

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



Basic features

Approval/Conformity	cULus CE UKCA EAC 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 µF
No-load current I_o max. at Ue	50 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 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	2.5 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)	563 a
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Photoelectric Sensors
BOS 18M-PA-RH22-S4
Order Code: BOS014W

BALLUFF

Interface

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

Housing material	Brass
Material sensing surface	Glass

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
Beam characteristic	Divergent
LED group per IEC 62471	Exempt Group
Light spot size	27 x 27 mm at 300 mm
Light type	LED, red light
Principle of optical operation	Diffuse sensor, triangulation
Special optical feature	Background suppression
Switching function, optical	Light-on dark-on
Wave length	630 nm

Range/Distance

Distance deviation 18 % max. (% of Sr)	typ. 18 %
Hysteresis H max. (% of Sr)	6.0 %
Range	30...300 mm
Rated operating distance Sn	300 mm Adjustable
Repeat accuracy max. (% of Sr)	1.0 %

Remarks

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.

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

Order accessories separately.

For additional information, refer to user's guide.

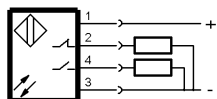
For more information about MTTF and B10d see MTTF / B10d Certificate

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



Opto Symbols

