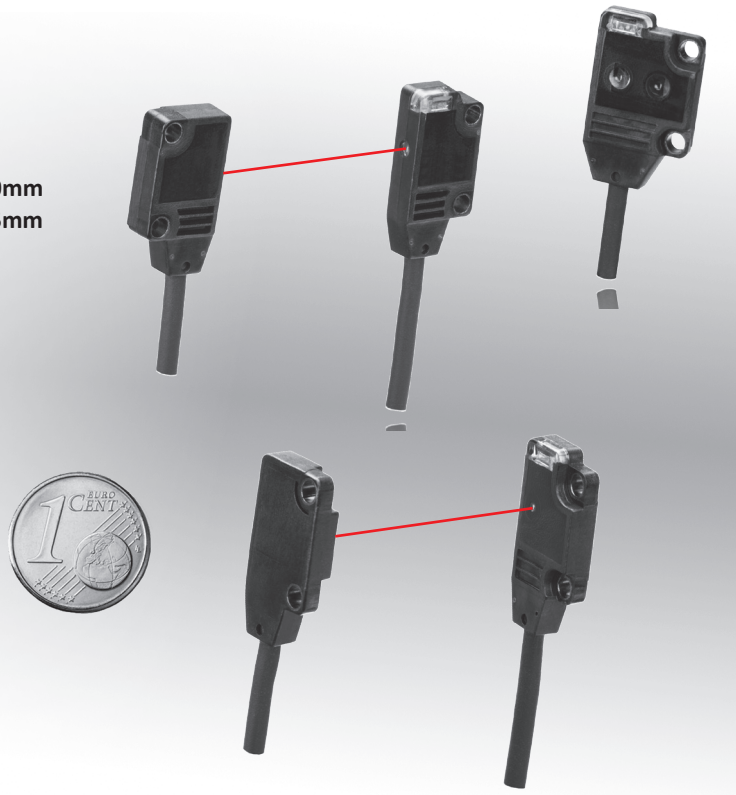
design		**14.5 x 10 x 3.5mm** **14.5 x 13 x 3.5mm** **14.5 x 4.5 x 10mm**
through-beam sensors	operating distance	**up to 1000mm**
dif. reflection sensors	sensing range	**2 to 25mm**



- ✓ **high repeat accuracy**
- ✓ **extremely compact design**
- ✓ **robust plastic housing**
- ✓ **status display by red LED**
- ✓ **stand-by function by green LED**
- ✓ **integrated amplifier**
- ✓ **high sampling frequency**
- ✓ **connection with cable or M8-connector**

visible red light
small light beam diameter

description

The devices of the design Q3 and Q4 are counted among the smallest optical sensors worldwide. Their extremely compact dimensions make them suitable for applications, which in the past had been reserved to fiber optics. The sensors have such a high repeat accuracy that they may be compared to laser sensors. The devices operate with a visible red light, which simplifies the adjustment.

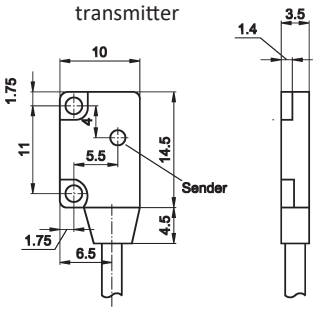
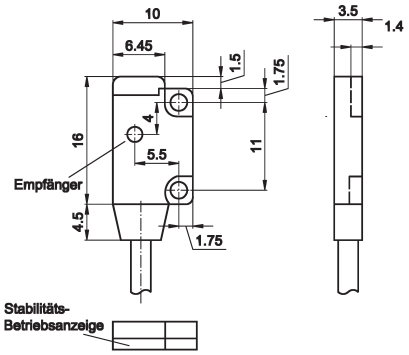
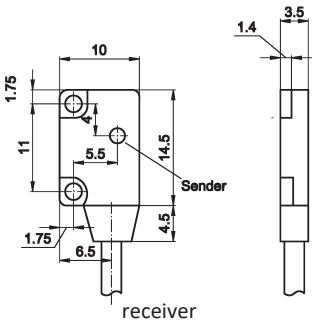
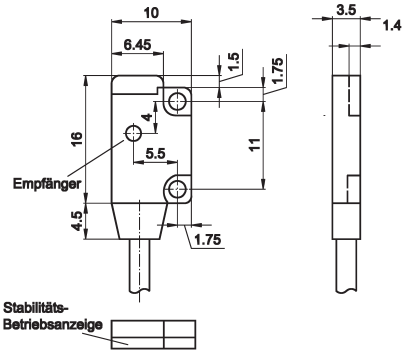
The OTQ30100 difffuse reflection sensor is a so-called fix focus diffuse reflection sensor. Its light beam excels due to its very low diffusion, with the result that small, even transparent objects may be detected. The smallest light spot diameter is found exactly in the centre of the nominal sensing range.

