

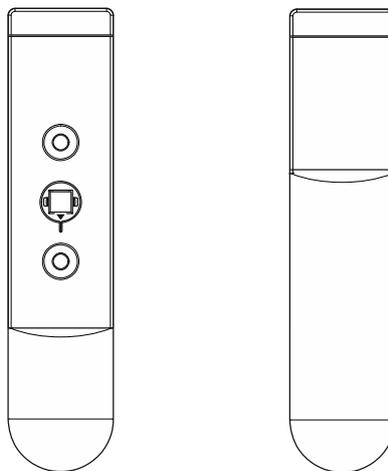
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## Product manual

ABB-free@home®

WBI-S-1-xx-WL free@home window sensor, wireless

BI-S-1-xx-WL free@home universal detector, wireless



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# 1 Information on the manual

Please read this manual carefully and observe the information it contains. This will assist you in preventing injuries and damage to property, and ensure both reliable operation and a long service life for the device.

Please keep this manual in a safe place.

If you pass the device on, also pass on this manual along with it.

ABB accepts no liability for any failure to observe the instructions in this manual.

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

[www.abb.com/freeathome](http://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 hazards of this kind.

ABB accepts no liability for any failure to observe the safety instructions.

### 2.1 Information and symbols used

The following Instructions point to particular hazards involved in the use of the device or provide practical instructions:



#### **Danger**

Risk of death / serious damage to health

- The respective warning symbol in connection with the signal word "Danger" indicates an imminently threatening danger which leads to death or serious (irreversible) injuries.



#### **Warning**

Serious damage to health

- The respective warning symbol in connection with the signal word "Warning" indicates a threatening danger which can lead to death or serious (irreversible) injuries.



#### **Caution**

Damage to health

- The respective warning symbol in connection with the signal word "Caution" indicates a danger which can lead to minor (reversible) injuries.



#### **Attention**

Damage to property

- This symbol in connection with the signal word "Attention" indicates a situation which could cause damage to the product itself or to objects in its surroundings.



#### **NOTE**

This symbol in connection with the word "Note" indicates useful tips and recommendations for the efficient handling of the product.



This symbol alerts to electric voltage.

## 2.2 Intended use

### 2.2.1 Window sensor

The free@home window sensor, wireless serves for monitoring the status of windows (open, tilted and closed).

The free@home window sensor, wireless is intended for the following:

- Operation according to the listed technical data
- Installation in dry interior rooms

### 2.2.2 Universal detector

The free@home universal detector, wireless serves for monitoring the status of roof windows, skylights, doors and gates (open and closed). 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.

The free@home universal detector, wireless is intended for the following:

- Operation according to the listed technical data
- Installation in dry interior rooms and also protected outdoors against spray water and direct flow of water.

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

## 2.3 Improper use

Each use not listed in Chapter 2.2 “Intended use“ on page 6 is deemed improper use and can lead to personal injury and damage to property.

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

The device is not intended for the following:

- Unauthorized structural changes
- Repairs
- Use outdoors (only window sensor, the universal detector may be used outdoors under the conditions stated in Chapter 2.2 “Intended use“ on page 6)
- The use in bathroom areas

## 2.4 Declaration of conformity

ABB herewith declares, that radio system type WBI-S-1-xx-WL and BI-S-1-xx-WL conform to directive 2014/53/EU.

The complete text of the EU declaration of conformity is available at the following Internet address:

WBI-S-1-xx-WL	<a href="http://www.busch-jaeger-catalogue.com/6200-0-0067,article.html">www.busch-jaeger-catalogue.com/ 6200-0-0067,article.html</a>
BI-S-1-xx-WL	<a href="http://www.busch-jaeger-catalogue.com/6200-0-0068,article.html">www.busch-jaeger-catalogue.com/ 6200-0-0068,article.html</a>

Table 1: Link to Declaration of conformity

## 2.5 Target group / Qualifications of personnel

No special qualifications are needed to connect and operate the device.

However, persons installing or connecting and operating the device must have read and understood the manual and follow the instructions provided.

## 2.6 Safety instructions



### Caution - risk of injury!

An improper use of batteries can lead to the risk of sustaining injuries!

- Keep the batteries away from children.
- In case of damaged batteries, avoid contact with skin, eyes and mucous membranes.
  - When coming into contact with battery acid, clean the affected parts immediately with plenty of clean water and, if necessary, contact a doctor.



### Caution! - Risk of damaging the device due to external factors!

Moisture and contamination can damage the device.

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

## 2.7 Use of batteries

To guarantee the correct function of the device, please observe the following points:

- Do not use rechargeable batteries! The use of rechargeable batteries is not recommended due to their lower voltage level in comparison to standard batteries.
- Use only lithium batteries (type CR2, 3 V).
- Remove discharged batteries immediately from the device.
- Do not use new batteries and used ones together.
- If necessary, clean the batteries and contacts before inserting them.



Defective lithium batteries must not be sent via air freight. For other types of transport the regulations 188 of the ADR must be observed.

## 2.8 Environment



### Consider the protection of the environment!

Used electric and electronic devices must not be disposed of with domestic waste.

- The device contains valuable raw materials which can be recycled. Therefore, dispose of the device at the appropriate collecting depot.

All packaging materials and devices bear the markings and test seals for proper disposal. Always dispose of the packaging material and electric devices and their components via the authorized collecting depots and disposal companies.

The products meet the legal requirements, in particular the laws governing electronic and electrical devices and the REACH ordinance.

(EU Directive 2012/19/EU WEEE and 2011/65/EU RoHS)

(EU REACH ordinance and law for the implementation of the ordinance (EC) No.1907/2006).

## 3 Setup and function

### 3.1 Window sensor

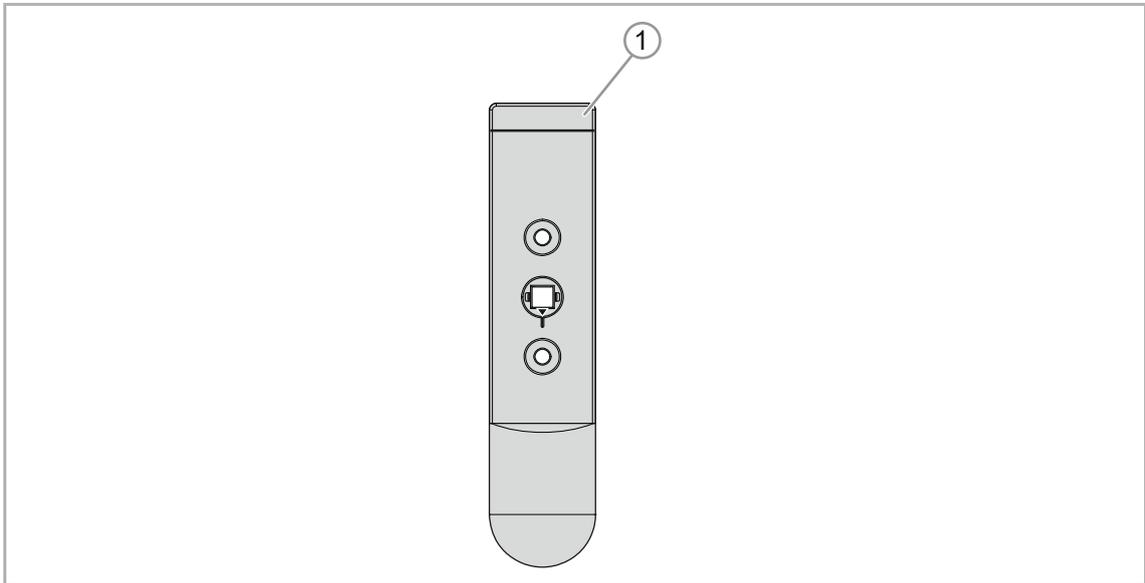


Fig. 1: Product overview

[1] Window sensor 6222/1

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.

### 3.2 Universal detector

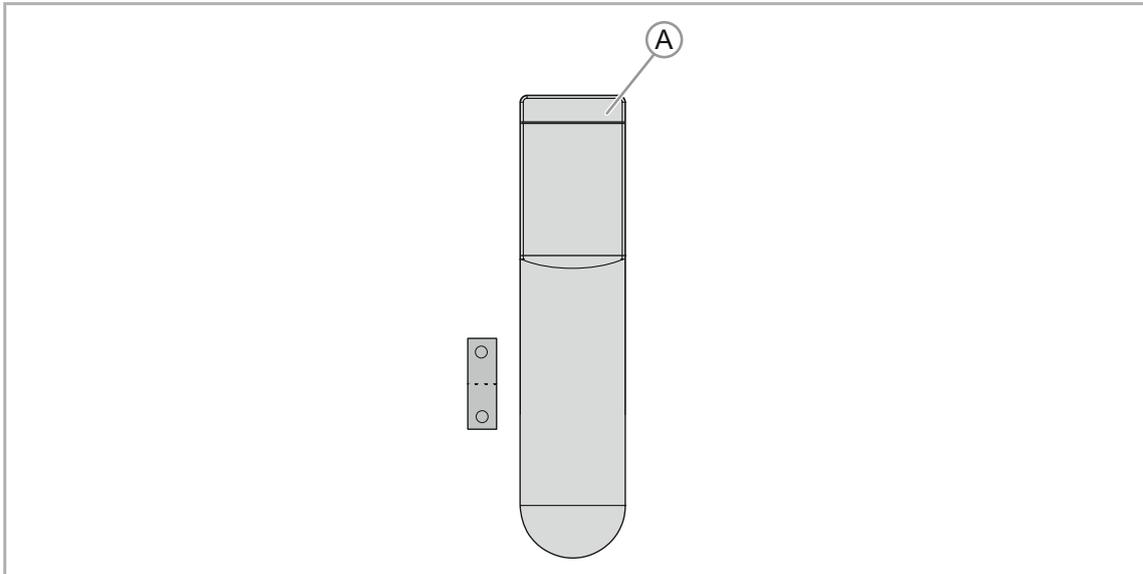


Fig. 2: Product overview

[1] Universal detector 6222/2

With free@home universal detector, wireless the state (open and closed) of roof windows, skylights, doors and gates can be monitored.

