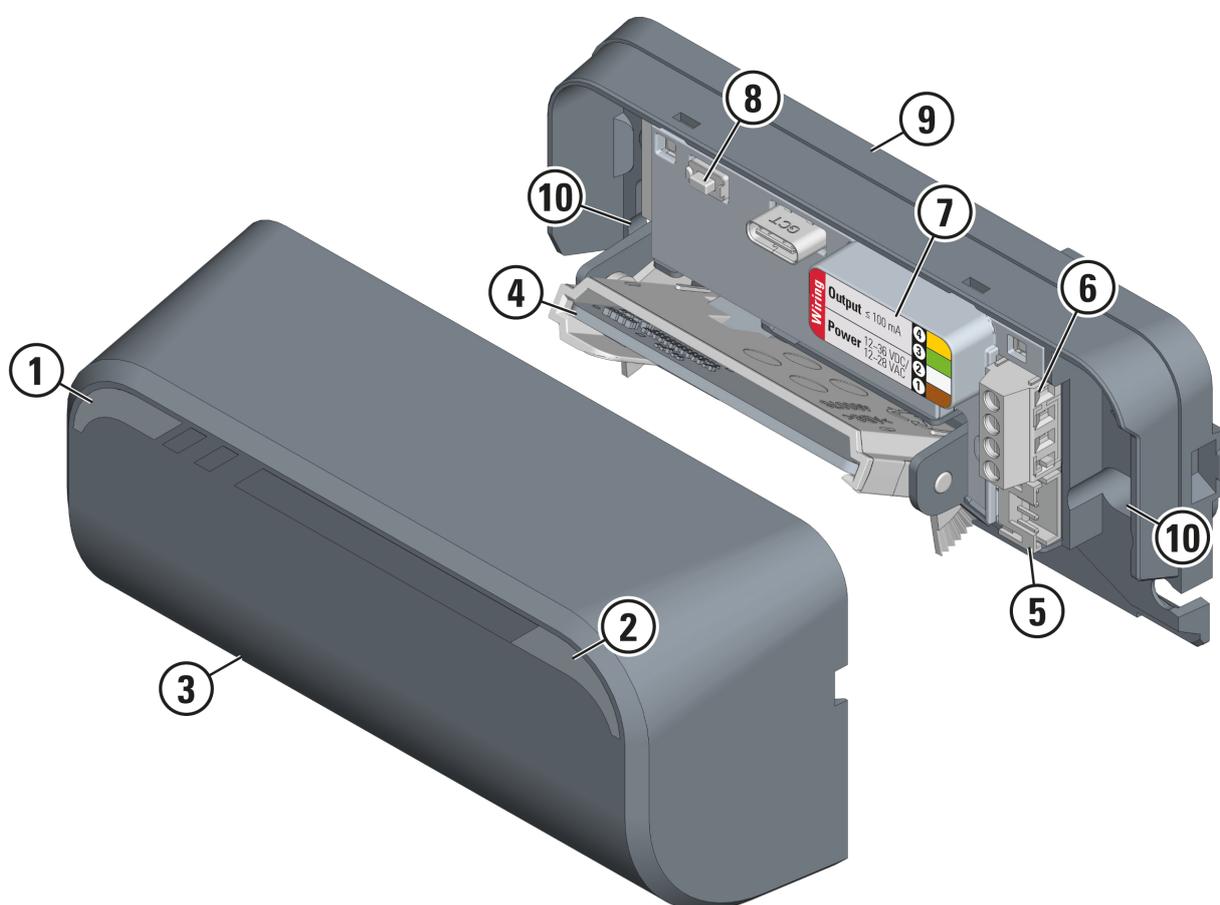


# FutureSense

Detector for activating automatic doors

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<b>1</b> Left LED	<b>6</b> Connection terminals
<b>2</b> Right LED	<b>7</b> Connection label
<b>3</b> Cover	<b>8</b> Reset button
<b>4</b> Radar module	<b>9</b> Support plate
<b>5</b> Connection slot	<b>10</b> Mounting points