The mode of operation is based on the energetic principle. Consequently a considerably higher sensing range is achieved on bright or reflecting surfaces.

The through-beam sensors can be supplied in different versions. Despite their small dimensions the maximum operating distance is up to 1m.

application examples

- presence check of different objects
- collision avoidance in feeding motions
- control of object and stack heights
- limit switches, position switches and pulse generators
- inquiry of grippers

article-no.	**OYQ30100**	**OYQ30103**
version	**through-beam sensor**	**through-beam sensor**
connection	**cable**	**cable**
operating distance	**150mm**	**1000mm**
	transmitter  receiver  	transmitter  receiver 
TECHNICAL DATA		
operating distance	150mm	1000mm
minimum object size	non-transparent, Ø 1mm	non-transparent, Ø 2mm
output signal	pnp, dark-on mode **	pnp, dark-on mode **
operating voltage	12 ... 24V DC ± 10%	12 ... 24V DC ± 10%
current consumption (w/o load)	≤ 15mA *, ≤ 10mA **	≤ 15mA *,≤ 10mA **
output current (max. load)	50mA **	50mA **
voltage drop (max. load)	1.0V DC **	1.0V DC **
transmitting element (pulsed)	LED, red light *	LED, red light *
wavelength	680nm *	680nm *
response time	max. 0.5ms	max. 0.5ms
hysteresis	-	-
repeat accuracy	0.05mm	0.05mm
display (signal)	red LED **	red LED **
display (stand-by)	green LED **	green LED **
short-circuit protection	+ **	+ **
reverse polarity protection	+	+
design	14.5x10x3.5mm	14.5x10x3.5mm
housing material	PET	PET
lens material	polyalylate	polyalylate
operating temperature	-25 ... +55°C	-25 ... +55°C
system of protection (EN 60529)	IP67	IP67
connection connection	2m PVC-cable, 3-wire ** 2m PVC-cable, 2-wire *	2m PVC-cable, 3-wire ** 2m PVC-cable, 2-wire *
connection accessories	-	-
mounting accessories (bracket)	e.g. AV000077 / AV000078	e.g. AV000077 / **AV000078**
* transmitter ** receiver		

