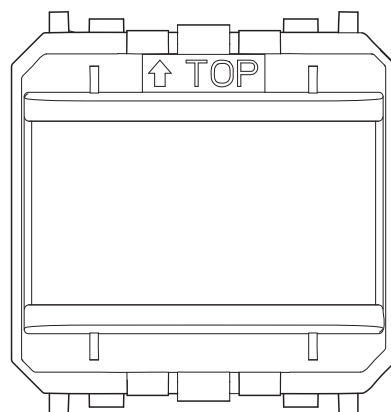


Technical Manual

Movement detector/Switch actuator, 1-gang



MSA-F-1.1.PB.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 movement detector/switch actuator for decentralized flush-mounted installation.

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 manual.

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
- » as substitute for an alarm system.

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

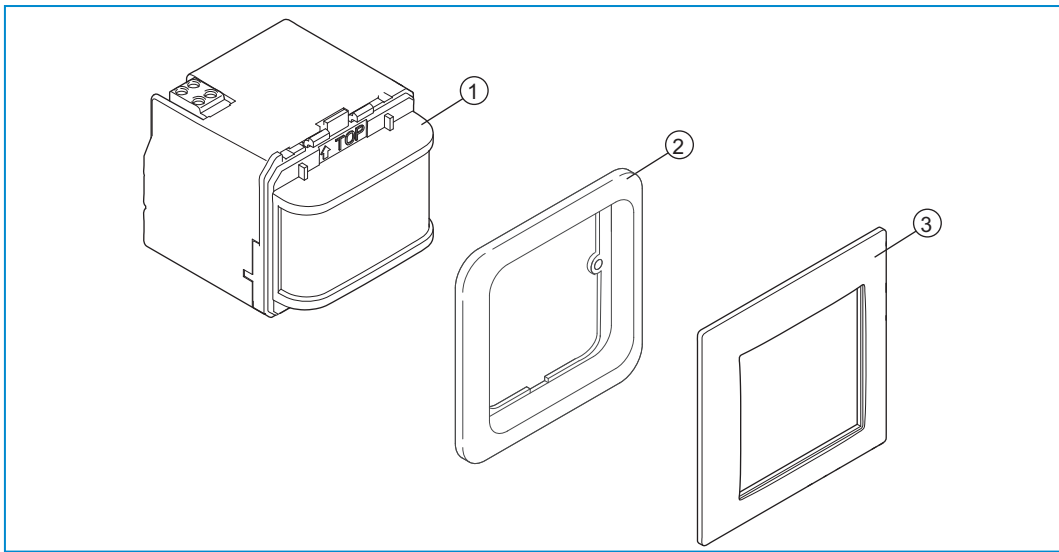


Fig. 1: Product overview

- [1] Flush-mounted insert
- [2] Support ring (not included in scope of delivery)
- [3] Cover frame (not included in scope of delivery)

This device is a movement detector/switch actuator unit for decentralized flush-mounted installation. The movement detector and the switch actuator form a single unit. The devices respond to moving body heat and switch on the lights. They are appropriately pre-programmed and switch directly after being installed. However, this pre-configuration can be adjusted as required.

The devices do not serve as a substitute for an alarm system.

Sensor and actuator are combined in a flush-mounted insert [1].

The integrated bus coupler makes possible the connection to the free@home bus line. After activating the bus voltage and connecting the load, it can be switched directly.

4.1 Scope of supply

The scope of supply only contains the flush-mounted insert [1]. It must still be completed with a support ring [2] and a cover frame [3].



Note ...

- » Use only the following support rings: ES: N2271.9F; MX: N2373.9; CN: 2TCA014501P0001.

