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.

TECHNICAL DATA

Feeding technology	YES
Ring-shaped sensors	NO
Ambient temperature (min/max)	0 °C / 55 °C
Degree of protection (IP)	IP67
Ejection control	NO
Fork-/angular shaped	NO
Frame-shaped	NO
Heavy soiling	NO
Housing design	Cylinder, screw-thread
Housing material	Stainless steel V2A
Increased ambient temperatures >70°C	NO
Material of optical surface	Glass
Punching tools	NO
Reflector included in the scope of delivery	NO
Sensor length	45 mm
Strong vibration / motion	NO
Thread length	30 mm
Thread pitch	0.5 mm
Thread size, metric	5
With interchangeable lens	NO
Alarm output	NO
Analogue output -10 V ... +10 V	NO
Analogue output 0 V ... 10 V	NO
Analogue output 0 mA ... 20 mA	NO
Analogue output 4 mA ... 20 mA	NO
Clock frequency of the transmitter	1 kHz
Decay time	2.5 ms
High repeat accuracy	NO

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optical sensors

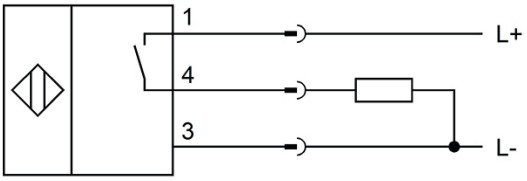
TECHNICAL DATA

Hysteresis	10 %
Interference suppression	NO
Max. output current	100 mA
Max. switching distance	50 mm
No-load current	15 mA
Number of pins	3
Number of semiconductor outputs with signaling function	1
Operating voltage (min/max)	10 V / 30 V
Polarizing filter	NO
Pre-failure message	NO
Rated control supply voltage Us at DC (min/max)	24 V / 24 V
Readiness delay	20 ms
Residual ripple	20 %
Response time	2.5 ms
Reverse polarity protection	YES
Scanning function	Light switching
Sensing range (min/max)	50 mm / 50 mm
Short-circuit-proof	YES
Suitable for safety functions	NO
Switching frequency	200 Hz
Type of electrical connection	Connector M8
Type of switching function	Normally open contact (NO)
Type of switching output	PNP
USB connection	NO
Voltage drop	2 V
Voltage type	DC
With LED display	YES
With communication interface, AS-Interface	NO
With communication interface, CANOpen	NO
With communication interface, DeviceNet	NO
With communication interface, Ethernet	NO
With communication interface, INTERBUS	NO
With communication interface, PROFIBUS	NO
With communication interface, RS-232	NO
With communication interface, RS-422	NO
With communication interface, RS-485	NO
With communication interface, SSD	NO
With communication interface, SSI	NO
With communication interface, analog	NO
With monitoring function of downstream devices	NO
With other analog output	NO
With restart lock	NO
With time function	NO
Background suppression	NO
Color recognition	NO

TECHNICAL DATA

Contrast differentiation	NO
Light beam form	Point
Light source	Infrared light
Luminescence detection	NO
Small light beam diameter	NO
Wavelength of the sensor	880 nm

CONNECTION



Colors: 1 = BN (brown), 3 = BU (blue), 4 = BK (black)
Functions: 1 = L+, 3 = L-, 4 = pnp no

DIMENSIONAL DRAWING