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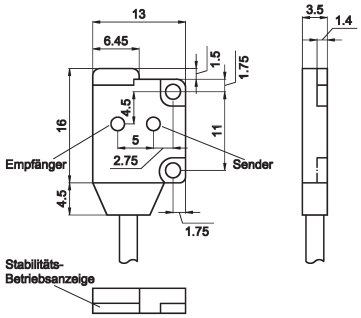
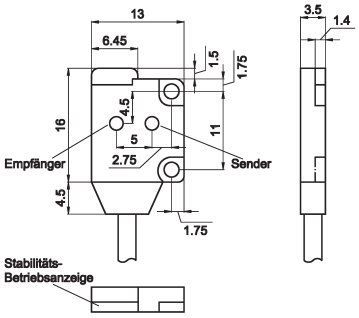
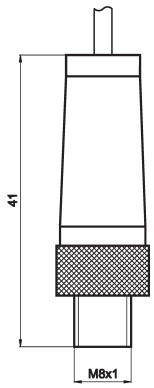
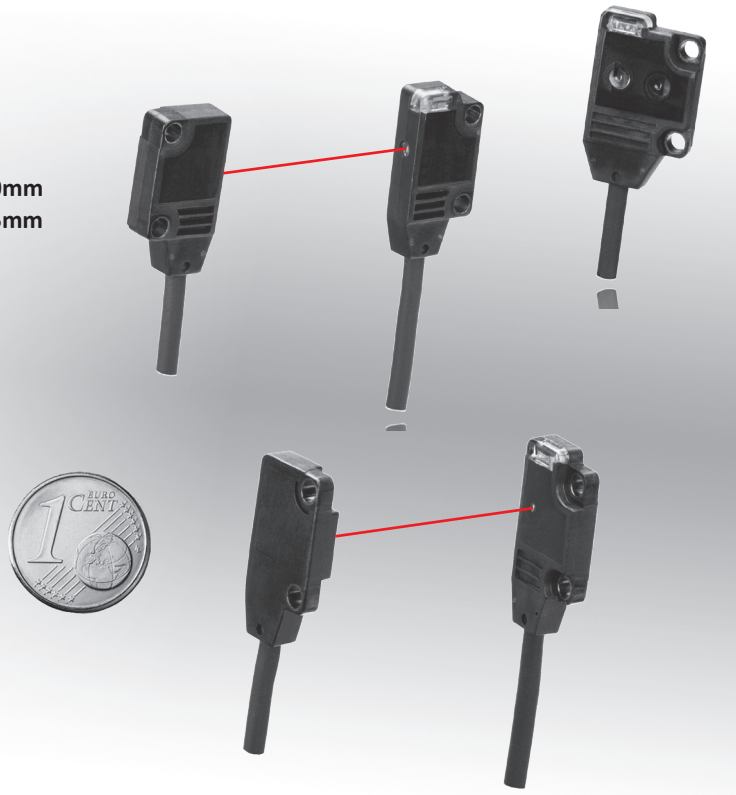
article-no.	**OTQ30100**	**OTQ30170**
version	**diffuse reflection sensor**	**diffuse reflection sensor**
connection	**cable**	**M8-cable connector**
sensing range	**2 ... 25mm**	**2 ... 25mm**
		 
TECHNICAL DATA		
sensing range	2 ... 25mm	2 ... 25mm
minimum object size	Ø 1mm	Ø 1mm
output signal	pnp, light-on mode	pnp, light-on mode
operating voltage	12 ... 24V DC ± 10%	12 ... 24V DC ± 10%
current consumption (w/o load)	≤ 20mA	≤ 20mA
output current (max. load)	50mA	50mA
voltage drop (max. load)	1.0V DC	1.0V DC
transmitting element	LED, red light	LED, red light
wavelength	680nm	680nm
response time	< 0.5ms	< 0.5ms
hysteresis	15% of the sensing range	15% of the sensing range
repeat accuracy	0.1mm	0.1mm
display (signal)	red LED	red LED
display (stand-by)	green LED	green LED
short-circuit protection	+	+
reverse polarity protection	+	+
design	14.5x13x3.5mm	14.5x13x3.5mm
housing material	PET	PET
lens material	polyalylate	polyalylate
operating temperature	-25 ... +55°C	-25 ... +55°C
system of protection (EN 60529)	IP67	IP67
connection	2m PVC-cable, 3-wire	M8-cable connector 300mm, 3-wire
connection accessories	-	e.g. **VK200075**
mounting accessories (bracket)	e.g. AV000077 / AV000078	e.g. AV000077 / **AV000078**

design		**14.5 x 10 x 3.5mm** **14.5 x 13 x 3.5mm** **14.5 x 4.5 x 10mm**
through-beam sensors	operating distance	**up to 1000mm**
dif. reflection sensors	sensing range	**2 to 25mm**



- ✓ **high repeat accuracy**
- ✓ **extremely compact design**
- ✓ **robust plastic housing**
- ✓ **status display by red LED**
- ✓ **stand-by function by green LED**
- ✓ **integrated amplifier**
- ✓ **high sampling frequency**
- ✓ **connection with cable or M8-connector**

visible red light
small light beam diameter

description

The devices of the design Q3 and Q4 are counted among the smallest optical sensors worldwide. Their extremely compact dimensions make them suitable for applications, which in the past had been reserved to fiber optics. The sensors have such a high repeat accuracy that they may be compared to laser sensors. The devices operate with a visible red light, which simplifies the adjustment.