4.2 Type overview



Article no.	Product name	Sensor channels	Actuator channels	Switching load
MSA-F-1.1.PB.1	Movement detector/switch actuator, 1gang	1 	1 	1 x 2300 W

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: Movement detector Type: Sensor Made available by: Movement detector/switch actuator Function: Sensor for movement- and brightness-dependent control of free@home functions
	Name: Switch actuator Type: Actuator Made available by: Movement detector/switch actuator Function: Switches connected loads

Table 2: Function overview

4.4 Device overview of movement detector/switch actuator, 1gang

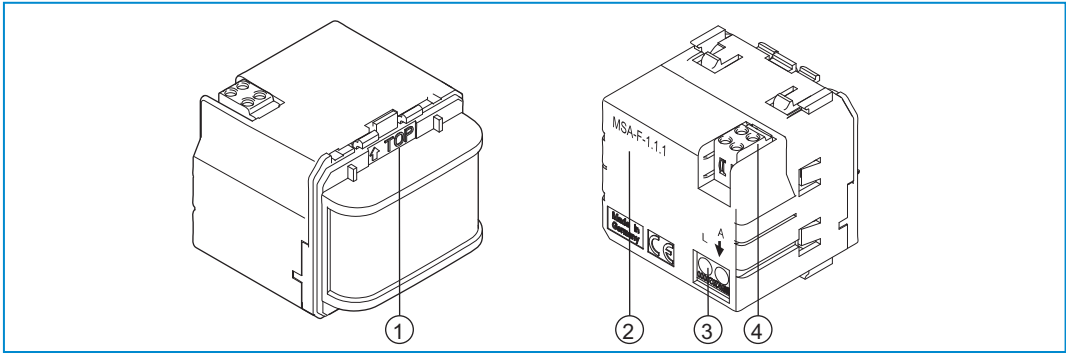


Fig. 2: Device overview of movement detector/switch actuator, 1gang

- [1] Mark TOP
- [2] Type plate
- [3] Bottom terminal block
- [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
Maximum load	10 Ax
Switched load line	230 V ~, 50 / 60 Hz; screw-type terminals: 2x2.5 mm ² rigid; 2x1.5 mm ² flexible
Opening angle	180 °
Brightness limit value	1 – 500 lux
Mounting height	1.1 m to 1.3 m
Protection	IP20
Ambient temperature	-5 °C – +45 °C
Storage temperature	-20 °C – +70 °C

Table 3: Technical data

5.2 Types of load



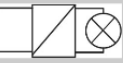

	Movement detector/switch actuator, 1-gang
	2300 W
	2300 W
	2300 VA
CFL	2300 W
LEDi	Typically 100 W

Table 4: Types of load

5.3 Dimensions



Note...

