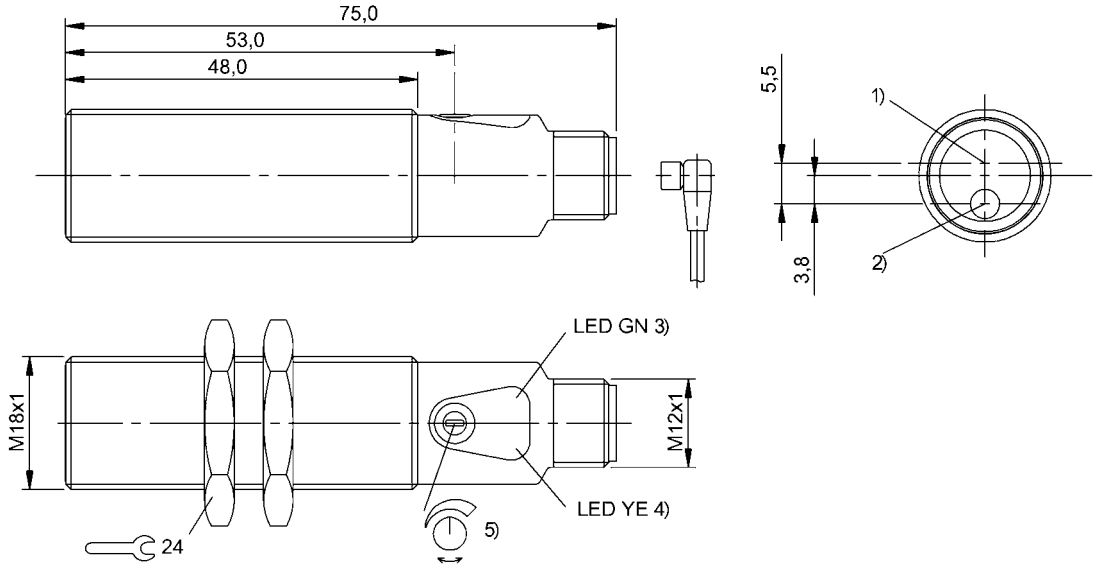
Photoelectric Sensors

BOS 18M-NA-LD20-S4
Order Code: BOS01R3



1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage/Error, 4) Light reception/limit area, 5) Sn

Basic features

Approval/Conformity	cULus CE UKCA WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	18M
Style	Cylinder Straight optics

Display/Operation

Adjuster	Potentiometer 270°
Display	LED green: Power Error - LED green, flashing Limit range - LED yellow, flashing LED yellow: Light received
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

Electrical data

Load capacitance max. at Ue	0.1 µF
No-load current Io max. at Ue	15 mA
Operating voltage Ub	10...30 VDC
Protection class	II
Rated insulation voltage Ui	75 V DC
Rated operating current Ie	100 mA
Rated operating voltage Ue DC	24 V
Ready delay tv max.	20 ms
Ripple max. (% of Ue)	15 %
Switching frequency	1000 Hz
Turn-off delay toff max.	0.5 ms
Turn-on delay ton max.	0.5 ms
Utilization category	DC -13
Voltage drop Ud max. at Ie	1.5 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)	574 a

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Interface

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

Material

Housing material	Brass, nickel-plated
Material sensing surface	Glass
Surface protection	nickel-plated

Mechanical data

Dimension	Ø 18 x 75 mm
Mounting part	Nut M18x1
Tightening torque max.	15 Nm 30 Nm

Optical features

Ambient light max.	10000 Lux
Average power Po max.	390 µW
Beam characteristic	Focus, typical at 400 mm
Laser class per IEC 60825-1	1
Light spot size	Ø 2 mm at 250 mm
Light type	Laser red light
Principle of optical operation	Diffuse sensor, energetic
Pulse duration t max.	4400 µs
Pulse frequency	10 kHz
Pulse power Pp max.	4.0 mW
Smallest part typ.	Ø 0.4 mm at 100 mm (90 % Rem.)
Switching function, optical	Light-on dark-on
Wave length	655 nm

Range/Distance

Hysteresis H max. (% of Sr)	10.0 %
Range	1...250 mm
Rated operating distance Sn	250 mm Adjustable
Temperature drift max. (% of Sr)	5 %

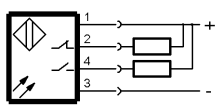
Remarks

The sensor is functional again after the overload has been eliminated.
Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.
For additional information, refer to user's guide.
Order accessories separately.
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.

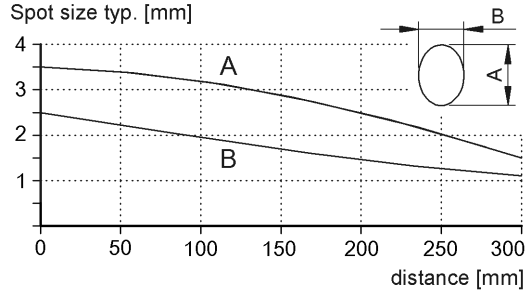
Connector Drawings

Wiring Diagrams

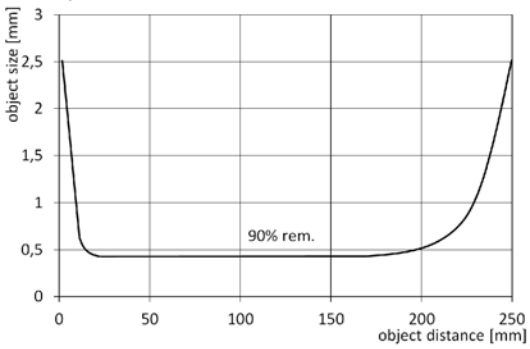


Technical Drawings

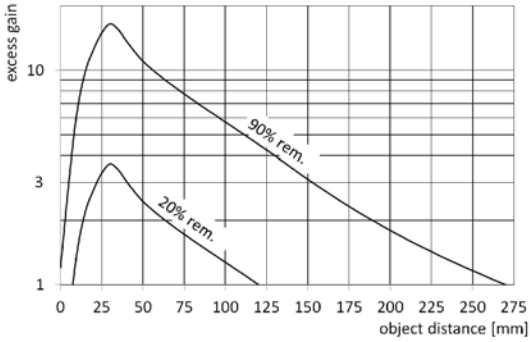
Spot size typ. [mm]



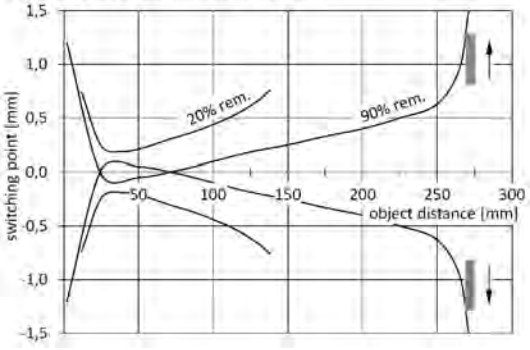
Small part detection



Excess gain

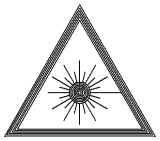


Sensing area for lateral approach



Opto Symbols

Warning Symbols



LASER CLASS 1 per IEC 60825-1