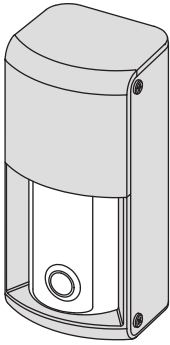


ProAccess

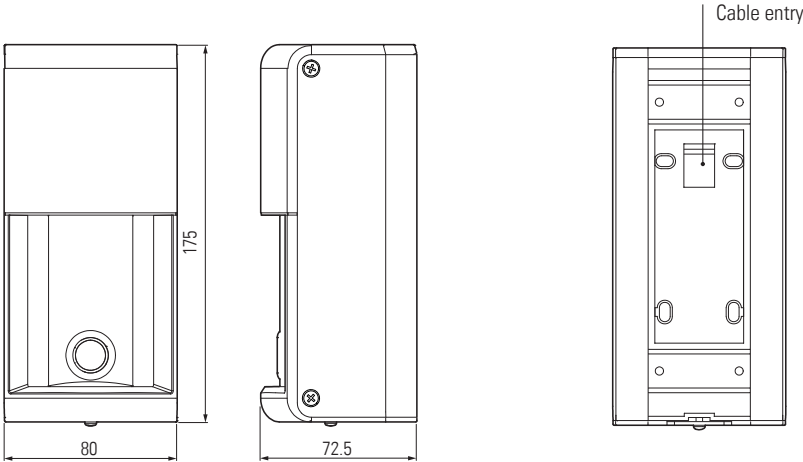
Vehicle detection sensor for gates and barriers

Original operating instructions

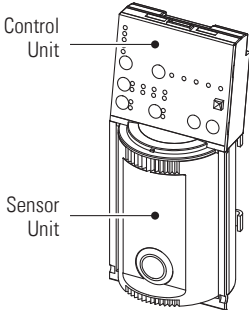
General



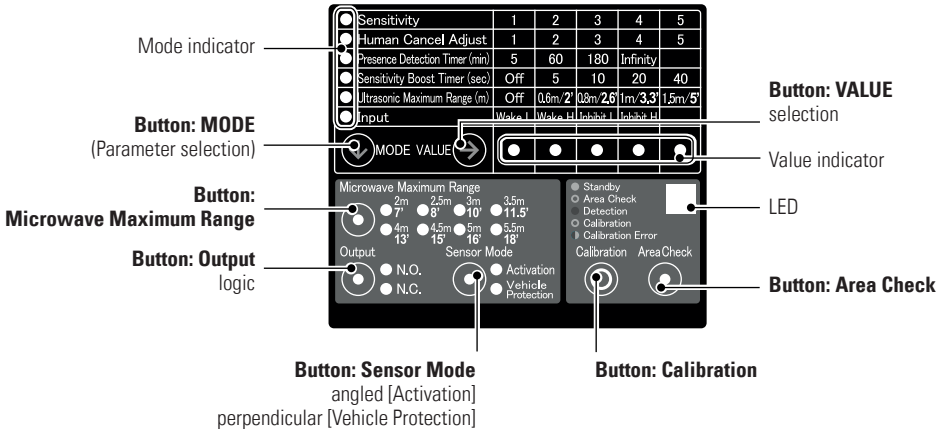
Dimensions



Sensor unit



Control unit



Sensitivity	1	2	3	4	5
Human Cancel Adjust	1	2	3	4	5
Presence Detection Timer (min)	5	60	180	Infinity	
Sensitivity Boost Timer (sec)	Off	5	10	20	40
Ultrasonic Maximum Range (m)	Off	0.6m/2'	0.8m/2.6'	1m/3.3'	1.5m/5'
Input	Wake L	Wake H	Inhibit L	Inhibit H	

1 Safety instructions

This product is a vehicle detection sensor designed to detect approach and presence of a vehicle in proximity of a gate or barrier.



- Read these operating instructions thoroughly before putting the device into operation and keep them for future reference.
- The assembly, commissioning, modifications and extensions may only be completed by an experienced electrician!
- Before commencing work, remove the power supply from the device/installations!
- During operation of electrical components, e. g. in case of a short circuit hot and ionised gases can be emitted.
- Pay attention to all local relevant electrical safety regulations!
- Disregard of the safety regulations can cause death, severe injuries or extensive damage!
- For 24 VACDC: supply voltage must be obtained from a regulated supply according to EN 61558. The wiring must be protected against mechanical damage.