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

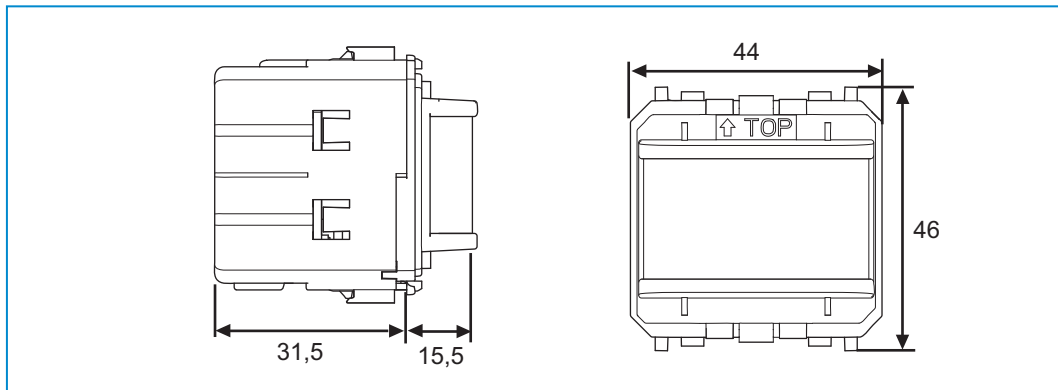


Fig. 3: Dimensions

5.4 Circuit diagrams

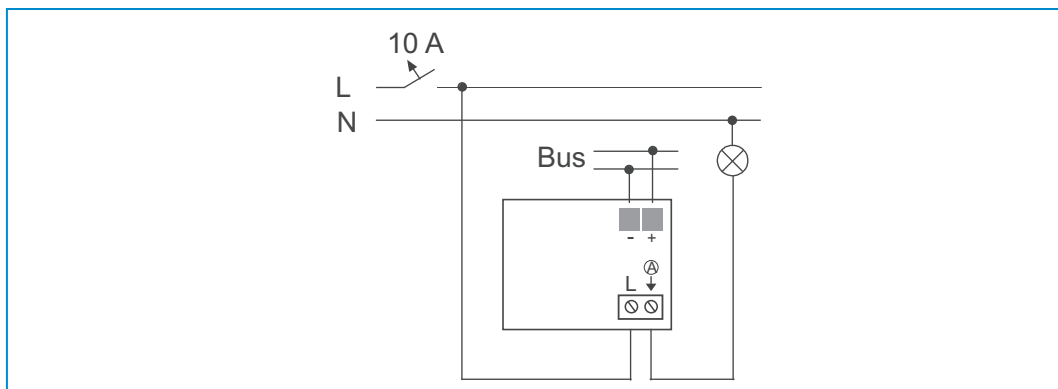


Fig. 4: Electrical connection

5.5 Detection range

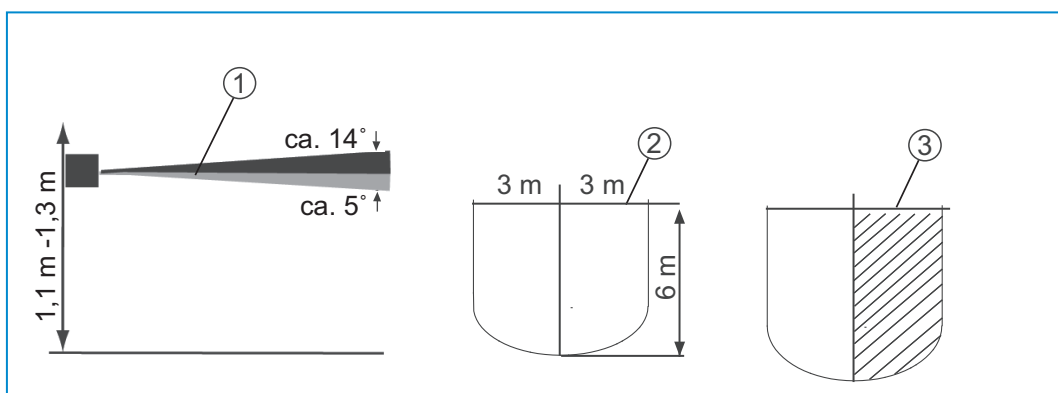


Fig. 5: Detection range

- [1] Mounting heights / Detection levels;
- [2] Detection range (0 °C – + 36 °C);
- [3] Horizontal reduction of the detection range by masking

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

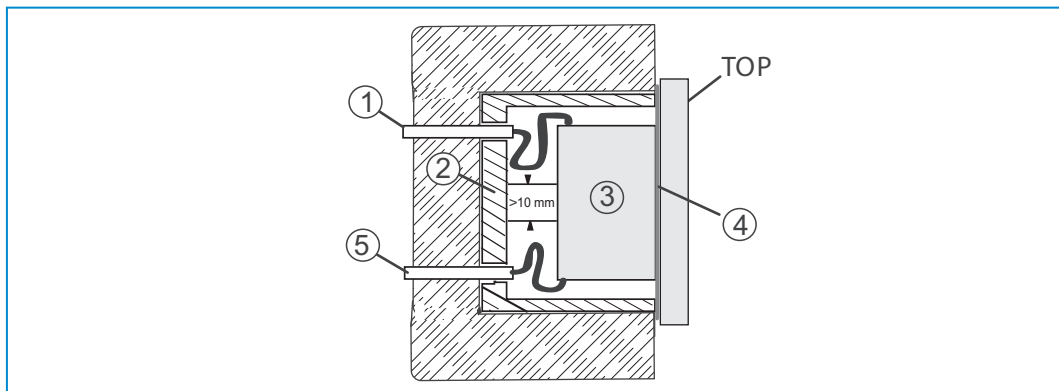


Fig. 6: SELV power circuits

- [1] Bus line
- [2] Flush-mounted installation box
- [3] Device insert
- [4] Mounting plate
- [5] 230 V power cord



Warning - Risk of death due to short-circuit

Risk of death due to electrical voltage of 230 V during short-circuit in the low-voltage line.

