

BALLUFF

Distance Sensor BOD 63M

... with light propagation time measurement



Measuring and sensing in one unit – **BOD 63M Distance Sensor** with light propagation time measurement rounds out the Balluff product family of distance sensors for the most demanding applications.

The BOD 63M in a rugged metal housing has a working range of 500...6000 mm and is an ideal supplement to the BOD 26K (45...85 mm) and BOD 66M (200...2000 mm). It features adjustable background suppression and an analog output of 0...10 V or 4...20 mA.

A multi-turn potentiometer is used for calibrating the sensor. The highly focused, easily visible and precise laser red light enables long range with very low gray value shift and hysteresis.

With a variety of output circuits, this innovative sensor technology is used in applications where traditional approaches run

into technological or cost limits. This includes detection of small objects at large distances, in difficult environments such as when sensing is required "from outside" in processes characterized by high temperatures or in robotic cells. Furthermore these sensors are virtually unaffected by reflective or color properties of the target object.

Features

- The principle of measuring the propagation time of light allows greater ranges than with sensors using triangulation or energetic diffuse optical sensors
- Small laser spot for detecting small objects over large distances
- Virtually unaffected by the reflective properties of the object within a particular sensing range
- Background suppression (HGA) is adjustable over the entire working range
- Sensing output and switching output

Applications

- Precise detection over large distances (e. g., installation constraints or when local temperatures are very high)
- Detecting objects with changing colors, reflective surfaces or at unfavorable angles to the light beam
- Flexible solutions for position sensing, level control sensing and control, distance and height measurement, quality assurance



Laser safety regulation

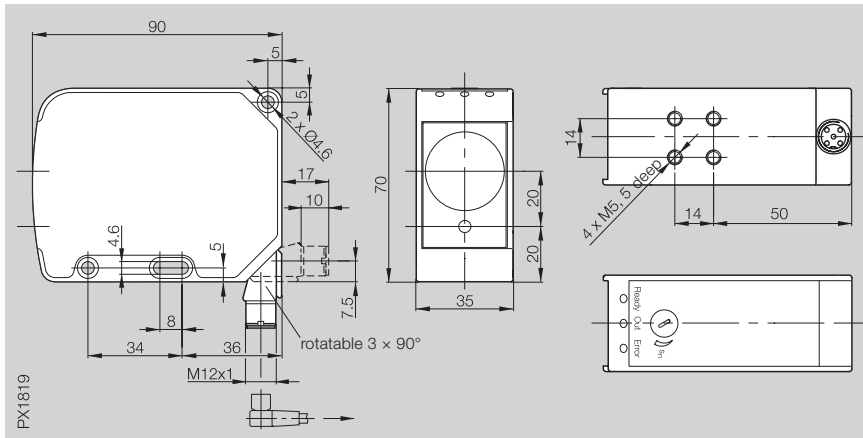
The emitter corresponds to Laser safety class 2 per EN 60825-1:2001-11. Therefore, no additional safety measures are required.



The device must be mounted so that the laser warning label is easily visible.



Series	BOD 63M	BOD 63M
Working range	500...6000 mm	500...6000 mm



Diffuse

PNP 500...6000 mm HGA	BOD 63M-LA01-S115	BOD 63M-LB01-S115
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Electrical data

Supply voltage U_B	15...30 V DC	15...30 V DC
No-load supply current I_0 max.	≤ 100 mA	≤ 100 mA
Analog output	voltage 0...10 V	current 4...20 mA
Switching output	PNP	PNP
Switching type	light-on	light-on
Alarm output	PNP dark-on	PNP dark-on
Output current	200 mA	200 mA
	switching output	200 mA
	alarm output	200 mA
Voltage drop U_d at I_0	≤ 2.5 V	≤ 2.5 V
Settings	4-turn potentiometer	4-turn potentiometer

Optical data

Emitter, light type	laser, red light	laser, red light
Wavelength	650 nm	650 nm
Laser protection class	2	2
Light spot diameter	5 mm at 3 m	5 mm at 3 m
	10 mm at 6 m	10 mm at 6 m
Resolution	≤ 2 mm	≤ 2 mm
Gray value shift	≤ 1.5 %	≤ 1.5 %
Repeatability	≤ 10 mm	≤ 10 mm
Temperature drift	≤ 2 mm/°C	≤ 2 mm/°C
Linearity	1 %	1 %
Switching hysteresis	≤ 20 mm	≤ 20 mm

