

## OT450521

### Optical sensors • Diffuse reflection sensors with background suppression

Sensor Optical, diffuse reflection sensor, 56x32x18mm, Sn: 30-400, 10-30V diagnostic coverage, 1x PNP/NPN push-pull, IO-Link, M12 plug-in connector 4-pin, IP67, plastic ASA+PMMA, 1kHz, red light unpolarized, dot, teach-in



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	0.49ms
Number of switching outputs	1
Display	LED display
Type of switching function	Normally closed contact/normally open contact
Type of electrical connection	Connector M12
Type of switching output	PNP/NPN
Rated switching current	100mA
Setting procedure	Teach-In
Short-circuit protection	Yes
No-load current	30mA
Number of pins	4
Switching distance	60 - 400mm
Switching frequency	1000Hz
Voltage drop	3V
Scanning function	Light-/dark-on mode
Reverse polarity protection	Yes
Decay time	0.49ms
Supported communication interface	IO-Link
Operating voltage (DC)	10 - 30V
Dead zone	0 - 30
Interference suppression	Yes

**Mechanical features**

Design	Cuboid
Width	18mm
Height	56.2mm
Length	32.2mm
Degree of protection (IP)	IP67
Active area material of sensor	Plastic (PMMA)
Housing material	Plastic ASA
Ambient temperature	-25 - 60°C

**Optical features**

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

**Other features**

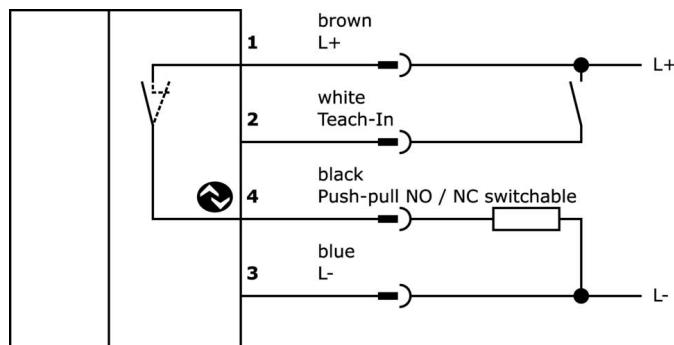
IO-Link version	V1.1
Operational mode	Background suppression
Reference medium / object	Material with 90% reflectivity

**Classification**

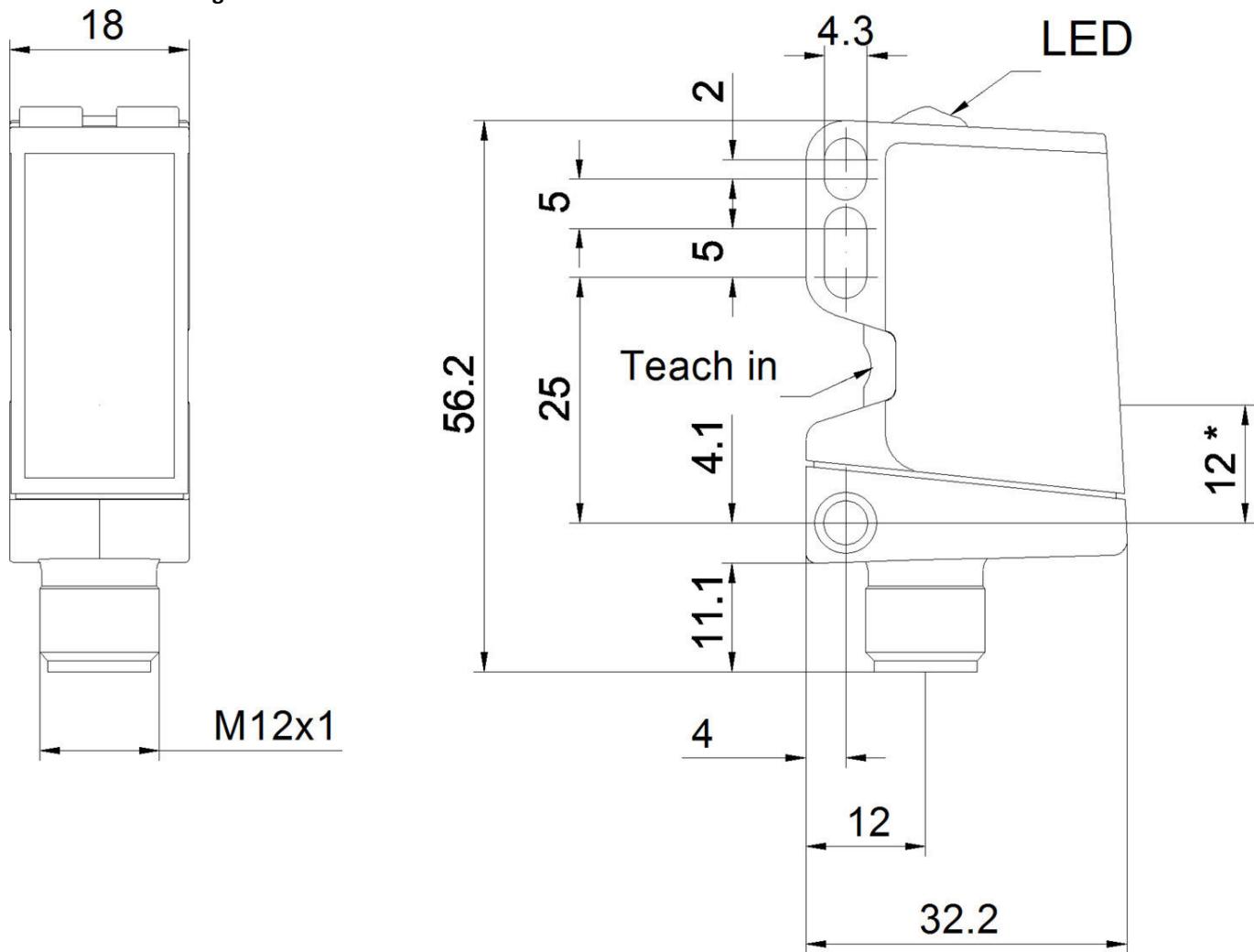
ETIM 8	EC002719 Photoelectric proximity switch with background suppression
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**More**