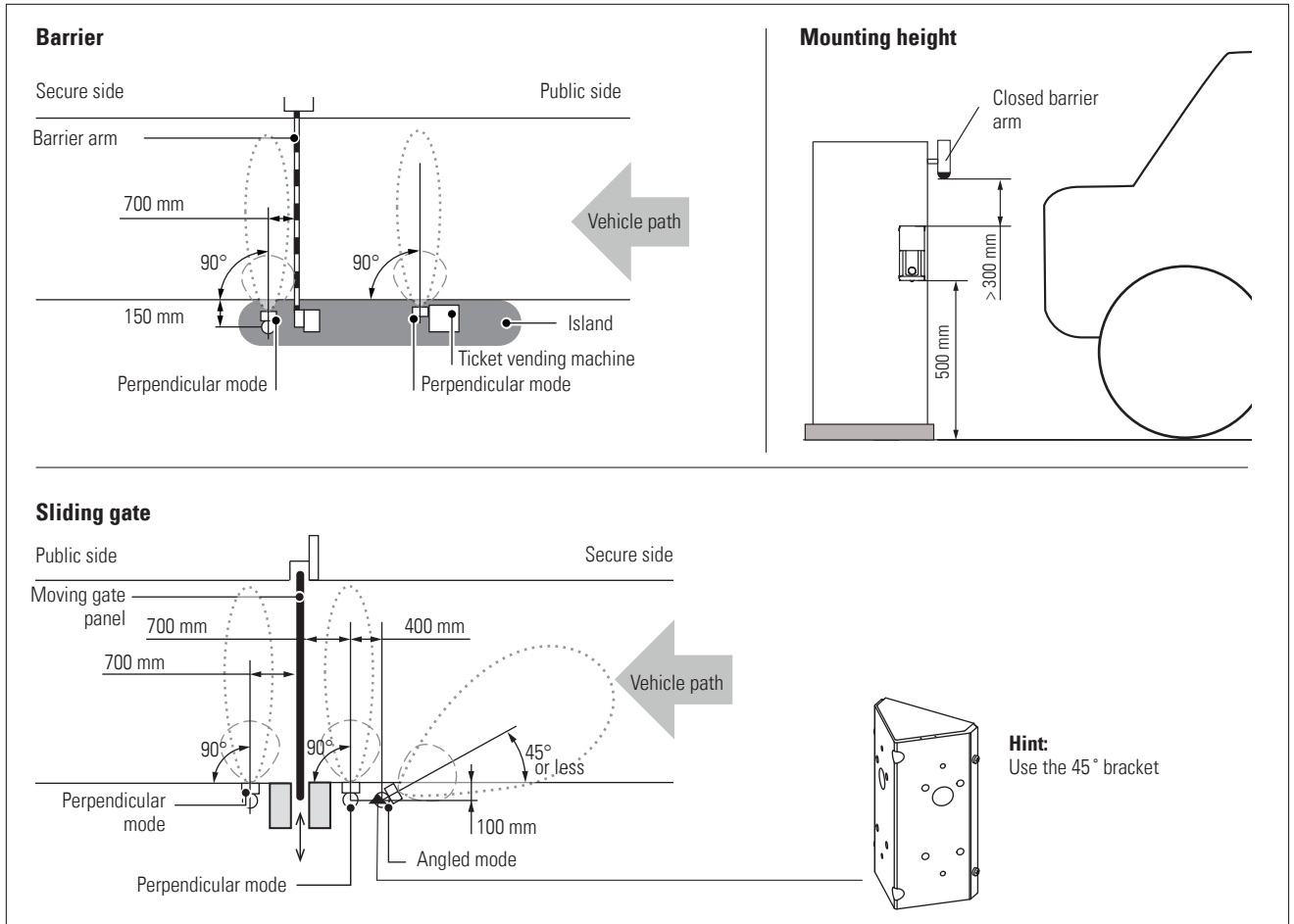
Before commencing the installation or assembly complete the following safety precautions:

- Remove the power supply from the units/installation!
- Determine that the power supply is disconnected!
- Ensure that the units/installations can not be switched on!
- Disconnect the device from mains in the event of a fault.

Limited protection against accidental contact!

