

EasyLoop D

Original operating instructions
 EN 2.7 488142

Vehicle detection sensor for activation or presence detection at automatic barrier systems

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EasyLoop D

1 Description

1.1 Function

The sensor detects vehicles using a high-frequency microwave technology. The device is designed to be connected to automatic barrier system controls.

The sensor can be used for:

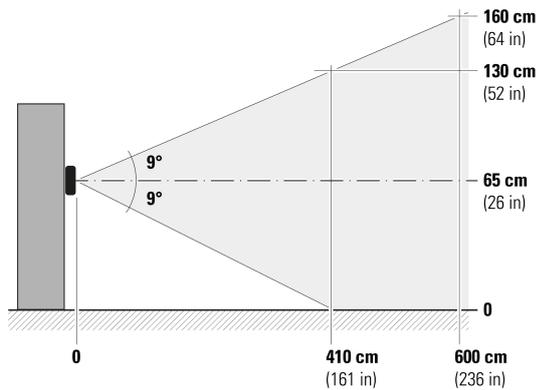
- presence detection for supplementary protection (type D acc. to EN 12453) at a force-limited barrier arm
- **or** motion detection in proximity of the barrier for activation purpose

Alignment of the radar field to the roadway:

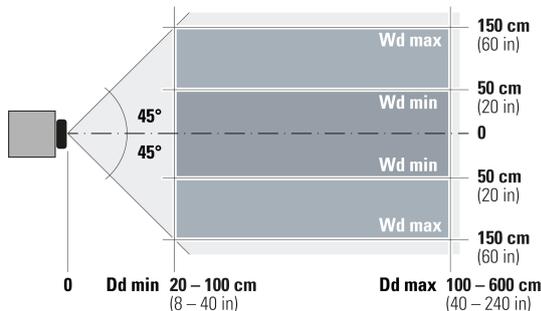
- 90° for presence detection
- 90° or 45° for motion detection

1.2 Radar zone dimensions

Side view



Top view



Wd detection width, configurable via mobile app
Dd detection distance, configurable via mobile app, default 300 cm (118 in)

1.3 Scope of delivery

1 sensor, 1 connection cable 10 pin × 1.2 m (4 ft), mounting material, instructions

Package dimensions: 140 × 85 × 60 mm

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 function specified:

Vehicle detection sensor for activation or presence detection at automatic barrier systems

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.

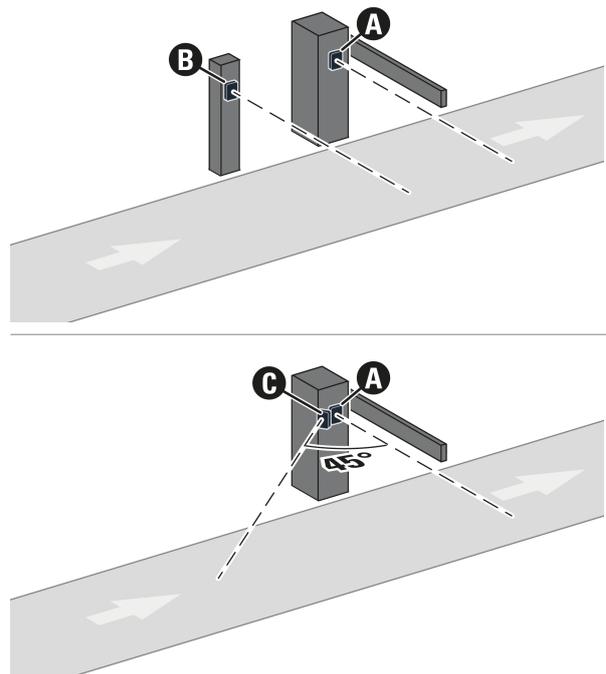
The cables must be protected against mechanical damage.

3 Installation

3.1 Mounting position

Alignment to the roadway

The mounting position of the sensor depends on the intended function.



