

OT120421

Optical sensors • Diffuse reflection sensors with background suppression

Optical sensor, diffuse reflection sensor, M12x1, 60 mm long, Sn: 25–100, 10–30 V DC, PNP exclusive-OR, 4-pin M12 connector, IP67, nickel-plated (n-pltd) brass + PMMA, 500 Hz, unpolarized red light, spot

including Nut, Toothed washer

- / Robust metal housing
- / Setting by potentiometer
- / M12 plug connection



visible red light Point Source LED

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	1 ms
Number of switching outputs	2
Display	LED display
Type of switching function	Exclusive-OR
Type of electrical connection	Connector M12
Type of switching output	PNP
Rated switching current	100 mA
Setting procedure	Potentiometer
Operating principle	background suppression
No-load current	40 mA
Number of pins	4
Reaction time	1 ms
Residual ripple	10 %
Switching distance	25 - 100 mm
Switching frequency	500 Hz
Voltage drop	2.5 V
Scanning function	Light-/dark-on mode
Operating voltage (DC)	10 - 30 V
protection functions	short circuit protection reverse polarity protection

Mechanical features

Design	Cylinder, screw-thread
Diameter	12 mm
Thread length	32 mm
Thread pitch	1 mm
Length	60 mm
Maximum tightening torque	7 Nm
Degree of protection (IP)	IP67
Active area material of sensor	Plastic (PMMA)
Housing material	nickel-plated brass
Thread dimension	M12
Ambient temperature	-5 - 55 °C

Optical features

Light source	Polarity free red light
Light exit	axial
Light beam form	Point
Wavelength of the sensor	650 nm
Light spot diameter at the end of the measuring range	6 mm

Other features

Reference medium / object	Material with 90% reflectivity
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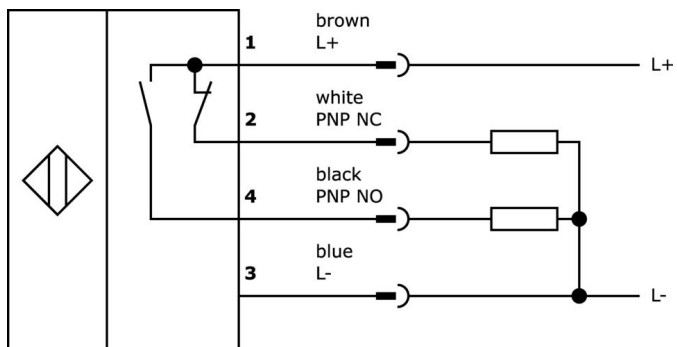
Classification

ETIM 8

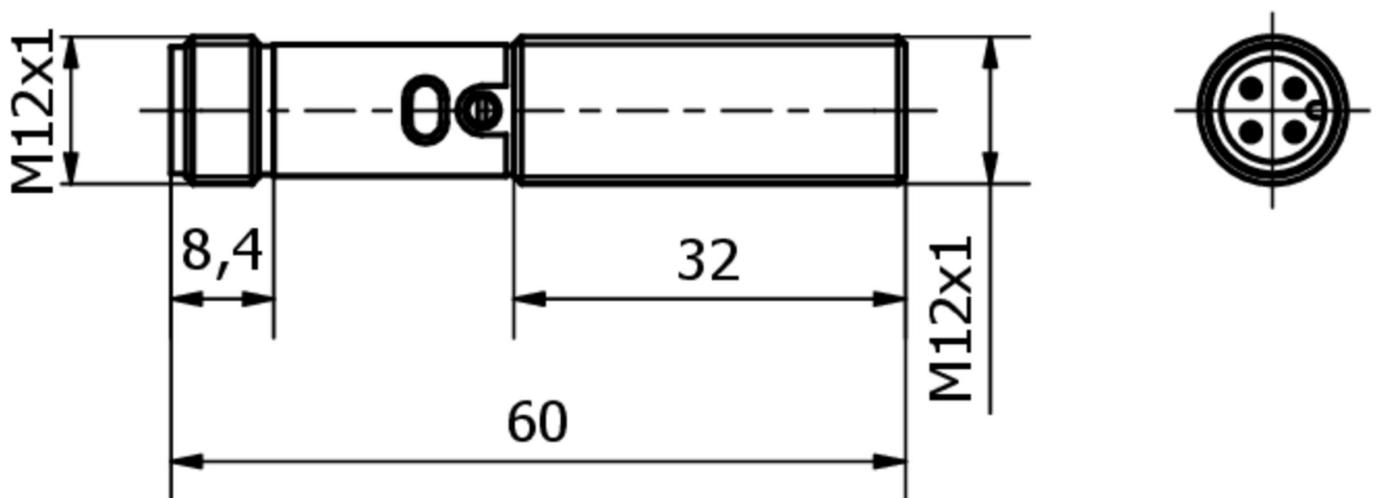
More

IPF Product Group	100 optical sensors
packaging dimensions	170 x 100 x 15 mm
gross weight	34 g
customs tariff number	85365019
WEEE number	40951076
OzDS-compliant	Yes
POP-compliant	Yes
Reach-compliant	Yes
RoHS-compliant	Yes
MTTF (40°C)	631 year(s)

Connection



Dimensional drawing



Extract accessories program

VK200321



Connection cable, 2m, M12 socket 4-pin angular, free cable end, 4x0.34mm², PUR (polyurethane), Ø4.7mm, 250V, -40-90°C, IP67, suitable for trailing chain and torsion resistant, oils and cooling lubricants, welding area, silicone-free

VK200325



Connection cable, 2m, M12 socket 4-pin straight, free cable end, 4x0.34mm², PUR (polyurethane), Ø4.7mm, 250V, -40-90°C, IP67, suitable for trailing chain and torsion resistant, oils and cooling lubricants, welding area, silicone-free

VK200421



Connection cable, 2m, M12 socket 4-pin angular, free cable end, 4x0.34mm², PUR (polyurethane), Ø4.7mm, -30-90°C, IP67, LED, suitable for trailing chain and torsion resistant, oils and cooling lubricants, welding area, silicone-free

VK500421



Connection cable, 5m, M12 socket 4-pin angular, free cable end 4-pin, 4x0.34mm², PUR (polyurethane), Ø4.7mm, -30-90°C, IP67, LED, suitable for trailing chain and torsion resistant, oils and cooling lubricants, welding area, silicone-free

VK030F21



Connection cable, 0.3m, M12 socket 4-pin angular, M12 connector 4-pin straight, 4x0.34mm², 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, 4x0.34mm², PUR (polyurethane), 240V, IP67, suitable for trailing chain and torsion resistant, oils and cooling lubricants, welding area, silicone-free

VK030F23



Connection cable, 0.3m, M12 socket 4-pin angular, M12 connector 4-pin straight, 4x0.34mm², PUR (polyurethane), IP67, LED, suitable for trailing chain and torsion resistant, oils and cooling lubricants, welding area, silicone-free

VK030F26



Connection cable, 0.3m, M12 socket 4-pin straight, M12 connector 4-pin straight, 4x0.34mm², PUR (polyurethane), IP67, LED, suitable for trailing chain and torsion resistant, oils and cooling lubricants, welding area, silicone-free

VK003020



Cable socket, angular, self-assembly, screw connection, Ø3-6.5mm, 4A, 240V, -25-90°C, M12 socket 4-pin, IP67, PBT

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.