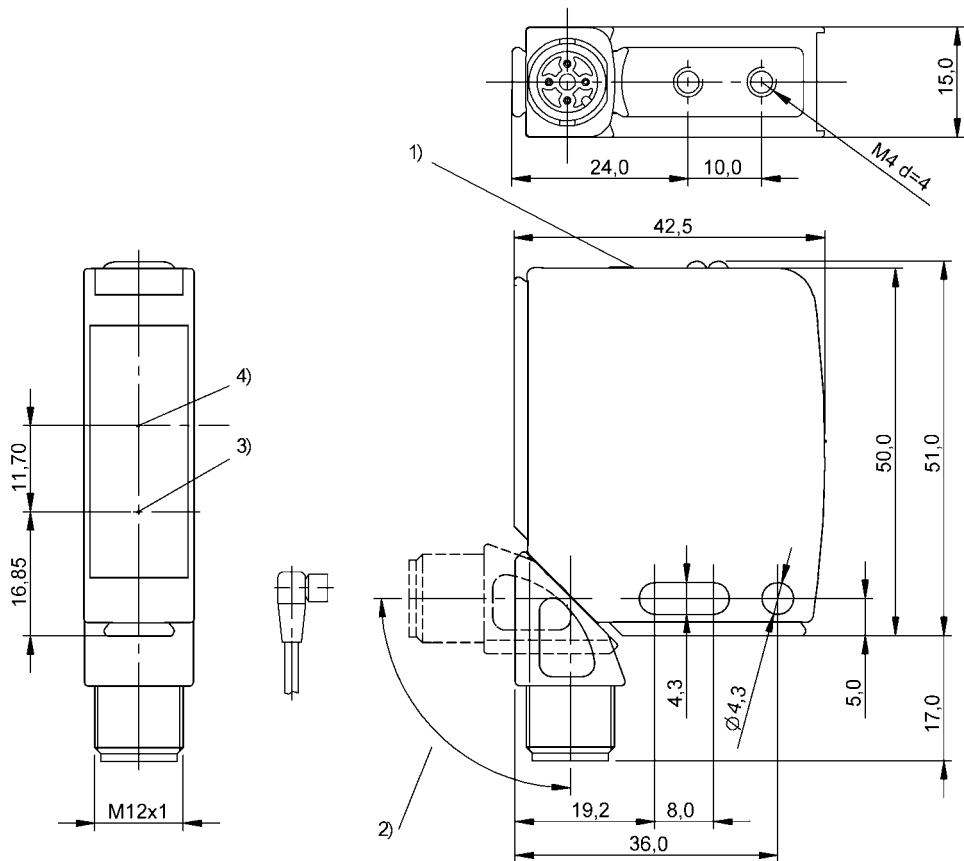




1) Display and control panel, 2) rotatable 270°, 3) Optical axis emitter, 4) Optical axis receiver



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

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

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)

Photoelectric Sensors
BOS 21M-PA-LH23-S4
Order Code: BOS01Z9

BALLUFF

Electrical data

Load capacitance max. at Ue	0.2 µF
No-load current I _o max. at Ue	40 mA
Operating voltage U _b	10...30 VDC
Protection class	II
Rated insulation voltage U _i	250 V AC
Rated operating current I _e	100 mA
Rated operating voltage U _e DC	24 V
Ready delay t _v max.	50 ms
Residual current I _r max.	500 µA
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 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)	205 a
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Interface

Switching output	PNP normally closed (NC) PNP normally open (NO) Pins 4-2
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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
Average power P _o max.	390 µW
Beam characteristic	Focus, typical at 400 mm
Laser class per IEC 60825-1	1
Light spot size	Ø 3 mm at 200 mm
Light type	Laser red light
Principle of optical operation	Diffuse sensor, triangulation
Pulse duration t max.	10000 µs
Pulse frequency	5.7 kHz
Pulse power P _p max.	4.0 mW
Smallest part typ.	50 µm at focal point
Special optical feature	Background suppression
Switching function, optical	Light/dark switching
Wave length	655 nm

Range/Distance

Distance deviation 18 % max. (% of Sr)	typ. 5 %
Hysteresis H max. (% of Sr)	5.0 %
Range	1...250 mm
Rated operating distance S _n	250 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.

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

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.

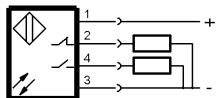
For more information about MTTF and B10d see MTTF / B10d Certificate

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.

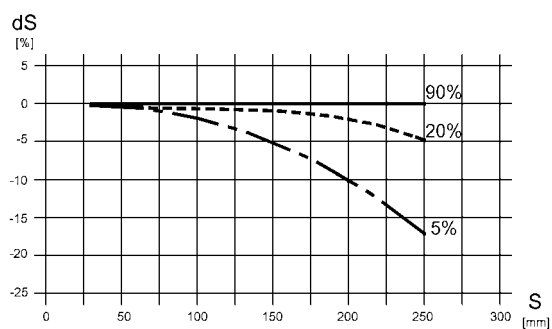
Connector Drawings



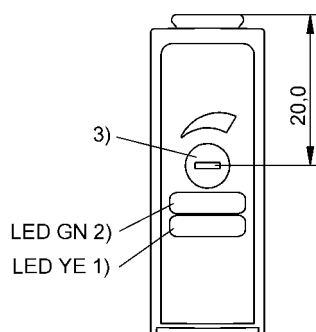
Wiring Diagrams



Technical Drawings



Help Views

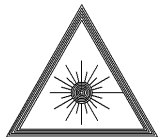


- 1) Output function/Error
- 2) Power/short-circuit
- 3) Sn

Opto Symbols



Warning Symbols



LASER CLASS 1 per IEC 60825-1: 2014-05