

1) Optical axis receiver, 2) Optical axis emitter, 3) Operating voltage/Error, 4) Light reception/limit area, 5) Sn



**Basic features**

<b>Approval/Conformity</b>	cULus CE EAC WEEE
<b>Basic standard</b>	IEC 60947-5-2
<b>Principle of operation</b>	Photoelectric sensor
<b>Reference reflector</b>	BOS R-22
<b>Series</b>	18M
<b>Style</b>	Cylinder Straight optics

**Display/Operation**

<b>Adjuster</b>	Potentiometer 270°
<b>Display</b>	LED green: Power Error - LED green, flashing Limit range - LED yellow, flashing LED yellow: Light received
<b>Setting</b>	Sensitivity (Sn)

**Electrical connection**

<b>Connection</b>	Connector, M12x1-Male, 4-pin
<b>Contact, surface protection</b>	Gold plated
<b>Polarity reversal protected</b>	yes
<b>Protection against device mix-ups</b>	yes
<b>Short-circuit protection</b>	yes

**Electrical data**

<b>Load capacitance max. at Ue</b>	0.1 µF
<b>No-load current I<sub>o</sub> max. at Ue</b>	15 mA
<b>Operating voltage U<sub>b</sub></b>	10...30 VDC
<b>Protection class</b>	II
<b>Rated insulation voltage U<sub>i</sub></b>	75 V DC
<b>Rated operating current I<sub>e</sub></b>	100 mA
<b>Rated operating voltage U<sub>e</sub> DC</b>	24 V
<b>Ready delay t<sub>v</sub> max.</b>	20 ms
<b>Ripple max. (% of U<sub>e</sub>)</b>	15 %
<b>Switching frequency</b>	1000 Hz
<b>Turn-off delay t<sub>off</sub> max.</b>	0.5 ms
<b>Turn-on delay t<sub>on</sub> max.</b>	0.5 ms
<b>Utilization category</b>	DC -13
<b>Voltage drop U<sub>d</sub> max. at I<sub>e</sub></b>	1.5 V

**Environmental conditions**

<b>Ambient temperature</b>	-5...55 °C
<b>Contamination scale</b>	3
<b>EN 60068-2-27, Shock</b>	Half-sinus, 30 gn, 11 ms, 3x6
<b>EN 60068-2-6, Vibration</b>	10...55 Hz, amplitude 1 mm, 3x30 min
<b>Protection degree</b>	IP67

**Functional safety**

<b>MTTF (40 °C)</b>	634 a
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## Material

Housing material	Brass, nickel plated
Material sensing surface	Glass
Surface protection	nickel plated

## Mechanical data

Dimension	Ø 18 x 75 mm
Mounting	Nut M18x1
Tightening torque max.	15 Nm 30 Nm

## Optical features

Ambient light max.	10000 Lux
Average power Po max.	390 µW
Beam characteristic	Collimated
Blind zone	30 mm
Laser class per IEC 60825-1	1
Light spot size	Ø 10 mm at 16 m
Light type	Laser red light
Polarizing filter	yes
Principle of optical operation	Retroreflective sensor
Pulse duration t max.	4400 µs
Pulse frequency	10 kHz
Pulse power Pp max.	2.5 mW
Smallest part typ.	Ø 0.4 mm at 1 m. R0 = 3 m
Switching function, optical	dark-on
Wave length	655 nm

## Output/Interface

Switching output	PNP normally open (NO) Pin 4
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## Range/Distance

Range	0...16 m
Rated operating distance Sn	16 m Adjustable

## Remarks

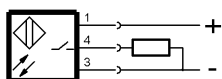
The sensor is functional again after the overload has been eliminated.  
 Polarizing filters prevent spurious switching due to reflecting and shiny parts.  
 For additional information, refer to user's guide.  
 Order accessories separately.  
 For more information about MTTF and B10d see MTTF / B10d 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

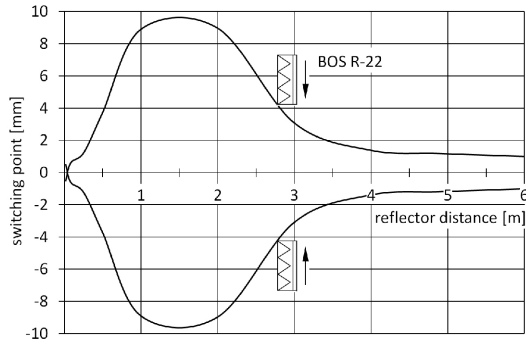


## Wiring Diagrams

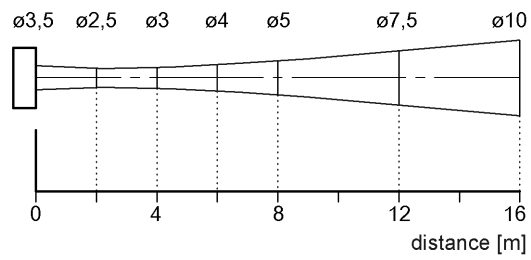


**Technical Drawings**

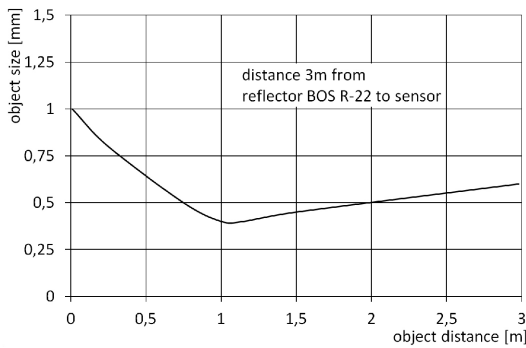
Sensing area for lateral approach



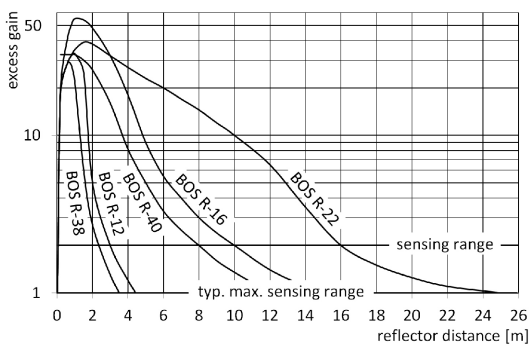
Spot size typ. [mm]



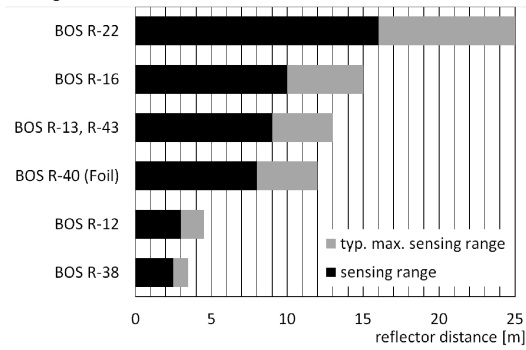
Small part detection



Excess gain



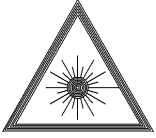
Range



**Opto Symbols**



## Warning Symbols



LASER CLASS 1 per IEC 60825-1