Triangulation sensor (BGS)

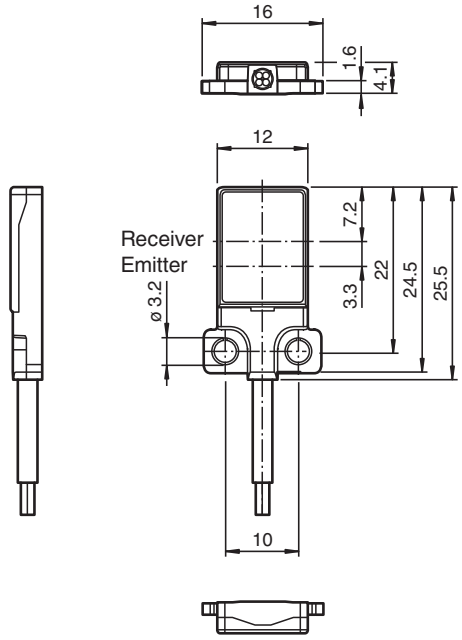
OBT30-R3F-E1



- 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, dark on, NPN output, fixed cable

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

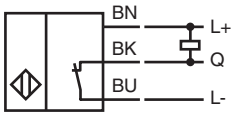
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Technical Data

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
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	10 ... 30 V DC
No-load supply current	I_0	< 15 mA
Protection class		III
Output		
Switching type		NC contact / dark-on
Signal output		1 NPN 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. 1 kHz
Response time		500 µs
Conformity		
Product standard		EN 60947-5-2
Approvals and certificates		
UL approval		E87056 , cULus Recognized, Class 2 Power Source
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Storage temperature		-20 ... 70 °C (-4 ... 158 °F)
Mechanical specifications		
Degree of protection		IP67
Connection		2 m fixed cable
Material		
Housing		PC (Polycarbonate) and Stainless steel
Optical face		PMMA
Cable		PUR
Mass		approx. 20 g
Tightening torque, fastening screws		1 Nm
Dimensions		
Height		25.5 mm
Width		16 mm
Depth		4.1 mm
Cable length		2 m

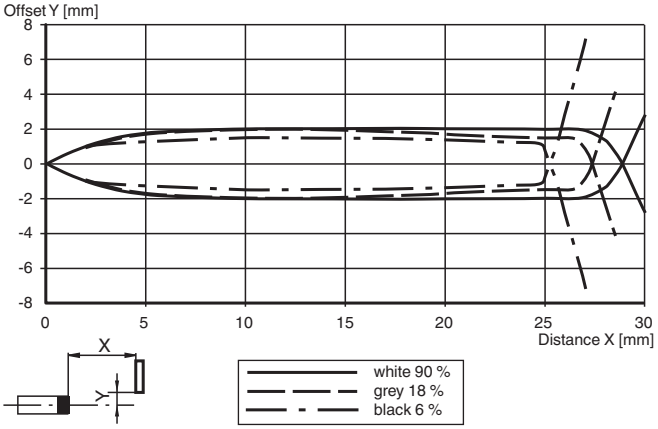
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Connection

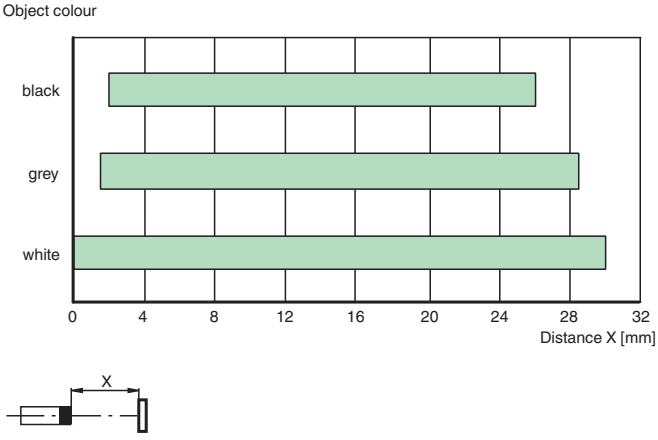


Characteristic Curve

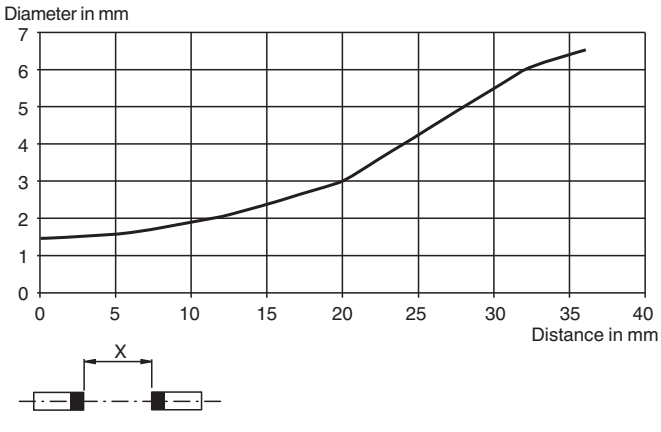
Characteristic response curve



Detection ranges



Light spot diameter



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