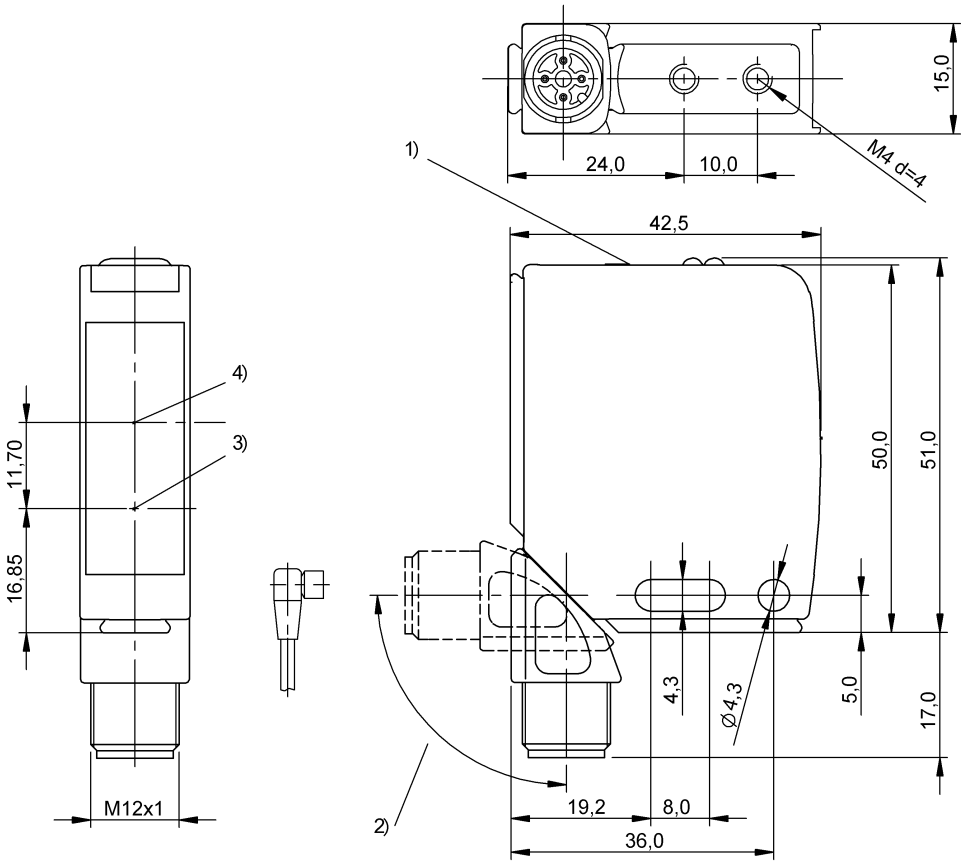
Photoelectric Sensors

BOS 21M-PA-RH22-S4
Order Code: BOS01Z8



1) Display and control panel, 2) rotatable 270°, 3) Optical axis emitter, 4) Optical axis receiver

Basic features

Approval/Conformity	CE UKCA cULus WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	21M
Style	Square Connection can be rotated

Display/Operation

Adjuster	10-turn potentiometer
Display	Output function- LED yellow LED green: Power Error - LED yellow, flashing Short circuit - LED green, flashing
Setting	Rated switching distance (Sn)

Electrical connection

Connection	Connector, M12x1-Male, 4-pin
Contact, surface protection	Gold plated
Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

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Electrical data

Load capacitance max. at Ue	0.2 µF
No-load current Io max. at Ue	40 mA
Operating voltage Ub	10...30 VDC
Protection class	II
Rated insulation voltage Ui	250 V AC
Rated operating current Ie	100 mA
Rated operating voltage Ue DC	24 V
Ready delay tv max.	50 ms
Residual current Ir max.	500 µA
Ripple max. (% of Ue)	15 %
Switching frequency	500 Hz
Turn-off delay toff max.	1 ms
Turn-on delay ton max.	1 ms
Utilization category	DC -13
Voltage drop Ud max. at Ie	2 V

Environmental conditions

Ambient temperature	-5...55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 g_n, 11 ms, 3x6
EN 60068-2-6, Vibration	10…55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67

Functional safety

MTTF (40 °C)	264 a

Interface

Switching output	PNP normally closed (NC) PNP normally open (NO) Pins 4-2

Material

Housing material	Zinc, Die casting, Powder coated Aluminium
Material sensing surface	Glass
Surface protection	Powder coated

Mechanical data

Dimension	15 x 51 x 42.5 mm
Mounting part	Screw M4

Optical features

Ambient light max.	10000 Lux
Beam characteristic	Focus, typical at 200 mm
LED group per IEC 62471	Exempt Group
Light spot size	6 x 6 mm at 200 mm
Light type	LED, red light
Principle of optical operation	Diffuse sensor, triangulation
Special optical feature	Background suppression
Switching function, optical	Light/dark switching
Wave length	650 nm

Range/Distance

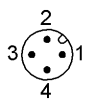
Distance deviation 18 % max. (% of Sr)	8 %
Hysteresis H max. (% of Sr)	5.0 %
Range	1...400 mm
Rated operating distance Sn	400 mm Adjustable
Repeat accuracy max. (% of Sr)	1.0 %
Temperature drift max. (% of Sr)	10 %

Remarks

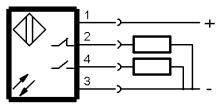
Order accessories separately.
For additional information, refer to user's guide.
Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device.
Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.
The sensor is functional again after the overload has been eliminated.
For more information about MTTF and B10d see MTTF / B10d Certificate

Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

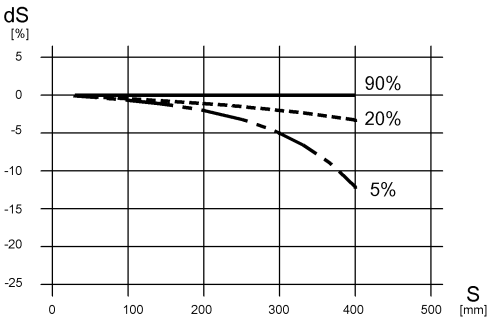
Connector Drawings



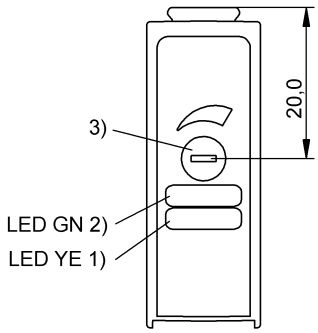
Wiring Diagrams (Schematic)



Technical Drawings



Help Views



1) Output function/Error
2) Power/short-circuit
3) Sn

Opto Symbols