



Retroreflective sensor (glass)

OBG3500-18GK40-E1-V1



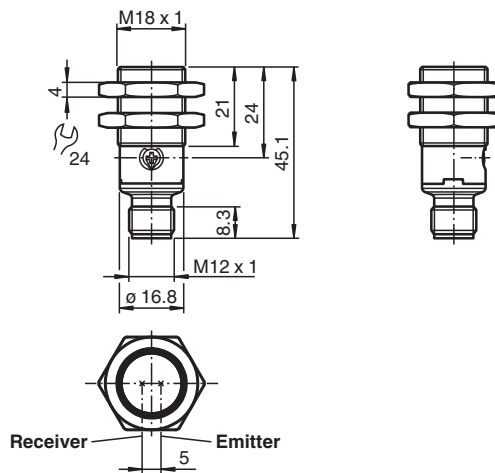
- Short design in M18 plastic housing
- Sensitivity adjuster for optimal adaptation to the application
- Not sensitive to ambient light
- Degree of protection IP67
- Very high detection range



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

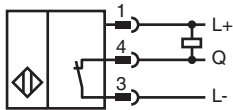
General specifications

Effective detection range	0 ... 3.5 m in glass mode;
Reflector distance	0 ... 3.5 m in glass mode;
Threshold detection range	3.5 m
Reference target	reflector C110-2
Light source	LED
Light type	modulated visible red light
Polarization filter	yes
Diameter of the light spot	approx. 190 mm at a distance of 3.5 m
Opening angle	approx. 2.6 °
Optical face	frontal

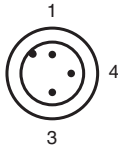
Technical Data

Ambient light limit	EN 60947-5-2 20000 Lux	
Functional safety related parameters		
MTTF _d	904 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	Yellow LED: Permanently lit - light path clear Permanently off - object detected Flashing (4 Hz) - insufficient operating reserve	
Control elements	potentiometer for Teach-In	
Contrast detection levels	18 % - clear glass bottles 40 % - colored glass or opaque materials	
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: NPN normally closed / light-on	
Signal output	1 NPN 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	PC (Polycarbonate)	
Optical face	PMMA	
Connector	Plastic	
Mass	approx. 8 g	
Dimensions		
Length	45.1 mm	
Diameter	18 mm	
Thread size	M18	

Connection



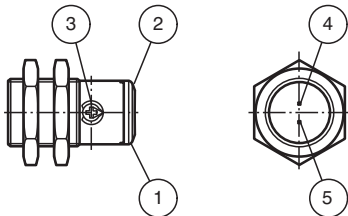
Connection Assignment



Wire colors in accordance with EN 60947-5-2

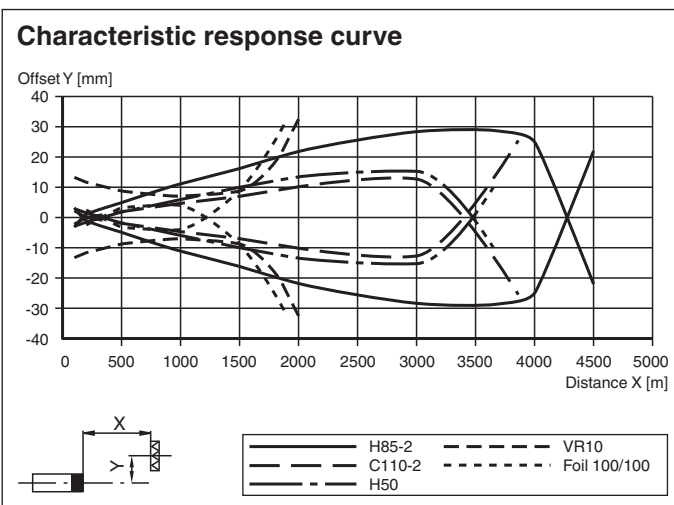
1	BN	(brown)
3	BU	(blue)
4	BK	(black)

