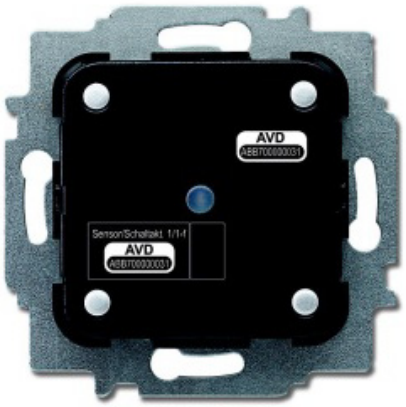
1473-1-8561 | 02.07.2014

Technical Manual

Sensor unit 1gang; 2gang



1gang (SU-F-1.0.1)

2gang (SU-F-2.0.1)

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1 Notes on the instruction manual

Please read this manual through carefully and adhere to the information contained therein. This will assist you in preventing damage to persons and property and ensure reliable operation and long service life of the device.

Please keep this manual in a safe place.

If you pass the device on, also include this manual.

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

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

www.BUSCH-JAEGER.com

www.abb.com/freeathome

2 Safety

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

However, residual hazards remain. Read and adhere to the safety instructions to prevent such hazards.

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

2.1 Used symbols

The following symbols point to dangers involved in the use of the device and provide practical instructions.

Warning

This symbol in connection with the signal word "Warning" indicates a dangerous situation which could lead to immediate death or to serious injury.

Attention - damage to property

This symbol indicates a possibly damaging situation for the product. Non-observance can lead to damage or destruction of the product.

Note...
This symbol indicates information or references to additional useful topics. This is not a signal word for a dangerous situation.

This symbol indicates information on the protection of the environment.

The following symbols are used in the manual to draw attention to special dangers:

This symbol indicates a dangerous situation due to electric current. If such a sign is ignored, it can lead to serious injuries or even death.

2.2 Intended use

This device is a sensor unit for decentralized flush-mounted installation. The sensor unit (with bus coupler) can be assigned to an available switch actuator. The devices serve for switching processes and are not pre-programmed.

The device is intended for the following:

» operation according to the listed technical data,
» installation in dry interior rooms and suitable flush-mounted boxes,
» use with the connecting options available on the device.

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

2.3 Improper use

Each use not listed in chapter 2.2 is deemed improper use and can lead to personal injury and damage to property.

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

The device is not intended for the following:

» unauthorized structural changes,
» repairs,
» use outdoors or in bathroom areas,
» use with an additional bus coupler.

2.4 Target group / qualification of personnel

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

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

The electrical installers must adhere to the valid national regulations in their country governing the installation, functional test, repair and maintenance of electrical products.

The electrical installers must be familiar with and correctly apply the "Five safety regulations" (DIN VDE 0105, EN 50110):

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

2.5 Safety instructions

Warning

Electric voltage! Risk of death and fire due to electrical voltage of 230 V.

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

» Work on the 230 V supply system may only be performed by authorised and qualified electricians.

» Disconnect the mains power supply before installation / disassembly.

» Never use the device with damaged connecting cables.

» Do not open covers firmly bolted to the housing of the device.

» Use the device only in a technically faultless state.

» Do not make changes to or perform repairs on the device, on its components or its accessories.

» Keep the device away from water and wet surroundings.

Attention - damage to property

Risk of damaging the device due to external factors.

Moisture and contamination can damage or destroy the device.

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

3 Information on protection of the environment

All packaging materials and devices bear the markings and test seals for proper disposal.

The products meet the legal requirements, in particular the laws governing electronic and electrical devices and the REACH ordinance (EU Directive 2002/96/EG WEEE and 2002/95/EG RoHS), (EU-REACH Directive and Law for the Execution of the Directive (EG) No.1907/2006).

The device contains valuable raw materials which can be recycled. Used electric and electronic devices must not be disposed of with domestic waste.

» Always dispose of the packaging material and electric devices and their components via the authorized collecting depots and disposal companies.

