

SpotScan

Active-Infrared-Presence Detector

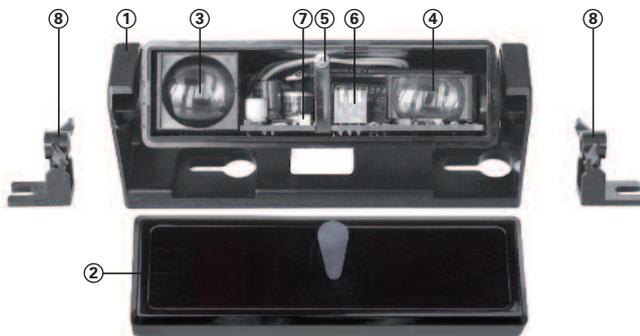
Translation of the original instructions

1 Safety instructions



The unit may only be operated at protective low voltage in conjunction with safe electrical isolation. The unit may only be repaired by the supplier. Avoid contact with electronic and optical components. Protect the sensor against rain and snow.

2 Product overview



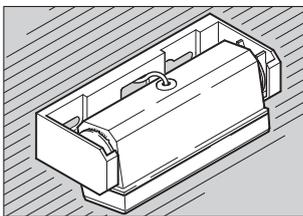
- ① Swivel bracket
- ② Front cover with optics window
- ③ Transmitter lens
- ④ Receiver lens
- ⑤ Scanning range adjustment screw
- ⑥ DIP switches 1-3
- ⑦ LED display
- ⑧ Bracket set (in lieu of swivel bracket)

3 Installation

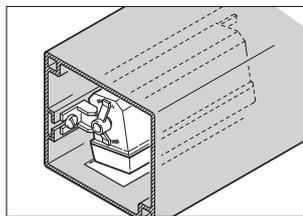


Max. mounting height of 3.2 m (10.5 ft) should not be exceeded

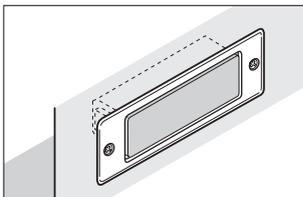
Swivel bracket with ratchet disc
(e.g. surface-type installation)



Mounting bracket set
(e.g. integration)



Recessed mounting frame
(Special equipment for integration)

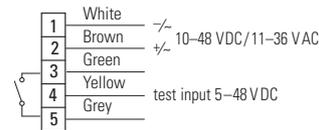


Further installation accessories available on request:

- Protective cover
- Flush-type inlet box
- Surface-type box
- Flush-type set
- Flush-type cover

4 Electrical connections

SpotScan connection diagram



Instructions for testing input:

- Only use the test input when the sensor is operated in the stationary mode (background analysis). See also Sect. 5.2.
- Testing is only possible with DC power supply.

5 Settings



- DIP-Switch 1
- DIP-Switch 2
- DIP-Switch 3

5.1 Frequency switching (DIP switch 1)

| | | |
|--|-----|-------------|
| | OFF | Frequency 1 |
| | ON | Frequency 2 |

Sensors with small installation clearance (< 50 mm / 2") can interact. To avoid this, a choice can be made between two different transmission frequencies (1 and 2). These should be set alternately.

5.2 Operating mode (DIP switch 2)

| | | |
|--|-----|--|
| | OFF | Stationary mode (background analysis) |
| | ON | Mobile mode (background suppression) |

Choice between **stationary** and **mobile** operating mode:
Mobile = background is ignored (background suppression).
Stationary = background may not change (background analysis). Only fixed mounting possible.
The testing function only works with the stationary operating mode.

