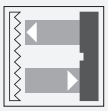
Retroreflective sensor

OBR17M-R202-2EP



- Medium design with versatile mounting options
- Degree of protection IP67
- Mounting on full metal sockets
- Very bright, highly visible light spot
- Highly visible LEDs for Power ON and switching state
- Easy to use
- Image is generic for this device type and may deviate from the specific variant

Function

The optical sensors of this series for applications in standard automation have a modern housing design. The sensors are characterized by the many mounting options, easy handling and highly visible LED status indicators. The integrated full metal bushings ensure long-term secure and dimensionally stable mounting.

Dimensions

Drawing is generic for this device type and may deviate from the specific variant.
For the number of cores refer to connection diagram.

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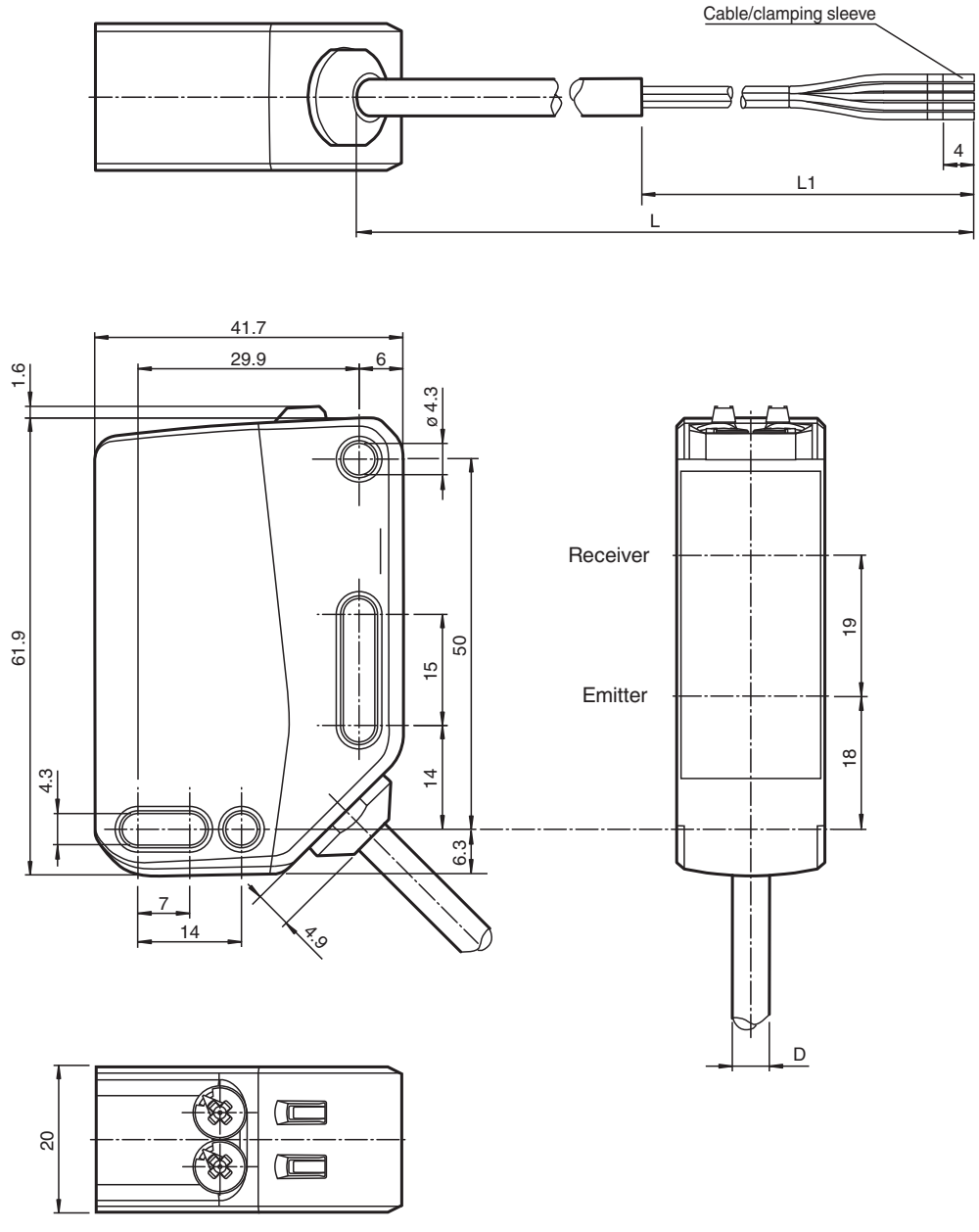
Dimensions