4 Product description

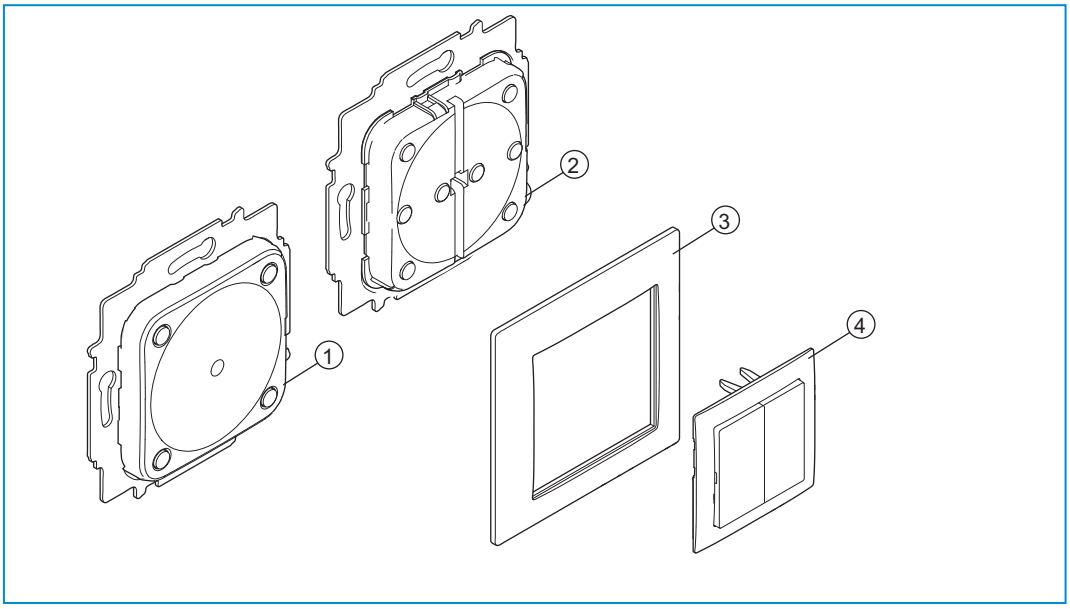


Fig. 1: Product overview

[1] Flush-mounted insert of sensor unit, 1gang (sensor pre-mounted)
[2] Flush-mounted insert of sensor unit, 2gang (sensor pre-mounted)
[3] Frame (not included in scope of delivery)
[4] Rocker (not included in scope of delivery)

This device is a sensor unit for decentralized flush-mounted installation. The sensor unit (with bus coupler) can be assigned to an available switch actuator. The integrated bus coupler makes possible the connection to the free@home bus line.

The devices serve for switching processes and are not pre-programmed. The devices must be parameterised for the use of the functions.

The sensor is integrated in a flush-mounted insert [1 or 2]. The sensor is already pre-mounted.

Additional product features:

» Green LEDs as light for orientation/status indication,
» Exchangeable rockers with the corresponding icons.

4.1 Scope of supply

The scope of supply only contains the flush-mounted insert [1 or 2] with pre-mounted sensor. It must still be completed with a suitable rocker [4] and a cover frame [3].

Note...
Depending on their use, the rockers can be selected with different printing. Additional information about the switch ranges is available in the electronic catalogue (www.busch-jaeger-catalogue.com).

4.2 Type overview

Article no.	Product name	Sensor channels	
SU-F-1.0.1	Sensor unit, 1gang	1	
SU-F-2.0.1	Sensor unit, 2gang	2	

Table 1: Overview of types

4.3 Function overview

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

Icon of the operating surface	Information
	Name: Sensor **Type:** Sensor **Made available by:** Sensor unit **Function:** Control element for the control of free@home functions

Table 2: Function overview

4.4 Device overview of sensor unit, 1gang and 2gang

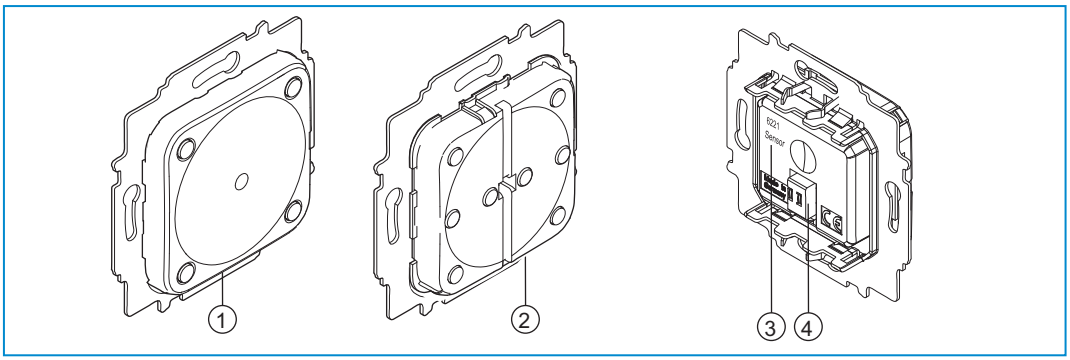


Fig. 2: Device overview of sensor unit, 1gang and 2gang (with sensors)

