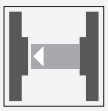
Thru-beam sensor (pair)

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

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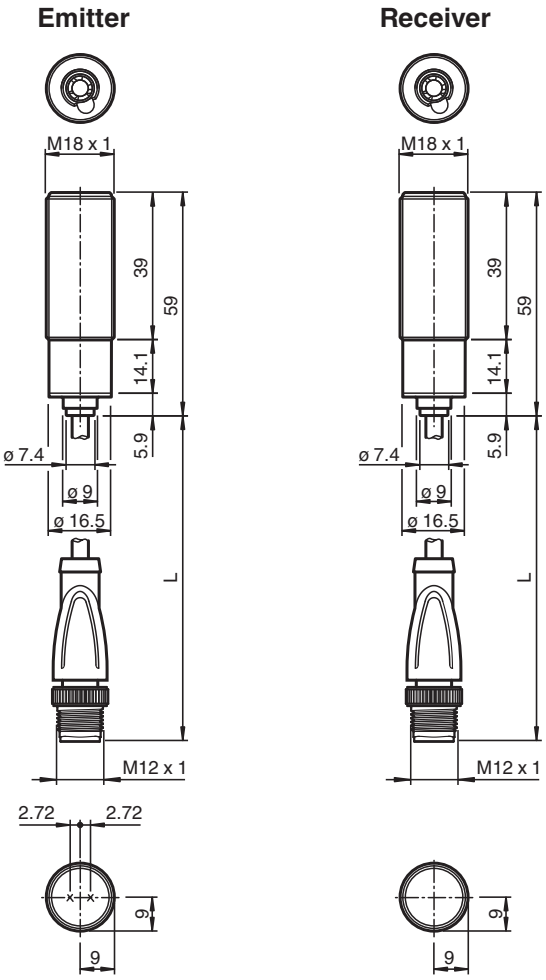
Dimensions



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: ± 5 ° ; Receiver: ± 10 °
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		

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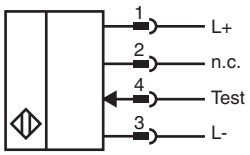
Technical Data

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



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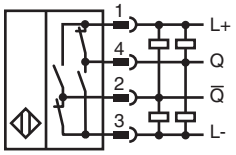
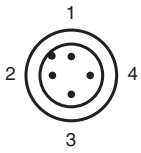
Connection



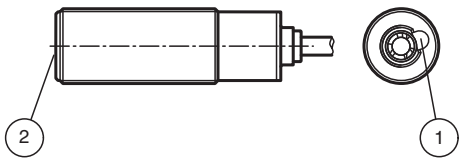
Connection Assignment



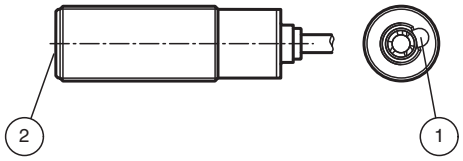
Wire colors in accordance with EN 60947-5-2

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.

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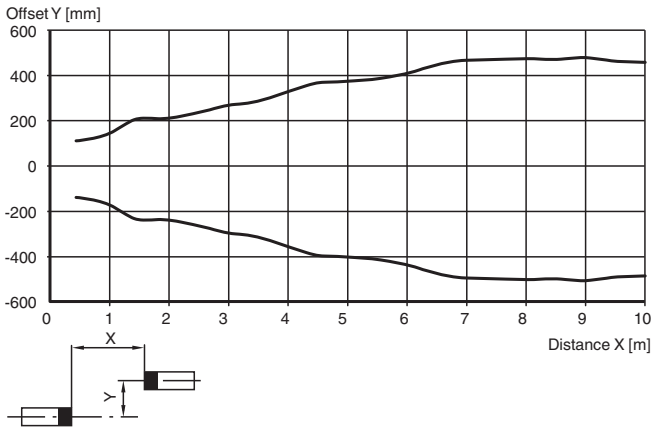
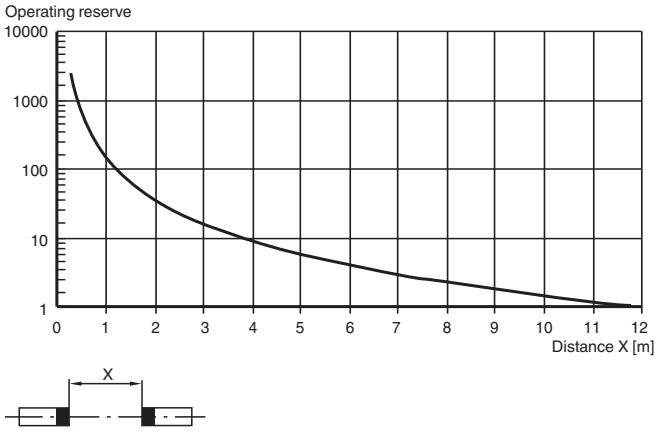
Characteristic Curve

Characteristic response curve



Relative received light strength



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 dismounting 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

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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.

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