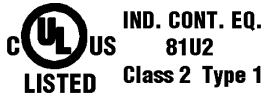


1) Optical axis receiver, 2) Optical axis emitter, 3) Power/short-circuit, 4) Output function/Error, 5) Sn



Basic features

Approval/Conformity	CE cULus 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	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.	100 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 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)	455 a
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Material

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

Mechanical data

Dimension	Ø 18 x 75 mm
Distance deviation 6 % max. (% of Sr)	16.0 %
Mounting	Nut M18x1
Tightening torque max.	15 Nm 30 Nm

Optical features

Ambient light max.	10000 Lux
Average power Po max.	1 mW
Beam characteristic	Focus, typical at 100 mm
Laser class per IEC 60825-1	2
Light spot size	0.05 x 0.1 mm at focal point
Light type	Laser red light
Principle of optical operation	Diffuse sensor, triangulation
Pulse duration t max.	10000 µs
Pulse frequency	7.1 kHz
Pulse power Pp max.	4.0 mW
Smallest part typ.	50 µm at focal point
Special optical feature	Background suppression
Switching function, optical	Light-on
Wave length	660 nm

Output/Interface

Supplementary output	Error output PNP
Switch function, supplementary output	Normally closed (NC)
Switching output	PNP normally open (NO) Pin 4

Range/Distance

Distance deviation 18 % max. (% of Sr)	8 %
Hysteresis H max. (% of Sr)	5.0 %
Range	30...150 mm
Rated operating distance Sn	150 mm Adjustable
Repeat accuracy max. (% of Sr)	1.0 %
Temperature drift max. (% of Sr)	15 %

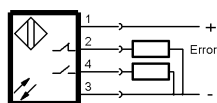
Remarks

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

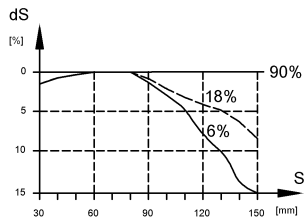
Connector Drawings



Wiring Diagrams



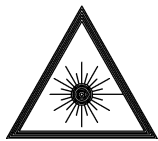
Technical Drawings



Opto Symbols



Warning Symbols



LASER BEAM - DO NOT STARE INTO THE LIGHT BEAM!

LASER CLASS 2 per IEC60825-1: 2003-10