[1] Sensor unit, 1gang
[2] Sensor unit, 2gang
[3] Type plate
[4] Bus connection terminal

5 Technical data

5.1 Main overview

Parameters	Value
Power Supply	24 V DC (via bus line)
Bus subscribers	1 (12mA)
Connection	Bus connection terminal: 0.4-0.8 mm
Line type	J-Y(St)Y, 2 x 2x 0.8 mm
Wire stripping	6-7 mm
Protection	IP20
Ambient temperature	-5 °C – +45 °C
Storage T°	-20 °C – +70 °C

Table 3: Technical data

5.2 Dimensions

Note...
All dimensions are specified in mm. All device types listed in this manual have the same dimensions.

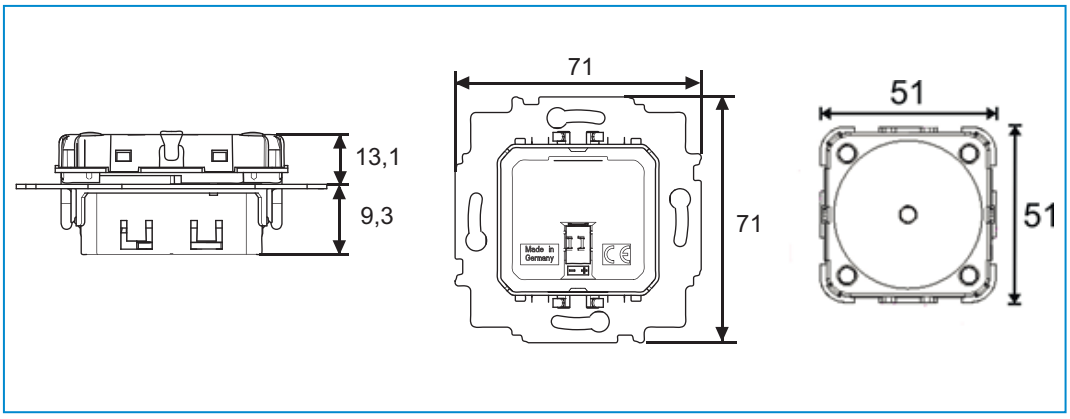


Fig. 3: Dimensions of all described device types

5.3 Circuit diagrams

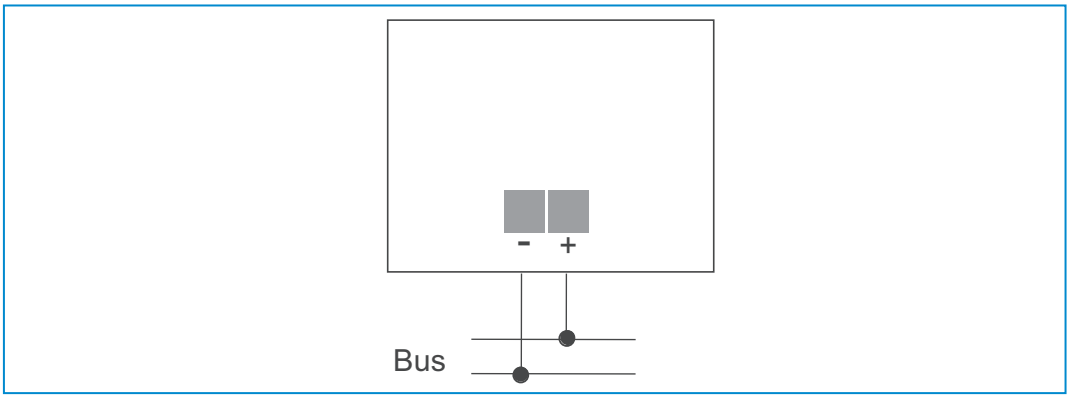


Fig. 4: Electrical connection

6 Mounting

6.1 Planning instructions

Note...
Planning and application instructions for the system are available in the free@home system manual. They can be downloaded at www.abb.com/freeathome.