Technical Data

General specifications	
Effective detection range	0 ... 17 m
Reflector distance	0.02 ... 17 m
Threshold detection range	20 m
Reference target	H85-2 reflector
Light source	LED
Light type	modulated visible red light
LED risk group labelling	exempt group

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Technical Data

Polarization filter		yes
Diameter of the light spot		approx. 500 mm at a distance of 17 m
Opening angle		2 °
Ambient light limit		EN 60947-5-2 : 60000 Lux
Functional safety related parameters		
$MTTF_d$		876 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green: on - power on flashing (4 Hz) - short circuit
Function indicator		Yellow LED: Permanently lit - light path clear Permanently off - object detected Flashing (4 Hz) - insufficient operating reserve Flashing (8 Hz) - fault detected, the outputs maintain the status
Control elements		Light-on/dark-on changeover switch
Control elements		sensitivity adjustment
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	< 30 mA at 24 V Operating voltage
Protection class		III
Output		
Switching type		The switching type of the sensor is adjustable. The default setting is: Q - BK: NPN normally open / dark-on, PNP normally closed / light-on /Q - WH: NPN normally closed / light-on, PNP normally open / dark-on
Signal output		2 push-pull (4 in 1) outputs, complementary, short-circuit proof, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA , resistive load
Usage category		DC-12 and DC-13
Voltage drop	U_d	≤ 1.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms
Conformity		
Product standard		EN 60947-5-2
Approvals and certificates		
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		-30 ... 60 °C (-22 ... 140 °F) , fixed cable -20 ... 60 °C (-4 ... 140 °F) , movable cable not appropriate for conveyor chains
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications		
Housing width		20 mm
Housing height		62 mm
Housing depth		42 mm
Degree of protection		IP67
Connection		2 m fixed cable
Material		
Housing		PC (Polycarbonate)
Optical face		PMMA
Mass		approx. 100 g
Cable length		2 m

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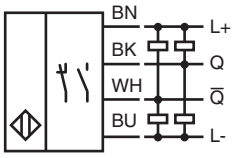
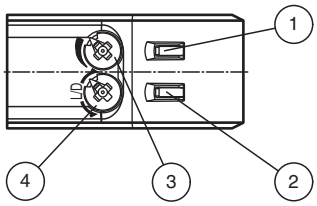
Connection



