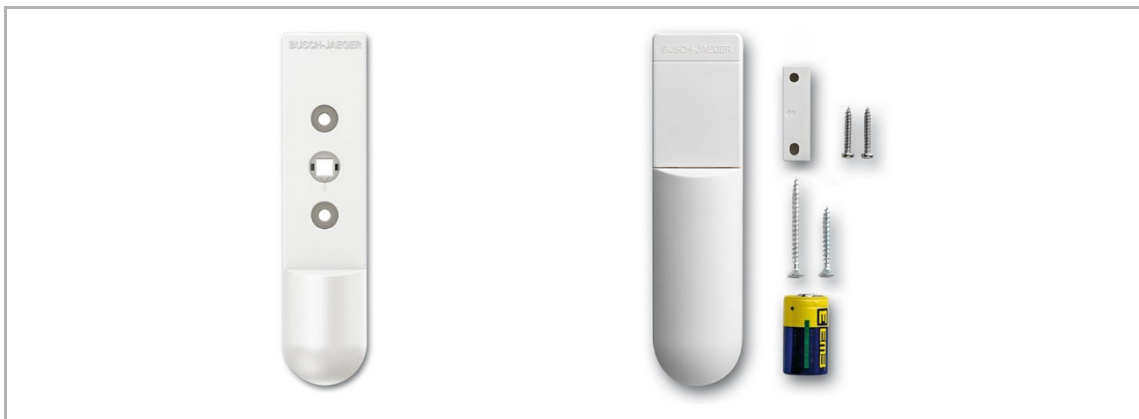


Fig. 90: Window sensor

The window sensor status can be visualized via radio signal on the free@home- panel and in the free@home- app.

Battery operation

The window sensors are operated with a lithium battery, type CR2, 3 V. A battery is included in scope of supply.

The window sensors issue an early warning in the free@home- when the battery is to be replaced. The devices still continue to function for a few days after the first warning is issued. However, a replacement battery should be kept ready.

For additional information see:

- Chapter 5.6.3 “Radio range of battery devices” on page 107
- Chapter 5.6.4 “Battery service life” on page 107

Party function

The party function can be linked directly with the blind actuator in the floor plan. If a window is open, the roller shutter is locked.

Order items window sensor/universal detector

Article no.	Product name	Sensor channels	Colour
6222/1 AP-64-WL	free@home window sensor, wireless	See details in Chapter 5.3 "Binary inputs" on page 83	Studio white, matt
6222/1 AP-65-WL	free@home window sensor, wireless		Basalt black
6222/1 AP-66-WL	free@home window sensor, wireless		Stainless steel

Table 32: free@home window sensor, wireless

Article no.	Product name	Sensor channels	Colour
6222/2 AP-64-WL	free@home universal detector, wireless	See details in Chapter 5.3 "Binary inputs" on page 83	Studio white, matt
6222/2 AP-65-WL	free@home universal detector, wireless		Basalt black

Table 33: free@home universal detector, wireless

5.6.2.1 Parameter settings of window sensor/universal detector

See details in Chapter 5.3 "Binary inputs" on page 83.

**Note**

Special features of battery-operated detectors:

- It is not possible to assign it the function allocation as blind sensor.
- Light switching can be carried out, for example, via the "Control element" (rocker) function. However, for this a direct connection with the switch actuator must be available.
- Only "On/Off" can be activated for the dimming function.
- No change is possible between contact types "Normally closed contact" and "Normally open contact".
- Only the following statuses are signalled:
 - Window sensor: open, closed, tilted
 - Universal detector: open, closed

5.6.3 Radio range of battery devices

To minimize the consumption of power, battery-operated free@home wireless devices do not act as repeaters. This means that different to free@home wireless devices that are supplied with mains voltage, a command that is received is not transmitted.

That is why during the installation it should be ensured that there is at least one free@home wireless device that is supplied with mains power within the range of the battery-operated device.

5.6.4 Battery service life

The service life, aside from the battery type and charging status, depends mainly on the respective usage. This means, for example, that the more frequently a window is opened or a motor of an actuating drive (radiator thermostat) is operated, the sooner the battery must be replaced.

For standard use we assume a battery service life of up to two years.

Guide values for a service life of two years:

- Actuating drive: Two setpoint adjustments per day; OFF status from May to September
- Window sensor: Opening the window twice during the day

For operating the radiator thermostat we recommend the use of alkaline batteries. The use of rechargeable batteries is not recommended due to their lower voltage level in comparison to standard batteries.

5.7 Gateways

5.7.1 Split Unit Gateway

The Split Unit Gateway forms a unidirectional interface between the Busch-free@home® system and air-conditioning devices from a wide range of manufacturers, so-called Split Units. The device converts the Busch-free@home® telegrams into infrared commands and transmits them to the Split Unit.

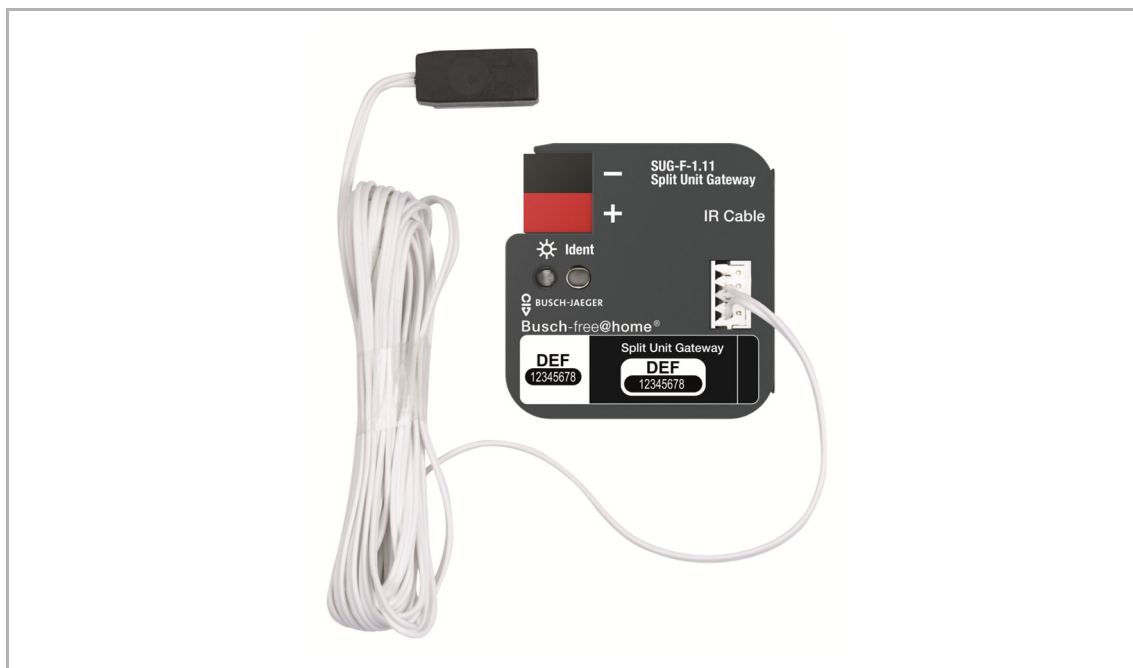


Fig. 91: Split Unit Gateway

Not all Split Units support all functions. Only functions that the respective Split Unit supports are enabled in the user interface.

The following functions are provided in dependence of the respective Split Unit:

- Switch-on / switch-off
- Specifying the set-point temperature including parameterizable set-point temperature limit
- Setting the operating Mode (Automatic, Heating, Cooling, Ventilation, Drying)
- Control of fan speed level
- Slat adjustment horizontal and vertical
- Activation of silent mode

The Split Unit Gateway is installed in close proximity (maximum distance of 2 metres) to the Split Unit. The transmission unit of the enclosed cable is glued directly on the receiving unit of the Split Unit. The air-conditioning unit then no longer receives commands from a remote control, but can be operated via Busch-free@home® sensors or the visualization.

Actuator settings

see chapter "Parameter settings Split Unit Gateway" on page 109.

5.7.1.1 Identification Split Unit Gateway

The devices connected to the system must be identified, i.e. they are allocated to a room according to their function and are given a practical name. The allocation is made via the "Devices" allocation function of the Web-based user interface of the System Access Point.

If several devices suitable for the selected application are integrated, a dialogue field with the listed devices is displayed.

The desired channel can be identified in three ways.

Identification via serial number

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

Identification via switching

Select a device and a channel from the list and press the button in the detailed view of the device.

Identification via the identification button

You can carry out the identification via the identification button during direct access to the Split Unit Gateway.

5.7.1.2 Parameter settings Split Unit Gateway

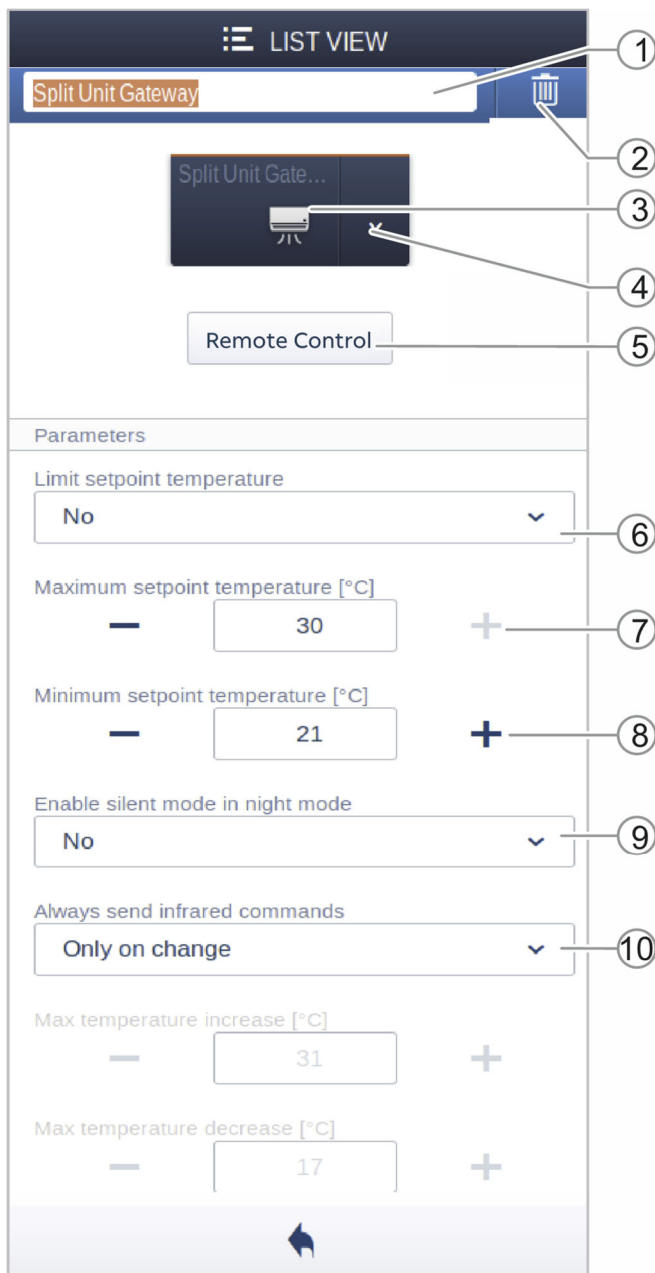


Fig. 92: Parameter settings

- [1] Changing the name
- [2] Deleting the channel
- [3] Switching the actuator on/off via the button
- [4] Call-up or closing the control element of the actuator via the arrow button (For description, see Chapter 9 "Operation")
- [5] Call-up of the selection for allocating the corresponding remote control via button "Description"**
 Selecting remote control" on page 111.)
- [6] Specification for limiting the setpoint temperature range. If the setpoint temperature limit is activated while the current setpoint temperature is outside setpoint temperature range, the setpoint temperature is shifted to the top or bottom limit of the range.
- [7] Setting the maximum setpoint temperature via the +/- buttons. This parameter fixes the limits for the setpoint temperature. If a temperature value above the maximum setpoint temperature is sent to the Split

Unit Gateway, the highest permitted value is sent to the Split Unit. The status value is adjusted accordingly.

- [8] Setting the minimum setpoint temperature via the +/- buttons. This parameter fixes the limits for the setpoint temperature. If a temperature value below the minimum setpoint temperature is sent to the Split Unit Gateway, the lowest permitted value is sent to the Split Unit. The status value is adjusted accordingly.



Notice

It must be checked whether the Split Unit supports the desired temperature range. This is available in the documentation of the Split Unit manufacturer.

- [9] Specification whether the outdoor unit of the Split Unit is to be set into a low-noise operating mode. The precise behaviour of the Split Unit in this mode is available in the Split Unit product manual.



Notice

It must be checked whether the silent mode is supported by the Split Unit.

- [10] Specification whether the infrared commands are always to be sent. If the Split Unit is operated in parallel with a remote control, the status of the Split Unit can deviate from the status of the gateway. To ensure that the Split Unit always takes on the correct status, this parameter must be activated. It can, however, lead to an increase in acknowledgment tones of the Split Unit Gateway.

Selecting remote control

The model of the remote control can be selected and allocated in the list view of the device via the "Remote control" button. This selection window displays the manufacturer of the Split Unit and the model of the remote control. Select the appropriate specifications and confirm them with a tick.

SPLIT UNIT GATEWAY IR CONFIGURATION

Please select the manufacturer and the remote control to configure the Split Unit Gateway.

Manufacturer: ROTENSO

Device: RG57A_BGEF

X [checkmark]

Fig. 93: Select the remote control

5.7.2 DALI gateway

The DALI-Gateway, MDRC forms the interface between the Busch-free@home® system and a DALI bus. The device converts the Busch-free@home® telegrams and transmits them to the DALI bus. A maximum of 16 DALI participants can be connected to the DALI-Gateway, MDRC.

DALI (Digital Addressable Lighting Interface) has established itself as a neutral company standard in the lighting technology. The range of ballasts, transformers, dimmers and relays with DALI interface characterizes the modern lighting technology. DALI increasingly replaces the traditional 1-10 V technology and additionally offers many other functions such as flexibility, comfort, ambience, functionality and energy savings.

DALI-2 is the ongoing development of the DALI standard (DIN EN 62 386), which improves the compatibility between the manufacturers and also guarantees a downward compatibility to DALI.

Supported are all DALI participants of type 0 (DALI Device Type 0, DT0).

The DALI Gateway, REG offers the following functions

- Switching DALI participants on/off
- Dimming of brightness
- Options for parameterization
 - Parameter setting of minimum brightness
 - Parameter setting of maximum switch-on brightness during the day and in the night (in %)
 - Switch-off delay in seconds
 - Brightness during bus voltage failure (in %) ("System Failure Level")
 - Brightness during return of electronic ballast voltage (in %) ("System Failure Level")



Notice

DALI ballasts that are not certified according to DALI-2, can be operated on the DALI Gateway, REG.



Notice

The DALI Gateway, REG can be operated and parameterized only with the connected auxiliary voltage.



Notice

The DALI Gateway, REG provides the DALI operating voltage.

Parameter settings

see chapter "Parameter settings DALI Gateway, REG" on page 112.

5.7.2.1 Parameter settings DALI Gateway, REG

Actuator settings

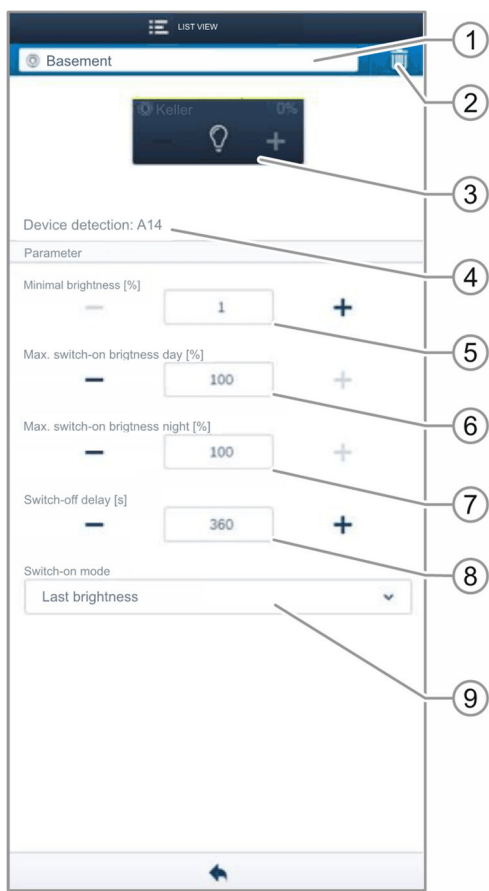


Fig. 94: Actuator settings

- [1] Changing the name
- [2] Deleting the channel
- [3] Switching of the actuator via the button.
Dimming the actuator via the -/+ buttons
- [4] Display of device identification (channel name or DALI addressing)
- [5] Setting the minimum brightness in % via the -/+ buttons
- [6] Setting the maximum switch-on brightness during the day in % via the -/+ buttons
- [7] Setting the maximum switch-on brightness during the night in % via the -/+ buttons
- [8] Setting the switch-off delay in seconds
 - The -/+ buttons can be used to specify, for example, how long the light remains switched on after the actuator has deactivated the load.
- [9] Setting the activation mode
 - The parameter specifies whether the lamp switches on with the previously set brightness or always with maximum brightness.

5.8 System Access Point

The System Access Point establishes the connection between the free@home participants and the smartphone, tablet or PC.

The System Access Point is used to identify and program the participants during commissioning. The device also executes time and astro programs and serves as exchange to switch functions via the free@home app.



Fig. 95: Identification of wired and wireless devices

5.8.1 Identification: Twisted Pair devices

Devices which are physically connected to the free@home bus, log themselves automatically into the System Access Point. They share information about their type and supported functions.

During initial commissioning all devices are given a universal name (Sensor/switch actuator 1/1gang, etc.). The installer must change this name within the commissioning process to a name practical and specific for the system (in case of an actuator, e.g. to "Living room ceiling light").

5.8.2 Identification of wireless devices

When energized, a device that has not been programmed is in programming mode for 30 minutes and can be logged into the system. Programmed devices share information about their type and supported functions with the System Access Point.

During initial commissioning all devices are given a universal name (Sensor/switch actuator 1/1gang, etc.). The installer must change this name within the commissioning process to a name practical and specific for the system (in case of an actuator, e.g. in "Living room ceiling light").

5.8.3 Network functions

5.8.3.1 Access point mode

The access point mode is intended for commissioning of the system. The System Access Point establishes its own WLAN and acts as DHCP server (devices which connect themselves as client with the WLAN receive an IP address automatically).

Advantage: The system can be made operational and operated without a router (e.g. FRITZ!BOX).

Disadvantage: In access point mode the System Access Point cannot be simultaneously connected to an Internet router. For continuous operation the System Access Point should therefore be configured as LAN or WLAN client. This allows the users to both surf on the Internet with their devices and operate the free@home system without having to change between different WLAN networks.

Activating/deactivating access point mode (WLAN)

1. Press the access point button. (SAP/S.13 status LED lights up blue / 6200 AP-101: left button lights up).

During initial commissioning the access point mode is automatically activated.

5.8.3.2 LAN/WLAN client mode

If a router is already available, it is recommended to connect the System Access Point with this network via LAN or WLAN as client.

The following three options are available to activate the client mode:

- A: Connect the System Access Point via LAN with the router before commissioning.
- When the cable is plugged in, it is recognized automatically and the access point mode is deactivated.
 - The System Access Point receives an IP address from the router automatically.
 - During the attempt to connect, the connection display flashes.
 - After the connection has been successfully established the connection display lights up permanently.
- B: Connect the System Access Point via LAN with the router after commissioning.
- For this connection the access point mode must be deactivated manually. This can be carried out with a press of the button on the device itself or in the network settings of the user interface.
 - The System Access Point receives an IP address from the router automatically.
 - During the attempt to connect, the connection display flashes.
 - After the connection has been successfully established the connection display lights up permanently.

C: Connect the System Access Point via WLAN with the router after commissioning.

- This connection must be carried out via the network settings of the user interface. There select the name of the network with which you want to connect the System Access Point and enter the network key.



Notice

The list of recommended network names (SSIDs) is created during the boot-up process of the System Access Point. The WLAN networks that cannot be reached at this point will not be shown in the list of recommendations.

- The System Access Point receives an IP address from the router automatically.
- During the attempt to connect, the connection display flashes.
- After the connection has been successfully established the connection display lights up permanently.

The access point mode can be deactivated again at any time. When the access point mode is deactivated, the LAN client or (if it has been configured) the WLAN client mode is activated.

5.8.4 Mounting

System Access Point 2.0 SAP/S.13

Transmitter and receiver communicate via radio control. The range depends on the structural conditions. Walls or ceilings, especially steel reinforcements or metal claddings, reduce the transmission range. The distance of components to other transmitters that also emit high-frequency signals (e.g. computers, audio and video systems) should be at least 1 m.

- If the System Access Point 2.0 is installed within closed metallic housings (e.g. switch cabinet), the external antenna should be optionally connected for wireless operation and fed to the outside.
- Stationary surface-mounting in interior dry rooms only. Observe connection options with the applicable regulations.

Mounting possibilities

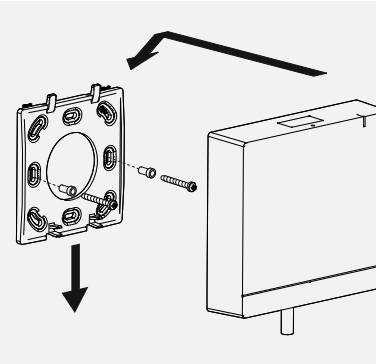
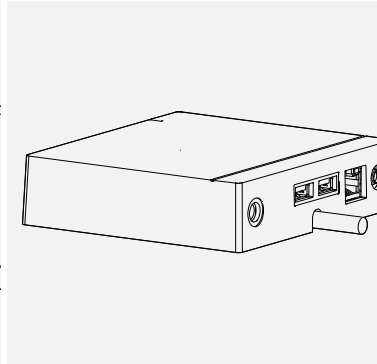
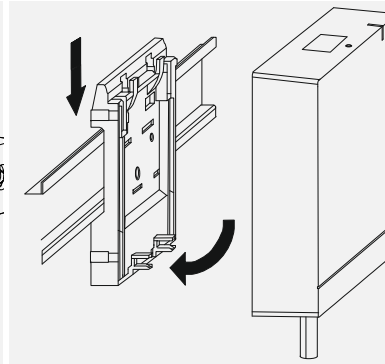
Wall mounting with mounting plate	Desktop mounting	Switch cabinet mounting with mounting rail adapter
		

Table 34: Mounting possibilities

System Access Point 6200 AP-101

The System Access Point is installed surface-mounted. The bus line is always inserted on the rear side. The 230 V power cord and the optional CAT wire can also be inserted on the rear side or installed surface-mounted. In case of surface-mounting, the wires are inserted from the underside of the device via the available breakout openings.

If the CAT wire is inserted on the rear side, it should be ensured that the distance between centres of the two installation boxes amounts to 80 mm.

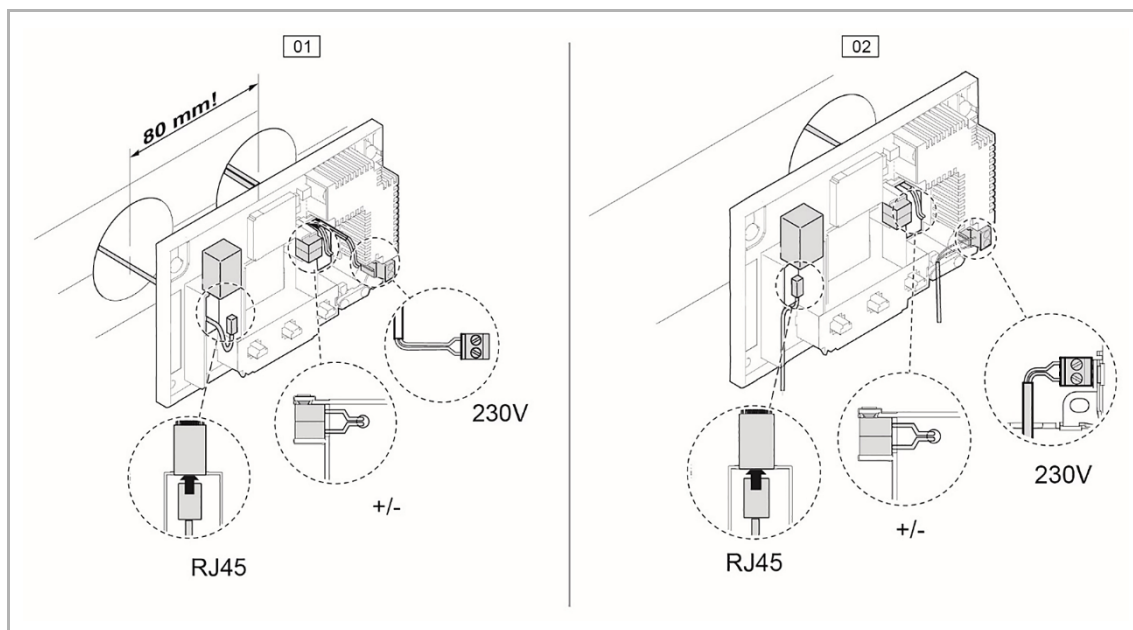


Fig. 96: Mounting the System Access Point 6200 AP-101

01 – CAT wire inserted on the rear side

02 – CAT wire installed surface-mounted

5.8.5 Connection

System Access Point 2.0 SAP/S.13

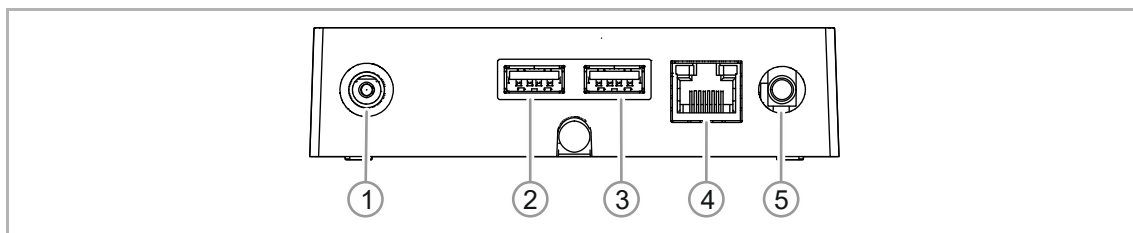


Fig. 97: Connections SAP/S.13

- [1] Power adapter plug 24 V connection
- [2] USB port (for future extension of functions)
- [3] USB port (for future extension of functions)
- [4] Connection of the CAT wire (RJ45)
- [5] Connection of external antenna

CAT wires that are patched can be connected directly via the RJ45 female connector. Use only shielded CAT wires-

For installations with a permanent connection outside the installation an easy-to-access isolating fixture must be available.

