

OTQ40270

OPTICAL SENSORS • DIFFUSE REFLECTION SENSORS WITH BACKGROUND SUPPRESSION

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) | 50 °C |
| Ambient temperature (MIN) | -10 °C |
| Cable length | 0.2 m |
| Degree of protection (IP) | IP65 |
| Housing design | Cuboid |
| Housing material | Plastic ASA |
| Material of cable sheath | PVC |
| Material of optical surface | PMMA |
| Number of wires | 3 |
| Reflector included in the scope of delivery | No |
| Sensor height | 44.8 mm |
| Sensor length | 6.2 mm |
| Sensor width | 4 mm |
| Wire cross section | 0.1 mm ² |

ELECTRICAL DATA

| | |
|---------------------------------|--------|
| Adjustment range (MAX) | 30 mm |
| Adjustment range (MIN) | 30 mm |
| Analogue output 0 mA ... 20 mA | No |
| Analogue output 0 V ... 10 V | No |
| Analogue output -10 V ... +10 V | No |
| Analogue output 4 mA ... 20 mA | No |
| Decay time | 0.5 ms |
| Interference suppression | Yes |
| Max. output current | 50 mA |
| Max. switching distance | 30 mm |
| No-load current | 30 mA |

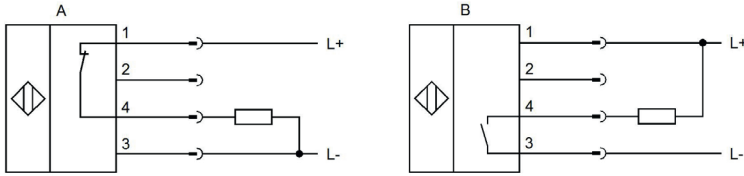
ELECTRICAL DATA

| | |
|---------------------------------------|--------------------|
| Number of pins | 4 |
| Number of switching outputs | 1 |
| Operating voltage (MAX) | 30 V |
| Operating voltage (MIN) | 11 V |
| Rated switching distance | 30 mm |
| Response time | 0.5 ms |
| Reverse polarity protection | Yes |
| Sensing range (MAX) | 30 mm |
| Sensing range (MIN) | 30 mm |
| Short-circuit-proof | Yes |
| Switching frequency | 1000 Hz |
| Type of electrical connection | Cable connector M8 |
| Type of switching function | Push-pull |
| Type of switching output | PNP/NPN |
| Voltage drop | 2 V |
| Voltage type | DC |
| With LED display | Yes |
| With LED display (functional reserve) | Yes |
| With LED display (signal) | Yes |
| With other analog output | No |

OPTICAL DATA

| | |
|---------------------------|-------------------------|
| Background suppression | Yes |
| Light beam form | Point |
| Light source | Polarity free red light |
| Light spot | 3.14 mm ² |
| Small light beam diameter | Yes |
| Triangulation | Background suppression |
| Wavelength of the sensor | 660 nm |

CONNECTION

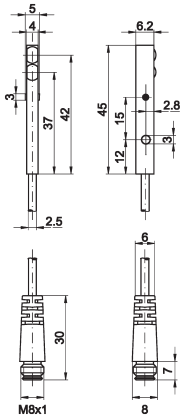


Colors: 1 = BN (brown), 2 = WH (white), 3 = BU (blue), 4 = BK (black)

Functions: 1 = L+, 2 = n. c., 3 = L-, 4 = PNP NC

1 = L+, 2 = n. c., 3 = L-, 4 = NPN 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!

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