

## OT180405

### Optical sensors • Diffuse reflection sensors with intensity differentiation

sensor optical, diffuse-reflection sensor, M18x1 50long, Sn: 40-600, 10-35V DC, 2x PNP Anticoincidence, Cable 2m PVC, IP67, Brass Chrome-plated+Glass, 1kHz, Polarity free red light, Point, Manual adjustment

including 2x Nut, 2x Toothed washer



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.

#### Electrical features

|                                    |                     |
|------------------------------------|---------------------|
| Response/decay time                | 0.5ms               |
| Number of switching outputs        | 2                   |
| Display                            | LED display         |
| Type of switching function         | Exclusive-OR        |
| Type of electrical connection      | Cable               |
| Type of switching output           | PNP                 |
| Rated switching current            | 200mA               |
| Readiness delay                    | 60ms                |
| Setting procedure                  | Manual adjustment   |
| Relative hysteresis                | 10%                 |
| Short-circuit protection           | Yes                 |
| No-load current                    | 20mA                |
| Line diameter                      | 5mm                 |
| Switching distance                 | 40 - 600mm          |
| Switching frequency                | 1000Hz              |
| Protection class                   | III                 |
| Voltage drop                       | 2V                  |
| Clock frequency of the transmitter | 15kHz               |
| Scanning function                  | Light-/dark-on mode |
| Reverse polarity protection        | Yes                 |
| Decay time                         | 0.5ms               |
| Operating voltage (DC)             | 10 - 35V            |

**Mechanical features**

|                                |                        |
|--------------------------------|------------------------|
| Number of cores                | 4                      |
| Conductor cross-section        | 0.25mm <sup>2</sup>    |
| Design                         | Cylinder, screw-thread |
| Thread length                  | 50mm                   |
| Thread pitch                   | 1mm                    |
| Cable length                   | 2m                     |
| Length                         | 50mm                   |
| Maximum tightening torque      | 20Nm                   |
| Surface                        | Chrome-plated          |
| Degree of protection (IP)      | IP67                   |
| Active area material of sensor | glass                  |
| Housing material               | Brass                  |
| Material of cable sheath       | Plastic (PVC)          |
| Thread dimension               | M18                    |
| Ambient temperature            | -25 - 55°C             |

**Optical features**

|                          |                         |
|--------------------------|-------------------------|
| Light source             | Polarity free red light |
| Light exit               | axial                   |
| Light beam form          | Point                   |
| Wavelength of the sensor | 660nm                   |

**Other features**

|                           |                                |
|---------------------------|--------------------------------|
| Feeding technology        | Yes                            |
| Reference medium / object | Material with 90% reflectivity |
| Ambient temperature       | -25 - 55°C                     |

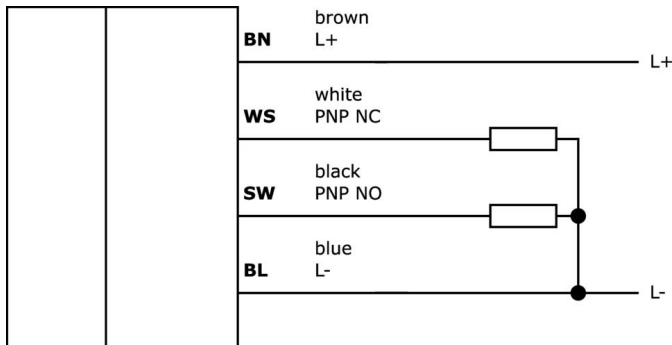
**Classification**

|        |                                 |
|--------|---------------------------------|
| ETIM 8 | EC001821 Light sensor energetic |
|--------|---------------------------------|

**More**

|                       |                     |
|-----------------------|---------------------|
| IPF Product Group     | 100 optical sensors |
| packaging dimensions  | 215 x 180 x 20 mm   |
| gross weight          | 124 g               |
| Customs tariff number | 85365019            |
| WEEE number           | 40951076            |
| Reach-compliant       | Yes                 |
| RoHS-compliant        | Yes                 |

## Connection



## 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.

For suitable connection and mounting accessories, please refer to our website [www.ipf-electronic.com](http://www.ipf-electronic.com).

## Dimensional drawing