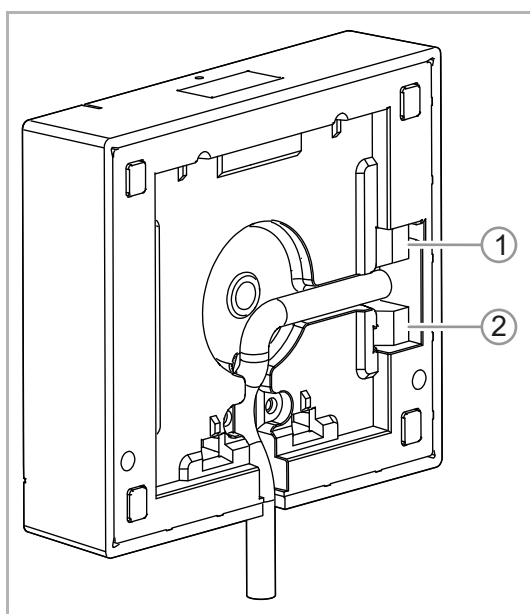


Fig. 98: Rear side of device

- [1] Connection of the free@home bus line
- [2] Connection of alternative power supply

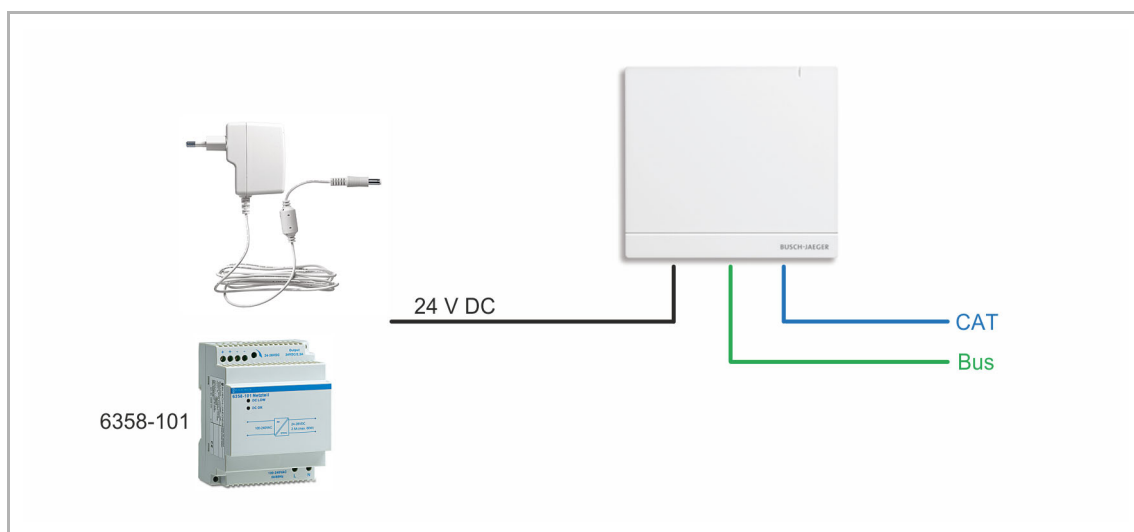


Fig. 99: Options for connecting the power supply

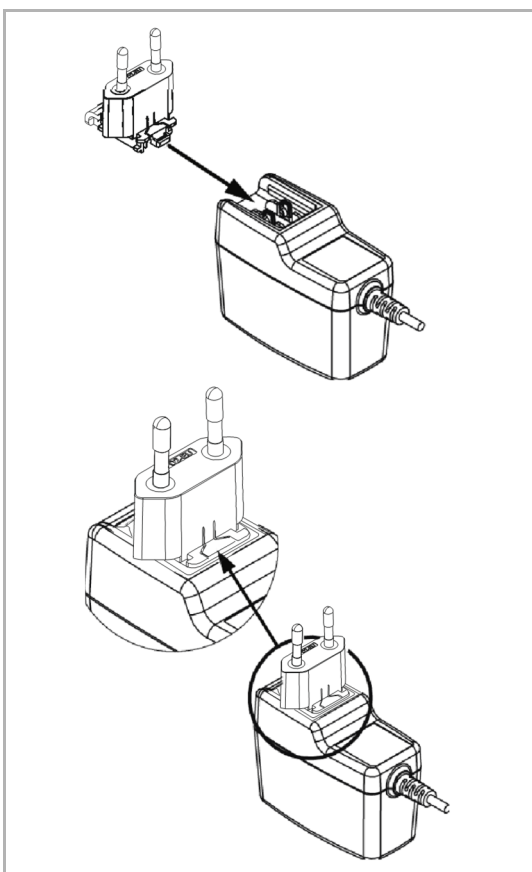


Fig. 100: Connection of the power adapter (the illustrated power adapter is an example)

Use the enclosed power adaptor with the correct adapter (illustration of adapter is an example) to supply the device with voltage.

- Push the adapter along the rail of the power adapter connector until it latches.

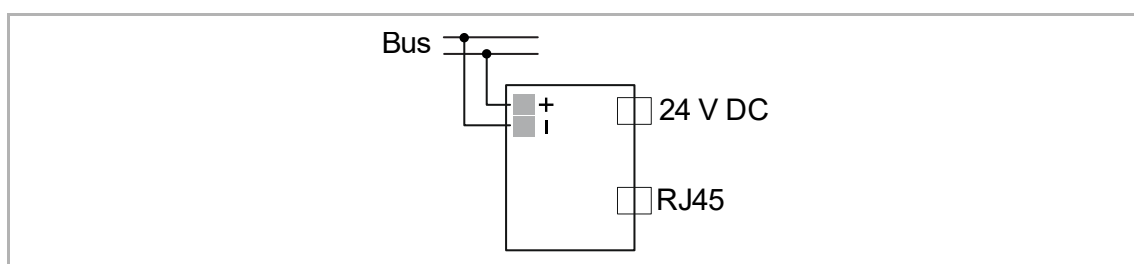


Fig. 101: Electrical connection with power adapter plug

Alternative connection (permanent connection)

Connection to an MDRC power supply, e.g. MDRC power pack 6358-101, instead of the enclosed power adapter plug. Connecting point, see fig. "Fig. 102" on page 122.

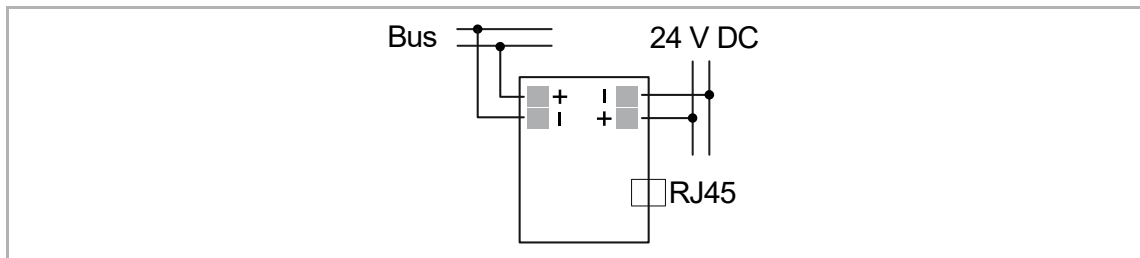


Fig. 102: Alternative connection (permanent connection)

**Warning - Risk of short circuit**

Risk of short-circuit

- Observe the spatial division (> 10 mm) of SELV electric circuits to other electric circuits.
- If the minimum distance is insufficient, use electronic boxes / insulating tubes.

**Warning**

Never supply the device with voltage simultaneously via the plug outlet and additionally via the alternative connection (24 V mains cable).

- Only use a single connection.

All other devices connected to the free@home bus must be supplied with a separate power supply of class NEC 2 (LPS).

**Notice**

When operating with more than 64 wired participants, a second power supply is required.

5.8.6 Control and display elements

System Access Point 2.0 SAP/S.13

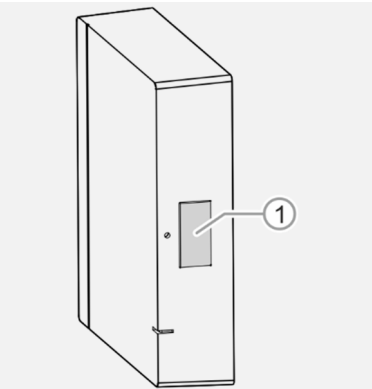
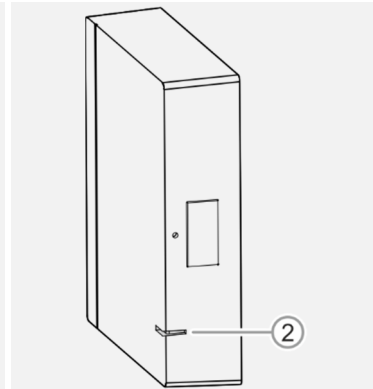
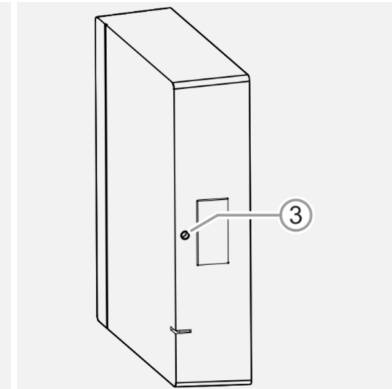
		
Access point button	Status LED	Reset button
Button function: Button operation switches the access point mode on/off	Button function: None	Button function: Button operation resets the access point
LED function: None	LED function: See Table 36	LED function: None

Table 35: System Access Point control and display elementsSAP/S.13

Green (short):	Voltage is supplied
Green (flashing)	Boot-loader mode
Orange (flashing):	Device is booting
White (constant):	The device is ready for operation
Blue (constant):	Access point mode (WLAN) is activated
Red (constant):	No connection with WLAN
Red (flashing fast):	LAN communication is interrupted
White/red (flashing):	No connection to myBUSCH-JAEGER
Off:	No voltage

Table 36: LED display

System Access Point 6200 AP-101

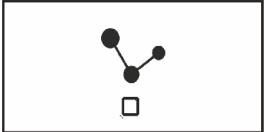
		
Access point button	Connection display	Status indication
Button function: Button operation switches the access point mode on/off	Button function: None	Button function: None
LED status: On: Access point mode on Off: Access point mode off	LED status: On: Connection with LAN/WLAN Off: No connection with LAN/WLAN Flashing: Connection try	LED status: Green (brief): Voltage supplied Yellow: Device is booting Green (constant): Device is ready for operation Off: No voltage Flashing: Fault

Table 37: System Access Point control and display elements6200 AP-101

5.8.7 Master reset without access to the Web interface



Notice

At a master reset, without access to the web interface of the System Access Point, all user data, floor plans and time programs will be permanently deleted.

System Access Point 6200 AP-101

To perform a master reset:

1. Lift the cover off the System Access Point.
 2. Briefly press the reset button (above the bus connection terminal).
 3. While the boot-up process starts, simultaneously press the access point button, the "Connection display" button and the "Status indication" button until all three button LEDs light up. This can take up to a minute.
- The System Access Point is then back to its factory settings.

System Access Point 2.0 SAP/S.13

To perform a master reset:

1. Press the reset button with the aid of a pin and keep the button pressed for at least 40 seconds.
- The System Access Point starts the boot-up process and is then back to its factory settings.

5.8.8 Additional general settings in the System Access Point

System information

Current software version status.

Network

The network settings of the System Access Point can be programmed in menu "Network".

Possible settings:

- LAN client: Used when the System Access Point is connected to the Internet router via network cable.



Note

This mode is activated automatically when the access point mode is deactivated (LED of the left button is off).

- WLAN client: Used when the System Access Point is connected to the Internet router via WLAN.

Users

In the "User" menu additional users can be created or users deleted. Also access rights can be changed.

Localization

Setting of the system name, the system language, the location and the time.

Data backup

The data backup stores all the settings made. The backup is first carried out on the internal memory of the System Access Point. But it can also be exported.

A data backup is created automatically at regular intervals. But it can also be created manually.

Data backups that have been created by user type "Fitter", can be restored by other users. But they cannot be deleted by them.

Update

Firmware update of the System Access Point and the free@home devices.



Note

The current firmware versions of the free@home devices are displayed for the respective device via the device configuration on the maintenance side.

The update file contains both the updates of the System Access Point as well as the updates for all system devices.

The update consists of four steps:

1. Upload the firmware to the System Access Point.
 - Takes place automatically after selection of the update file.
2. Processing the firmware.
 - Takes place automatically after the successful update. The process can take a few minutes.
3. Installation of the firmware.
 - Takes place after confirming the update dialogue. The update takes a few minutes.
 - After the update has been carried out successfully, the System Access Point restarts. This could lead to the website in the Internet browser continuing to indicate an ongoing update process, even though it has already been completed. An update of the website (F5 key) rectifies the problem.
4. Firmware update of all free@home devices connected to the bus.
 - After confirming the update dialogue, all free@home devices connected to the bus are updated automatically. The update is always carried out simultaneously on two devices and can be recognized by the mutual flashing of the LEDs. The process takes approximately two minutes for each device. The system can be operated as usual during the update.

Service

- **Updating all devices:** Loads the current firmware to the free@home devices. This process is only necessary when the update of the devices was rejected during the update dialogue.
- **Master reset:** Resets all free@home devices connected to the bus to the factory settings. All data backups, user data, floor plans and time programs are retained.
- **Resetting the database:** Resets the System Access Point completely or partly to the factory settings. The selection of the parameters to be reset is made in the pop-up window.

6 Device Functions

Icon	Information	
	Name:	Sensor
	Type:	Sensor
	Made available by:	Sensor unit, sensor/switch actuator, sensor/dimming actuator, sensor/blind actuator
	Function:	Control element for the control of free@home functions
	Name:	Movement detectors
	Type:	Sensor
	Made available by:	Movement detector, movement detector/switch actuator
	Function:	Sensor for movement- and brightness-dependent control of free@home functions
	Name:	Room temperature controller (RTC)
	Type:	Sensor
	Made available by:	Room temperature controller
	Function:	Controls free@home heating actuators
	Name:	Panel
	Type:	Sensor
	Made available by:	free@homeTouch 7" and 4.3"
	Function:	The location for installation and name of the panel can be changed
	Name:	Switch actuator
	Type:	Actuator
	Made available by:	Switch actuator, sensor/switch actuator, movement detector/switch actuator
	Function:	Switches connected loads
	Name:	Dimming actuator
	Type:	Actuator
	Made available by:	Dimming actuator, sensor/dimming actuator
	Function:	Dims connected loads
	Name:	Blind actuator
	Type:	Actuator
	Made available by:	Blind actuator, sensor/blind actuator
	Function:	Moves connected blinds and roller blinds
	Name:	Heating actuator
	Type:	Actuator
	Made available by:	Heating actuator, sensor/blind actuator
	Function:	Controls heating actuators

Icon	Information	
	Name:	Wind alarm
	Type:	Sensor
	Made available by:	Binary input
	Function:	Triggers a wind alarm
	Application:	Automatic retraction of the blinds
	Name:	Window contact
	Type:	Sensor
	Made available by:	Binary input
	Function:	Signals "Window open"
	Name:	Rain alarm
	Type:	Sensor
	Made available by:	Binary input
	Function:	Triggers a rain alarm
	Application:	Automatic retraction of the awning
	Name:	Frost alarm
	Type:	Sensor
	Made available by:	Binary input
	Function:	Triggers a frost alarm
	Application:	Automatic retraction of the awning
	Name:	Heating/cooling switchover
	Type:	Sensor
	Made available by:	Binary input
	Function:	Switches the room temperature controller over between heating mode and cooling mode.
	Name:	Floor call
	Type:	Sensor
	Made available by:	free@homeTouch 7"
	Function:	Signals an incoming floor call
	Application:	Switches a free@home actuator at an incoming floor call
	Name:	Floor call button
	Type:	Actuator
	Made available by:	free@homeTouch 7"
	Function:	Triggers a floor call
	Application:	A free@home sensor is used as floor call button

Icon	Information	
	Name:	Door opener
	Type:	Actuator
	Made available by:	free@homeTouch 7"
	Function:	Actuates the door opener of the Busch-Welcome® system
	Application:	A free@home sensor is to actuate the door opener
	Name:	Door call
	Type:	Sensor
	Made available by:	free@homeTouch 7"
	Function:	Signals an incoming door call
	Application:	A free@home actuator is to switch at an incoming door call
	Name:	Automatic door opener
	Type:	Actuator
	Made available by:	free@homeTouch 7"
	Function:	Activates/deactivates the automatic door opener
	Application:	A free@home sensor is to activate/deactivate the automatic door opener
	Name:	Corridor light
	Type:	Actuator
	Made available by:	free@homeTouch 7"
	Function:	Switches the corridor switch contact of the Busch-Welcome® system controller
	Application:	
	Name:	Weather station
	Type:	Sensor
	Made available by:	Weather station
	Function:	Makes available a wind sensor, temperature sensor, brightness sensor and rain sensor.
	Application:	Used in "Actions" or as weather alarms. Linked with blind actuators
	Name:	Fan with heating actuator
	Type:	Actuator
	Made available by:	Fan Coil actuator
	Function:	Control of the heating circuit of a blower convector
	Application:	Activation of a thermal or motor-driven (3-point) valve actuator for 2-pipe systems in "heating" operating mode

Icon	Information	
	Name:	Fan with cooling actuator
	Type:	Actuator
	Made available by:	Fan Coil actuator
	Function:	Control of the cooling circuit of a blower convector
	Application:	Activation of a thermal or motor-driven (3-point) valve actuator for 2-pipe systems in "cooling" operating mode
	Name:	Fan with actuator for heating or cooling
	Type:	Actuator
	Made available by:	Fan Coil actuator
	Function:	Activation of a valve actuator for actively heating or cooling a room
	Application:	Activation of a thermal or motor-driven (3-point) valve actuator for 2-pipe systems in "heating" or "cooling" operating mode (dependent on the changeover object)
	Name:	Fan with actuator for heating and cooling
	Type:	Actuator
	Made available by:	Fan Coil actuator
	Function:	Activation of two valve actuators for actively heating and cooling a room
	Application:	Activation of two thermal valve actuators for 4-pipe systems in "heating and cooling" operating mode

Table 38: Overview of device functions

Applications overview of room temperature control

Icon	Function	Heating actuator 6254/0.6 6254/0.12	Sensor/switch actuator 6211/1.1 6211/2.1 6211/2.2
	<Heating mode> The actuator operates permanently in heating mode. Controller type: PWM	For the activation of thermoelectric actuating drives in warm water heating systems. With automatic flushing function to prevent blockages of the valve.	For activating electric heaters. Without automatic flushing function.
	<Cooling mode> The RTC operates permanently in cooling mode. Controller type: PWM	For activating the cooling supply valve in systems with separate heating / cooling supplies. With automatic flushing function to prevent blockages of the valve.	—
	<Automatic heating/cooling mode> The RTC switches automatically between heating mode and cooling mode. Controller type: PWM	For activating the supply valve in 2-conductor systems. Note  The switchover between heating and cooling mode takes place via an additional binary input, which evaluates the signal of a heat pump, for example. For this the binary input must have been configured as "Heating/cooling reverser".	—
	<Additional heating stage> The RTC switches an additional heating element to reach the setpoint faster. Controller type: 2-point	—	To activate convectors, heated mirrors and infrared heaters, for example. 0.5°C hysteresis Switches on at $\geq 2^{\circ}\text{C}$ deviation from the setpoint. Without automatic flushing function.

Table 39: Overview of applications, RTC

7 Functional system extensions

7.1 Busch-secure@home

With the Busch-secure@home you have everything under control at home. The radio-based system secures the residential buildings not only against break-ins and theft, but also against sources of danger such as fire or water. It is easy to install - without damaging the walls or floors - and simple to integrate into the Busch-free@home®. This, for example, allows the lights to be switched on and the blinds moved up in case of an alarm.

Benefits

- Connection to Busch-free@home®:
 - Mixed scenes and actions for safety and home automation
 - Remote control and simple visualisation of the status of all real-time zones.
 - Push-notifications to mobile devices with a myBUSCH-JAEGER account
- Permanent monitoring of communication and possible interferences (e.g. 24-hour monitoring by smoke detectors)
- Activating and deactivating the alarm system via the Busch-free@home® panel and the Busch-free@home® app or Busch-free@home® user interface
- In the end user view of the Busch-free@home® user interface all zones can be displayed and activated or deactivated in the desired mode. The updated status is displayed with different icons.
- It is also possible to display the desired zones on the 4.3" and 7" panel to make the activation or deactivation even more comfortable. A PIN code is requested to activate / deactivate the zones. To make this possible, a pop-up keypad is displayed.

Explanations

- Mode

Different modes can be activated for the Busch-secure@home (status conditions). This, for example, allows zones to be armed or disarmed.

The following modes are possible:

- Absence mode (zone is armed and being monitored)
- Presence mode (zone is disarmed and is not being monitored)
- Notification mode (alarm is deactivated, but messages are being displayed)

Zones

Different zones can be created for Busch-secure@home; this means that different sectors of the house can be fixed, which can be armed or disarmed independent of each other.

Example:

Two-storey house with a garden: On the ground floor, for example, is a business. Now the area can be defined as a zone. And the garden and the top floor can each be created as a separate zone.

Now sensors are connected everywhere that are linked with the Busch-secure@home system. The different time zones make it possible, for example, to only arm the business sector. The living sector can remain disarmed to allow "free" movement there.



Notice

For additional explanations see the Busch-secure@home system manual.

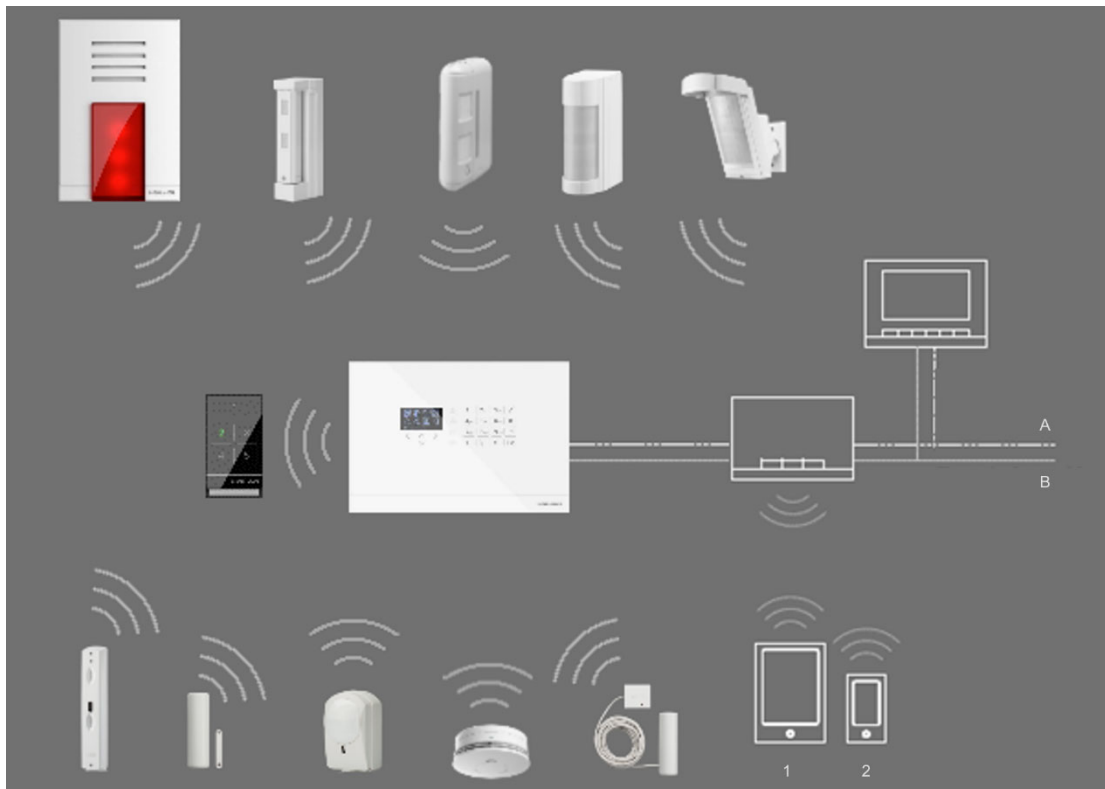


Fig. 103: Overview

- [1] Tablet
- [2] Smartphone
- [A] 230 V Leitung
- [B] 2-Draht Busleitung

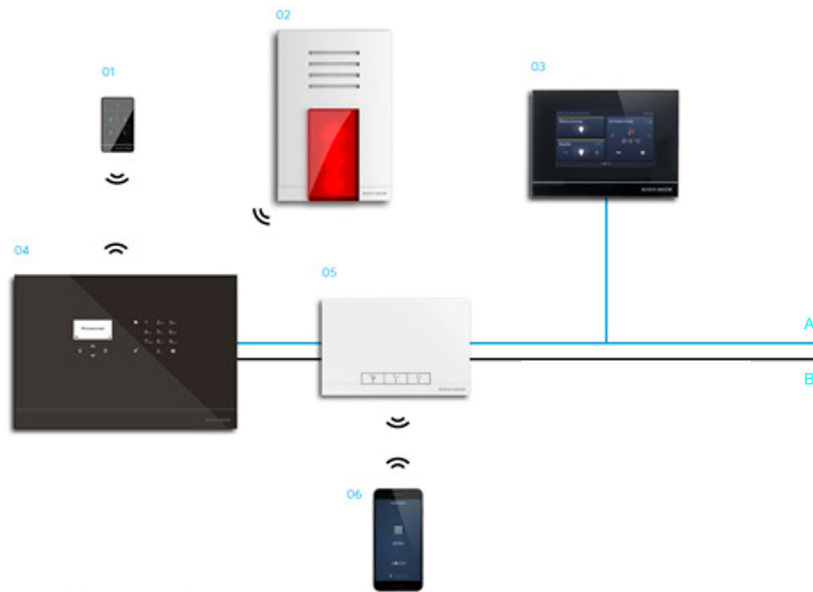


Fig. 104: Example

- [1] Fernbedienung
- [2] Außensirene
- [3] Busch-free@home® Panel
- [4] Busch-secure@home Systemzentrale
- [5] Busch-free@home® System Access Point
- [6] Busch-free@home® App
- [A] Busch-free@home® Bus
- [B] 230 V Leitung

7.1.1 Prerequisites

- Busch-secure@home system controller



Notice

At least one system controller is required for the transmission of alarm messages via Busch-free@home®!

Please use the operating and installation instructions for the system controller (see the enclosed installation and operation manual and product manual or Busch-secure@home system manual)!

- Sensors from Busch-secure@home or also Busch-free@home® (e.g. universal detector, etc.)



Notice

Please use the operating and installation instructions for the individual sensors (see the enclosed installation and operation manual and respective product manual or Busch-secure@home system manual)!

- Existing myBUSCH-JAEGER account (for the transmission of alarm messages via Push notifications)
- A setup Busch-free@home® -> Busch-free@home® System Access Point has already been registered in the myBUSCH-JAEGER



Notice

The connection to myBUSCH-JAEGER is always required when the system is to be operated also via remote control or to receive Push notifications.

- Direct connection of Busch-secure@home system controller with Busch-free@home® via Busch-free@home® bus

7.1.2 Examples of process scenarios

1. To activate / deactivate the system, select the desired mode for each zone. This allows the status of the real-time zones to be monitored.
2. Alarm messages can be displayed as popup on the monitor.
3. Actions can be configured, such as for switching on the lighting at an alarm during the night.

7.1.3 Functions

Every Busch-secure@home device (or Busch-free@home® sensors in connection with Busch-secure@home)

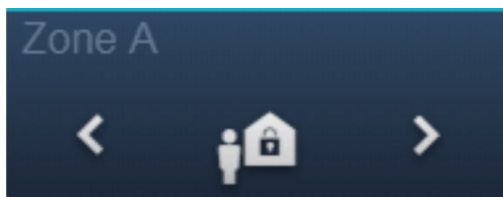
- is visible in Busch-free@home® as a native device
- is allocated to a zone. The individual zones are displayed with a zone button in the web-based user interface and can be armed or disarmed with it.
- becomes usable in conditions or actions via the zone allocation. This, for example, allows Push notifications to be sent during an alarm or other actions to be carried out. For example, the light can be switched on.
- can be positioned on a Busch-free@home® panel via the zone button.

The zones can be disarmed or armed directly via the icons of the corresponding zone buttons. They can also be activated via the zone icons in the Busch-free@home® user interface or Busch-free@home® app.

The example below shows a typical zone button. It appears in the web-based Busch-free@home® user interface, in the Busch-free@home® app or in the panels.

The zone buttons all have the same basic structure:

- The name of the zone is displayed on the top left.
- The icon indicates the current status of the zone. This icon may change accordingly, depending on the status. The status can be changed with the arrows.



The following status conditions (disarming/arming options) are available:

- Absence mode
- Presence mode
- Notification mode



Notice

The status conditions must be enabled via the parameter settings to display them in the zone button.

Available also is an optional external siren which can be configured via the parameter setting in Busch-free@home®. The alarm system also has an internal siren. However, it cannot be configured via Busch-free@home®.



Notice

For additional information please also observe the product manuals of the Busch-secure@home devices and the system manual of Busch-secure@home.

7.1.4 Setup of Busch-secure@home

To integrate the two systems, the central unit of Busch-secure@home must be connected via the bus with the Busch-free@home® System Access Point. The central unit is administered by Busch-free@home® as a native device. No additional devices are necessary (e.g. Gateway).

To guarantee the safety of the data exchange between the two systems, the Busch-secure@home central unit sends an AES key to the Busch-free@home® system (also the panel) during initial commissioning (manually triggered by the user). After the linkup, both systems can be used as "one system".



Notice

- AES stands for "Advanced Encryption Standard". With this an algorithm for the symmetrical block encryption is designated.
- For a general description of Busch-free@home® and the setup of the myBUSCH-JAEGER account, please observe the corresponding chapters of the system manual.
- For additional information please also observe the product manuals of the Busch-secure@home devices (especially for operating the central unit) and the system manual of Busch-secure@home.



Notice

The identity factor of the user (ID) is a 1-digit numerical code, variable from 0 to 9, which is assigned by the central unit progressively.

- The ID 0 is reserved for a user of access level 3 (installer).
- ID 1 and higher for a user of access level 2 (user) or 4 (installer). Each central unit must have at least one user of access level 3 and one user of access level 2.

Set via Busch-secure@home central unit

1. Connect the Busch-secure@home central unit with the Busch-free@home® bus.



Notice

- The Busch-free@home® system must be set up.
- First remove all the batteries from the Busch-secure@home devices to be integrated!

2. Linkup of the Busch-secure@home central unit with the Busch-free@home® System Access Point:
 - Apply the voltage to the Busch-secure@home central unit. The following window appears on the display of the central unit.

Welcome to
Secure@Home

- The display switches automatically into the language selection



- Select the desired language with the < > buttons. Confirm the selection with the confirmation button.
- Now you must create an installer access (user level 3, ID 0). For this, enter a name via the keypad. Then a 5-digit PIN must be allocated. It must also be entered a second time.



