

OT050175

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	0 °C ... 55 °C
Degree of protection (IP)	IP67
Housing design	Cylinder, screw-thread
Housing material	Stainless steel V2A
Material of optical surface	Sapphire glass
Max. tightening torque	1.5 Nm
Reflector included in the scope of delivery	No
Sensor length	46.8 mm
Thread length	30 mm
Thread pitch	0.5 mm
Thread size, metric	5
With interchangeable lens	No

ELECTRICAL DATA

Alarm output	No
Clock frequency of the transmitter	1 kHz
Decay time	2.5 ms
Equipment protection class	Protection class 3
High repeat accuracy	No
Hysteresis	10 %
Interference suppression	No
Max. output current	100 mA
Max. switching distance	20 mm
No-load current	15 mA
Number of pins	3
Number of switching outputs	1
Operating voltage	10 V ... 30 V

ELECTRICAL DATA

Pre-failure message	No
Readiness delay	20 ms
Residual ripple	20 %
Response time	2.5 ms
Reverse polarity protection	Yes
Scanning function	Light switching
Sensing range	20 mm ... 20 mm
Short-circuit-proof	Yes
Suitable for safety functions	No
Switching frequency	200 Hz
Type of electrical connection	Connector M8
Type of switching function	Normally open contact (NO)
Type of switching output	PNP
Voltage drop	2 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

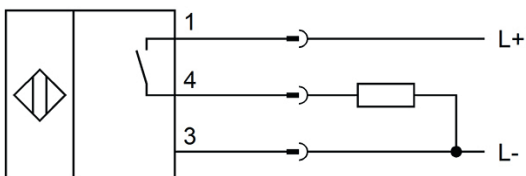
OPTICAL DATA

Light beam form	Point
Light exit	IV000197
Light source	Infrared light
Line scanner	No
Small light beam diameter	No
Wavelength of the sensor	880 nm

OTHER DATA

	No
	No
Feeding technology	Yes

CONNECTION



Colors: 1 = BN (brown), 3 = BU (blue), 4 = BK (black)

Functions: 1 = L+, 3 = L-, 4 = PNP NO

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!