

1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage, 4) Light reception/limit area



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



Basic features

Approval/Conformity	CE WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	12M
Style	Cylinder Straight optics
Trademark	Global

Display/Operation

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

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 U_e	0.2 μ F
Operating voltage U_b	10...30 VDC
Rated insulation voltage U_i	75 V DC
Rated operating current I_e	100 mA
Rated operating voltage U_e DC	24 V
Ripple max. (% of U_e)	15 %
Switching frequency	1000 Hz
Turn-off delay t_{off} max.	0.5 ms
Turn-on delay t_{on} max.	0.5 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 gn, 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1 mm, 3x30 min
Protection degree	IP67

Functional safety

MTTF (40 °C)	2349 a
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Material

Housing material	Brass, nickel plated
Material sensing surface	PMMA
Surface protection	nickel plated

Mechanical data

Dimension	Ø 12 x 60 mm
Mounting	Nut M12x1
Tightening torque max.	7 Nm 15 Nm

Optical features

Ambient light max.	10000 Lux
Beam characteristic	Divergent
LED group per IEC 62471	Exempt Group
Light spot size	Ø 8 mm at 100 mm
Light type	LED, red light
Principle of optical operation	Diffuse sensor, energetic
Switching function, optical	Light-on
Wave length	650 nm

Output/Interface

Switching output	PNP normally open (NO) Pin 4
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Range/Distance

Hysteresis H max. (% of Sr)	10.0 %
Range	1...100 mm
Rated operating distance S _n	100 mm
Temperature drift max. (% of Sr)	14 %

Remarks

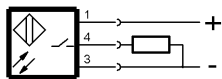
Order accessories separately.
 For additional information, refer to user's guide.
 Reference object (target): gray card, 200 x 200, 90 % remission, axial approach.
 The sensor is functional again after the overload has been eliminated.
 For more information about MTTF and B10d see MTTF / B10d Certificate

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

