

PT330070

dimensions 39 x 23 x 13 mm

- / Plastic housing, compact design
- / Setting via teach-in or IO-Link
- / LED display with alignment-aid
- / M8-connector, 4-pin



Analog output 0 ... 10V
Laser safety class 1

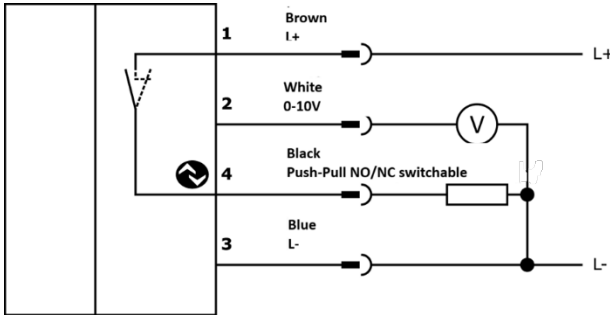
technical data

function	background suppression
sensing range	20 ... 250 mm
operating voltage	12 ... 30V DC
current consumption (without load)	≤ 30mA
output current (max. load)	≤ 100mA
output signal	Push-pull, NO/NC
voltage drop	≤ 2V DC
response/decay time	≤ 4.5ms
switching frequency	110Hz
repeat accuracy	100 ... 1500 µm (distance-dependent)
analog output	0 to 10 V
transmitting element (pulsed)	Laser diode, red light, point-shaped, pulsed
wavelength	656 nm
laser safety class	1
laser focus distance	400 mm
short-circuit protection	+
reverse polarity protection	+
display (operation)	green LED
display (signal) / alignment-aid	yellow LED
display (teach-in)	Blue LED
interference suppression	+
housing material	Plastic (ASA, PMMA)
material (front screen)	PMMA
degree of protection (EN 60529)	IP 67
operating temperature	-25 to +60°C
connection	M8 connector, 4-pin
connection accessories	e.g., VK205375
mounting accessories (universal mounting)	AY000118

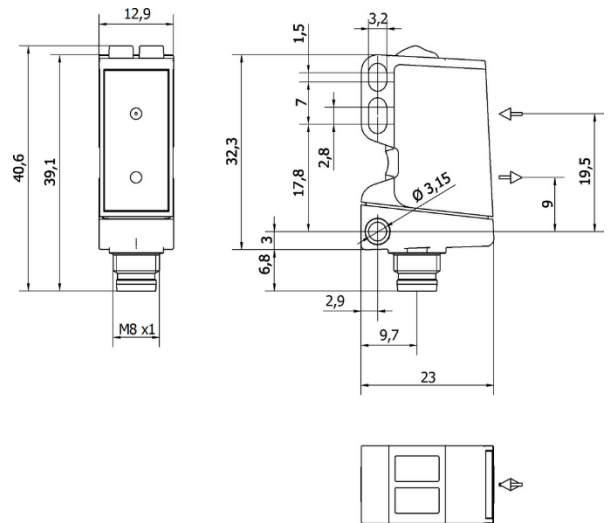
factory settings

switching output:	Normally open (positive switching), switching range 20 ... 250 mm
analog output:	Distance 20 mm: 0V
	Distance 250 mm: 10V

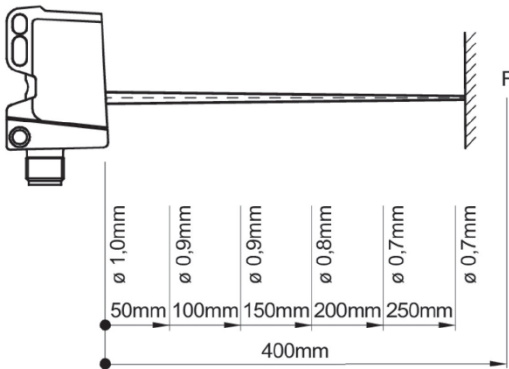
Electrical connection



Dimension sketch



Beam pattern (typical)



LED colors



Notes on teach-in:

The blue LED lights up brighter as soon as a ferromagnetic tool is recognized.

The teach-in procedures are performed by touching the blue LED with a ferromagnetic tool.

