

## PT170420

### LASER 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 FEATURES

Ambient temperature	-10 °C ... 50 °C
Degree of protection (IP)	IP67
Housing design	Cuboid
Housing material	Zinc die-cast
Material of optical surface	Glass
Reflector included in the scope of delivery	-
Sensor height	50 mm
Sensor length	50 mm
Sensor width	15.4 mm

#### ELECTRICAL FEATURES

Adjustment range	25 mm ... 300 mm
Analog output 0 mA ... 20 mA	-
Analog output 0 V ... 10 V	-
Analog output -10 V ... +10 V	-
Analog output 4 mA ... 20 mA	-
Decay time	0.6 ms
Interference suppression	+
Laser power	1 mW
Max. output current	200 mA
Max. switching distance	300 mm
No-load current	35 mA
Number of pins	4
Number of switching outputs	2
Operating voltage	10 V ... 30 V
Rated switching distance	300 mm
Relative repeat accuracy	0.1 mm
Response time	0.6 ms
Reverse polarity protection	+
Scanning function	Light-/dark-on mode
Sensing range	25 mm ... 300 mm
Setting procedure	Manual adjustment
Short-circuit protection	+

## ELECTRICAL FEATURES

Switching frequency	800 Hz
Type of electrical connection	Connector M12
Type of switching function	Normally closed contact/normally open contact
Type of switching output	PNP
Voltage drop	2 V
Voltage type	DC
With LED display	+
With LED display (operation)	+
With LED display (signal)	+
With other analog output	-
With time function	-

## OPTICAL FEATURES

Laser class	2
Light source	Laser diode, red light
Light spot	0.01 mm <sup>2</sup>
Wavelength of the sensor	650 nm
Triangulation	Background suppression
Resolution	0.1 mm
Light beam form	Point
Background suppression	+
Laser focus distance	80 mm

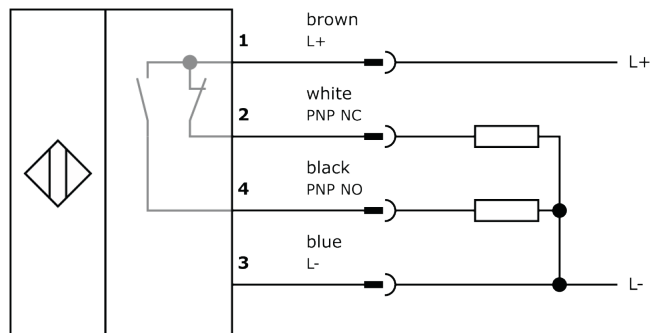
## Other

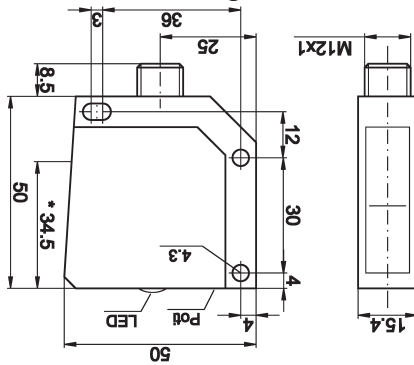
Packaging dimensions	77.0mm x 25.0mm x 123.0mm
Shipping weight	0.12kg
Tariff code	85365019

## Classification

ipf product group	160
eClass 8.0	27270904
eClass 9.0	27270904
eClass 9.1	27270904
ETIM-5.0	EC002719
ETIM-6.0	EC002719
ETIM-7.0	EC002719

## Connection



**Dimensional drawing****Installation**

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

**Disposal****Software**

Please download the software or driver required for operating your new device on our homepage: [www.ipf.de](http://www.ipf.de)

**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.

LED lighting systems can generate intensive UV radiation, which can damage your eyes in case of improper use. The manufacturer cannot be held responsible for damages that result from improper use or connection.