

OT0591A4

Optical sensors • Diffuse reflection sensors with intensity differentiation

Optical sensor, diffuse reflection sensor, M5x0.5, 36 long, Sn: 10, 10–30 V DC, 1x PNP NO, IO-Link, 3-pin cable, 2 m PUR (polyurethane), IP67, V2A+PMMA, 1 kHz, unpolarized red light, spot

including Nut, Toothed 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
Number of switching outputs	1
Display	LED display
Type of switching function	Normally open contact (NO)
Type of electrical connection	Cable
Type of switching output	PNP
Rated switching current	100 mA
Readiness delay	20 ms
Operating principle	intensity differentiation
No-load current	12 mA
Number of pins	3
Residual ripple	10 %
Switching distance	10 mm
Switching frequency	1000 Hz
Protection class	III
Voltage drop	2 V
Scanning function	Light switching
Decay time	0.5 ms
supported communication interface	IO-Link
Operating voltage (DC)	10 - 30 V
protection functions	short circuit protection reverse polarity protection

Mechanical features

Number of cores	3
Conductor cross-section	0.14 mm ²
Design	Cylinder, screw-thread
Thread length	30 mm
Thread pitch	0.5 mm
Cable length	2 m
Length	36 mm
Maximum tightening torque	1 Nm
Degree of protection (IP)	IP67
Active area material of sensor	Plastic (PMMA)
Housing material	stainless steel (V2A)
material of cable sheath	plastic (PUR)
Thread dimension	M5
Ambient temperature	-25 - 65 °C
Line diameter	3.1 mm

Optical features

Light source	Polarity free red light
Light exit	axial
Light beam form	Point
Wavelength of the sensor	630 nm

Other features

IO-Link version	V1.0.1
Reference medium / object	Material with 90% reflectivity

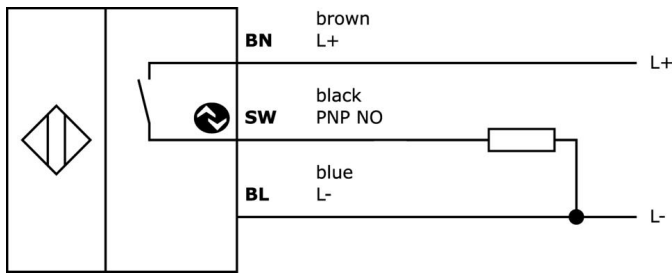
Classification

ETIM 8

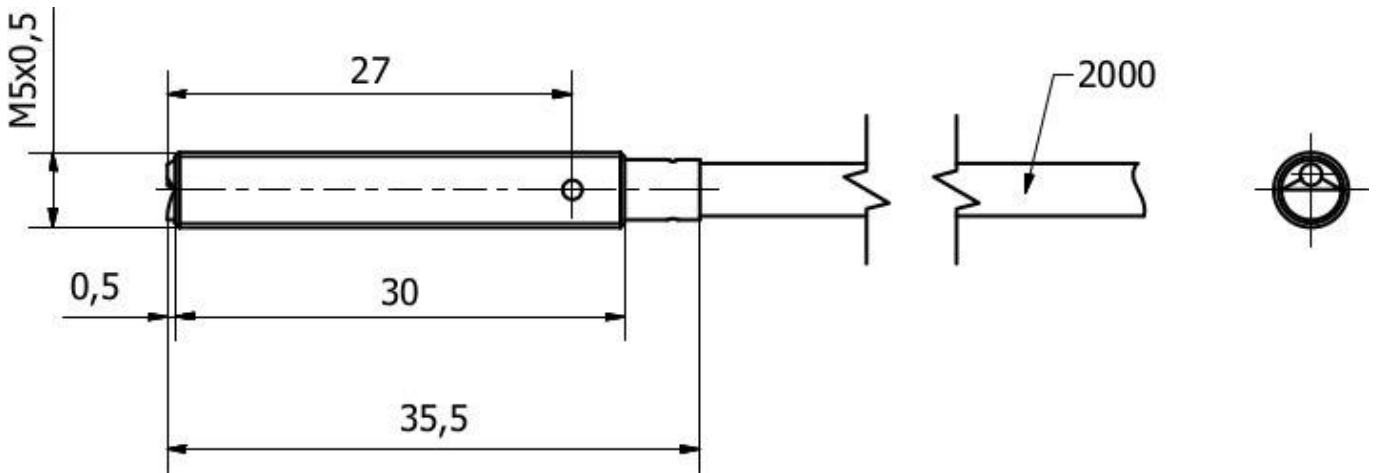
More

IPF Product Group	100 optical sensors
packaging dimensions	210 x 180 x 7 mm
gross weight	35 g
customs tariff number	85365019
WEEE number	40951076
Reach-compliant	Yes
RoHS-compliant	Yes

Connection



Dimensional drawing



Extract accessories program

VY000004



DC power supply, sensor tester, 120x26x72mm, 18V, 0.04A, Spring clamp connection 4pin, IP20, Plastic

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

VY000005



IO-Link master, 41x24x67mm, IO-Link, M12, With USB interface

AY000018



accessories sensor, Ø5mm, Aluminum, For sensor 5mm, for Wall mounting, Screw mounting

AY000023



accessories, Hexagon nut, M5x0.5, Wrench size 7mm, Brass Nickel-plated

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.
- / Any software, drivers or IODD files that may be required to operate your device can be downloaded free of charge from our homepage: www.ipf-electronic.com