6.2 Safety instructions for mounting

Warning - Risk of death due to electrical voltage

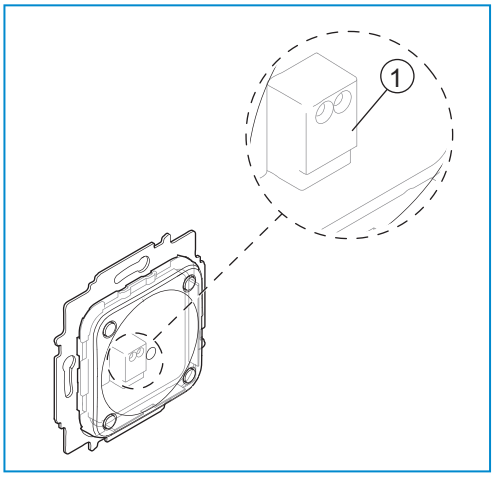
Dangerous currents flow through the body when coming into direct or indirect contact with live components. This results in electric shock, burns or even death.

Work improperly carried out on electrical systems is a hazard to one's own life and that of the user. Also fires and serious damage to property can result.

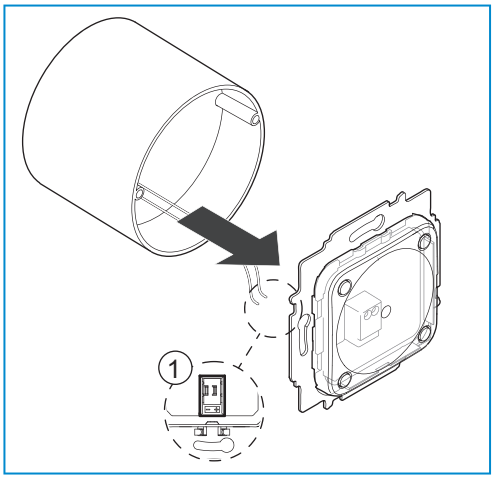
» Install the device only if you have the necessary electrical engineering knowledge and experience (see chapter 2.4).
» Use suitable personal protective clothing.
» Use suitable tools and measuring devices.
» Check the supply network type (TN system, IT system, TT system) to secure the following power supply conditions (classic connection to ground, protective earthing, necessary additional measures, etc.).
» Observe the correct polarity.

6.3 Mounting / Installation

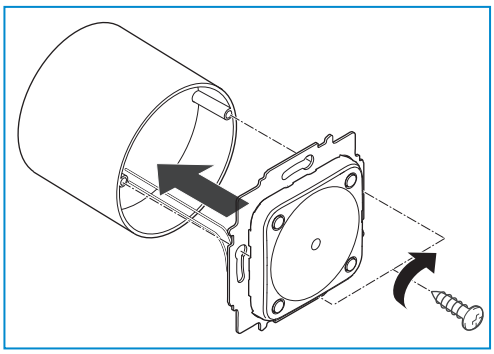
Note...
The devices with integrated bus coupler have been prepared for installing in flush-mounted boxes in connection with the corresponding mounting plate. The device insert has already been inserted in the mounting plate.



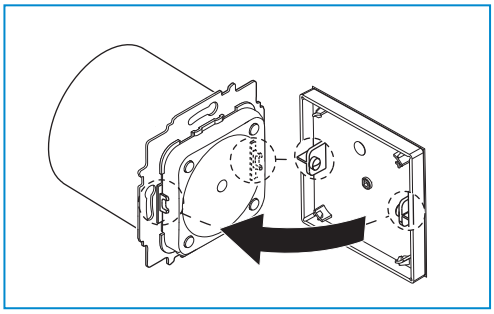
» Turn the device into the correct installation position.
- The bus connection terminal [1] must be at the bottom.



» Connect the free@home bus line with the bus connection terminal [1].
Observe the correct polarity!



» Insert the device into the flush-mounted box and screw it on.



» Attach the cover (rocker, example shows only a 1gang rocker) to the sensor. **Observe the correct position of the rocker support.**

7 Commissioning

Commissioning is always carried out via the Web-based surface of the System Access Point.

The System Access Point establishes the connection between the free@home participants and the smartphone, tablet or PC. It is used to identify and program the participants during commissioning.

