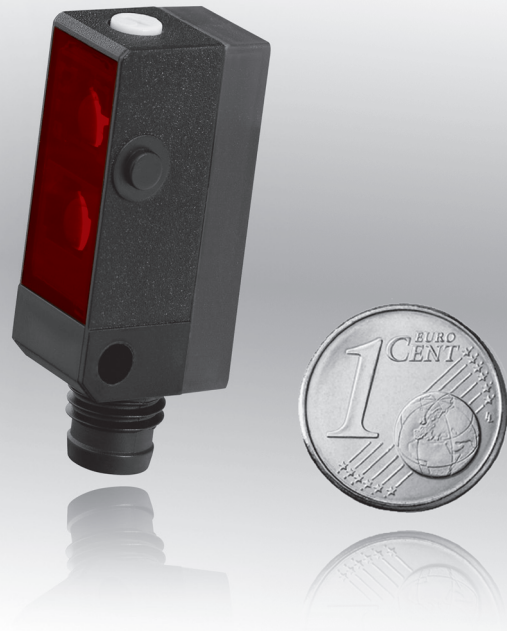


through-beam, retro-reflective, dif. reflection sensors 1800

dimensions	12 x 27 x 14mm		
	12 x 27 x 16.3mm		
through-beam sensors	operating distance		5m
retro-reflective sensors	operating distance		3.5m
dif. reflection sensors	sensing range	5 up to 200mm	



- ✓ special version for glass detection or with linear red light beam
- ✓ diffuse reflection sensor optional with intensity differentiation or background suppression
- ✓ adjustable operating distances or sensing ranges for through-beam and dif. reflection sensors
- ✓ retro-reflective sensors with polarizing filter
- ✓ plastic housing, subminiature design
- ✓ status display by LED with setting control
- ✓ integrated amplifier
- ✓ high sampling frequency and sensing ranges
- ✓ connection with cable, M8-connector 4-pin or M8-cable connector 3-pin

**power giant in spite of dwarf size
optimal – with visible red light!**


description

ipf sensors of this series are optoelectronic proximity switches with a high level of accuracy in a design which is especially small and compact.

The through-beam sensors function up to a sensing range of 5000mm. The retro-reflective sensors (with built-in polarizing filter) function up to a sensing range of 3500mm. Diffuse reflection sensors are available with intensity differentiation as well as with background suppression through triangulation. In case of the design with background suppression, objects are reliably recognized regardless of their color. This is because their position is calculated from the angle of the reflected light.

Even in fast production sequences, these sensors enable the smallest of objects to be detected with a high level of accuracy directly during the process itself.

The sensors work with a visible red light and for this reason can be easily directed to the object which is to be detected and in the process, can be set with ease.

Any maladjustment and/or soiled optics is/are signaled by the flashing of the status display.

Functional monitoring of the devices is possible via a test

input in the transmitter of the through-beam sensor. For this, the operating voltage is applied to the corresponding contact. Through this, the basic alignment of the transmitter to the receiver can be checked.

The retro-reflective sensors have a polarizing filter and a suppression function. Consequently, it is possible to guarantee the reliable detection of reflective objects and reciprocal fault suppression through further sensor systems. The suppression function is likewise available for the diffuse reflection sensors.

Optical sensors are often used in conjunction with a programmable logic controller (PLC).

Matching standard mounting brackets are included in the scope of delivery.

application examples

- ▶ limit switches, position switches and pulse generators on automatic machines and production sequences
- ▶ the accurate detection of very small objects made of metal, glass, plastic (films), wood, paper etc.

