



Triangulation sensor (BGS) OBT15-R3-E2-0,2M-V31-P-L



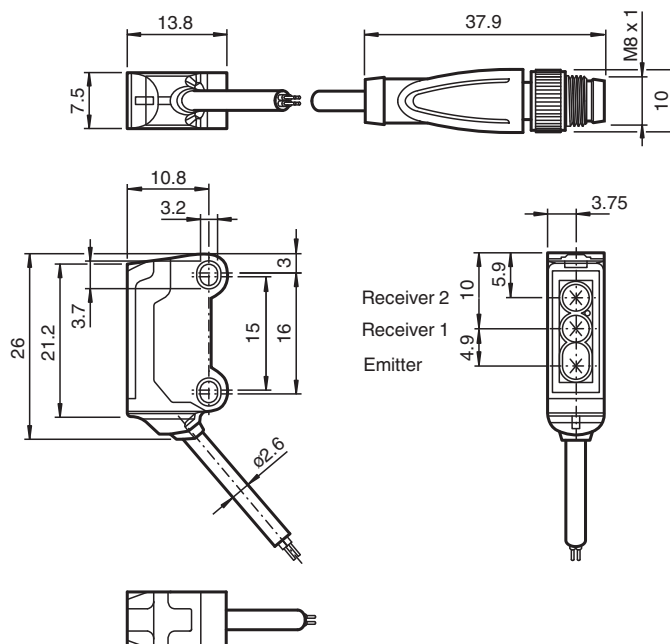
- Ultra-small housing design
- DuraBeam Laser Sensors - durable and employable like an LED
- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Extremely small light spot for very high switching point accuracy
- Precision object detection, almost irrespective of the color

Laser triangulation sensor with background suppression, ultra-small design with M3 mounting, 15 mm sensing range, light on, PNP output, 200 mm fixed cable with plug M8, 4-pin



The R3 series nano sensor has been developed for a broad range of applications. It offers excellent durability and is exceptionally easy to install. The housing is compact and, with its 45° cable outlet, can be installed in the smallest spaces. New functional principles and functionality open up a range of new options. The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.

Dimensions



Technical Data

General specifications

Detection range	7 ... 15 mm
Reference target	standard white, 100 mm x 100 mm
Light source	laser diode
Light type	modulated visible red light , 680 nm
Laser nominal ratings	
Note	LASER LIGHT , DO NOT STARE INTO BEAM

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical Data

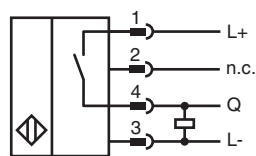
Laser class	1
Wave length	680 nm
Beam divergence	> 5 mrad
Pulse length	approx. 3 µs
Repetition rate	approx. 16.6 kHz
max. pulse energy	9.5 nJ
Black-white difference (6 %/90 %)	< 3 % at 15 mm
Diameter of the light spot	approx. 1.5 mm at a distance of 15 mm
Opening angle	approx. 2 °
Optical face	frontal
Ambient light limit	EN 60947-5-2 : 30000 Lux
Functional safety related parameters	
MTTF _d	800 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %
Indicators/operating means	
Operation indicator	LED green, statically lit Power on , short-circuit : LED green flashing (approx. 4 Hz)
Function indicator	LED yellow: lights when object is detected
Electrical specifications	
Operating voltage	U _B 12 ... 24 V
No-load supply current	I ₀ < 10 mA
Protection class	III
Output	
Switching type	NO contact / light on
Signal output	1 PNP output, short-circuit protected, reverse polarity protected, open collector
Switching voltage	max. 30 V DC
Switching current	max. 50 mA , resistive load
Voltage drop	U _d ≤ 1.5 V DC
Switching frequency	f approx. 2 kHz
Response time	250 µs
Conformity	
Product standard	EN 60947-5-2
Laser safety	EN 60825-1:2007
Approvals and certificates	
EAC conformity	TR CU 020/2011
UL approval	E87056 , cULus Recognized, Class 2 Power Source
CCC approval	CCC approval / marking not required for products rated ≤36 V
FDA approval	IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)
Mechanical specifications	
Housing width	7.5 mm
Housing height	26 mm
Housing depth	13.8 mm
Degree of protection	IP67
Connection	200 mm fixed cable with 4-pin, M8x1 connector
Material	
Housing	PC/ABS and TPU
Optical face	PC
Cable	PUR
Mass	approx. 10 g

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Technical Data

Cable length	200 mm
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Connection



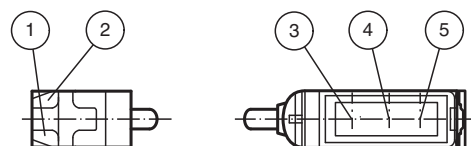
Connection Assignment



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Assembly

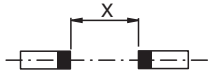
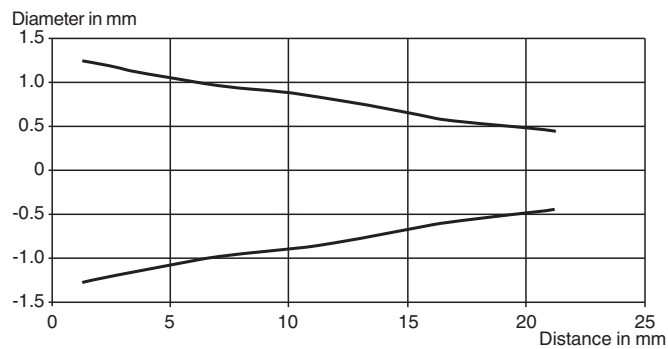


1	Operating display	green
2	Signal display	yellow
3	Emitter	
4	Receiver 1	
5	Receiver 2	

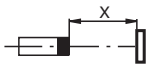
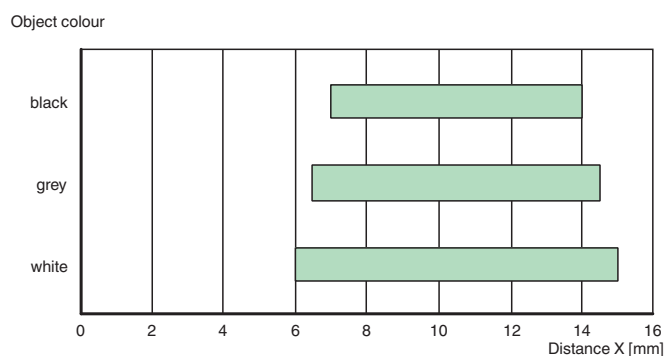
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Characteristic Curve

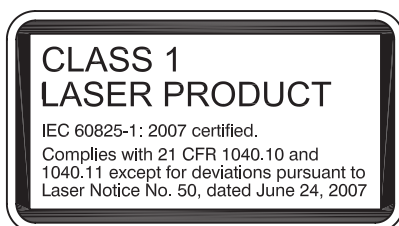
Light spot diameter



Detection ranges



Safety Information



Accessories

	V31-WM-2M-PUR	Female cordset single-ended M8 angled A-coded, 4-pin, PUR cable grey
	MH-R3-01	Mounting aid for sensors from the R3 series, mounting bracket
	MH-R3-02	Mounting aid for sensors from the R3 series, mounting bracket
	MH-R3-03	Mounting aid for sensors from the R3 series, mounting bracket
	MH-R3-04	Mounting aid for sensors from the R3 series, mounting bracket