#### **Special feature of universal detector:**

An additional connecting option for an external sensor (optional floating normally closed or open contact) is available. If external sensors with floating contacts are connected, other additional status messages can be processed.

- Maximum cable length for external sensor: 5 m.
- Connection cross section of external sensor: 0.14 - 0.5 mm<sup>2</sup> (single-wire)

The universal detector has two channels. One channel for the internal magnet contact and one channel for an external contact. The two channels are evaluated and monitored independently.

### 3.3 Additional product features

No laying of cables is required for both types of detectors. Communication with the free@home system is carried out wireless.

The devices are operated with a lithium battery (type CR2, 3 V). Material required for commissioning is supplied. Also a System Access Point is required for commissioning.

The status of window sensors/universal detectors can be visualized on the free@home panel and in the free@home app via radio signal.

The devices are not pre-programmed. Programming is carried out via the user interface of the System Access Point.

### 3.4 Battery service life

The service life of the battery depends mainly on the respective usage; also depending on how often the window contact is opened, and on the battery type and the state of charge. For standard use (window sensor: two openings of the window per day) we assume a battery service life of up to 3 years.

For operating the detector we recommend the use of lithium batteries (type CR2, 3 V). The use of rechargeable batteries is not recommended due to their lower voltage level in comparison to standard batteries.

### 3.5 Scope of supply

#### 3.5.1 Window sensor

- Detector
- 1 lithium battery (type CR2, 3 V)
- Mounting accessories: Square extension, screws, adapter for cams.

#### 3.5.2 Universal detector

- Detector
- 1 lithium battery (type CR2, 3 V)
- Mounting accessories: Adhesive film, screws, magnet

### 3.6 Overview of types

Article no.	Product name	Sensor channels
WBI-S-1-64-WL	free@home window sensor, wireless	Studio white, matt
WBI-S-1-65-WL	free@home window sensor, wireless	Basalt black
WBI-S-1-66-WL	free@home window sensor, wireless	Stainless steel
BI-S-1-64-WL	free@home universal detector, wireless	Studio white, matt
BI-S-1-65-WL	free@home universal detector, wireless	Basalt black

Table 2: Overview of types

### 3.7 Functions

#### 3.7.1 Window sensor and universal detector functions (via internal magnet contact)

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

Icon of the user interface	Information	
	<b>Name:</b>	Window contact
	<b>Type:</b>	Sensor
	<b>Made available by:</b>	Window sensor + universal detector
	<b>Function:</b>	Signals "Window open" (Application: automatic deactivation of heating when the window is open)

Table 3: Overview of functions



#### Note

Special features of battery-operated detectors:

- Only the following statuses are signalled:
  - Window sensor: open, closed, tilted
  - Universal detector: open, closed

#### Additional functions:

- "Low battery" warning - The user is informed when the power of the battery drops below a critical level. Although the detectors will continue to function for a few days after the warning, replacement batteries should be kept ready.

#### 3.7.2 Universal detector functions (via connection of external sensor)

The functions correspond to the binary inputs and can be fixed as follows:

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

Icon of the user interface	Information
	Name: Sensor (rocker) Control element for the control of free@home functions
	Name: Movement detector Sensor for movement- and brightness-dependent control of free@home functions
	Name: Window contact Signals "Window open" (Application: automatic deactivation of heating when the window is open)
	Name: Frost alarm Triggers a frost alarm (Application: Automatic retraction of the blinds, roller blinds or awnings)
	Name: Rain alarm For the detection of a rain alarm (Application: Automatic retraction of the blinds, roller blinds or awnings)
	Name: Wind alarm For the detection of a wind alarm (Application: Automatic retraction of the blinds, roller blinds or awnings)
	Name: Switchover heating/cooling Is used for the switchover of heating/cooling in two-pipe heating/cooling systems

Table 4: Universal detector functions (via connection of external sensor)

**Note**

Special features of battery-operated detectors:

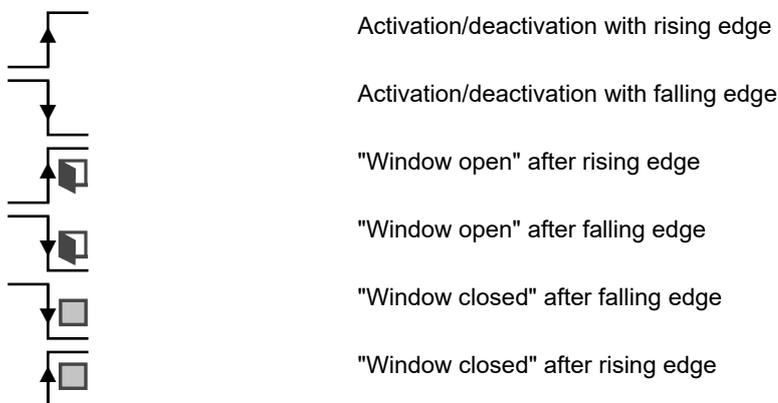
- It is not possible to assign it the function as blind sensor.
- Light switching can be carried out, for example, via the "Control element" (rocker) function. However, for this a direct connection with the switch actuator must be available.
- Only "On/Off" can be activated for the dimming function.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

The following table provides an overview of the possible functions and applications of the universal detector at the connection of an external sensor:

Icon	Function	Contact type	Sensor type	Switching behaviour		Description
				On	Off	
	Control element	Normally open contact	Push-button			-
		Normally open contact	Switch			
		Normally closed contact	Push-button			
		Normally closed contact	Switch			
	Dimming sensor	Normally open contact	-			Dimming is triggered with a long press of the button
		Normally closed contact	-			
	Staircase light sensor	Normally open contact	-		After time	Setting switch-off delay for actuator parameters
		Normally closed contact	-		After time	
	Scene sensor	Normally open contact	-		-	-
		Normally closed contact	-		-	
	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			
		Normal close	Force-position on			
		Normal close	Force-position off			
	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			
		Normally closed contact	-			

Icon	Function	Contact type	Sensor type	Switching behaviour		
				On	Off	Description
	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 retract and are locked against manual operation. After cancelling the alarm the blinds return to their 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 and cooling mode of the RTC. Activation via winter/summer mode. Switchover of heat pumps
		Normally closed contact	-			

Table 5: Switching behaviour of binary inputs



**Additional functions:**

- "Low battery" warning - The user is informed when the power of the battery drops below a critical level. Although the detectors will continue to function for a few days after the warning, replacement batteries should be kept ready.

### 3.8 Description of functions

**Note**

Special feature of universal detector:

The device has two channels. One channel for the internal magnet contact and one channel for an external contact. The two channels are evaluated independently.

#### 3.8.1 Rocker (only universal detector via connection of external sensor)

The "Rocker" function is used when push-buttons are connected to the universal detector. Depending on whether single or double push-buttons are used, this must be set in "Device configuration" in the main menu of the System Access Point. There the respective detector must be selected, and then in field "Channel selection" to select the coupling of two channels for the connection of a multiple push-button.

**Note**

Channels can only be coupled as long as they have not been allocated to other free@home devices in menu "Devices" of the System Access Point.

#### 3.8.2 Switching of (light) electric circuits (only universal detector via connection of external sensor)

If the rocker function is used in connection with a switch actuator, for switching a lamp, for example, the "Control element" function must be selected. However, for this a direct connection with the switch actuator must be available.

#### 3.8.3 Switching and dimming of lamps (only universal detector via connection of external sensor)

If a single or double push-button connected to the universal detector is to be used together with a dimmer to dim a lamp, the "Dimming sensor" function must be selected. Only "On/Off" can be activated for the dimming function.

#### **3.8.4 Staircase lighting (only universal detector via connection of external sensor)**

If a push-button connected to the universal detector is to be used for switching staircase lighting, the "Staircase lighting sensor" function is to be selected.

In the configuration of the associated switch actuator (to which the lamps of the staircase are connected), the "Switch-off delay" can be configured.

The switch-off delay indicates how long a channel of the switch actuator remains in the ON state after being switch on. If the staircase lighting has already been switched on by the press of a push-button, the switch-off delay can be extended (retriggered) by a renewed press of the push-button.

