



Laser triangulation sensor with background suppression

OBT30-R2F-E2-0,2M-V31-L

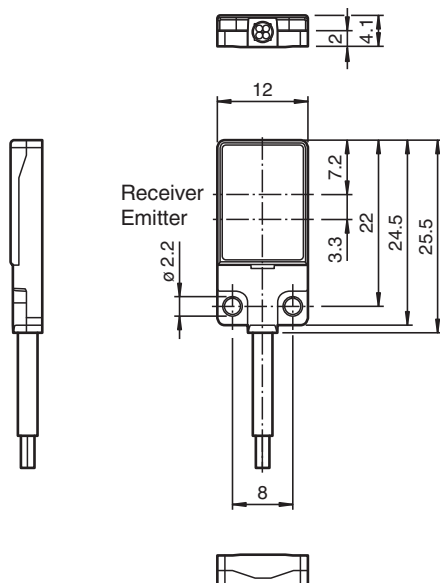
- Very flat design for direct mounting without mounting bracket
- DuraBeam Laser Sensors - durable and employable like an LED
- Small parts detection from 0.05 mm
- Highly visible light spot, even on dark materials
- Extremely small light spot for very high switching point accuracy
- Precision object detection, almost irrespective of the color



Triangulation sensor with background suppression for standard applications, flat design, space-saving M2 mounting, 30 mm sensing range, red light, light on, PNP output, with 0.2 m fixed cable and M8 plug, 4-pin



Dimensions



Technical Data

General specifications

Detection range	3 ... 30 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LASER LIGHT
Light type	modulated visible red light , 680 nm
Laser nominal ratings	
Note	LASER LIGHT , DO NOT STARE INTO BEAM
Laser class	1
Wave length	680 nm

Release date: 2022-08-08 Date of issue: 2022-08-08 Filename: 263389_eng.pdf

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

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Technical Data

Beam divergence		> 5 mrad
Pulse length		approx. 3 µs
Repetition rate		approx. 16.6 kHz
max. pulse energy		8 nJ
Black-white difference (6 %/90 %)		< 20 % at 30 mm
Angle deviation		approx. 0.5 °
Object size		typ. starts from 0.05 mm @ 20 mm
Diameter of the light spot		approx. 1 mm at a distance of 30 mm
Opening angle		approx. 1 °
Optical face		frontal
Ambient light limit		EN 60947-5-2 : 25000 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 ON: 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		-10 ... 60 °C (14 ... 140 °F)
Storage temperature		-20 ... 70 °C (-4 ... 158 °F)
Mechanical specifications		
Housing width		12 mm
Housing height		25.5 mm
Housing depth		4.1 mm
Degree of protection		IP67
Connection		200 mm fixed cable with 4-pin, M8x1 connector
Material		
Housing		PC (Polycarbonate) and Stainless steel
Optical face		PMMA
Cable		PUR
Mass		approx. 10 g

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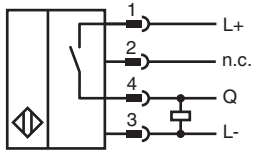
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Tightening torque, fastening screws	0.25 Nm
Cable length	200 mm

Connection



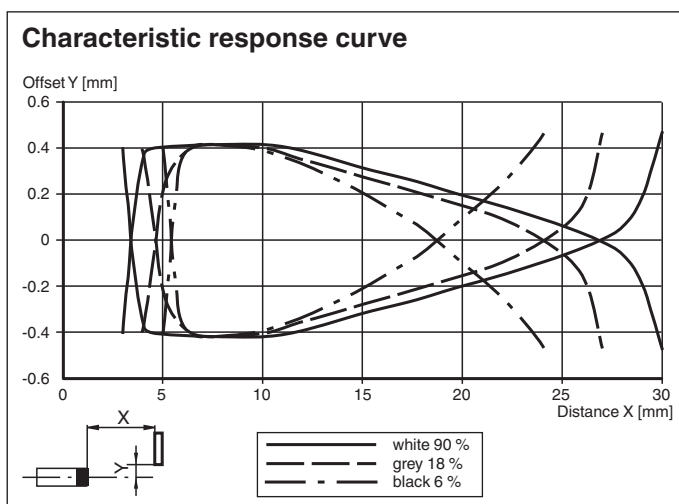
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

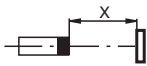
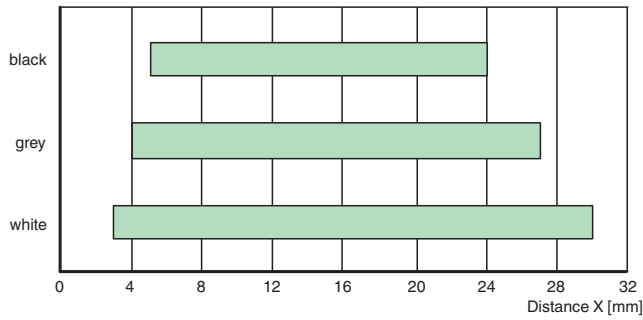
Characteristic Curve



Characteristic Curve

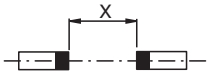
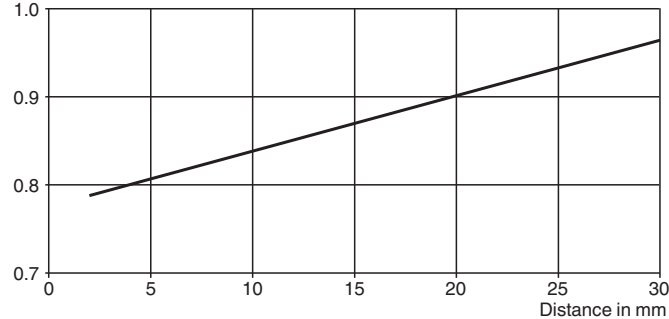
Detection ranges

Object colour

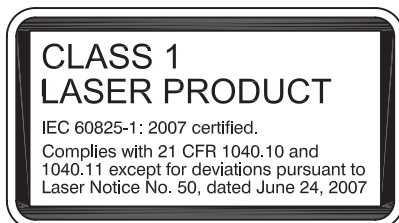


Light spot diameter

Diameter in mm



Safety Information



Accessories

	V31-GM-2M-PUR	Female cordset single-ended M8 straight A-coded, 4-pin, PUR cable grey
	V31-WM-2M-PUR	Female cordset single-ended M8 angled A-coded, 4-pin, PUR cable grey