Time data

On/off delay	≤ 70 ms	≤ 70 ms
Response time	5 ms	5 ms
Frequency of operating cycles f (standard)	≥ 100 Hz	≥ 100 Hz

Display

Supply voltage indicator	LED green	LED green
Output function indicator	LED yellow	LED yellow
Stability indicator	LED red	LED red

Mechanical data

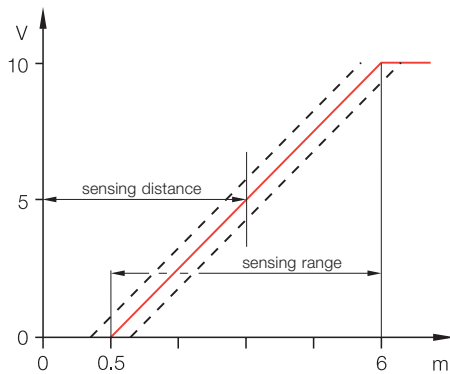
Connection	M12 connector, 8-pin	M12 connector, 8-pin
Housing material	anodized aluminum	anodized aluminum
Lens material	glass	glass
Weight (incl. holder)	260 g	260 g

Ambient data

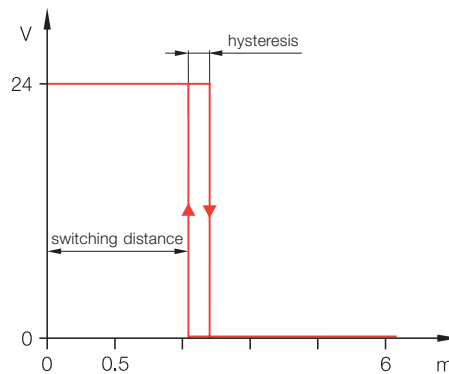
Degree of protection per IEC 60529	IP 65	IP 65
Protected against polarity reversal	yes	yes
Short circuit protected	yes	yes
Permissible ambient light	≤ 10 kLux	≤ 10 kLux
Ambient temperature range T_a	-10...+55 °C	-10...+55 °C



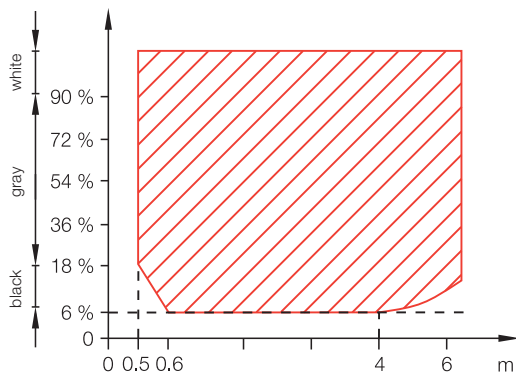
Analog output



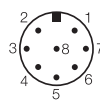
Switching output



Measuring range as a function of object reflection

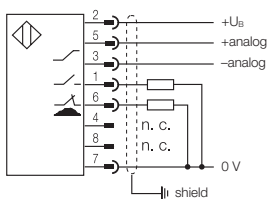


Connector diagram



Pin configuration	Wire color	
1	white	switching output
2	brown	+U _B
3	green	-analog output
4	yellow	n. c.
5	gray	+analog output
6	pink	error output
7	blue	-U _B 0 V
8	red	n. c.
knurled ring	braided shield	shield

Wiring diagram



Recommended accessories

please order separately

Connector
BKS-S139-__-05

Mounting bracket
BOD 63-HW-1



Standard models BOD 63M

Bestellcode	Analog output		Switching output		Switching type
	voltage	current	PNP	NPN	light-on
BOD 63M-LA01-S115	x		x		x
BOD 63M-LB01-S115		x	x		x
BOD 63M-LA11-S115	x			x	x
BOD 63M-LB11-S115		x		x	x

other versions on request



For more sensors see main catalog "The Sensor Line" on CD-ROM or online!



www.balluff.de

Balluff GmbH
Schurwaldstrasse 9
73765 Neuhausen a.d.F.
Germany
Phone +49 (0) 71 58/1 73-0
Fax +49 (0) 71 58/50 10
E-Mail: balluff@balluff.de