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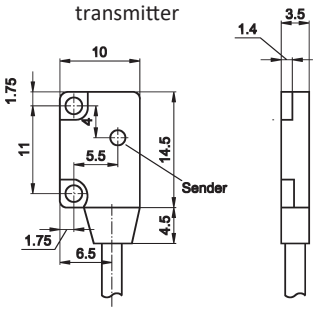
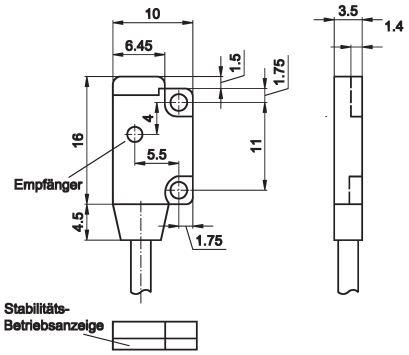
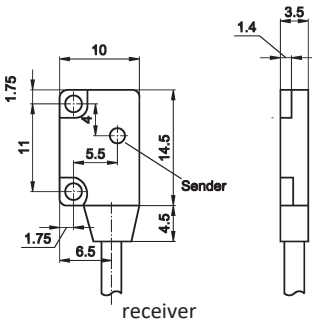
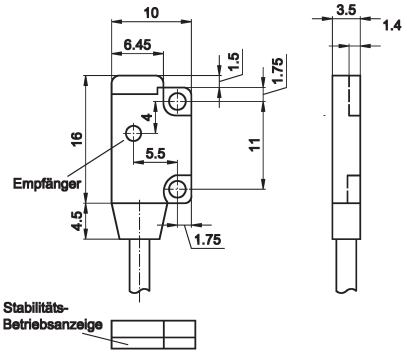
The mode of operation is based on the energetic principle. Consequently a considerably higher sensing range is achieved on bright or reflecting surfaces.

The through-beam sensors can be supplied in different versions. Despite their small dimensions the maximum operating distance is up to 1m.

application examples

- presence check of different objects
- collision avoidance in feeding motions
- control of object and stack heights
- limit switches, position switches and pulse generators
- inquiry of grippers

article-no.	**OYQ30100**	**OYQ30103**
version	**through-beam sensor**	**through-beam sensor**
connection	**cable**	**cable**
operating distance	**150mm**	**1000mm**
	transmitter  receiver  	transmitter  receiver 
TECHNICAL DATA		
operating distance	150mm	1000mm
minimum object size	non-transparent, Ø 1mm	non-transparent, Ø 2mm
output signal	pnp, dark-on mode **	pnp, dark-on mode **
operating voltage	12 ... 24V DC ± 10%	12 ... 24V DC ± 10%
current consumption (w/o load)	≤ 15mA *, ≤ 10mA **	≤ 15mA *,≤ 10mA **
output current (max. load)	50mA **	50mA **
voltage drop (max. load)	1.0V DC **	1.0V DC **
transmitting element (pulsed)	LED, red light *	LED, red light *
wavelength	680nm *	680nm *
response time	max. 0.5ms	max. 0.5ms
hysteresis	-	-
repeat accuracy	0.05mm	0.05mm
display (signal)	red LED **	red LED **
display (stand-by)	green LED **	green LED **
short-circuit protection	+ **	+ **
reverse polarity protection	+	+
design	14.5x10x3.5mm	14.5x10x3.5mm
housing material	PET	PET
lens material	polyalylate	polyalylate
operating temperature	-25 ... +55°C	-25 ... +55°C
system of protection (EN 60529)	IP67	IP67
connection connection	2m PVC-cable, 3-wire ** 2m PVC-cable, 2-wire *	2m PVC-cable, 3-wire ** 2m PVC-cable, 2-wire *
connection accessories	-	-
mounting accessories (bracket)	e.g. AV000077 / AV000078	e.g. AV000077 / **AV000078**
* transmitter ** receiver		

