

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



**Basic features**

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

**Display/Operation**

Adjuster	incremental encoder
Display	Output function- LED yellow LED green: Power Error - LED yellow, flashing Short circuit - LED yellow, 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 <sub>o</sub> max. at Ue	20 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Protection class	II
Rated insulation voltage U <sub>i</sub>	75 V DC
Rated operating current I <sub>e</sub>	100 mA
Rated operating voltage U <sub>e</sub> DC	24 V
Ready delay t <sub>v</sub> max.	200 ms
Residual current I <sub>r</sub> max.	500 µA
Ripple max. (% of U <sub>e</sub> )	15 %
Switching frequency	700 Hz
Turn-off delay t <sub>off</sub> max.	1 ms
Turn-on delay t <sub>on</sub> max.	1 ms
Utilization category	DC -13
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	2.5 V

**Environmental conditions**

Ambient temperature	-5...55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67

**Functional safety**

MTTF (40 °C)	301 a
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## Interface

<b>Switching output</b>	PNP normally closed (NC) PNP normally open (NO) Pins 4-2
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## Material

<b>Housing material</b>	Brass
<b>Material sensing surface</b>	Glass

## Mechanical data

<b>Dimension</b>	Ø 18 x 75 mm
<b>Mounting part</b>	Nut M18x1
<b>Tightening torque max.</b>	15 Nm 30 Nm

## Optical features

<b>Ambient light max.</b>	10000 Lux
<b>Beam characteristic</b>	Divergent
<b>LED group per IEC 62471</b>	Exempt Group
<b>Light spot size</b>	10 x 10 mm at 150 mm
<b>Light type</b>	LED, red light
<b>Principle of optical operation</b>	Diffuse sensor, triangulation
<b>Special optical feature</b>	Background suppression
<b>Switching function, optical</b>	Light-on dark-on
<b>Wave length</b>	630 nm

## Range/Distance

<b>Distance deviation 18 % max. (% of Sr)</b>	8 %
<b>Hysteresis H max. (% of Sr)</b>	5.0 %
<b>Range</b>	30...150 mm
<b>Rated operating distance Sn</b>	150 mm, Adjustable
<b>Repeat accuracy max. (% of Sr)</b>	1.0 %
<b>Temperature drift max. (% of Sr)</b>	10 %

## Remarks

The sensor is functional again after the overload has been eliminated.

Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.

For additional information, refer to user's guide.

Order accessories separately.

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.

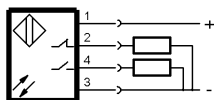
For more information about MTTF and B10d see MTTF / B10d Certificate

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 (Schematic)



## Opto Symbols