- » Observe the spatial division (> 10 mm) of SELV electric circuits to other electric circuits during mounting (see Fig. 6).
- » If the minimum distance is insufficient, use electronic boxes or insulating tubes.
- » Observe the correct polarity.
- » Observe the relevant standards!



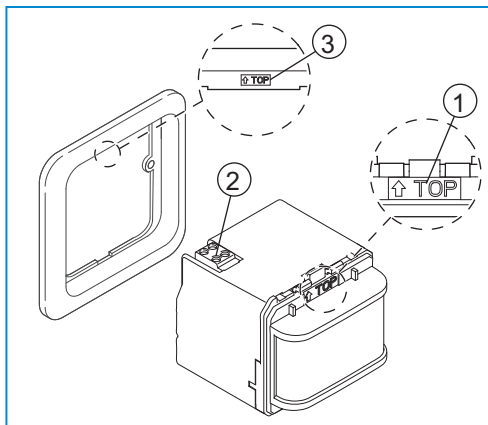
Warning - Risk of death due to electrical voltage

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.

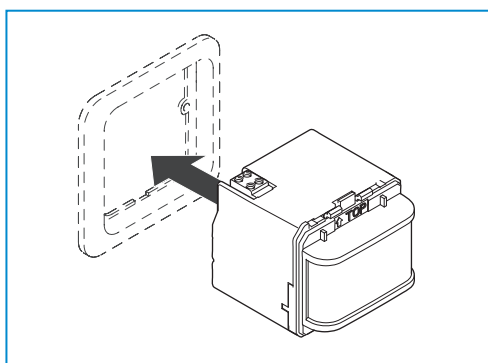
Work improperly carried out on electrical systems is a hazard to one's own life and that of the user. Also fires and serious damage to property can result.

- » 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.).

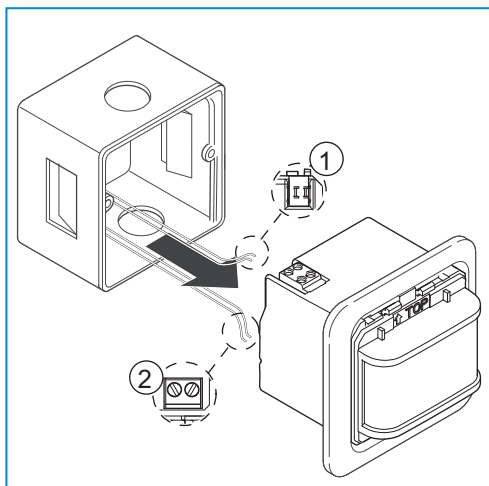
6.3 Mounting / Installation



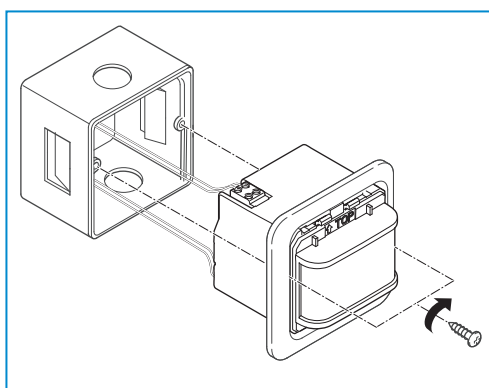
- » Turn the device into the correct installation position.
 - The mark "TOP" [1] must be aligned toward the top.
 - The bus connection terminal [2] must be aligned toward the top.
- » Turn the support ring into the correct installation position.
 - The mark "TOP" [3] must be aligned toward the top.



- » Push the device through the support ring until it latches into the support ring.



- » Connect the free@home bus line with the bus connection terminal [1].
Observe the correct polarity!
- » Connect the 230 V power cord to the bottom terminal block [2].
Observe the circuit diagrams in chapter 5.4.