article-no. version	OE140170 through-beam sensor receiver	OE140406 through-beam sensor receiver	OE140476 through-beam sensor receiver
connection	M8-cable connector, PVC	cable, PUR	M8-connector
output	pnp, dark-on mode	pnp, dark-on/light-on mode	pnp, dark-on/light-on mode
article-no. version	OS140070 through-beam sensor transmitter	OS140006 through-beam sensor transmitter	OS140076 through-beam sensor transmitter
connection	M8-cable connector, PVC	cable, PUR	M8-connector
operating distance	5m	5m	5m
TECHNICAL DATA			
operating distance	5m	5m	5m
output signal**	pnp, dark-on mode	pnp, dark-on/light-on mode	pnp, dark-on/light-on mode
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 23mA* / ≤ 16mA**	≤ 23mA* / ≤ 16mA**	≤ 23mA* / ≤ 16mA**
output current (max. load)**	100mA	100mA	100mA
voltage drop (max. load)**	1.8V DC	1.8V DC	1.8V DC
transmitting element (pulsed)*	LED, red light	LED, red light	LED, red light
wave length*	660nm	660nm	660nm
response / decay time**	< 1.4msec	< 1.4msec	< 1.4msec
switching frequency	350Hz	350Hz	350Hz
display (signal)**	yellow LED, continuous light	yellow LED, continuous light	yellow LED, continuous light
display (stand-by function)**	yellow LED, flashing	yellow LED, flashing	yellow LED, flashing
sensitivity adjustment**	potentiometer 270°	potentiometer 270°	potentiometer 270°
interference suppression	-	-	-
test input*	+	+	+
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
dimensions	12x27x14mm	12x27x14mm	12x27x14mm
housing material	plastic ASA	plastic ASA	plastic ASA
front screen material	PMMA	PMMA	PMMA
operating temperature	-25 ... +65°C	-25 ... +65°C	-25 ... +65°C
system of protection (EN 60529)	IP65	IP65	IP67
connection	M8-cable connector, 200mm, 3-pin	cable, 2m, 4-wire	M8-connector, 4-pin
connection accessories	e.g. VK200075	-	e.g. VK200375
mounting accessories (enclosed)	AO000066	AO000066	AO000073
mounting accessories (Uni-bracket)	AY000116	AY000116	AY000116
* only transmitter			
** only receiver			

through-beam, retro-reflective, dif. reflection sensors 1800

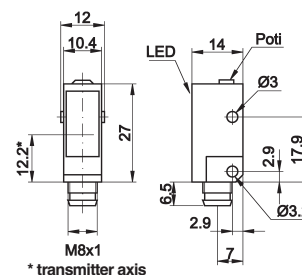
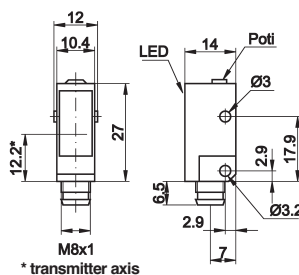
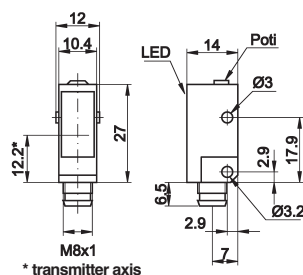
article-no.	OR140404	OR140474
version	retro-reflective sensor with polarizing filter	retro-reflective sensor with polarizing filter
connection	M8-cable connector, PVC	cable, PUR
output	pnp, light-on mode	pnp, dark-on/light-on mode
operating distance	3.5m	3.5m
TECHNICAL DATA		
operating distance	3.5m	3.5m
output signal	pnp, light-on mode	pnp, dark-on/ light-on mode
operating voltage	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 25mA	≤ 25mA
output current (max. load)	100mA	100mA
voltage drop (max. load)	1.8V DC	1.8V DC
transmitting element (pulsed)	LED, red light	LED, red light
wave length	660nm	660nm
response / decay time	< 0.5msec	< 0.5msec
switching frequency	1kHz	1kHz
display (signal)	yellow LED, continuous light	yellow LED, continuous light
display (stand-by function)	yellow LED, flashing	yellow LED, flashing
sensitivity adjustment	-	-
interference suppression	+	+
test input	-	-
short-circuit protection	+	+
reverse polarity protection	+	+
dimensions	12x27x16.3mm	12x27x16.3mm
housing material	plastic ASA	plastic ASA
front screen material	PMMA	PMMA
operating temperature	-25 ... +65°C	-25 ... +65°C
system of protection (EN 60529)	IP65	IP67
connection	2m cable, 4-wire	M8-connector, 4-pin
connection accessories	-	e.g. VK200375
mounting accessories (enclosed)	AO00073	AO00073
mounting accessories (Uni-bracket)	AY000116	AY000116

