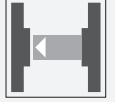




Thru-beam sensor (pair)

OBE10M-18GF60-S2PP-0,3M-V1-IR



- Sensing range 10 m
- With increased sealing, degree of protection IP68
- Integrated circuit
- Narrow opening angle, suitable for mounting in pairs
- Not sensitive to ambient light
- DC voltage version
- Test input
- Reverse polarity protection
- Short-circuit protected
- Switching status indicator, yellow LED

Thru-beam sensor, M18 threaded housing design, plastic housing, 10 m detection range, infrared light, light/dark on, DC version, 2 push-pull outputs, fixed cable with M12 plug



Function

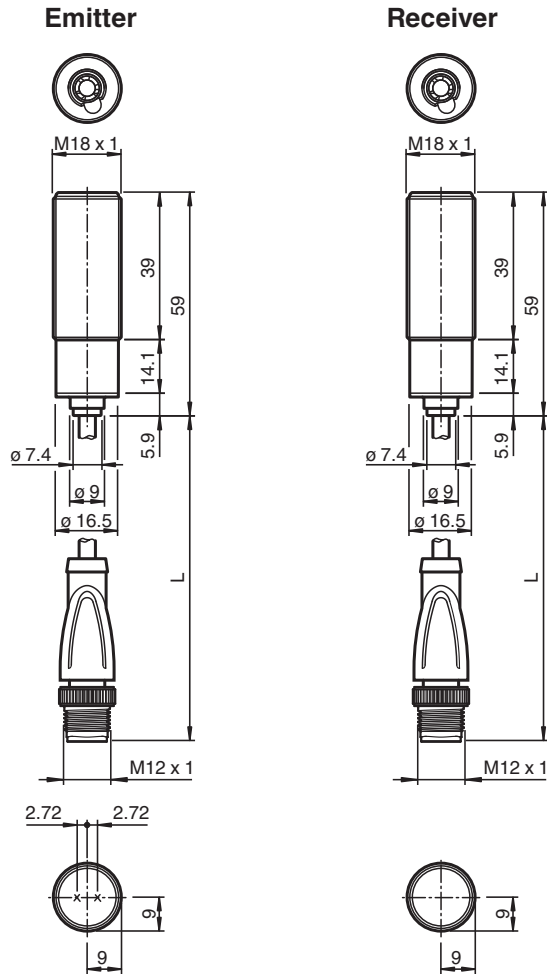
The optical sensor is optimized to perform in wet environments and in poor visibility conditions. To penetrate mist more effectively, the sensor uses multiple-beam infrared light.

With the full sealing, the sensor operates reliably in wet environments and over a wide temperature range.

Application

- Car wash machines
- Car parking systems
- Car access gates
- Monitoring of industrial gates
- Sawmill automation
- Bale presses / Channel presses
- Farm automation

Dimensions



Technical Data

System components

| | |
|----------|------------------------------|
| Emitter | OBE10M-18GF60-S-0,3M-V1-IR |
| Receiver | OBE10M-18GF60-2PP-0,3M-V1-IR |

General specifications

| | |
|----------------------------|---|
| Effective detection range | 0 ... 10 m |
| Threshold detection range | 12 m |
| Light source | IRED |
| Light type | modulated infrared light , 850 nm |
| Diameter of the light spot | approx. 1500 mm at a distance of 10 m |
| Opening angle | Emitter: $\pm 5^\circ$; Receiver: $\pm 10^\circ$ |
| Optical face | frontal |
| Ambient light limit | 10000 Lux |
| Accessories provided | Mounting nuts |

Functional safety related parameters

| | |
|--------------------------------|-------|
| MTTF _d | 606 a |
| Mission Time (T _M) | 20 a |
| Diagnostic Coverage (DC) | 0 % |

