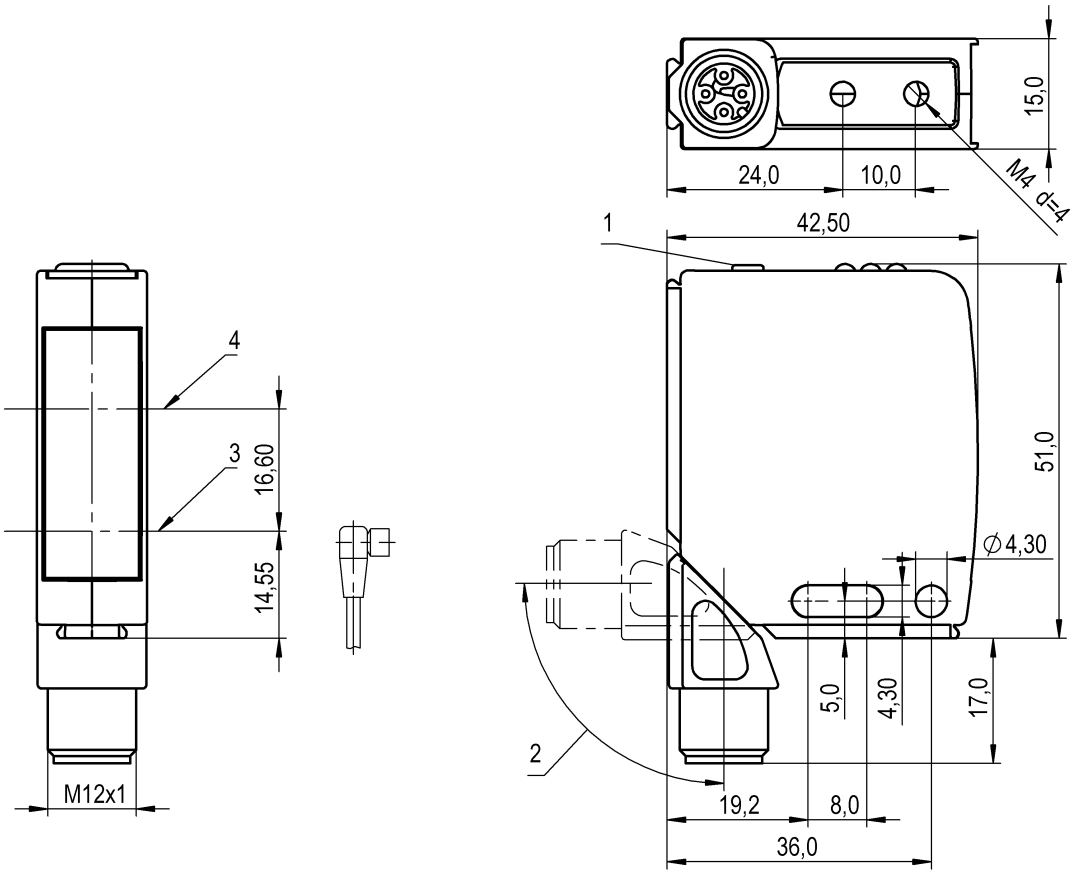
Photoelectric Sensors

BOS 21M-UUI-LH31-S4
Order Code: BOS026K



1) Display and control panel, 2) rotatable 270°, 3) Optical axis emitter, 4) Optical axis receiver

Basic features

Additional features	Count function Operating hours counter Darkness measurement
Approval/Conformity	CE UKCA cULus WEEE
Basic standard	IEC 60947-5-2
Operating mode	SIO Mode IO-Link Mode
Principle of operation	Photoelectric sensor
Scope of delivery	User manual
Series	21M
Style	Square Connection can be rotated

Display/Operation

Adjuster	button
Display	Run - LED green Short circuit - LED green, flashing Output function- LED yellow Error - LED red
Setting	Rated switching distance (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

