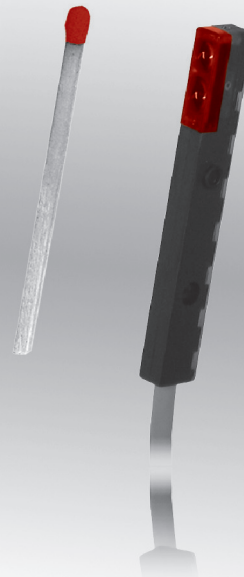


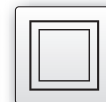
dimensions 4 x 44 x 6.2mm

dif. reflection sensor sensing range 30mm  
sensing range 50mm

- ✓ insensitive to colors thanks to background suppression
- ✓ tamper proof with fixed sensing range
- ✓ fast response time thanks to high sampling frequency
- ✓ suppression of mutual interference
- ✓ LED display for reception and soiling
- ✓ point-shaped light beam
- ✓ easy alignment with visible red light
- ✓ integrated amplifier
- ✓ switching output with push-pull stage (PNP/NPN)
- ✓ reinforced plastic housing with metallic charge and M3-mounting



**fixed sensing range  
very small and rod-shaped design**



**description**

Type **OTQ4** optical sensing devices have smallest mechanical dimensions with a rod-shaped design. Their extremely compact and slim design make them suitable for applications that in the past have been reserved mainly to fiber optics.

The sensors are easy to put into operation, as they work using visible red light and they have a fixed sensing range. Thus, there is no more need for laborious alignment and adjustment work.

The use of modern electronics and a casted housing ensure very high operational dependability and reliability in your automation application.

For avoiding reciprocal optical interference, the devices have automatic interference suppression. As a result, it is possible to mount sensor upon sensor (up to 4 pieces) without causing erroneous operations.

The functional principle behind these sensing devices is based on triangulation, in which the distance of the object

is determined by the angle of light reflected from it. Through this, objects are reliably recognized, regardless of their color and structure and erroneous operation due to objects located further away (machine parts, operating staff) is securely avoided.

**application examples**

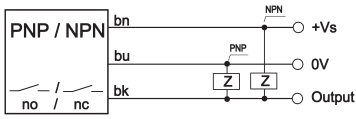
- ▶ detection with background suppression on transfer systems, regardless of color
- ▶ material recognition during transport from an oscillating conveyor
- ▶ positioning and detecting in a wide range of automation applications
- ▶ tablet recognition with the use of multiple sensors
- ▶ checking the presence of a wide range of objects as well as small objects
- ▶ monitoring and detection of object heights
- ▶ contactless position recognition of small parts

article-no.	OTQ40100	OTQ40170	OTQ40270
sensing range	30mm	30mm	30mm
output	pnp, light-on mode npn, dark-on mode	pnp, light-on mode npn, dark-on mode	pnp, dark-on mode npn, light-on mode
connection	2m cable, PVC, 3-wire	200mm M8-cable connector, PVC, 4-pin	200mm M8-cable connector, PVC, 4-pin
<b>TECHNICAL DATA</b>			
sensing range	30mm	30mm	30mm
output signal	pnp, light-on / npn, dark-on	pnp, light-on / npn, dark-on	pnp, dark-on / npn, light-on
operating voltage	11 ... 30V DC	11 ... 30V DC	11 ... 30V DC
current consumption (w/o load)	≤ 30mA	≤ 30mA	≤ 30mA
output current (max. load)	50mA	50mA	50mA
voltage drop (max. load)	2V DC	2V DC	2V DC
transmitting element (pulsed)	LED, red light	LED, red light	LED, red light
wavelength	660nm	660nm	660nm
light spot size	2mm	2mm	2mm
response/decay time	< 0.5ms	< 0.5ms	< 0.5ms
sampling frequency	1kHz	1kHz	1kHz
display (signal)	yellow LED	yellow LED	yellow LED
display (soiling)	yellow LED, flashing	yellow LED, flashing	yellow LED, flashing
interference suppression	+	+	+
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
dimensions	4x44x6.2mm	4x44x6.2mm	4x44x6.2mm
housing material	plastic (ASA)	plastic (ASA)	plastic (ASA)
front screen material	PMMA	PMMA	PMMA
operating temperature	-10 ... +50°C	-10 ... +50°C	-10 ... +50°C
degree of protection (EN 60529)	IP65	IP65	IP65
connection	2m cable, PVC, 3-wire	200mm M8-cable connector, PVC, 4-pin	200mm M8-cable connector, PVC, 4-pin
connection accessories	-	e.g. <b>VK200375</b>	e.g. <b>VK200375</b>
mounting accessories	e.g. <b>AO000154</b> profile adapter	e.g. <b>AO000154</b> profile adapter	e.g. <b>AO000154</b> profile adapter
mounting accessories (universal holder)	<b>AY000116</b>	<b>AY000116</b>	<b>AY000116</b>

