

OT230321

Optical Sensors
Diffuse reflection sensors with background suppression

- / Plastic housing**
- / degree of protection IP67**
- / PNP switching output**
- / M12 plug connection, rotatable 270°**

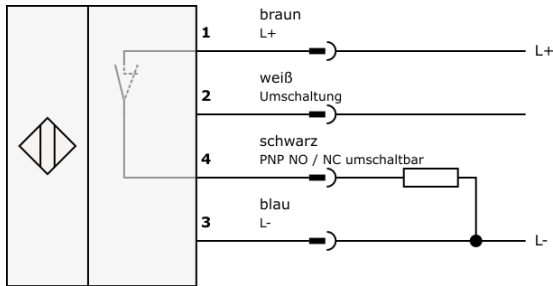


**Visible blue light setting,
adjustable via potentiometer**

TECHNICAL DATA

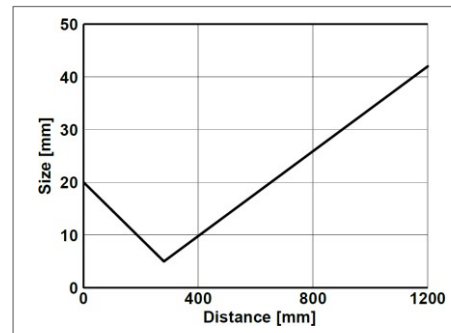
function	Triangulation
Sensing range (90% reflectivity)	3 ... 1200 mm
Detection Range Adjustment	Potentiometer
operating voltage	10 ... 30 V DC
residual ripple	≤ 10%
readiness delay	≤ 300 ms
Current consumption (no load)	≤ 30 mA
output signal	PNP, NO/NC, setting via control input
Output current (max. load)	100 mA
hysteresis	approx. 15%
switching frequency	≤ 600 Hz
response time	830 µs
transmitting element	LED
wavelength	450 nm
Reverse polarity protection	+
Short-circuit protection	+
Indicator (Operation)	green LED
Indicator (switching output)	yellow LED
display (soiling)	Yellow LED flashing
housing material	PC-ABS
Material (front screen)	PMMA
operating temperature	-20 ... +60°C
dimensions	23 x 50 x 50 mm
Degree of protection (EN 60529)	IP67 & IP69k
connection	4-pin M12-connector, rotatable
connection accessories	e.g., VK200325
Mounting accessories (universal holder)	AY000119

connection

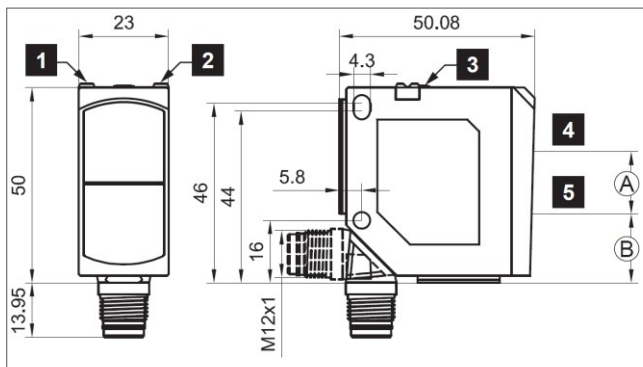


White line connected to L- or open: Switching output
 NO White line connected to L+: Switching output
 NC

light spot size



Dimensional Drawing



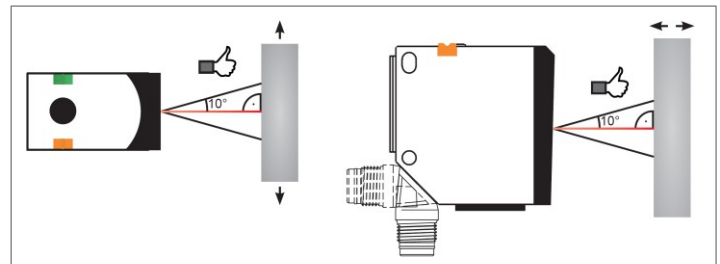
control elements

- 1 = yellow LED (switching output indicator)
- 2 = green LED (operating voltage indicator)
- 3 = Potentiometer
- 4 = Receiver axis (A = 19 mm)
- 5 = Transmitter axis (B = 14.6 mm)

measuring range

Reference material	detection range
White (90%)	3 ... 1200 mm
Gray (18%)	5 ... 750 mm
Black (6%)	10 ... 600 mm

Adjustment



Safety Instructions

Read the operating instructions before the start-up.

Connection, installation, setting, and start-up must be performed only by qualified personnel.

Use outdoors is not permitted.

Warning: Using control elements or settings, or performing procedures not specified here, may result in the emission of hazardous radiation.



Risk Group 2, potentially hazardous optical radiation (EN 62471). Do not look directly into the transmitting element for extended periods during operation!
 The light can be harmful to your eyes!

Please ensure before start-up that all safety instructions listed in the product documentation, if any, have been followed!

This device is not a safety component as defined by the EU Machinery Directive. The application of this product is prohibited if it directly affects personal safety!

Intended Use

The sensor is used for the optical, contactless detection of objects.

Installation

Mount the sensor using a suitable holder (e.g., universal mounting AY000119).

connection

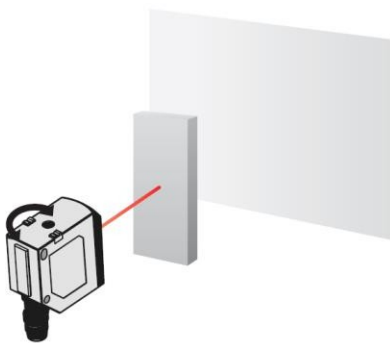
Connect the cable socket while the system is de-energized and tighten it securely. Connect the lines according to the wiring diagram on page 2.

If the white wire (PIN 2) is connected to L- or left open, the switching output functions as a normally open (NO) contact. If the switching output is to function as a normally closed (nc) contact, connect the white wire to L+ (24V).

setting

The sensing range is adjusted using the potentiometer. Turning it clockwise increases the sensing range; turning it counterclockwise decreases the sensing range.

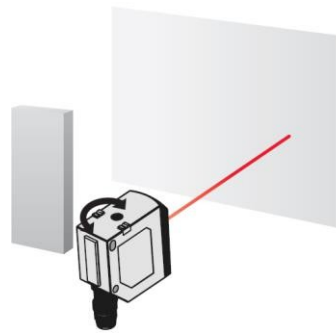
1. Object Setting



Switching output normally open (NO): Turn the potentiometer until the yellow LED lights up.

Switching output (normally closed (nc) contact): Turn the potentiometer until the yellow LED turns off.

2. Background Adjustment



Normally Open Switching Output: When looking at the background, the yellow LED must not light up.

Switching output (normally closed (nc)): When looking at the background, the yellow LED must light up.

If necessary, use the potentiometer to fine-tune the settings.

Maintenance

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