

## OYQ40103

### OPTICAL SENSORS • THROUGH-BEAM SENSORS

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 DATA

Ambient temperature	-25 °C ... 55 °C
Cable length	2 m
Degree of protection (IP)	IP67
Housing design	Cuboid
Housing material	Plastic PET
Material of cable sheath	PVC
Material of optical surface	Polyallylate
Number of wires	3
Sensor height	4.5 mm
Sensor length	10 mm
Sensor width	14.5 mm
Shock resistance	50 g
Storage temperature	70 °C
Storage temperature	-30 °C
Vibration resistance	500 Hz
Wire cross section	0.1 mm <sup>2</sup>

#### ELECTRICAL DATA

Decay time	0.5 ms
IO-Link compatible	No
Max. output current	50 mA
Measuring range	0.5 m
No-load current, receiver	15 mA
No-load current, transmitter	10 mA
Operating voltage	12 V ... 24 V
Rated switching distance	500 mm
Relative repeat accuracy	50 µm

## ELECTRICAL DATA

Residual ripple	10 %
Response time	0.5 ms
Reverse polarity protection	Yes
Scanning function	Dark switching
Short-circuit-proof	Yes
Switching frequency	1000 Hz
Type of electrical connection	Cable
Type of input voltage	DC
Type of switching function	Normally open contact (NO)
Type of switching output	PNP
Voltage drop	2 V
Voltage type	DC
With LED display	Yes
With LED display (functional reserve)	Yes
With LED display (signal)	Yes
With time function	No

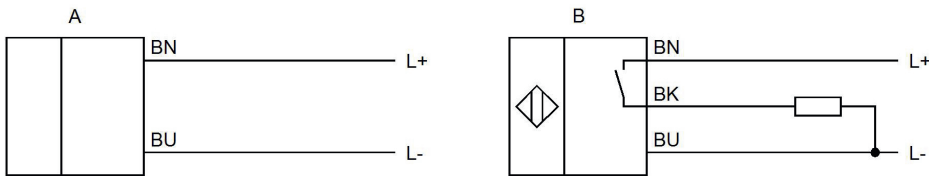
## OPTICAL DATA

Light beam form	Point
Light source	Polarity free red light
Wavelength of the sensor	680 nm

## OTHER DATA

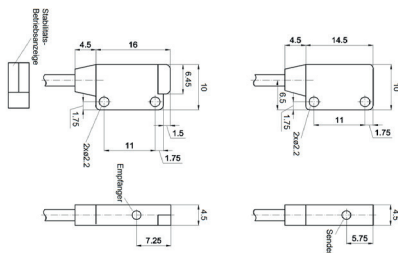
Scope of delivery of the one-way system	Transmitter and receiver
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## CONNECTION



**Colors:** BN (brown), BU (blue)  
**BN (brown), BU (blue), BK (black) Functions:** BN = L+, BU = L-  
 BN = L+, BU = L-, BK = PNP NO

## DIMENSIONAL DRAWING



## 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!