

OTQ8 Series

Optical Sensor, Diffuse Reflection Sensor, 25x16x8 mm, 10–30 V DC, 4-pin M8 connector, 0.2 m PVC cable, IP67, ASA+PMMA plastic, red light, teach-in

- / plastic housing
- / Setting by teach-in
- / M8 plug connection



visible red light Suppression of mutual interference

Intensity differentiation pushbuttons / Energy-Sensing

Energetic reflective sensors use the light intensity reflected by an object for object detection. The switching threshold is set to a defined signal value. However, the switching point depends not only on the distance between the sensor and the object, but also on the object's reflectance properties. Material, color, surface finish, gloss level, and texture influence the intensity of the reflected light and thus the signal received by the sensor.

Reflective sensors with background suppression

Reflective sensors with background suppression perform recognition to determine whether an object is within the set switching distance. Objects located outside this range are suppressed as background and do not trigger a switching signal. Unlike active reflective sensors, the switching point for reflective sensors with background suppression is largely independent of the object's reflectance properties. The product portfolio includes reflective sensors with background suppression that operate either according to the triangulation principle (mechanical/electronic) or the time-of-flight principle.

Triangulation (mechanical)

In triangulation sensors with mechanical switching point adjustment, the desired switching distance is determined by the position of the receiver element or the receiver lens. The setting is performed manually via a potentiometer, which allows the switching point to be adapted to the specific application.

Triangulation (electronic)

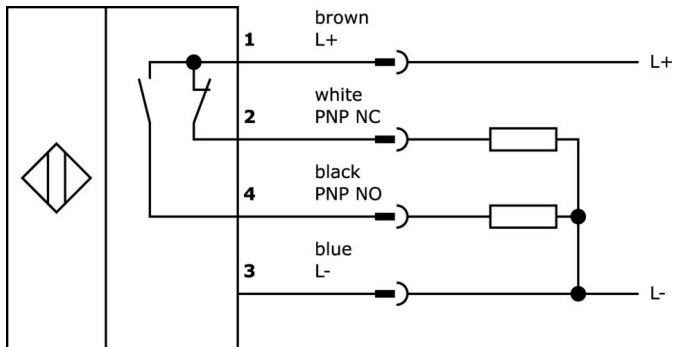
In triangulation sensors with electronic switching point adjustment, the light reflected by the object is projected onto a receiving element in the sensor, such as a PSD (Position Sensitive Device). The position of the light spot on the receiving element is electronically evaluated and used to determine the distance to the object. Depending on the sensor model, the switching point can be set either via a teach-in button or via IO-Link.

Time-of-Flight Measurement

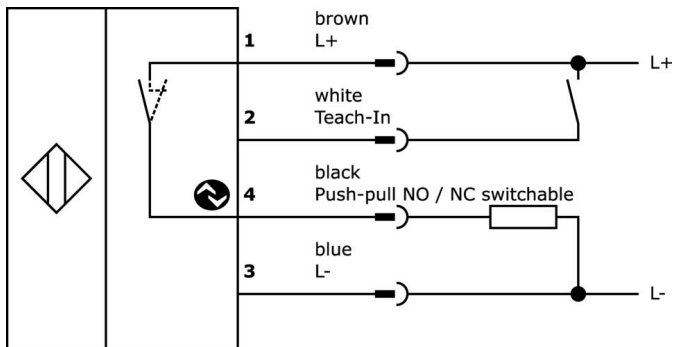
In reflective sensors with background suppression and Time-of-Flight (ToF) technology, the constant propagation velocity of light is used to measure distance. To do this, the sensor emits modulated light and detects the signal reflected by the object. The distance to the object is calculated based on the phase shift between the transmitted and received light. The system then checks whether the object is within the set switching distance. Depending on the sensor model, the switching point can be set using a potentiometer or via IO-Link.