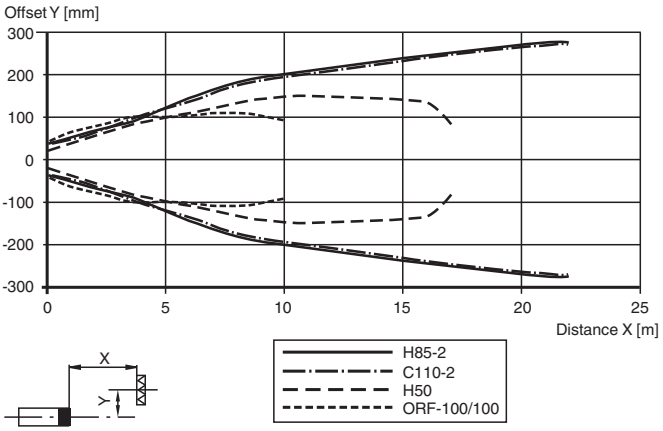
Assembly



1	Function indicator	YE
2	Operation indicator	GN
3	Sensitivity adjuster	
4	Light-on / dark-on changeover switch	

Characteristic Curve

Characteristic response curve



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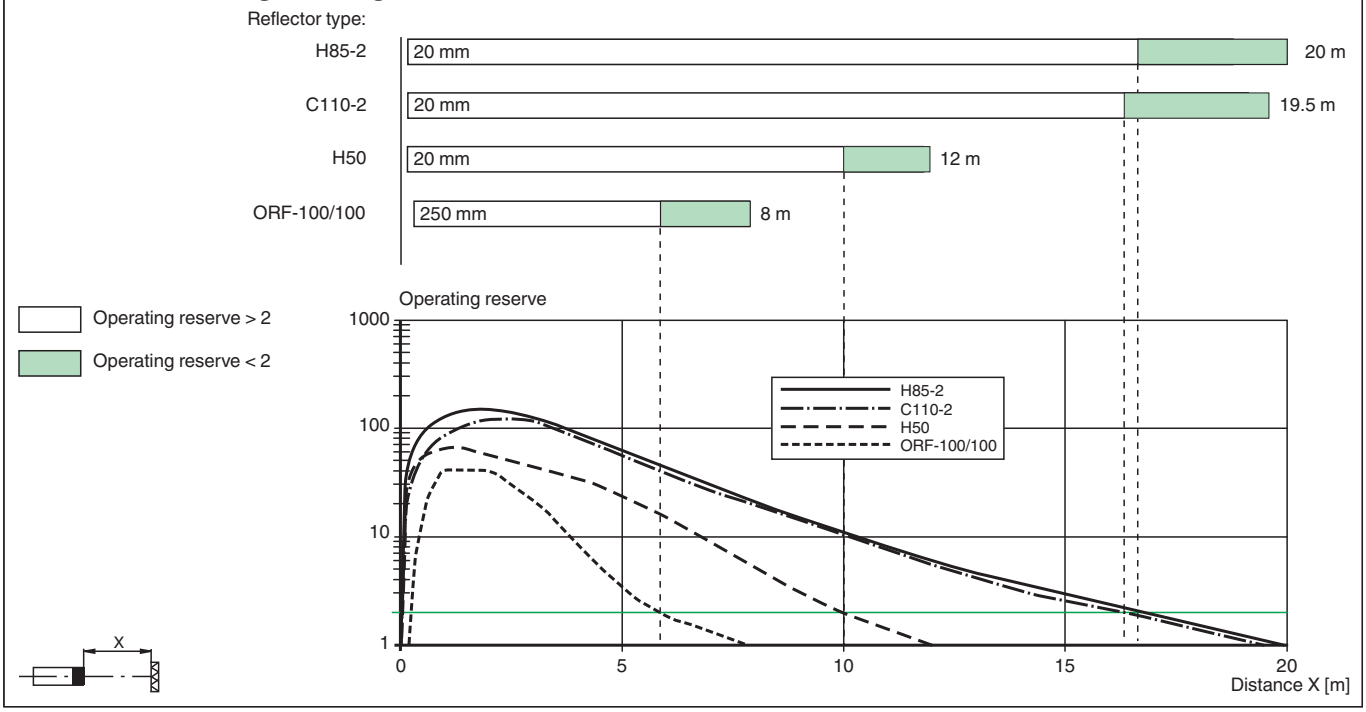
Characteristic Curve

Relative received light strength



Commissioning

Sensing Range / Sensitivity
Turn sensing range / sensitivity adjuster clockwise to increase sensing range / sensitivity.
Turn sensing range / sensitivity adjuster counter clockwise to decrease sensing range / sensitivity.
The internal end stop signals the end of the adjustment range.

Light-on / Dark-on Configuration
To set light switching or dark switching, turn the light/dark changeover switch to the end stop:

- clockwise: dark switching
- counterclockwise: light switching

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