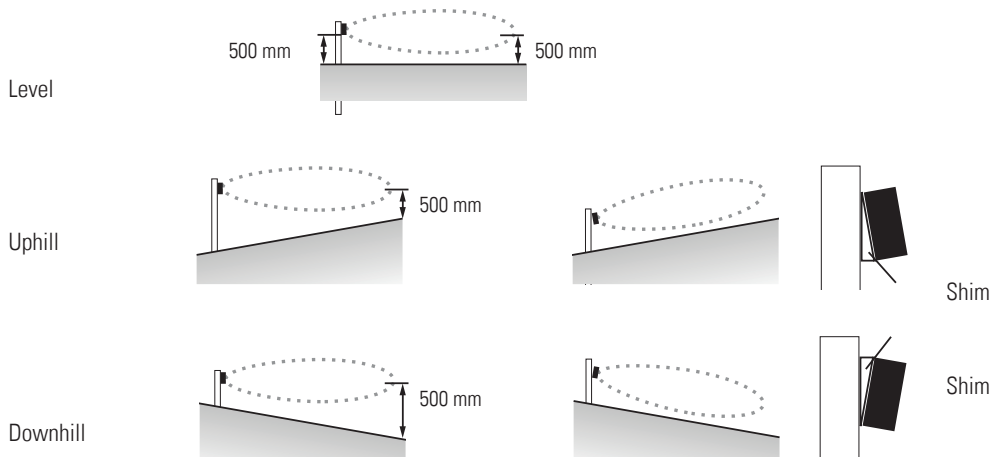
2 Sensor installation recommendations

The sensor will not work correctly unless the direction, height and mode are set correctly.



i Notes:

- Please make adjustment to ensure the detection plane is parallel to the road surface. Some vertical adjustment maybe required if the road surface rises or falls.



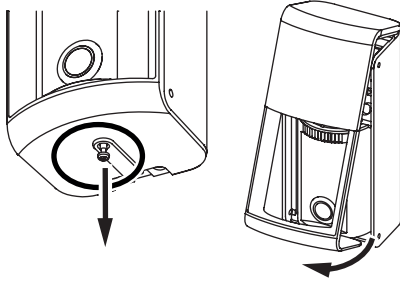
- Do not install any moving object such as flags or banners in the sensor's detection area. Remove any vegetation from the detection area, or reconfigure the detection area to be smaller. Not following these steps may prevent the sensor to leave the state of detection or delay the change of the state.
- Do not place an object such as a signboard close to the sensor's detection area. Not following these steps may prevent the sensor to leave the state of detection or delay the change of the state.
- There should not be any irregularity on the ground in the sensor's detection area. Not following these steps may prevent the sensor to leave the state of detection or delay the change of the state.
- Do not use a fluorescent lamp around the detection area. It may prevent proper operation of the sensor.
- A barrier arm with a skirt or placard may cause unstable detection by the sensor. In such a case, detach the placard or relocate the sensor to prevent such issue.

3 Installation of the unit

Required tools:

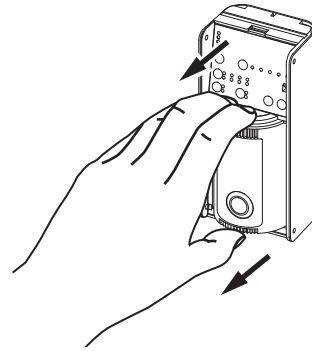
- Precision screwdriver, Phillips #1
- Screwdriver, Phillips #2

1



Loosen the retaining screws on the bottom of the front cover and remove the front cover.
(Do not loosen the screw completely. The screw may fall out. If the screw is lost, use a M3 x 10 Phillips screw.)

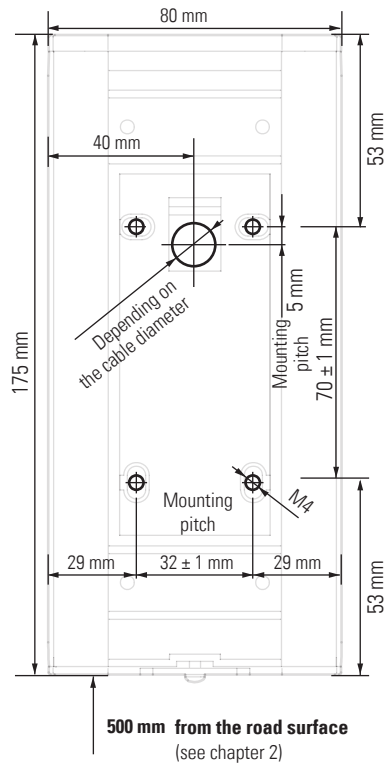
2



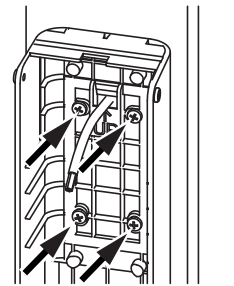
To detach the sensor unit:
Hold here and pull forward

3

Drill holes.
Route cable.