Article No.	OTQ80470	OTQ80475	OTQ80477	OTQ80576
				
dimensions	15.8 x 8 x 25.1 mm			
Operating voltage	10–30 VDC			
Operating principle	Hintergrundausschleifung	Intensitätsunterscheidung	Hintergrundausschleifung	Hintergrundausschleifung
Measurement principle	Triangulation (elektronisch)	Intensitätsunterscheidung (energetisch)	Triangulation (elektronisch)	Triangulation (elektronisch)
Working distance range	3 - 132 mm	20 - 200 mm	3 - 132 mm	3 - 132 mm
Switching distance	20 - 120 mm	20 - 200 mm	20 - 120 mm	20 - 120 mm
Dead zone	0 - 3 mm	0 - 20 mm	0 - 3 mm	0 - 3 mm
Reference medium / object	Material with 90% reflectivity			
Light source	PinPoint-LED, Rotlicht gepulst	Polarity free red light	PinPoint-LED, Rotlicht gepulst	PinPoint-LED, Rotlicht gepulst
Wavelength of the sensor	644 nm			
Light beam form	Point	Point	Line	Point
Response/decay time	0.5 ms	0.25 ms	2 ms	0.25 ms
Display	Operating mode display: LED green Switching state display: yellow LED			
Electrical connection	M8 4-pin cable connector, 0.2 m			
Number of switching outputs	1			
Type of switching output	PNP	PNP	PNP	Push-pull
Type of switching function	Exclusive-OR	Exclusive-OR	Exclusive-OR	Normally closed (n.o. for PNP) Normally closed (n.c. for NPN) - Adjustable
Rated switching current	50 mA			
Switching frequency	1000 Hz	2000 Hz	250 Hz	2000 Hz
ardTEEL_Schutzfunktionen	Short circuit protection Reverse polarity protection			
Scanning function	Light-/dark-on mode			
Setting procedure	Teach-In	Teach-In	Teach-In	Teach-In Parameterization via IO-Link
Supported communication interface				IO-Link
Range of functions	Störunterdrückung			
Housing material	Plastic ASA			
Active area material of sensor	Plastic (PMMA)			
Material of cable sheath	Plastic (PVC)			
Ambient temperature	-25 - 50 °C			
Degree of protection (IP)	IP67			

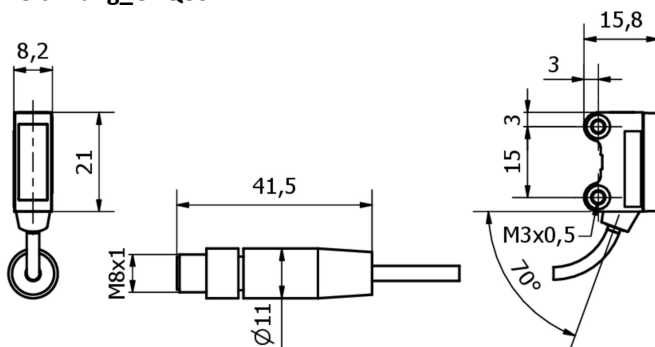
Anschlussbild_OTQ80470,_OTQ80475,_OTQ80477



Anschlussbild_OTQ80576



Zeichnung_OTQ80xxx



Extract accessories program

VK003171



Cable socket, Angular, Suitable for self-assembly, Screw connection, Ø5mm, 4A, 60V, -40-85°C, M8 Female (socket) 4pin, IP67, Polyamide PA

VK003175



Cable socket, Straight, Suitable for self-assembly, Screw connection, Ø3.5-5mm, 4A, 30V, -40-85°C, M8 Female (socket) 4pin, IP67, Brass

VK003S75



Cable socket, Straight, Suitable for self-assembly, Quick connection, Ø4-5.1mm, 4A, 32V, -25-85°C, M8 Female (socket) 4pin, IP67

VK200371



Connection cable, 2m, M8 socket 4-pin angular, free cable end, 4x0.34mm², PUR (polyurethane), Ø4.7mm, 30V, -30-90°C, IP67, suitable for trailing chain and torsion resistant, oils and cooling lubricants, welding area, silicone-free

VK200375



Connection cable, 2m, M8 socket 4-pin straight, free cable end, 4x0.34mm², PUR (polyurethane), Ø4.7mm, 30V, -30-90°C, IP67, suitable for trailing chain and torsion resistant, oils and cooling lubricants, welding area, silicone-free

AO000075



accessories optical, Mounting angle bracket, M3x0.5 12long, Mounting material for sensor, brackets, Steel

AO000076



accessories optical, Mounting angle bracket, M3x0.5 13long, Mounting material for sensor, brackets, Steel

AY000116



accessories sensor, Fixture kit, Metal, ball joint

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.