# 1 Description

## 1.1 Function

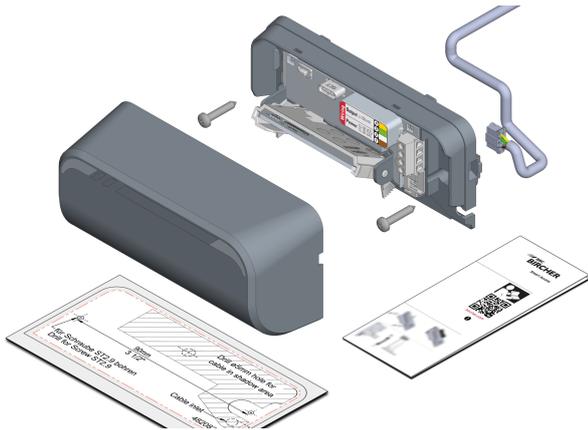
The sensor is designed for mounting above an automatic pedestrian door and for connection to the door controller.

To activate the door, a radar field detects the movement of people.

Detection: The sensor determines the position, direction and speed of all detected movements. With this movement data, the sensor calculates whether and when a person will reach the door.

## 1.2 Scope of delivery

### Standard package contents



- Sensor with cover
- Connection cable with plug-in connection
- Mounting materials
- Drilling template
- QuickStart guide



### ATTENTION

Do not touch the radar module.

## 2 Safety instructions

Read the operating instructions carefully before commissioning the device. Keep the instructions for future use.

### Intended use

The manufacturer is only liable for products used as intended. Only use this product for the following purpose:

Detector for activating automatic doors

### Personnel qualification

Only trained and qualified personnel may install and commission the device.

The installer is responsible for installing the device and the connected system in accordance with the regulations and standards.

## General safety instructions

It is the responsibility of the equipment installer to carry out a risk assessment and to install the system, in compliance with applicable regulations and safety standards.

If installation according to EN 61558 is required, the detector may only be operated using safety extra-low voltages (SELV) with safe electrical isolation.

The cables must be protected against mechanical damage.

## 3 Installation

### 3.1 Mounting position

Requirements for the environment:

- The sensor requires an unobstructed field of view to detect objects.
- Avoid proximity to fluorescent lamps.
- Shield the sensor against extreme weather conditions, e.g. with a rain cover, canopy or installation under the door lintel.

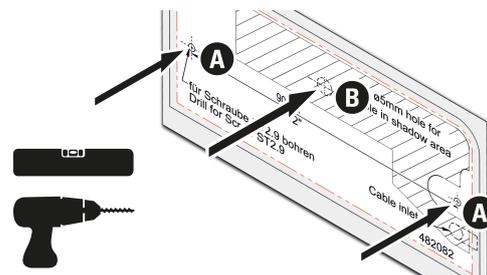
### 3.2 Mounting preparation

- 1) Disconnect the power supply to the door controller.
- 2) Specify the mounting position.
- 3) Lay the connection cable. Ensure that the cable is routed so that it is free of electromagnetic interference. Avoid e.g. parallel routing of the cables for the sensor and door drive.
- 4) Remove the cover from the sensor.
- 5) Prepare the sensor for the installation situation according to section 4.2:
  - Set the radar inclination angle according to the table.

### 3.3 Mounting

The sensor is attached to or above the door frame as standard.

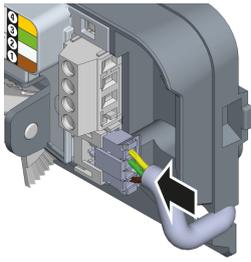
- 1) Glue the drilling template onto the intended location.



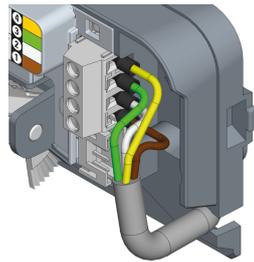
- 2) Make two core holes  $\varnothing 2.0$  to  $2.5$  mm in the door frame at mounting points A. Alternatively, place dowels above the frame.
- 3) Drill a hole for cables  $B\varnothing \geq 5$  mm within the hatching. Alternatively, surface-mounted cabling above the sensor is possible.

