



# Triangulation sensor (BGS) OBT40-R102-EP1-V31-F-Y0621



- 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



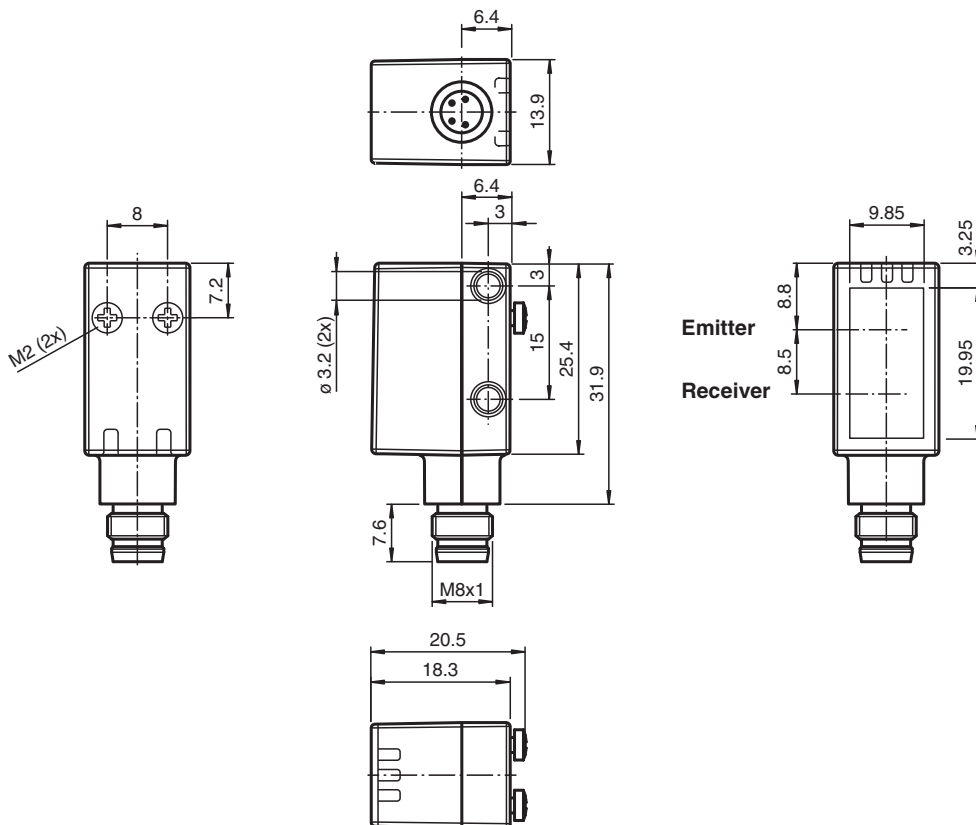
## Function

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



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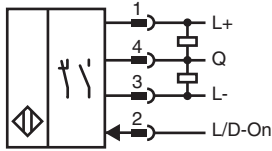
## Technical Data

General specifications		
Detection range		10 ... 40 mm
Detection range max.		10 ... 50 mm
Background suppression		starts from 50 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. 3 mm at 40 mm
Opening angle		approx. 5 °
Ambient light limit		EN 60947-5-2 : 40000 Lux
Functional safety related parameters		
MTTF <sub>d</sub>		600 a
Mission Time (T <sub>M</sub> )		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 <sub>B</sub>	10 ... 30 V
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	max. 25 mA ( at 24 V )
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-active 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 <sub>d</sub>	≤ 1.5 V DC
Switching frequency	f	1800 Hz
Response time		260 μs
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)
Optical face		Float glass

## Technical Data

Mass approx. 10 g

## Connection



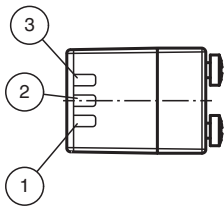
## Connection Assignment



Wire colors in accordance with EN 60947-5-2

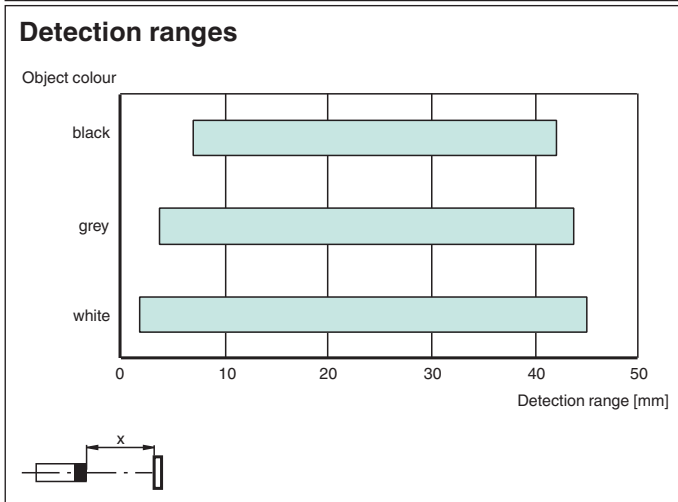
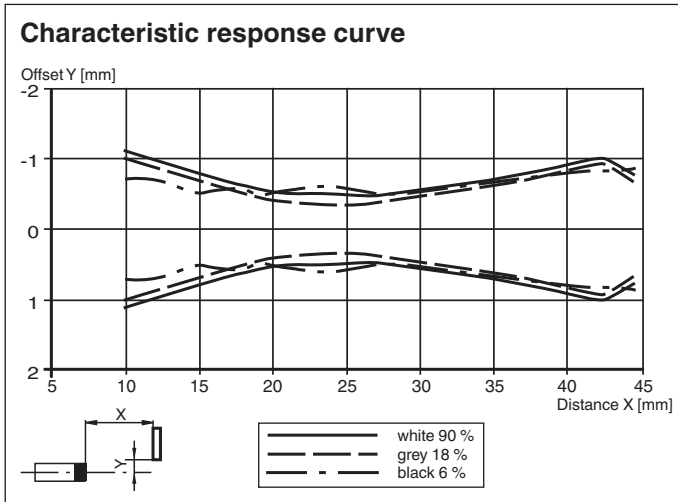
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

## Assembly





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

**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

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