Triangulation sensor (BGS)
OBT20-R102-EP1-V31-Y0629
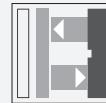
- Miniature design with versatile mounting options
- Best background suppressor in its class
- Precision object detection, almost irrespective of the color
- Extended temperature range
  -40 °C ... 60 °C
- High degree of protection IP69K

Triangulation sensor with background suppression

CE c(UL)us LISTED UKCA

Function

The miniature optical sensors are the first devices of their kind to offer an end-to- end solution in a small single standard design — from thru-beam sensor through to a distance measurement device. As a result of this design, the sensors are able to perform practically all standard automation tasks.
The DuraBeam laser sensors are durable and can be used in the same way as a standard sensor.
The use of Multi Pixel Technology gives the standard sensors a high level of flexibility and enables them to adapt more effectively to their operating environment.

Dimensions

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

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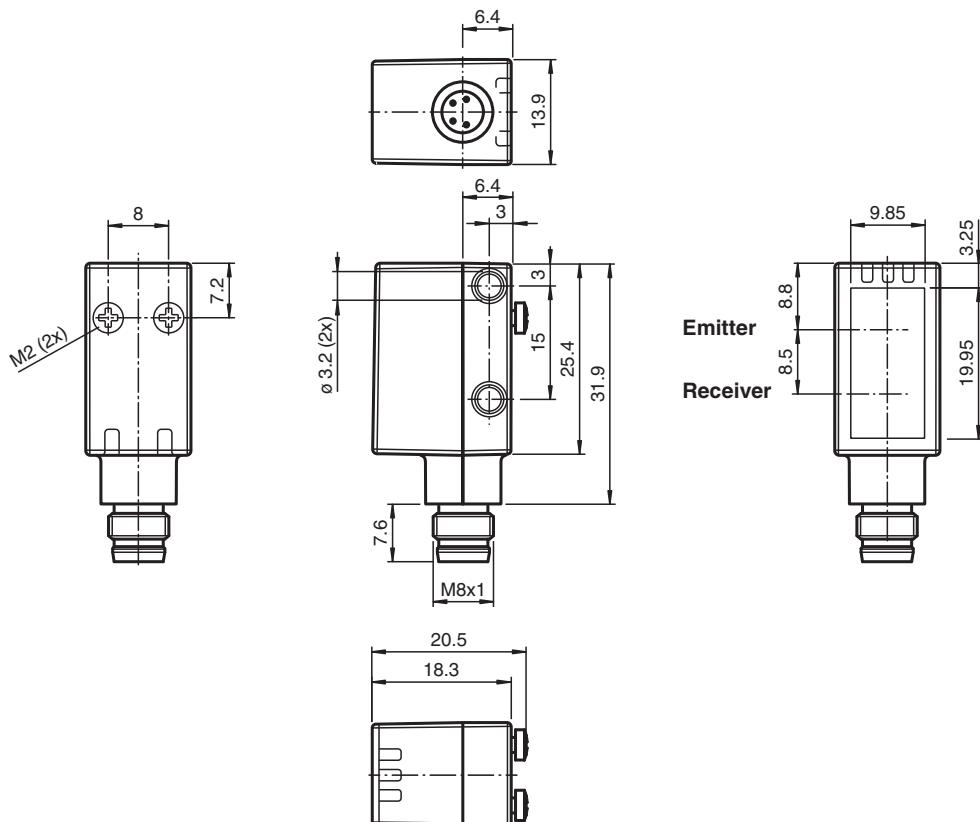
Technical Data

General specifications

Detection range		7 ... 20 mm
Detection range max.		5 ... 25 mm
Background suppression		starts from 25 mm
Reference target		standard white, 100 mm x 100 mm
Light source		LED
Light type		modulated visible red light
LED risk group labelling		exempt group
Black-white difference (6 %/90 %)		approx. 1 mm
Diameter of the light spot		approx. 1.5 mm at 20 mm
Opening angle		approx. 3 °
Ambient light limit		EN 60947-5-2 : 40000 Lux