article-no.	OT140170	OT140406	OT140476
version	dif. reflection sensor with background suppression	dif. reflection sensor with background suppression	dif. reflection sensor with background suppression
connection	M8-cable connector, PVC	cable, PUR	M8-connector
output	pnp, light-on mode	pnp, dark-on/light-on mode	pnp, dark-on/light-on mode
sensing range	20 ... 120mm	20 ... 120mm	20 ... 120mm
TECHNICAL DATA			
operating distance	20 ... 120mm	20 ... 120mm	20 ... 120mm
output signal	pnp, light-on mode	pnp, dark-on/light-on mode	pnp, dark-on/light-on mode
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 30mA	≤ 30mA	≤ 30mA
output current (max. load)	100mA	100mA	100mA
voltage drop (max. load)	1.8V DC	1.8V DC	1.8V DC
transmitting element (pulsed)	LED, red light	LED, red light	LED, red light
wave length	660nm	660nm	660nm
response / decay time	< 1.0msec	< 1.0msec	< 1.0msec
switching frequency	500Hz	500Hz	500Hz
display (signal)	yellow LED, continuous light	yellow LED, continuous light	yellow LED, continuous light
display (stand-by function)	yellow LED, flashing	yellow LED, flashing	yellow LED, flashing
sensitivity adjustment	mechanical, 5 revolutions	mechanical, 5 revolutions	mechanical, 5 revolutions
interference suppression	+	+	+
test input	-	-	-
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
dimensions	12x27x14mm	12x27x14mm	12x27x14mm
housing material	plastic ASA	plastic ASA	plastic ASA
front screen material	PMMA	PMMA	PMMA
operating temperature	-25 ... +65°C	-25 ... +65°C	-25 ... +65°C
system of protection (EN 60529)	IP65	IP65	IP67
connection	M8-connector, 200mm, 3-pin	2m cable, 4-wire	M8-connector, 4-wire
connection accessories	e.g. VK200075	-	e.g. VK200375
mounting accessories (enclosed)	AO000066	AO000066	AO000073
mounting accessories (Uni-bracket)	AY000116	AY000116	AY000116

through-beam, retro-reflective, dif. reflection sensors 1800

article-no.	OT140405	OT140475
version	dif. reflection sensor with intensity differentiation	dif. reflection sensor with intensity differentiation
connection	cable, PUR	M8-connector
output	pnp, dark-on/light on mode	pnp, dark-on/light-on mode
sensing range	5 ... 200mm	5 ... 200mm
TECHNICAL DATA		
sensing range	5 ... 200mm	5 ... 200mm
output signal	pnp, dark-on/light on mode	pnp, dark-on/light-on mode
operating voltage	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 30mA	≤ 30mA
output current (max. load)	100mA	100mA
voltage drop (max. load)	1.8V DC	1.8V DC
transmitting element (pulsed)	LED, red light	LED, red light
wave length	660nm	660nm
response / decay time	< 1.0msec	< 1.0msec
switching frequency	500Hz	500Hz
display (signal)	yellow LED, continuous light	yellow LED, continuous light
display (stand-by function)	yellow LED, flashing	yellow LED, flashing
sensitivity adjustment	potentiometer 270°	potentiometer 270°
interference suppression	+	+
test input	-	-
short-circuit protection	+	+
reverse polarity protection	+	+
dimensions	12x27x14mm	12x27x14mm
housing material	plastic ASA	plastic ASA
front screen material	PMMA	PMMA
operating temperature	-25 ... +65°C	-25 ... +65°C
system of protection (EN 60529)	IP65	IP67
connection	2m cable, 4-wire	M8-connector, 4-pin
connection accessories	-	e.g. VK200375
mounting accessories (enclosed)	AO000066	AO000073
mounting accessories (Uni-bracket)	AY000116	AY000116

article-no.	OT140477	OT140478	OT140479
version	dif. reflection sensor with background suppression linear beam	dif. reflection sensor with background suppression glass detection	dif. reflection sensor with background suppression less beam diameter
connection	M8-connector	M8-connector	M8-connector
output	pnp, dark-on/light-on mode	pnp, dark-on/light-on mode	pnp, dark-on/light-on mode
sensing range	20 ... 80mm	10 ... 30mm	25 ... 120mm

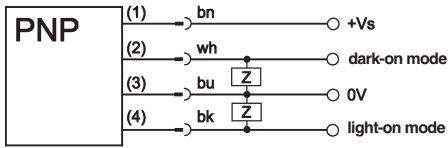


TECHNICAL DATA

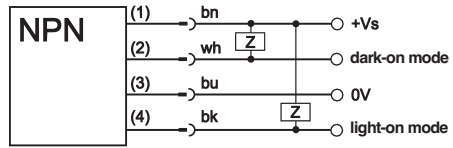
sensing range	20 ... 80mm	10 ... 30mm	25 ... 120mm
output signal	pnp, dark-on/light-on mode	pnp, dark-on/light-on mode	pnp, dark-on/light-on mode
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 30mA	≤ 30mA	≤ 30mA
output current (max. load)	100mA	100mA	100mA
voltage drop (max. load)	1.8V DC	1.8V DC	1.8V DC
transmitting element (pulsed)	LED, red light	LED, red light	LED, red light
wave length	660nm	660nm	660nm
beam diameter			2mm for distance focus 35 ... 45mm
response / decay time	< 1.0msec	< 1.0msec	< 1.0msec
switching frequency	< 500Hz	< 500Hz	< 500Hz
display (signal)	yellow LED, continuous light	yellow LED, continuous light	yellow LED, continuous light
display (stand-by function)	yellow LED, flashing	yellow LED, flashing	yellow LED, flashing
sensitivity adjustment	mechanical, 5 revolutions	mechanical, 5 revolutions	mechanical, 5 revolutions
interference suppression	+	+	+
test input	-	-	-
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
dimensions	12x27x14mm	12x27x14mm	12x27x14mm
housing material	plastic ASA	plastic ASA	plastic ASA
front screen material	PMMA	PMMA	PMMA
operating temperature	-25 ... +65°C	-25 ... +65°C	-25 ... +65°C
system of protection (EN 60529)	IP67	IP67	IP67
connection	M8-connector, 4-pin	M8-connector, 4-pin	M8-connector, 4-pin
connection accessories	e.g. VK200375	e.g. VK200375	e.g. VK200375
mounting accessories (enclosed)	AO000073	AO000073	AO000073
mounting accessories (Uni-bracket)	AY000116	AY000116	AY000116