Indicators/operating means

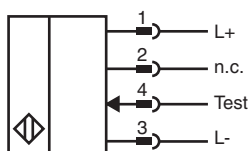
| | |
|---------------------|---|
| Operation indicator | Emitter: LED green: Power on |
| Function indicator | Receiver: LED yellow, lights up when light beam is free, flashes when falling short of the operating reserve ; OFF when light beam is interrupted |

Electrical specifications

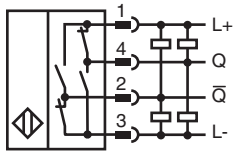
Technical Data

| | | |
|-----------------------------------|-------|---|
| Operating voltage | U_B | 10 ... 30 V DC |
| No-load supply current | I_0 | Emitter: ≤ 17 mA Receiver: ≤ 13 mA |
| Protection class | | Class III |
| Input | | |
| Test input | | emitter deactivation at 0 V |
| Output | | |
| Switching type | | Q - Pin4: NPN normally open / dark-on, PNP normally closed / light-on /Q - Pin2: NPN normally closed / light-on, PNP normally open / dark-on |
| Signal output | | 2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected |
| Switching voltage | | max. 30 V DC |
| Switching current | | max. 100 mA |
| Voltage drop | U_d | ≤ 1.5 V DC |
| Switching frequency | f | 80 Hz |
| Response time | | 6 ms |
| Conformity | | |
| Product standard | | EN 60947-5-2 |
| Approvals and certificates | | |
| CE conformity | | CE |
| UKCA conformity | | UKCA |
| UL approval | | E87056 , cULus Listed , class 2 power supply , type rating 1 |
| CCC approval | | CCC approval / marking not required for products rated ≤ 36 V |
| Ambient conditions | | |
| Ambient temperature | | -20 ... 60 °C (-4 ... 140 °F) |
| Storage temperature | | -40 ... 70 °C (-40 ... 158 °F) |
| Relative humidity | | 90 % , noncondensing |
| Mechanical specifications | | |
| Housing length | | 59 mm |
| Degree of protection | | IP67 / IP68 |
| Connection | | fixed cable with 4-pin, M12 x 1 connector Emitter: black ; Receiver: grey |
| Material | | |
| Housing | | PC , black |
| Optical face | | Plastic pane |
| Cable | | |
| Length | L | 0.3 m |
| Mass | | approx. 25 g per device |

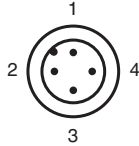
Connection



Connection



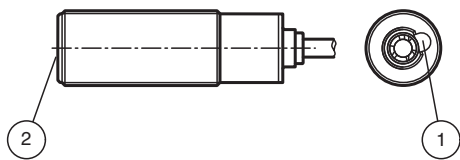
Connection Assignment



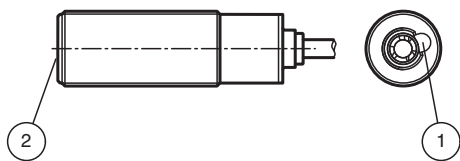
Wire colors in accordance with EN 60947-5-2

| | | |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue) |
| 4 | BK | (black) |

Indication



| | | |
|---|-------------------|-------|
| 1 | Operating display | green |
| 2 | Emitter | |



| | | |
|---|----------------|--------|
| 1 | Signal display | yellow |
| 2 | Receiver | |