Functional safety related parameters

$MTTF_d$		600 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %

Indicators/operating means

Operation indicator		Green LED: Permanently lit - power on Flashing (4 Hz) - short circuit
Function indicator		LED yellow: constantly on - object detected constantly off - object not detected

Electrical specifications

Operating voltage	U_B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	< 25 mA at 24 V supply voltage
Protection class		III

Output

Switching type		The switching type of the sensor is adjustable. The default setting is: Q - Pin4: NPN normally closed / dark-on, PNP normally open / light-on L/D-On - Pin2: High-aktive input
Signal output		1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected, overvoltage protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA , resistive load
Usage category		DC-12 and DC-13
Voltage drop	U_d	≤ 1.5 V DC
Switching frequency	f	500 Hz
Response time		1 ms

Conformity

Product standard		EN 60947-5-2

Approvals and certificates

UL approval		E87056 , cULus Listed , class 2 power supply , type rating 1

Ambient conditions

|		
Ambient temperature		-40 ... 60 °C (-40 ... 140 °F)
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)

Mechanical specifications

Housing width		13.9 mm
Housing height		31.9 mm
Housing depth		18.3 mm
Degree of protection		IP67 / IP69 / IP69K
Connection		M8 x 1 connector, 4-pin
Material		
Housing		PC (Polycarbonate)

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

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Technical Data

Optical face	Float glass
Mass	approx. 10 g

Connection
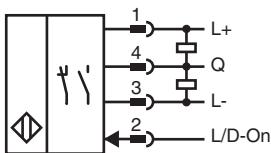
Connection Assignment

Wire colors in accordance with EN 60947-5-2

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

Assembly
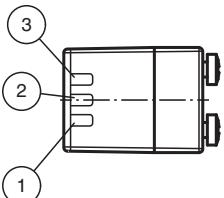
1	Operating indicator / dark on
2	Signal indicator
3	Operating indicator / light on

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

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Characteristic Curve

Characteristic response curve

Offset Y [mm]

Distance X [mm]

———	white 90 %
– – –	grey 18 %
–·–·–	black 6 %

Detection ranges

Object colour
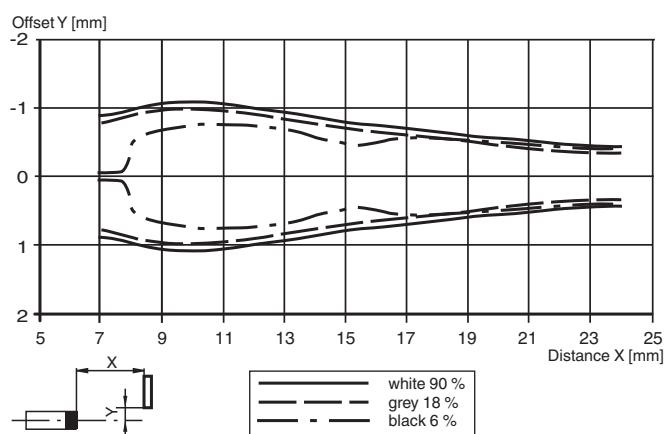
Detection range [mm]
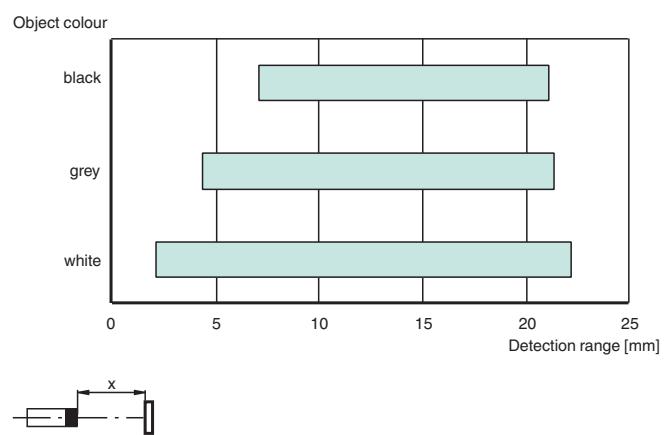
Accessories

	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

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

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