Protective sensor 90° (A):

- presence detection for protection in the range of motion of the barrier arm
- alignment perpendicular to the roadway, parallel to the barrier arm
- mounting on the barrier housing

Activation sensor 90° (B):

- motion detection for activation of the barrier

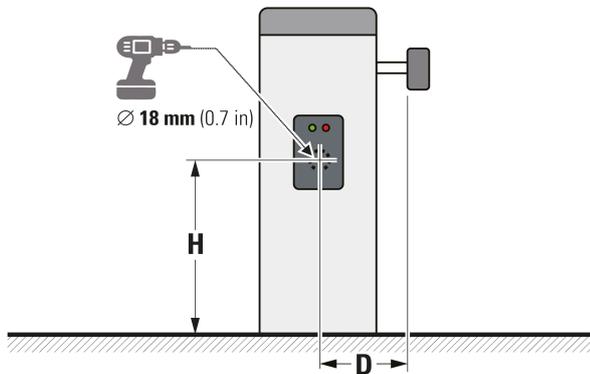
- detection of small distance between vehicles by alignment perpendicular to the roadway
- mounting on an additional post required

Activation sensor 45° (C):

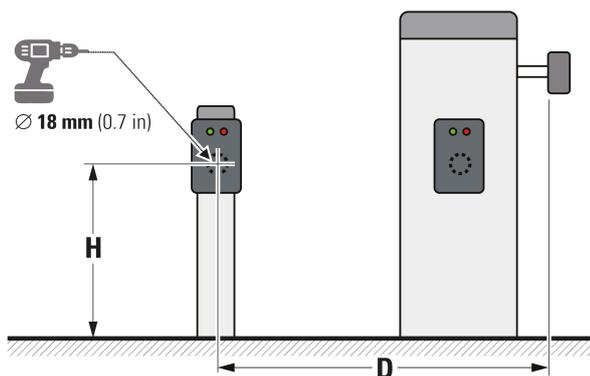
- motion detection for activation of the barrier
- detection only of large distances between vehicles by alignment diagonally to the roadway
- mounting on the barrier housing with 45° bracket (optional accessory)

Installation dimensions

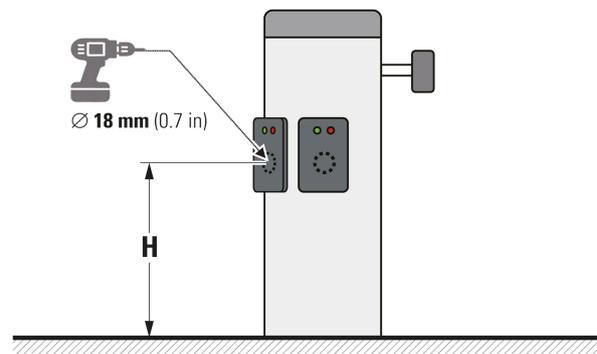
A



B



C



- H** Sensor mounting height above road level:
- 65 – 75 cm (26 – 30 in) for small vehicles
 - 75 – 80 cm (30 – 32 in) for small vehicles when speed bumps are used or for trucks with chassis height > 70 cm (28 in)
 - Use of 2 sensors recommended for trucks with chassis height > 100 cm (40 in)
- D** Sensor distance to barrier arm:
- 20 – 30 cm (8 – 12 in) for the presence detector on the barrier housing
 - > 180 cm (70 in) for the activation sensor on a post



ATTENTION

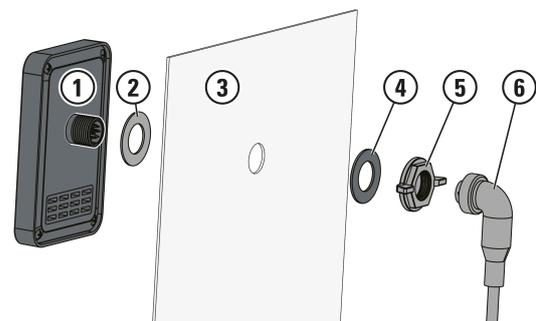
- Avoid obstructions (e.g., metal fences, walls, cameras) within the sensor's detection field.
- Performance may degrade in muddy or extreme weather (e.g., heavy rain, snow).