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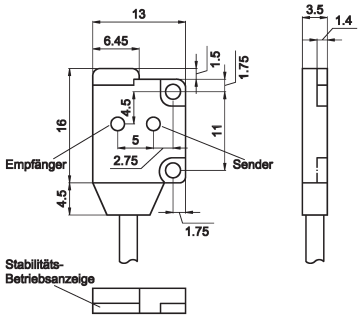
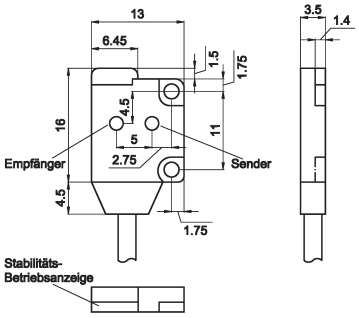
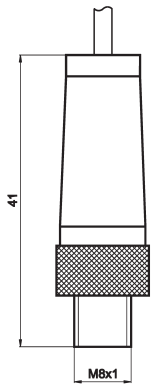
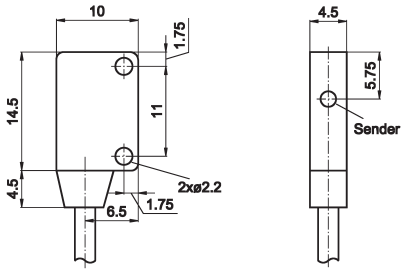
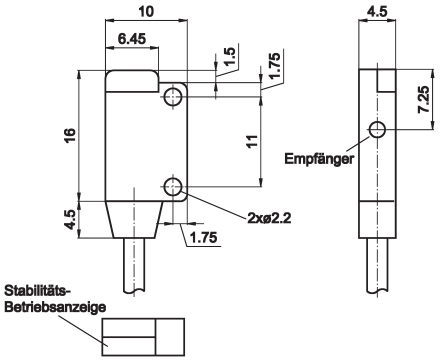
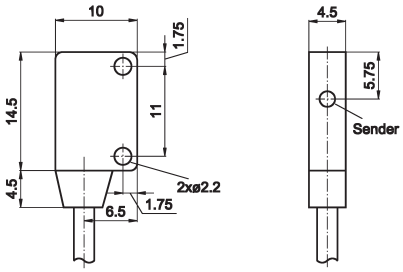
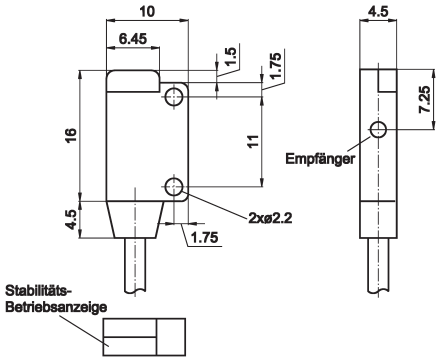
article-no.	**OTQ30100**	**OTQ30170**
version	**diffuse reflection sensor**	**diffuse reflection sensor**
connection	**cable**	**M8-cable connector**
sensing range	**2 ... 25mm**	**2 ... 25mm**
		 
TECHNICAL DATA		
sensing range	2 ... 25mm	2 ... 25mm
minimum object size	Ø 1mm	Ø 1mm
output signal	pnp, light-on mode	pnp, light-on mode
operating voltage	12 ... 24V DC ± 10%	12 ... 24V DC ± 10%
current consumption (w/o load)	≤ 20mA	≤ 20mA
output current (max. load)	50mA	50mA
voltage drop (max. load)	1.0V DC	1.0V DC
transmitting element	LED, red light	LED, red light
wavelength	680nm	680nm
response time	< 0.5ms	< 0.5ms
hysteresis	15% of the sensing range	15% of the sensing range
repeat accuracy	0.1mm	0.1mm
display (signal)	red LED	red LED
display (stand-by)	green LED	green LED
short-circuit protection	+	+
reverse polarity protection	+	+
design	14.5x13x3.5mm	14.5x13x3.5mm
housing material	PET	PET
lens material	polyalylate	polyalylate
operating temperature	-25 ... +55°C	-25 ... +55°C
system of protection (EN 60529)	IP67	IP67
connection	2m PVC-cable, 3-wire	M8-cable connector 300mm, 3-wire
connection accessories	-	e.g. **VK200075**
mounting accessories (bracket)	e.g. AV000077 / AV000078	e.g. AV000077 / **AV000078**