Devices which are physically connected to the free@home bus, log themselves automatically into the System Access Point. They transmit information about their type and supported functions (see Table 2, chapter 4.3).

During initial commissioning all devices are given a generic name (e.g. sensor unit 1, etc.). The user must change this name to a name practical for the system (Example: "Living room push-button switch").

The devices must be parameterised for the use of the functions.

Commissioning of the sensor units is described in the following chapters. Here it is assumed that the basic commissioning steps of the overall system have already been carried out. General knowledge about the Web-based commissioning software of the System Access Point is assumed.

Note...
General information about commissioning and parameterization is available in the technical reference manual and the online Help of the System Access Point.

7.1 Allocation of devices and specifying channels

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

The allocation is made via the placement function of the Web-based user interface of the System Access Point.

Adding device

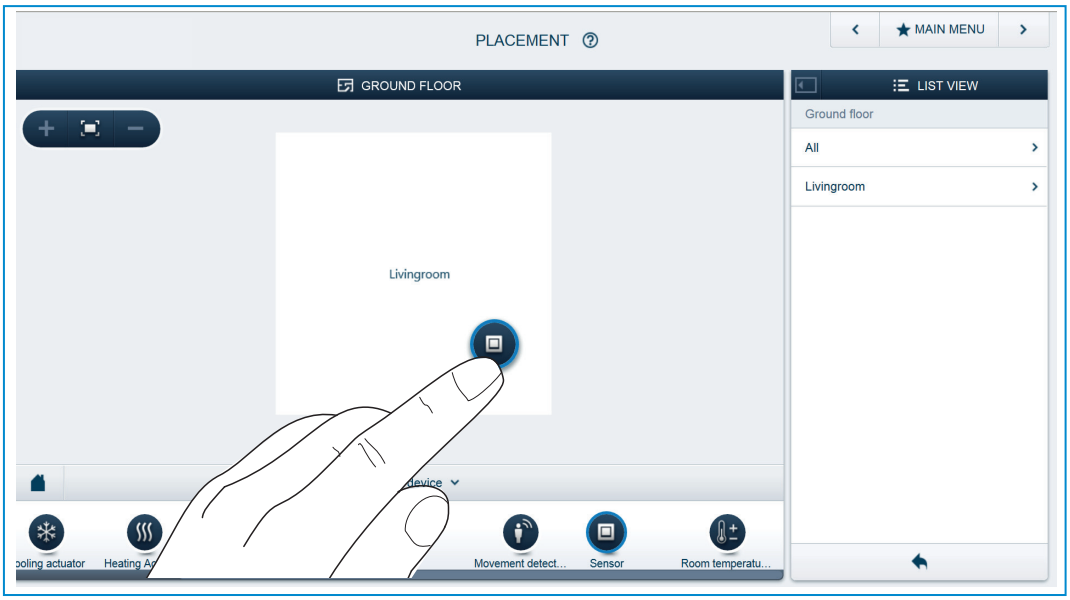


Fig. 5: Adding devices

» In the "Add device" bar select the desired application and pull it via drag-and-drop onto the floor plan in the working area.

