

Triangulation sensor (BGS)

OBT300-18GM40-E2-V1



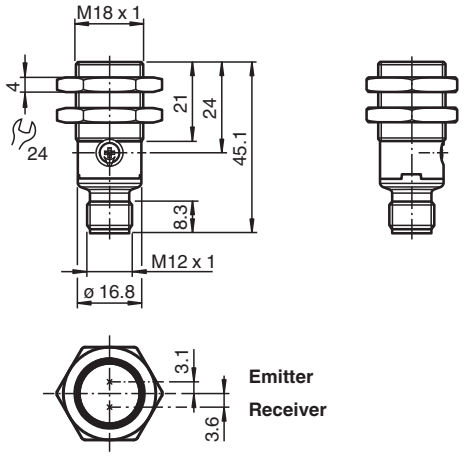
- Strong metallic housing in cylindrical shape M18 x 1
- Adjustable background suppression
- Not sensitive to ambient light
- Degree of protection IP67
- High operating distance

Triangulation sensor with background suppression

Function

The optical sensors of this series have an M18 threaded housing that is optionally available in plastic or metal.
The sensors are robust and versatile.
Focusing on the essential requirements simplifies selection and commissioning, saving time and costs.

Dimensions



Technical Data

General specifications	
Detection range	10 ... 300 mm
Detection range min.	10 ... 50 mm
Detection range max.	12 ... 300 mm
Adjustment range	50 ... 300 mm
Reference target	standard white, 100 mm x 100 mm
Light source	LED
Light type	modulated visible red light
Black-white difference (6 %/90 %)	< 40 % at 300 mm
Diameter of the light spot	approx. 16 mm at detection range 300 mm
Opening angle	approx. 2 °
Optical face	frontal

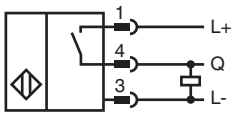
Release date: 2024-06-28 Date of issue: 2024-06-28 Filename: 70113328-100052_eng.pdf

Technical Data

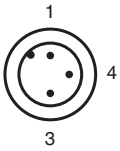
Ambient light limit		EN 60947-5-2 100000 Lux
Hysteresis	H	< 4 %
Functional safety related parameters		
$MTTF_d$		1734 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green: on - power on flashing (4 Hz) - short circuit
Function indicator		LED yellow: constantly on - object detected constantly off - object not detected
Control elements		sensitivity adjustment
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	< 25 mA
Protection class		III
Output		
Switching type		Q - Pin4: PNP normally open / light-on
Signal output		1 PNP output, short-circuit protected, reverse polarity protected, open collector
Switching voltage		max. 30 V DC
Switching current		max. 100 mA , resistive load
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		
Degree of protection		IP67
Connection		3-pin, M12 x 1 connector
Material		
Housing		brass, nickel-plated
Optical face		PMMA
Connector		plastic
Mass		approx. 15 g
Dimensions		
Length		45.1 mm
Diameter		18 mm
Thread size		M18

Release date: 2024-06-28 Date of issue: 2024-06-28 Filename: 70113328-100052_eng.pdf