article-no.	**OYQ40100**	**OYQ40103**
version	**through-beam sensor**	**through-beam sensor**
connection	**cable**	**cable**
operating distance	**150mm**	**500mm**
	transmitter  receiver  	transmitter  receiver 
TECHNICAL DATA		
operating distance	150mm	500mm
minimum object size	non-transparent, Ø 1mm	non-transparent, Ø 2mm
output signal	pnp, dark-on mode **	pnp, dark-on mode **
operating voltage	12 ... 24V DC ± 10%	12 ... 24V DC ± 10%
current consumption (w/o load)	≤ 15mA **, <=10mA *	≤ 15mA **, <=10mA *
output current (max. load)	50mA **	50mA **
voltage drop (max. load)	1.0V DC **	1.0V DC **
transmitting element (pulsed)	LED, red light *	LED, red light *
wavelength	680nm *	680nm *
response time	< 0.5ms	< 0.5ms
hysteresis	-	-
repeat accuracy	0.05mm	0.05mm
display (signal)	red LED **	red LED **
display (stand-by)	green LED **	green LED **
short-circuit protection	+ **	+ **
reverse polarity protection	+	+
design	14.5x4.5x10mm	14.5x4.5x10mm
housing material	PET	PET
lens material	polyalylate	polyalylate
operating temperature	-25 ... +55°C	-25 ... +55°C
system of protection (EN 60529)	IP67	IP67
connection	2m PVC-cable, 3-wire **	2m PVC-cable, 3-wire **
connection	2m PVC-cable, 2-wire *	2m PVC-cable, 2-wire *
connection accessories	-	-
mounting accessories (bracket)	e.g. AV000079	e.g. **AV000079**

* transmitter
** receiver

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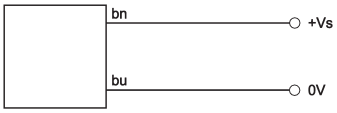
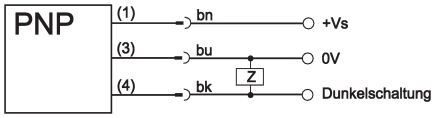
connection

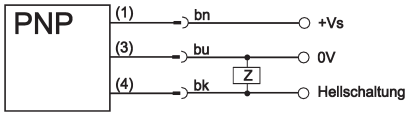
transmitter



receiver

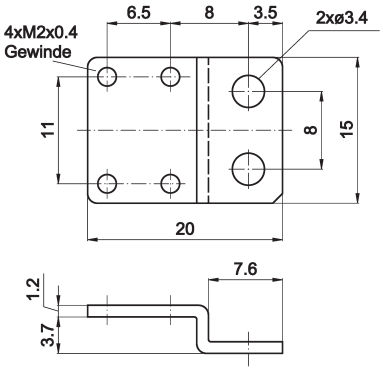


diffuse reflection sensors

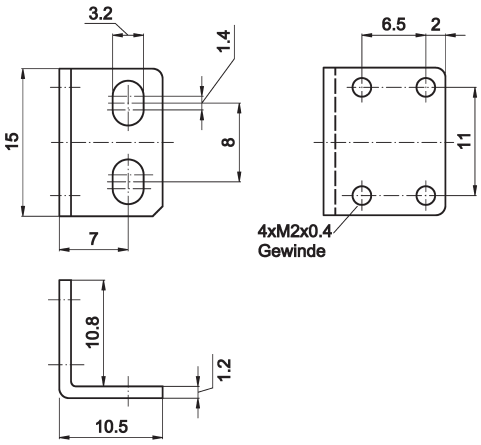


wire colors: bn = brown (1), bu = blue (3), bk = black (4)

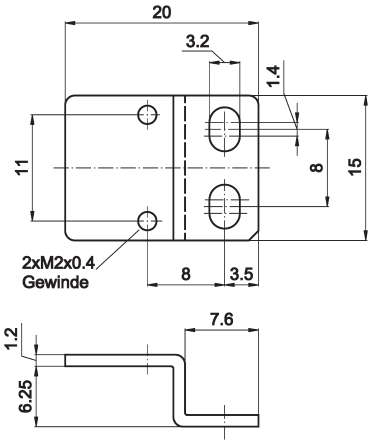
mounting bracket **AO000077** for **OYQ3**



mounting bracket **AO000078** for **OYQ3**



mounting bracket **AO000079** for **OYQ4**



ACCESSORIES

article-no.	description	material
AO000077	mounting bracket OYQ3	galvanized sheet steel
AO000078	mounting bracket OYQ3	galvanized sheet steel
AO000079	mounting bracket OYQ4	galvanized sheet 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.

NOTES

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