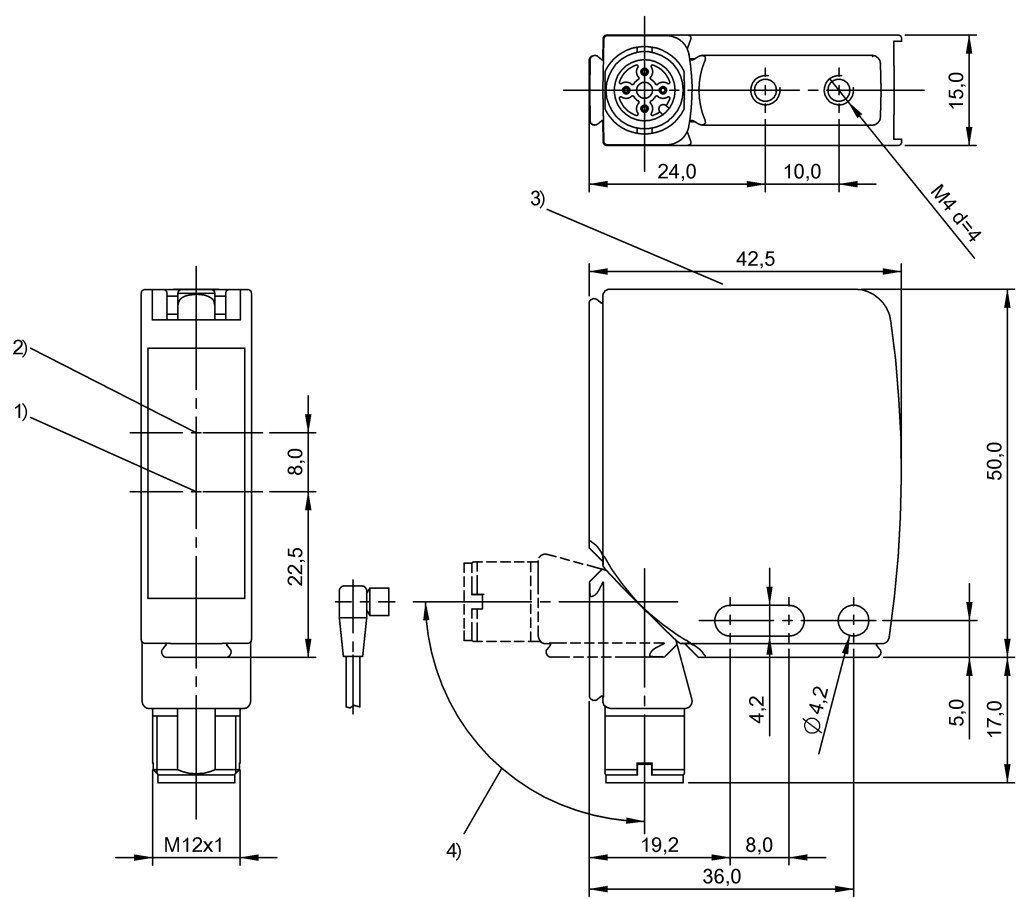


Photoelectric Sensors  
BOS 21M-NA-ID10-S4  
Order Code: BOS002T

**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 Stability - LED green
Setting	Rated switching distance (Sn)

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#### Electrical data

Load capacitance max. at Ue	1 µF
No-load current I <sub>o</sub> max. at Ue	35 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Protection class	II
Rated insulation voltage U <sub>i</sub>	75 V DC
Rated operating current I <sub>e</sub>	100 mA
Rated operating voltage U <sub>e</sub> DC	24 V
Ready delay t <sub>v</sub> max.	200 ms
Residual current I <sub>r</sub> max.	10 µA
Ripple max. (% of U <sub>e</sub> )	8 %
Switching frequency	500 Hz
Turn-off delay t <sub>off</sub> max.	1 ms
Turn-on delay t <sub>on</sub> max.	1 ms
Utilization category	DC -13
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	2 V

#### Environmental conditions

Ambient temperature	-25...55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67

#### Functional safety

MTTF (40 °C)	594 a
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#### Interface

Switching output	NPN normally closed (NC) NPN normally open (NO) Pins 4-2
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#### 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.	10000 Lux
Beam characteristic	Divergent
Light type	Infrared
Principle of optical operation	Diffuse sensor, energetic
Switching function, optical	Light-on dark-on
Wave length	880 nm

#### Range/Distance

Hysteresis H max. (% of Sr)	20.0 %
Range	50...2000 mm
Rated operating distance S <sub>n</sub>	2 m Adjustable
Repeat accuracy max. (% of Sr)	1.0 %

#### Remarks

Order accessories separately.

For additional information, refer to user's guide.

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

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.

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.

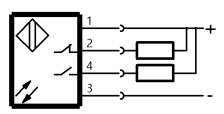
#### Connector Drawings



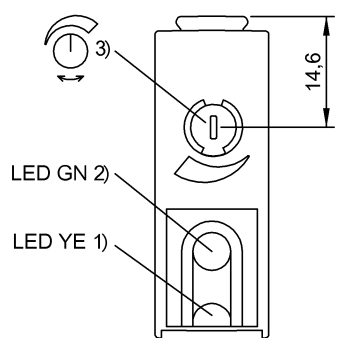
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Wiring Diagrams



Help Views



- 1) Output function
- 2) Stability
- 3) Sensitivity

Opto Symbols

