

Diffuse mode sensor

OBD500-18GM60-E5-V1-IR-1C

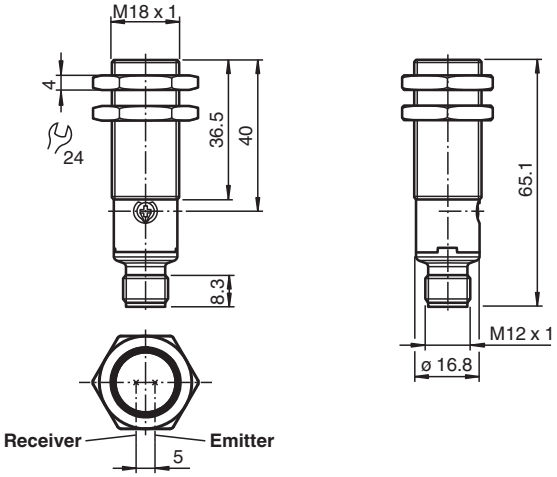


- Strong metallic housing in cylindrical shape M18 x 1
- Operating distance adjustable
- Not sensitive to ambient light
- Degree of protection IP67
- High operating distance

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	0 ... 500 mm
Detection range min.	0 ... 30 mm
Detection range max.	0 ... 500 mm
Adjustment range	30 ... 500 mm
Reference target	standard white 200 mm X 200 mm
Light source	IRED
Light type	infrared
Diameter of the light spot	approx. 52 mm at 500 mm
Opening angle	approx. 2.6 °
Optical face	frontal
Ambient light limit	EN 60947-5-2 10000 Lux

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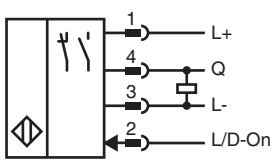
Technical Data

Hysteresis	H	< 15 %
Functional safety related parameters		
$MTTF_d$		854 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: permanently lit - output active permanently off - output inactive
Control elements		sensitivity adjustment
Control elements		light/dark on electrically switchable
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		The switching type of the sensor is adjustable. The default setting is: Q - Pin4: PNP output / light-on L/D-On - Pin2: Low-active input
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	≤ 2 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		4-pin, M12 x 1 connector
Material		
Housing		brass, nickel-plated
Optical face		PMMA
Connector		Plastic
Mass		approx. 23 g

Connection



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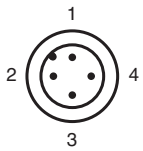
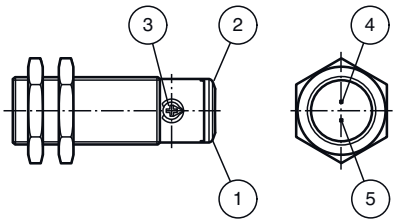
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

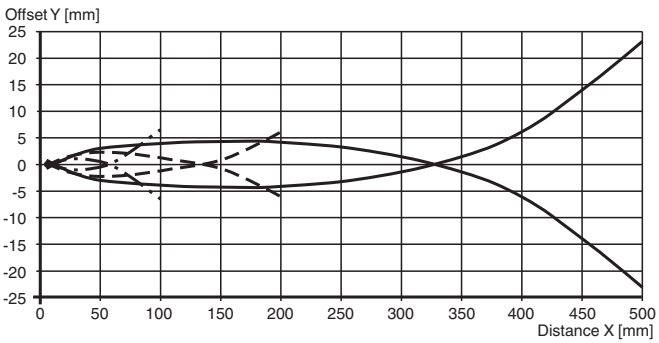
Indication



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

Characteristic Curve

Characteristic response curve



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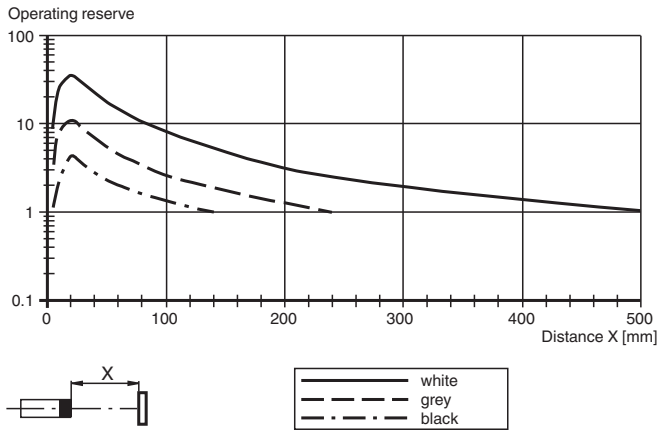
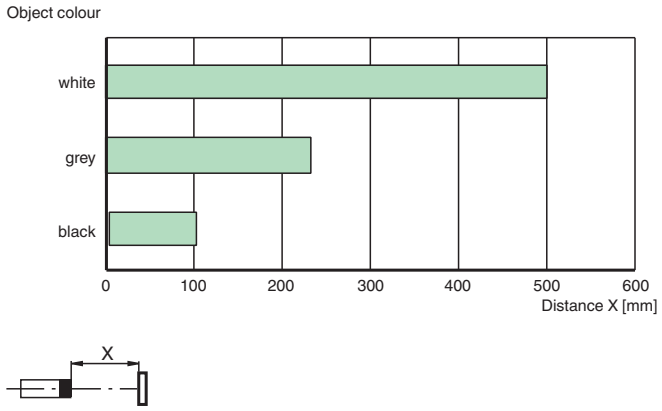
Characteristic Curve

Relative received light strength



Detection ranges



Accessories

	**V1-W-2M-PUR**	Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey
	**V1-G-2M-PUR**	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey
	**BF 18**	Mounting flange, 18 mm
	**CPZ18B03**	Mounting Bracket with swivel nut
	**BF 18-F**	Plastic mounting adapter, 18 mm
	**BF 5-30**	Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm

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