- 4) If you are using the supplied connection cable, plug the plug connector into the plug connection on the sensor. Electrical connection is carried out as described in section 3.4.

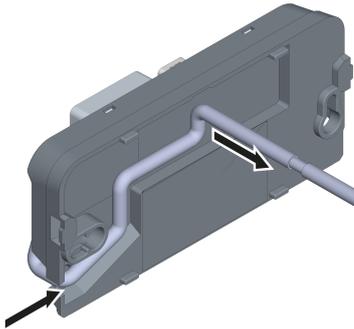
a) Supplied cable:



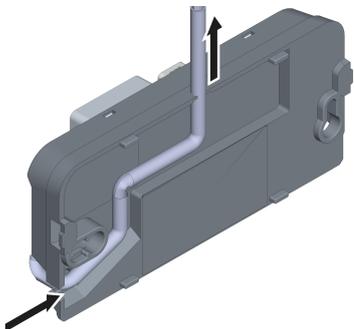
b) Cable provided by the customer:



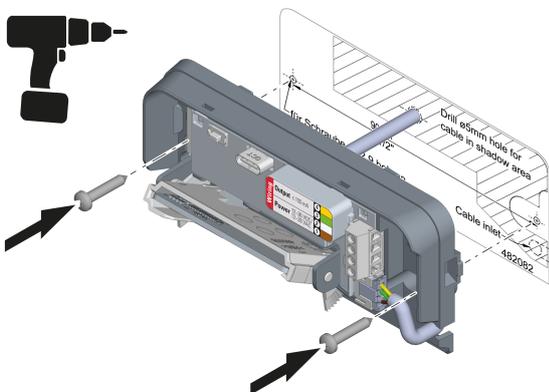
- 5) Lay the connection cable over the back of the support plate.



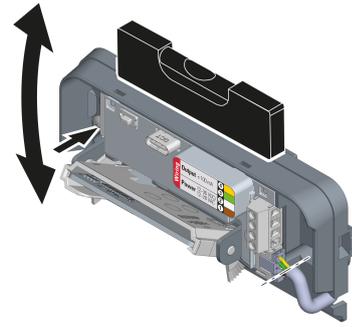
If surface-mounted cabling is required, insert cable cutouts at the prepared positions on the support plate and cover.



- 6) Screw the support plate of the sensor to the mounting points.



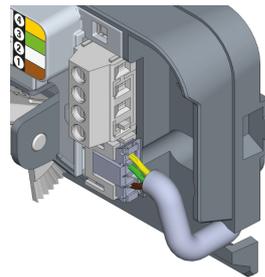
- 7) Tightening the left screw adjusts the sensor horizontally.



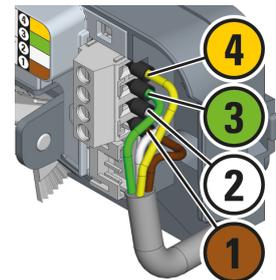
### 3.4 Electrical connection

- Connect the sensor to the door controller.

a) Supplied cable:



b) Cable provided by the customer:



Assign the cable terminals on the door controller as follows.

Assign the cable terminals on the sensor as follows. The wire colors may deviate.

	4/3	Radar output ≤ 36 V DC/28 V AC ≤ 100 mA
	2/1	Supply voltage 12 – 36 V DC/12 – 28 V AC ≤ 60 mA

- Switch on the power supply to the door controller.

## 4 Settings

### 4.1 Software configuration

#### 4.1.1 Installing the app

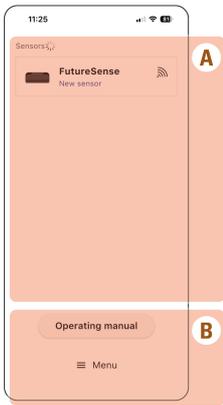


- 1) Scan the QR code.
- 2) Install the configuration app on your mobile end device.