The teach-in function is blocked 5 minutes after switching on. The blue LED goes out. If you want to make a new setting, switch the operating voltage off and on again.

If no input is made within 60 seconds during the teach-in procedures, the sensor returns to standard mode without accepting the new values. You must then restart the teach-in procedure.

If one of the teach points is in the limit range, the respective teach process fails and all LEDs flash at approx. 8Hz. In this case, adjust the threshold values and repeat the teach process.

Teach-in procedure for switching output:

1. This procedure allows you to set a switching window for the switching output. Align the sensor on the object to be detected and ensure that the blue teach LED lights up.
2. Touch the blue teach LED on the back of the housing with a ferromagnetic tool **for longer than 2 seconds but less than 4 seconds** until the yellow LED goes out and the blue and green LEDs flash at approx. 2Hz.
3. Position the object to be detected at the switching point close to the sensor. Briefly touch the blue teach LED with a ferromagnetic tool within 60 seconds to confirm the position of the object. The yellow LED lights up during contact, and after removing the tool, the green and blue LEDs flash at 2 Hz.
4. Now position the object to be detected at the switching point far from the sensor. Briefly touch the blue teach LED with a ferromagnetic tool within 60 seconds to confirm the position of the object. The yellow LED lights up during contact, and all LEDs go out briefly after the tool is removed.
5. As soon as the blue LED light up, the teach-in process is complete.

Teach-in procedure for analog output:

1. Align the sensor on the object to be detected and ensure that the blue teach LED lights up.
2. Touch the blue teach LED on the back of the housing with a ferromagnetic tool **for longer than 4 seconds but less than 6 seconds** until the green LED goes out and the blue and yellow LEDs flash at approx. 2Hz.
3. Position the object to be detected at the point where the analog output should output 4mA. Briefly touch the blue teach LED with a ferromagnetic tool within 60 seconds to confirm the position of the object. The green LED lights up during contact, and after removing the tool, the yellow and blue LEDs flash at 2Hz.
4. Position the object to be detected at the point where the analog output should output 20mA. Briefly touch the blue teach LED with a ferromagnetic tool within 60 seconds to confirm the position of the object. The green LED lights up during contact, and all LEDs go out briefly after the tool is removed.
5. As soon as the blue LED light up, the teach process is complete.

Changing the switching function (normally open/normally closed (nc))

1. Touch the blue teach LED on the back of the housing with a ferromagnetic tool **for longer than 6 seconds but less than 8 seconds** until all 3 LEDs flash at approx. 2Hz.
2. After removing the tool, the blue LED flashes at approx. 2 Hz.
3. Touch the blue LED again briefly with a ferromagnetic tool. The yellow LED lights up.
4. After removing the tool, the blue LED flashes at approx. 2 Hz for approx. 4 seconds. As soon as the green LED lights up, the teach procedure is complete. The switching function has been changed.

Reset to factory settings

Touch the blue teach LED on the rear of the housing with a ferromagnetic tool for longer than 8 seconds until all 3 LEDs flash slowly (1Hz) and remove the tool once the flashing frequency has started. As soon as the blue and green LEDs light up continuously again, the sensor has been reset to the factory settings.

Note on additional setting options

Additional settings can be made via IO-Link. For example, various teach modes and delay times for the outputs are available. You can also choose between four different measurement methods:

Description Measurement mode	Response time	Repeat accuracy (distance-dependent)
Raw	< 1.5 ms	200 ... 3,000 µm
High speed	< 2.25 ms	150 ... 2,250µm
Standard (factory setting)	< 4.5 ms	100 ... 1,500 µm
High Accuracy	< 14.0 ms	50 ... 750µm

Safety note:

Before start-up, please ensure that all safety instructions listed in the product documentation have been observed!

The application of these products is prohibited if there is a direct impact on personal safety.

Laser warning:

**CLASS 1 LASER
PRODUCT**

IEC 60825-1/2014
Complies with 21 CFR 1040.10 and
1040.11 except for conformance with
IEC 60825-1 Ed. 3., as described in
Laser Notice No. 56, dated May 8, 2019