Connection Assignment



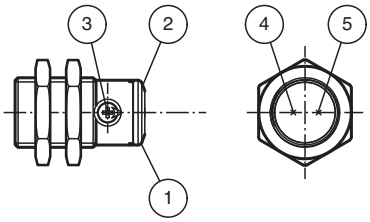
Connection Assignment



Wire colors in accordance with EN 60947-5-2

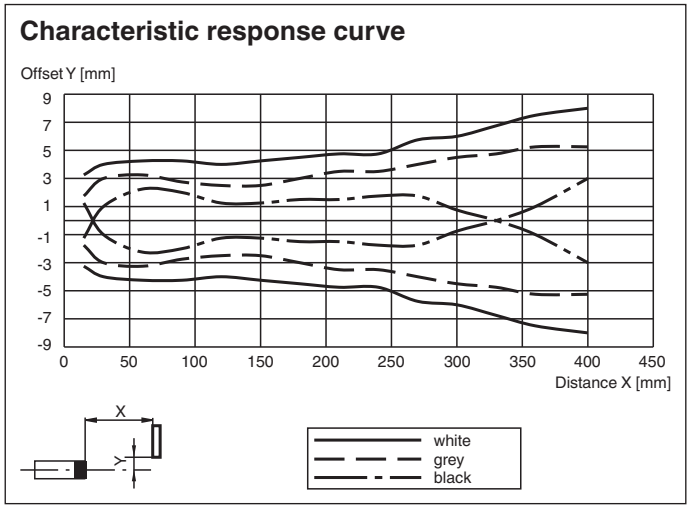
1	BN	(brown)
3	BU	(blue)
4	BK	(black)

Indication



1	Operating display	green
2	Signal display	yellow
3	Sensitivity adjustment	
4	Emitter	
5	Receiver	

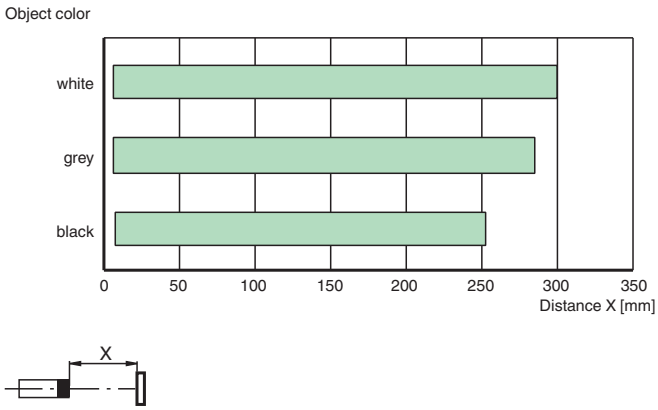
Characteristic Curve



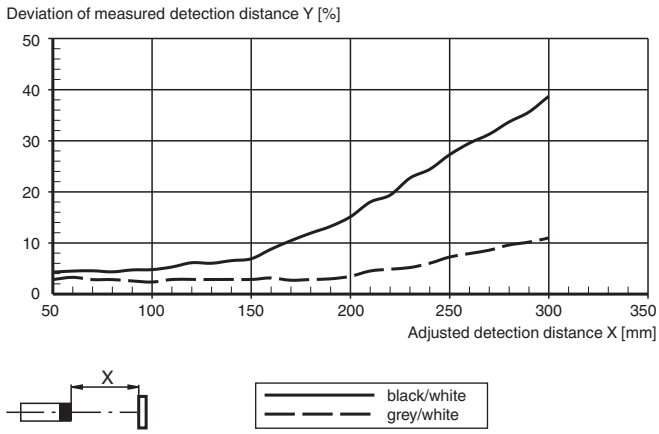
Release date: 2024-06-28 Date of issue: 2024-06-28 Filename: 70113328-100052_eng.pdf

Characteristic Curve

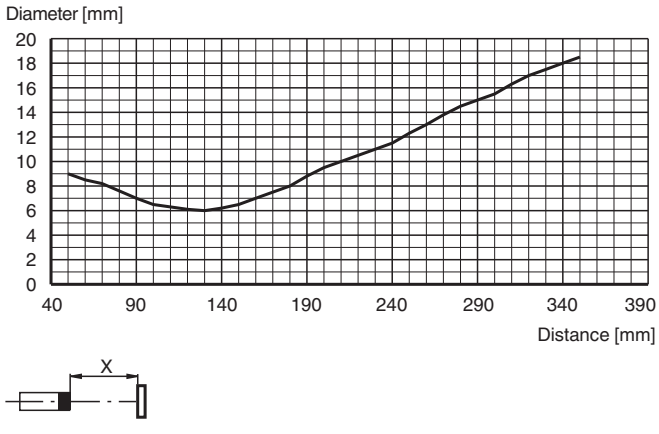
Detection ranges



Difference in detection distance



Light spot diameter



Release date: 2024-06-28 Date of issue: 2024-06-28 Filename: 70113328-100052_eng.pdf