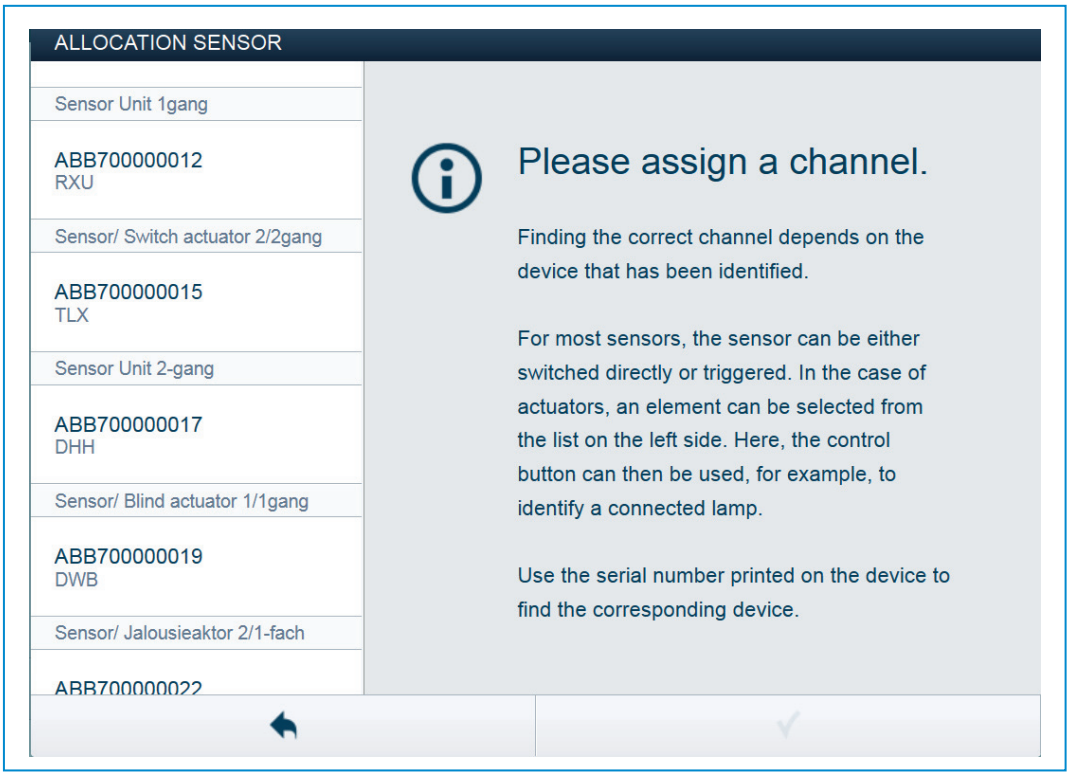


Fig. 6: Allocation

- A pop-up window opens automatically which lists all the devices suitable for the application selected.

Identification via serial number

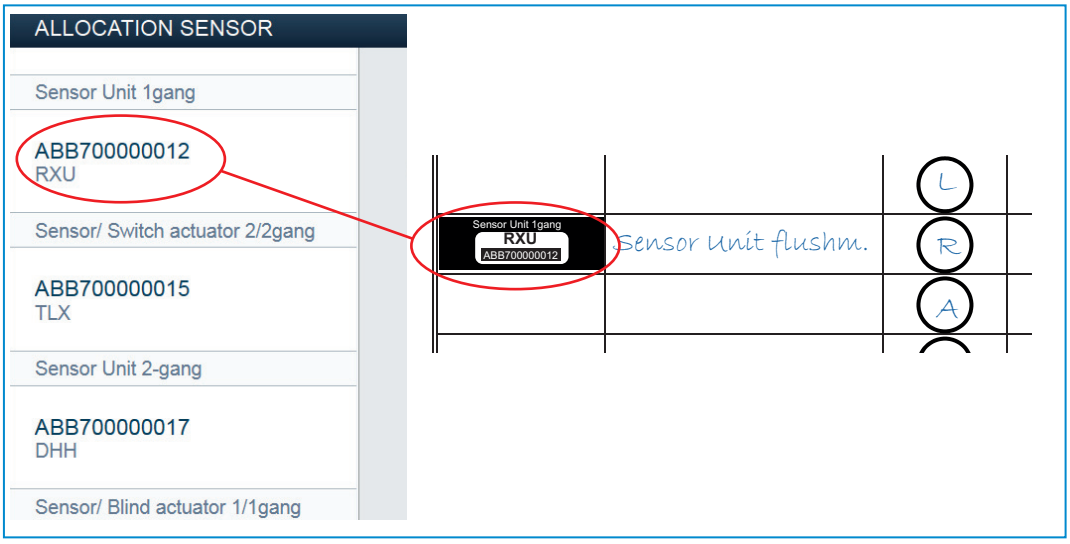


Fig. 7 Identification via serial number

» Compare the short 3-digit number of the identity label, which should be glued to the device plan, with the numbers in the list and in this way identify the device you are searching for and, if necessary, also the channel.