Notice

Please observe that a change into the next input field must take place via the ^v buttons. The confirmation button must not be used!

```
Create installer
User 0
PIN
Repeat PIN
```

- Finally confirm the entries with the confirmation button.
- The display switches automatically into the linkup view with Busch-free@home®

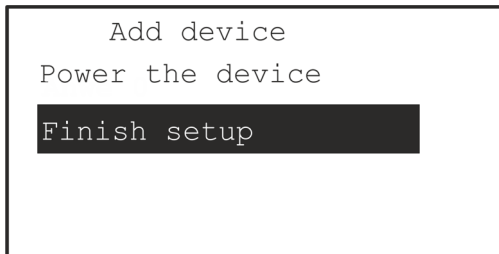
```
Connect to f@h

xxxxxxx
xxxxxxx
xxxxxxx
xxxxxxx
OK to send to f@h
```

- The AES key is displayed here, confirm it with the confirmation button.
- The central unit is now linked with the System Access Point. At the same time the AES key is transferred to the Busch-free@home® system.
- Now enter the current date and time:

```
Date and time
[24/04/19]
Hour
[12:12:00]
```

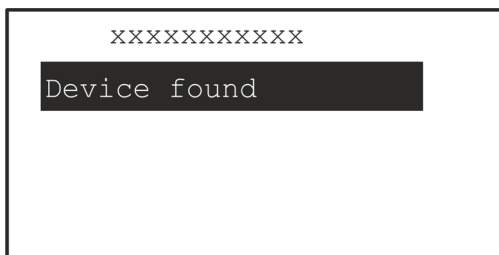
- Finally confirm the entries with the confirmation button.
- The following view then opens

**Notice**

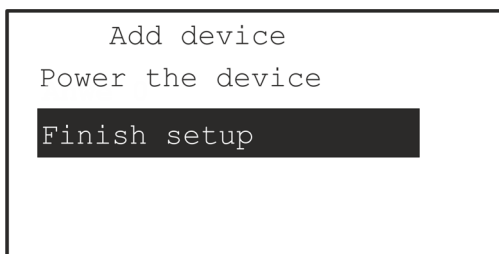
The confirmation button should not be used. First integrate all Busch-secure@home devices.

3. Integration of the Busch-secure@home devices

- Reinsert the batteries again during the integration of the first Busch-secure@home sensor.
- After the power has been connected to the device it can be read in by the Busch-secure@home system controller. As soon as the read-in is complete it is shown in the display and a short "Peep tone" sounds.



- The device has now been integrated into the system.
- Proceed in the same way with the remaining Busch-secure@home devices that are to be integrated.
- The following display automatically appears after a sensor has been integrated:



- Confirm the message if possible with the confirmation button only after all Busch-secure@home devices have been integrated.

- You need to create a user of level 2 (ID 1). This user is necessary to configure the disarming/arming in Busch-free@home®. For this, enter a name via the keypad. Then a 5-digit PIN must be allocated. It must be entered a second time for safety reasons.

**Notice**

Please observe that a change into the next input field must take place via the $\wedge \vee$ buttons. The confirmation button must not be used.

Create user

User 1

PIN

Repeat PIN

- Finally confirm the entries with the confirmation button.

The system has now been set up. The additional configuration is now made via Busch-free@home®:

Configure
via Free@home

**Notice**

Whether the system controller is recognised on the bus can be checked as follows. Use the $\wedge \vee$ buttons to change to the display. The software versions, the date and the battery status are shown in an overview display. If "f@h" is shown in this display, the system controller is recognised on the bus.

Subsequent setup via free@home user interface

1. Log in to the Busch-free@home® user interface.

**Notice**

In order to make all necessary settings, you require the authorisation level “Installation”.

**Notice**

For additional explanations, please use the available Busch-free@home® system manual.

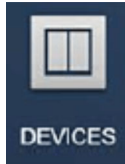
**Notice**

Make sure that your Busch-free@home® system is equipped with software version 2.3.0 or higher. If this is not the case, carry out an update of your system.

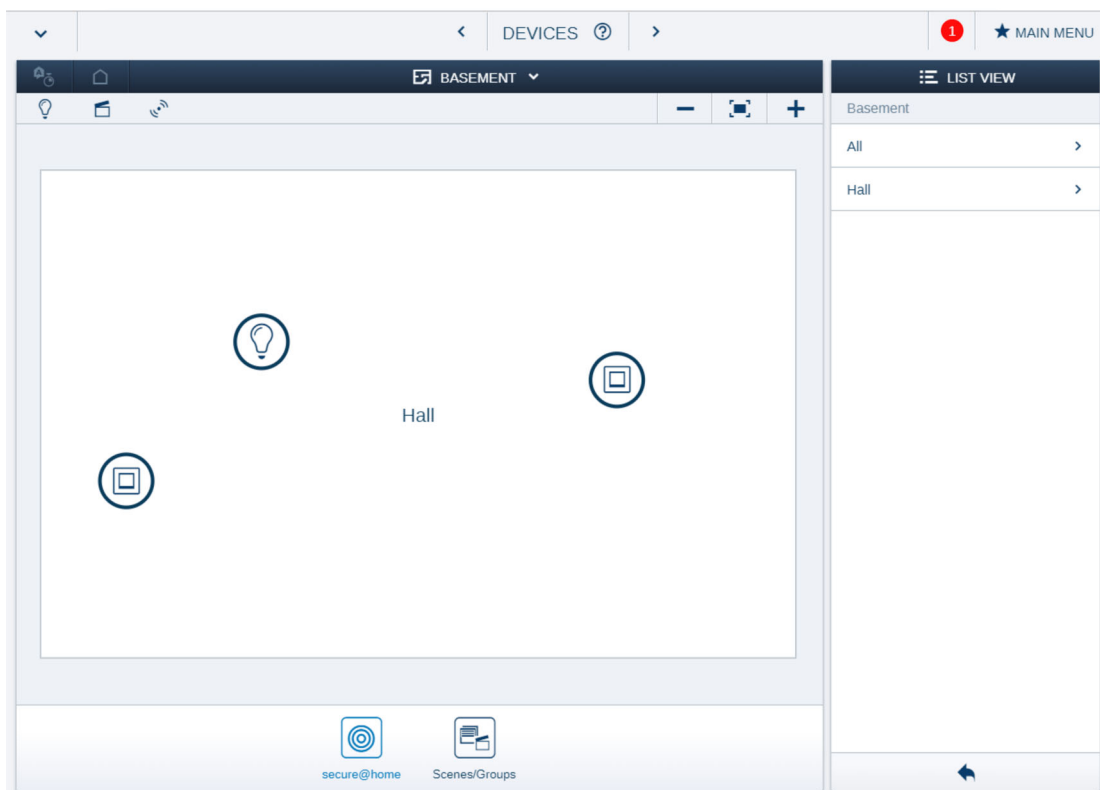
The latest firmware version is automatically downloaded when your system is connected to the Internet (unless you have deactivated the function “Download new firmware automatically”). If this is not the case, you can also download the latest firmware version at <http://freeathome.de/firmware>.

Please note that also the panels must contain the latest firmware version. See the corresponding instructions in the product manuals.

2. The Busch-secure@home devices must be positioned in the floor plan the same as all the other Busch-free@home® devices.
 - The allocation is made via the "Devices" allocation function of the Web-based
 - user interface of the System Access Point



- Add Busch-secure@home central Unit
- Switch to the "Devices" view and there select a floor and a room.
- In the add bar "Add devices" select the group "secure@home".

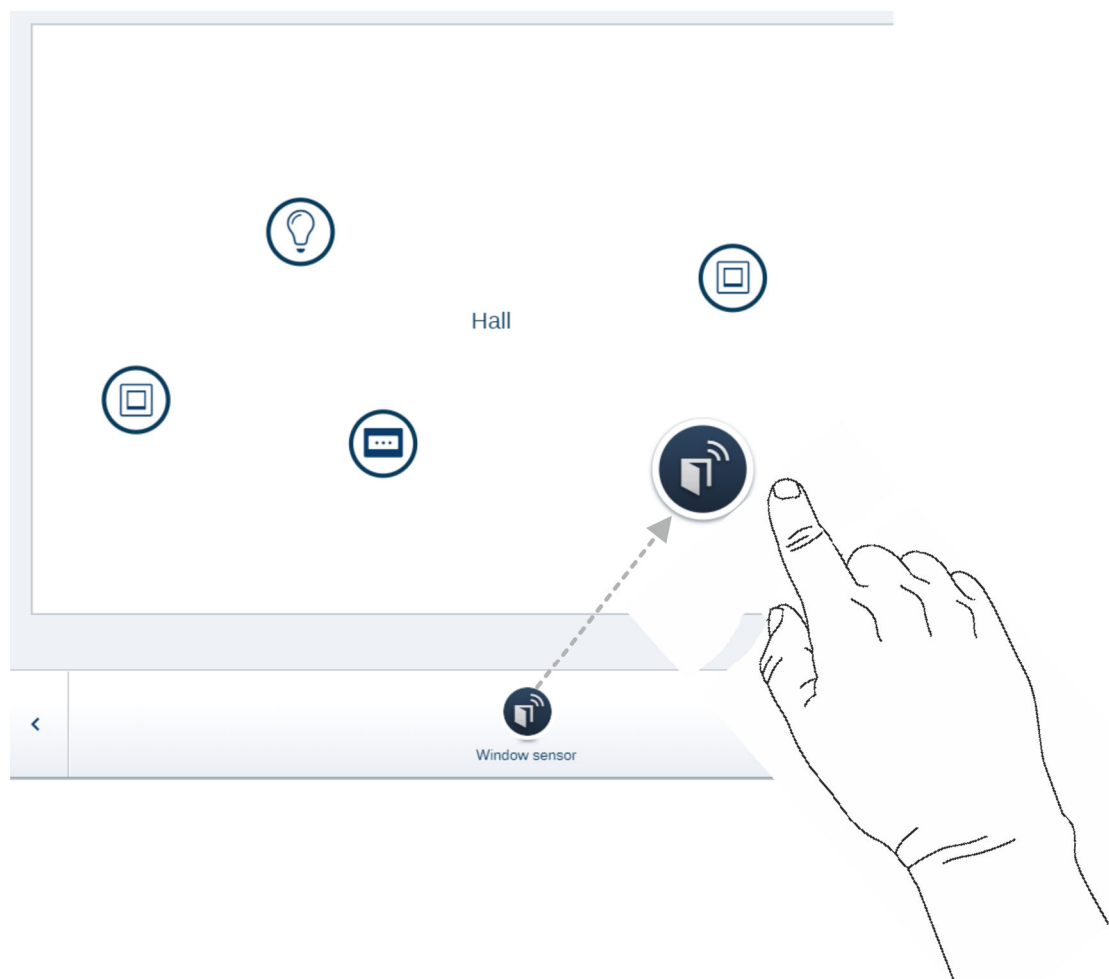


- In the "Add devices" bar select the desired application (central unit) and pull it via drag-and-drop into the floor plan.

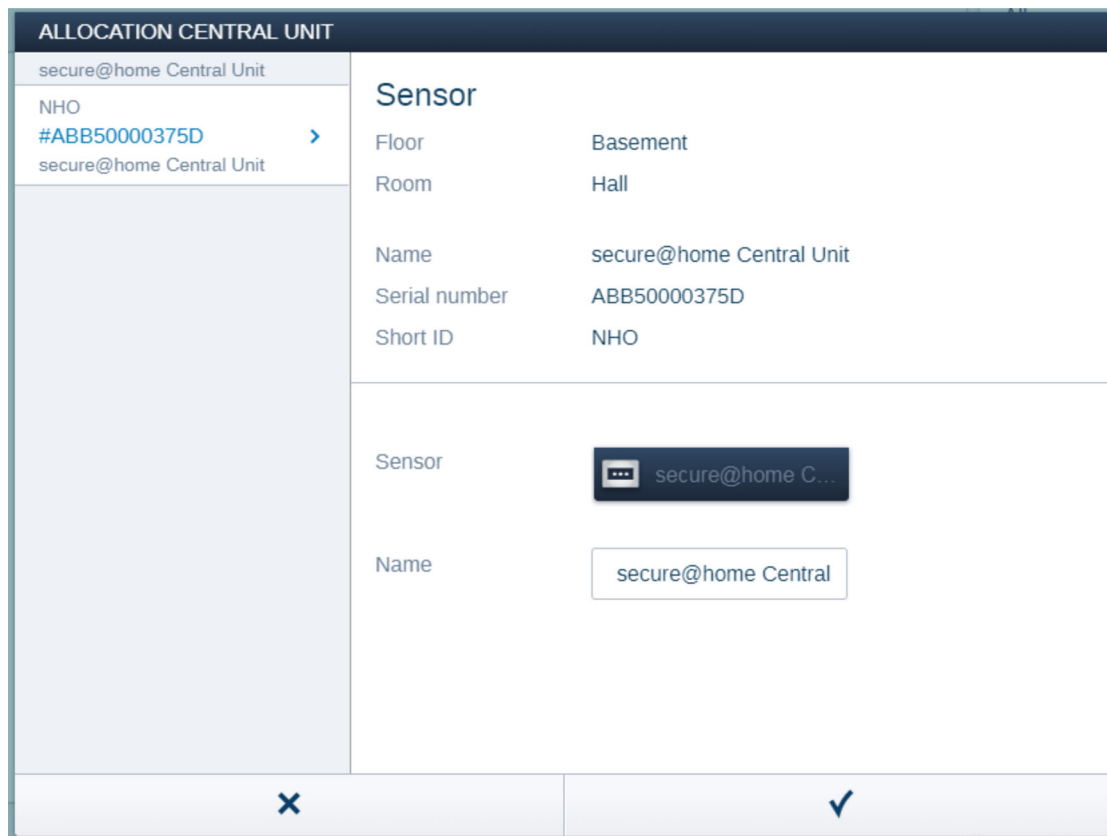


Notice

The central channel, i.e. the central unit, must always be positioned first. Then all Busch-secure@home sensors can be linked.



- A popup window opens which lists the "Central unit" device.



ALLOCATION CENTRAL UNIT

secure@home Central Unit

NHO
#ABB50000375D

secure@home Central Unit

Sensor

Floor Basement

Room Hall

Name secure@home Central Unit

Serial number ABB50000375D

Short ID NHO

Sensor secure@home C...

Name secure@home Central

X ✓

**Notice**

Identification via serial number

Compare the serial number and the short ID of the identification label, which is glued on the device plan (See “Creating a plan for devices“ on page 22), with the numbers and IDs in the list. This is how the searched for device and possibly the searched for channel are identified.

- Enter an easy to understand name under which the device is to be displayed later.
- Confirm the settings/configuration with the tick on the bottom right.

**Notice**

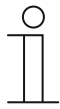
The name must not have more than 16 characters!

- The settings/configuration are taken over.

**Notice**

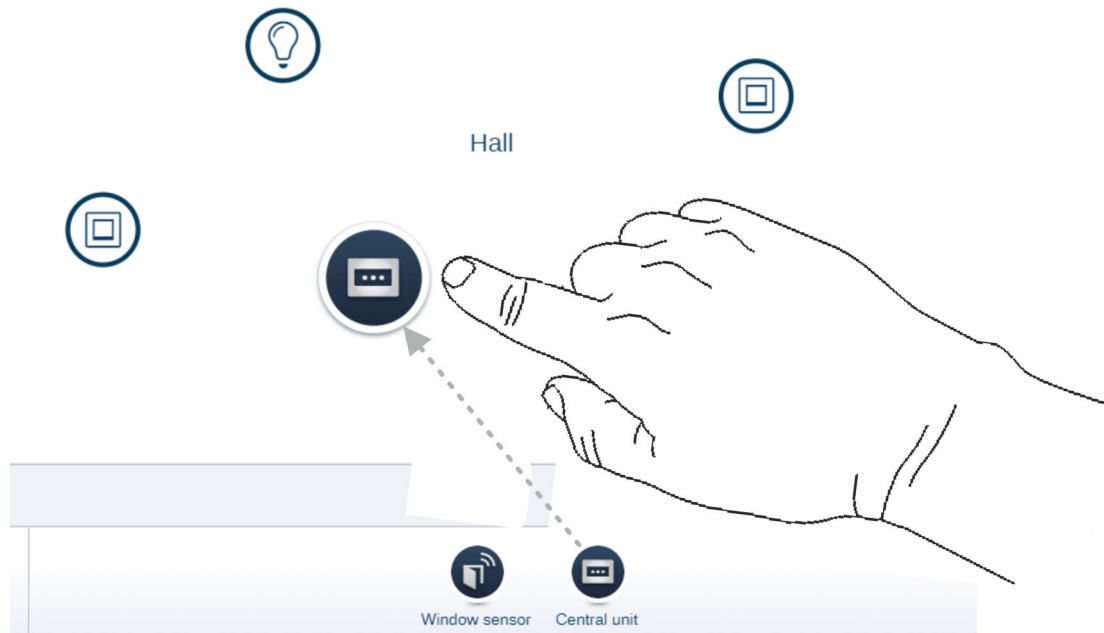
The settings of the device can be adjusted via the Web-based user interface of the System Access Point, See “Setting options per device / channel“ on page 150.

3. After the central unit has been positioned, additional Busch-secure@home devices (sensors) can be added and zones allocated. Also additional zones can be created.

**Notice**

You are still in the "Devices" view. The group "secure@home" is still open.

- In the add bar of the group "secure@home", select a Busch-secure@home device (e.g. window contact) and pull it onto the floor plan via drag and drop.



- A popup window opens and displays all devices of this type (all connected window sensors, for example). Select the desired device from the list.

**Notice**

Identification via serial number

Compare the serial number and the short ID of the identification label, which is glued on the device plan (See "Creating a plan for devices" on page 22), with the numbers and IDs in the list. This is how the searched for device and possibly the searched for channel are identified.

ALLOCATION WINDOW SENSOR

secure@home Central Unit

NHO

#ABB50000375D

Window Contact Channel 1

Sensor/switch actuator

Floor	Basement
Room	Hall
Name	secure@home Central Unit
Serial number	ABB50000375D
Hardware identifier	F888C3DB
Short ID	NHO

Sensor

 Window Contact ...

Name

Window Contact Chan

×

>

- Enter an easy to understand name under which the device is to be displayed later (e.g. "Bathroom window contact"). Confirm the settings/configuration with the arrow on the bottom right.
- The settings/configuration are taken over.



Notice

The name must not have more than 16 characters!

- You can now create a new zone. To do this, press the plus at the top left.



Notice

If zones are already available, they can then be selected from the list and allocated to the device.

For additional information on the zones please observe the system manual of the Busch-secure@home.

- The new zone is created and displayed.

ALLOCATION WINDOW SENSOR

Create new zone +

NHO

Zone A >

ABB50000375D

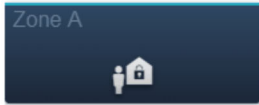
Zone

Name secure@home Central Unit

Serial number ABB50000375D

Short ID NHO

Zone



Name

Zone A

Icon



▼

×

✓

- Enter an easy to understand name under which the zone is to be displayed later (e.g. "Cellar"). Also a different icon can be selected. This is the way the zone will be displayed later in the Web-based user interface of the System Access Point. Confirm the settings/configuration with the tick on the bottom right. The settings/configuration are taken over.
- The zone is created and the device is allocated to this zone.



Notice

The settings of the device can be adjusted via the Web-based user interface of the System Access Point, See "Setting options per device / channel" on page 150.

- Repeat the process for all other Busch-secure@home devices.

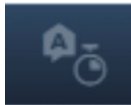
Adding Busch-free@home® devices (sensors) and allocating or creating zones



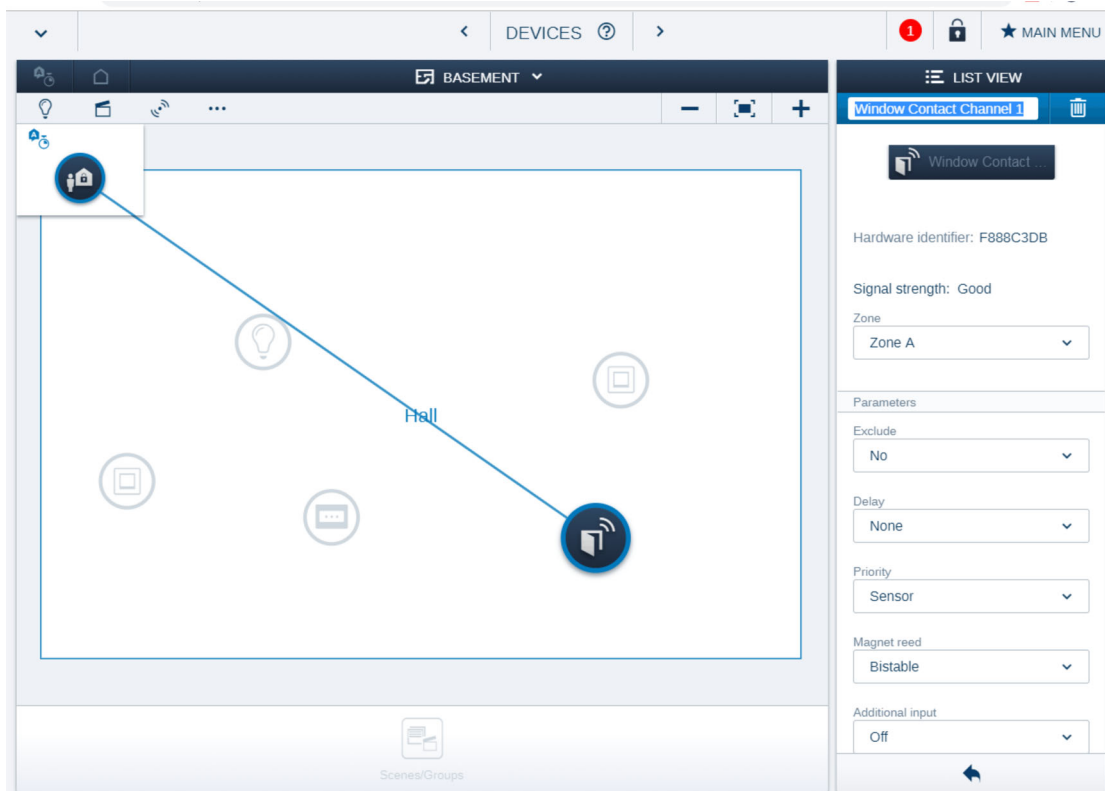
Notice

You are still in the "Devices" view.

- The Busch-free@home® devices must first have been allocated to the Busch-free@home® system (see the product manuals of the devices).
- Select the corresponding sensor in the floor plan.
- Click on the icon at the top left.



- The available zones are displayed. Select a zone. A blue connecting line indicates the link with the sensor.



Notice

New zones can also be created via the device settings in the list view on the right. Click on the arrow in field "Zone". A new zone can then be created via the selection (process as described in item 6).

Allocation of zones on the Busch-free@home® 4.3" panel and the Busch-free@home® 7" panel

- It is also possible to connect the zones with the 4.3" and 7" panel, so that they can also be armed or disarmed via the panel.



Notice

A PIN code is requested to activate / deactivate the zones. To make this possible, a pop-up keypad is displayed.

Setup of actions and Push notifications

- The setup is carried out as described in the Busch-free@home® system manual. The following illustration shows an example.

Precondition	Event	Action	Notification
By day	Safety alarm Safety zone: 24h Zone Zone status: Warning raised Delay: 6 Sec.	Light During: Occurrence of th...	 Define a notification which is to be sent when the event occurs.
Add precondition	Add event	Add actuator	Add notification

+ Add New action Alarm

7.1.5 Setting options per device / channel



Notice

The identity factor of the user (ID) is a 1-digit numerical code, variable from 0 to 9, which is assigned by the central unit progressively.

- The ID 0 is reserved for a user of access level 3 (installer).
- ID 1 and higher for a user of access level 2 (user) or 4 (installer). Each central unit must have at least one user of access level 3 and one user of access level 2.

1. Log in to the Busch-free@home® user interface.



Notice

In order to make all necessary settings, you require the authorisation level "Configuration" in Busch-free@home®. This corresponds to a user created in the central unit (user level 3, ID 0).

2. To be able to configure the Busch-secure@home system via Busch-free@home®, first the configuration must be enabled. For this the lock shown below must be clicked in the Busch-free@home® user interface.



Notice

A popup opens via which a PIN is requested. The PIN corresponds to the PIN that was allocated to a user created in the central unit (user level 3). Please note that the PIN in Busch-free@home® has 6 digits. Here the first digit is always the ID level (here level 0). This is followed by the entry of the five digits of the PIN.

PIN ENTRY

Type in your PIN to arm the Zone.

Insert the user ID, followed by the user PIN (1+5 digits).

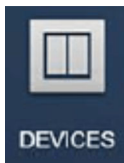
✕
✓

The Busch-secure@home system can be configured via Busch-free@home® if the lock is displayed opened.



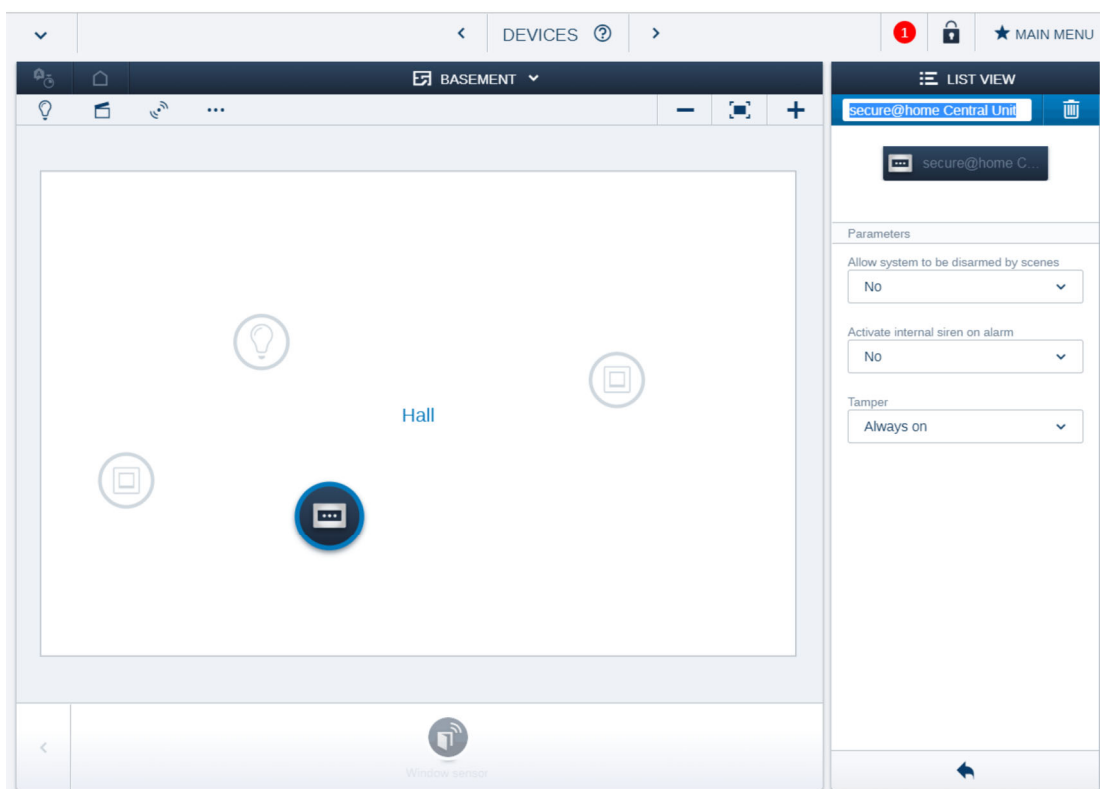
3. Device selection:

- Change to the "Devices" view and there select the floor and room in which the device is located (the central unit in the following example).



- Select the device icon in the floor plan of the working area view.

All setting options for the respective channel (device) are displayed in the list view (the following illustration shows an example)



- Confirm the settings/configuration with the arrow on the bottom right.



Notice

The settings can also be made via the "Device configuration"!

- 4. Setting options/parameter of the central unit:
 - Permitting arming/disarming of the system via scenes
 - Activation of the siren during an internal alarm (the central unit issues an alarm tone when triggered)
 - Sabotage (message during an attempt to manipulate)
- Settings of additional devices:
 - Individual settings for the device type

7.1.6 Setting options per zone

There are 3 types of zones:

- Global zone

All Busch-secure@home sensors and if necessary some Busch-free@home® sensors are linked automatically. Global arming and disarming is carried out via this zone. These links cannot be removed. As soon as one of these sensors signals an error, an alarm is triggered via this zone. It can also be configured whether the internal siren of the central unit is to be activated or not during such an alarm.

- Zones created by the user

The Busch-secure@home sensors and if necessary some Busch-free@home® sensors can be linked with these zones. The user can arm or disarm these zones manually.

1. Log in to the Busch-free@home® user interface.



Notice

The identity factor of the user (ID) is a 1-digit numerical code, variable from 0 to 9, which is assigned by the central unit progressively.

- The ID 0 is reserved for a user of access level 3 (installer).
- ID 1 and higher for a user of access level 2 (user) or 4 (installer). Each central unit must have at least one user of access level 3 and one user of access level 2.



Notice

In order to make all necessary settings, you require the authorisation level "Configuration" in Busch-free@home®. This corresponds to a user created in the central unit (user level 3, ID 0).

2. To be able to configure the Busch-secure@home system via Busch-free@home®, first the configuration must be enabled. For this the lock shown below must be clicked in the Busch-free@home® user interface.