IPF Product Group	100 optical sensors
packaging dimensions	123 x 77 x 25 mm
gross weight	40 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

**VK030F21**

Connection cable, 0.3m, M12  
socket 4-pin angular, M12  
connector 4-pin straight, 4x0.  
34mm<sup>2</sup>, 240V, IP67, suitable for  
trailing chain and torsion resistant,  
oils and cooling lubricants,  
welding area, silicone-free

**VK030F25**

Connection cable, 0.3m, M12  
socket 4-pin straight, M12  
connector 4-pin straight, 4x0.  
34mm<sup>2</sup>, PUR (polyurethane),  
240V, IP67, suitable for trailing  
chain and torsion resistant, oils  
and cooling lubricants, welding  
area, silicone-free

**VK200421**

Connection cable, 2m, M12  
Female (socket) 4pin Angular, Free  
conductor end, 4x0.34mm<sup>2</sup>, PUR  
(Polyurethane), Ø4.7mm, -30-  
90°C, IP67, With LED display,  
Suitable for trailing chain and  
torsion resistant, Oil and cooling  
lubricants, Welding area, Silic...

**VK500421**

Connection cable, 5m, M12  
Female (socket) 4pin Angular, Free  
conductor end 4pin, 4x0.34mm<sup>2</sup>,  
PUR (Polyurethane), Ø4.7mm, -30-  
90°C, IP67, With LED display,  
Suitable for trailing chain and  
torsion resistant, Oil and cooling  
lubricants, Welding area, ...

**VK200321**

Connection cable, 2m, M12  
Female (socket) 4pin Angular, Free  
conductor end, 4x0.34mm<sup>2</sup>, PUR  
(Polyurethane), Ø4.7mm, 250V, -  
40-90°C, IP67, Suitable for trailing  
chain and torsion resistant, Oil and  
cooling lubricants, Welding area,  
Silicone-free

**VK200325**

Connection cable, 2m, M12  
Female (socket) 4pin Straight, Free  
conductor end, 4x0.34mm<sup>2</sup>, PUR  
(Polyurethane), Ø4.7mm, 250V, -  
40-90°C, IP67, Suitable for trailing  
chain and torsion resistant, Oil and  
cooling lubricants, Welding area,  
Silicone-free

**VK003020**

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

**VK003024**

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

**VK003021**

Cable socket, Angular, Suitable for  
self-assembly, Screw connection,  
Ø3-6.5mm, 4A, 60V, -25-90°C,  
M12 Female (socket) 5pin, IP67,  
PBT

You can find further accessories on our homepage

**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).

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](http://www.ipf-electronic.com)