#### **3.8.5 Sensor force-position ON/OFF (only universal detector via connection of external sensor)**

If several universal detectors are connected to a channel of a switch actuator, this channel can initially be operated from all universal detectors.

After configuring a channel of the linked universal detector with the "Force-position sensor ON/OFF" function, the force-position of the sensor for the channel of the switch actuator can be activated or deactivated with a press of the push-button of the rocker connected to this channel.

After the activation the operation of the affected switch actuator channel is blocked by all other devices. In the parameter settings of the switch actuator the forced behaviour can be configured, and it can be specified whether the channel of the switch actuator concerned is to be switched on (Force-position ON) or off (Force-position OFF).

#### **3.8.6 Blind force position (only universal detector via connection of external sensor)**

This function makes possible a forced behaviour of blinds via the blind actuator.

The forced behaviour can be configured in the parameter settings of blind actuator: The associated blinds (or roller blinds or awnings) can be moved to the top end position (Force-position top) or to the bottom end position (Force-position bottom).

#### **3.8.7 Movement detector sensor (only universal detector via connection of external sensor)**

This function must be selected when a movement detector is connected to the universal detector for the control of lights.

If the universal detector is connected with a switch actuator, the duration of the light of the lamps connected to the switch actuator can be set via parameter "Switch-off delay" in the parameter settings. The duration of the light extends again automatically by the switch-off delay if persons continue to be detected by the movement detector.

### **3.8.8 Frost, rain and wind alarm (only universal detector via connection of external sensor)**

These functions must be selected when connecting the relevant sensors, to protect blinds or roller blinds from damage.

The channel of a detector configured with this function must be linked with one or several channels of a blind actuator (blind and roller blind or awning).

During a frost alarm the respective channel of the blind actuator is blocked to make movement impossible. During rain or wind alarm the blind is moved to the top end position and then the associated channel of the blind actuator is blocked. Operating the blind with further free@home devices or Venetian blind switches is then impossible.

### **3.8.9 Switchover of heating/cooling (only universal detector via connection of external sensor)**

This function must be selected if there is to be a manual switchover between heating and cooling modes via a connected switch.

If the associated heating/cooling system offers a corresponding binary output for heating/cooling, it can be connected to the universal detector.

### **3.8.10 Window contact**

The "Window contact" function must be selected when a room temperature controller is to be connected with the detector (as window contact).

If the associated channel of the detector is connected with the room temperature controller, the room temperature controller switches to "Frost protection" mode when an open window is detected and reduces the set-point temperature to prevent unnecessary loss of energy.

## 4 Technical data

Designation	Value
Power supply	1 x CR 2 (Lithium batteries); 3 V
Typical battery service life	3 years
Transmission frequency	2.400... 2.483 GHz
Transmission protocol	free@home wireless
Maximum transmission power WL (wireless)	< 15 dBm
Protection <ul style="list-style-type: none"> <li>▪ Window sensor</li> <li>▪ Universal detector</li> </ul>	IP20 IP43
Ambient temperature	-5°C...+50°C
Storage temperature	-20°C...+70°C
Universal detector - connection of external sensor:	Optional floating normally closed contacts or normally open contacts
Maximum cable length	5 m
Connection cross section	0.14 mm...0.5 mm <sup>2</sup> (single-wire)

Table 6: Technical data

### 4.1 Battery types

The detectors are intended to be used with 1 x CR 2 lithium batteries (3 V). The use of rechargeable batteries is not recommended, since the voltage level of rechargeable batteries is lower than that of lithium batteries.

Their use would mean that the "Battery low" warning is mistakenly displayed and could also lead to the limitation of functions during the software update of the devices.

## 4.2 Dimensional drawings

### 4.2.1 Dimensional drawing of window sensor



**Note**

All dimensions are in mm.

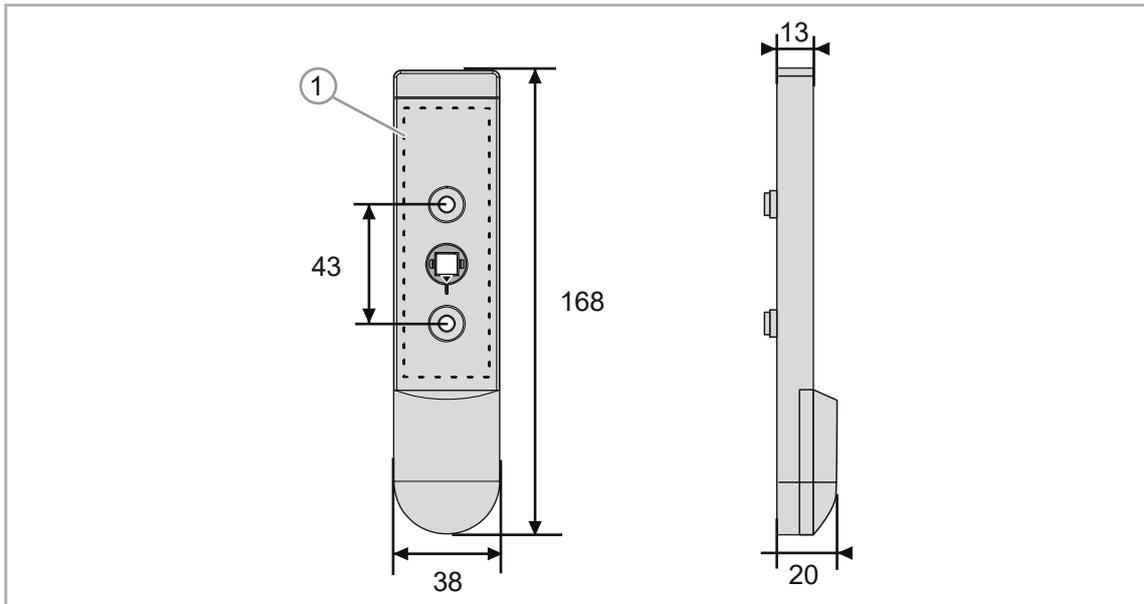


Fig. 3: Dimensions of window sensor

[1] Maximum height of fixing plate = 77 mm

**Additional specifications for window sensor:**

Square dimensions	7 mm
Distance of fixing screws	43 mm
Cams	Ø 10 mm and 12 mm
Maximum size of fixing plate	34 mm x 77 mm (WxH)

Table 7: Additional specifications

#### 4.2.2 Dimensional drawing of universal detector



**Note**

All dimensions are in mm.

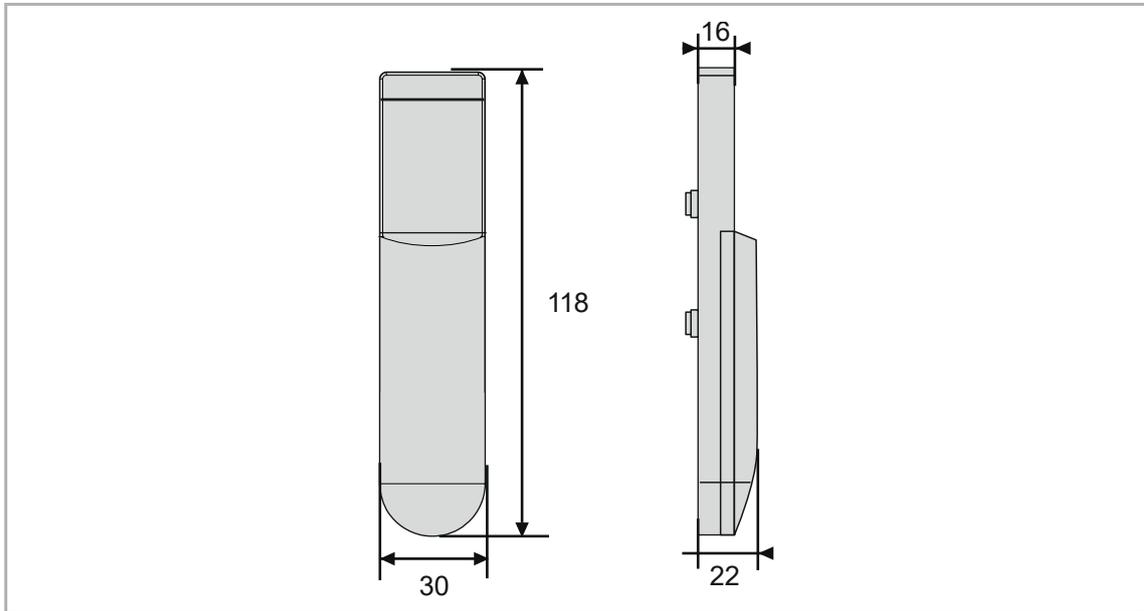


Fig. 4: Dimensional drawing of universal detector

## 5 Connection and installation

### 5.1 Planning instructions

**NOTE**

Planning and application instructions for the system are available in system manual for ABB-free@home®. This can be downloaded via [www.abb.com/freeathome](http://www.abb.com/freeathome).

**Note**

Transmitter and receiver communicate via radio control. The transmission range depends on the structural conditions. Walls and 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.