Notice

A popup opens via which a PIN is requested. The PIN corresponds to the PIN that was allocated to a user created in the central unit (user level 3). Please note that the PIN in Busch-free@home® has 6 digits. Here the first digit is always the ID level (here level 0). This is followed by the entry of the five digits of the PIN.

PIN ENTRY

Type in your PIN to arm the Zone.
Insert the user ID, followed by the user PIN (1+5 digits).

✕

✓

The Busch-secure@home system can be configured via Busch-free@home® if the lock is displayed opened.



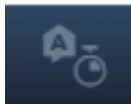
3. Configuration options of the zones:



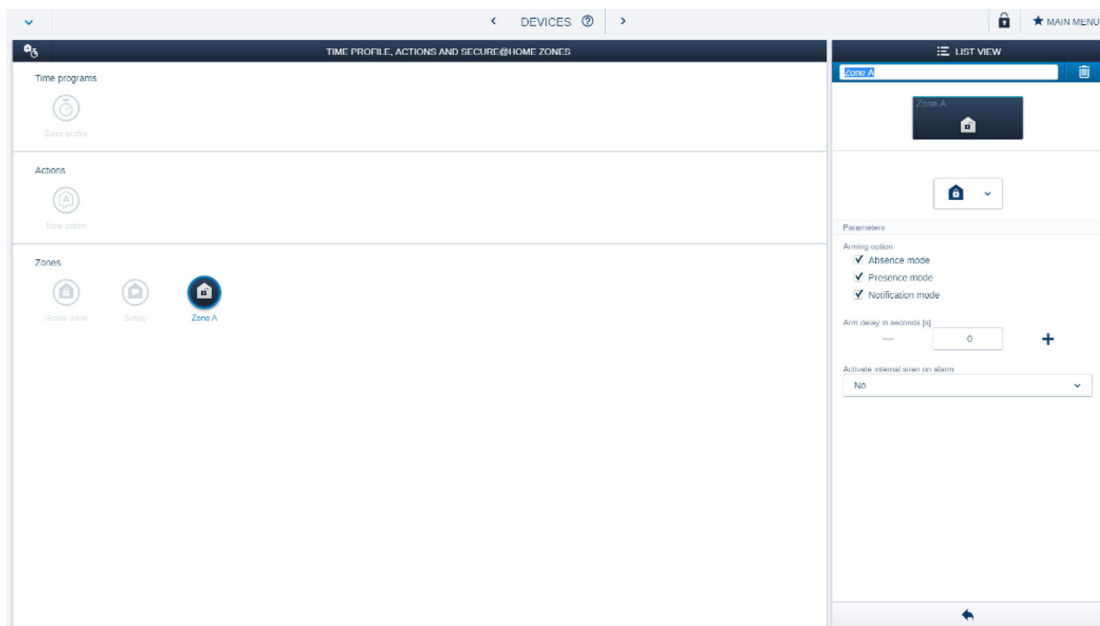
Notice

You are in the "Devices" view.

- Click on the icon at the top left.



- The available zones are displayed. Select a zone.



- The following settings can be made:
 - Disarming/arming the zone via the zone button
 - Selection of icon
 - Specifying disarming/arming options. Then only the selected arming options are displayed in the zone button.
 - Absence mode
 - Presence mode
 - Notification mode
 - Arming delay in seconds [s]

- Activation of the siren during an internal alarm (the central unit issues an alarm tone when triggered)

This parameter can also be activated for the 24-hour zone!

- Click on the arrow at the bottom left.



Notice

The settings can also be made via the "Device configuration"!

7.1.7 Disarming/arming of zones

1. Log in to the Busch-free@home® user interface.



Notice

The identity factor of the user (ID) is a 1-digit numerical code, variable from 0 to 9, which is assigned by the central unit progressively.

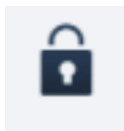
- The ID 0 is reserved for a user of access level 3 (installer).
- ID 1 and higher for a user of access level 2 (user) or 4 (installer). Each central unit must have at least one user of access level 3 and one user of access level 2.



Notice

In order to make all necessary settings, you require the authorisation level "Configuration" in Busch-free@home®. This corresponds to a user created in the central unit (user level 3, ID 0).

2. To be able to configure the Busch-secure@home system via Busch-free@home®, first the configuration must be enabled. For this the lock shown below must be clicked in the Busch-free@home® user interface.



Notice

A popup opens via which a PIN is requested. The PIN corresponds to the PIN that was allocated to a user created in the central unit (user level 3). Please note that the PIN in Busch-free@home® has 6 digits. Here the first digit is always the ID level (here level 0). This is followed by the entry of the five digits of the PIN.

The Busch-secure@home system can be configured via Busch-free@home® if the lock is displayed opened.



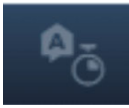
3. Disarming/arming of zones:



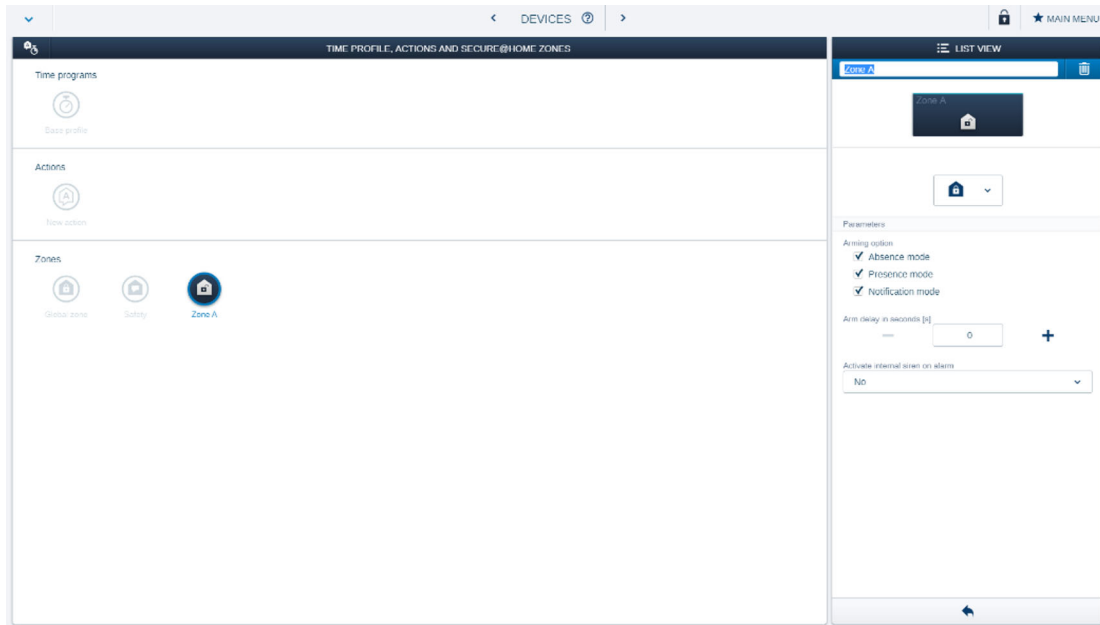
Notice

You are in the "Devices" view.

- Press the following icon at the top left.



- The available zones are displayed. Select a zone.



- Select the zone button in the list view.

Specify the disarming/arming options. Then only the selected arming options are displayed in the zone button:

- Absence mode
- Presence mode
- Notification mode

- Click on the arrow at the bottom left.



Notice

- Disarming/arming can also be carried out via the user interface. Here select the corresponding icon. Then the zone button is displayed. The PIN request is made only in case of changes. No PIN needs to be entered when merely selecting a zone.
- Disarming/arming can also be carried out via the "Device configuration"!
- Disarming/arming can also be linked on a Busch-free@home® sensor. For this a zone must be linked with a scene in Busch-free@home®.

It is also possible to display the desired zones on the 4.3" and 7" panel to make the activation or deactivation even more comfortable. For this only the PIN code (see above) needs to be entered. To make this possible, a pop-up keypad is displayed when the zone control element is touched. A user with the user authorisation 'Configuration' is then not required.

7.1.8 Notes on the use of the integration

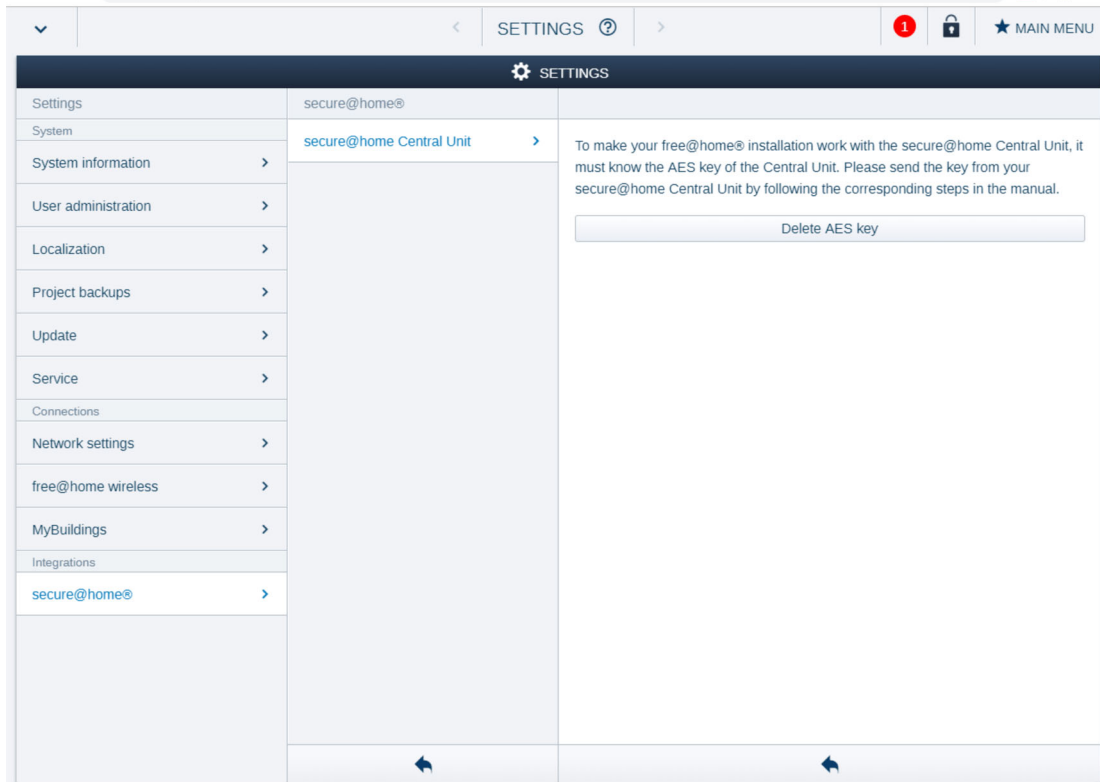
Deleting the AES key



Notice

If you delete the AES key, your Busch-secure@home device can no longer communicate with the Busch-free@home® device.

The AES key can also be deleted via "Settings" in Busch-free@home®:



The AES key is automatically exchanged during every reset to the factory settings.



Notice

Please note that the AES key must then be sent again to the Busch-free@home® system.

Resetting the System Access Point to factory setting

During the reset, also the connection to v>T - 02_Product-group -- Busch-secure@home </v> is interrupted. Connections data are then deleted.

7.2 Alarm integration

The integration of alarm devices (also smoke detectors) into the Busch-free@home® system was only possible via binary inputs up to now. This meant elaborate handling with only limited functionalities. This application has been made a lot easier with the aid of the Alarm stick for Busch-free@home®.

Now the integration of alarm devices (detectors) is carried out easily and wireless and offers functions such as the transmission of alarm messages via Push notification, including the information about the room the alarm has been triggered (alarm localisation). Additionally, scenarios can be triggered within the Busch-free@home® system.

Advantages:

- Simple linkage of Busch-free@home® with a Busch smoke alarm radio network including smoke detectors, heat detectors and CO detectors.
- Alarm devices are independently networked
- No wiring expenditure
- Simple planning, only one additional device is required
- Integration of alarm devices as Busch-free@home® participants
- Compatible with existing radio networked Busch-Smoke alarm detectors and radio modules
- Push notifications to mobile devices with a myBUSCH-JAEGER account for alarms with allocation to specific rooms (alarm localisation)
- Triggering of Smart-Home functions, e.g. scenes
- Differentiation between smoke and CO alarm
- Signalling empty battery

System accessories

System Access Point 2.0

- Minimum system requirement



Alarm stick

- Included in the scope of delivery 1.8 m USB extension, 2 cable clips
- Alarm stick is suitable for the Busch-free@home® system integration of the smoke alarm detector, heat detector and CO alarm via the associated radio modules
- Alarm stick operates as receiver
- Operates free of repercussion, alarm devices are independently networked
- USB extension cable for practical fixing outside the junction box
- Radio frequency: 868 MHz



Busch-Smoke alarm detector

Busch-Smoke alarm detector® ProfessionalLINE Suitable for the connection to external systems such as Busch-free@home® via radio module Busch-Smoke alarm detector RF in combination with the Busch-free@home® Alarm stick.



Busch heat alarm detector ProfessionalLINE

Suitable for the connection to external systems such as Busch-free@home® via radio module Busch-Smoke alarm detector RF in combination with the Busch-free@home® Alarm stick.



Radio module smoke/heat Busch-Smoke alarm detector RF

Suitable for the connection of the Busch-Smoke alarm detector ProfessionalLINE / Busch heat alarm detector ProfessionalLINE to external systems such as Busch-free@home® in combination with the Busch-free@home® Alarm stick.



Busch-CO Alarm

Suitable for the connection to external systems such as Busch-free@home® via the Busch-CO Alarm Radio module in combination with the Busch-free@home® Alarm stick.



Busch-CO Alarm Radio module

Suitable for the connection of the Busch-CO Alarm to external systems such as Busch-free@home® in combination with the Busch-free@home® Alarm stick.



System overview



Intended use

The Busch-free@home® Alarm stick with radio technology makes it possible to transmit information of the radio-networked smoke detectors, heat and carbon monoxide detectors into the System Access Point. Prerequisite is an operational Busch-free@home® system. This allows signals generated by alarm devices, such as warning signals, to be transferred to mobile terminal devices or interactions triggered with other system devices.

General safety instructions

The integration of the alarm devices, especially the smoke detectors, into the Alarm stick does not create a fire warning system (BWA according to DIN VDE V0826-2) or fire detection system (BMA according to series of standards DIN 14675 in connection with DIN VDE 0833-2). Such a combination cannot replace a fire warning system or a fire alarm system.

7.2.1 Prerequisites

- System Access Point 2.0
- Internet connection
- Sensors + Radio modules (See “System accessories“ on page 159)



Notice

Please use the operating and installation instructions for the individual sensors (see the enclosed installation and operation manual and respective product manual or Busch-Smoke alarm detector system manual)!

- A set up myBUSCH-JAEGER account (for the transmission of alarm messages via Push notifications)
- A set up Busch-free@home® system -> Busch-free@home® System Access Point 2.0 has been registered in the myBUSCH-JAEGER account

7.2.2 Functions



Notice

Busch-free@home® cannot perform the following functions:

- Trigger alarms or test alarms in the smoke detector network
- Switch a triggered alarm to mute

Notifications

Notifications about an alarm are sent automatically as soon as the smoke alarm detector radio network is connected correctly with the Busch-free@home® system and the detectors have been assigned to a room in the floor plan. The creation of an "Action" is not necessary.

▪ Fire alarm

Alarms triggered by a smoke alarm detector or a heat alarm detector are replayed as a fire alarm message in the Busch-free@home® system.

"A fire alarm has been triggered in the following room: Living room"

The notification is displayed in the Busch-free@home® user interface and as Push notification on the smartphone/tablet.



Notice

To display the notification as pop-up on the Busch-free@home® panels, an action must be created.

*Prerequisite is a mobile terminal device with an installed Busch-free@home® app and a valid subscription of the myBUSCH-JAEGER remote access.

▪ CO alarm

Alarms triggered by a CO alarm detector are replayed as CO alarm messages in the Busch-free@home® system:

"A CO alarm has been triggered in the following room: Cellar"

The notification is displayed in the Busch-free@home® user interface and as Push notification on the smartphone/tablet.



Notice

To display the notification as pop-up on the Busch-free@home® panels, an action must be created.

*Prerequisite is a mobile terminal device with an installed Busch-free@home® app and a valid subscription of the myBUSCH-JAEGER remote access.

Scenes

The detectors can be linked with any scene on the Busch-free@home® user interface. The scenes are triggered both at an alarm and at a test alarm.

Each detector can be linked with up to two types of scenes. The first (top) scene is triggered as soon as an alarm has been detected. The second (bottom) scene is triggered as soon as the alarm ends.

A distinction is made between the following two links:

- Link with a smoke alarm detector or a heat alarm detector

Example of application:

In case of a fire all lights in the house are to be switched on to illuminate the escape routes. In addition, the roller shutter are to move up to open possible escape routes.



Notice

Scenes that are linked with a smoke alarm or heat alarm detector are triggered as soon as any smoke detector or heat detector of the network triggers an alarm or test alarm.

If, for example, a scene is only linked with the smoke detector in the bedroom, this is also triggered when an alarm from a smoke or heat detector is triggered in a different room of the radio network.

- Link with a CO detector

Example of application:

In case of an increase in carbon monoxide concentration in the boiler room, the ventilator of the washing machine room is to switch on to care for a better exchange of air.



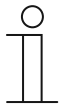
Notice

Scenes that are linked with a CO detector are triggered as soon as any CO detector of the network triggers an alarm or test alarm.

If, for example, a scene is only linked with the CO detector in the living room, this is also triggered when an alarm from a CO detector is triggered in a different room of the radio network.

Actions

Smoke/heat alarm detectors and CO detectors can also be selected as precondition in the "Actions" menu or as an event. Actions that are triggered by a smoke, heat or CO alarm, are triggered as soon as any smoke detector or heat detector of the radio network triggers an alarm or test alarm.



Notice

If, for example, an action is only linked with the smoke detector in the bedroom, this is also triggered when an alarm from a smoke or heat detector is triggered in a different room of the radio network.

As is usual with other events, for the smoke alarm event it can be defined whether it is triggered at the start or the end of an alarm. In addition, a time delay can be added.

▪ Definition "Start of the alarm"

As soon as a detector issues an acoustic alarm:

- At a press of the button for a test alarm
- At a measured smoke development or at high CO concentration or excessive heat

- Definition "End of the alarm"

As soon as the detector mutes after an alarm:

- When the button is released
- When the alarm is muted on the triggering detector
- When smoke development or high CO concentration or excessive heat is no longer measured
- At the latest after 30 minutes



Notice

Actions do not distinguish between alarms or test alarms!

For the simple annual smoke alarm maintenance the respective action should be deactivated if possible.

Additional status messages

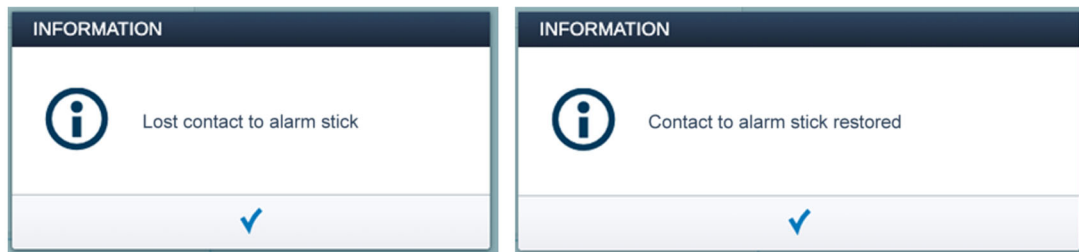
- Battery status

All detectors and their radio modules have a guaranteed service life of 10 years.

As soon as the measured battery capacity drops below 30 days of the remaining service life, an acoustic signal of the detector sounds. At the same time a message is displayed in the message center of the user interface of the Busch-free@home®.

- Removal/insertion of the alarm stick

The user is informed about the removal/insertion of the Alarm stick from/into the Busch-free@home® user interface by means of the following message:



7.2.3 Setup



Notice

For a general description of Busch-free@home® and the setup of the myBUSCH-JAEGER account, please observe the corresponding chapters of the see chapter “myBUSCH-JAEGER” on page 53 system manual.

For additional information please also observe the operating and installation instructions for the individual sensors, see the enclosed installation and operation manual and respective product manual or Busch-Smoke alarm detector system manual!

1. Firmware update:

Make sure that your Busch-free@home® system is equipped with software version 2.4.0 or higher.

If this is not the case, carry out an update of your system. The latest firmware version is automatically downloaded when your system is connected to the Internet



Notice

- For an automatic Firmware update, the function "Download new Firmware automatically" must be activated.
- The latest firmware version can also be downloaded manually at <http://freeathome.de/firmware>.
- Note also that the panels must contain the latest Firmware version; see the corresponding instructions in the product manuals.

2. Insertion of Alarm stick

Insert the Alarm stick into one of the two USB ports of the Busch-free@home® System Access Point 2.0.



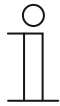
Notice

If the System Access Point is installed in a distributor case, the enclosed USB extension can be used to insert the Alarm stick at the outside of the distributor case. The distributor case can remain closed.

3. Installing alarm devices of the radio network:

The radio networking of the alarm stick with the alarm devices (detectors) is carried out via the activation of the coding mode:

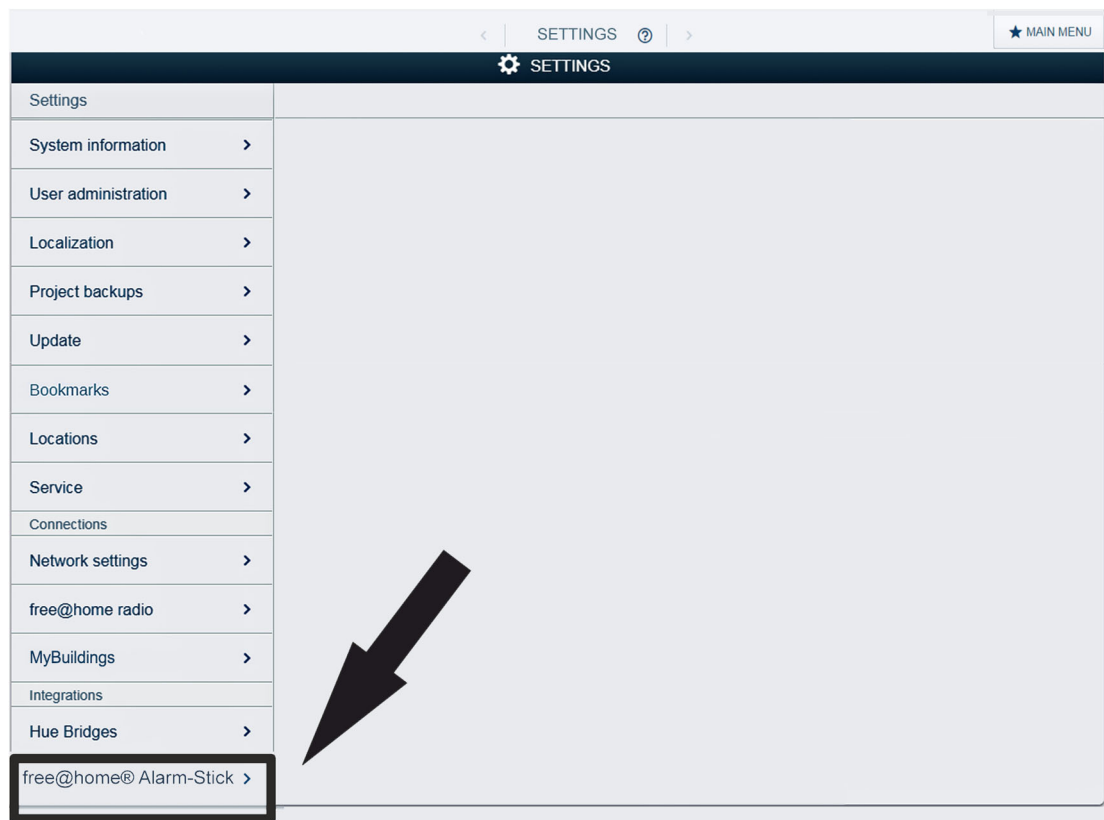
- Log in to the Busch-free@home® user interface.



Notice

In order to make all necessary settings, you require the authorisation level "Installation".

- Open the "Alarm stick" command in the "Settings" menu.



- Activate the coding mode of the alarm stick by activating the "Activate devices" button.

smoke@home®

Programming an alarm unit

Proceed as follows to program the alarm unit.
Activate the coding mode of the alarm stick (on the bottom of the page).

1. Press the coding button and keep it pressed until the LED on the radio module lights up red (for radio module 6828) or blue (for radio module 6828/12).
 - Release the coding button as soon as it lights up. The LED then flashes fast consecutively several times. This indicates that the radio module is in coding.
2. Insert the alarm unit in the mounting plate.
 - Inserting activates the coding and with it the search for additional alarm units for 30 minutes.
 - During the insertion of the alarm unit into the mounting plate the red LED of the alarm unit lights up once briefly.
3. Set all other alarm units also into the coding mode and insert them the same way into the mounting plates within 30 minutes.
4. Deactivate the coding mode of the alarm stick.
5. Locate the alarm unit on the floor plan.

Search devices

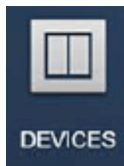
Continue with the radio network connection of the detectors:

- Activate the coding mode of the alarm stick.
- Press the coding button of the alarm stick and keep it pressed until the LED on the radio module lights up red (for radio module 6828) or blue (for radio module 6828/12).
Release the coding button as soon as it lights up. The LED then flashes fast consecutively several times. The alarm detector is now in coding mode for 30 minutes.
- Set all remaining alarm detectors also into the coding mode. All detectors that are now in coding mode network themselves with each other automatically.
- When all detectors have been networked, end the coding mode of the detector with a brief press of the coding button.
- Insert the alarm detectors into the mounting plate and continue with the commissioning on the free@home floor plan.

4. Integration of the alarm devices into Busch-free@home®

The devices connected to the system must be identified, i.e. they are allocated to a room according to their function and are given a practical name. The allocation is made via the "Devices" allocation function of the Web-based user interface of the System Access Point.

- Switch to the "Devices" view and there select a floor.



- In the add bar "Add devices" select the group "Alarm detectors".
- In the "Add devices" bar select the desired application (alarm detector) and pull it via drag-and-drop into the floor plan.
- A pop-up window opens in which the selected application is listed.

Sensor	
Floor	Erdgeschoss
Room	Eingang
Name	Carbon Monoxide Sensor
Serial number	E11252400878
Short ID	ZKF

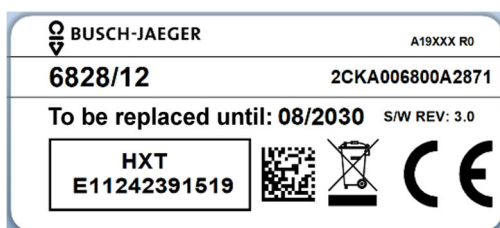
Sensor	
Name	Carbon Monoxide Sensor



Notice

Identification via serial number

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



- Enter an easy to understand name under which the application is to be displayed later, (e.g. "Carbon monoxide detector of ground floor).
- Press the tick at the bottom right. This takes over the entry.



Notice

The settings of the device can be adjusted via the Web-based user interface of the System Access Point.

7.3 Philips Hue

7.3.1 Philips Hue integration

The integration of the Philips Hue system into free@home is carried out with the aid of the Philips Hue API. This means that the commands of the free@home system are "compiled" within the free@home System Access Point, and transmitted from there via the IP protocol to the Philips Hue Bridge. The Philips Hue Bridge then controls the lamps via the Zigbee protocol.

Prerequisites for the integration of the Philips Hue system into free@home are:

- A router [1]
- An operable Philips Hue system [2]
- An operable free@home system [3]

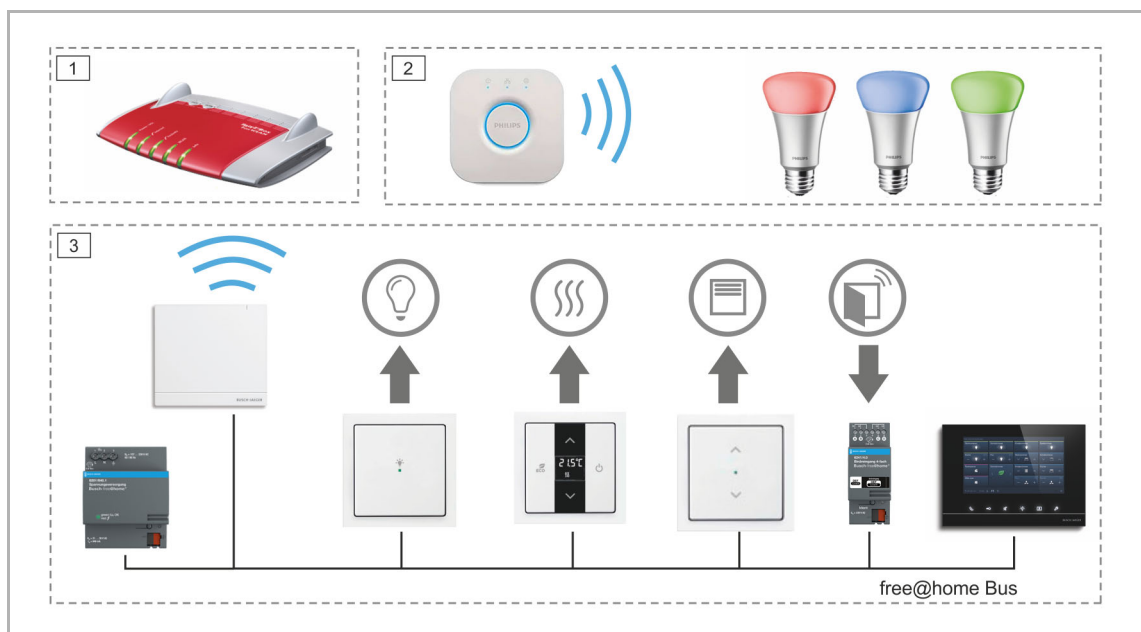


Fig. 105: Philips Hue Integration

7.3.2 Setup of Philips Hue

Preparatory work: Commissioning of the free@home system and commissioning of the Philips Hue system. Both systems must be located in the same network.