Installation

Mounting

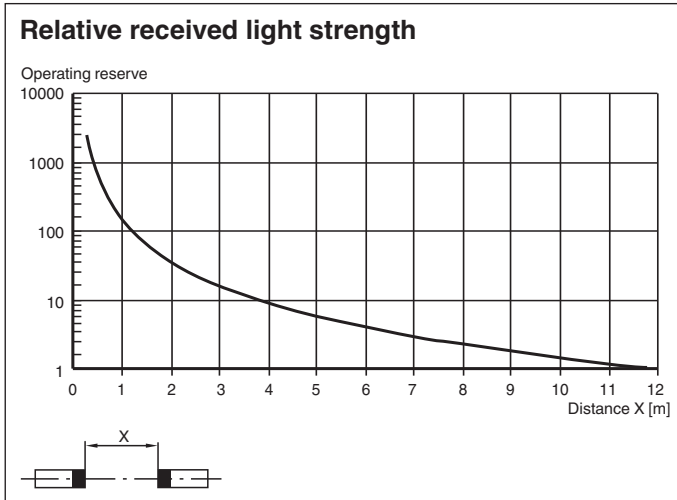
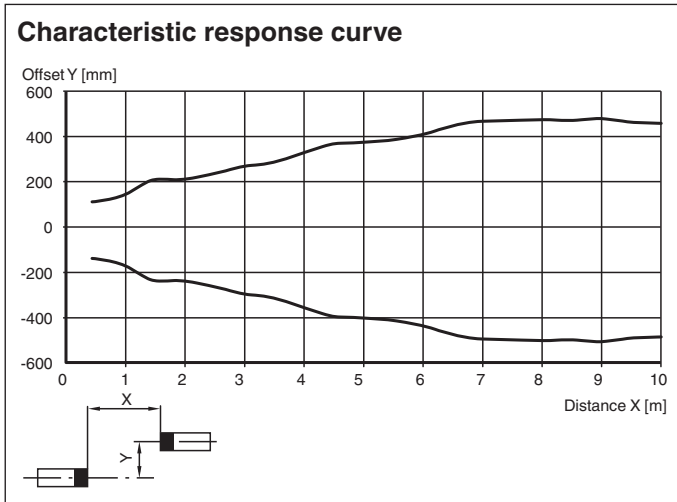
Sensor: The sensors have an M18 x 1 threaded housing design and nuts. The sensors can be mounted directly through a simple Ø 18 mm hole, or using a mounting bracket. Mounting brackets are available as accessories.

Pay careful attention to the position and visibility of the programming interface or signal indicators during mounting.

Apply the operating voltage to the sensor. The operating indicator lights up green.

Mount the emitter and receiver opposite each other. Roughly align the emitter and receiver with each other. Next, adjust the sensor by swiveling it horizontally and vertically so that the yellow signal indicator lights up continuously. In the event of misalignment, the yellow signal indicator flashes.

Characteristic Curve



Safety Information

Prior to mounting, installation, and commissioning of the device you should make yourself familiar with the device and carefully read the instruction manual.

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismantling of the device. The trained and qualified personnel must have read and understood the instruction manual.

The device is not a safety component according to the Machinery Directive. Do not use the device to prevent personal injury.

Function Principle

The thru-beam sensor requires two devices for operation; an emitter and a receiver. The emitter and receiver must be optically aligned with one another in a single line. The infrared light emitted from the emitter is recorded by the receiver and evaluated. The sensor detects both people and objects for as long as an object interrupts the detection beam, regardless of movement and surface structure.

Commissioning

Commissioning

Check Object Detection: Check as follows if the sensor detects objects as intended.

Position the object in the beam path of the sensor.

Once the object is detected, the yellow signal indicator goes out. As soon as the object leaves the beam path of the sensor, the yellow signal indicator permanently lights up again.

Configuration

Emitter Control Input

To vary the emitter range, connect the control input (black single core) to a grounded resistor of specific value:

| External resistance at single core (BK) [Ω] | Emitter range [%] |
|--|---|
| 0 (ground) | OFF (Test or synchronization applications) |
| Approx. 300 | 38 |
| Approx. 500 | 55 |
| Approx. 1000 | 72 |

Configuration

| External resistance at single core (BK) [Ω] | Emitter range [%] |
|--|-------------------|
| Approx. 2000 | 86 |
| Approx. 4000 | 96 |
| Disconnected | 100 |

Maintenance

Maintenance

Cleaning: If the transmission reception deteriorates, e.g., due to dirt, the yellow signal indicator on the receiver flashes. Clean the optical interfaces of the sensor (e.g., lenses) at regular intervals.

Maintenance: Check the mounting fittings and the electrical connections regularly.