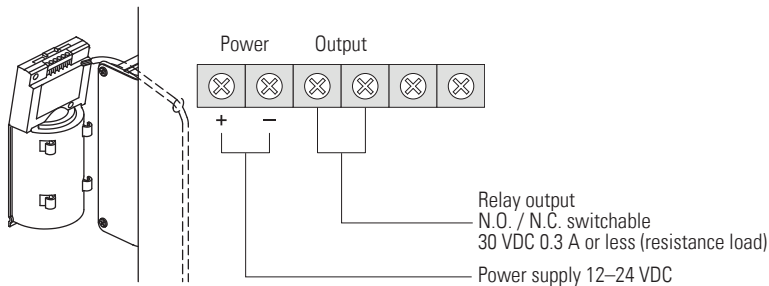


4



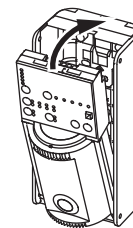
Attach the base to the mounting surface using 4 screws.

5



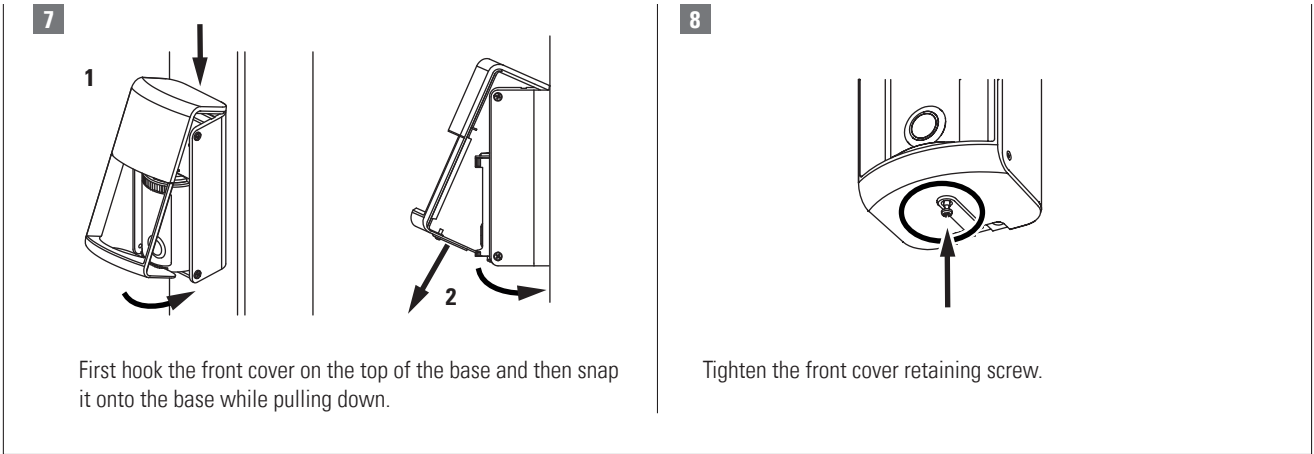
Connect wires to the terminals.

6



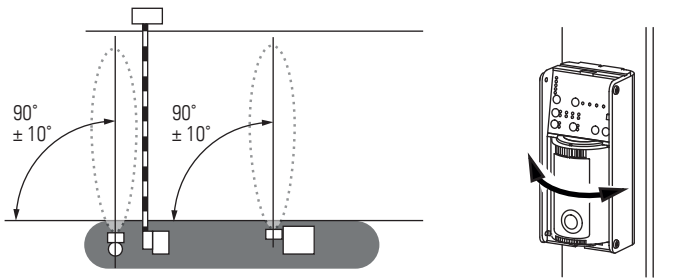
Push the sensor unit back into the base. Push the excess wire (≥ 10 cm) back into the mounting surface.

