

# OYQ30103

## Optical sensors • Through-beam sensors

Optical Sensor, Light Barrier, 10 x 3.5 x 14 mm, Sensing Distance: 1 m, 12–24 V DC, PNP NO, 2 m PVC cable, IP67, PET + Polyarylate plastic, Unpolarized Red Light

including Nut, Screw, Transmitter and receiver, Washer



Optical sensors operate contactless. They detect objects regardless of their characteristics (e.g., shape, color, surface texture, material). Their basic operating principle is based on the transmission and reception of light. There are three versions: 1. The through-beam sensor consists of two separate devices—a transmitter and a receiver—that are aligned with each other. When the light beam between the two devices is interrupted, the switching output integrated into the receiver changes its status. 2. In a reflective light barrier, the transmitter and receiver are housed in a single device. The transmitted light beam is reflected toward the receiver by a reflector mounted opposite it. As soon as the light beam is interrupted, the switching output integrated into the device changes its status. 3. In a diffuse reflection sensor, the transmitter and receiver are housed in a single device. The emitted light beam is reflected by the object to be detected. As soon as the receiver detects the reflected light, the switching output integrated into the device changes its status.

### Electrical features

|                               |                                                        |
|-------------------------------|--------------------------------------------------------|
| Response/decay time           | 0.5 ms                                                 |
| Display                       | LED display                                            |
| Type of switching function    | Normally open contact (NO)                             |
| Type of electrical connection | Cable                                                  |
| Type of switching output      | PNP                                                    |
| Rated switching current       | 50 mA                                                  |
| No-load current, receiver     | 15 mA                                                  |
| No-load current, transmitter  | 10 mA                                                  |
| Residual ripple               | 10 %                                                   |
| Switching distance            | 0 - 1000 mm                                            |
| Switching frequency           | 1000 Hz                                                |
| Voltage drop                  | 2 V                                                    |
| Scanning function             | Dark switching                                         |
| Decay time                    | 0.5 ms                                                 |
| Absolute repeat accuracy      | 0.05 mm                                                |
| Operating voltage (DC)        | 12 - 24 V                                              |
| protection functions          | short circuit protection   reverse polarity protection |

**Mechanical features**

|                                |                     |
|--------------------------------|---------------------|
| Number of cores                | 3                   |
| Conductor cross-section        | 0.1 mm <sup>2</sup> |
| Design                         | Cuboid              |
| Width                          | 14.5 mm             |
| Height                         | 10 mm               |
| Cable length                   | 2 m                 |
| Storage temperature            | -30 - 70 °C         |
| Length                         | 3.5 mm              |
| Shock resistance               | 50 g                |
| Degree of protection (IP)      | IP67                |
| Vibration resistance           | 500 Hz              |
| Active area material of sensor | Plastic (PAR)       |
| Housing material               | plastic PET         |
| material of cable sheath       | plastic (PVC)       |
| Working distance range         | 0 - 1000 mm         |
| Ambient temperature            | -25 - 55 °C         |
| Line diameter                  | 2.5 mm              |

**Optical features**

|                          |                         |
|--------------------------|-------------------------|
| Light source             | Polarity free red light |
| Light beam form          | Point                   |
| Wavelength of the sensor | 680 nm                  |

**Other features**

|         |               |
|---------|---------------|
| Version | Light barrier |
|---------|---------------|