### 5.2 Radio range

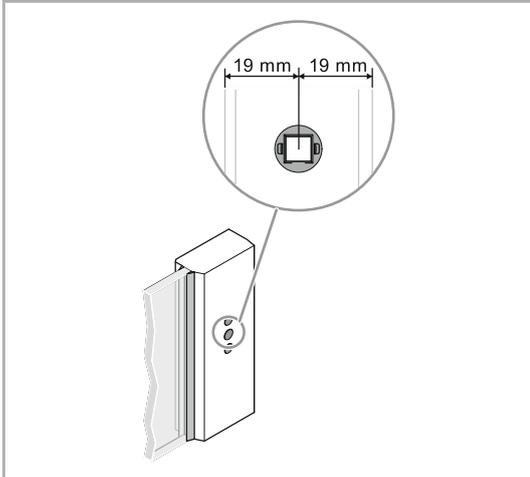
To minimize the consumption of power, battery-operated free@home wireless devices do not act as repeaters. This means that different to free@home wireless devices that are supplied with mains voltage, a command that is received is not transmitted.

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

### 5.3 Installation

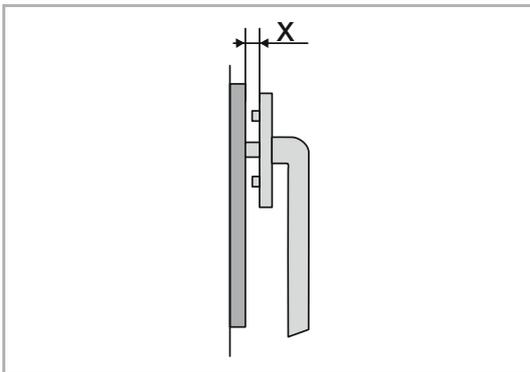
#### 5.3.1 Requirements for window sensor installation

##### Windows with attachments or decorative strips:



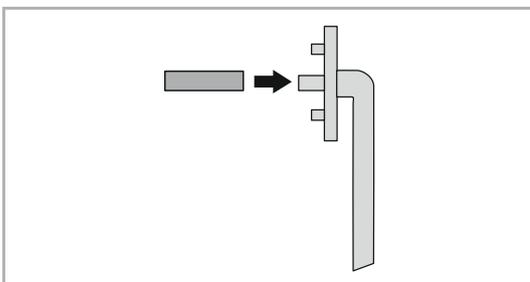
- Prior to the installation, check whether there is a free space of 19 mm to all sides from the centre of the square hole (total width of the window sensor is 39 mm).

##### Square bar of window handle too long:



- If the square extension is installed and the window handle cannot be set completely onto the window sensor, the square bar of the window handle may have to be shortened.
- For this, install the window sensor.
- Measure the gap between the window handle and the window sensor (Pos. X) and add 2 mm.
- Shorten the square bar accordingly using a metal-cutting saw.

##### Square bar of window handle too short:



- If the square bar of the window handle is too short, it can be extended with the supplied attachment.

### 5.3.2 Window sensor installation



**Warning! – Risk of damage**

Damage to the window frame and window sensor due to incorrect mounting material

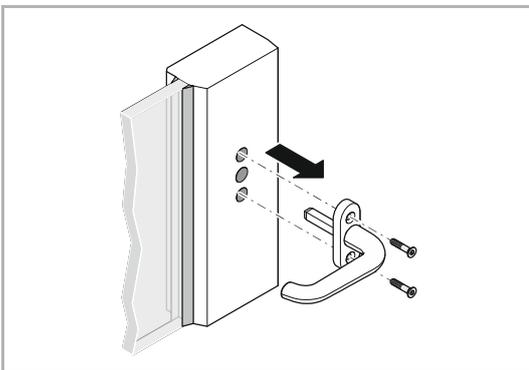
- Use only the screws that are supplied for installing the window sensor.  
Observe the maximum length in order not to damage the window frame.



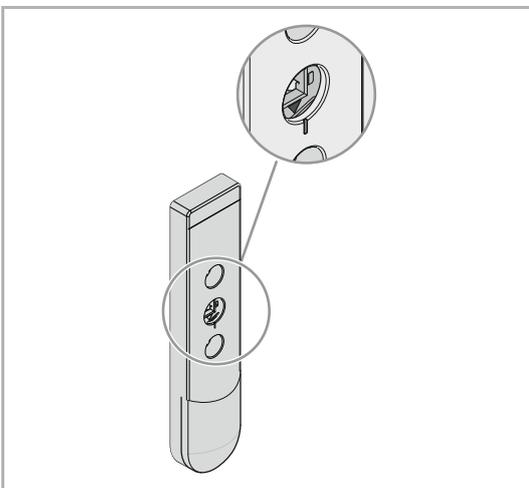
**Note**

Insert the battery only directly before programming starts.

To install the device, perform the following steps:



1. Remove the existing window handle.



2. Align the reference mark on the square bushing with the reference mark of the window sensor.



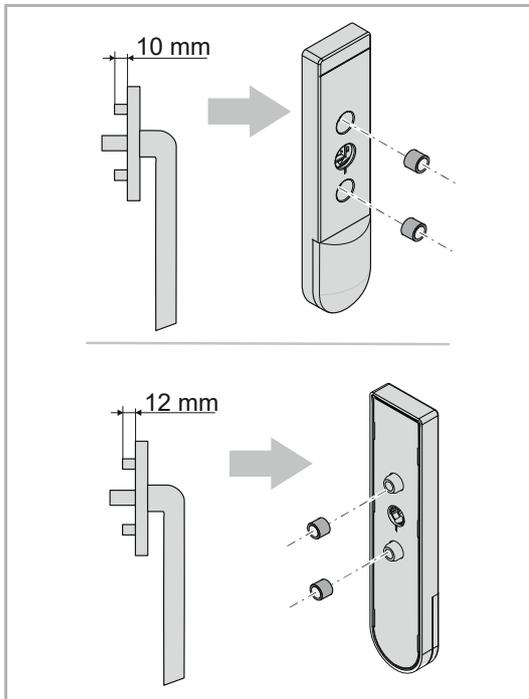
**Note**

If the square bushing is misaligned, the window states will not be displayed correctly.



### Note

The intermediate rings allow window handles with 10 mm cams and with 12 mm cams to be used.



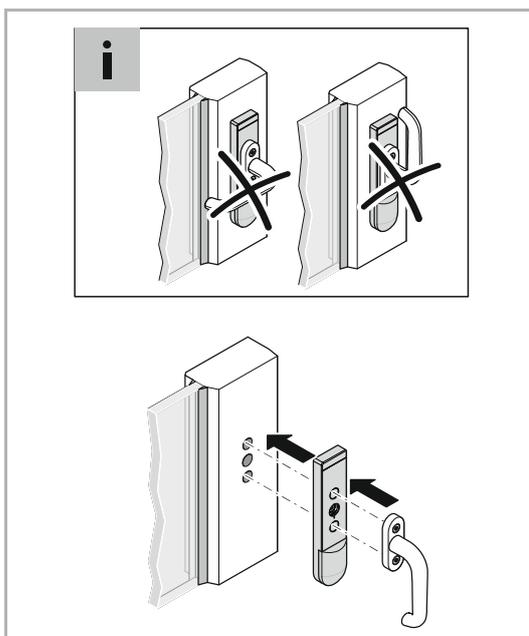
3. Insert the supplied intermediate rings.

- Handles with 10 mm cams: Insert the supplied intermediate rings into the recesses of the window sensor.
- Handles with 12 mm cams: Set the supplied intermediate rings onto the cams of the window sensor.



### Note

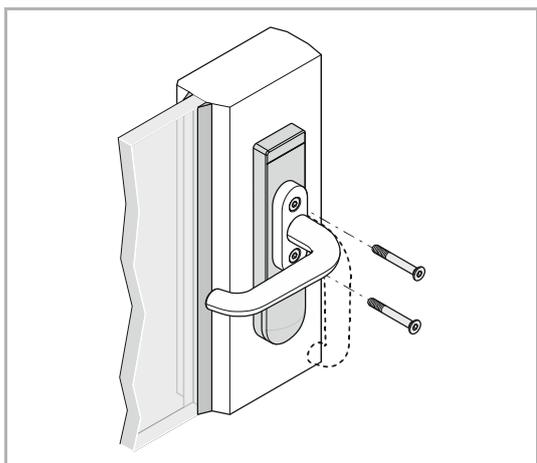
Do not install the window handle unless it is in the “closed” position.



