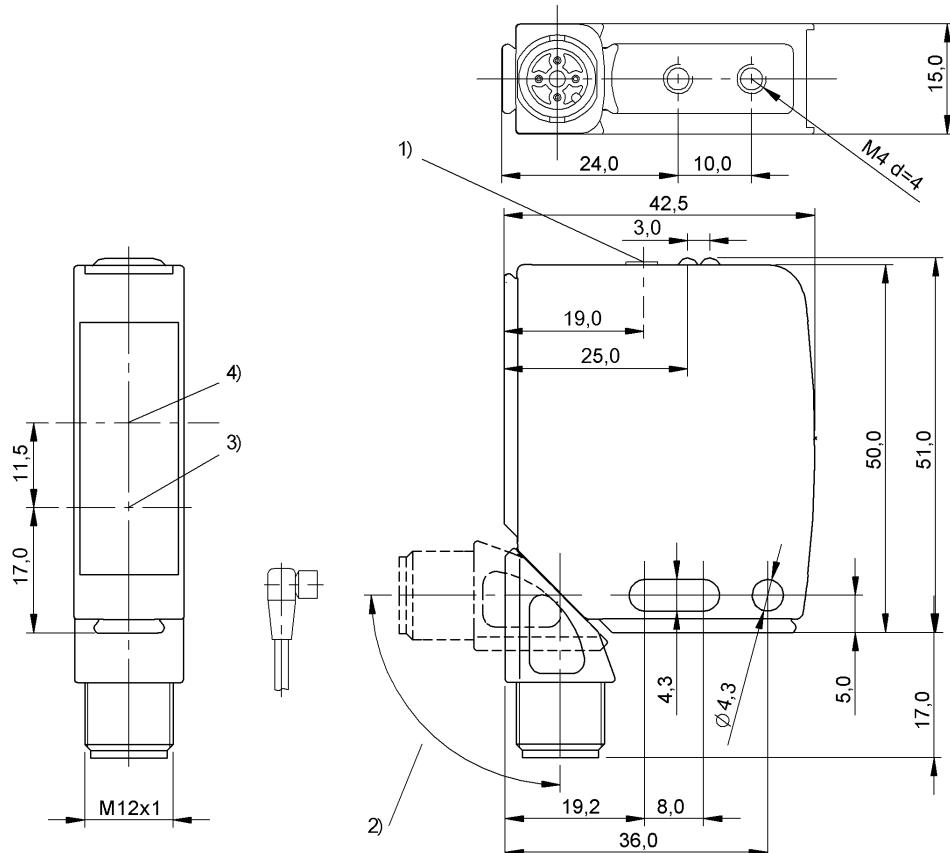


Photoelectric Sensors
BOS 21M-UUI-RP30-S4
Order Code: BOS026R

BALLUFF



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 Speed monitoring
Approval/Conformity	CE UKCA cULus WEEE
Basic standard	IEC 60947-5-2
Operating mode	SIO Mode IO-Link Mode
Principle of operation	Photoelectric sensor
Reference emitter	Same sensor, through-beam (emitter)
Reference reflector	BOS R-1
Scope of delivery	User manual
Series	21M
Style	Square Connection can be rotated

Display/Operation

Adjuster	Potentiometer digital
Display	Run - LED green Communication - Green LED, flashing
	LED yellow: Light received
	Limit range - LED yellow, flashing
	Error - LED green+yellow, flashing
	Emitter LED power drop - LED red, flashing
Setting	Optical function principle - LED multi-color
	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

Frequency range of frequency monitor	10...10000 Imp/Min
Input frequency of count function max.	1000 Hz (SIO mode) 400 Hz (IO-Link mode)
Input function	Reset counter
Load capacitance max. at Ue	0.07 μ F
No-load current I ₀ max. at Ue	30 mA
Operating voltage U _b	10...30 VDC
Protection class	II
Rated insulation voltage U _i	75 V DC
Rated operating current I _e	100 mA
Rated operating voltage U _e DC	24 V
Ready delay t _V max.	100 ms
Residual current I _r max.	10 μ A
Ripple max. (% of U _e)	10 %
Start-up delay for counter	0...255 s
Switching frequency	1000 Hz
Turn-off delay t _{OFF} max.	0.5 ms
Turn-on delay t _{ON} max.	0.5 ms
Utilization category	DC-13
Voltage drop U _d max. at I _e	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)	343 a
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IO-Link

IO-Link Profil IDs	0x0001 SSP0
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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 of switchpoints Principle of optical operation Switching output Switching function Hysteresis Time function Count function Frequency converter Data retention active/inactive Emitter on/off Adjuster active/inactive 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.	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
Beam characteristic	Divergent
LED group per IEC 62471	Exempt Group
Light spot size	Ø 50 mm at 1 m
Light type	LED, red light
Polarizing filter	no
Principle of optical operation	Diffuse sensor energetic diffuse sensor with background suppression retroreflective sensor through-beam sensor (emitter) through-beam sensor (receiver), depends on setting
Special optical feature	Multifunction
Switching function, optical	Light/dark switching
Wave length	633 nm

Principle of operation diffuse sensor

Hysteresis H max. (% of Sr)	10.0 %
Range	1...600 mm
Real switching distance sr	600 mm
Repeat accuracy max. (% of Sr)	2.0 %

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