1. Carry out a firmware update of the free@home System Access Point to Version 1.2 or higher (via an automatic update or a manual update).
2. Open the free@home user interface and log yourself in as "Fitter".
 - A pop-up window appears "NEW HUE BRIDGE DETECTED".

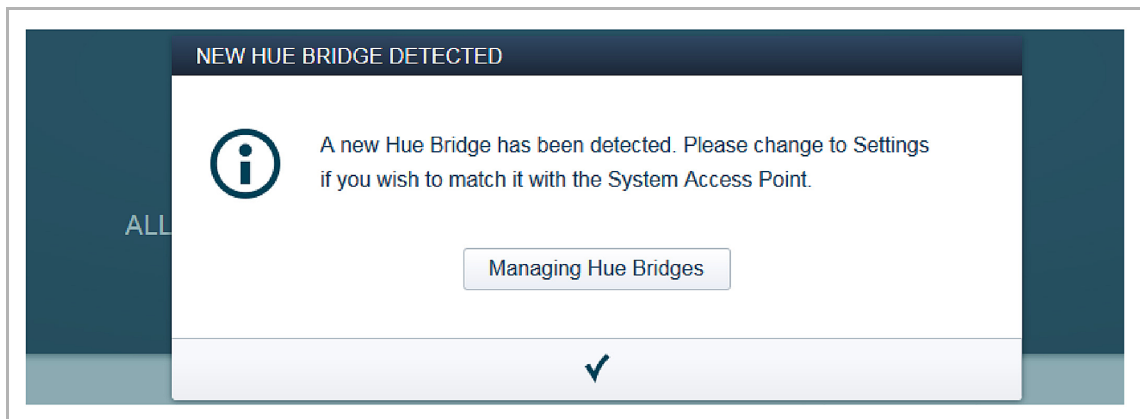


Fig. 106: Hue Bridge pop-up window

3. Click/tap on "Managing Hue Bridges" in the pop-up window.
 - The management of "Hue Bridges" appears in the "Settings". Here several Philips HUE bridges of a free@home system can be managed.

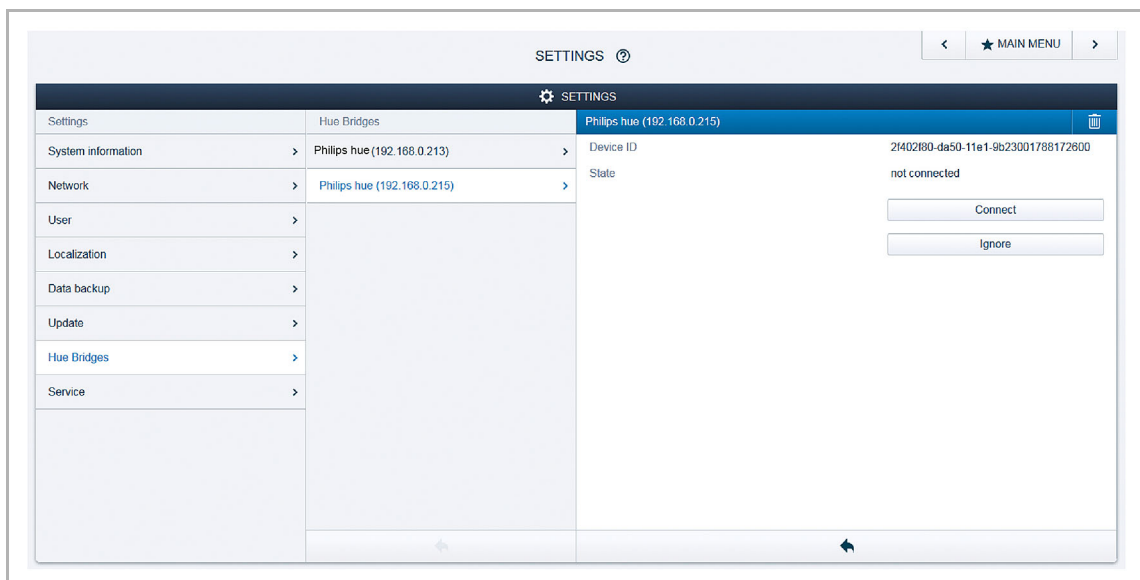


Fig. 107: Philips Hue settings



Fig. 108: Philips Hue identification

If several Philips Hue Bridges are to be available in the network, the Bridge required can be identified by means of your MAC address. This can be read on the Hue Bridge or in the Hue app ("Settings -> My Bridge").

If there is a HUE Bridge available in the network which is not to be managed via free@home, it can be set on "Ignore". This prevents the pop-up window "NEW HUE BRIDGE DETECTED" for the located HUE Bridge to be displayed during each additional a login.

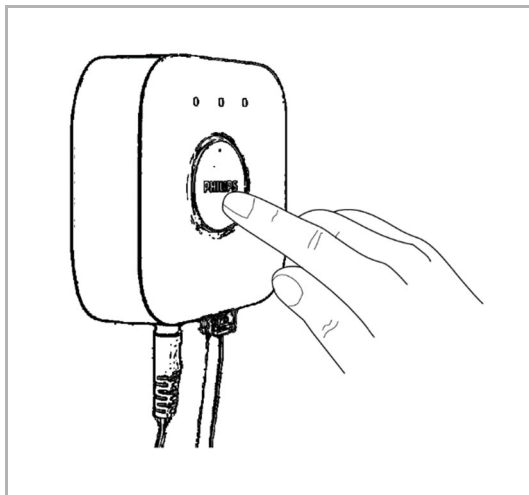


Fig. 109: Confirmation of the Philips Hue Bridge

4. Select the desired Bridge and click/tap on "Connect".
5. To confirm the connection, press the push-button on the Hue bridge.
- This completes the Philips Hue setup.

7.3.3 Allocating links

For all additional steps the Philips Hue lamps behave as already known from the free@home actuators:

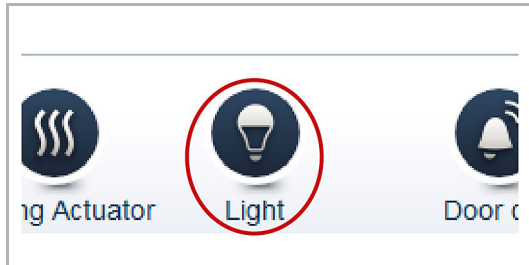


Fig. 110: Philips Hue icon

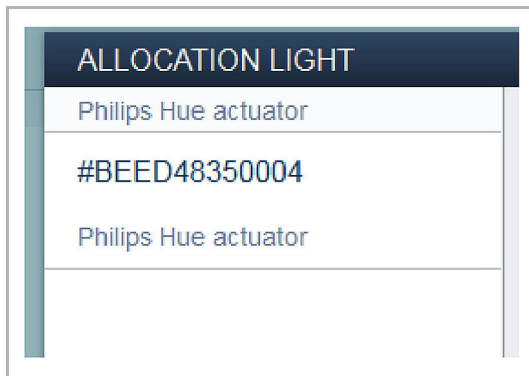


Fig. 111: Philips Hue selection window

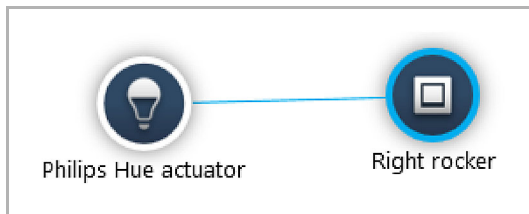


Fig. 112: Philips Hue connection

The Philips Hue lamps appear in the working area of the "Devices" menu under their own icon.

1. Position the lamp icon on the floor plan.
 - A selection window appears with all Philips Hue lamps connected to the bridge.
 - The names of the lamps that were previously assigned during the setup are displayed.
2. Select a Phillips Hue lamp in the selection window.
 - The lamp appears on the floor plan.
3. Connect the lamp with a sensor, or integrate it into a scene.
 - The Philips Hue lamp behaves like a dimmer:
A brief press of the button switches the lamp on or off. A long press of the button dims the lamp brighter or darker.

7.3.4 Parameters

The Philips Hue lamps basically have the same parameters as a dimmer, with the exception of switch-on modes, see chapter “Parameter settings of 1/1gang sensor/dimming actuator” on page 63.

7.3.5 Colour settings

If the Philips Hue lamp is connected with only one free@home sensor, no specific setting of a colour is then possible. The lamp can be switched on/off and dimmed, or switched on with the previously set colour.

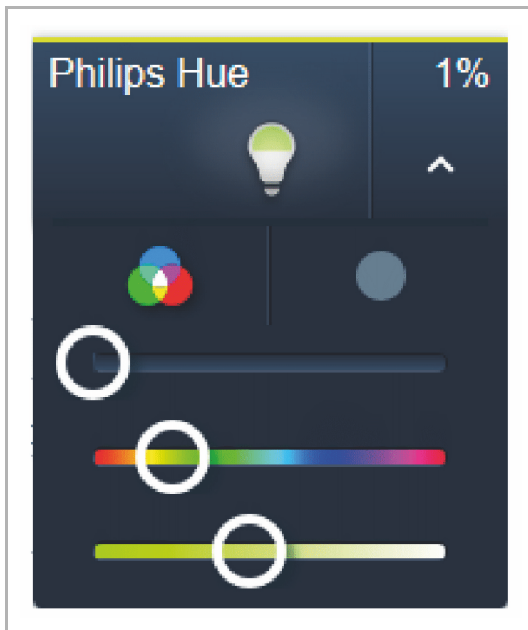


Fig. 113: Philips Hue colour settings

The specific colour of the lamp can be set via the free@home user interface (both via the configuration interface, as well as the control interface), the app, or via the free@home panel (from firmware version 1.1).

If a specific colour is to be set via a sensor:

1. Link the Philips Hue lamp with a scene.
2. Set the desired colour in this scene.
3. Link the scene with the sensor.

7.3.6 Time control

Similar to all actuators, the Philips Hue lamp can also be controlled via the timer. Aside from the brightness, also a colour value can be selected here. By creating several switching times, for example, a sunrise or sunset can be simulated.

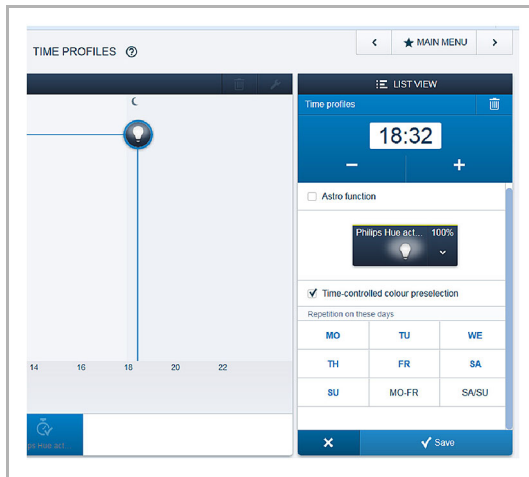


Fig. 114: Philips Hue time profiles

In the "Timing" area the "Time-controlled colour preselection" parameter can be selected for the Philips Hue lamp.

If the parameter is set, the colour with which the lamp is switched on at the next switch-on command is pre-selected at the set time. This, for example, allows you to specify that the bedroom lamp switches on in the morning with cold white and in the evening with a dimmed warm white.

7.3.7 Philips Hue parameter settings

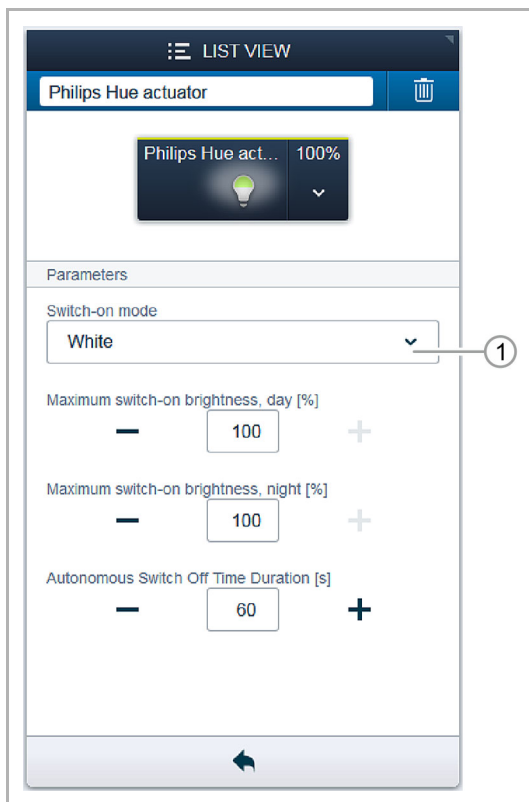


Fig. 115: Actuator settings of Philips Hue lamp

[1] Switch-on mode

- "White": The lamp switches on with 100% brightness white.
- "White with the previous brightness": The lamp switches on with the previous brightness.
- "Previous colour": The lamp switches on with the previous brightness and the previously set colour.

Example: The colour is set via the Philips Hue app and then switched off. At the next activation via free@home, the lamp switches on again with the previous colour.

7.3.8 Sonos loudspeaker

The Sonos Multiroom Audio system can be integrated into the free@home system.

Benefits

- Control of the Sonos devices via firmly installed switches and panels. This makes the use of the smartphone unnecessary. Integration of loudspeakers into scenes. This, for example, permits a "Good morning" scene to be created which plays the favourite radio station.
- Creation of Sonos groups via the free@home panel or via scenes possible.
- Available from Firmware V 2.1.4. (if necessary, update System Access Point 6200 AP-101). A connection to myBUSCH-JAEGER is not required.
- Easy to set up: When a Sonos system has been detected in the IP network, it will be automatically integrated into free@home (similar to Philips Hue).
- New rockers for control elements with suitable printing in all colours.

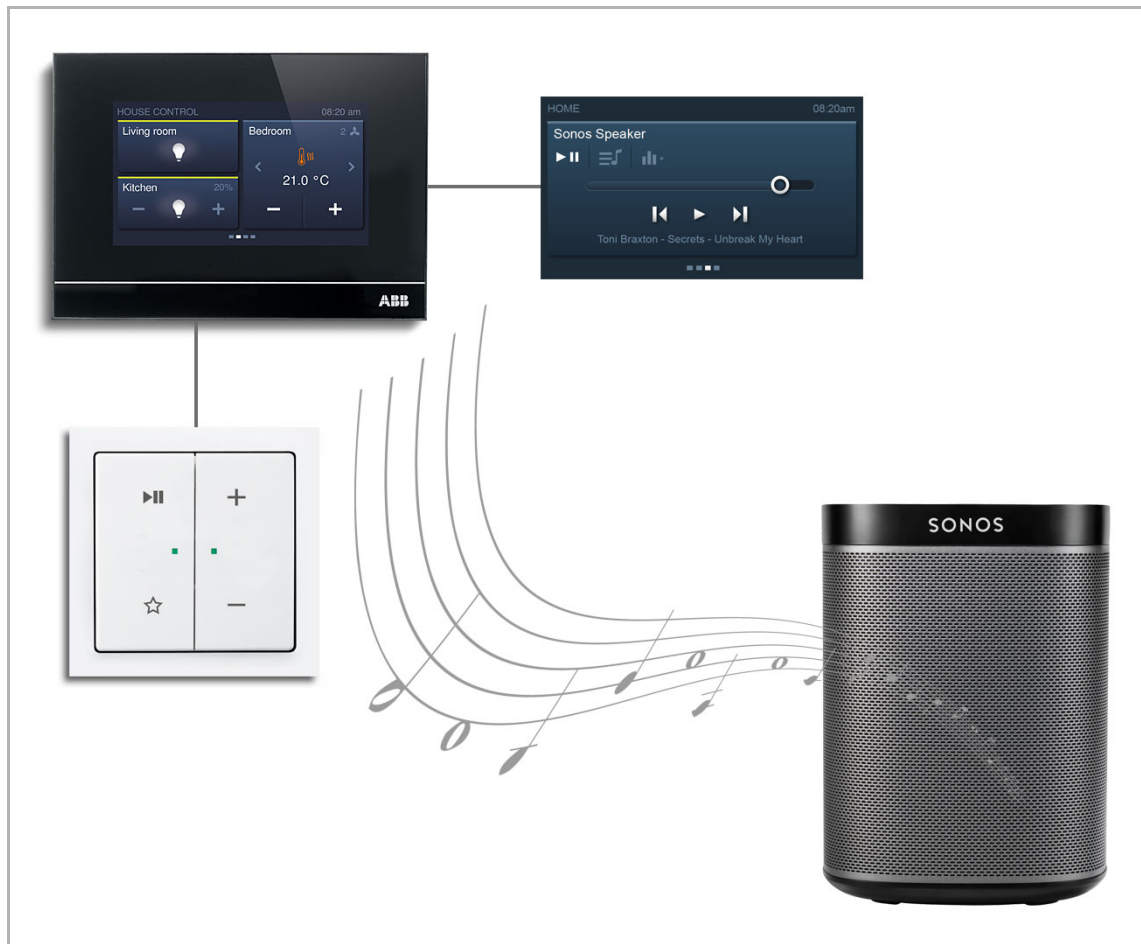


Fig. 116: Control of Sonos loudspeakers with free@home

7.3.8.1 Setting up Sonos speaker

Prerequisites: The Sonos speaker must be set up with the aid of the Sonos app and be located in the same IP network as the free@home System Access Point.



Notice

For some functions it is necessary to define "Sonos favourites" in the Sonos app before they can be used in free@home.

Limitations: free@home can be coupled only with a Sonos system.

1. For connection to a Sonos system, see Fig. 117.

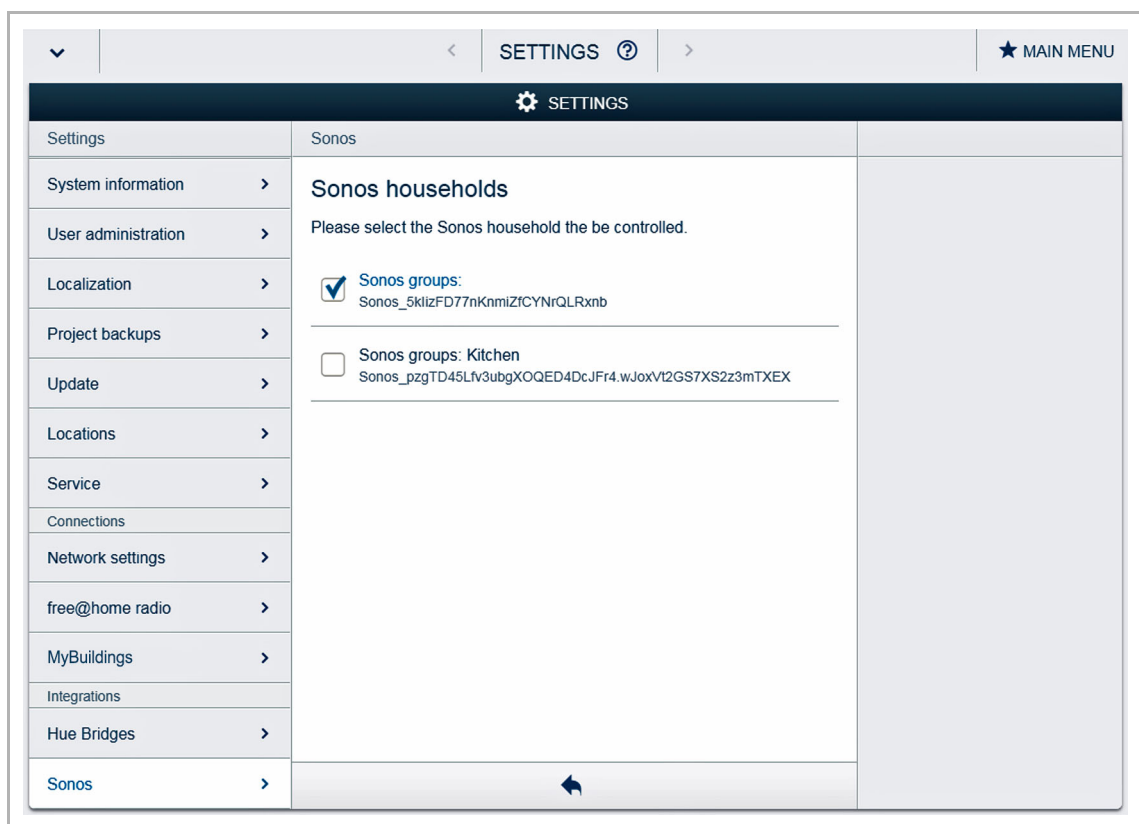


Fig. 117: Establishing a connection to a Sonos system

As soon as a Sonos system is detected in the network, the entry "Sonos" appears in the "Settings" menu. The connection is established automatically. free@home can only be connected with a Sonos system. If several Sonos systems are located in a network, all are displayed under the "Sonos" entry and the user can select the desired system.

2. For allocating the Sonos speakers (Media Player) to rooms in the "Devices" menu, see Fig. 118.
 - The names of the loudspeakers are taken over the way the user has configured them in the Sonos system and cannot be overwritten.

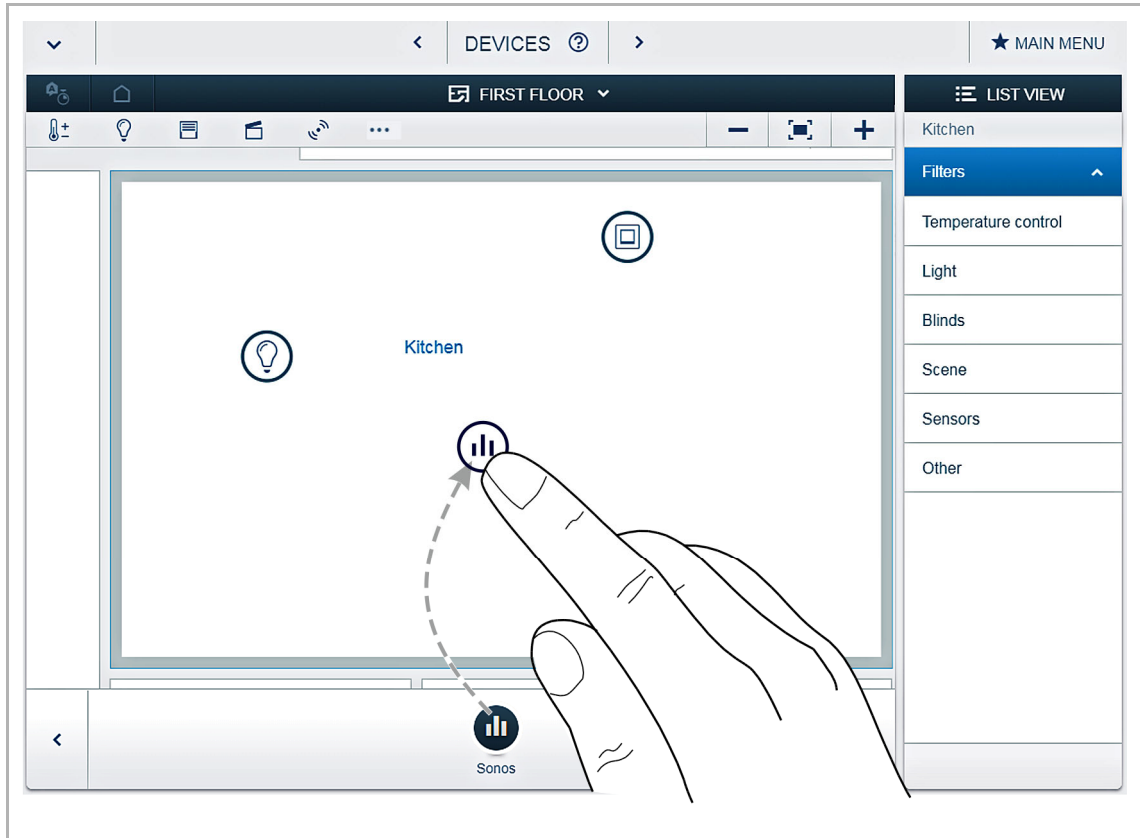


Fig. 118: Allocating Sonos speakers to rooms

3. Linking loudspeakers.
 - The Sonos speakers can now be linked with a 2gang sensor or a scene. In addition, also buttons for the loudspeakers can be configured in the panel configuration.

7.3.9 Operation

7.3.9.1 Operation via app

The icon of a Sonos speaker in the app changes dependent on its status.

The replay of a music title via the loudspeaker can be started or stopped by a brief tap. To start a title, first the music source must be selected.

		
No replay	Replay	Replay in a group

Table 40: Operation via app

7.3.9.2 Operation via control element and panel

The following buttons are used in the free@home app and on the free@home panel. Each button represents a Sonos speaker.

Replay/pause menu

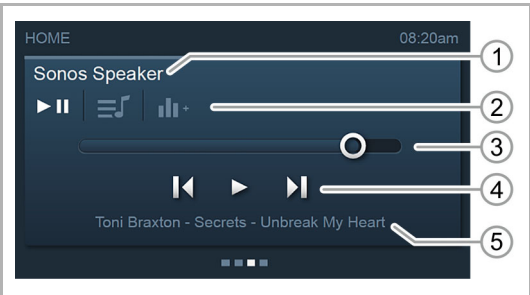


Fig. 119: Replay/pause menu

- [1] Name of the Sonos speaker
- [2] Switchover between
 - Replay/pause menu (selected)
 - Favourites menu
 - Sonos speaker group menu
- [3] Volume of loudspeaker
- [4] Replay/pause, skip
- [5] Current title

Favourites menu

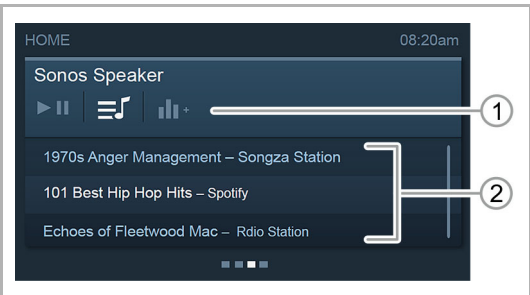


Fig. 120: Favourites menu

- [1] Menu selection of favourites menu
- [2] List of the Sonos favourites
 - The Sonos favourites list must be created in the Sonos app.

Group menu

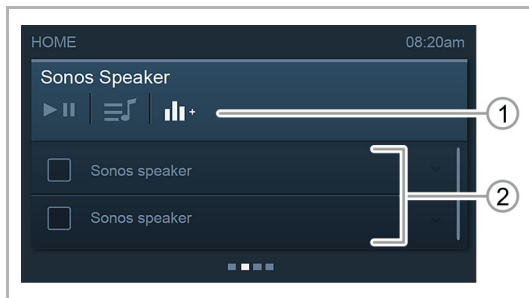


Fig. 121: Group menu

- [1] Menu selection of group menu
- [2] Selection of available Sonos speakers
 - All selected loudspeakers are combined into a group and synchronously play the selected music. The loudspeaker to which the button has been allocated is not displayed in the list and cannot be deselected.

7.3.9.3 Operation via free@home sensor

A free@home sensor with 2gang rocker (Twisted Pair or wireless device, with or without actuator) can be linked with a Sonos speaker. The available functions are then fixed:

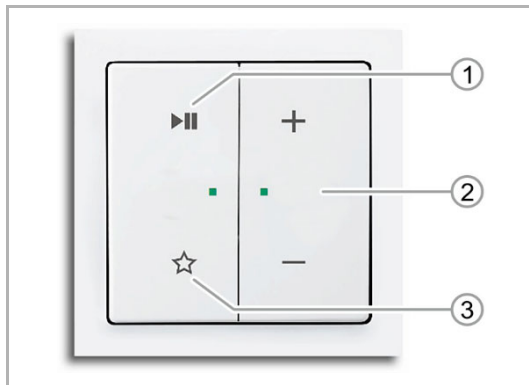


Fig. 122: Sensor with 2gang rocker "Media Player",
See "Rocker order items" on page 58

- [1] Replay/pause (brief press)
Next title (long press)
- [2] Volume:
(+) louder
(-) softer
- [3] Next favourite (brief press)
Previous title (long press)

A free@home sensor can also be linked with several Sonos speakers. This allows the loudspeakers to be started or stopped together. However, no group is formed, which means that the music will not be played synchronously.