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Electrical data

Input frequency of count function max.	250 Hz
Input function	Reset counter
Load capacitance max. at Ue	0.2 µF
No-load current Io max. at Ue	40 mA
Operating voltage Ub	10...30 VDC
Protection class	II
Rated insulation voltage Ui	250 V AC
Rated operating current Ie	100 mA
Rated operating voltage Ue DC	24 V
Ready delay tv max.	50 ms
Residual current Ir max.	500 µA
Ripple max. (% of Ue)	10 %
Start-up delay for counter	0…255 s
Switching frequency	250 Hz
Turn-off delay toff max.	2 ms
Turn-on delay ton max.	2 ms
Utilization category	DC -13
Voltage drop Ud max. at Ie	2.5 V

Environmental conditions

Ambient temperature	-5...55 °C
Contamination scale	3
EN 60068-2-27, Shock	Half-sinus, 30 g_n, 11 ms, 3x6
EN 60068-2-6, Vibration	10…55 Hz, amplitude 1 mm, 3x30 min
IP rating	IP67

Functional safety

MTTF (40 °C)	296 a

IO-Link

IO-Link Profil IDs	0x0001 SSP0

Interface

Baud rate	38.4 kBaud
Duration of time function	0…65535 ms
Function class, smart sensor	Identification Teach channel Switching signal channel Variable process data Diagnostics
Interface	IO-Link 1.1
Interface setting option	Operating mode Teach-In switchpoint/window Principle of background assessment Switching output Switching function Hysteresis Time function Count function Data retention active/inactive Dark measurement active/inactive Emitter on/off Key disable on/off Factory setting (Reset) for more information refer to user's guide
Process data IN	1 byte
Process data OUT	3 bytes
Process data cycle min.	6.4 ms
Profile	Smart Sensor
Switching output	2x PNP/NPN/push-pull NO/NC Pin 4 programmable NO/NC, Pin 2 automatically complementary
Time function	Single pulse Turn-on delay switch-off delay On/off delay

Material

Housing material	Zinc, Die casting, Painted Aluminium, Glass, PC
Housing material, surface protection	Painted
Material sensing surface	Glass, anti-glare
Surface protection	Powder coated

Mechanical data

Dimension	15 x 51 x 42.5 mm
Mounting part	Screw M4

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Optical features

Ambient light max.	10000 Lux
Average power Po max.	390 µW
Beam characteristic	Focus, typical at 400 mm
Laser class per IEC 60825-1	1
Light spot size	0.5 x 1.5 mm at 200 mm
Light type	Laser red light
Principle of optical operation	Diffuse sensor, triangulation
Pulse duration t max.	100 µs
Pulse frequency	0.5 kHz
Pulse power Pp max.	5.2 mW
Special optical feature	Background suppression CCD technology
Switching function, optical	Light/dark switching
Wave length	655 nm

Range/Distance

Distance deviation 18 % max. (% of Sr)	typ. 1 %
Hysteresis H typ. (% of Sr)	3.0 %
Range	30...200 mm
Rated operating distance Sn	200 mm Adjustable
Repeat accuracy max. (% of Sr)	1.0 %

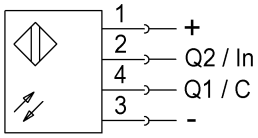
Remarks

The sensor is functional again after the overload has been eliminated.
Order accessories separately.
For additional information, refer to user's guide.
Reference object (target) for diffuse sensor: gray card, 200 x 200, 90 % remission, axial approach.
For more information about MTTF and B10d see MTTF / B10d Certificate

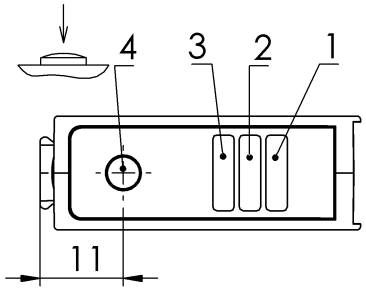
Indication of the MTTF- / B10d value does not represent a binding composition and/or life expectancy assurance; these are simply experiential values with no warranty implications. These declared values also do not extend the expiration period for defect claims or affect it in any way.

Connector Drawings

Wiring Diagrams



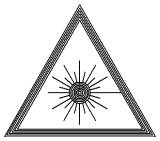
Help Views



1) Output function
2) Power/short-circuit
3) Error, setup mode active.
4) Sn

Opto Symbols

Warning Symbols



LASER CLASS 1 per IEC 60825-1: 2014-05