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

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. movement detector1, etc.). The user must change this name to a name practical for the system (Example: "Movement detector living room light" for a movement detector that controls the living room light).

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

Commissioning of the movement detector/switch actuator 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.

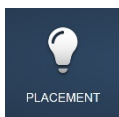


Note...

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 allocation function of the Web-based user interface of the System Access Point.

7.1.1 Adding device

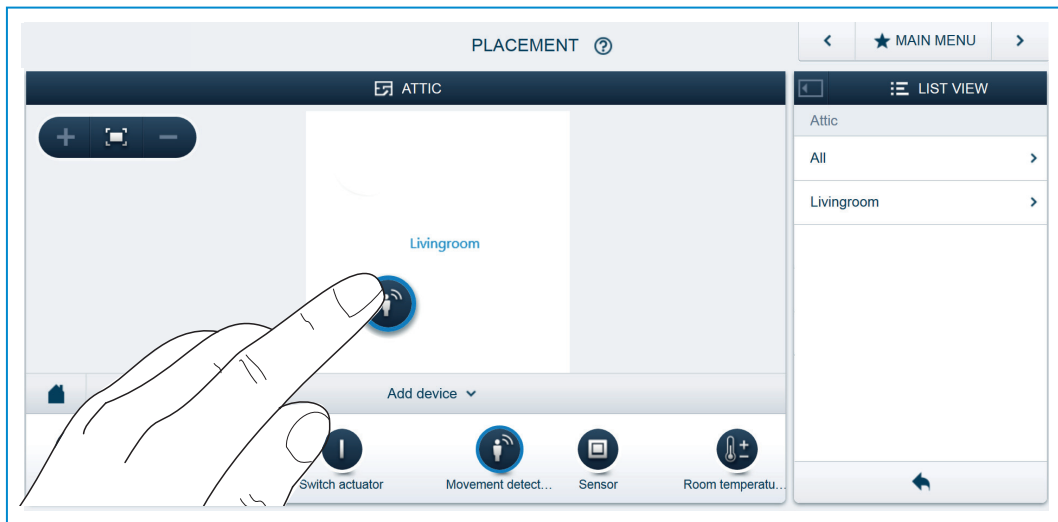


Fig. 7: Adding device

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

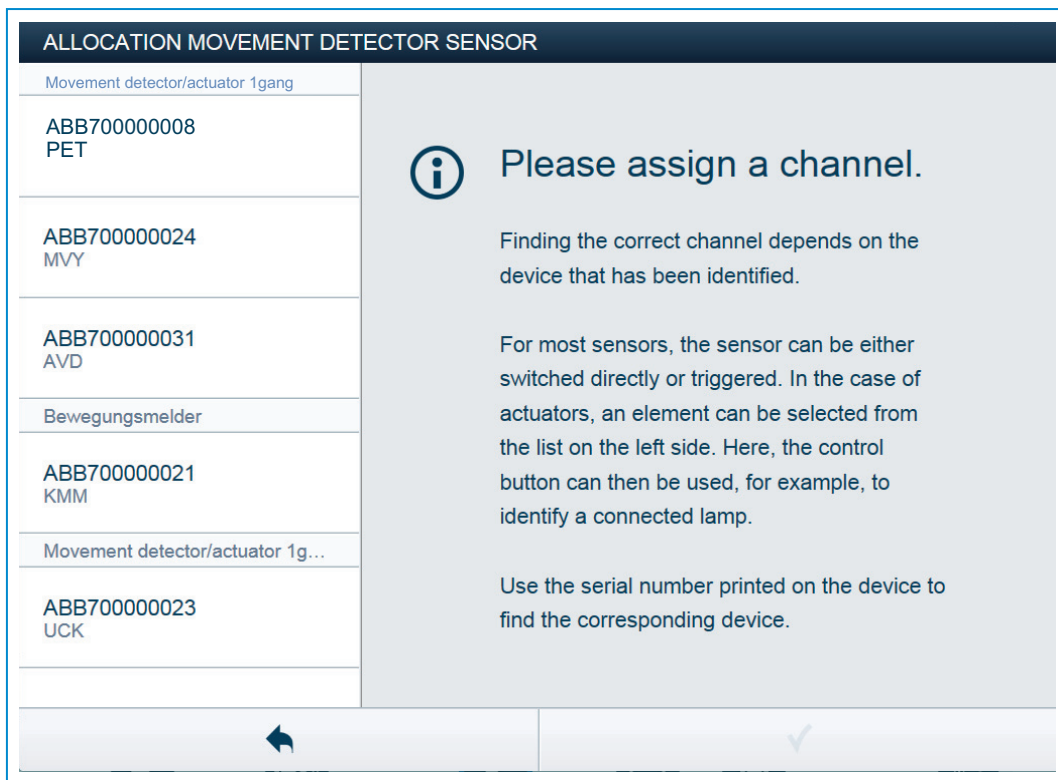


Fig. 8: Allocation

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

The desired device can be identified in 2 ways.

Identification via serial number

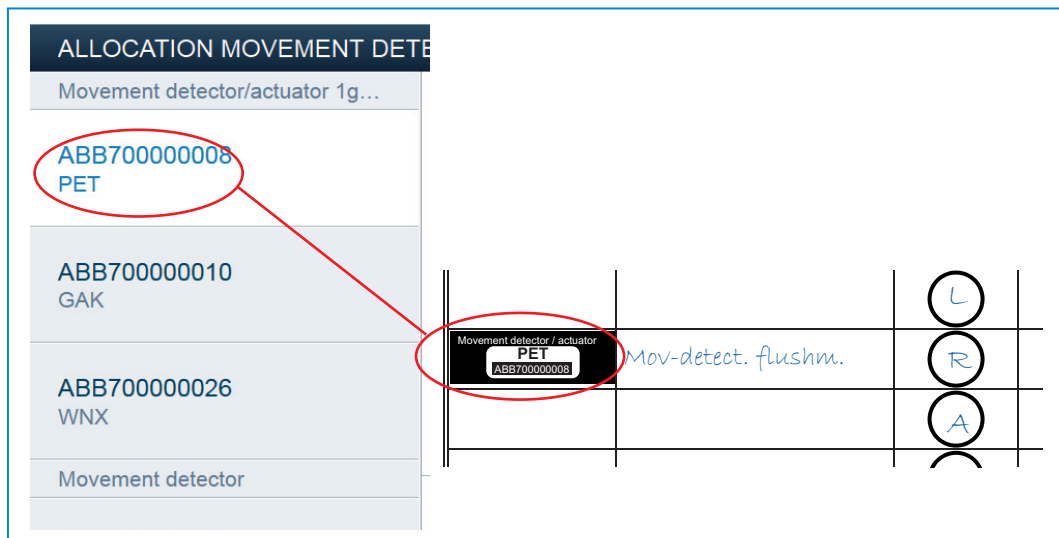


Fig. 9 Identification via serial number

- » 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.

Identification via switching (only suitable for actuators)