7.3.9.4 Integration into scenes

The Sonos speakers can be linked with scenes. The status that is currently set is stored when a scene is created. This, for example, allows a "Good morning" scene to be created into which the loudspeakers are grouped in the kitchen and the living room and simultaneously play the "Coffee house music" replay list.



Note

If the Sonos speakers are to synchronously play the same music in a scene from the one source, the selection of the devices to be grouped must be made in the group menu.

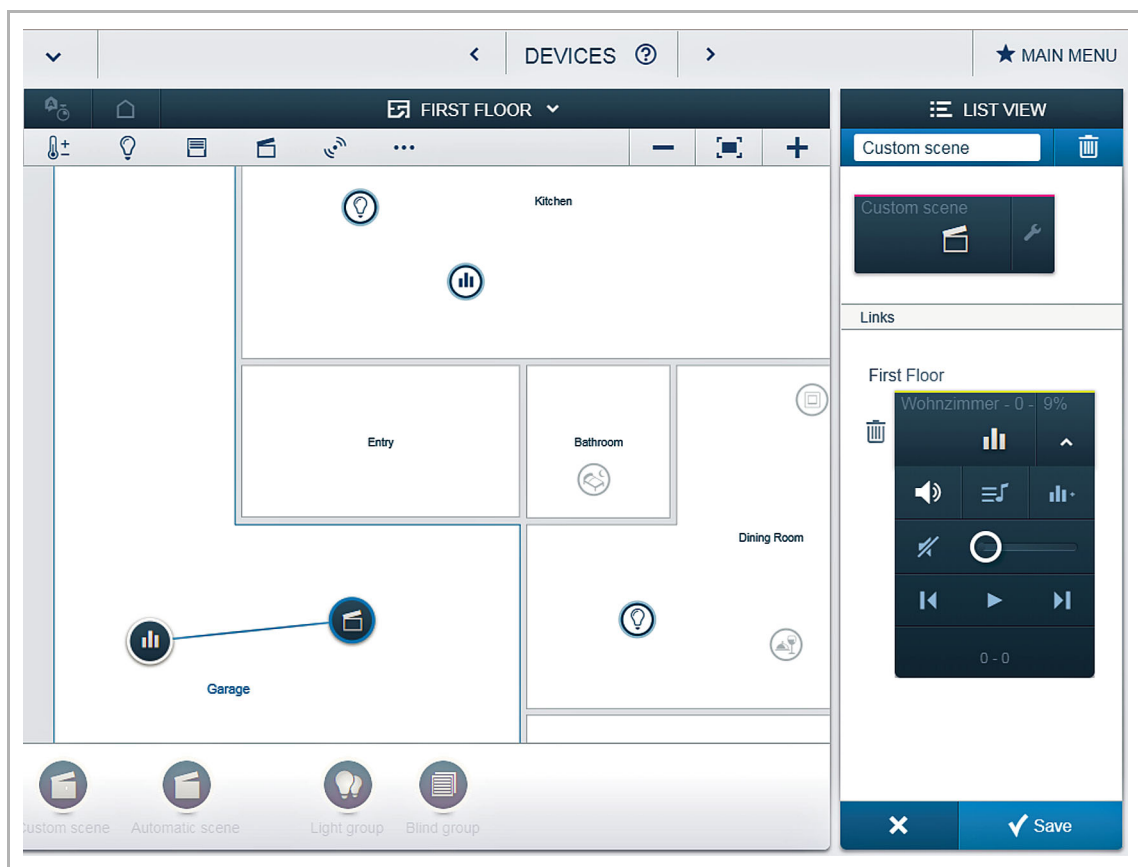


Fig. 123: Linking a Sonos speaker with a scene

The Sonos speakers can also be integrated into an "All off" scene. For this, all loudspeakers must be linked with a scene and the replay stopped on all devices. The replay is then stopped when the scene is triggered.

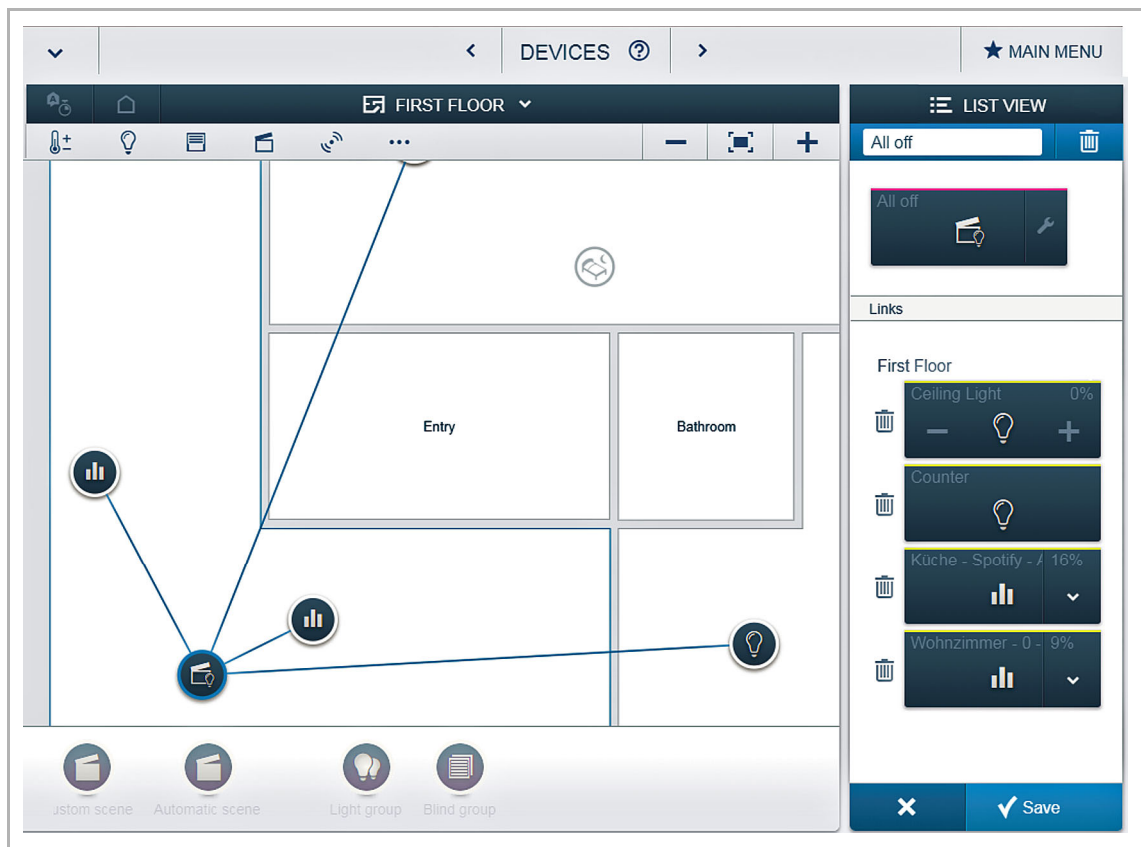


Fig. 124: Integrating Sonos speakers into an "All off" scene

7.4 Geofencing

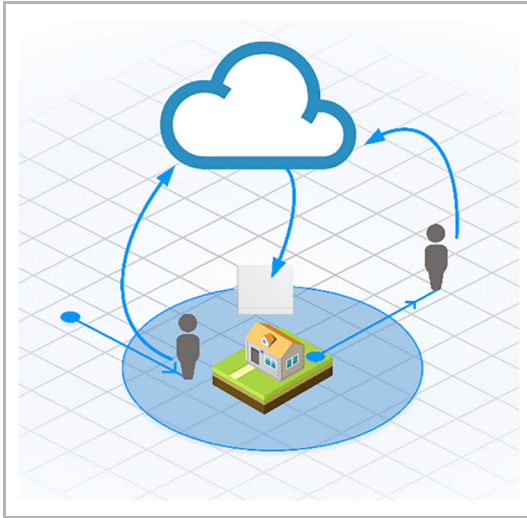


Fig. 125: Geofencing

With the geofencing function the free@home system can trigger an action in the house automatically when a location is entered or exited. For example, a scene can be activated when all residents have left the house. Or the heating can be switched on in the living room when leaving the workplace.

Prerequisites

- A set up free@home system
- A subscribed remote control at myBUSCH-JAEGER
- Internet connection
- A smartphone with Internet connection and installed free@home-App with a set up remote control
- Activated locating services on the smartphone and access authorization of the free@home-App to these services.

7.4.1 Process

The operating systems of the smartphones (iOS/Android) have a predefined location function. This determines the current location of the device via GPS/WLAN.

When the free@home user creates one or several Geolocations, these coordinates are exchanged by the free@home-App with the operating system. When entering or exiting one of these defined locations, the operating system informs the free@home-App about this event. The free@home-App signals the event to the System Access Point in the house of the user via the myBUSCH-JAEGER service.

All coordinates or events are transmitted encoded, to ensure that they are available only for the terminal devices of the user.

No movement data of the user are sent or recorded the free@home-App. Only predefined events, such as "Arrived at/left the workplace", are used for the desired actions.

**Note**

At the first use of the free@home-App the user is asked whether he permits the access to the current location. The access must be permitted for the Geofencing function to be able to be used.

The option "Always" must be selected in the operating system of the smartphone under "Settings" > "Data protection" > "Location services".

The access can also be permitted later.

7.4.2 Setup**Creation of Geolocations**

You can create any Geolocations in the "Settings" menu. A Geolocation is composed of the coordinates of the Geoposition and the surroundings.

A Geoposition is defined via a right mouse click on the map, or via the search for an address (icon "Magnifying glass"). The coordinates (latitude/longitude) can also be entered directly.

The Geofencing boundary, which is to be drawn around the position entered, is specified with the "Radius" parameter (at least 200 m).

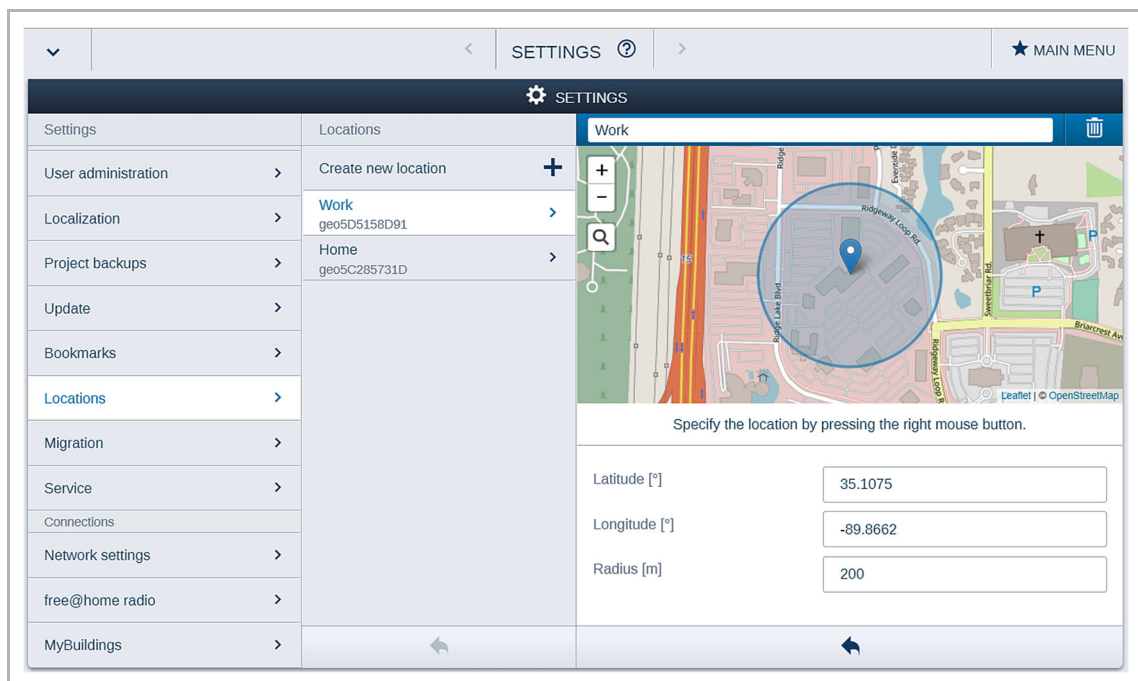


Fig. 126: Creation of Geolocations

Definition of actions with Geolocations

The created Geolocations can then be used in the "Actions" menu as a precondition or event. A precondition or event determines when or how an action is to be carried out.

If several smartphones are registered at myBUSCH-JAEGER, also several smartphones can function as detector simultaneously. For example, you can create an action which switches off the heating when all users have left the Geolocation.

The screenshot shows the 'NEW ACTION' configuration screen. It features a top navigation bar with 'ACTIONS' and a 'MAIN MENU' link. The main area is divided into four columns: 'Presence', 'Event', 'Action', and 'Notification'. The 'Presence' column is active and shows a 'GeoLocation' named 'Work'. Below it, a 'User' list includes 'iPhone' (unchecked) and 'Christians iPhone' (checked), both with the note 'Use to activate the app'. Under 'Presence', 'Enter' is selected with a radio button, and 'Leave' is unselected. The 'Event' column contains a signal icon, 'Action' contains a lightbulb icon, and 'Notification' contains an envelope icon. At the bottom, there are buttons for 'Add event', 'Add actuator', and 'Add action'. A 'New action' button is also present at the bottom center.

Fig. 127: Creation of actions

7.5 Integration of household appliances

The seamless integration of modern household appliances into Busch-free@home® offers a variety of options for convenient use. This makes full interaction possible:

- Control (on/off)
- Query/display status (incl. standby)
- Super cool / Super freeze for refrigerator / freezer
- Display remaining running times
- Add scenes (e.g. everything-off switch)
- Usage within events / actions and time profiles

All networked devices with their icons are displayed in the free@home app and the Busch-free@homePanel 4.3" and can be controlled from there. All functions can also be directly controlled via the wall-mounted push-buttons, which is possible only with Busch-free@home®.



Hinweis

No additional gateway devices are required. Simple commissioning and configuration via myBUSCH-JAEGER and the Busch-free@home® System Access Point.



7.5.1 Prerequisites

- A third-party provider account (e.g. Miele and/or HomeConnect) has been set up and the corresponding household appliances added



Hinweis

Please follow the operating instructions of the corresponding third-party provider!

- A myBUSCH-JAEGER account has been set up
- free@home System is installed
 - Busch-free@home® System Access Point has been registered in the myBUSCH-JAEGER account
- Internet connection



Hinweis

Pop-up blockers must be deactivated in the web browser!

7.5.2 Examples of process scenarios

1. As soon as you wake up, a free@home scene is started: The kitchen light goes on, the sound system is tuned to your favourite radio station and the **coffee machine** begins to heat the coffee.
2. With the voice control command "I'm leaving now!" (additional prerequisite here is the installation of a voice control system), you tell the free@home system that you are leaving the building. All lights are switched off, the heating switches to standby mode and the blinds are closed. And **household appliances** are switched to "Off" or "Standby" status.
3. Some of the **household appliances** are in the cellar: the dryer, the washing machine, the fridge-freezer. I want to monitor the status or the remaining running time of these appliances via information icons on the Busch-free@homePanel 4.3": Is the fridge door closed? When will the dryer finish its cycle? This means you no longer have to keep going down to the cellar to check.

7.5.3 Functions

The integration of household appliances in Busch-free@home® supports the following functions. Each household appliance...

- will be visible as a native device in Busch-free@home®.
- will display a main function on the control element, which the user can use by tapping it.
- will display additional available information on the control element, e.g. remaining running time or faults.
- can be used in events / actions.
- can be used with its main function within a time profile.
- can be positioned on a Busch-free@home® Busch-free@homePanel 4.3".

[1]	Dishwasher	[2]	Stove
[3]	Refrigerator	[4]	Freezer
[5]	Coffee machine	[6]	Dryer
[7]	Washing machine	[8]	Fume hood

Feature	Function	1	2	3	4	5	6	7	8
Control household appliance	on/off	X	X			X	X	X	X
Display status of the household appliance in free@home	Status on/off	X	X	X	X	X	X	X	X
	Operating mode ¹	X	X	X	X	X	X	X	X
	Fault status ²	X	X	X	X	X	X	X	X
Display program information of the household appliance in free@home	Remaining running time	X	X				X	X	
	Start time	X	X				X	X	
Display temperature of household appliance	Actual temperature and setpoint temperature		X	X	X	X			
Activate and display special status modes of the household appliance in and via free@home	Super cool			X					
	Super freeze				X				
Trigger/display alarm in free@home when a specific status occurs	Door open (too long)			X	X				
Transfer functions of the household appliances to a free@home scene	Main function of the household appliance	X	X	X	X	X	X	X	X
Use household appliances in free@home automation functions	Events/actions	X	X	X	X	X	X	X	X
	Time control	X	X	X	X	v	X	X	X

¹ The available operating mode states depend on the respective household appliance : Standby, Preparation (e.g. heating), Ready, Operation, Stopped, Terminated, Process interrupted, Delayed start, Manual intervention required

² The available fault states depend on the respective household appliance.

 Main function in free@home



Note

The available functions of individual household appliances from manufacturers Miele and HomeConnect can deviate from the range of functions offered in Busch-free@home® and may not be compatible. Busch-Jaeger can therefore not guarantee that all functions are made available by partners (third-party suppliers) for every device. For questions about compatibility please contact the support service of the manufacturers.

Additional information about compatibility is available at:

- <https://www.home-connect.com/de/de/service>
- <https://www.miele.de/haushalt/kontakt-45.htm>

Additional information is available at:

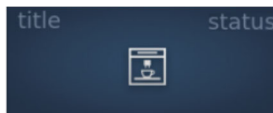
- HomeConnect:
<https://developer.home-connect.com/docs/monitoring/availabilitymatrix>

The main functions of the household appliances can be activated directly via the corresponding buttons. They can also be activated via the round icons in the free@home user interface or free@home app.

The example below shows a typical button. It appears in the web-based free@home user interface, in the free@home app or in the Busch-free@homePanel 4.3".

The buttons all have the same basic structure (see illustration below):

- The name of the appliance is displayed on the top left.
- The status of the appliance is displayed on the top right.
- The icon shows the main function of the household appliance. This icon may change accordingly, depending on the status.



Additional display of functions or information (Figures only show examples):

- Operation

Devices are registered and activated in Busch-free@home®.



Devices are registered and activated in Busch-free@home®. Additional indication possible, that the door is, for example, open.



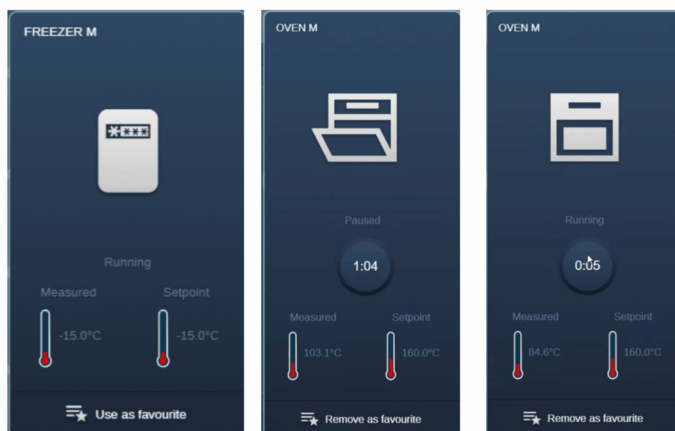
Devices have already been registered in Busch-free@home® and are now deactivated.



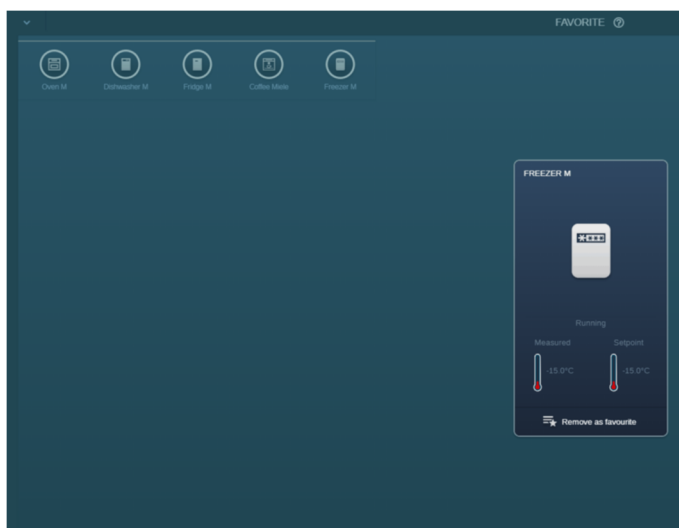
Devices wait for local operation or on the device if the "Remote control function" is not active.



Control element with status indication device after the icon has been pressed long.



Status indication device after the icon has been pressed long -> here via favourites list.

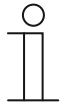


Indication when a house device does not have a standby mode and is switched off. This is the case, for example, with HomeConnect washing machines and dryers. This can also be checked in the app of the manufacturer: "Device is not connected".



7.5.4 Setup

1. Register at <https://my.busch-jaeger.de/>.



Note

The use of HomeConnect, Miele@home Service is free of charge.

It is **not** necessary to subscribe to the fee-based remote access in order to use the integration of household appliances function. In order to use the function, you only have to set up a myBUSCH-JAEGER account; it is not necessary to book remote access* in addition.

The Busch-free@home® remote access gives you reliable mobile access to your free@home system, allows you to use the geofencing function, send push messages and e-mails.



Note

The System Access Point to be used must be registered in the myBUSCH-JAEGER login!

2. Log in to the free@home user interface.



Note

In order to make all necessary settings, you require the authorisation level "Installation".

- Make sure that your free@home system is equipped with software version 2.5.0 or higher. If this is not the case, carry out an update of your system. The latest firmware version is automatically downloaded when your system is connected to the Internet (unless you have deactivated the function "Download new firmware automatically"). If this is not the case, you can also download the latest firmware version under . Please note that the Busch-free@homePanel 4.3" must also be equipped with the latest firmware version (1.0.6). See the corresponding instructions in the product manuals.
3. Under "Settings" → "myBUSCH-JAEGER" → "Connection" and enter your user data for the myBUSCH-JAEGER portal.
Here the "free@home API" must additionally be activated!
 4. Permit access to the pop-up windows in the Internet browser being used.
 5. Activate household appliance function
 - In the myBUSCH-JAEGER login, navigate to the following menu:
"my Home" → "Busch-free@home®"
 - Then click the following tab:
"Extensions & links"



Note

To continue, it is essential to set up a third-party provider account (e.g. Miele and/or HomeConnect) and add the corresponding household appliances to it.

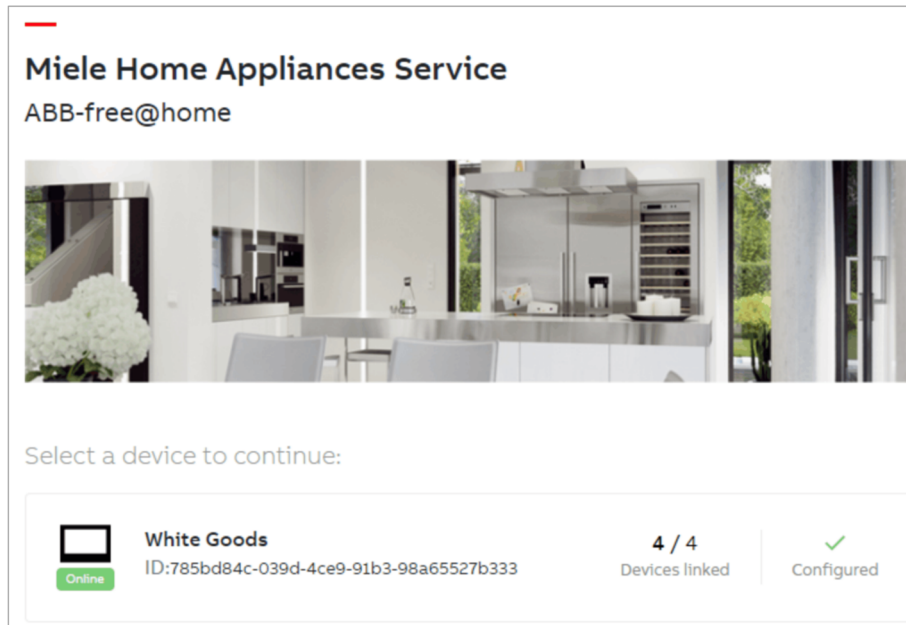
- Now click the corresponding button of the third-party provider (e.g. Miele or HomeConnect)..

- In the pop-up window select the System Access Point with which the household appliance function is to be linked. Click "Continue".



Note

Attention! In the following only images of Miele are shown. These images only serve as example.

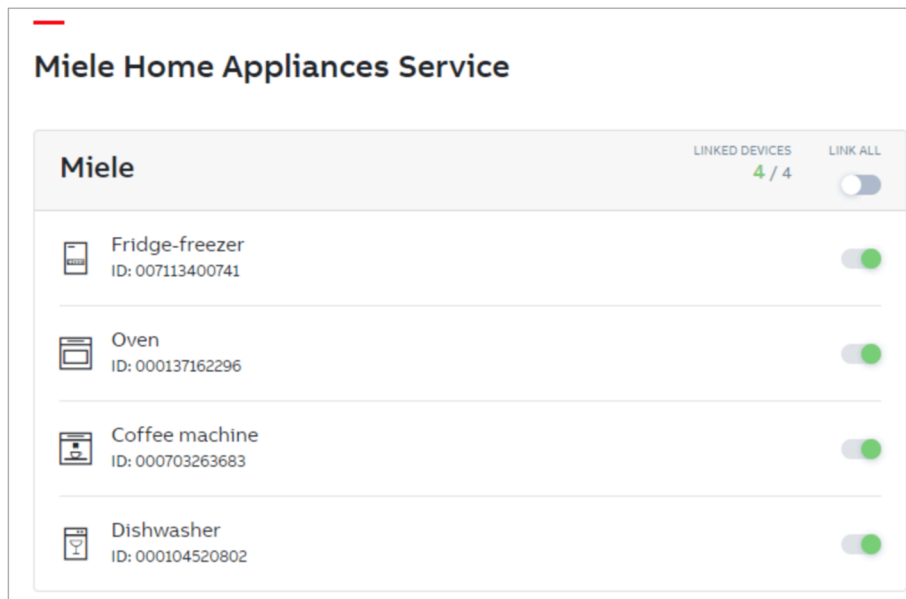


Note

In case the function "free@home API" has not been activated (see previous steps), no connection will be established.

- Now enter the data from the third-party provider account in the input fields. Click then on "Send".

- The following view opens (Caution! This is only an example!). Here, all household appliances which are available via the third-party account are displayed.

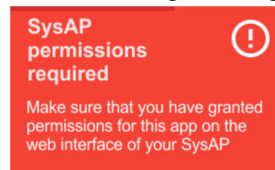


- Checkmark the appliances you wish to integrate into Busch-free@home®.

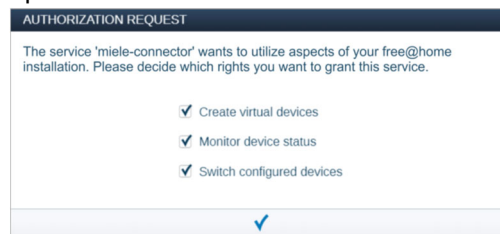


Note

If the following messages appear, switch to the free@home user interface:

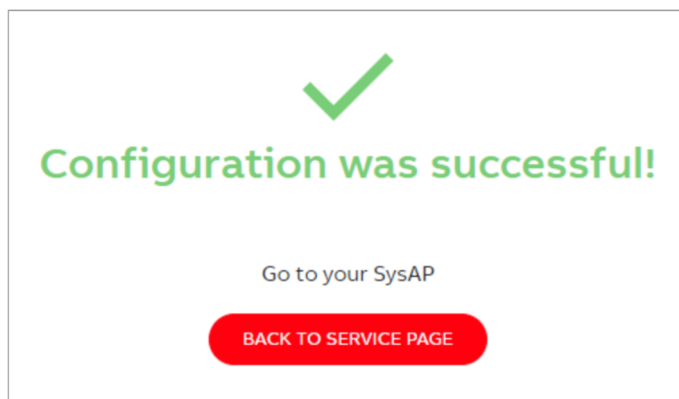


After the change to the free@home user interface the following pop-up widow opens:

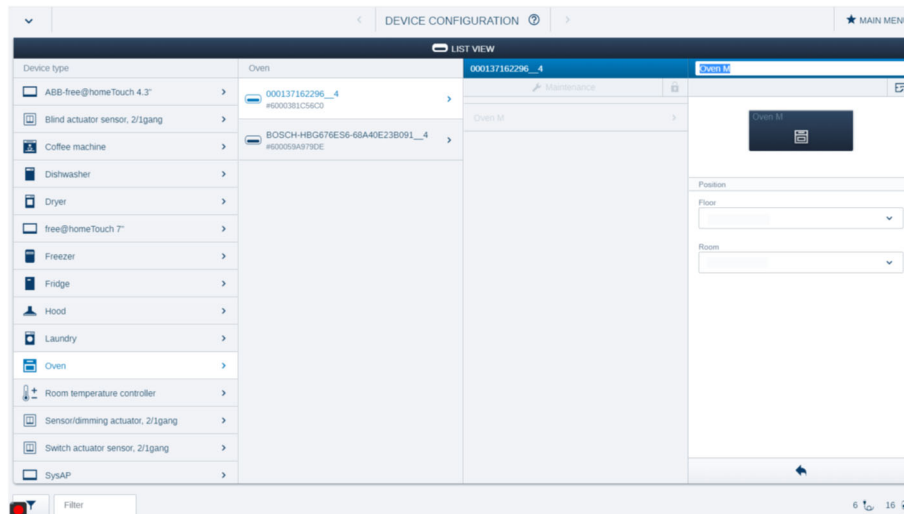


Activate all 3 functions and finally click on the tick.