connection

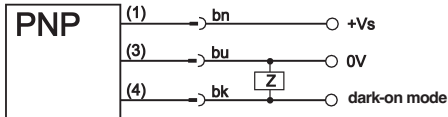
light-on and dark-on mode



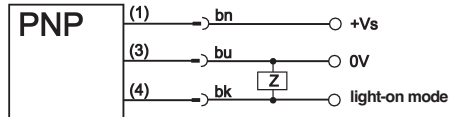
light-on and dark-on mode



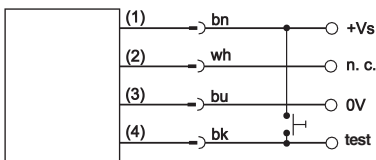
M8-cable connector devices, dark-on mode



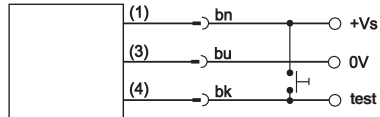
M8-cable connector devices, light-on mode



transmitter through-beam sensor



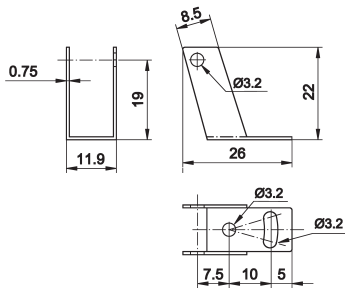
M8-cable connector devices, transmitter through-beam sensor



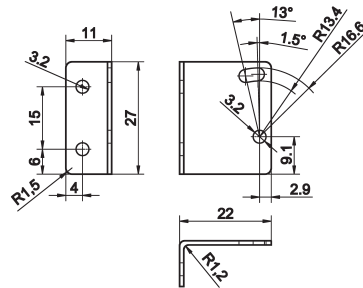
wire colors: bn = brown (1), wh = white (2), bl = blue(3), bk = black (4)

mounting bracket

AO000066 black anodized

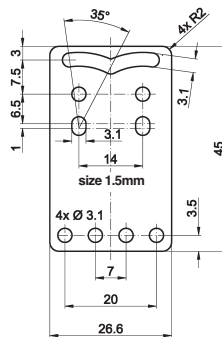
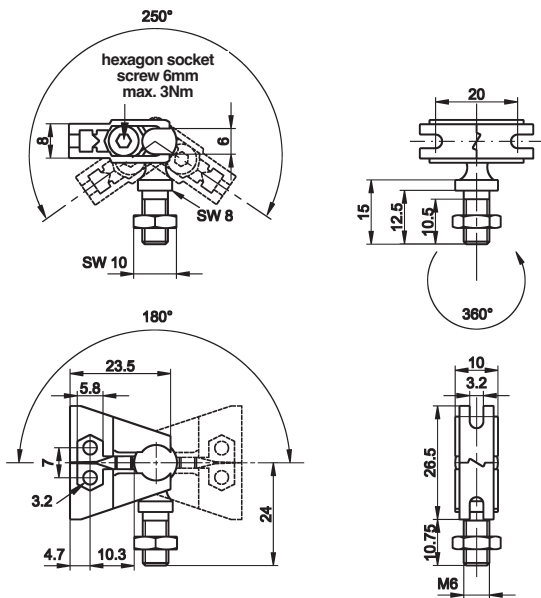


AO000073 zincd



universal mounting (Uni-bracket)
AY000116 composed of base module

... and fitting panel



ACCESSORIES

article-no.	description	notice
AY000088	base module *	jaws: stainless steel, ball pins: steel zincd
AY000116	fastening kit for sensors Ox14	stainless steel

* The base module **AY000088** is included in every fastening-parts kit.
Material of the screws and nuts: steel zincd

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

You also find this data sheet, as well as contact details under www.ipf-electronic.com