→ Setup
see page 4

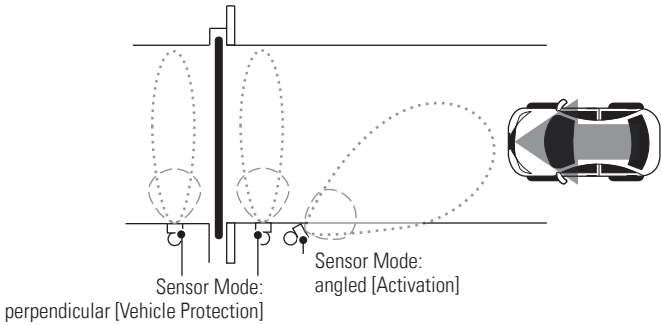


4 Setup

Rotate the sensor unit to the correct angle.



Sensor Mode Configure the proper sensor mode by pressing and holding the **Sensor Mode button** for 2 seconds. Factory setting: Perpendicular



Output Select the output logic type (by pressing the **Output button**). Factory setting: N.O.

Microwave Maximum Range Adjust the detection range (by pressing the **Microwave Maximum Range button**). Recommendation: Set the range 500 mm shorter than the actual width of the road. Factory setting: 3.5 m

4.1 Calibration

Calibration memorizes the background of the detection area → perform without any pedestrians or vehicle present!

- Press and hold the **Calibration button** on the sensor unit for 2 seconds and verify that the LED is blinking slowly in blue. The LED blinks for 8 seconds and blinks more quickly for 2 seconds.
- If the ultrasonic sensor detects an object during calibration, the LED blinks in red and blue alternately, resulting in calibration error. If the cause cannot be eliminated reduce the range.
- When the calibration is complete, the LED turns to a solid green.
- If a noticeable change occurs around the detection area (such as construction of a wall or fence), the calibration must be performed again.
- If a vehicle or pedestrian enters the detection area during the calibration, perform the calibration again.
- If a change is made to the sensor installation height, direction angle, and/or Microwave Maximum Range perform the calibration again.

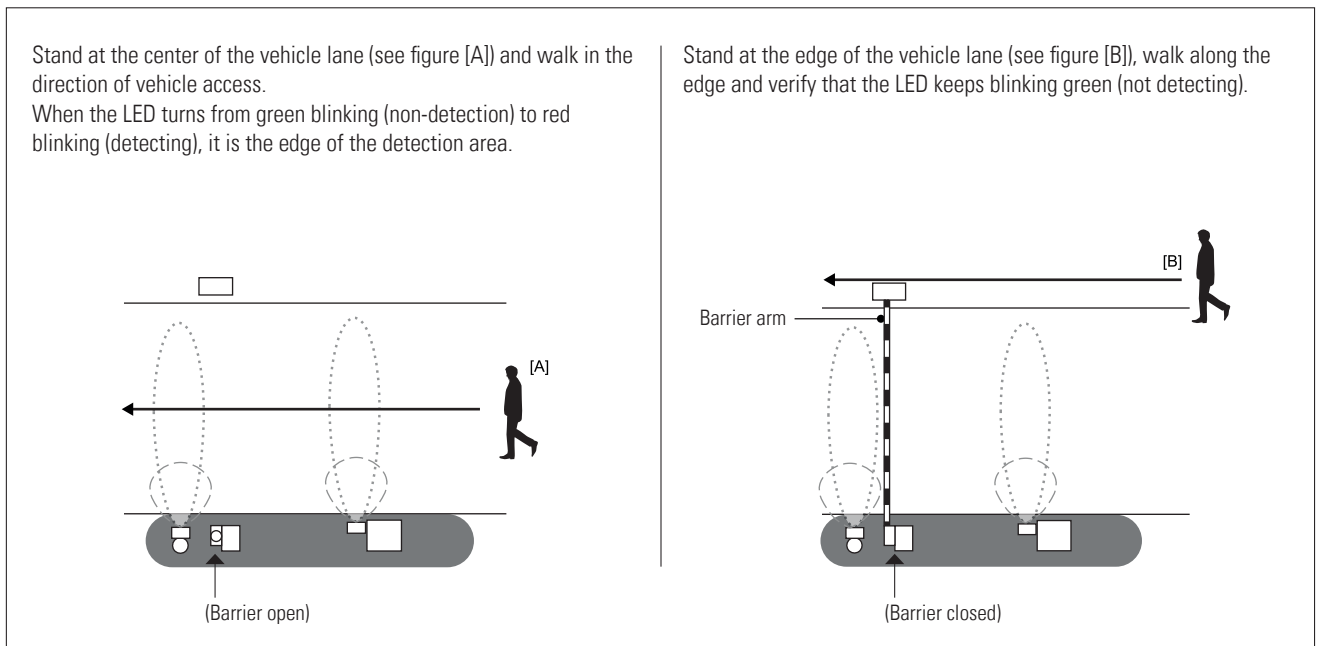
4.2 Detection area check (can be performed after calibration)

Press the **Area Check button**

The LED blinks green.

