

1) Optical axis receiver, 2) Optical axis emitter, 3) Light reception/limit area



IND. CONT. EQ.
 81U2
 Class 2 Type 1



Basic features

Approval/Conformity	cULus CE EAC WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Reference reflector	BOS R-1
Scope of delivery	2x nut M18x1 User manual
Series	18M
Style	Cylinder Straight optics

Electrical data

Load capacitance max. at Ue	0.2 µF
No-load current I _o max. at Ue	30 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.	20 ms
Residual current I _r max.	30 µA
Ripple max. (% of U _e)	15 %
Switching frequency	800 Hz
Turn-off delay t _{off} max.	0.63 ms
Turn-on delay t _{on} max.	0.63 ms
Utilization category	DC -13
Voltage drop U _d max. at I _e	2.5 V

Display/Operation

Adjuster	no
Display	LED green: Power Error - LED green, flashing LED yellow: Light received Limit range - LED yellow, flashing

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

Environmental conditions

Ambient temperature	-5...55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 gn, 11 ms, 3x6 Half-sinus, 100 gn, 2 ms, 3x8000
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1 mm, 3x30 min 10...2000 Hz, amplitude 1 mm, 30 gn, 3x5 h
Protection degree	IP67

Functional safety

MTTF (40 °C)	1299 a
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Material

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

Mechanical data

Dimension	Ø 18 x 75 mm
Mounting	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 300 mm at 7 m
Light type	LED, red light
Polarizing filter	yes
Principle of optical operation	Retroreflective sensor
Switching function, optical	Light-on
Wave length	626 nm

Output/Interface

Switching output	PNP NC Pin 2
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Range/Distance

Range	0...4 m
Rated operating distance Sn	4 m

Remarks

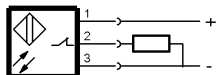
For additional information, refer to user's guide.
 Order accessories separately.
 The sensor is functional again after the overload has been eliminated.
 Polarizing filters prevent spurious switching due to reflecting and shiny parts.
 For more information about MTTF and B10d see MTTF / B10d Certificate

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