4. Set the window handle into the "closed" position.

5. Attach the window handle together with the window sensor.

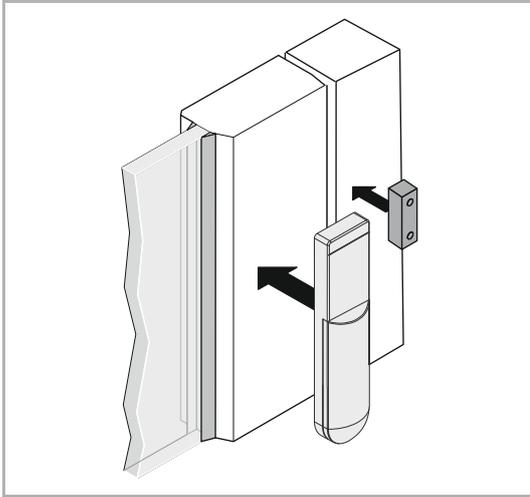
## Connection and installation



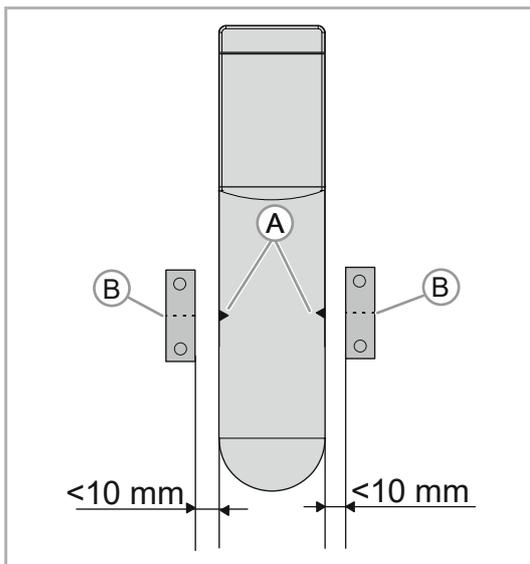
6. Turn the window handle to the side and fasten it with the supplied screws.

### 5.3.3 Requirements for installing the universal detector

#### Positioning the universal detector and magnetic contact:



- Fix the position of the universal detector.
- The position of the supplied magnetic contact can be fixed on both sides of the universal detector.



- The reference mark of the universal detector (A) must be in line with the centre of the magnet (B).
- The distance between the magnet and the universal detector must not be greater than 10 mm.
- The connection between the magnet and the universal detector must be sufficiently separated, e.g. when tilting the window.

### 5.3.4 Installation of universal detector



**Warning! – Risk of damage**

Damage to the universal detector due to incorrect mounting material  
– Use only the screws that are supplied for installing the universal detector.



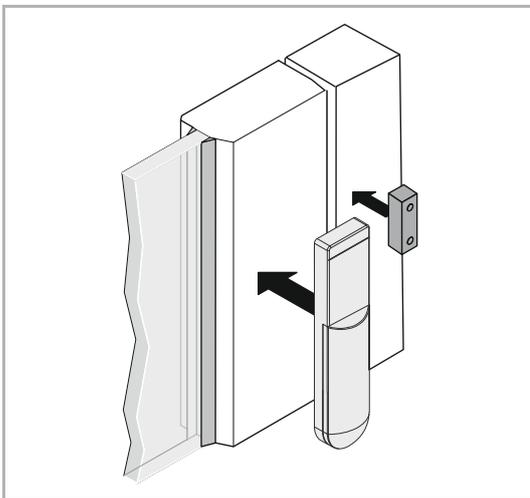
**Note**

Insert the battery only directly before programming starts.

The magnet and the universal detector can be either glued on or screwed on.

To install the device, perform the following steps:

**Gluing:**



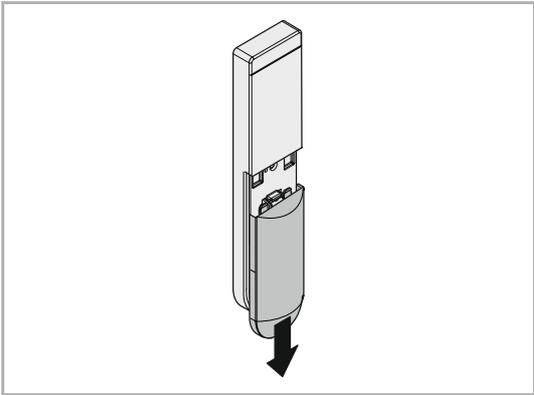
1. Glue the universal detector and the magnet with the supplied adhesive film on any smooth, clean and grease-free surfaces.



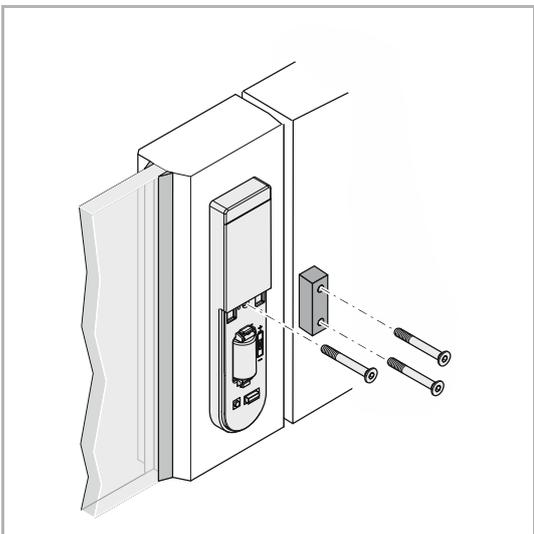
**Note**

The maximum adhesive strength is reached after 24 hours.

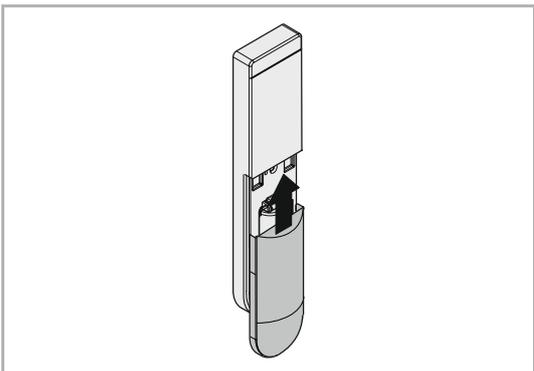
### Screws:



1. Remove the cover of the battery compartment.



2. Screw on the universal detector and the magnet with the supplied screws.



3. Replace the cover of the battery compartment.

#### 5.4 Connection of external, floating sensor on universal detector



##### **Danger - Electric voltage!**

Install the device only if you have the necessary electrical engineering knowledge and experience.

- Incorrect installation endangers your life and that of the users of the electrical system.
- Incorrect installation can cause serious damage to property, e.g. due to fire.

The minimum necessary expert knowledge and requirements for the installation are as follows:

- Apply the "five safety rules" (DIN VDE 0105, EN 50110):
  1. Disconnect
  2. Secure against being re-connected
  3. Ensure there is no voltage
  4. Connect to earth and short-circuit
  5. Cover or barricade adjacent live parts.
- Use suitable personal protective clothing.
- Use only suitable tools and measuring devices.
- Check the type of supply network (TN system, IT system, TT system) to secure the following power supply conditions (classic connection to ground, protective earthing, necessary additional measures, etc.).
- Observe the correct polarity.

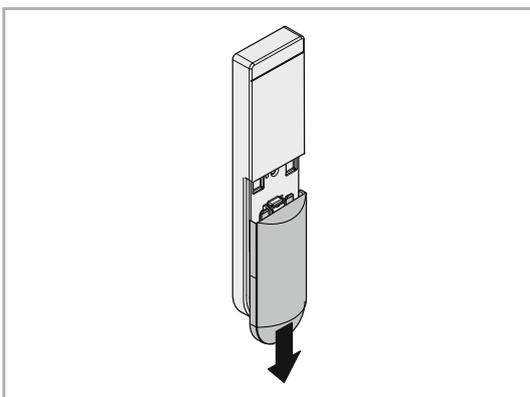
Additional external sensors (floating normally-closed or normally-open contacts) can be connected to the universal detector.



##### **Note**

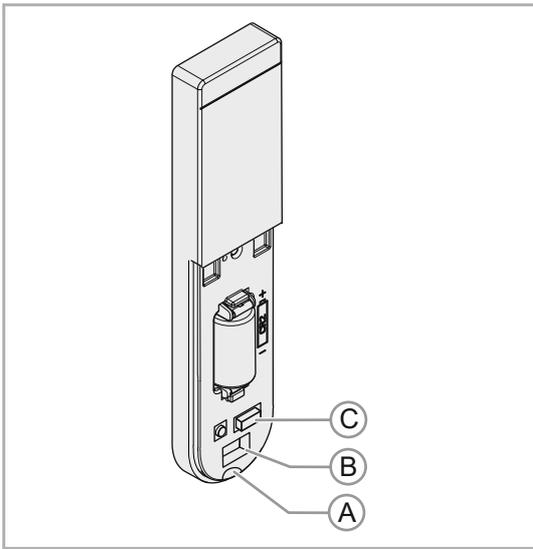
When connecting sensors, please note that the maximum admissible line length is 5 m!

The connection cross section is 0.14 mm - 0.5 mm<sup>2</sup> (single-wire).



1. Remove the battery cover.

## Connection and installation



2. To connect a sensor cable, break out the recess on the bottom of the device (A).
3. Connect the sensor cable to the terminal (C).
4. As strain relief the sensor cable can additionally be secured in the recess of the housing (B) with a cable tie.
5. Push on the battery cover.

## 6 Commissioning

Commissioning of the device is always carried out via the Web-based surface of the System Access Point. It is assumed that the basic commissioning steps of the overall system have already been carried out. Knowledge about the Web-based commissioning software of the System Access Point is assumed.

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.

When energized, a device that has not been programmed is in programming mode for 10 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. The installer must change this name within the commissioning process to a name practical and specific for the system.

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

**Note**

General information about commissioning and parameterization is available in the ABB-free@home® system manual.

