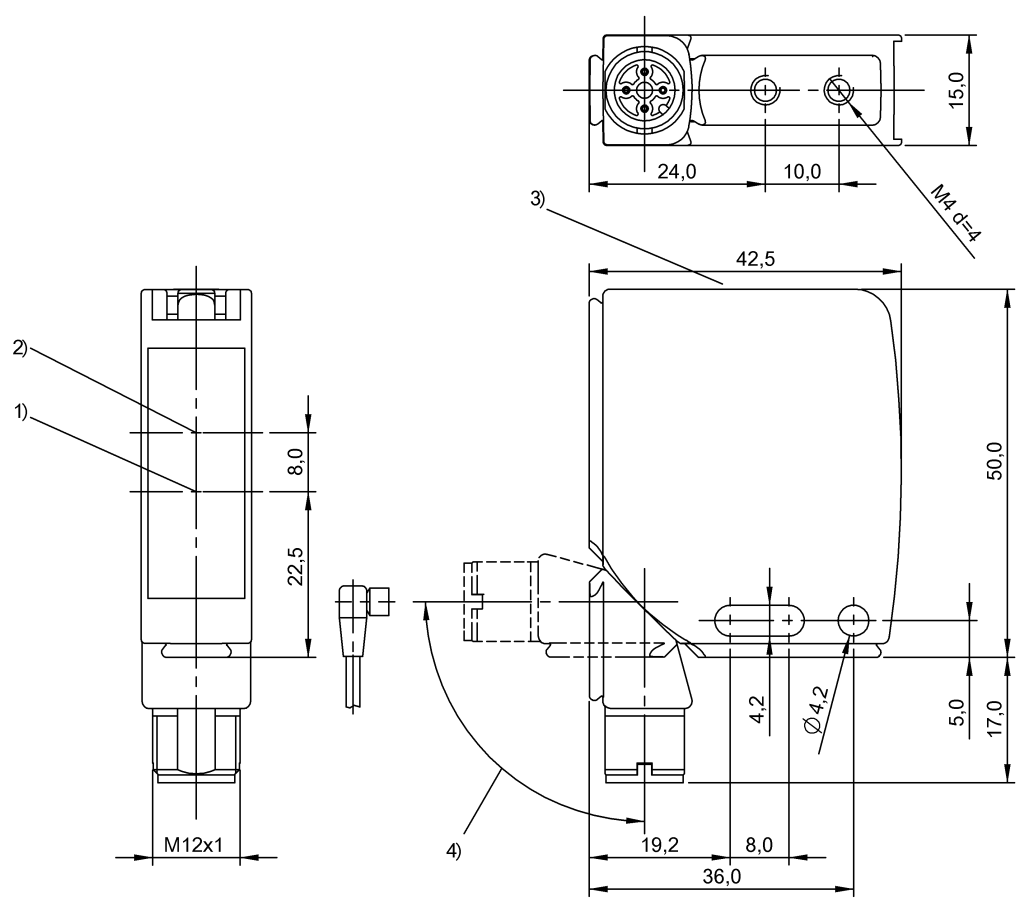


Photoelectric Sensors
BOS 21M-PA-LR10-S4
Order Code: BOS00TL

BALLUFF



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



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	Potentiometer 270°
Display	Output function- LED yellow LED green: Power
Setting	Sensitivity (Sn)

Photoelectric Sensors
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BALLUFF

Electrical data

Load capacitance max. at Ue	1 μ F
No-load current I _o max. at Ue	35 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)	8 %
Switching frequency	2000 Hz
Turn-off delay t _{off} max.	0.25 ms
Turn-on delay t _{on} max.	0.25 ms
Utilization category	DC -13
Voltage drop U _d max. at I _e	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 1 mm, 3x30 min
IP rating	IP67

Functional safety

MTTF (40 °C)	308 a
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Interface

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

Order accessories separately.

For additional information, refer to user's guide.

Polarizing filters prevent spurious switching due to reflecting and shiny parts.

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.

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

Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.

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.

Material

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

Mechanical data

Dimension	15 x 50 x 42.5 mm
Mounting part	Screw M4

Optical features

Ambient light max.	5000 Lux
Average power P _o max.	390 μ W
Beam characteristic	Collimated
Blind zone	100 mm
Laser class per IEC 60825-1	1
Light type	Laser red light
Polarizing filter	yes
Principle of optical operation	Retroreflective sensor
Pulse frequency	33.5 kHz
Switching function, optical	Light-on dark-on
Wave length	650 nm

Range/Distance

Range	0...20 m
Rated operating distance S _n	20 m Adjustable

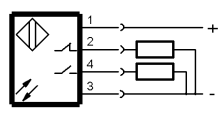
Connector Drawings



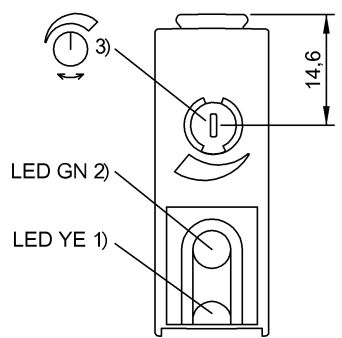
Photoelectric Sensors
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Wiring Diagrams



Help Views

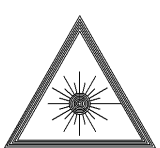


- 1) Output function
- 2) Operating voltage
- 3) Sensitivity

Opto Symbols



Warning Symbols



LASER CLASS 1 per IEC 60825-1