

Diffuse Mode Sensor (BGS)

OBT30-R3-E1-P



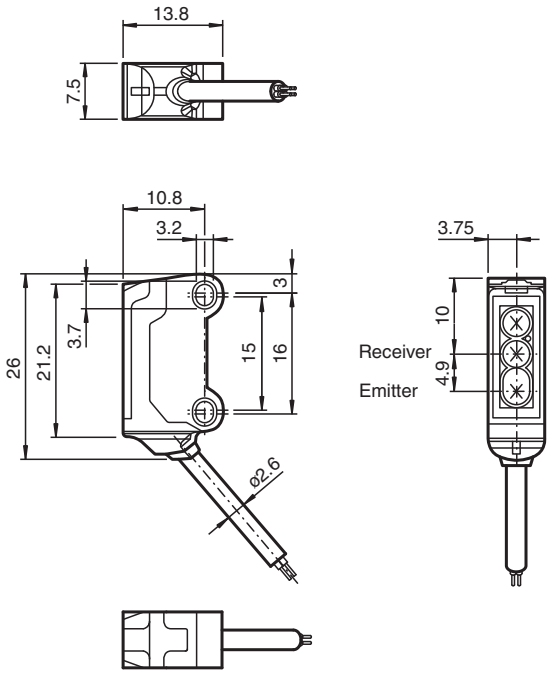
- 45° cable outlet for maximum mounting freedom under extremely tight space constraints
- Highly visible light spot, even on dark materials
- Precision object detection, almost irrespective of the color

Diffuse mode sensor based on triangulation principle with background suppression (BGS) for standard applications, miniature design, 30 mm detection range, red light, dark on, NPN output, 2 m fixed cable

Function

The nano sensor has been developed for a broad range of applications. It offers excellent durability and is exceptionally easy to install. The housing is compact and, with its 45° cable outlet, can be installed in the smallest spaces. New functional principles and functionality open up a range of new options.

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
Black-white difference (6 %/90 %)		< 7 % at 30 mm
Angle deviation		approx. 2 °

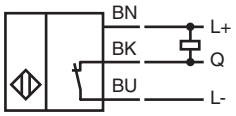
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Technical Data

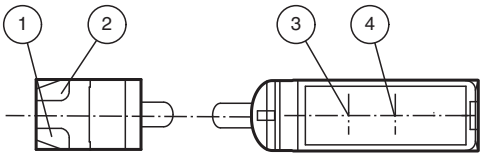
Diameter of the light spot		approx. 2 mm at a distance of 30 mm
Opening angle		approx. 2 °
Optical face		frontal
Ambient light limit		EN 60947-5-2 : 30000 Lux
Functional safety related parameters		
$MTTF_d$		800 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green: Power on flashing: Short circuit/overload indication
Function indicator		LED yellow ON: lights when object is detected
Electrical specifications		
Operating voltage	U_B	12 ... 24 V DC , class 2
No-load supply current	I_0	< 10 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. 800 Hz
Response time		600 µs
Conformity		
Product standard		EN 60947-5-2
Approvals and certificates		
UL approval		E87056 , cULus Recognized, Class 2 Power Source Further UL information see section "Additional Information"
Ambient conditions		
Ambient temperature		-25 ... 60 °C (-13 ... 140 °F)
Storage temperature		-30 ... 70 °C (-22 ... 158 °F)
Mechanical specifications		
Degree of protection		IP67
Connection		2 m fixed cable
Material		
Housing		PC/ABS and TPU
Optical face		PC
Cable		PUR
Mass		approx. 20 g
Dimensions		
Height		26 mm
Width		7.5 mm
Depth		13.8 mm
Cable length		2 m

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Connection Assignment



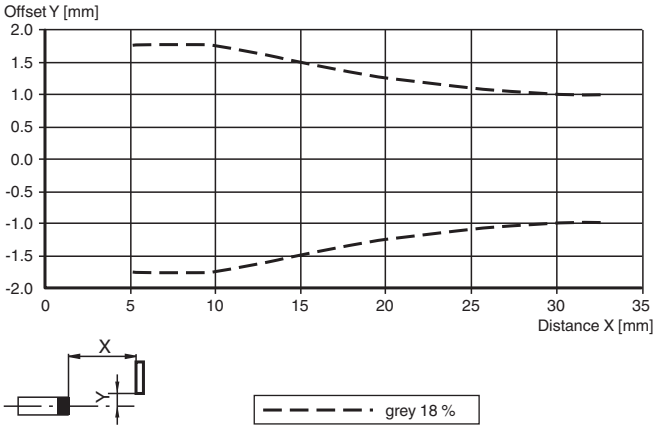
Assembly



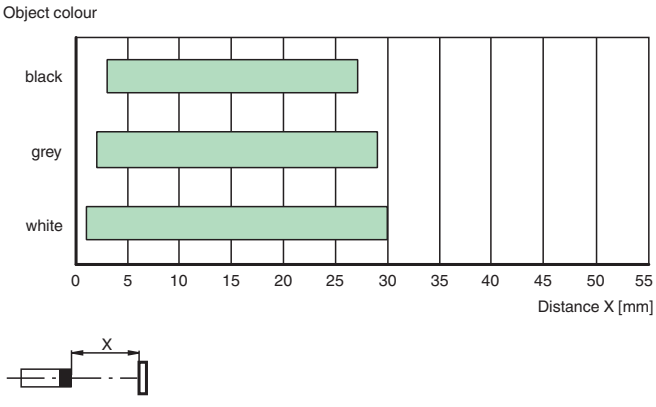
1	Operating display	green
2	Signal display	yellow
3	Emitter	
4	Receiver	

Characteristic Curve

Characteristic response curve



Detection ranges



Additional Information

Additional UL Information
Conditions of Acceptability:
These devices should be mounted within a suitable ultimate enclosure with proper end products spacings.
These devices shall be used within their recognized electrical ratings.
These devices are intended for factory wiring only. The suitability of the power cord and strain relief should be determined in the end use application.
These proximity switches are intended to be powered by Listed Class 2 power supply or are located in a limited voltage / limited current circuit.

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