Assigning a name

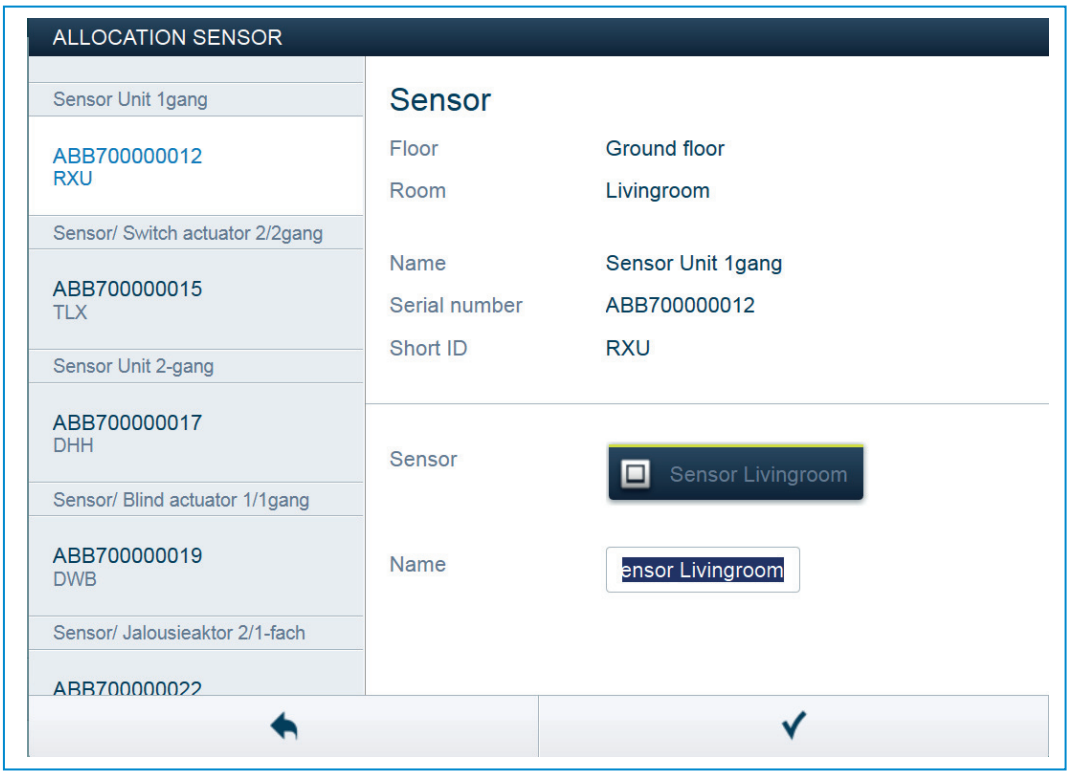


Fig. 8: Assigning a name

» Enter a name that is easy to understand and under which the application is to be displayed later (e.g. "Living room push-button switch").

» Press the tick at the bottom right to take over the entry.

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

7.2 Setting options per channel

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

The settings are made via the placement function of the Web-based user interface of the System Access Point.

Device selection

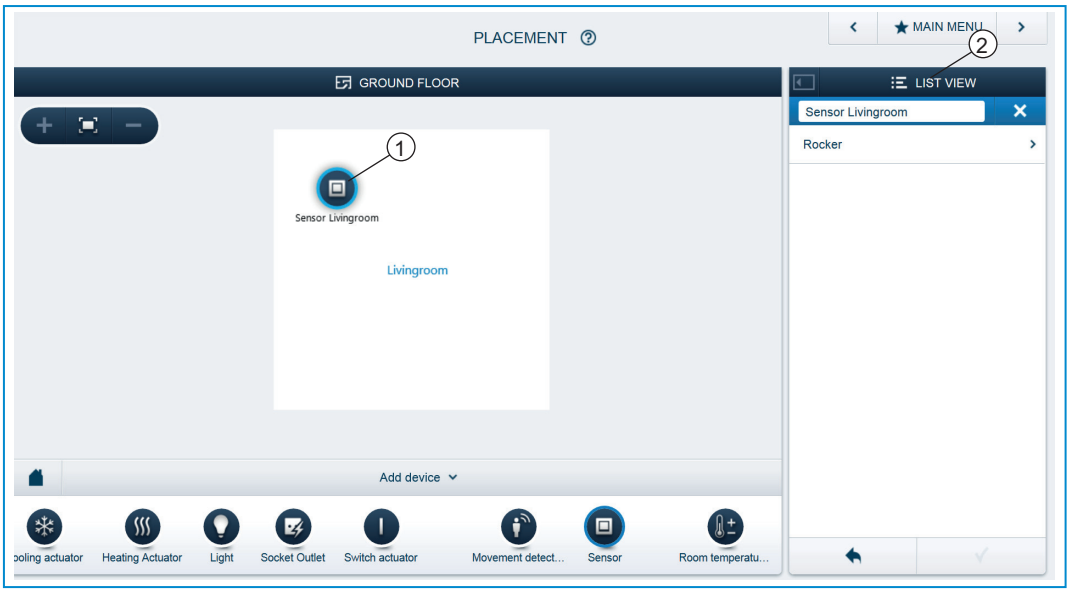


Fig. 9: Device selection

» Select the device icon [1] in the floor plan of the working area view.

