

1) Optical axis receiver, 2) Optical axis emitter, 3) Sn, 4) Output function, 5) Light-on/dark-on, 6) stability



## Basic features

Approval/Conformity	cULus CE WEEE UKCA
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	5K
Style	Square Connection 90°
Trademark	Global

## Display/Operation

Adjuster	Potentiometer 270° 6-turn potentiometer
Display	Output function- LED yellow Stability - LED green
Setting	Rated switching distance (Sn) Light-on/dark-on

## Electrical connection

Connection	Connector, M8x1-Male, 4-pin
Polarity reversal protected	yes
Short-circuit protection	yes

## Electrical data

No-load current $I_0$ max. at $U_e$	35 mA
Operating voltage $U_b$	10...30 VDC
Rated operating current $I_e$	100 mA
Rated operating voltage $U_e$ DC	24 V
Ripple max. (% of $U_e$ )	10 %
Switching frequency	2000 Hz
Turn-off delay $t_{off}$ max.	0.25 ms
Turn-on delay $t_{on}$ max.	0.25 ms
Voltage drop $U_d$ max. at $I_e$	1.5 V

## Environmental conditions

<b>Ambient temperature</b>	-10...55 °C
<b>EN 60068-2-27, Shock</b>	Half-sinus, 50 g <sub>n</sub> , 11 ms, 3x10
<b>EN 60068-2-6, Vibration</b>	10...55 Hz, amplitude 1.5 mm, 3x2 h
<b>IP rating</b>	IP67

## Functional safety

<b>MTTF (40 °C)</b>	3 a
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## Interface

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

<b>Housing material</b>	PC PBT
<b>Material sensing surface</b>	PMMA

## Mechanical data

<b>Dimension</b>	10.8 x 43.5 x 19.5 mm
<b>Mounting part</b>	Screw M3
<b>Tightening torque max.</b>	0.5 Nm

## Optical features

<b>Ambient light max.</b>	5000 Lux
<b>Average power Po max.</b>	390 µW
<b>Beam characteristic</b>	Focus, typical at 260 mm
<b>Laser class per IEC 60825-1</b>	1
<b>Light spot size</b>	0.2 x 0.3 mm at focal point
<b>Light type</b>	Laser red light
<b>Principle of optical operation</b>	Diffuse sensor, triangulation
<b>Pulse duration t max.</b>	1.4 µs
<b>Pulse frequency</b>	20 kHz
<b>Pulse power Pp max.</b>	4.5 mW
<b>Smallest part typ.</b>	0.2 mm at 170 mm
<b>Special optical feature</b>	Background suppression
<b>Switching function, optical</b>	Light/dark switching
<b>Wave length</b>	650 nm

## Range/Distance

<b>Distance deviation 18 % max. (% of Sr)</b>	8 %
<b>Hysteresis H max. (% of Sr)</b>	10.0 %
<b>Range</b>	20...300 mm
<b>Rated operating distance Sn</b>	300 mm, Adjustable

## Remarks

When using as a UL product the ambient temperature Ta max. must not exceed 50°C.

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

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

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 additional information, refer to user's guide.

Order accessories separately.

To meet the EMC requirements of EN 60947-5-2 the mounting bracket must not be grounded.

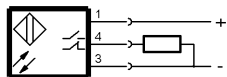
For more information about MTTF and B10d see MTTF / B10d Certificate

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.

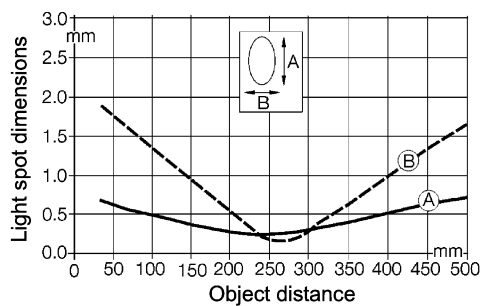
## Connector Drawings



## Wiring Diagrams (Schematic)



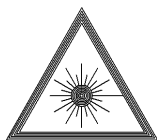
## Technical Drawings



## Opto Symbols



## Warning Symbols



LASER CLASS 1 per IEC 60825-1