



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



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
Trademark	Global

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
Setting	Sensitivity Light-on/dark-on

Photoelectric Sensors
BWL 9090D-R011-S49
Order Code: **BWL0019**

BALLUFF

Electrical data

Load capacitance max. at Ue	1 µF
No-load current I _o max. at Ue	35 mA
Operating voltage U _b	10...30 VDC
Rated insulation voltage U _i	75 V DC
Rated operating current I _e	200 mA
Rated operating voltage U _e DC	24 V
Ready delay t _v max.	200 ms
Residual current I _r max.	50 µA
Ripple max. (% of U _e)	10 %
Switching frequency	1500 Hz
Turn-off delay t _{off} max.	0.33 ms
Turn-on delay t _{on} max.	0.33 ms
Utilization category	DC -13
Voltage drop U _d max. at I _e	3 V

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.
Order accessories separately.
For additional information, refer to user's guide.
Factory default setting for switching output: Normally open.
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.

Interface

Switching output	PNP normally open/normally closed (NO/NC)
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Material

Housing material	Zinc, Die casting, Painted
Material sensing surface	Glass
Surface protection	Painted

Mechanical data

Dimension	12 x 125 x 134 mm
Mounting part	Screw M4

Optical features

Ambient light max.	5000 Lux
Beam characteristic	Divergent
Light spot size	Ø 2.5 mm Light exit
Light type	LED, red light
Principle of optical operation	Through-beam sensor
Smallest part typ.	0.60 mm
Switching function, optical	dark-on/light-on
Wave length	636 nm

Range/Distance

Hysteresis H max.	0.2 mm
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Connector Drawings



Wiring Diagrams



Opto Symbols