- If there is a pedestrian or an object in the detection area, the LED lights up:
 - Blinking yellow: Only the microwave sensor is detecting
 - Blinking purple: Only the ultrasonic sensor is detecting
 - Blinking red: Both the microwave and the ultrasonic are detecting
- If requested:
 - adjust the ultrasonic sensor range
 - 1. Press the **MODE button** and select Ultrasonic Maximum Range
 - 2. Press the **VALUE button** and select the desired sensing distance
- After 30 seconds without detection it will automatically change back to the normal operation mode.

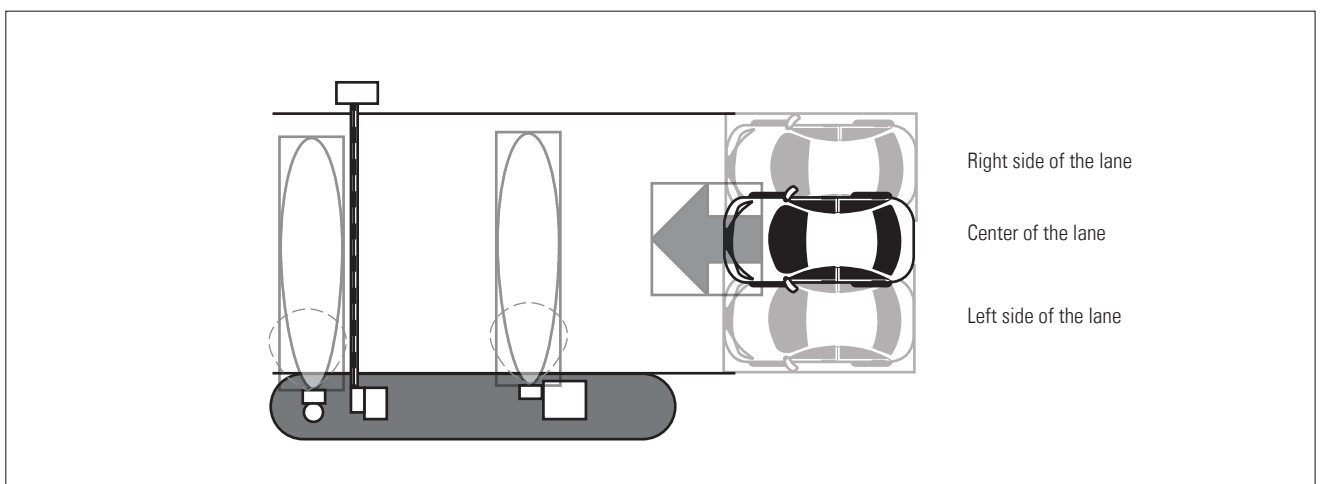
Factory setting:
1 m



After verifying the detection area: Press the **Area check button** again

4.3 System operation check

After verifying the detection area, check the entire system using a vehicle.
For this purpose, approach with a vehicle over the full width of the driveway.



For advanced settings (if needed): → go to page 6

5 Advanced settings

All these parameters are to be adjusted if the sensor does not operate as expected. They are not necessary for a normal installation.

5.1 Sensitivity to initial detection [Human Cancel Adjust]

Setting	1	2	3	4	5
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Human cancellation capability Low High

Sensitivity	1	2	3	4	5
● Human Cancel Adjust	1	2	3	4	5
● Presence Detection Timer (min)	5	60	180	Infinity	
● Sensitivity Boost Timer (sec)	Off	5	10	20	40
● Ultrasonic Maximum Range (m)	Off	0.8m/2'	0.8m/2.6'	1m/3.3'	1.5m/5'
● Input	Wake L	Wake H	Inhibit L	Inhibit H	
MODE VALUE	●	●	●	●	●

Factory setting:
3

- Increase** the value if:
- A person is detected occasionally
 - The sensor detects a vehicle passing close to (but not in) the detection area
- Decrease** the value if:
- Occasionally a vehicle is not detected
 - Response of detection is too slow

