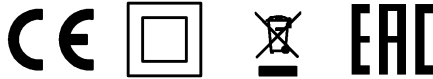
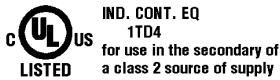


1) Optical axis, 2) Sn, 3) Output function, 4) Operating voltage



### Basic features

Approval/Conformity	CE cULus EAC WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Reference reflector	BOS R-1
Series	18MR
Style	Cylinder Optics 90°

### Electrical data

No-load current $I_0$ max. at $U_e$	35 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
Ripple max. (% of $U_e$ )	8 %
Switching frequency	1500 Hz
Turn-off delay $t_{off}$ max.	0.33 ms
Turn-on delay $t_{on}$ max.	0.33 ms
Voltage drop $U_d$ max. at $I_e$	2 V

### Display/Operation

Adjuster	Potentiometer 270°
Display	Output function- LED yellow Stability - LED green
Setting	Sensitivity ( $S_n$ )

### Environmental conditions

Ambient temperature	-10...50 °C
EN 60068-2-27, Shock	Half-sinus, 50 gn, 500 ms, 3x3
EN 60068-2-6, Vibration	10...55 Hz, amplitude 0.5 mm, 3x30 min
Protection degree	IP67

### Electrical connection

Connection	Connector, M12x1-Male, 4-pin
Polarity reversal protected	yes
Short-circuit protection	yes

### Functional safety

MTTF (40 °C)	739 a
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### Material

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

**Mechanical data**

<b>Dimension</b>	Ø 18 x 93.5 mm
<b>Mounting</b>	Nut M18x1
<b>Tightening torque max.</b>	22 Nm

**Optical features**

<b>Ambient light max.</b>	3000 Lux
<b>Average power Po max.</b>	390 µW
<b>Blind zone</b>	100 mm
<b>Laser class per IEC 60825-1</b>	1
<b>Light type</b>	Laser red light
<b>Polarizing filter</b>	yes
<b>Principle of optical operation</b>	Retroreflective sensor
<b>Pulse duration t max.</b>	6.0 µs
<b>Pulse frequency</b>	25 kHz
<b>Switching function, optical</b>	dark-on
<b>Wave length</b>	650 nm

**Output/Interface**

<b>Switching output</b>	PNP normally open (NO) PNP NC Pins 4-2
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**Range/Distance**

<b>Range</b>	0...9 m
<b>Rated operating distance Sn</b>	9 m Adjustable

**Remarks**

Order accessories separately.

For additional information, refer to user's guide.

Polarizing filters prevent spurious switching due to reflecting and shiny parts.

Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.

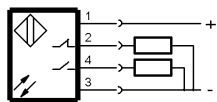
For more information about MTTF and B10d see MTTF / B10d Certificate

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**



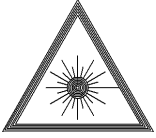
**Wiring Diagrams**



**Opto Symbols**



## Warning Symbols



LASER CLASS 1 per IEC 60825-1