3.2 Mounting the sensor

Sensor orientation 90° (A, B)

Mounting on the barrier housing or on the post:

- 1) Drill a hole, $\varnothing 18$ mm (0.7 in), on the position intended, see section "**Mounting position**".
- 2) Fix the sensor by usage of the mounting material as illustrated.

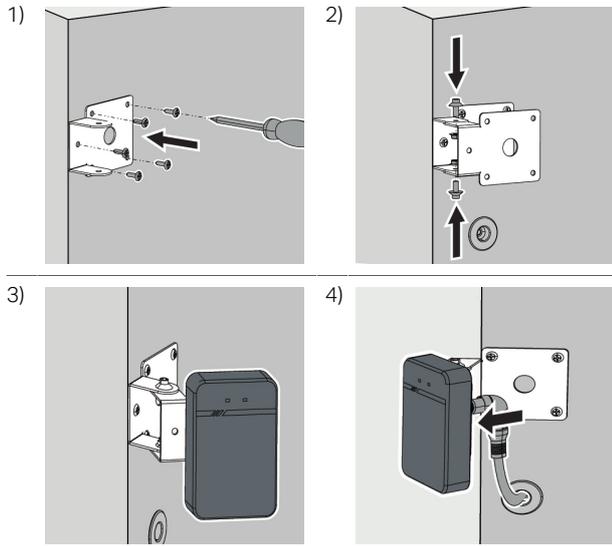


- 1 sensor
- 2 rubber seal
- 3 mounting plate
- 4 washer
- 5 M16 wing nut (5/8 in)
- 6 wire harness

Sensor orientation 45° (C)

Mounting with bracket (optional mounting set):

- 1) Mount one part of the bracket with the tapping screws on the position intended, see section "Mounting position".
- 2) Fix the other part of the bracket with the hinge bolts. Drill a cable access hole, $\varnothing 18$ mm (0.7 in), in the barrier housing and insert the seal.
- 3) Fix the sensor on the bracket. Orientate the sensor.
- 4) Run the cable through the access hole. Connect the cable with the sensor.



3.3 Electrical connection

- Connect the sensor to the barrier control board.

Wiring

	1	red	9 – 24 V DC	+
	2	black	GND	-
	3	blue	Output 1	NO
	4	green		
	5	brown	Output 2	NC
	6	pink		

Power supply

Note the polarity while connecting.

- 1 red: positive pole
- 2 black: negative pole

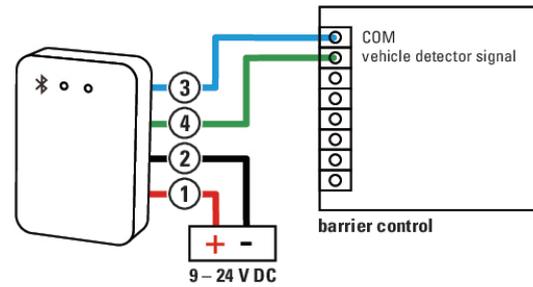


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- Ensure a stable 9 – 24 V DC power source.
- A dedicated 12 V / 1 A power adapter is recommended for optimal performance.

Output for activation purpose

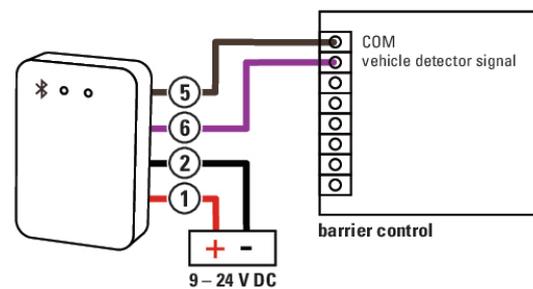
Output 1: NO (*normally open*)



- 3 blue
- 4 green

Output for presence detection

Output 2: NC (*normally closed*)



- 5 brown
- 6 purple

4 Settings

4.1 Installing the app



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

The device can be configured using a smartphone. The dedicated App is free of charge. Please note that the app requires access to:

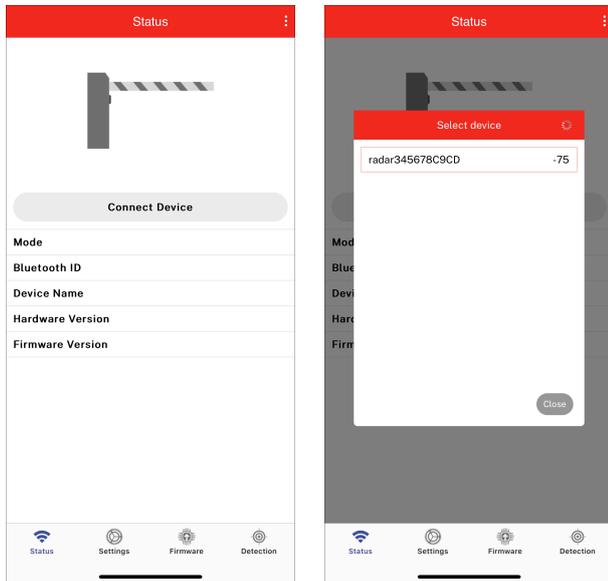
- location services
- Bluetooth® connection
- camera function

4.2 Configuring the sensor

Connecting to a device

Menu: **Status**

- ▶ Click the **Connect Device** button displayed on the screen.
- ▶ Select the Bluetooth® ID of your sensor and initiate the pairing process.



Setting the password

The app is used to configure different sensors via Bluetooth® connections.

- ▶ Prevent unauthorized access to the sensor configuration by using a suitable password. The password "88888888" is used by default. Replace the password with other numbers (0–9). Keep the password safe.



NOTE

Lost password

If you have forgotten your password:

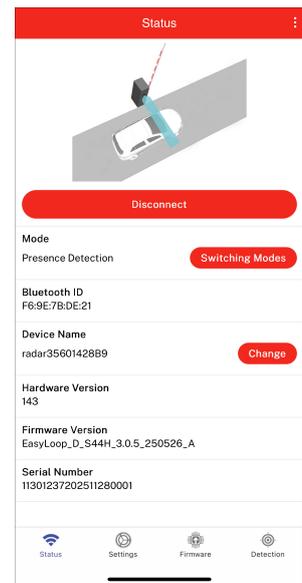
- ▶ select the option "Forgot Your Password" and contact the manufacturer to obtain the administrator password.

Setting the mode

Menu: **Status**

- ▶ Select the mode according to the intended sensor function.

- Presence detection
 - sensor on barrier housing
 - alignment 90° to the road
 - for protection in the range of motion of the barrier arm
- Activation
 - sensor on a post
 - alignment 90° to the road
 - motion detection
- Activation 45°
 - sensor with bracket on barrier housing
 - alignment 45° to the road
 - motion detection



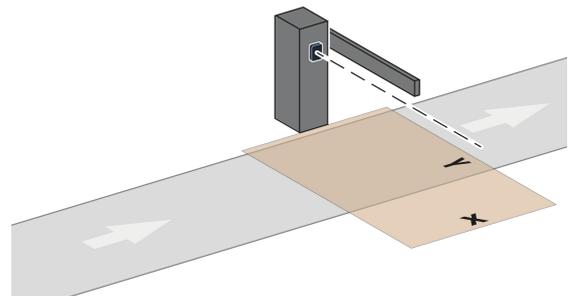
- ▶ Specify one of the following settings according to the mode selected:
 - 4.3 "Configuring presence detection"
 - 4.4 "Configuring motion detection"

4.3 Configuring presence detection

Specify Settings

Menu: **Settings**

- ▶ Select the appropriate roadway side and the barrier arm type.
- ▶ Set the dimensions of the detection zone:



X Detection zone width

Y Detection zone length

50 cm (20 in) less than the length of the barrier arm

- ▶ Clear the detection zone from pedestrians and vehicles. Set the barrier arm to the raised position.
- ▶ Initiate the teach-in process by pressing the button **Send to Device**.