5.2 Sensitivity to static objects (after initial detection)

Setting	1	2	3	4	5
---------	---	---	----------	---	---

Vehicle detection capability Low High

Sensitivity	1	2	3	4	5
● Human Cancel Adjust	1	2	3	4	5
● Presence Detection Timer (min)	5	60	180	Infinity	
● Sensitivity Boost Timer (sec)	Off	5	10	20	40
● Ultrasonic Maximum Range (m)	Off	0.8m/2'	0.8m/2.6'	1m/3.3'	1.5m/5'
● Input	Wake L	Wake H	Inhibit L	Inhibit H	
MODE VALUE	●	●	●	●	●

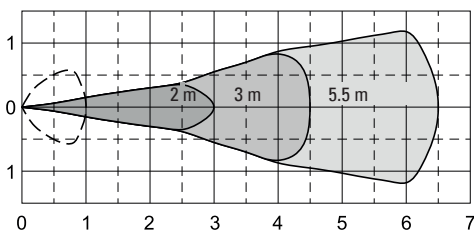
Factory setting:
3

- Increase** the value if: Occasionally a vehicle is not detected or the detection response is too slow
- Decrease** the value if: The sensor stays in detection after a vehicle has left

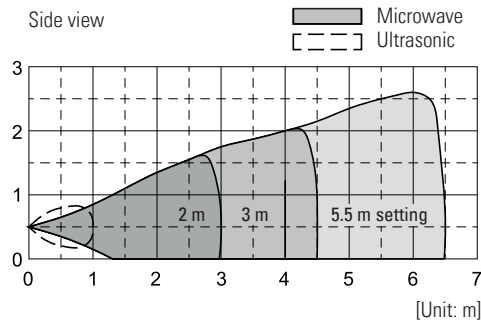
Note: Once the level is set to 5, the human cancel capability becomes inactive.

5.3 Detection area diagram

Top view



Side view



5.4 Presence timer

The presence timer periodically performs re-calibration. It can prevent the sensor from permanently staying switched on.

If any of the following conditions is fulfilled, configure the presence timer:

- The sensor keeps detecting due to an object in the detection area.
- The sensor keeps detecting after installing a roadblock.

Description:

- An object is placed in the detection field of the microwave area and the sensor detects the object.
- When the time period of the presence timer runs down, the sensor changes to non-detection state because the object is memorized as a background.
- When the object is removed, the sensor may stay in a non-detection or detection state.
- If the sensor stays in the non-detection state, it may be less sensitive for a while.
- When the object is removed after the time period of presence detection, the sensor will memorize again the background and be in non-detection state.

Factory setting:
5 min.

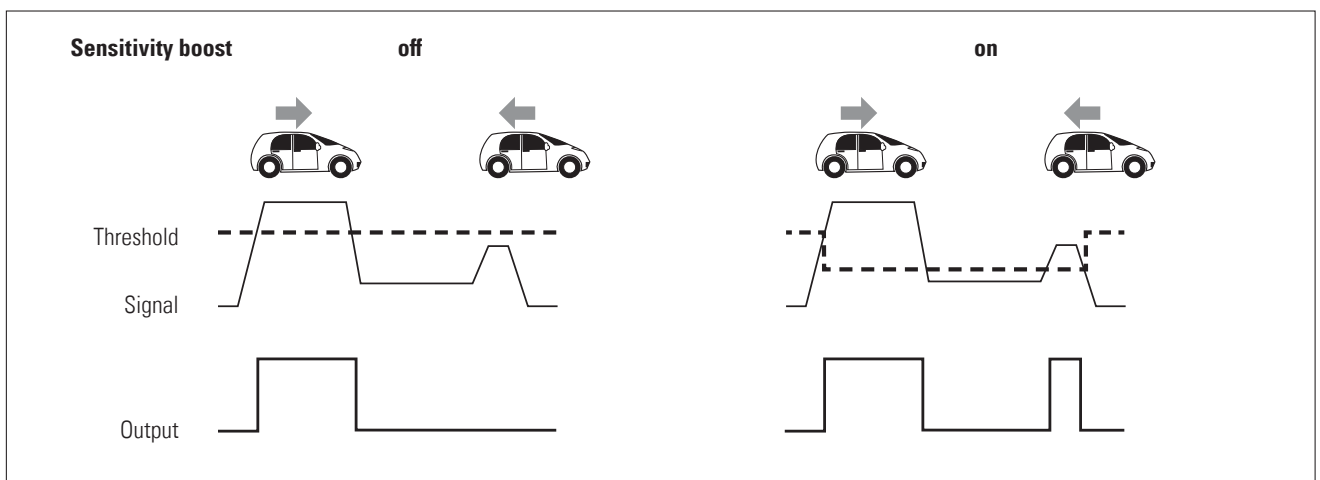
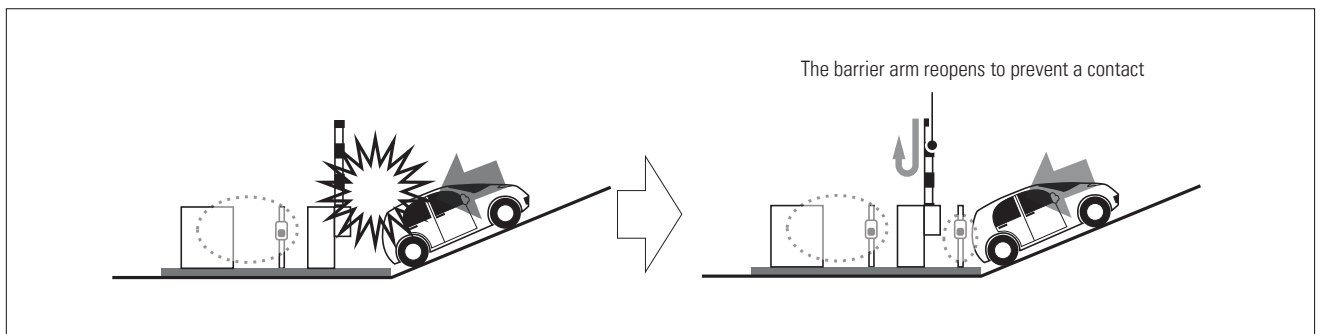
5.5 Sensitivity boost