#### 4.1.2 Configuring the sensor

Start the app. The app searches for Bluetooth® connections to sensors. A list of available connections appears on the display.

## Connection list



- A** Select a sensor from the list of detected connections, sorted in descending order by signal strength
- B** App options:
- Select language
  - Contact support
  - Send feedback
  - Read instructions
  - View log messages

## Connecting the app to the sensor

- ▶ Select the sensor to be configured from the connection list. An unconfigured sensor has the name **New sensor**. The left LED of the selected sensor flashes blue. Confirm the connection in the app.
- ▶ If the sensor is set to factory settings, enter a descriptive name and password. Otherwise, log on with the sensor password.



### NOTE

If the password is lost:

- ▶ Restore the sensor to its factory settings, see [4.1.3](#). Reconfigure the sensor.

Once a connection to a specific sensor is established, the app switches to the sensor view.

## Sensor view



- A** Display of detections without door activation (gray) and with door activation (green)
- a** Change display settings
- B** Set parameters
- C** Sensor options:
- Change name and password
  - Check and update firmware version
  - Switch output logic
  - Restart sensor
  - Restore factory settings
  - Display product documentation
  - View device messages

## Set situation parameters

Adjust the sensor according to the situation.

- ▶ Specify the type and dimensions of the door. For swing doors, indicate whether the sensor is installed on the hinge side.
- ▶ Specify the position of the sensor.
- ▶ The sensor measures the set inclination angle of the radar module. The app calculates a recommended angle range. Rotate the radar module until the app displays the set inclination angle within the recommended angle range. See also [4.2 "Mechanical settings"](#).



### ATTENTION

- The sensor interprets detections based on the specified dimensions. Ensure that the dimensions are correct.
- For swing doors, the sensor suppresses door movements on the hinge side. Ensure correct assignment of the door type and the hinge side.

Test the settings. If necessary, correct the entries.

## Optimize detection parameters

If the door opens too early, too late, or while closing, optimize the evaluation of detections.

- ▶ Interference suppression:  
Use this function on the hinge side of swing doors if the sensor detects door movements. Start the **teach-in**. Follow the specified process.
- ▶ Detection area:  
If door openings are triggered too early, reduce the **activation distance**.

Test and optimize the settings. If necessary, repeat the teach-in.

## Define zone parameters

If required, also define zones for complex environmental conditions.

- ▶ Activation zones:  
In tight spaces, there are sometimes no paths within the radar field. To ensure that stationary persons also activate the door, define activation zones near the door if necessary.
- ▶ Exclusion zones:  
Plants, flags, and puddles may be interpreted by the radar as human movement. To prevent activations caused by moving or reflective elements in the room, define exclusion zones if necessary.

Test and optimize the settings.

## Switch output logic

If the open door closes when activated:

- ▶ You will find sensor options below the parameters. Open the **sensor settings**. Switch the **output logic (NO/NC)**.

## 4.1.3 Reset functions

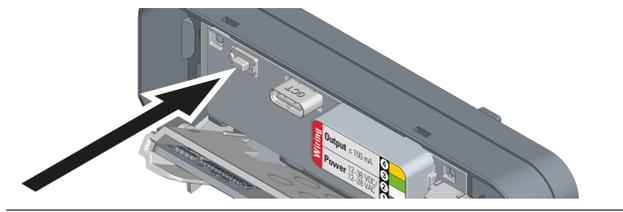
The app reset functions (see [4.1.2](#)) can also be triggered manually on the device.

Restart sensor:

- ▶ Briefly press the reset button.

