

1) Optical axis



**Basic features**

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

**Electrical data**

Load capacitance max. at Ue	1 µF
No-load current I <sub>o</sub> max. at Ue	20 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Output resistance R <sub>a</sub>	33.0 kOhm
Protection class	II
Rated insulation voltage U <sub>i</sub>	250 V AC
Rated operating current I <sub>e</sub>	200 mA
Rated operating voltage U <sub>e</sub> DC	24 V
Ready delay t <sub>v</sub> max.	10 ms
Residual current I <sub>r</sub> max.	50 µA
Ripple max. (% of U <sub>e</sub> )	15 %
Switching frequency	100 Hz
Turn-off delay t <sub>off</sub> max.	5 ms
Turn-on delay t <sub>on</sub> max.	5 ms
Utilization category	DC -13
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	2.5 V

**Display/Operation**

Adjuster	no
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**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...75 °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	IP68

**Functional safety**

MTTF (40 °C)	909 a
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## Interface

Switching output PNP normally open (NO) Pin 4

## Material

Housing material 1.4571 stainless steel  
 Material sensing surface Glass

## Mechanical data

Dimension  $\varnothing$  18 x 72 mm  
 Mounting part Nut M18x1  
 Tightening torque max. 30 Nm  
 40 Nm

## Optical features

Ambient light max. 10000 Lux  
 Beam characteristic Focus, typical at 16 mm  
 Light spot size  $\varnothing$  5 mm at 20 mm  
 Light type LED, red light  
 Principle of optical operation Diffuse sensor, triangulation  
 Special optical feature Fixed background suppression, not suitable for very dark objects  
 Switching function, optical Light-on  
 Wave length 660 nm

## Range/Distance

Hysteresis H max. 30.0 %  
 Range 0...40 mm  
 Rated operating distance Sn 40 mm  
 Repeat accuracy max. (% of Sr) 5.0 %  
 Temperature drift max. (% of Sr) 10 %

## Remarks

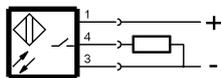
Reference object (target): gray card, 100 x 100, 90 % remission, axial approach.  
 Order accessories separately.  
 The sensor is functional again after the overload has been eliminated.  
 For more information about MTTF and B10d see MTTF / B10d Certificate

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 (Schematic)



## Opto Symbols

