

1) Optical axis receiver, 2) Optical axis emitter, 3) Power/short-circuit, 4) Light reception/limit area, 5) Sn



Basic features

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

Display/Operation

Adjuster	button
Display	LED green: Power Limit range - LED yellow, flashing Short circuit - LED green, flashing LED yellow: Light received
Setting	Rated switching distance (Sn) Light-on/dark-on

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	0.3 μ F
No-load current I_o max. at Ue	40 mA
Operating voltage U_b	18...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.	100 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	1.5 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 0.5 mm, 3x30 min
IP rating	IP67

Functional safety

MTTF (40 °C)	509 a
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Photoelectric Sensors
BOS 18M-PI-RD30-S4
Order Code: BOS01UA

BALLUFF

IO-Link

IO-Link Profil IDs 0x0001 SSP0

Interface

Baud rate 38.4 kBaud
Function class, smart sensor Switching signal channel
Teach channel
Diagnostics
Identification
Interface IO-Link 1.1
Interface setting option Key disable on/off
Sensor name in application
Teach method 2-point/dyn.
BDC mode 1-pt./2-pt./window
Light-on/dark-on
Process data OUT Teaching active/inactive
Limit range yes/no
Switching state active/inactive
Error active/inactive
Process data cycle min. 3 ms
Profile Smart Sensor
Switching output PNP normally open/normally closed (NO/NC)

Material

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

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 Ø 50 mm at 600 mm
Light type LED, red light
Principle of optical operation Diffuse sensor, energetic
Switching function, optical Light/dark switching
Wave length 626 nm

Range/Distance

Hysteresis H max. (% of Sr) 10.0 %
Range 1...500 mm
Rated operating distance Sn 500 mm Adjustable
Temperature drift max. (% of Sr) 10 %

Remarks

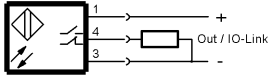
The sensor is functional again after the overload has been eliminated.
Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.
Only for applications per NFPA 79 (machines with a supply voltage of maximum 600 V). Use an R/C (CYJV2) cable with suitable properties for attaching the device.
For additional information, refer to user's guide.
Order accessories separately.
Do not press key using a pointed tool.
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

