

**OT180303**

**OPTICAL SENSORS • DIFFUSE REFLECTION SENSORS WITH INTENSITY DIFFERENCIATION**

Optical sensors function contactlessly. They detect objects independent of their characteristics (e.g., shape, color, surface structure, material). The basic operating principle is based on the transmission and reception of light. There are three different versions: 1. The through-beam sensor consists of two separate devices, a transmitter and a receiver that are aligned with one another. If the light beam between the two devices is interrupted, the switching output integrated in the receiver changes its status. 2. With the retro-reflective sensor, the transmitter and receiver are located in one device. The emitted light beam is reflected back to the receiver by a reflector that is to be mounted opposite the device. As soon as the light beam is interrupted, the switching output integrated in the device changes its status. 3. With the diffuse reflection sensor, the transmitter and receiver are in one device. The emitted light beam is reflected by the object that is to be detected. As soon as the receiver detects the reflected light, the switching output integrated in the device changes its status.



**MECHANICAL DATA**

Ambient temperature (MAX)	55 °C
Ambient temperature (MIN)	-25 °C
Cable length	2 m
Degree of protection (IP)	IP67
Housing coating	Nickel-plated
Housing design	Cylinder, screw-thread
Housing material	Brass
Material of cable sheath	PVC
Material of optical surface	Plastic
Number of wires	4
Reflector included in the scope of delivery	No
Sensor length	60 mm
Storage temperature	70 °C
Storage temperature	-40 °C
Thread length	35 mm
Thread pitch	1 mm
Thread size, metric	18
Wire cross section	0.34 mm <sup>2</sup>
With interchangeable lens	No

**ELECTRICAL DATA**

Alarm output	No
Decay time	1 ms
Equipment protection class	Protection class 3
High repeat accuracy	No
Interference suppression	No
Max. output current	100 mA

**ELECTRICAL DATA**

Max. switching distance	200 mm
No-load current	25 mA
Number of switching outputs	1
Operating voltage (MAX)	30 V
Operating voltage (MIN)	10 V
Pre-failure message	No
Readiness delay	25 ms
Residual ripple	10 %
Response time	1 ms
Reverse polarity protection	Yes
Scanning function	Light-/dark-on mode
Sensing range (MAX)	200 mm
Sensing range (MIN)	200 mm
Setting procedure	Manual adjustment
Short-circuit-proof	Yes
Suitable for safety functions	No
Switching frequency	500 Hz
Type of electrical connection	Cable
Type of switching function	Programmable/configurable
Type of switching output	PNP
Voltage drop	2.5 V
Voltage type	DC
With communication interface, RS-232	No
With LED display	Yes
With monitoring function of downstream devices	No
With other analog output	No
With restart lock	No
With time function	No

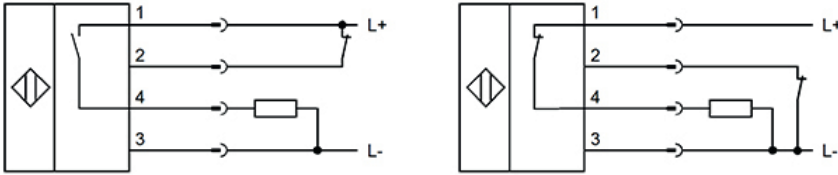
**OPTICAL DATA**

Light beam form	Point
Light exit	Axial
Light source	Infrared light
Line scanner	No
Small light beam diameter	No
Wavelength of the sensor	880 nm

**OTHER DATA**

Feeding technology	Yes
For gloss queries	No
Is line scan camera	No

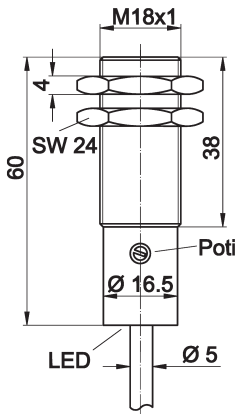
**CONNECTION**



**Colors:** 1 = BN (brown), 2 = WH (white), 3 = BU (blue), 4 = BK (black)

**Functions:** 1 = L+, 2 = programming, 3 = L-, 4 = PNP NO/NC

**DIMENSIONAL DRAWING**



**INSTALLATION**



Mounting / Installation may only be carried out by a qualified electrician!

**DISPOSAL**



**SAFETY WARNINGS**

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

Never use these devices in applications where the safety of a person depends on their functionality.