Use only with perpendicular mode.

The sensitivity boost enhances the sensitivity for a certain period of time after a vehicle has passed through the detection area. Enable this function if a vehicle may back up unintentionally due to a slope in the exit area.

- While the sensitivity boost is enabled, a human or an object other than a vehicle may be detected.
- The function cannot be used for a gate system without the reopen function.

Factory setting:
Off



5.6 Factory reset

Press and hold both the **Calibration button** and **Area Check button** at the same time for 2 seconds.

6 LED signals / troubleshooting

LED colour	Solid / blinking	Mode	Indication
green	solid	Standard operation	Standby
	blinking twice	Standard operation	Error
	blinking	Detection Area Check	Outside detection area
yellow	blinking	Detection Area Check	Within microwave detection area
	solid 2 seconds	Factory reset	Reset completed
red	solid	Standard operation	Detection
	blinking	Detection Area Check	Within microwave & ultrasonic detection area
purple	blinking	Detection Area Check	Within ultrasonic detection area
blue	blinking slowly	Calibration	Preparation → leave detection area!
	blinking fast	Calibration	Calibrating
blue – red	alternate blinking	Calibration	Ultrasonic sensor detection error

7 Technical data

Sensor technology	Microwave: 24 GHz, Ultrasonic: 56 kHz
Supply voltage	12 – 24 VDC, ± 15 %
Response time	500 ms
Power consumption Heater disabled Heater enabled	Up to 80 mA (at 24 V) Max. 200 mA (at 12 V)
Output	Relay 30 VDC, 0.3 A (N.O. / N.C. switchable)
Sensing distance Microwave sensor Ultrasonic sensor	0.8 to 5.5 m (max. range adjustable) 0.1 to 1.5 m (max. range adjustable)
Detectable vehicle speed	2 – 20 km/h
Ambient temperature	–30 to 50 °C
Operating ambient humidity	95 % max. (no condensation)
Protection class	IP65
Installation height	500 mm (distance from the road surface to the bottom of the unit)
Sensor angle adjustment	Left and right: ±30 degrees (5-degree steps)
Dimensions	175 x 80 x 72.5 mm
Weight	420 g
In the box	Retaining screws (4x), manual

8 EU Declaration of Conformity

 See attachment

9 WEEE



Devices with this symbol must be treated separately during disposal. This must be done in accordance with the laws of the respective countries for environmentally sound disposal, processing and recycling of electrical and electronic equipment.

10 FCC approval



This device meets the requirements of Part 15 of the FCC regulations and the RSS-210 standard of Industry Canada.
Warning: Changes or modifications made to this device may void the FCC authorisation to operate this device.

11 Contact

BBC Bircher Smart Access, BBC Bircher AG, Wiesengasse 20, CH-8222 Beringen, www.bircher.com

Made in Japan