## 6.1 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 smartphone, tablet or PC to call up the user interface of the System Access Point that is ready for use.
3. Start the scanning mode ("Settings" > "free@home-Wireless" > "Search for wireless devices").

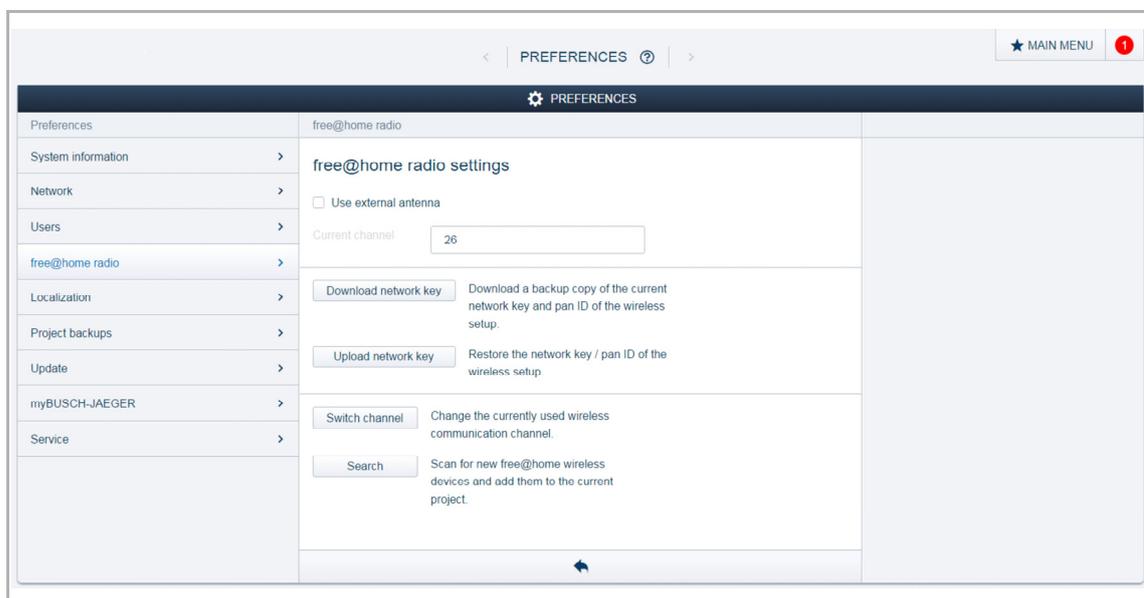


Fig 5: Coupling wireless devices with the System Access Point

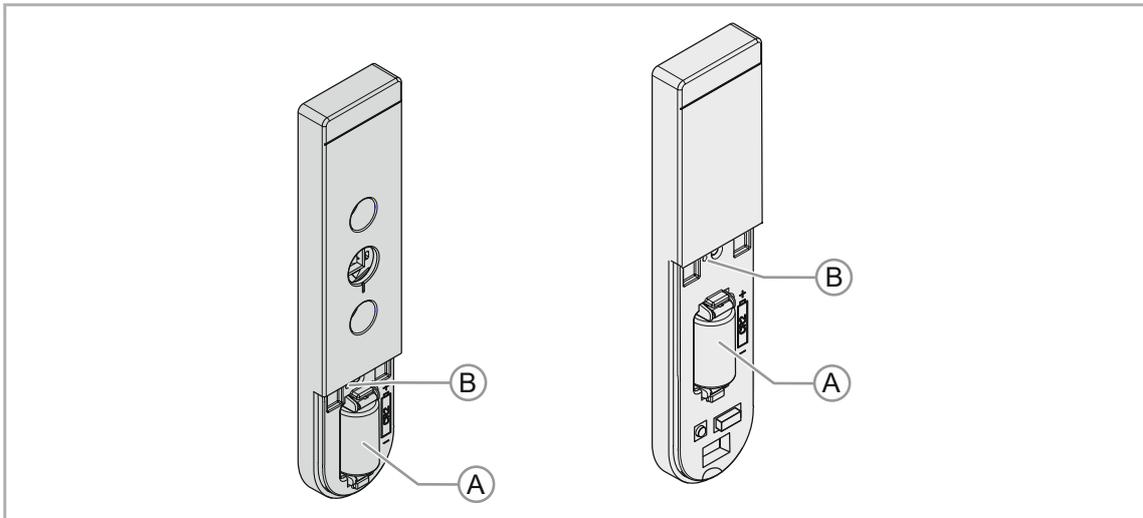


Fig. 6: Inserting the batteries

4. Insert the battery into the device (A).
  - The LED (B) flashes briefly (battery function test).
  - The device is now in programming mode for 10 minutes.
  - The LED (B) now flashes as long as the programming mode is active.
5. The System Access Point now consecutively scans all free@home wireless channels. 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. Devices are listed in the "Device list" of the user interface.
6. 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 not in programming mode.
  - The 10-minute programming time has expired.
  - The device has already been coupled with a different system.

### 6.1.1 Resetting the wireless device to the factory settings

A device that has already been programmed must be reset to enable it to be set again into programming mode.

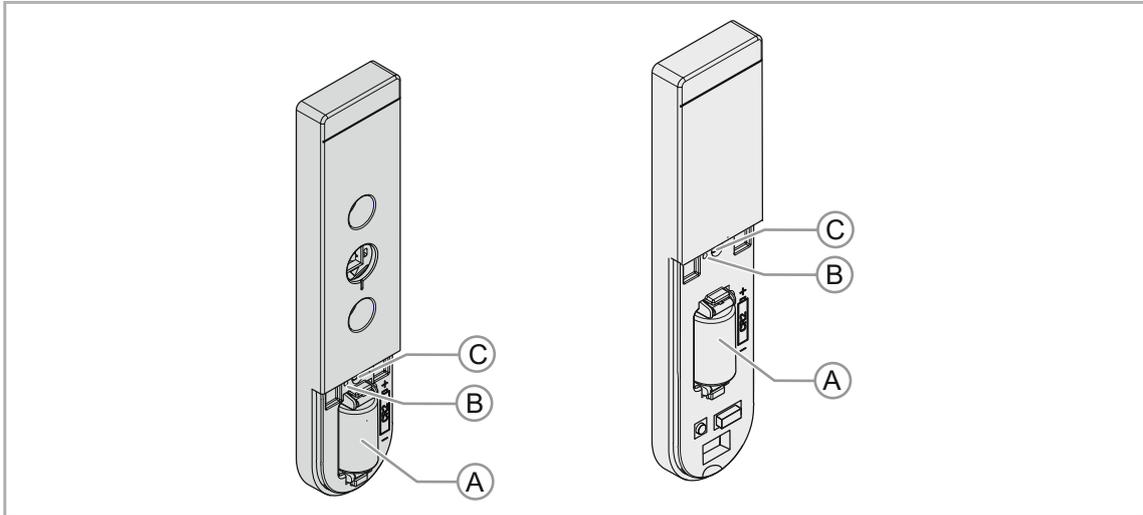


Fig. 7: Resetting to factory settings

1. Remove the battery (A) from the device and wait 30 seconds.
  2. Insert batteries again and simultaneously keep the button (C) pressed for at least 15 seconds, until the LED (B) stops flashing.
- The factory settings are restored and the device can now be programmed again.

## 6.2 Allocation of devices and definition of channels



### Note

Special feature of universal detector:

The device has two channels. One channel for the internal magnet contact and one channel for an external contact. The two channels are evaluated independently.

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.

### 6.2.1 Add device

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

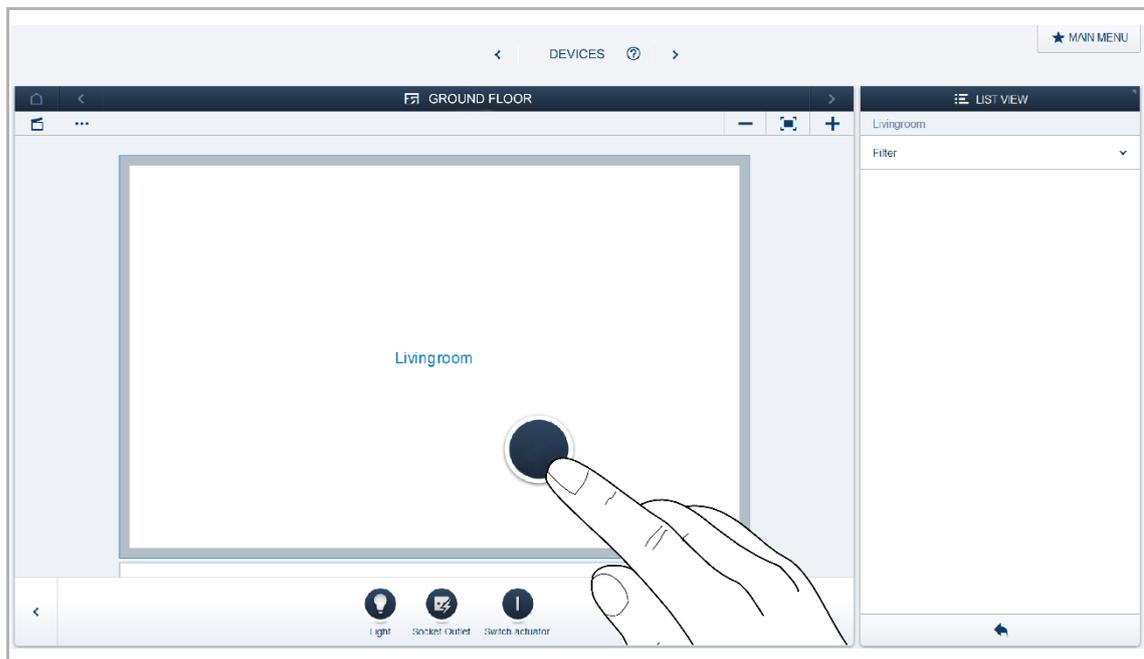


Fig. 8: Dragging the application from the add bar

A pop-up window opens which lists all the devices that are connected to the bus and suitable for the selected application.