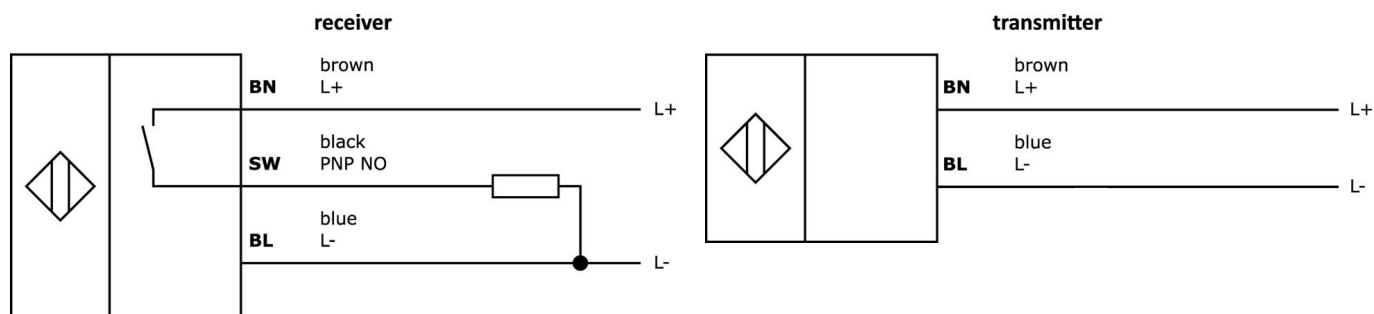
**Classification**

|        |
|--------|
| ETIM 8 |
|--------|

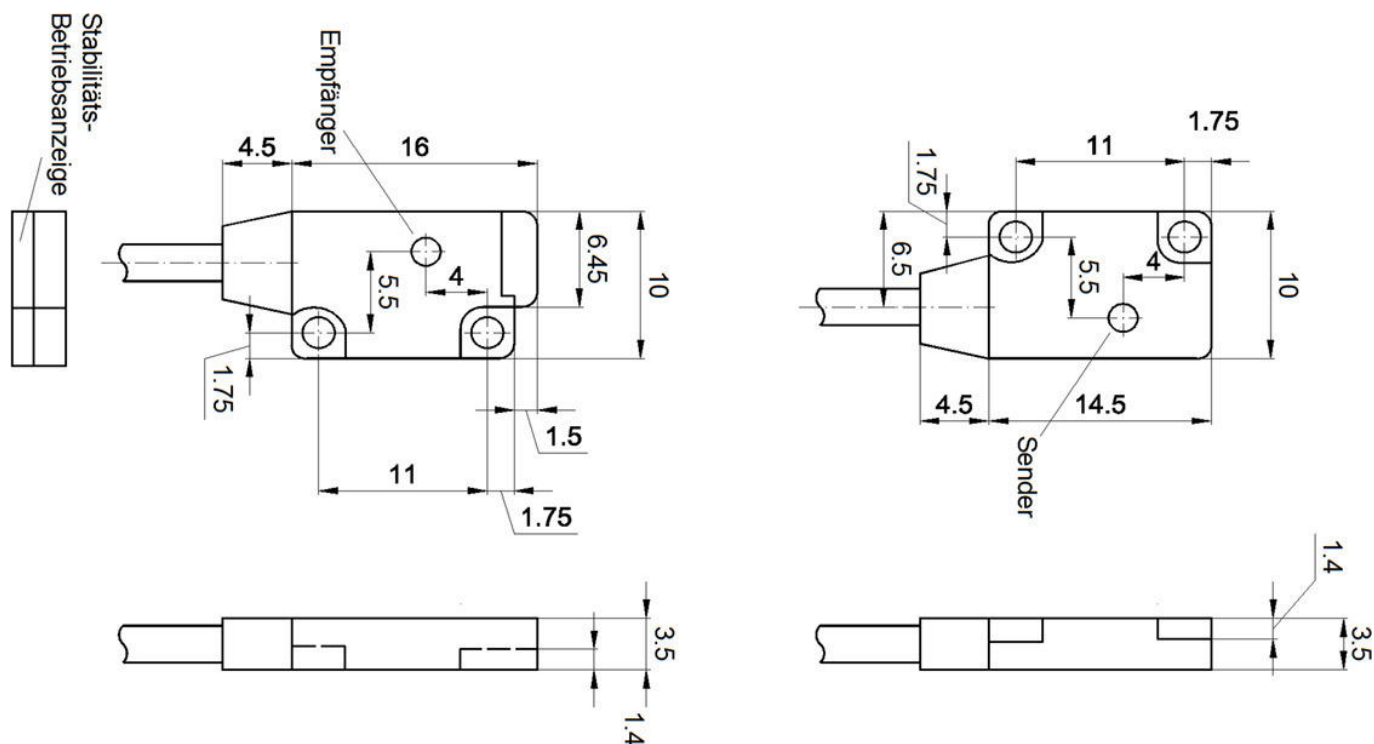
**More**

|                       |                     |
|-----------------------|---------------------|
| IPF Product Group     | 100 optical sensors |
| packaging dimensions  | 123 x 77 x 25 mm    |
| gross weight          | 50 g                |
| customs tariff number | 85365019            |
| WEEE number           | 40951076            |
| OzDS-compliant        | Yes                 |
| POP-compliant         | Yes                 |
| Reach-compliant       | Yes                 |
| RoHS-compliant        | Yes                 |

## Connection



## Dimensional drawing



## Extract accessories program

### AO000077



accessories optical, Mounting angle bracket, M2x0.4 22long, Mounting material for sensor, brackets, Steel

### AO000078



accessories optical, Mounting angle bracket, M2x0.4 10long, Mounting material for sensor, brackets, Steel

### VK003076



Cable connector, Angular, Suitable for self-assembly, Soldering connection, 4A, 60V, -40-85°C, M8 Male (connector) 3pin, IP67, Brass

### VK003078



Cable connector, Straight, Suitable for self-assembly, Soldering connection, Ø3.5-5mm, 4A, 60V, -40-85°C, M8 Male (connector) 3pin, IP67, Brass

### VK003026



Cable connector, Angular, Suitable for self-assembly, Screw connection, Ø3-6.5mm, 4A, 240V, -25-90°C, M12 Male (connector) 4pin, IP67, PBT

### VK003028



Cable connector, Straight, Suitable for self-assembly, Screw connection, Ø3-6.5mm, 4A, 240V, -25-90°C, M12 Male (connector) 4pin, IP67, PBT

### AY000141



Plastic sheath, Ø17mm, Inner diameter 10mm, -40-250°C, Glass fiber with silicone rubber, Short-term resistance to weld spatter 1200°C, Tensile strength 400N, Flexible, Flame retardant, yard good

### AO000701



Accessories Optical, aperture, 11x15x5mm, metal

You can find further accessories on our homepage



### Installation

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



### Disposal

WEEE number according to § 6 para. 3 ElektroG: 40951076

## 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.