- All setting options for the respective channel are displayed in the list view [2]. For rockers (sensors) the corresponding rocker must be selected.

The following settings are available.

7.2.1 Settings of sensor unit, 1gang

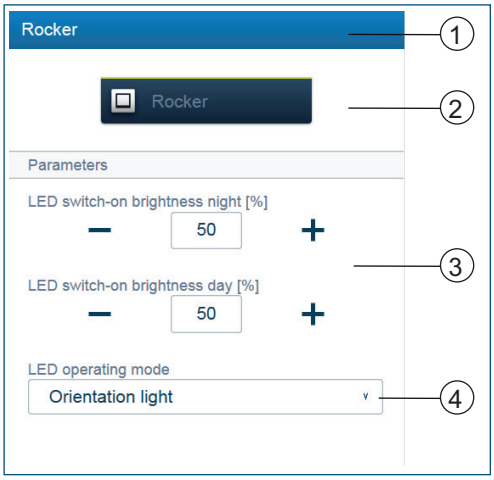
Sensor settings

[1] Changing the name

[2] Deleting the channel via 'X'

[3] Selecting the rocker in the list view

Rocker settings



[1] Changing the name

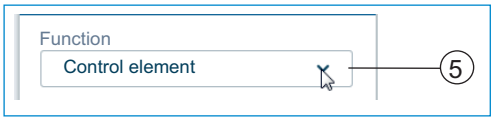
[2] Switching the sensor via the button

[3] Setting the LED night/day switch-on brightness in % via the -/+ buttons:
This parameter can be used to specify how strong the LED lights percentage-wise at night/day.
Attention! 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!
Application symbol:

[4] Selecting the LED operating mode:
Light for orientation: LED lights permanent.
Status display: LED lights when actuated.

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.



[5] Selecting the function:
Control element; dimming sensor; stairwell light sensor; sensor force-position On/Off; blind sensor; blind force-position

7.2.2 Settings of sensor unit, 2gang

Sensor settings:

As for sensor unit 1gang; however, 2 rockers (left rocker and right rocker) are displayed in the list view!

Rocker settings:

As for sensor unit 1gang; however, the settings can be made for 2 rockers (left rocker and right rocker)!

7.3 Linking

The sensor units created via the allocation function can now be linked with actuators. This allows simple ON/OFF circuits or two-way circuits to be implemented.

The linking in the list view is then made via the linking function of the Web-based user interface of the System Access Point.

Connecting actuator and sensor

Fig. 10: Connecting actuator and sensor

» To connect an actuator with a sensor, first click on the desired sensor [1] which is to operate the actuator and then on the actuator [2].

» Press the tick [3] at the bottom right to take over the entry.

- A blue connecting line indicates the link between the two devices. The configuration is now 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.

Connecting an actuator with an additional sensor

Fig. 11: Connecting actuator and sensor

» To connect the actuator with an additional sensor, first click on the second desired sensor [1] which is to operate the actuator and then on the actuator [2].

- An additional blue connecting line appears between the second sensor and the actuator.
- After the transmission has been completed the sensor can be operated directly locally.

8 Updating options

A Firmware update is carried out via the Web-based user interface of the System Access Point.

9 Operation

Operation is carried out by pressing the individual rockers. Their function is fixed via the assigned function or its pre-programming and its parameter settings.

Extensive applications are available for the rockers (control buttons).

Note...
The scope of delivery contains only the electronic insert. It must still be completed with a suitable rocker and a cover frame.

Additional information about the switch ranges is available in the electronic catalogue (www.busch-jaeger-catalogue.com).

10 Maintenance

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

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

10.1 Cleaning

Dirty units can be cleaned with a dry cloth. If this is not sufficient, a cloth slightly moistened with a soap solution can be used. Caustic cleaning agents or solvents must not be used.

A member of the ABB Group

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