

1) Optical axis emitter, 2) Optical axis receiver, 3) Output function



### Basic features

Approval/Conformity	cULus CE UKCA WEEE
Basic standard	IEC 60947-5-2
Principle of operation	Photoelectric sensor
Reference reflector	BOS R-22
Series	Q08M
Style	Square Connection 90°

### Display/Operation

Display	Limit range - LED yellow, flashing LED yellow: Light received
---------	--

### Electrical connection

Cable length L	0.2 m
Connection	Cable with connector, M8x1-Male, 3-pin, 0.20 m, PUR
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	0.1 µF
No-load current I <sub>o</sub> max. at Ue	10 mA
Operating voltage U <sub>b</sub>	10...30 VDC
Output resistance R <sub>a</sub>	33.0 kOhm
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.	150 ms
Residual current I <sub>r</sub> max.	50 µA
Ripple max. (% of U <sub>e</sub> )	10 %
Switching frequency	400 Hz
Turn-off delay t <sub>off</sub> max.	1.25 ms
Turn-on delay t <sub>on</sub> max.	1.25 ms
Utilization category	DC -13
Voltage drop U <sub>d</sub> max. at I <sub>e</sub>	1.2 V

### Environmental conditions

Ambient temperature	-5...55 °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...55 Hz, amplitude 1 mm, 3x30 min 10...2000 Hz, amplitude 1 mm, 30 gn, 3x5 h
IP rating	IP67

## Functional safety

MTTF (40 °C) 1619 a

## Interface

Switching output PNP normally open (NO)

## Material

Housing material Zinc, Die casting, nickel-plated  
 Material jacket PUR  
 Material sensing surface PMMA  
 Surface protection nickel-plated

## Mechanical data

Dimension 8 x 59 x 8 mm  
 Mounting part Screw M3

## Optical features

Ambient light max. 5000 Lux  
 Average power Po max. 390 µW  
 Beam characteristic Divergent  
 Blind zone 25 mm  
 Laser class per IEC 60825-1 1  
 Light spot size Ø 3.0 mm Light exit  
 Light type Laser red light  
 Polarizing filter yes  
 Principle of optical operation Retroreflective sensor  
 Pulse duration t max. 10.0 µs  
 Pulse frequency 10.8 kHz  
 Pulse power Pp max. 3.1 mW  
 Smallest part typ. 0.4 mm at 100 mm. R0 = 500 mm  
 Switching function, optical dark-on  
 Wave length 655 nm

## Range/Distance

Range 0...1 m  
 Rated operating distance Sn 1 m

## Remarks

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.

Order accessories separately.

For additional information, refer to user's guide.

Actuation object (target): gray card, 200 x 200, 90 % remission, lateral approach, approach direction vertical to lens axis plane.

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

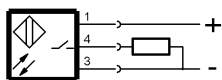
For more information about MTTF and B10d see MTTF / B10d Certificate

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.

## Connector Drawings



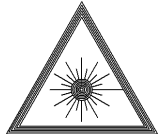
## Wiring Diagrams (Schematic)



## Opto Symbols



## Warning Symbols



LASER CLASS 1 per IEC 60825-1