Restore factory settings:

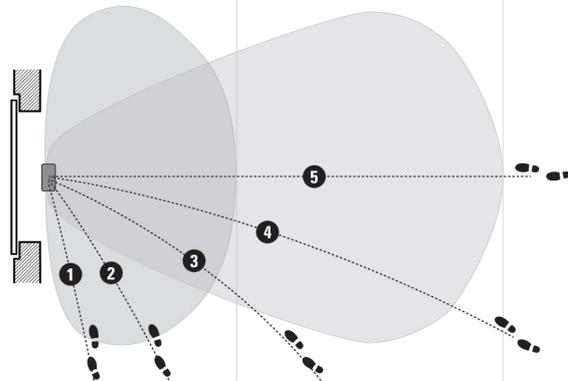
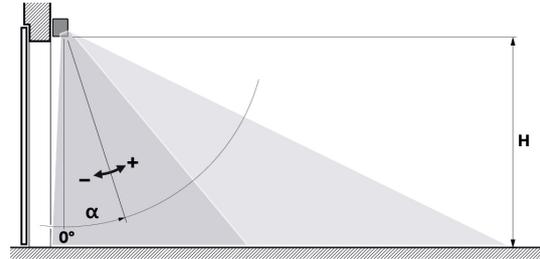
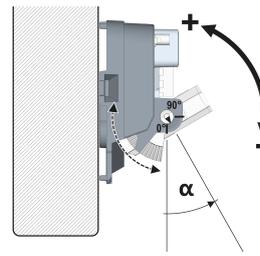
- ▶ Press the reset button until the status LEDs alternately flash white and magenta. As soon as the factory settings are restored, the status LEDs alternately flash white.



## 4.2 Mechanical settings

### Setting the radar inclination angle

The inclination angle of the radar module can be adjusted in 5° increments.



Mounting height	Inclination angle		
	H (m)	min. $\alpha$	max. $\alpha$
2.00		30°	75°
2.25		<b>30°</b>	70°
2.50		30°	65°
2.75		30°	60°
3.00		30°	55°
3.25		25°	50°
3.50		25°	45°
3.75		20°	40°
4.00		20°	35°
<b>Factory setting 30°</b>			

Set a suitable inclination angle  $\alpha$ :

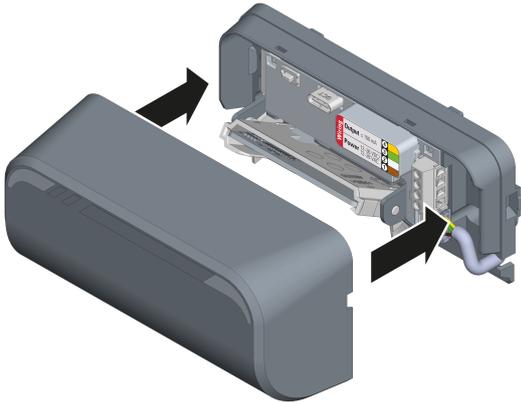
- ▶ For mounting height  $H$  of the sensor, determine the appropriate angle **min.  $\alpha$**  in the table. The angle **min.  $\alpha$**  is suitable for all room situations.

- ▶ To achieve early detection on paths 4 or 5, increase the inclination angle to **max.  $\alpha$**  as required. Lateral movements (paths 1 and 2) are detected later at larger inclination angles. A large inclination angle is suitable for doors at the end of narrow hallways. The radar field cannot be passed under with angle settings up to **max.  $\alpha$** .
- ▶ Test the selected setting using the illustrated paths 1 to 5.

## 5 Operation

### 5.1 Commissioning

- 1) Place the cover on the sensor.



- 2) Wait until the LEDs stop flashing. Note: Continuous flashing signals indicate a fault, see section **Faults**.
- 3) Test the door system and, if necessary, modify the **Settings**.

### 5.2 Status display

LED display lit up	Operating status
	No detection
	Movement detected, no door activation
	Movement detected and door activated
	Warning message
	Sensor connected to app via Bluetooth®, right LED continues to indicate sensor status
LED display flashing on both sides	Operating status
	Operating voltage switched on, sensor starting
	Error

LED display flashes alternately	Operating status
	Restoring factory settings
	Factory settings active, no password set
	Sensor ready for Bluetooth connection, waiting for confirmation in app

### 5.3 Faults

#### Possible error sources

- Incorrect configuration
- Unfavorable inclination angle of the radar module
- Incorrect power supply
- Incorrectly connected signal output
- Ambient interference
- Device fault