Indication



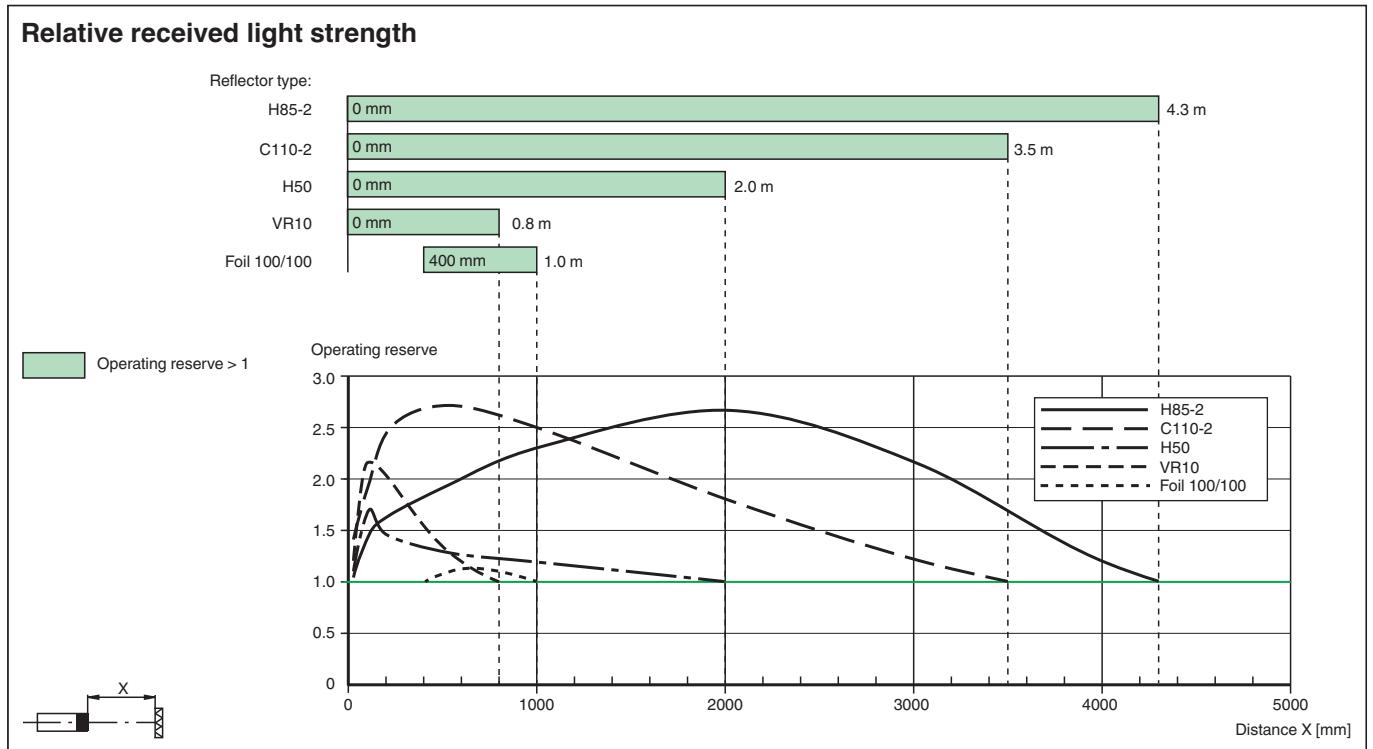
1	Operating display	green
2	Signal display	yellow
3	Teach-In and Mode selection	
4	Emitter	
5	Receiver	

Characteristic Curve



Release date: 2024-10-16 Date of issue: 2024-10-16 Filename: 70113328-100162_eng.pdf

Characteristic Curve



Teach-In

Apply the operating voltage to the sensor. The operating indicator lights up green. The sensor is automatically set to the last teach-in setting. Mount a suitable reflector opposite the sensor. The reflector can be taught-in in teach-in mode.

Switch position	Description
T	Teach-in mode
CI	Contrast 1
CII	Contrast 2

Teach-in mode:

- To start the teach-in mode, set the switch to the "T" position when light beam is free (no target).
- Wait approx. 3 seconds until the yellow and green signal indicators flash slowly and simultaneously (2.5 Hz).
- Turn the switch to contrast I or contrast II.

To indicate the end of the teach-in mode, the yellow and green signal indicators flash alternately for approx. 5 seconds.

- Teach-in successful:** The green and yellow signal indicators flash slowly and alternately (2.5 Hz) for approximately 5 seconds. The contrast selected will be activated. The yellow signal indicator lights up permanently. The sensor is ready for operation.
- Teach-in unsuccessful:** The green and yellow signal indicators flash quickly and alternately (8 Hz) for approx. 5 seconds. The contrast selected will be activated. The sensor is set to the previous valid teach-in setting.