5.3 Output switching mode (DIP-switch 3)

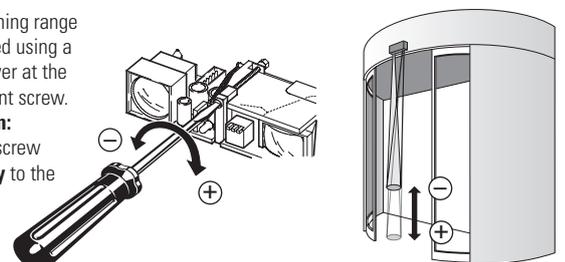
| | | |
|--|-----|---|
| | OFF | Active when stationary mode Passive when mobile mode |
| | ON | Passive when stationary mode Active when mobile mode |

Active or **passive** switching mode. Definitions:
Active = output is activated, when an object is detected in the detection range
Passive = output is activated when no object is detected in the detection range
Important: Active/passive is the opposite way around with stationary and mobile operating mode. See also Sect. 5.2 for the operating mode.

6 Adjusting the scanning range

The scanning range is adjusted using a screwdriver at the adjustment screw.

Attention:
Turn the screw **smoothly** to the end stop.



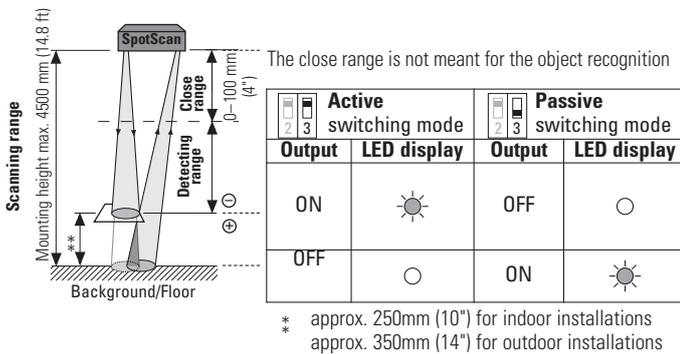
7 Setting the switching point

1. Turn the adjusting screw smoothly clockwise to the end stop (= maximum scanning range)
2. Turn the adjusting screw anti-clockwise until the state of the LED display changes. As soon as the LED state changes, the switching point is set directly over the floor.
 - When making adjustments do not reach into the detection beam with the hand, any part of the body or with the screwdriver, etc. (hold the screwdriver slightly diagonally upright).
3. To avoid false detection by subsequent changes of the background, set the switching point back to approx. 250 mm (10") above the floor for indoor installations and approx. 350mm (14") for outdoor installations
 - To do so, turn the adjusting screw a little further in the anti-clockwise direction.
 - The switching point can be easily located from below by hand or using a sheet of paper: The LED display changes its state, as soon as the hand or the piece of paper reaches the switching point.
4. Close the cover and check the settings once more. If necessary, make further adjustments.

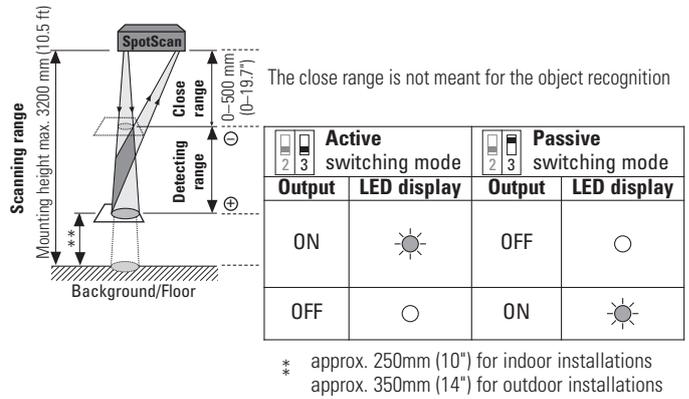
8 Switching state

The following diagrams show the switching state of the output and of the LED display, when an object is captured in the detecting range. There will be differences in the active and passive switching mode of the output. The definitions in Sect. 5.3 should be observed!

8.1 Stationary operating mode (DIP switch 2 = OFF)



8.2 Mobile operating mode (DIP switch 2 = ON)



9 Testing function

The correct functioning of the sensor is checked using the testing function.

