

1) Light-on/dark-on, 2) Sensitivity, 3) Optical axis, 4) Output function, 5) Operating voltage



#### Basic features

Approval/Conformity	CE UKCA cULus WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Angle sensor
Series	D
Style	Angle Straight connection

#### Electrical connection

Connection	Connector, M8x1-Male, 3-pin
Contact, surface protection	Gold plated
Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

#### Display/Operation

Adjuster	Potentiometer 270° (2x)
Display	Output function- LED yellow LED green: Power
Setting	Light-on/dark-on Sensitivity

**Electrical data**

Load capacitance max. at Ue	1 $\mu$ F
No-load current I <sub>0</sub> max. at Ue	35 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Rated insulation voltage U <sub>i</sub>	75 V DC
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.	200 ms
Residual current I <sub>r</sub> max.	50 $\mu$ A
Ripple max. (% of Ue)	10 %
Switching frequency	1000 Hz
Turn-off delay t <sub>off</sub> max.	0.5 ms
Turn-on delay t <sub>on</sub> max.	0.5 ms
Utilization category	DC-13

**Environmental conditions**

Ambient temperature	-10...60 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 100 gn, 2 ms, 3x8000
	Half-sinus, 30 gn, 11 ms, 3x6
EN 60068-2-6, Vibration	10...2000 Hz, amplitude 1 mm, 30 gn, 3x5 h
IP rating	IP67

**Functional safety**

MTTF (40 °C)	307 a
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**Remarks**

Reference object (target): Steel plate, 50 x 50, thickness 0.5 mm, lateral approach.

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.

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

Factory default setting for switching output: Normally open.

For additional information, refer to user's guide.

Order accessories separately.

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.

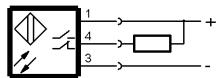
**Connector Drawings**



Photoelectric Sensors  
BWL 9090D-I012-S49  
Order Code: BWL0016

**BALLUFF**

### Wiring Diagrams



### Opto Symbols