#### Diagnosis

- 1) Test the door behavior.
  - Approach the door from different directions.
  - Walk past the door at different distances.
- 2) Observe what is shown in the app and the status display, see .
- 3) Check the configuration, see **4.1**.
- 4) Check the inclination angle of the radar module, see **4.2**.
- 5) Check the electrical connections on the sensor and door controller, see .
- 6) Check the mounting position, see .
- 7) Check whether the firmware is up to date, see **4.1.2**

#### Fault patterns

	LED signal
Possible cause	Possible remedies
	No signal
No supply voltage.	Correct the electrical connection.
	Flashes red quickly
Sensor fault.	<ol style="list-style-type: none"> <li>Restart the sensor via the app or the reset button.</li> <li>Update the firmware.</li> <li>Activate the factory settings and repeat the sensor configuration.</li> <li>Replace the sensor.</li> </ol>

**Door continuously alternates between opening and closing.**



Lights up green when door closes

Radar field detects door movement.

App, sensor view, parameters:  
 a) **Situation:**  
 Check the set door type and the assignment of the hinge side.  
 b) **Detection:**  
 Select interference suppression and start the teach-in, repeating it multiple times if necessary, until the problem is resolved.

**Door opens without pedestrian traffic.**



Lights up green when door closes

Radar field detects moving objects or reflections in the room.

To suppress interfering elements, define **exclusion zones** (app, sensor view, parameter **zones**).

**Door open, closes when someone nears.**



Lights up green when door closes (White on detection)

Switching logic configured backwards

App, sensor view, device-related settings:  
 Set the **Switching logic NO/NC** (Normally Open/Normally Closed) to another value.

**Door does not open when someone nears from the side.**



No signal

Radar field set too high is bypassed underneath.

Adjust the radar field further downward. The app assists you in setting the inclination angle (app, sensor view, parameter **situation**).

Tight space without path in the radar field.

To activate the door for stationary persons next to the door frame, define **activation zones** (app, sensor view, parameter **zones**).

**Door does not open when someone nears.**



Lights up white when the person is detected

Activation distance set too small.

Increase the **activation distance** (app, sensor view, parameter **detection**).

**Door does not open in the required moment.**



Lights up white on detection, green on activation

Parameters set incorrectly or imprecisely.

App, **Situation** and **Detection** parameters:  
 Optimize the door dimensions, sensor position, and the activation distance.

## 6 Technical data

Technology	FMCW radar 57 – 64 GHz
Configuration interface	App (Android OS, iOS)
Mounting height	2.00 to 3.50 m optimal, max. 4.00 m
Diameter (W × L) of the radar field floor projection at a mounting height of 2.30 m	approx. 5.00 × 3.00 m at an inclination angle of 30°, approx. 4.00 × 6.00 m at an inclination angle of 70°

### Mechanical data

Housing material	ABS
Housing color	black, silver, white
Dimensions (L × W × D)	105 × 49 × 35 mm
Weight	55 g
Protection class	IP54 (EN 60529)

### Electrical data

Supply voltage	min. 12 V DC, max. 36 V DC/ min. 12 V AC, max. 28 V AC (50 Hz/60 Hz)
Operating current	max. 60 mA at 24 V DC
Inrush current	max. 1 A (max. 10 ms)
Radar output	Solid state relay, max. 100 mA, max. 36 V DC/28 V AC
Connection type (standard)	3 m cable with plug connector

### Ambient conditions

Ambient temperature	min. -20°C, max. +60°C
Relative humidity	max. 95%, non-condensing

### Disposal information



The product contains electrical or electronic components. Do not dispose of the product with household waste.

### Notice on conformity



BBC Bircher AG declares that this product conforms with the following guidelines and directives of the EU:

RED 2014/53/EU    RoHS 2011/65/EU

Follow the QR code or link below for the detailed declaration of conformity.

### Technical documentation



You will find all documents on the manufacturer website  
[www.bircher.com](http://www.bircher.com)

## 7 Contact

If you have any questions about the device, please contact us:

✉ [service@bircher.com](mailto:service@bircher.com) 📞 +41 52 687 1366

### **BBC Bircher Smart Access**

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