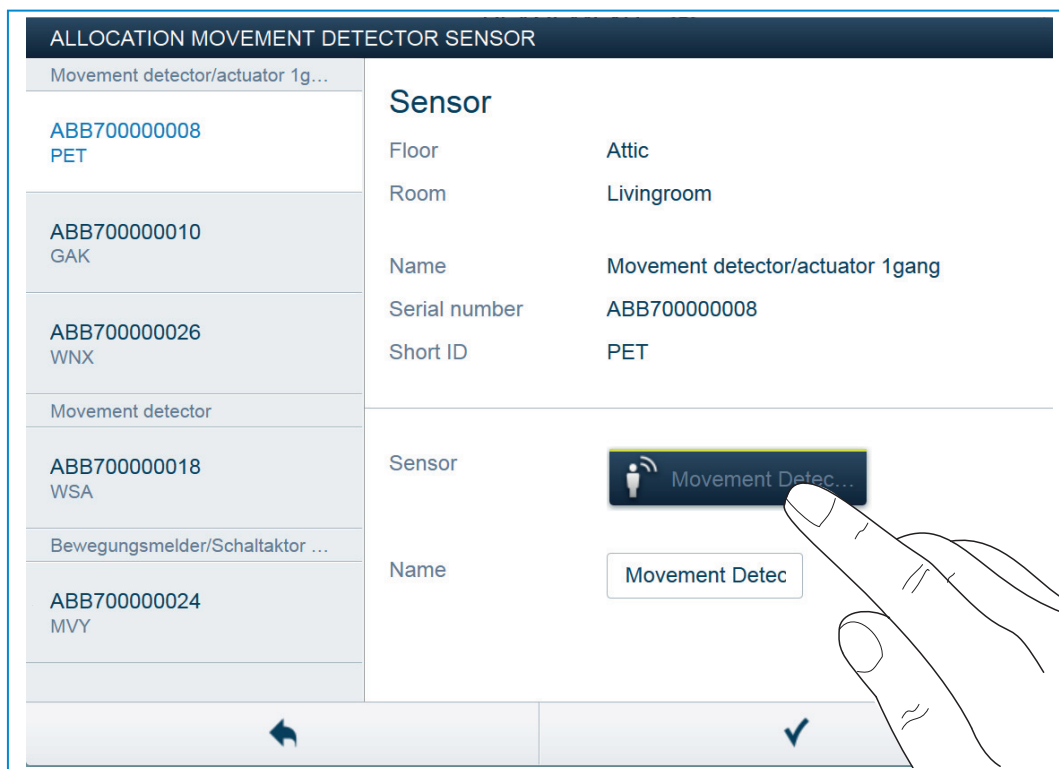


Fig. 10 Identification via switching

- » Select a device and a channel from the list.
- » Press the button in the detailed view of the device.
- The connected load is switched.
- » Continue until you have found the device you are looking for.

Assigning a name

ALLOCATION MOVEMENT DETECTOR SENSOR	
Movement detector/actuator 1g...	
ABB700000008 PET	
ABB700000010 GAK	
ABB700000026 WNX	
Movement detector	
ABB700000018 WSA	
Bewegungsmelder/Schaltaktor ...	
ABB700000024 MVY	

Sensor	
Floor	Attic
Room	Livingroom
Name	Movement detector/actuator 1gang
Serial number	ABB700000008
Short ID	PET

Sensor	
Name	<input type="text" value="Movement detec"/>

←
✓

Fig. 11: Assigning a name

- » Enter a name that is easy to understand and under which the application is to be displayed later (e.g. "Movement detector living room").
- » Press the tick at the bottom right to take over the entry.



Note...

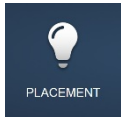
The settings of the device can be adjusted via the Web-based user interface of the System Access Point.

For pre-programmed devices (movement detector/switch actuator unit) the default settings can be adjusted. This allows the channel selection to be influenced.

These settings, however, can only be made in part with a fitter access (see online Help of the System Access Point). The parameter settings remain as described above.

