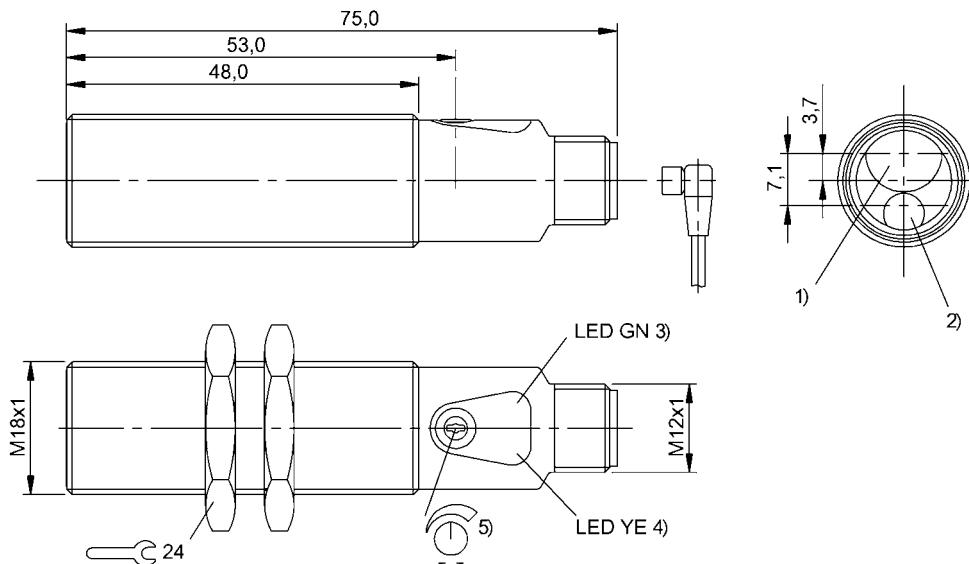


Photoelectric Sensors
BOS 18M-NSV-LH22-S4
Order Code: BOS001L

BALLUFF



1) Optical axis receiver, 2) Optical axis emitter, 3) Power/short-circuit, 4) Output function/Error, 5) Sn



Basic features

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

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

Electrical data

Load capacitance max. at Ue	0.1 μ F
No-load current I ₀ max. at Ue	30 mA
Operating voltage U _b	10...30 VDC
Protection class	II
Rated insulation voltage U _i	75 V DC
Rated operating current I _e	100 mA
Rated operating voltage U _e DC	24 V
Ready delay t _v max.	200 ms
Residual current I _r max.	10 μ A
Ripple max. (% of U _e)	15 %
Switching frequency	500 Hz
Turn-off delay t _{off} max.	1 ms
Turn-on delay t _{on} max.	1 ms
Utilization category	DC-13
Voltage drop U _d max. at I _e	2.5 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)	455 a
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Interface

Supplementary output	Error output PNP
Switch function, supplementary output	Normally closed (NC)
Switching output	NPN normally open (NO) Pin 4

Material

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

Mechanical data

Dimension	Ø 18 x 75 mm
Distance deviation 6 % max. (% of Sr)	16.0 %
Mounting part	Nut M18x1
Tightening torque max.	15 Nm

30 Nm

Optical features

Ambient light max.	10000 Lux
Average power Po max.	1 mW
Beam characteristic	Focus, typical at 100 mm
Laser class per IEC 60825-1	2
Light spot size	0.05 x 0.1 mm at focal point
Light type	Laser red light
Principle of optical operation	Diffuse sensor, triangulation
Pulse duration t max.	10000 µs
Pulse frequency	7.1 kHz
Pulse power Pp max.	4.0 mW
Smallest part typ.	50 µm at focal point
Special optical feature	Background suppression
Switching function, optical	Light-on
Wave length	660 nm

Range/Distance

Distance deviation 18 % max. (% of Sr)	8 %
Hysteresis H max. (% of Sr)	5.0 %
Range	30...150 mm
Rated operating distance Sn	150 mm Adjustable
Repeat accuracy max. (% of Sr)	1.0 %
Temperature drift max. (% of Sr)	15 %

Remarks

Order accessories separately.

For additional information, refer to user's guide.

The sensor is functional again after the overload has been eliminated.

Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.

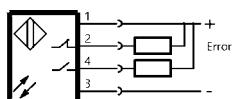
For more information about MTTF and B10d see MTTF / B10d Certificate

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



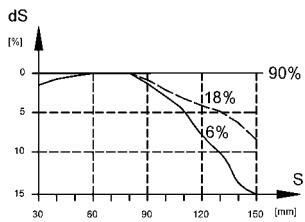
Wiring Diagrams



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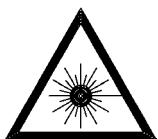
Technical Drawings



Opto Symbols



Warning Symbols



LASER BEAM - DO NOT STARE INTO THE LIGHT BEAM!

LASER CLASS 2 per IEC60825-1: 2003-10