Whilst the testing is in operation (the test input is subjected to electrical tension), the transmitter is switched off. This simulates an object in the detection area (detection) and causes the switching state of the output to change. **Important: Testing is only possible in the stationary operating mode. See sect. 5 for the allowed voltage levels and further instructions on the use of the testing function.** The table shows the switching state of the output and the LED display when the test input is activated.

| Switching mode | Output | LED display |
|----------------|--------|-------------|
| active | ON | ○ |
| passive | OFF | ☀ |

10 Trouble shooting

- Check operating voltage and electrical connections → Sect. 4
- Interaction influence of sensors → Sect. 5.1
- Maximum mounting height (scanning range) of 3.2 m (10.5 ft) exceeded?
- Is the floor recognized as an object? Is the switching point correctly adjusted? → Sect. 7 and 8

11 Technical data

| | SpotScan | Remarks |
|--|--|---|
| Scanning range | max. 3200 mm (10.5 ft) | = max. stationary mounting height for active infrared presence detectors (DIP 2 = on, stationary) |
| | max. 4500 mm (14.8 ft) | = max. stationary mounting height for active infrared activation detectors (DIP 2 = off, moving) |
| Scanning range adjustment | 1000–4500 mm (3.3–14.8 ft) with mechanical adjusting screw | triangulation principle |
| Detecting range | 100 – approx. 3200 mm (4"–126") | stationary mode |
| | 500 – approx. 4500 mm (19.7"–177") | mobile mode |
| Temperature dependence of detecting range | at +60°C (140°F): +10% / at –20°C (–4°F): –10% | linear deviation from 20°C (68°F) with ref. to the switching point set |
| Black/white difference | < 400 mm (15.75") | at 2000 mm (6.5 ft) scanning range |
| Detection field | approx. 50 x 50 mm (2" x 2") | light beam cross-section at 2000 mm (6.5 ft) scanning range |
| Type of light | pulsed, intermittent IRED | 2 frequencies selectable with DIP switch |
| Operating voltage | 10-48 V DC or 11-36 V AC | |
| Residual ripple | max. 10% | with DC operation |
| Current / power consumption | max. 100 mA / approx. 3 W / 3 VA | |
| Operating mode | stationary or mobile | selectable with DIP switch |
| Output switching mode | active or passive | selectable with DIP switch |

| | SpotScan | Remarks |
|------------------------------------|--|---|
| Signal output | – relay, 1 contact normally open – max. switching voltage 48 V AC/V DC – max. switching current 0.5A AC / 1 A DC – max switching capacity 55 VA / 24 W | – to SpotScan: relay contact electrically isolated – nominal current (ohmic load) 1 A / 24 V DC for ind./cap. load, – provide spark quenching – ohmic load |
| Response time | approx. 35 ms / approx. 100 ms | with detection / with test signal |
| Drop-out time | max. 20 ms / max. 20 ms | with stationary mode / with mobile mode |
| Test input | 5–48 V DC | only with DC operating voltage and stationary mode |
| Function display | LED red | illuminates when output is ON |
| Type of connection | 5 m (16.4 ft) / 5 x 0.25 mm ² (AWG 24) | with plug-in connector, circuit board side |
| Protection class | IP52 | with protective cover accessory IP 65 |
| Housing material, colour | ABS black / Lexan | housing / optics window in front cover |
| Dimensions | – sensor only: 102x45x32 mm (4.01" x 1.77" x 1.97") – incl. swivel bracket: 123x45x50 mm (4.84" x 1.77" x 1.97") – incl. bracket set: 140x45x34 mm (5.51" x 1.77" x 1.34") | L x W x H |
| Operating temperature range | –20°C to +60°C (–4°F to 140°F) | |
| Humidity | 0–90% relative humidity | non-condensing |
| Weight | approx. 340 g (12 oz) | incl. packing and scope of supply |

12 EC-Declaration of Conformity

Manufacturer:
Following directives have been observed:
Product variants:

Bircher Reglomat AG, Wiesengasse 20, CH-8222 Beringen
RoHS 211/65 EU, EMC 2014/30/EU
SpotScan

13 Contact

Danish seller

BBC Bircher Smart Access
Bircher Reglomat AG
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