article-no.	OTQ40173	OTQ40273
sensing range	50mm	50mm
output	pnp, light-on mode nnp, dark-on mode	pnnp, dark-on mode nnp, light-on mode
connection	200mm M8-cable connector, PVC, 4-pin	200mm M8-cable connector, PVC, 4-pin
<b>TECHNICAL DATA</b>		
sensing range	50mm	50mm
output signal	pnnp, light-on / nnp, dark-on	pnnp, dark-on / nnp, light-on
operating voltage	11 ... 30V DC	11 ... 30V DC
current consumption (w/o load)	≤ 30mA	≤ 30mA
output current (max. load)	50mA	50mA
voltage drop (max. load)	2V DC	2V DC
transmitting element pulsed	LED, red light	LED, red light
wavelength	660nm	660nm
light spot size	2mm	2mm
response/decay time	< 0.5ms	< 0.5ms
sampling frequency	1kHz	1kHz
display (signal)	yellow LED	yellow LED
display (soiling)	yellow LED, flashing	yellow LED, flashing
interference suppression	+	+
short-circuit protection	+	+
reverse polarity protection	+	+
dimensions	4x44x6.2mm	4x44x6.2mm
housing material	plastic (ASA)	plastic (ASA)
front screen material	PMMA	PMMA
operating temperature	-10 ... +50°C	-10 ... +50°C
degree of protection (EN 60529)	IP65	IP65
connection	200mm M8-cable connector, PVC, 4-pin	200mm M8-cable connector, PVC, 4-pin
connection accessories	e.g. <b>VK200375</b> , 2m, straight	e.g. <b>VK200375</b> , 2m, straight
mounting accessories	e.g. <b>AO000154</b> profile adapter	e.g. <b>AO000154</b> profile adapter
mounting accessories (universal holder)	<b>AY000116</b>	<b>AY000116</b>

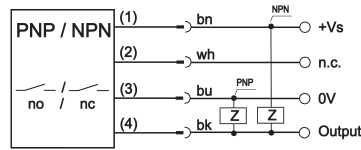
### connection

cable device



wire colors: bn = brown (1), bu = blue (3), bk = black (4)

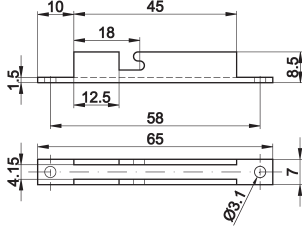
connector device



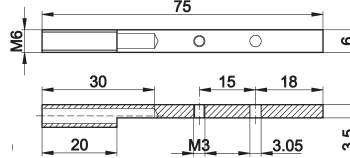
**Note:** Do not use the push-pull stage pnp/npn simultaneously!

### accessories

**AO000154** profile adapter

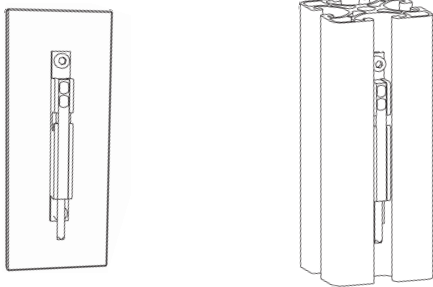


**AO000163** mounting pin



### mounting examples

sensor with profile adapter

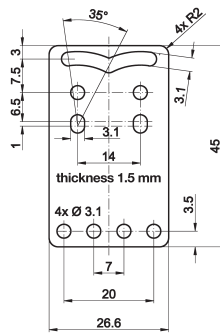
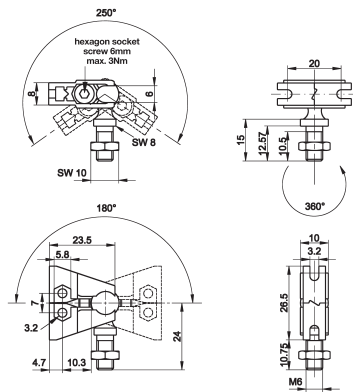


sensor with mounting pin



**universal holder AY000116**  
consisting of **base module ...**

and **fitting panel**



### ACCESSORIES

article-no.	description	material
<b>AO000154</b>	profile adapter for aluminum system profiles	aluminum
<b>AO000163</b>	mounting pin	nickel-plated brass
<b>AY000088</b>	base module *	jaw: stainless steel, ball pin: galvanized steel
<b>AY000116</b>	mounting kit for design <b>OTQ4</b>	stainless steel

\* The **AY000088** base module is contained in every mounting kit. Material of bolts and nuts: galvanized steel

This data sheet contains the standard versions only. Kindly request the availability of other output- and connection functions.

We will be pleased to supply the matching cable socket for your devices with connector. Please refer to the list in catalog chapter "accessories" under "cable sockets **ipf-SENSORFLEX®**" or search our website for "VK".

**Warning:** Never use these devices in applications where the safety of a person depends on their functionality.

This data sheet as well as your personal contact can be found at [www.ipf-electronic.com](http://www.ipf-electronic.com)