Teach-in

The duration of the teach-in process depends on the barrier arm type.

Straight arm teach-in

Duration: 2 – 3 seconds

- Keep the detection zone clear from traffic.



Advertising or fence arm teach-in

Duration: 30 – 60 seconds

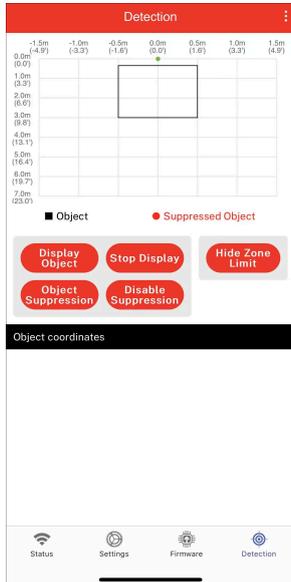
- Keep the detection zone clear from traffic.
- Trigger some opening-closing sequences of the barrier via the remote control.



Detection

When the teach-in process is complete, select **Display Object** to visualize detection data.

During this phase, do not perform any other operations except for selecting **Stop Display**.



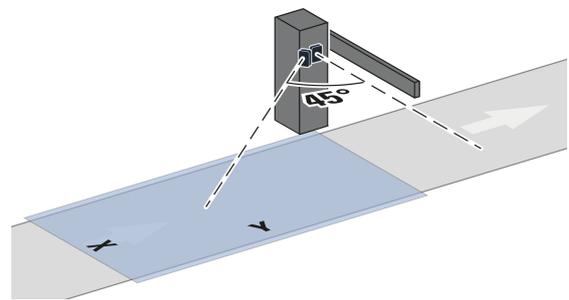
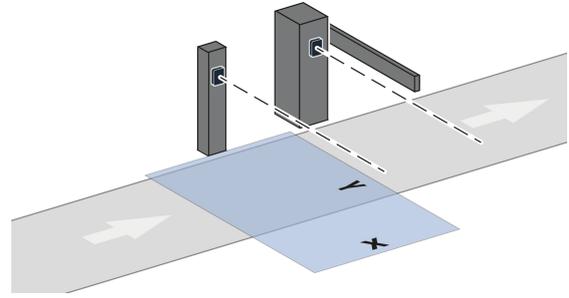
If an object will be detected, click **Stop Display** and then the **Object Suppression** button to resolve issues before resuming normal operation.

4.4 Configuring motion detection

Specify settings

Menu: **Settings**

- Select the appropriate roadway side of the barrier.
- The sensor can activate the barrier depending on the direction of movement of a detected object. Select the activation direction.
- Set the dimensions of the detection zone:



X Detection zone width

Y Detection zone length

50 cm (20 in) less than the length of the barrier arm at 90° alignment

Roadway width at 45° alignment

- To detect pedestrians, select the high sensitivity.

5 Operation

5.1 Status display

Operation mode	LED display	Operating status
Standard	red on	standby
	green on	detection
Teach-in	red on	in progress
	green flashing fast	complete
Area check	red flashing	firmware update
	green flashing	power supply unstable

5.2 Troubleshooting

Fault

Possible cause	Possible remedies
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System failed, operating indicator (red LED) off

Power supply has failed.	▶ Provide a stable power supply.
Supply voltage is incorrect.	▶ Connect to a 9 – 24 V DC power supply, 12 V / 1 A preferred.

Sensor not visible in app

Sensor is too far from your mobile device.	▶ For a stable connection, limit the distance to the sensor to 1 m.
Sensor is already connected to another mobile device.	Multi-device connection is not possible. ▶ Disconnect sensor from other device.

Detection indicated correctly (green LED), barrier works incorrectly

The barrier control board is configured incorrectly.	▶ Correct the configuration according to the barrier control board instructions.
Sensor is incorrectly connected to barrier control board.	▶ Correct the wiring according to section " Electrical connection ".
Reverse switching logic is selected.	▶ Change NO/NC output according to section " Electrical connection ".

