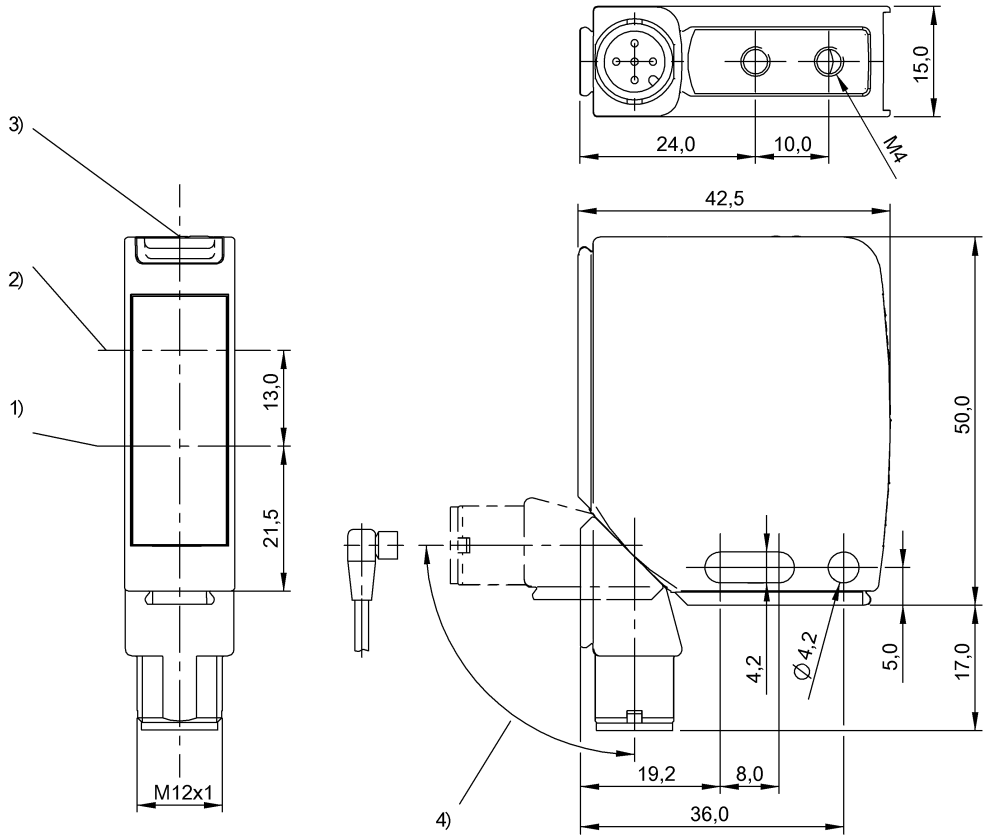
Photoelectric Sensors

BOD 21M-LA01-S92
Order Code: BOD000L



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

Basic features

Application	Distance measurement
Approval/Conformity	CE UKCA cULus WEEE
Basic standard	IEC 60947-5-2, IEC 60947-5-7
Principle of operation	Photoelectric distance sensor
Series	21M
Style	Square Connection can be rotated

Display/Operation

Adjuster	Rotary switch 5 positions
Display	Output function Output 1 - LED yellow LED green: Power
Setting	Working range Rated switching distance (Sn)

Electrical connection

Connection	Connector, M12x1-Male, 5-pin
Contact, surface protection	Gold plated
Polarity reversal protected	yes
Short-circuit protection	yes

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Electrical data

Load capacitance max. at Ue	0.1 µF
Load resistance RL min. (Analog V)	2 kOhm
No-load current Io max. at Ue	50 mA
Operating voltage Ub	18...30 VDC
Rated insulation voltage Ui	75 V DC
Rated operating current Ie	100 mA
Rated operating voltage Ue DC	24 V
Ready delay tv max.	300 ms
Ripple max. (% of Ue)	15 %
Switching frequency	70 Hz
Turn-off delay toff max.	7 ms
Turn-on delay ton max.	7 ms
Utilization category	DC -13
Voltage drop Ud max. at Ie	2 V

Environmental conditions

Ambient temperature	-10...50 °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 0.5 mm, 3x30 min
IP rating	IP67

Functional safety

MTTF (40 °C)	69 a

Interface

Analog output	Analog, voltage 1…10 V
Output characteristic	linear increasing
Switching output	2x PNP/NPN NO/NC push-pull

Material

Housing material	Zinc, Die casting Aluminium
Material sensing surface	Glass

Mechanical data

Dimension	15 x 42.5 x 50 mm
Distance deviation 6 % max. (% of Sr)	1.5 %
Mounting part	Screw M4

Optical features

Ambient light max.	5000 Lux
Average power Po max.	1 mW
Beam characteristic	Collimated
Laser class per IEC 60825-1	2
Light spot size	Ø 1 mm at 45 mm
Light type	Laser red light
Principle of optical operation	Triangulation
Pulse duration t max.	3000 µs
Pulse power Pp max.	1.2 mW
Switching function, optical	Light/dark switching
Wave length	650 nm

Range/Distance

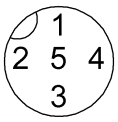
Accuracy	±0.5 % FS
Hysteresis H max. (% of Sr)	1.5 %
Range	25...45 mm, adjustable
Rated operating distance Sn	45 mm Adjustable
Repeat accuracy	0.1 %FS
Resolution	≤ 30 µm

Remarks

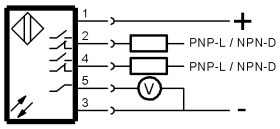
For additional information, refer to user's guide.
Order accessories separately.
The sensor is functional again after the overload has been eliminated.
Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.
Full accuracy after warmup phase
The push-pull switching outputs must not be connected in parallel.
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.
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.

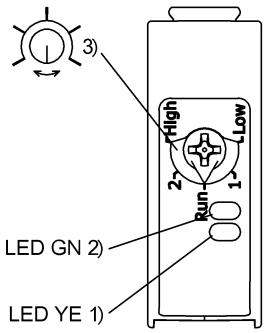
Connector Drawings



Wiring Diagrams



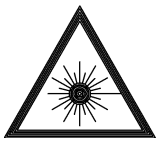
Help Views



1) Output function
2) Stability
3) Teach-in Sn, WR

Opto Symbols

Warning Symbols



LASER BEAM - DO NOT STARE INTO THE LIGHT BEAM!

LASER CLASS 2 per IEC60825-1: 2003-10