

1) Optical axis, 2) Display and control panel, 3) rotatable 270°



IND. CONT. EQ.  
81U2  
Class 2 Type 1



## Display/Operation

Adjuster	Potentiometer 270°
Display	Output function- LED yellow Stability - LED green
Setting	Sensitivity (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	1 µF
No-load current I <sub>o</sub> max. at Ue	35 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.	10 µA
Ripple max. (% of U <sub>e</sub> )	8 %
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
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	2 V

Photoelectric Sensors  
**BOS 21M-PA-PK10-S4S**  
Order Code: BOS00TP

**BALLUFF**

#### Environmental conditions

Ambient temperature	-25...55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 gn, 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67

#### Functional safety

MTTF (40 °C)	595 a
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#### General data

Approval/Conformity	CE cULus EAC WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Series	21M
Style	Square Connection can be rotated

#### Material

Housing material	Zinc, Die casting Aluminum
Material sensing surface	Glass
Surface protection	Powder coated

#### Remarks

Order accessories separately.  
For additional information, refer to user's guide.  
Polarizing filters prevent spurious switching due to reflecting and shiny parts.  
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.  
Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.  
For further information about the 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.

#### Mechanical data

Dimension	15 x 50 x 42.5 mm
Mounting	Screw M4

#### Optical data

Ambient light max.	10000 Lux
Light type	LED, red light
Polarizing filter	yes
Principle of optical operation	Retroreflective sensor
Special optical feature	Coaxial optics
Switching function, optical	Light-on dark-on
Wave length	650 nm

#### Output/Interface

Switching output	PNP normally open (NO) PNP NC Pins 2-4
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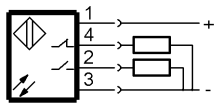
#### Range/Distance

Range	0...4 m
Rated operating distance Sn	4 m Adjustable

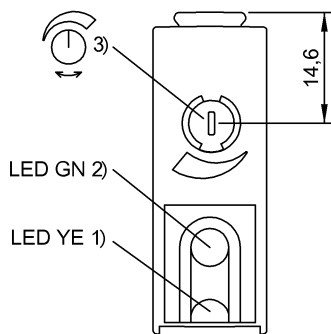
#### Connector Drawings



Wiring Diagrams



Help Views



- 1) Output function
- 2) Stability
- 3) Sensitivity

Opto Symbols

