

OT180323

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 |
| Degree of protection (IP) | IP67 |
| Housing coating | Nickel-plated |
| Housing design | Cylinder, screw-thread |
| Housing material | Brass |
| Material of optical surface | Plastic |
| Reflector included in the scope of delivery | No |
| Sensor length | 70 mm |
| Storage temperature | 70 °C |
| Storage temperature | -40 °C |
| Thread length | 35 mm |
| Thread pitch | 1 mm |
| Thread size, metric | 18 |
| 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 |
| Max. switching distance | 200 mm |
| No-load current | 25 mA |
| Number of pins | 4 |
| Number of switching outputs | 1 |

ELECTRICAL DATA

| | |
|--|---------------------------|
| 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 | Connector M12 |
| 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 |

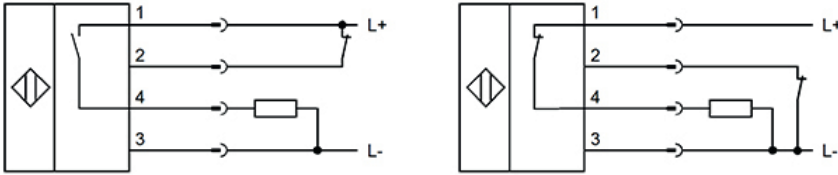
OPTICAL DATA

| | |
|---------------------------|----------------|
| 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 |

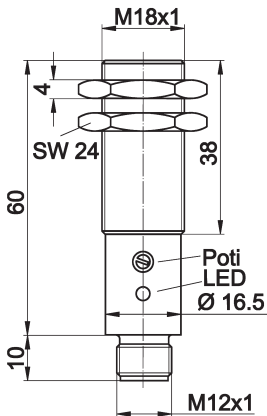
CONNECTION



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.