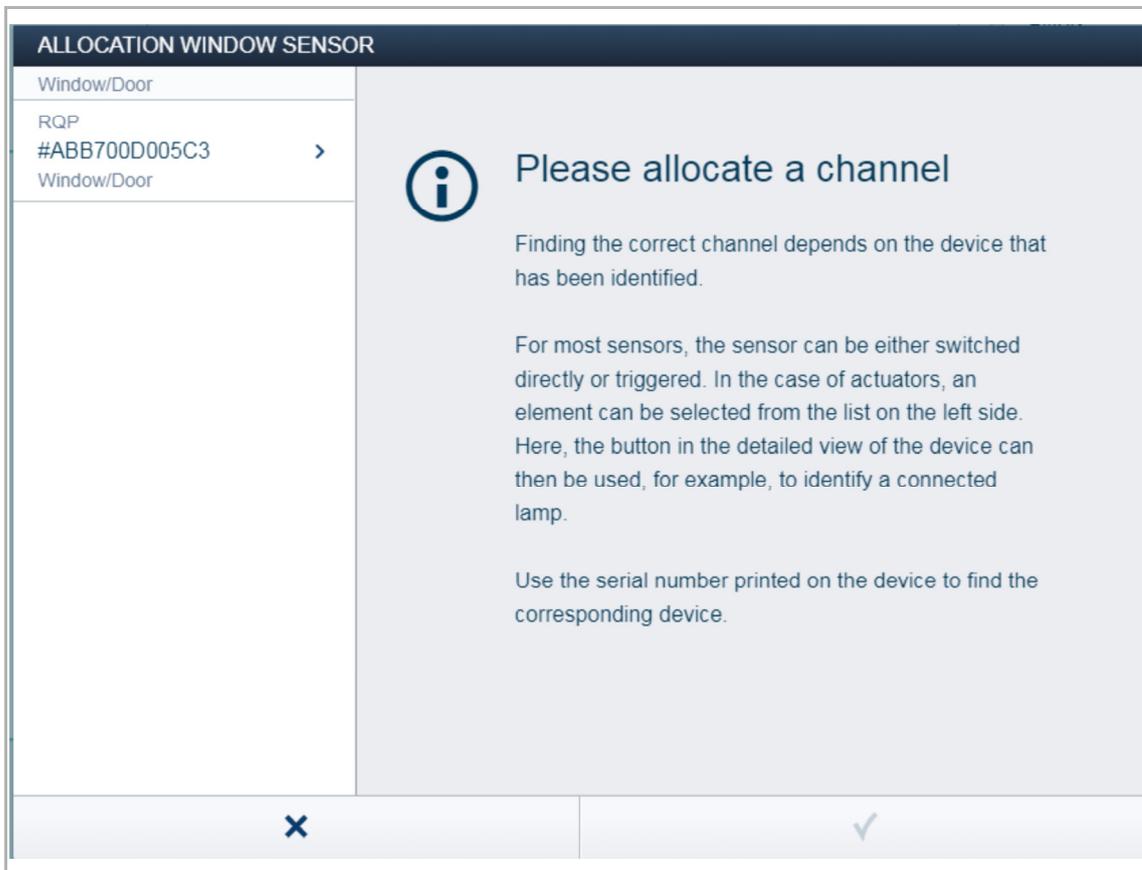


Fig. 9: Pop-up window with the suitable devices

### Identification

The device can be identified via the serial number.

### Identification via serial number

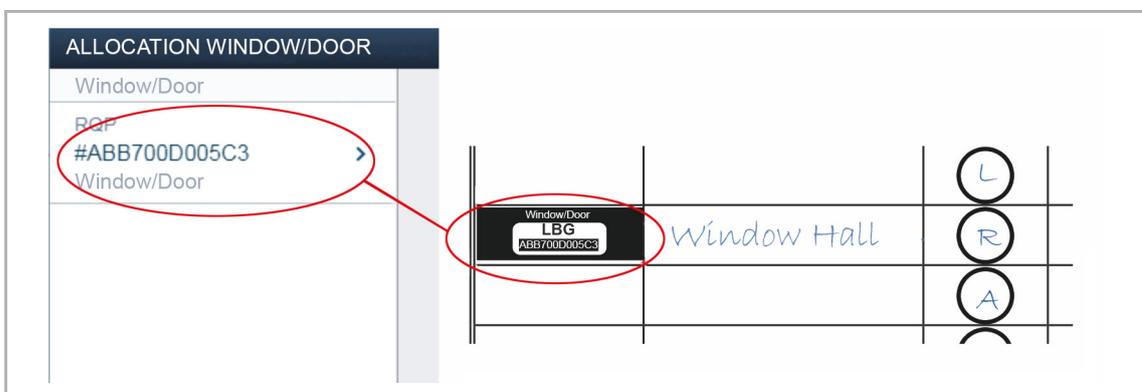
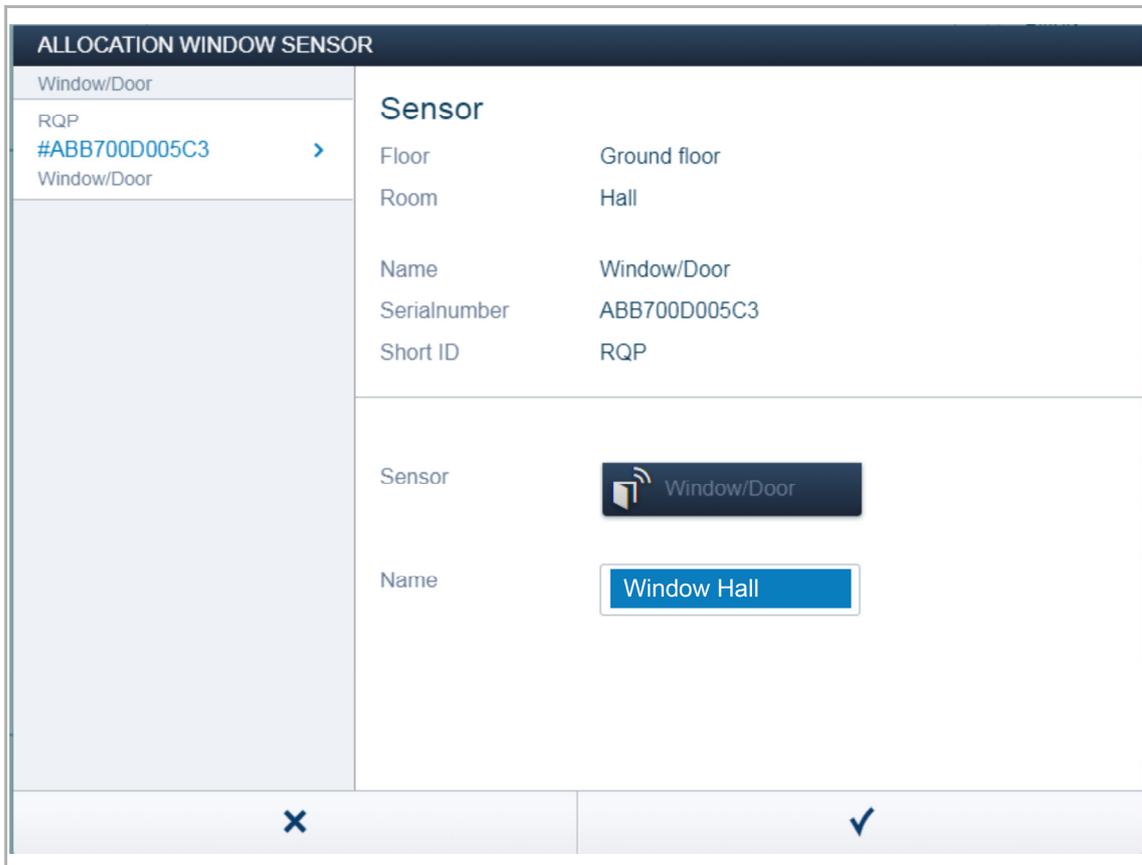


Fig. 10: Identification via serial number

- 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.