- Switch back again to the myBUSCH-JAEGER login. Then click on the "Continue" button.
- This concludes the process in the myBUSCH-JAEGER login.

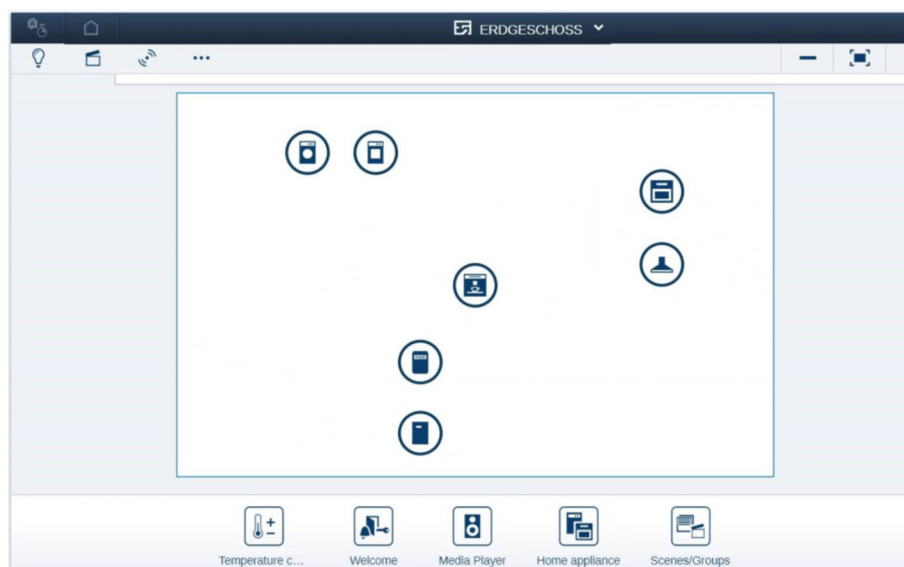


- All linked household appliances are now displayed in the appliances list (device configuration) (example):



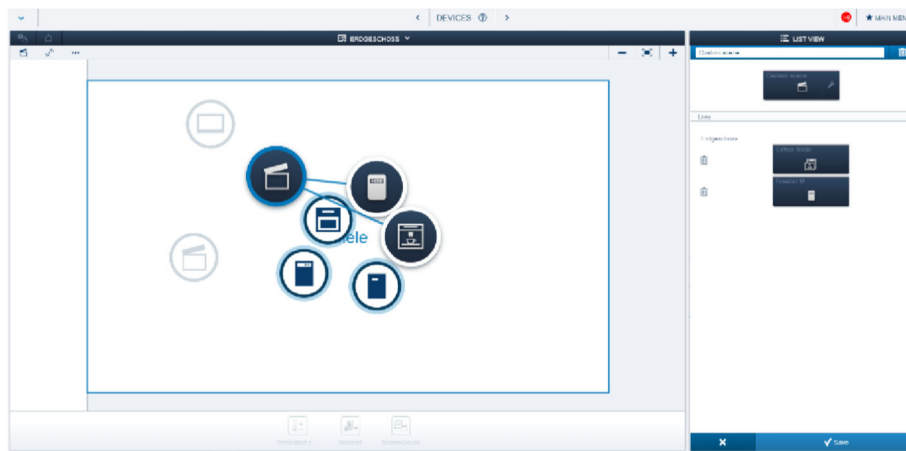
- The existing household appliances can now be used in Busch-free@home®, as can other free@home appliances (see chapter 7.5.3 “Functions” on page 189). The following figures show examples. For an explanation of the general free@home functions the Busch-free@home® system manual can be used.

Localisation in the floor plan via Drag&Drop

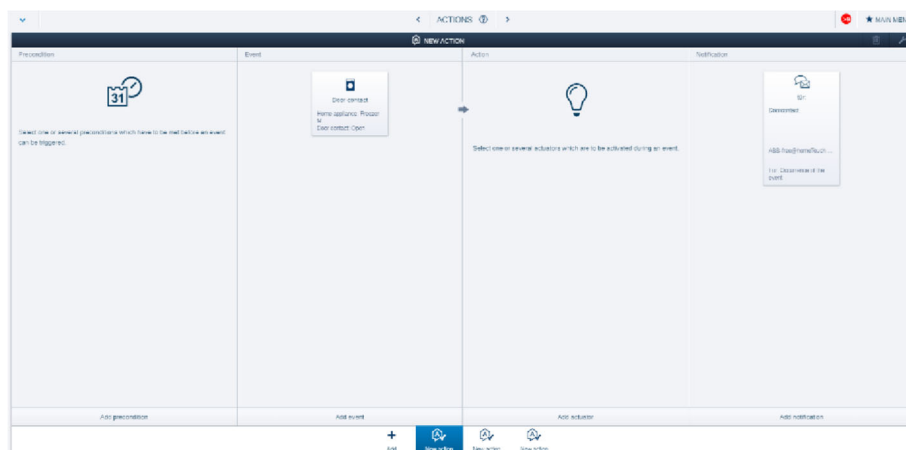


Usage in scenes, events and actions, as well as for time control

- Linking with scenes



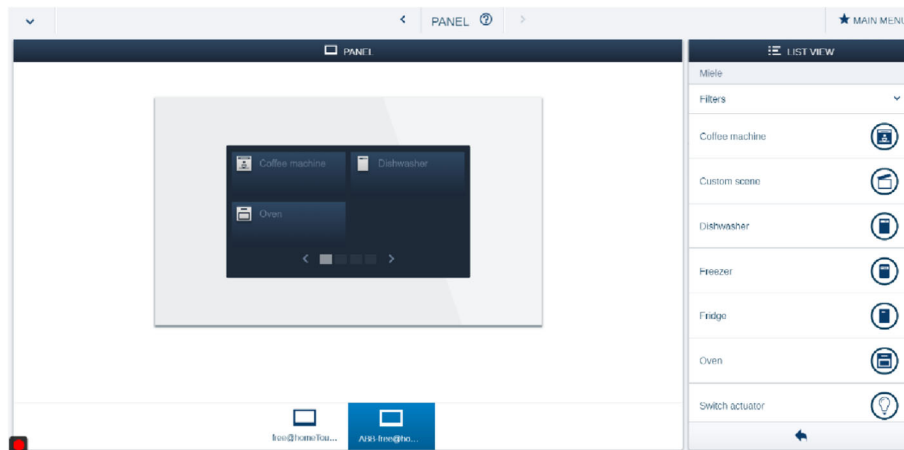
- Actions



- Time control



Integration in the Busch-free@homePanel 4.3"



7.5.5 Notes on using the household appliances function

FAQ / Troubleshooting:

- The household appliances signal that they can no longer be reached

Procedure:

1. Please check the Internet connection
2. Please check in the HomeConnect or Miele app, whether the devices are online there
3. Please check whether the System Access Point is online and connected in myBUSCH-JAEGER.

If these measures do not help, run through the web configurator again, deactivate all devices and conclude the procedure, and then run through the web configurator again and reactivate the devices again.

- The System Access Point is not displayed in the web configurator via the myBUSCH-JAEGER login as being online

Procedure:

1. Restart the System Access Point
2. Use the free@home user interface to ensure that:
 - a connection to myBUSCH-JAEGER has been established
 - the "free@home API" is activatedThen deactivate this function and activate it again. Then update the web configurator via the myBUSCH-JAEGER login and check again whether the System Access Point is now online.

- • The household appliances are not correctly displayed or updated in Busch-free@home®

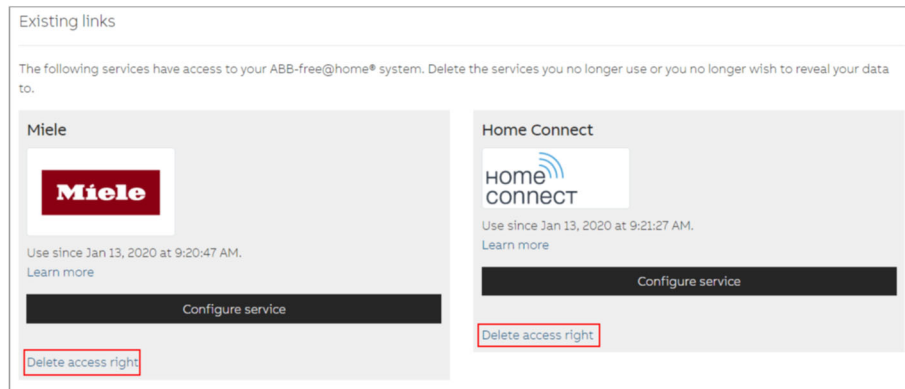
Procedure:

1. Rerun the web configurator via the myBUSCH-JAEGER login and conclude. Leave the setting so
2. If this does not help, run through the web configurator again, deactivate all devices and conclude the procedure, and then run through the web configurator again and reactivate the devices again

- There is no reactio

Procedure:

The user can completely delete the user settings for the service in the myBUSCH-JAEGER login (delete access rights) and then run the web configurator through again.



This does not delete the household appliances and their configuration in Busch-free@home®.

Special notes:

- Due to the Cloud connection and the Internet access, the System Access Point should be operated via the LAN connection and not via WLAN.
- A stable WLAN for household appliance must be ensured.
- If problems arise with the household appliances in Busch-free@home®, first always check the status in the apps of the manufacturers (third-party supplier account) to ensure that there is no error on the part of the partners (third-party suppliers).
- The "Remote control" function must always be activated on every household appliance to ensure that the integration functions.
- After an update or installing backups it can take up to 10 minutes until the household appliances are synchronized again with Busch-free@home®. If this is not the case, as a remedy, run through the web configurator again, deactivate all devices and conclude the procedure, and then run through the web configurator again and reactivate the devices again.
- For Miele devices the menu path "Setting -> time of day -> display" must be set to "On" in the device menu.
- Some devices contain an Eco/deep-sleep function. This may have to be deactivated on the device, otherwise the device cannot be taken out of deep sleep and switched on via Busch-free@home®.
In addition, for some Miele devices also the clock must be activated in the device menu under "Settings -> monitor", to prevent the devices from dropping into deep sleep.
More detailed information for the customer is available from the corresponding manufacturer.

Special features of the devices:

The range of functions of household appliances can be limited independent of the basic functionality offered by Busch-free@home®:

- This, for example, makes washing machines and dryers subject to standard conditions to prevent people or objects from being in the device and the device is mistakenly activated remotely.
- Some dishwasher models from Miele cannot be activated/deactivated remotely.
- The door contact of some Miele devices is triggered only in Busch-free@home® when the device is running in the program.

7.6 Migration assistant

7.6.1 Introduction

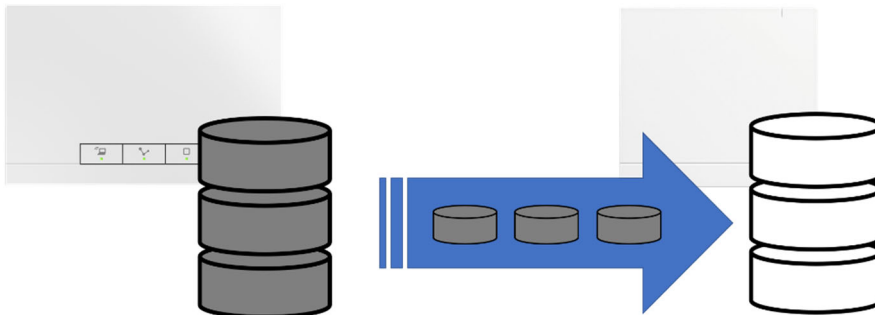


Abb. 128: Replacement of an existing System Access Point

The Busch-free@home® migration assistant makes it easy to replace an existing System Access Point with a new one.

During this process, all configuration data of the existing system access point are transferred to the new device.

To do this, both System Access Points must be in the same home network.

- The configuration data is exchanged directly between the two devices via the network.
- No manual exchange of the data is required.

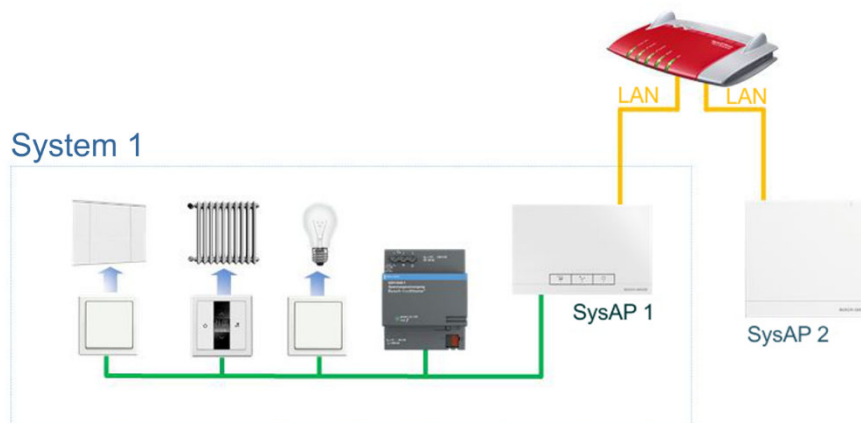


Abb. 129: System overview

- System 1: set up and ready to use; Firmware version 2.5.0 or higher;
 - The device is in the home network
 - System Access Point LED on the left and in the middle glowing green
- System 2: factory new; Firmware version 2.5.0 or higher;
 - Device is in the home network
 - System Access Point LED lights up white
- System 1 and 2 in the same network
- System 1 username and password are known



Hinweis

The Migration Assistant works for all System Access Point generations.

What is transmitted?

All components of the Busch-free@home® project planning:

- floor plan
- Device names
- Device assignment
- Device parameters
- Device links
- Time programs
- Actions
- Panel configurations
- User accounts & passwords
- Busch-free@home® wireless key
- System name
- Links of 3rd party devices (Hue, Sonos)
- IP address (if fixed)
- WLAN SSID and key
- myBUSCH-JAEGER login
- Connect to Amazon Alexa
- Pairing with mobile phones

7.6.2 Prerequisites

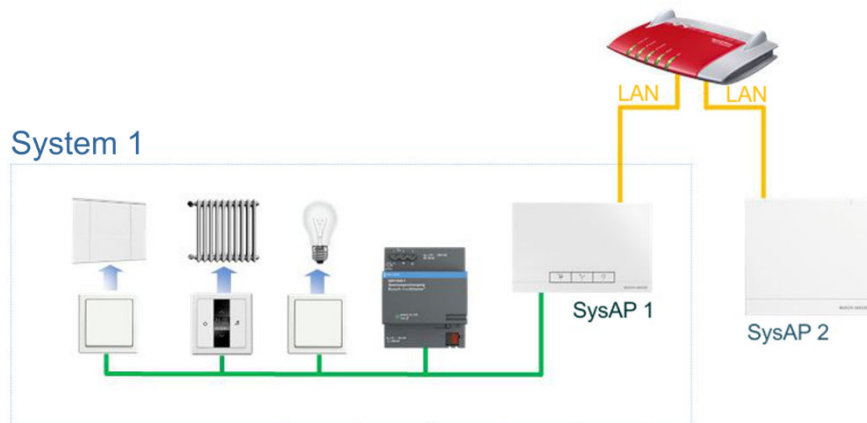


Abb. 130: System overview

- System 1: set up and ready to use; Firmware version 2.5.0 or higher;
 - The device is in the home network
 - System Access Point LED on the left and in the middle glowing green
- System 2: factory new; Firmware version 2.5.0 or higher;
 - Device is in the home network
 - System Access Point LED lights up white
- System 1 and 2 in the same network
- System 1 username and password are known



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- User accounts & passwords
- Busch-free@home® wireless key
- System name
- Links of 3rd party devices (Hue, Sonos)
- IP address (if fixed)
- WLAN SSID and key
- myBUSCH-JAEGER login
- Connect to Amazon Alexa
- Pairing with mobile phones

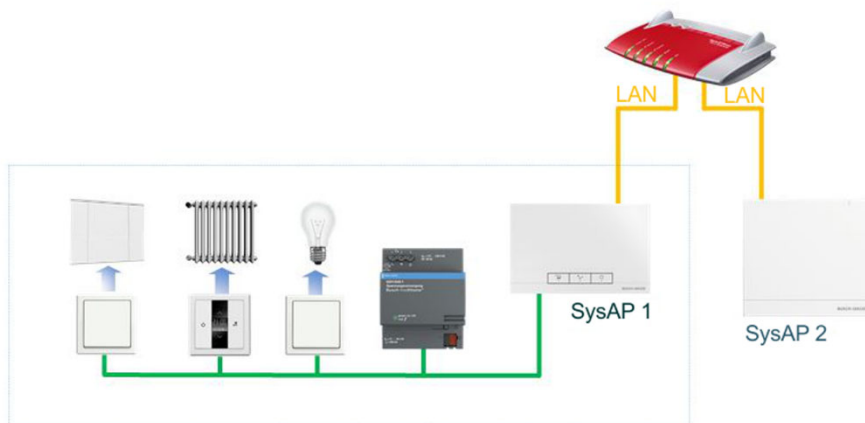


Abb. 131: System overview

- SysAP1 (System Access Point to be replaced) is set up and ready to use; Firmware version 2.5.0 or higher;
 - The device is in the home network
 - System Access Point 6200 AP: LED on the left and in the middle glowing green
 - System Access Point 2.0 SAP/S.13: LED glowing white

- SysAP2 (New System Access Point): Firmware version 2.5.0 or higher;
 - Device is in the home network
 - System Access Point 6200 AP: LED on the left and in the middle glowing green
 - System Access Point 2.0 SAP/S.13: LED glowing white
- SysAP1 and SysAP2 are in the same network
- SysAP1 username and password are known



Hinweis

The Migration Assistant works for all System Access Point generations.

What is transmitted?

All components of the Busch-free@home® project planning:

- floor plan
- Device names
- Device assignment
- Device parameters
- Device links
- Time programs
- Actions
- Panel configurations
- User accounts & passwords
- Busch-free@home® wireless key
- System name
- Links of 3rd party devices (Hue, Sonos)
- IP address (if fixed)
- WLAN SSID and key
- myBUSCH-JAEGER login
- Connect to Amazon Alexa
- Pairing with mobile phones

7.6.3 Procedure

Variant 1

1. Open the Busch-free@home® user interface of the SysAP 2
2. Start the migration wizard

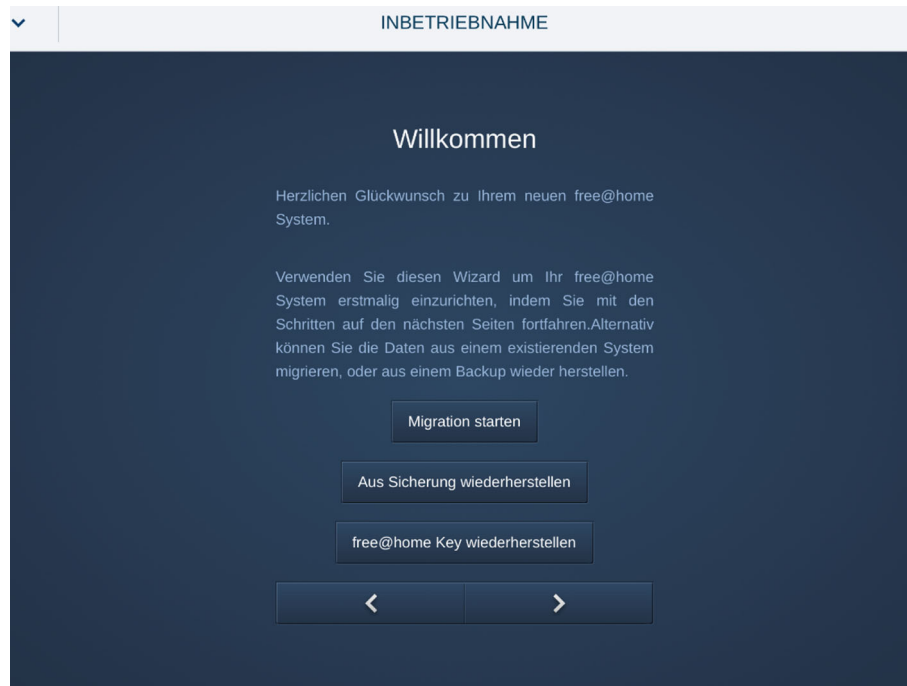


Abb. 132: Start Migration assistant

3. Select SysAP 1 to transfer the configuration.

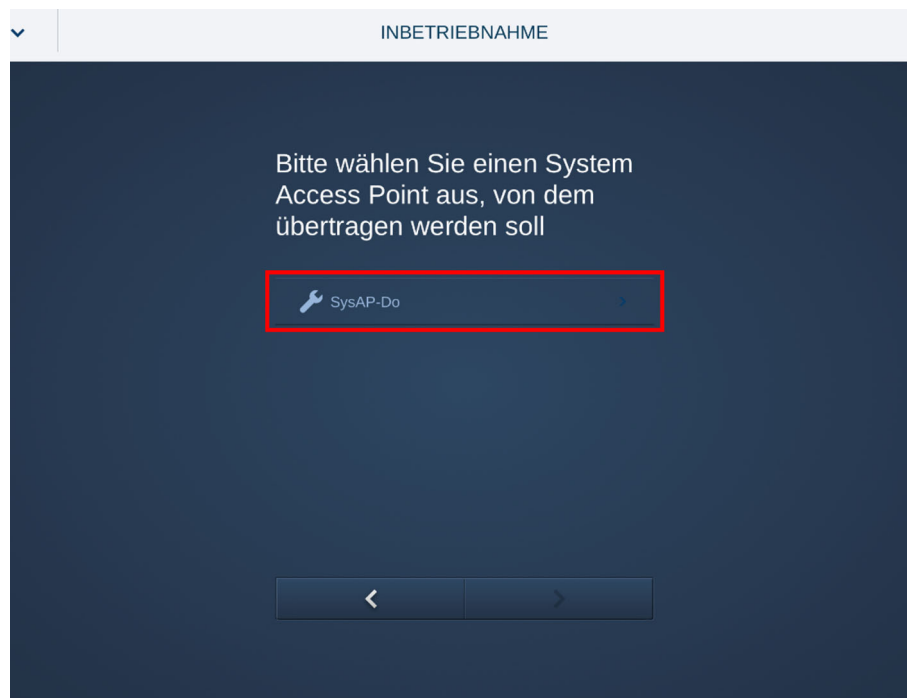


Abb. 133: Select System Access Point

4. Enter the password of the installer user.

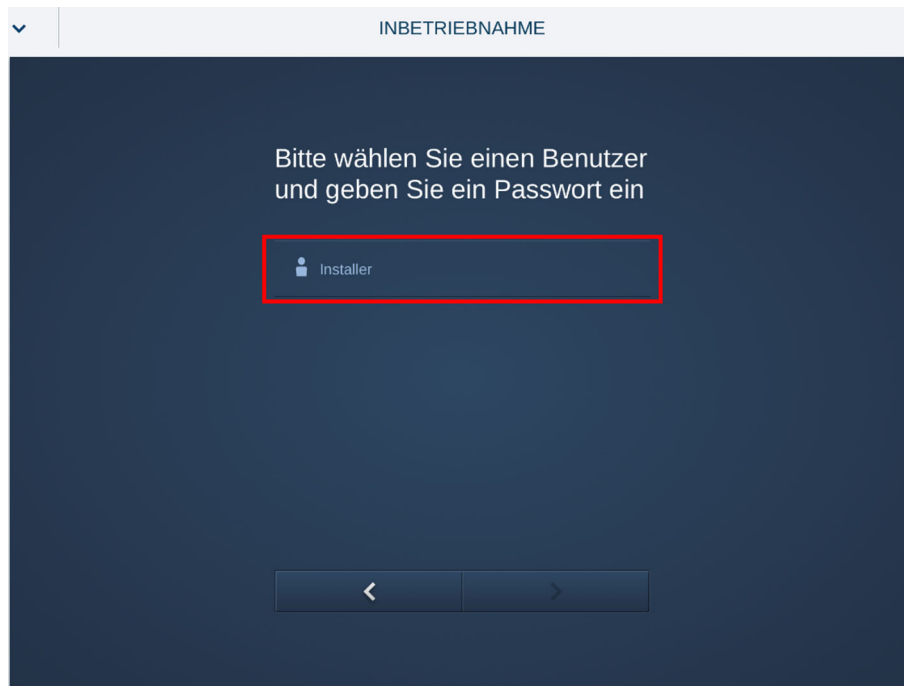


Abb. 134: Name Electrician / User

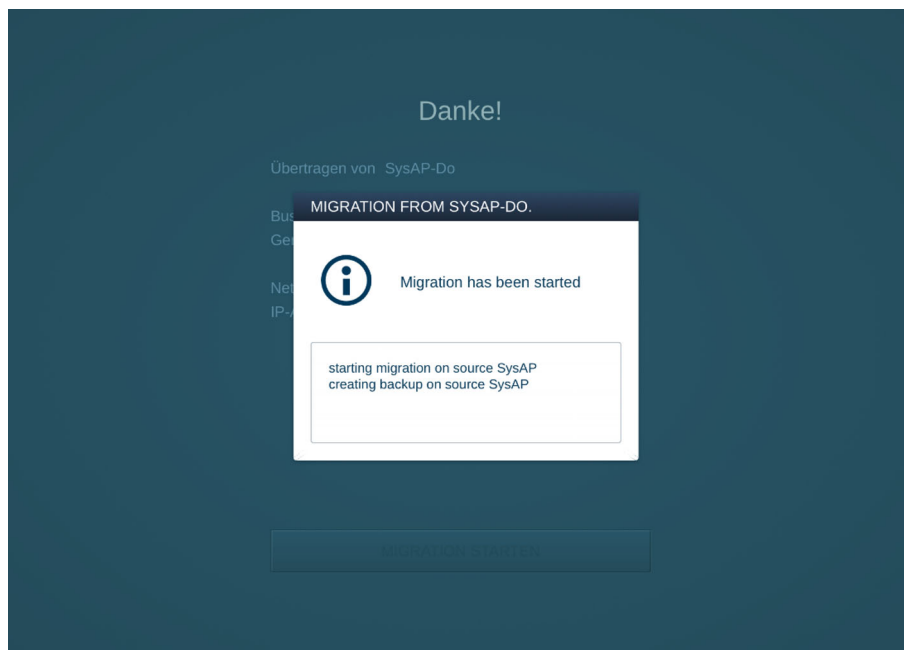


Abb. 135: Migration in progress

5. Remove the SysAP1 from the network and from the bus and connect the bus connection to the SysAP2.
 - The migration is now complete. The SysAP2 now takes over all functions of the old device.

