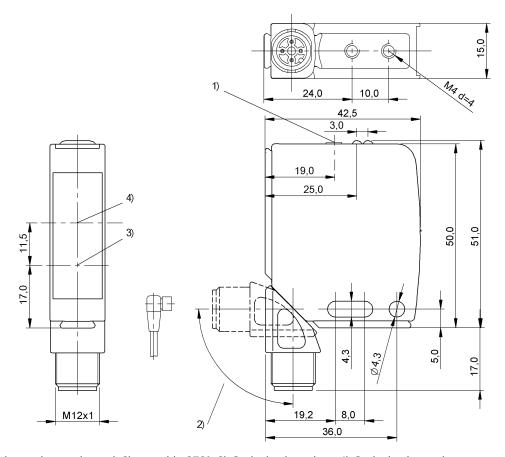
BALLUFF



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

UKCA EAC cULus WEEE

Basic standard IEC 60947-5-2 Operating mode SIO Mode

Principle of operation IO-Link Mode
Photoelectric sensor

Reference emitter Same sensor, through-beam

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

Optical function principle - LED

multi-color

Setting 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

Photoelectric Sensors

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

BVLLUFF

Electrical data

10...10000 Imp/Min Frequency range of frequency monitor Input frequency of count function 1000 Hz (SIO mode) max. 400 Hz (IO-Link mode)

Input function Reset counter Load capacitance max. at Ue 0.07 µF No-load current lo max. at Ue 30 mA Operating voltage Ub 10...30 VDC

Protection class Rated insulation voltage Ui 75 V DC Rated operating current le 100 mA Rated operating voltage Ue DC 24 V Ready delay tv max. 40 ms Residual current Ir max. 10 μΑ Ripple max. (% of Ue) 10 % Start-up delay for counter 0...255 s Switching frequency 1000 Hz Turn-off delay toff max. 0.5 ms Turn-on delay ton max. 0.5 ms **Utilization category** DC -13

Environmental conditions

Voltage drop Ud max. at le

Ambient temperature -5...55 °C Contamination scale

Half-sinus, 30 g_n, 11 ms, 3x6 EN 60068-2-27. Shock EN 60068-2-6, Vibration 10...55 Hz, amplitude 1 mm,

3x30 min

2.5 V

IP rating **IP67**

Functional safety

MTTF (40 °C) 343 a

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 quide

Process data IN 1 byte Process data OUT 3 bytes Process data cycle min. 4 ms

Profile Smart Sensor

> 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

Switching output

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

Photoelectric Sensors

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

BALLUFF

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 BGS

Distance deviation 18 % max. (% of 10 %

Sr)

Hysteresis H typ. (% of Sr) 5.0 %

Range 8...200 mm

Real switching distance sr 200 mm

Repeat accuracy max. (% of Sr) 1.0 %

Principle of operation retroreflective sensor

Range 0...7 r

Principle of operation through-beam sensor

Range 0...10 m

Range/Distance

Range Adjustable

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

