

1) Optical axis receiver, 2) Display and control panel, 3) 240° rotatable



**ECOLAB®**



#### Basic features

Approval/Conformity	CE UKCA cULus WEEE Ecolab
Basic standard	IEC 60947-5-2
Operating mode	SIO Mode IO-Link Mode
Principle of operation	Photoelectric sensor
Reference emitter	BOS 21M-XI-RS31-S4
Series	21M
Style	Square Connection can be rotated

#### Display/Operation

Adjuster	Potentiometer 240°
Display	Run - LED green Communication - Green LED, flashing (10:1) LED yellow: Light received Limit range - LED yellow, flashing Error - LED green, flashing
Setting	Sensitivity (Sn)

#### Electrical connection

Connection	Connector, M12x1-Male, 4-pin
Polarity reversal protected	yes
Protection against device mix-ups	yes
Short-circuit protection	yes

**Electrical data**

Load capacitance max. at Ue	0.2 $\mu$ F
No-load current I <sub>0</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 $\mu$ A
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

**Environmental conditions**

Ambient temperature	-25...60 °C
Ambient temperature UL max.	55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 g <sub>n</sub> , 11 ms, 3x6
EN 60068-2-6, Vibration	10...55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67, IP69K

**Functional safety**

MTTF (40 °C)	1208 a
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**IO-Link**

IO-Link Profil IDs	N/A
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**Remarks**

Order accessories separately.

For additional information, refer to user's guide.

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**

Baud rate	38.4 kBaud
Interface	IO-Link 1.1
Interface setting option	Display limit range Display temperature Display setting switching range
Process data IN	0 bytes
Process data OUT	1 byte
Process data cycle min.	4 ms

**Material**

Housing material	Zinc, Die casting, Powder coated Die-cast zinc
Material sensing surface	PMMA
Surface protection	Powder coated

**Mechanical data**

Dimension	15.4 x 51.1 x 42.7 mm
Mounting part	Screw M4

**Optical features**

Ambient light max.	5000 Lux
Light type	Red light
Principle of optical operation	Through-beam sensor (receiver)
Switching function, optical	Light-on dark-on

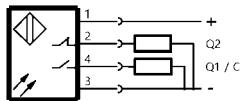
**Range/Distance**

Range	0...20 m
Rated operating distance S <sub>n</sub>	20 m Adjustable

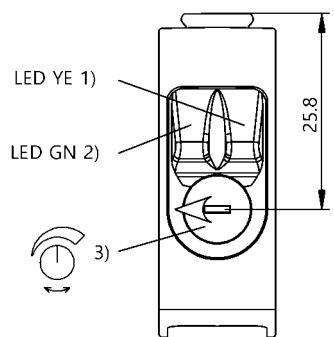
**Connector Drawings**



### Wiring Diagrams



### Help Views



- 1) Light reception/Limit range
- 2) Oper. voltage/Error/IO-Link
- 3) Sn

### Opto Symbols