7.2 Setting options per channel

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



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

Device selection

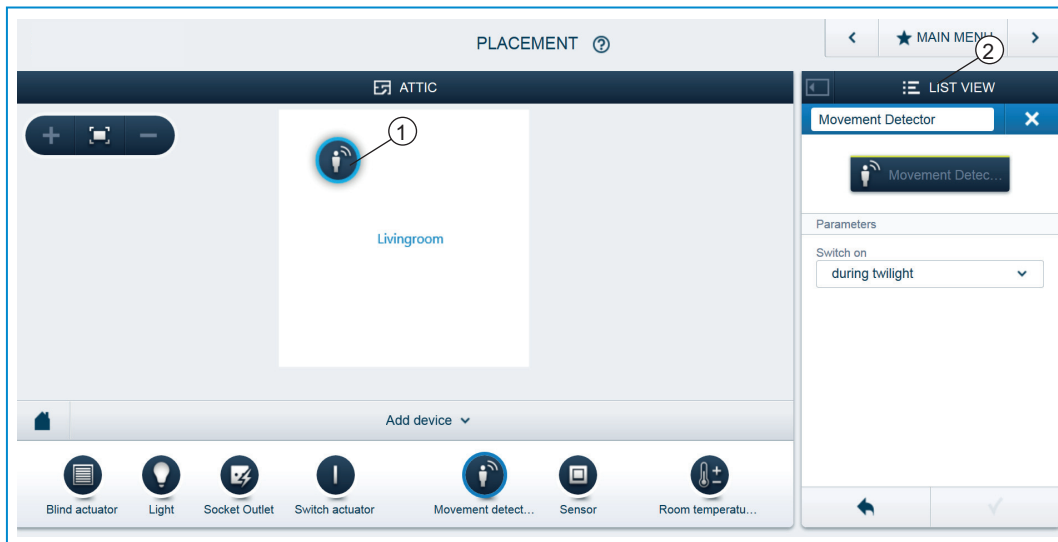


Fig. 12: Device selection

- » 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].
- The following settings are available.

7.2.1 Settings for movement detector/switch actuator, 1gang

Actuator settings

Actuator settings interface showing various configuration options for a 1gang movement detector/switch actuator.

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

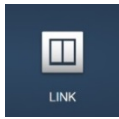
Sensor settings (movement detector settings)

Sensor settings (movement detector settings) interface showing configuration options for a movement detector.

- [1] Changing the name
- [2] Deleting the channel via 'X'
- [3] Switching of the actuator via the button
- [4] Switch-on behavior:
Selection of the brightness conditions at which the device is to respond.

7.3 Linking

The movement detector/switch actuator units created via the allocation function can now be linked with each other.



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



Note...

For pre-programmed devices (switch actuator units) a link is automatically established between actuator and sensor, since they are combined in the one device.

Connecting actuator and sensor

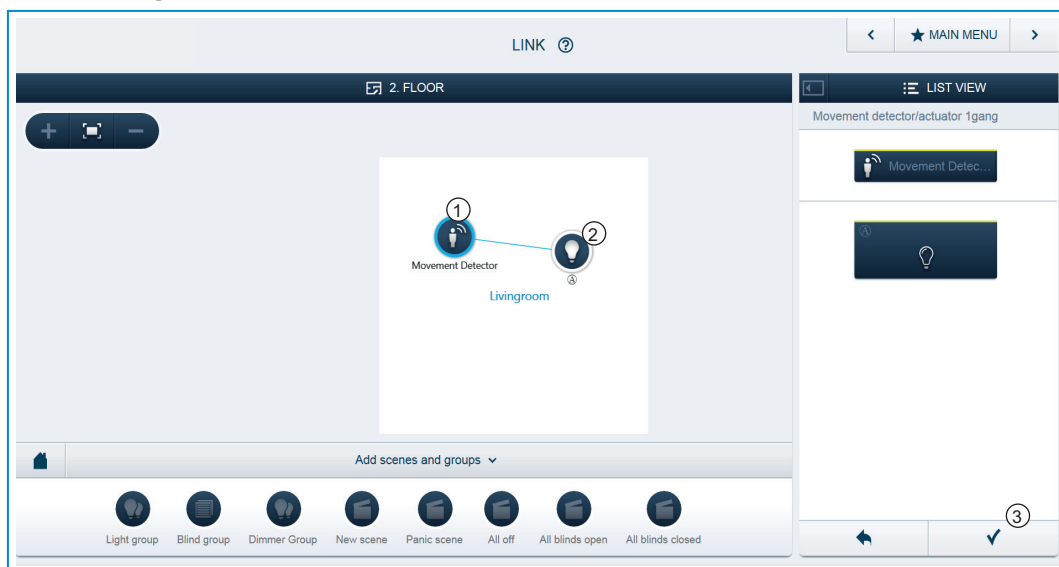


Fig. 13: Connecting actuator and sensor

- » 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. 14: 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

The devices respond to moving body heat and switch on the lights. They have been pre-programmed accordingly.

Action by the user is therefore not necessary.

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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