

# Triangulation sensor (BGS)

## OBT30-R3F-E2-0,2M-V31

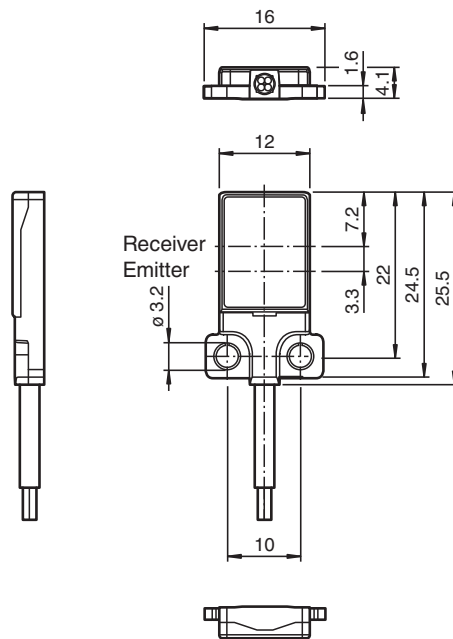


- Very flat design for direct mounting without mounting bracket
- Precision object detection, almost irrespective of the color
- Small parts detection from 0.1 mm
- Highly visible light spot, even on dark materials
- High degree of immunity to extraneous light

Triangulation sensor with background suppression for standard applications, flat design, M3 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	1 ... 30 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LED
Light type	modulated visible red light , 630 nm
LED risk group labelling	exempt group
Black-white difference (6 %/90 %)	< 20 % at 30 mm
Angle deviation	approx. 2 °
Object size	typ. starts from 0.1 mm @ 16 mm

Release date: 2023-04-05 Date of issue: 2023-04-05 Filename: 263508\_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

**PEPPERL+FUCHS**

## Technical Data

Diameter of the light spot	approx. 5.5 mm at a distance of 30 mm	
Opening angle	approx. 5 °	
Optical face	frontal	
Ambient light limit	EN 60947-5-2 : 25000 Lux	
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>	800 a	
Mission Time (T <sub>M</sub> )	20 a	
Diagnostic Coverage (DC)	0 %	
<b>Indicators/operating means</b>		
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	
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC
No-load supply current	I <sub>0</sub>	< 15 mA
Protection class	III	
<b>Output</b>		
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 <sub>d</sub>	≤ 1.5 V DC
Switching frequency	f	approx. 1 kHz
Response time	500 μs	
<b>Conformity</b>		
Product standard	EN 60947-5-2	
<b>Approvals and certificates</b>		
UL approval	E87056 , cULus Recognized, Class 2 Power Source	
CCC approval	CCC approval / marking not required for products rated ≤36 V	
<b>Ambient conditions</b>		
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)	
Storage temperature	-20 ... 70 °C (-4 ... 158 °F)	
<b>Mechanical specifications</b>		
Housing width	16 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	
Tightening torque, fastening screws	1 Nm	
Cable length	200 mm	

## Connection



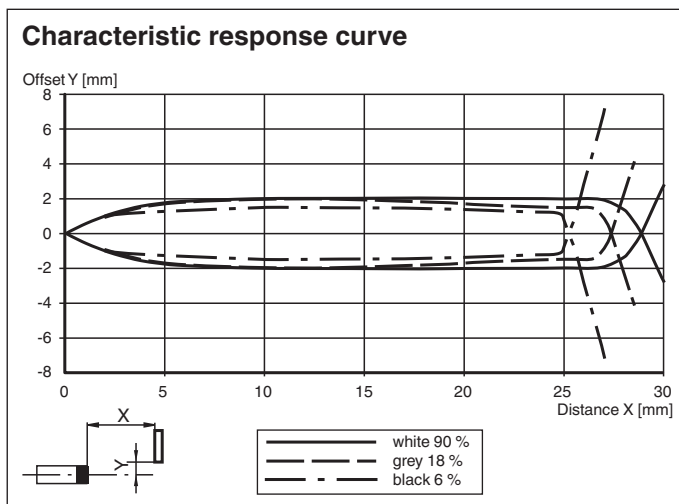
## Connection Assignment



Wire colors in accordance with EN 60947-5-2

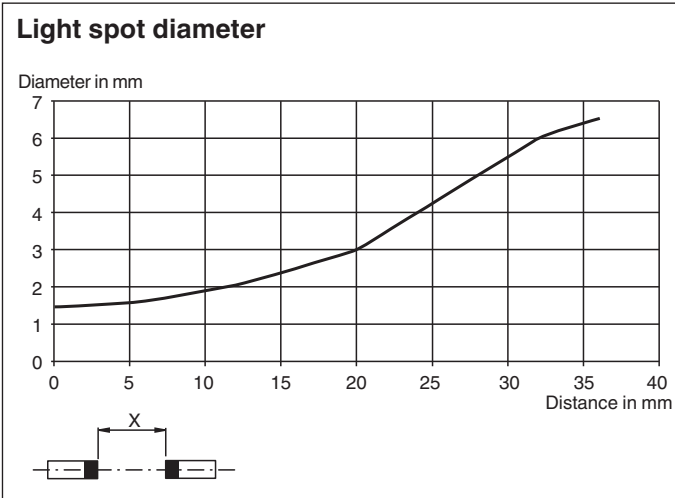
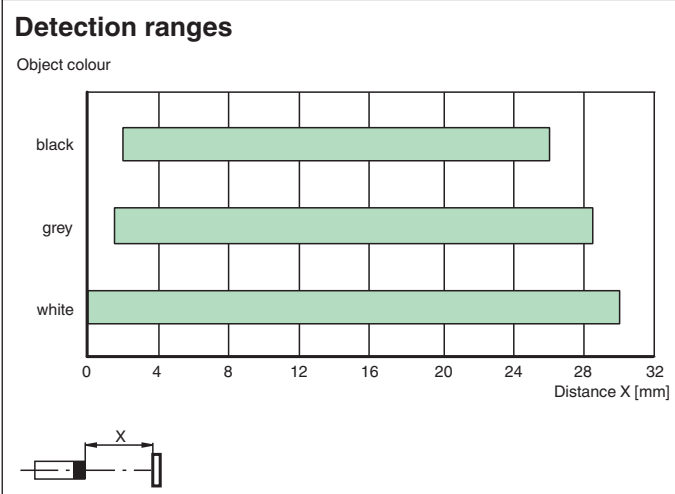
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

## Characteristic Curve



Release date: 2023-04-05 Date of issue: 2023-04-05 Filename: 263508\_eng.pdf

## Characteristic Curve



## Accessories

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

Release date: 2023-04-05 Date of issue: 2023-04-05 Filename: 263508\_eng.pdf