Variant 2

- Alternatively, the Migration assistant could also be started from the Settings Menu:

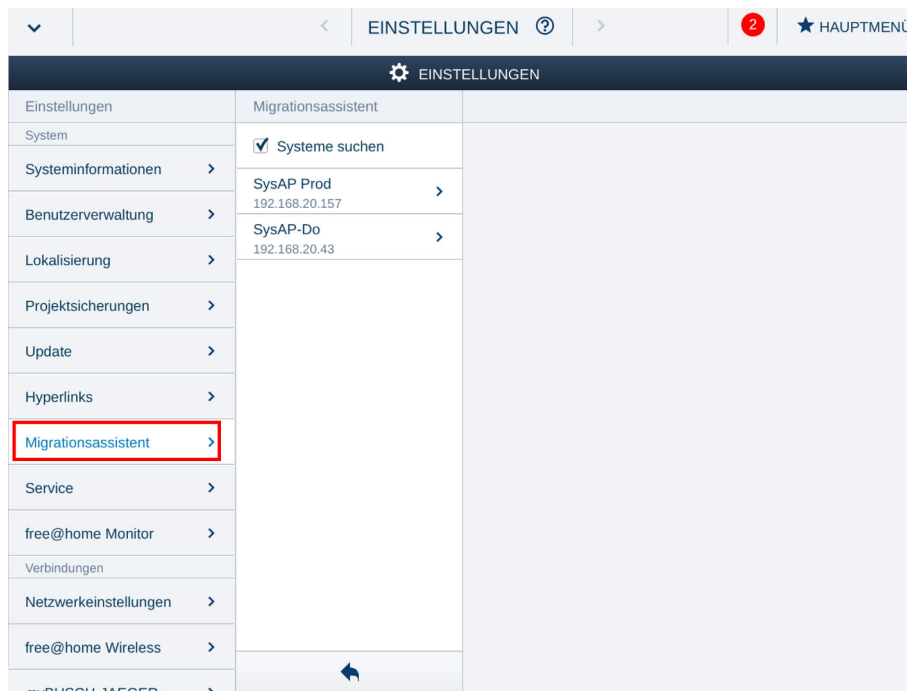
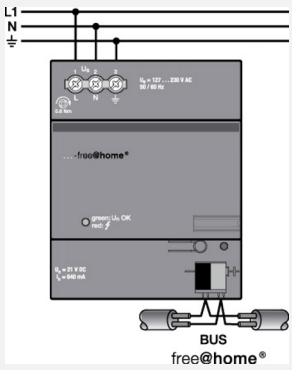


Abb. 136: Starting the Migration Assistant from the settings menu

8 Overview of product range

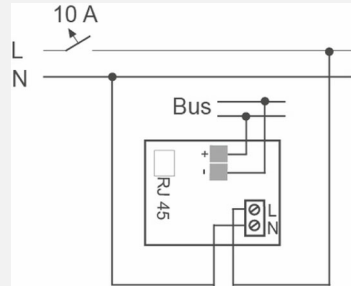
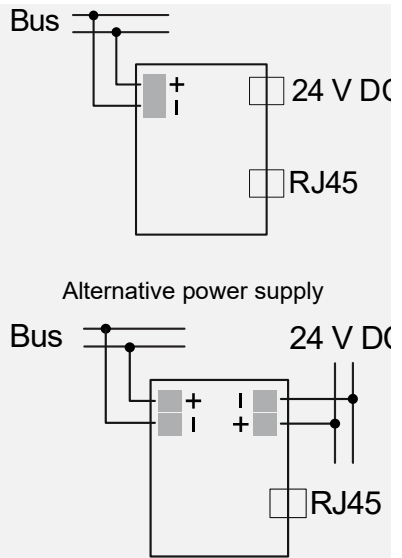
8.1 System devices

Power supply

	Device	Connection
	 6201/640.1 640 mA	

No separate power supply is required for pure wireless systems.

System Access Point

	Device	Connection
	 6200 AP-101	
	 SAP/S.13	 Alternative power supply

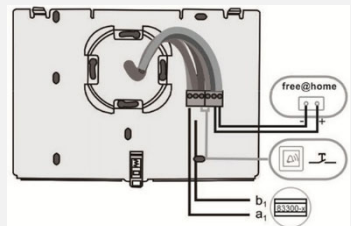
8.2 Displays

Busch-free@homeTouch 7"





83221AP-xxx
16 free@home functions
Busch-Welcome®

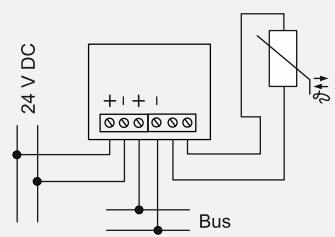


Busch-free@homePanel 4.3"



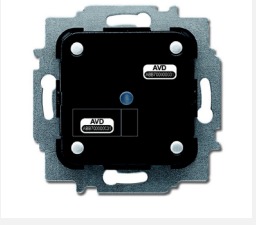
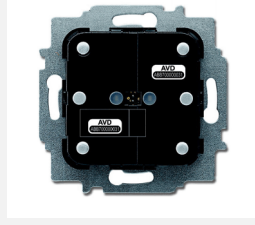
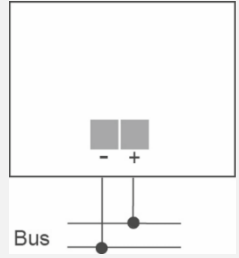


6226-xxx

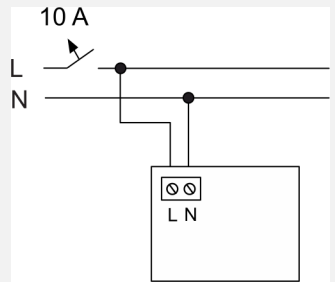


8.3 Sensors

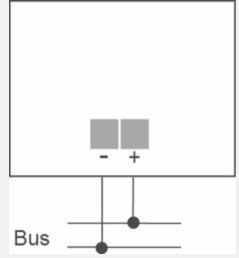
Sensor units

Icon	1gang	2gang	Connection
			
	6221/1.0	6221/2.0	

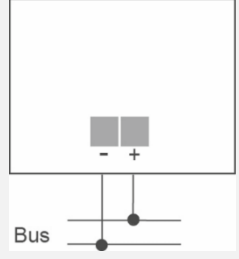
Wireless sensor units

Icon	1gang	2gang	Connection
			
	6221/1.0-WL	6221/2.0-WL	

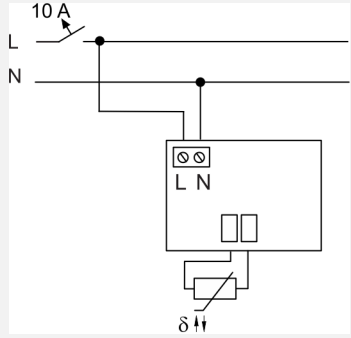
Movement detectors

Icon	1gang	Connection
		
	6225/1.0-...	

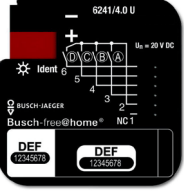
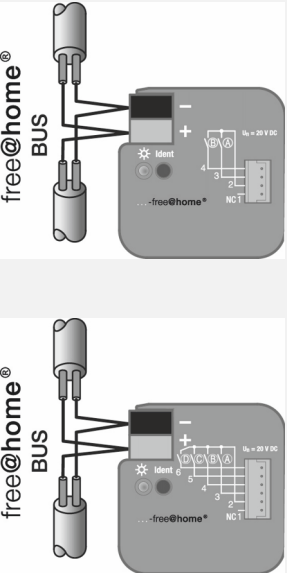
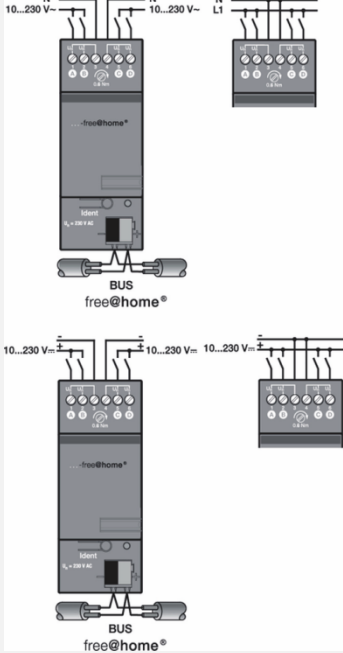
Room temperature controller

Icon	1gang	Connection
	 6224/2.0	

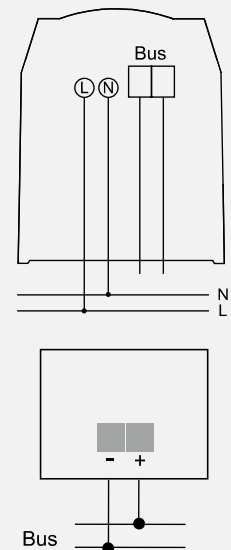
Wireless room temperature controller

Icon	1gang	Connection
	 6224/2.0-WL	

Binary inputs

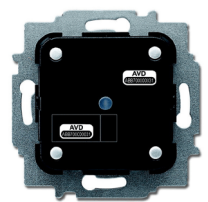
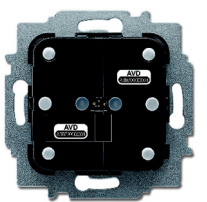
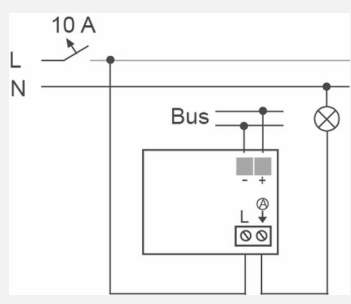
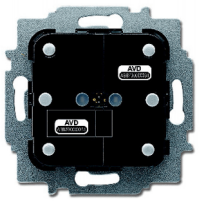
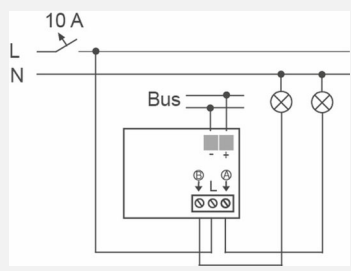
Icon	2gang	4gang	Connection
      			
	6241/2.0 U 20 V DC, 0.5 mA	6241/4.0 U 20 V DC, 0.5 mA	
	—		
		6241/4.0 10 - 230 V AC/DC, 1 mA	

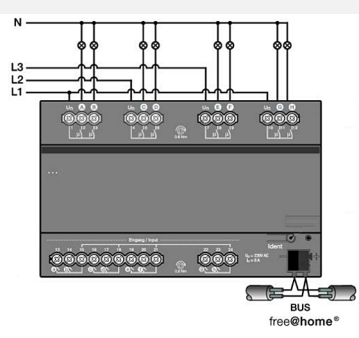
Weather station

Icon		Connection
	 6228 110 - 230 V AC Brightness, wind, rain, temperature	

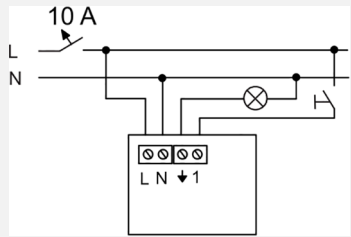
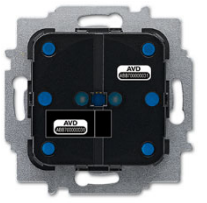
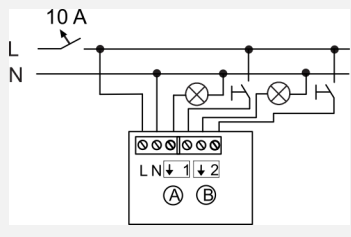
8.4 Sensor/actuator units

Sensor/switch actuator

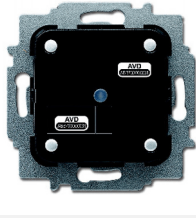
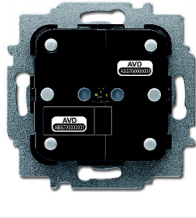
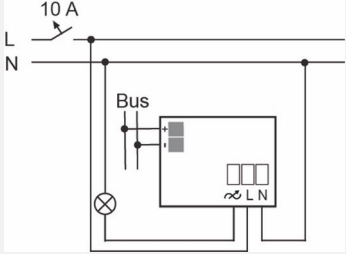
Icon		1gang sensor	2gang sensor	Connection
	1-way actuator	 6211/1.1 1 x 2300 W	 6211/2.1 1 x 2300 W	
	2-way actuator	-	 6211/2.2 2 x 1200 W	

Icon	8gang sensor		Connection
	8-way actuator		
		6251/8.8 8 x 6 A, 8 x 32 V DC, 0.1 mA	

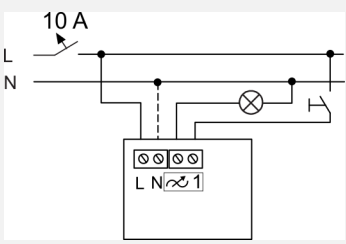
Wireless sensor/switch actuator

Icon	1gang sensor	2gang sensor	Connection
			
	6211/1.1-WL 1 x 2300 W	6211/2.1-WL 1 x 2300 W	
	—		
		6211/2.2-WL 2 x 1200 W	

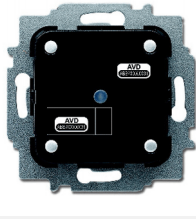
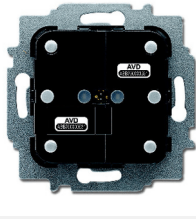
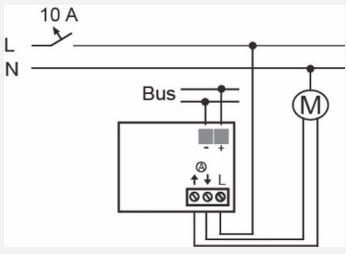
Sensor/dimming actuator

Icon		1gang sensor	2gang sensor	Connection
	1-way actuator			
		6212/1.1 1 x 180 W/VA	6212/2.1 1 x 180 W/VA	

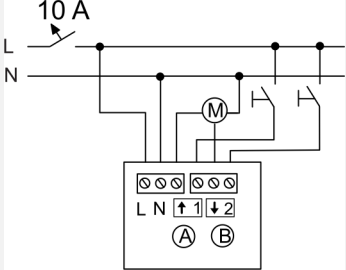
Wireless sensor/dimming actuator

Icon		1gang sensor	2gang sensor	Connection
	1-way actuator			
		6212/1.1-WL 1 x 180 W/VA	6212/2.1-WL 1 x 180 W/VA	

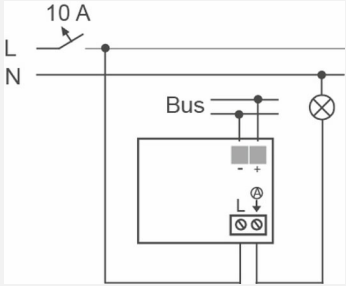
Sensor/blind actuator

Icon		1gang sensor	2gang sensor	Connection
	1-way actuator			
		6213/1.1 4 A, $\cos \varphi = 0.5$	6213/2.1 4 A, $\cos \varphi = 0.5$	

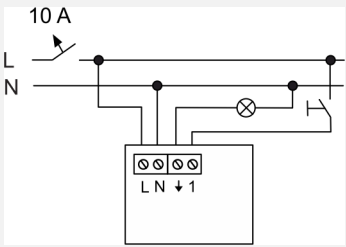
Wireless sensor/blind actuator

Icon		1gang sensor	2gang sensor	Connection
	1-way actuator			
		6213/1.1-WL 4 A, $\cos \varphi = 0.5$	6213/1.1-WL 4 A, $\cos \varphi = 0.5$	

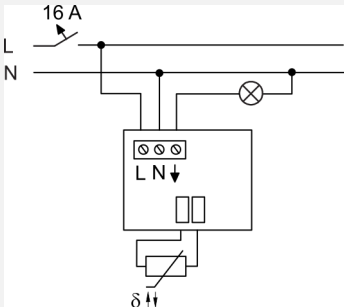
Movement detector/switch actuator

Icon		1gang sensor	Connection
	1-way actuator		
		6215/1.1-... 1 x 2300 W	

Wireless movement detector/switch actuator

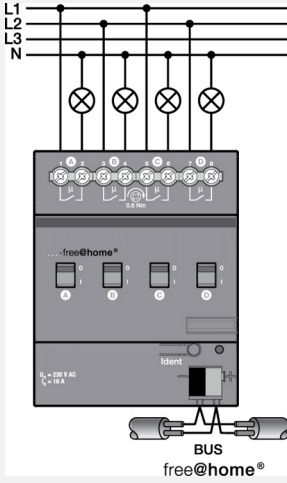
Icon		1gang sensor	Connection
	1-way actuator		
		6215/1.1-...-WL 1 x 2300 W	

Wireless room temperature controller/switch actuator

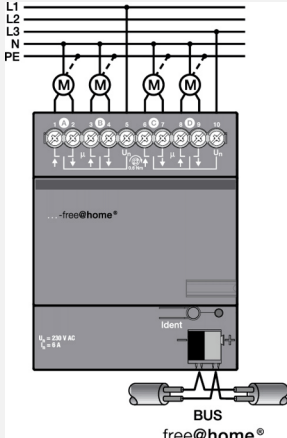
Icon	1gang	Connection
	 6224/2.1-WL	

8.5 Actuators

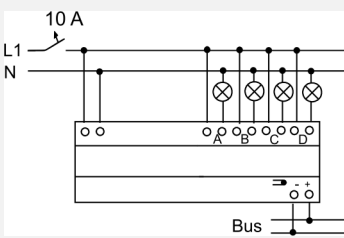
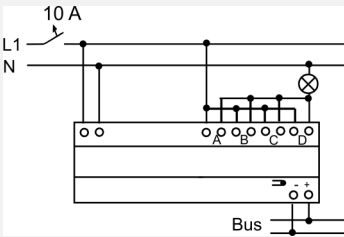
Switch Actuators

Symbol	4gang	Connection
        	 6251/0.4 4 x 16 A	

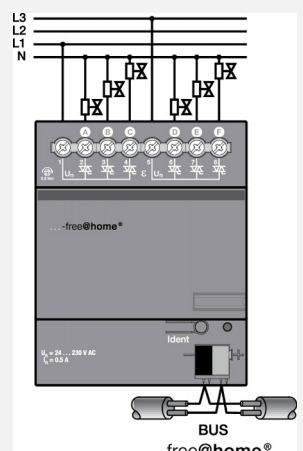
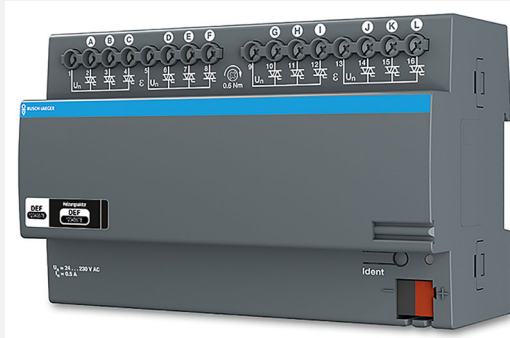
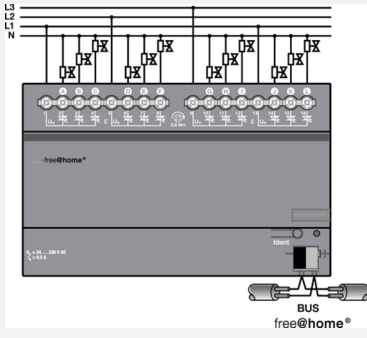
Blind actuators

Symbol	4gang	Connection
	 6253/0.4 4 x 6 A	

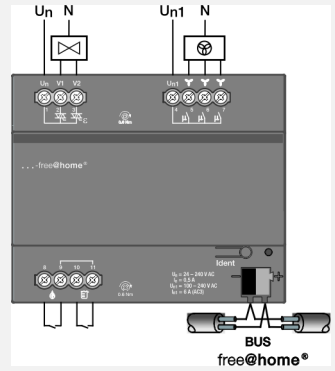
Dimming actuators

Symbol	4gang	Connection
		
	DA/M.4.210.2.1x 4 x 210 W/VA DA/M.4.315.2.11 4 x 315 W/VA	
Symbol	6gang	Connection
		See 6252/0.4-102
	DA/M.6.210.2.11 6 x 210 W/VA	

Heating actuators

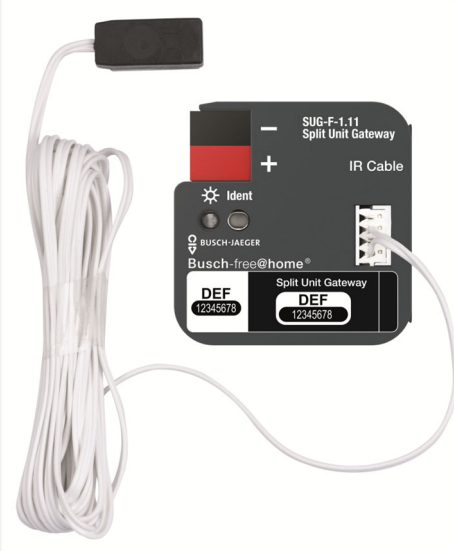
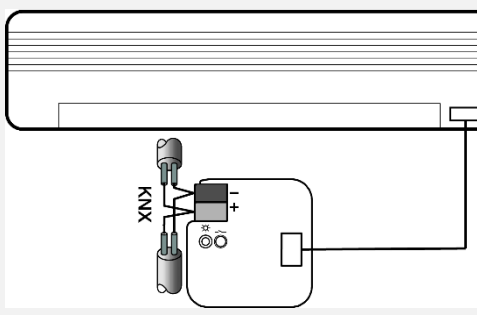
Symbol	6gang	Connection
	 6254/0.6	 BUS free@home®
Symbol	12gang	Connection
	 6254/0.12	 BUS free@home®

Fan coil actuators

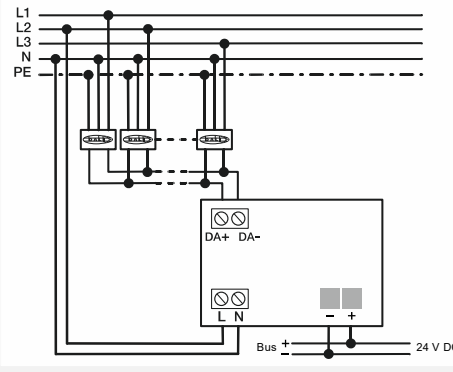
Symbols	6gang	Connection
   	 6255/2.3	 BUS free@home®

8.6 Gateways

Split Unit Gateway

Symbol	device	Connection
	 SUG-F-1.11	

DALI Gateway, REG

Symbol	device	Connection
	 DG-M-1.16.11	

8.7 Wireless battery devices

Radiator thermostats, wireless

Icon	Basic	Comfort
		
	6256/1-WL	6256/2-WL

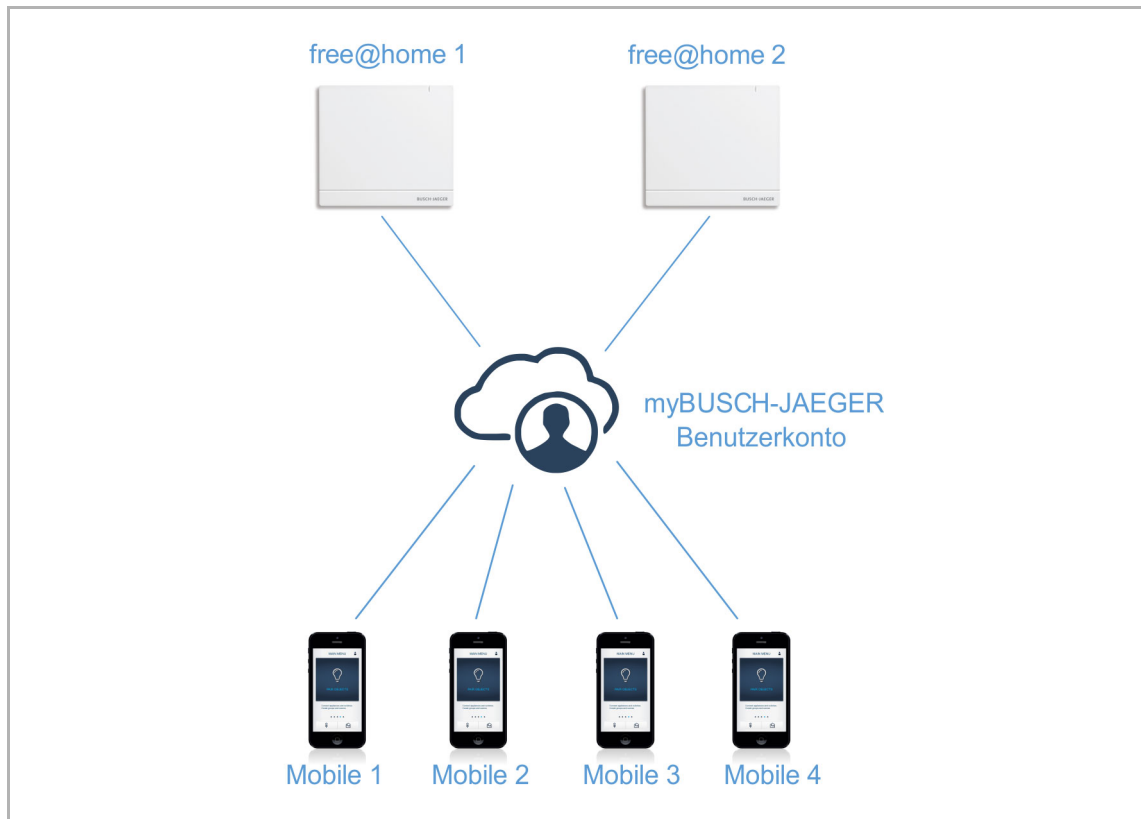
Window sensor, wireless

Icon		Connection
		
	6222/1 AP-xx-WL	

Universal detector, wireless

Icon		Connection
		
	6222/2 AP-xx-WL	

8.8 Covers for switch ranges



NOTE

Please see the electronic catalogue for all possible switch ranges (www.busch-jaeger-catalogue.com).

8.9 Directory of available covers

Article no.	Printing	Model	Orientation	Program	Colour
6230-10-81	–	1-gang	–	future [®] linear	Anthracite
6230-10-83				solo [®]	Aluminium silver
6230-10-84				carat [®] Busch-axcent [®]	Studio white
6231-10-81	Light	1gang	–	future [®] linear	Anthracite
6231-10-83				solo [®]	Aluminium silver
6231-10-84				carat [®] Busch-axcent [®]	Studio white
6232-10-81	Blind	1gang	–	future [®] linear	Anthracite
6232-10-83				solo [®]	Aluminium silver
6232-10-84				carat [®] Busch-axcent [®]	Studio white
6233-10-81	Scene	1gang	–	future [®] linear	Anthracite
6233-10-83				solo [®]	Aluminium silver
6233-10-84				carat [®] Busch-axcent [®]	Studio white
6234-10-81	Dimmer	1gang	–	future [®] linear	Anthracite
6234-10-83				solo [®]	Aluminium silver
6234-10-84				carat [®] Busch-axcent [®]	Studio white
6230-20-81	–	2gang	–	future [®] linear	Anthracite
6230-20-83				solo [®]	Aluminium silver
6230-20-84				carat [®] Busch-axcent [®]	Studio white
6231-21-81	Light	2gang	Left	future [®] linear	Anthracite
6231-21-83				solo [®]	Aluminium silver
6231-21-84				carat [®] Busch-axcent [®]	Studio white
6232-20-81	Blind	2gang	–	future [®] linear	Anthracite
6232-20-83				solo [®]	Aluminium silver
6232-20-84				carat [®] Busch-axcent [®]	Studio white
6233-21-81	Scene	2gang	Left	future [®] linear	Anthracite
6233-21-83				solo [®]	Aluminium silver
6233-21-84				carat [®] Busch-axcent [®]	Studio white
6234-21-81	Dimmer	2gang	Left	future [®] linear	Anthracite
6234-21-83				solo [®]	Aluminium silver
6234-21-84				carat [®] Busch-axcent [®]	Studio white
6231-22-81	Light	2gang	Right	future [®] linear	Anthracite
6231-22-83				solo [®]	Aluminium silver
6231-22-84				carat [®] Busch-axcent [®]	Studio white
6233-22-81	Scene	2gang	Right	future [®] linear	Anthracite
6233-22-83				solo [®]	Aluminium silver
6233-22-84				carat [®] Busch-axcent [®]	Studio white
6234-22-81	Dimmer	2gang	Right	future [®] linear	Anthracite
6234-22-83				solo [®]	Aluminium silver
6234-22-84				carat [®] Busch-axcent [®]	Studio white

6230-10-212	–	1gang	–	Busch-Duro 2000® SI	White
6230-10-214				Reflex SI	Alpine white
6231-10-212	Light	1gang	–	Busch-Duro 2000® SI	White
6231-10-214				Reflex SI	Alpine white
6232-10-212	Blind	1gang	–	Busch-Duro 2000® SI	White
6232-10-214				Reflex SI	Alpine white
6233-10-212	Scene	1gang	–	Busch-Duro 2000® SI	White
6233-10-214				Reflex SI	Alpine white
6234-10-212	Dimmer	1gang	–	Busch-Duro 2000® SI	White
6234-10-214				Reflex SI	Alpine white
6230-20-212	–	2gang	–	Busch-Duro 2000® SI	White
6230-20-214				Reflex SI	Alpine white
6231-21-212	Light	2gang	Left	Busch-Duro 2000® SI	White
6231-21-214				Reflex SI	Alpine white
6232-20-212	Blind	2gang	Left	Busch-Duro 2000® SI	White
6232-20-214				Reflex SI	Alpine white
6233-21-212	Scene	2gang	Left	Busch-Duro 2000® SI	White
6233-21-214				Reflex SI	Alpine white
6234-21-212	Dimmer	2gang	Left	Busch-Duro 2000® SI	White
6234-21-214				Reflex SI	Alpine white
6231-22-212	Light	2gang	Right	Busch-Duro 2000® SI	White
6231-22-214				Reflex SI	Alpine white
6233-22-212	Scene	2-gang	Right	Busch-Duro 2000® SI	White
6233-22-214				Reflex SI	Alpine white
6234-22-212	Dimmer	2gang	Right	Busch-Duro 2000® SI	White
6234-22-214				Reflex SI	Alpine white
6235-81	RTC	–	–	future® linear	Anthracite
6235-83				solo®	Aluminium silver
6235-84				carat®	Studio white
6235-212				Busch-Duro 2000® SI	White
6235-214				Reflex SI	Alpine white

Table 41: Available covers

**NOTE**

Please see the electronic catalogue for all possible switch ranges (www.busch-jaeger-catalogue.com).

9 Notes

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