

Setting via control input

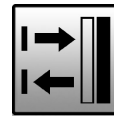
OT230320

Optical sensors
Diffuse-reflection sensors with background suppression



- / Plastic housing
- / Protection class IP67
- / PNP switching output
- / M12 plug connection, 270° rotatable

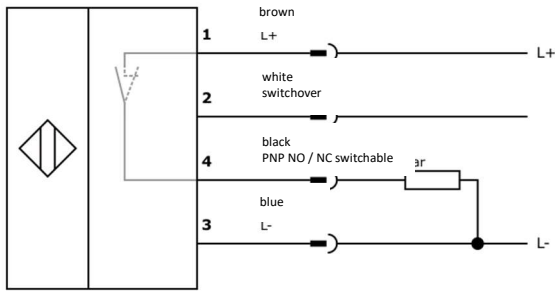
Visible red light
Adjustment via potentiometer



TECHNICAL DATA

Function	Triangulation
Scanning range (90% Reflectivity)	3 ... 1,200mm
Scanning range adjustment	Potentiometer
Operating voltage	10 ... 30V DC
Residual ripple	≤ 10%
Power-on delay time	≤ 300ms
Current consumption (without load)	≤ 30mA
Output signal	PNP, no/nc, Setting via control input
Output current (max. load)	100mA
Hysteresis	approx. 15%
Switching frequency	≤ 600Hz
Response time	830µs
Transmitting element	LED
Wavelength	640nm
Reverse polarity protection	+
Short circuit protection	+
Display (operation)	LED green
Display (switching output)	LED yellow
Soiling display	LED yellow flashing
Material (housing)	PC-ABS
Material (front screen)	PMMA
Temperature (operation)	-20 ... +60°C
Protection class (EN 60529)	IP67 & IP69k
Connection	M12-connector 4-pin, rotatable
Connection accessories	e.g. VK200325
Mounting accessories (universal holder)	AY000119

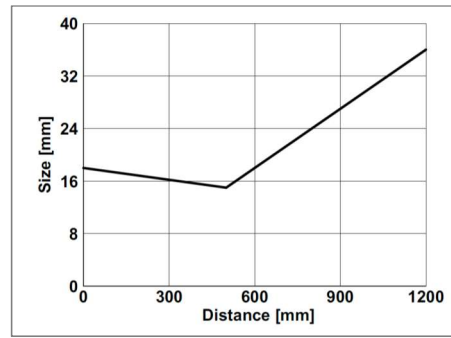
Connection



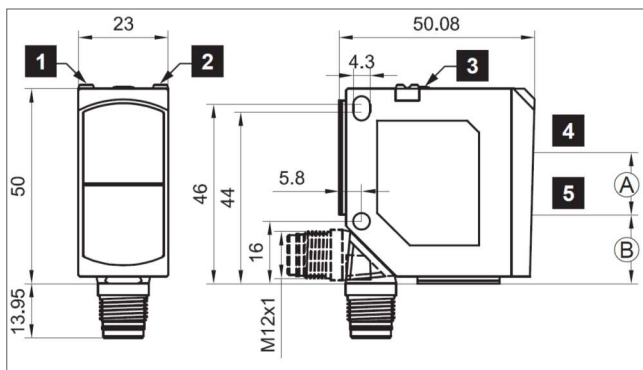
White line on L- or open:
White line on L+:

Switching output NO
Switching output NC

Light spot size



Dimensional drawing



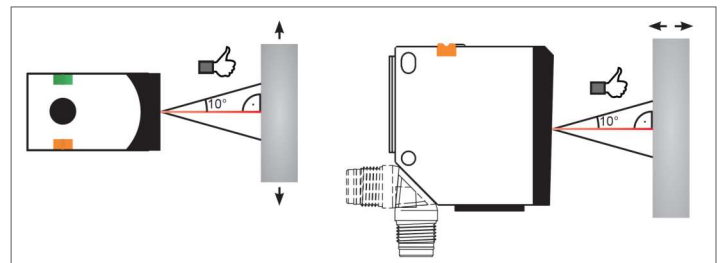
Control elements

- 1 = LED yellow (display switching output)
- 2 = LED green (display operating voltage)
- 3 = Potentiometer
- 4 = Receiver axis (A = 16mm)
- 5 = Transmitter axis (B = 17.6mm)

Measuring range

Cover material	Detection range
white (90%)	3 ... 1,200mm
grey (18%)	5 ... 800mm
black (6%)	10 ... 600mm

Adjustment



Safety instructions

Read the operating instructions carefully before commissioning!

Connection, assembly, adjustment and commissioning may only be performed by qualified personnel.

The use in outdoor areas is not permitted.

Attention: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Before initial operation, please make sure to follow all safety instructions that may be provided in the product information!

The device is not a safety component according to the EU Machinery Directive. If there is a direct impact on personal safety, the use of this product is prohibited!

Intended use

The sensor is used for optical contactless detection of objects.

Mounting

Attach the sensor with a suitable holder.

Connection

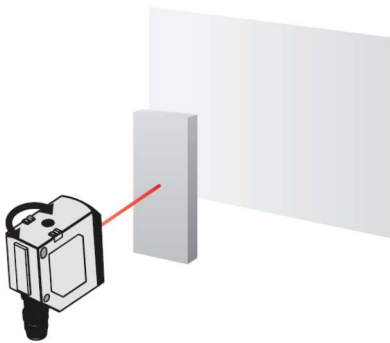
Plug on the cable socket in a de-energized state and screw it tight. Connect the cable according to the connection diagram on page 2.

If the white wire (PIN 2) is connected to L- or remains open, the switching output operates as a normally open contact (NO).
If the switching output is to operate as a normally closed contact (NC), connect the white wire to L+ (24V).

Setting

The scanning range is adjusted with the potentiometer. Turning clockwise increases the scanning range, turning counterclockwise decreases the scanning range.

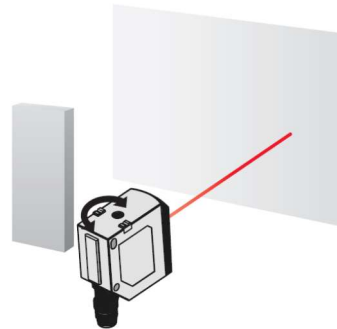
1. Object setting



Switching output normally open: Turn the potentiometer until the yellow LED lights up.

Switching output NC contact: Turn the potentiometer until the yellow LED goes out.

2. Background setting



Switching output normally open: When looking at the background, the yellow LED must not light up.

Switching output NC contact: When looking at the background, the yellow LED must light up.

If necessary, perform fine tuning with the potentiometer.

Maintenance

The diffuse-reflection sensor is maintenance-free. It is recommended to clean the optical surfaces at regular intervals and to check screw connections and plug connections.