### Specifying a name



ALLOCATION WINDOW SENSOR	
Window/Door	<b>Sensor</b>
RQP	Floor: Ground floor
#ABB700D005C3	Room: Hall
Window/Door	Name: Window/Door
	Serialnumber: ABB700D005C3
	Short ID: RQP
	Sensor: <input type="radio"/> Window/Door
	Name: <input type="text" value="Window Hall"/>
<input type="button" value="X"/>	<input type="button" value="✓"/>

Fig. 11: Specifying a name

1. Enter a name that is easy to understand and under which the application is to be displayed later, e.g. "Window Hall".
2. Press the tick at the bottom right.

This takes over the entry.



#### Note

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

### 6.3 Setting options per channel

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



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

#### Select device

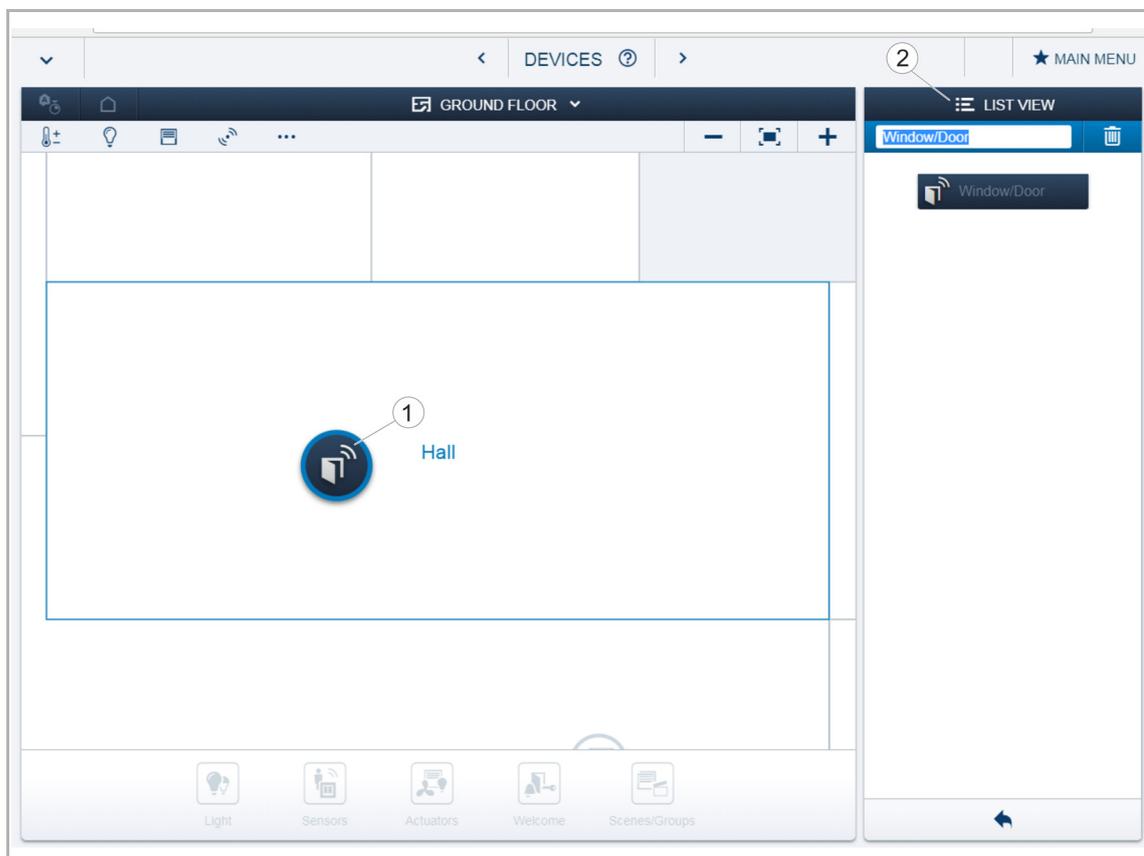


Fig. 12: Select device

1. 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 push-buttons (sensors) the corresponding push-button must be selected.

The following settings are available.

### 6.3.1 Parameter settings of window sensor / universal detector

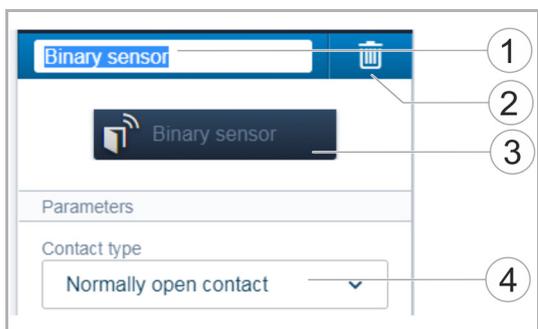
#### Window sensor and universal detector (via internal magnet contact)



- [1] Changing the name
- [2] Deleting the channel
- [3] Switching of the actuator via the button

Fig. 13: Sensor settings

#### Universal detector (via connection of external sensor)



- [1] Changing the name
- [2] Deleting the channel
- [3] Switching of the actuator via the button
- [4] Selecting the contact type of the switch (NC contact is closed in the rest position, a NO contact is open)

Fig. 14: Sensor settings

## 6.4 Links

The sensors and actuators created via the "Devices" allocation function can be linked with each other. A detector can be linked with a second device, e.g. room temperature controller. When an open window is detected, the room temperature controller changes into "Frost protection" mode and reduces the set-point temperature to prevent unnecessary loss of energy.



The linking in the list view is made via the linking function of the Web-based user interface of the System Access Point, which is also integrated in the "Devices" page.

### 6.4.1 Linking actuator and sensor

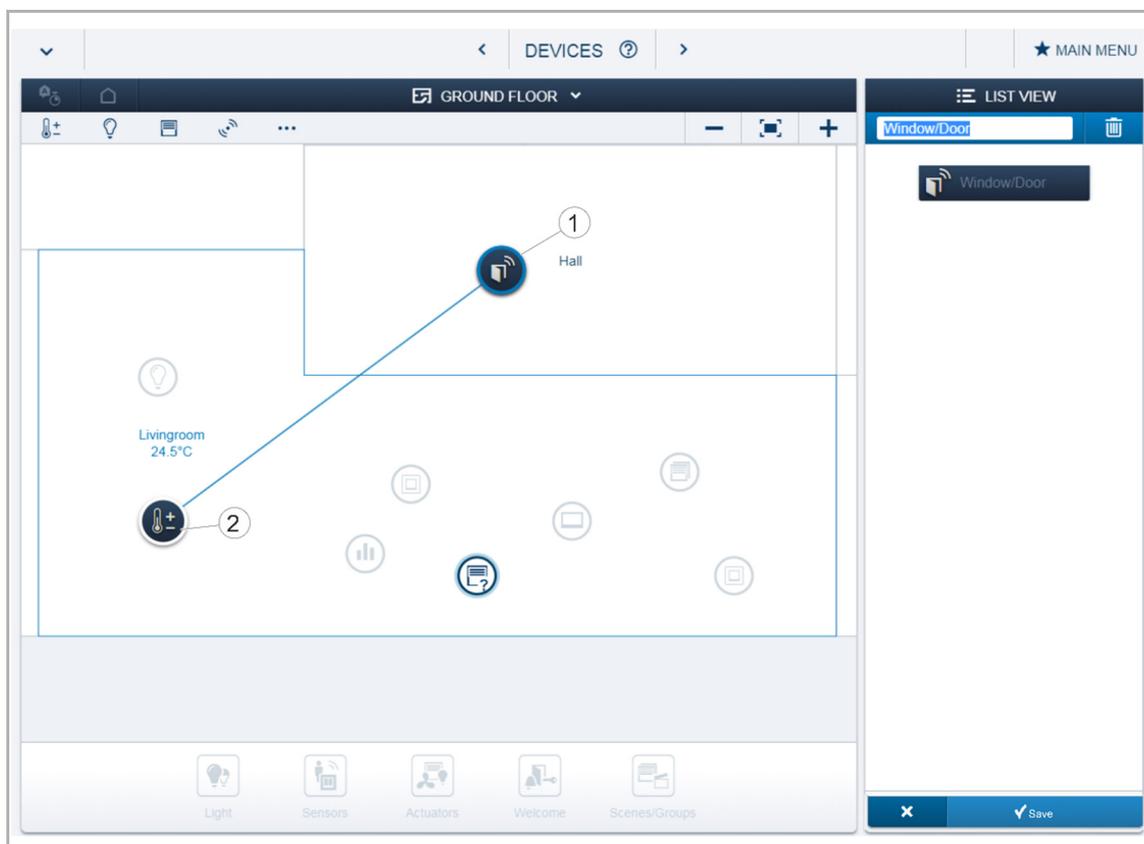


Fig. 15: Linking actuator and sensor

1. On the working area select the sensor [1] that is to be linked with the actuator.
2. Select the actuator [2] that is to be served by the sensor.
3. 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 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.

## 7 Update

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

## 8 Maintenance

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

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

### 8.1 Cleaning



**Caution! - Risk of damaging the device!**

- When spraying on cleaning agents, these can enter the device through crevices.
  - Do not spray cleaning agents directly onto the device.
- Aggressive cleaning agents can damage the surface of the device.
  - Never use caustic agents, abrasive agents or solvents.

Clean dirty devices with a soft dry cloth.

- If this is insufficient, the cloth can be moistened slightly with a soap solution.

## 9 Notes

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