

OT590586

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) | 55 °C |
| Ambient temperature (MIN) | -25 °C |
| Degree of protection (IP) | IP67 |
| Housing design | Cuboid |
| Housing material | Plastic ABS |
| Material of optical surface | Polycarbonate |
| Reflector included in the scope of delivery | No |
| Sensor height | 68 mm |
| Sensor length | 68 mm |
| Sensor width | 26 mm |
| Shock resistance | 50 g |
| Strong vibration / motion | Yes |
| Vibration resistance | 55 Hz |

ELECTRICAL DATA

| | |
|---------------------------------|---------|
| Adjustment range (MAX) | 2500 mm |
| Adjustment range (MIN) | 200 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 |
| Hysteresis | 10 % |
| Max. output current | 100 mA |
| Max. switching distance | 2500 mm |
| No-load current | 45 mA |
| Number of pins | 4 |
| Number of switching outputs | 1 |

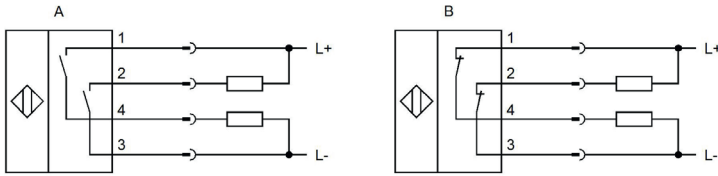
ELECTRICAL DATA

| | |
|--|---|
| Operating voltage (MAX) | 24 V |
| Operating voltage (MIN) | 12 V |
| Rated control supply voltage U_s at DC (MAX) | 24 V |
| Rated control supply voltage U_s at DC (MIN) | 12 V |
| Rated switching distance | 2500 mm |
| Response time | 2 ms |
| Reverse polarity protection | Yes |
| Scanning function | Light-/dark-on mode |
| Sensing range (MAX) | 2500 mm |
| Sensing range (MIN) | 200 mm |
| Setting procedure | Manual adjustment |
| Short-circuit-proof | Yes |
| Switching frequency | 250 Hz |
| Type of electrical connection | Connector M12 |
| Type of switching function | Normally closed contact/normally open contact |
| Type of switching output | PNP+NPN |
| Voltage drop | 1 V |
| Voltage type | DC |
| With LED display | Yes |
| With LED display (functional reserve) | Yes |
| With LED display (signal) | Yes |
| With other analog output | No |
| With time function | Yes |

OPTICAL DATA

| | |
|--------------------------|---|
| Background suppression | Yes |
| Light beam form | Point |
| Light source | Infrared light |
| Triangulation | Foreground suppression / background suppression |
| Wavelength of the sensor | 880 nm |

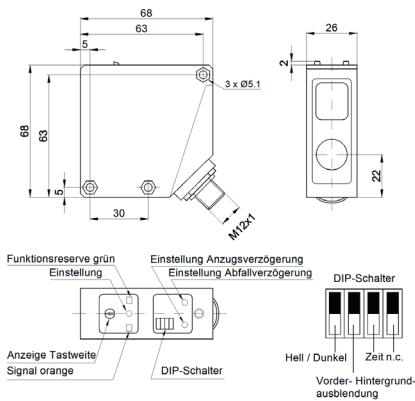
CONNECTION



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

Functions: 1 = L+, 2 = NPN NO/NC, 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.