Detection indicated incorrectly (green LED), operating indicator (red LED) on

Detection may be affected by the background.	▶ Perform teach-in process again.
Detection range may be too short.	▶ Increase the detection range via app.

Pedestrians are detected unintentionally

Sensitivity is set too high.	▶ Adjust the sensitivity setting via the app.
Pedestrians with large baggage or a metal objects are passing through the detection area.	▶ Take coordinating measures for pedestrian traffic in the detection area.
Crowds of pedestrians are passing through the detection area.	

Barrier arm repeatedly opens and closes.

The detection range is too long.	▶ Reduce the setting for the detection range via the app.
Installation position of the sensor is too close to the barrier arm.	▶ Increase the distance between the sensor and the barrier arm to at least 3 m (12 ft).
The barrier arm is equipped with a curtain.	▶ Remove the curtain.

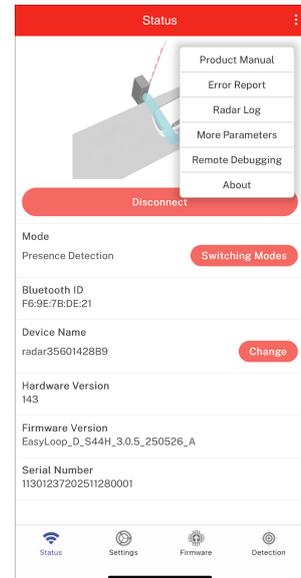
5.3 Debugging

For unresolved operational issues, you can find additional information and support by selecting from the menu at the top right:

- Error report
- Radar log
- Remote debugging

To get assistance, contact the Bircher technical support.

✉ service@bircher.com
☎ +41 52 687 1366

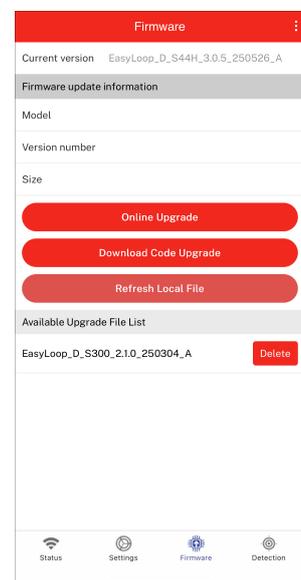


5.4 Firmware update

To update the firmware, select the **Firmware** button from the footer menu, acquire the latest firmware version and perform the online installation.

To get assistance, contact the Bircher technical support.

✉ service@bircher.com
☎ +41 52 687 1366



5.5 Maintenance

Ongoing

- ▶ To avoid operational interference, keep the sensor surface clean from debris (e.g., caused by water, snow, dust).
- ▶ In case of environmental changes: if objects (e.g., guide columns, traffic cones) are added to the detection area, repeat the teach-in process.

Every six months

- ▶ Test the functionality of the system.
- ▶ Ensure that the cables are undamaged.

6 Technical data

Functional data

Function	safety (presence detection) activation (motion detection)
Transmission frequency	microwave 79 GHz
Detection zone (L × W)	90°: 6 × 3 m (20 × 10 ft) 45°: 6 × 4 m (20 × 13 ft)
Detection depth (configurable)	lower limit: 20 – 100 cm (8 – 40 in) upper limit: 100 – 600 cm (40 – 240 in)
Detection width (configurable)	per side: 50 – 150 cm (20 – 60 in)
Configuration	via mobile app
Interface	Bluetooth® / RS485

Mechanical data

Housing material	PC, PBT, GF20, ABS
Dimensions (L × W × D)	108 × 74 × 18 mm (4.25 × 2.9 × 0.7 in)
Weight	131 g (4.7 oz)
Protection Class	IP66

Electrical data

Supply voltage	9 – 24 V DC (12 V / 1 A preferred)
Power consumption	< 2.5 W
Output	2 relays NO, NC
Response time	100 ms
Wiring	10 pin
Cable length	1.2 m (3.9 ft)

Ambient conditions

Operating temperature	min. -40 °C, max. 85 °C (min. -40 F, max. 185 F)
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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

7 Contact

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



info@rotech.com.au



+61 0732051123