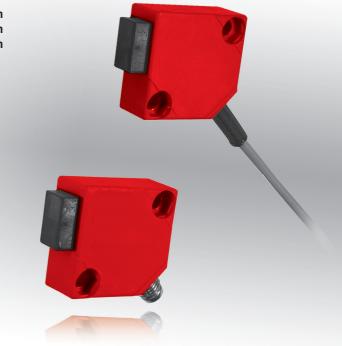


through-beam, retro-reflective, dif. reflection sensors 1900

dimensions 15 x 30 x 30mm

through-beam sensors retro-reflective sensors dif. reflection sensor

operating range operating range sensing range up to 12m up to 4m up to 1200mm



- ✓ scratch resistant glass lens
- √ high sampling frequency
- √ large operating ranges
- ✓ LED-display for switch signal and tolerance of the functional reserve
- ✓ devices with alarm output
- ✓ also with exclusive-OR switching output
- √ connection with M8-connector or cable
- ✓ glass fiber reinforced plastic housing

diffuse reflection with triangulation retro-reflective with polarizing filter











description

The optical sensors of this series have compact dimensions and a robust housing. Due to their small design they can be applied in areas with small installation space.

These devices have a sensitivity adjustment by means of the potentiometer attached to the rear side.

Instead of this, the transmitters of the through-beam sensors provide an opportunity to monitor the functions of the sensor pair via a test input. For this purpose, the 0V potential (GND) of the voltage supply is applied to the corresponding contact (4/bk) of the transmitter. This will deactivate the transmitting diode. By evaluation of the receiver signal in the control, the basic alignment of the transmitter to the receiver can also be checked.

The versions with alarm signal interconnect the corresponding output if the safe switching range of the functional reserve is left.

Optionally, the devices are available with fixed connection cable or with M8-connector (3- or 4-pin).

The retro-reflective sensors have a transmitting element working with visible red light. This will considerably simplify the adjustment and the alignment to the object to be detected and to the reflector. The diffuse reflection sensors for the close-up range (up to 150mm) also work with red light.

In addition, their independence of the sensing range relating to color and structure of the object surfaces is excellent. This is achieved by the principle of triangulation, which also obtains good background suppression.

application examples

- reliable positioning tasks in automation technology
- presence checking by detection of different objects
- monitoring and edge detection of object and stacking heights
- ▶ contactless position recognition of small and large parts

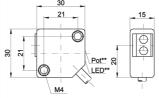


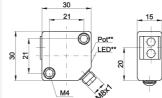


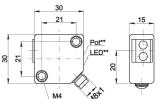
1900 through-beam, retro-reflective, dif. reflection sensors



article-no.	OE150105	OE150175	OE150275
version	through-beam sensor receiver	through-beam sensor receiver	through-beam sensor receiver
output signal	pnp, dark-on mode	pnp, dark-on mode	pnp, light-on mode
connection	cable	M8-connector	M8-connector
article-no.	OS150005	OS150075	OS150075
version	through-beam sensor transmitter	through-beam sensor transmitter	through-beam sensor transmitter
connection	cable	M8-connector	M8-connector
operating range	6m	6m	6m
	20	20	20





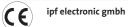


TECHNICAL DATA

operating range	6m	6m	6m
output signal**	pnp, dark-on mode	pnp, dark-on mode	pnp, light-on mode
operating voltage	10 36V DC	10 36V DC	10 36V DC
current consumption (w/o load)	≤ 15mA* / ≤ 10mA**	≤ 15mA* / ≤ 10mA**	≤ 15mA* / ≤ 10mA**
output current (max. load)**	200mA	200mA	200mA
voltage drop (max. load)**	2V DC	2V DC	2V DC
transmitting element (pulsed)*	LED, infrared light	LED, infrared light	LED, infrared light
wavelength*	880nm	880nm	880nm
readiness delay	100ms	100ms	100ms
sampling frequency**	1kHz	1kHz	1kHz
display (signal)**	yellow LED	yellow LED	yellow LED
display (functional reserve)**	green LED	green LED	green LED
sensitivity adjustment**	potentiometer	potentiometer	potentiometer
test input*	GND/0V: Pin4/bk	GND/0V: Pin4/bk	GND/0V: Pin4/bk
alarm output**	-		
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
dimensions	15x30x30mm	15x30x30mm	15x30x30mm
housing material	plastic PBTP	plastic PBTP	plastic PBTP
front screen material	glass	glass	glass
operating temperature	-25 +55°C	-25 +55°C	-25 +55°C
degree of protection (EN 60529)	IP65	IP65	IP65
connection	2m PVC-cable, 3-wire	M8-connector, 3-pin	M8-connector, 3-pin
connection accessories	-	e.g. VK200075	e.g. VK200075
mounting accessories	AO000045	AO000045	AO000045
mounting accessories (universal hol	der) AY000114	AY000114	AY000114

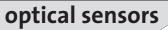
^{*} only transmitter

^{**} only receiver





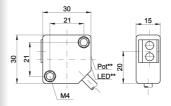


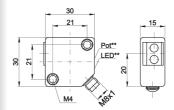


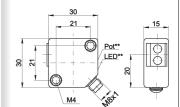


through-beam, retro-reflective, dif. reflection sensors 1900

OE150400	OE150470	OE150770
through-beam sensor receiver	through-beam sensor receiver	through-beam sensor receiver
cable	M8-connector	M8-connector
pnp, dark-on/light-on mode	pnp, dark-on/light-on mode	pnp, dark-on mode, alarm
OS150000	OS150070	OS150070
through-beam sensor transmitter	through-beam sensor transmitter	through-beam sensor transmitter
cable	M8-connector	M8-connector
12m	12m	12m
	through-beam sensor receiver cable pnp, dark-on/light-on mode OS150000 through-beam sensor transmitter cable	through-beam sensor receiver receiver cable M8-connector pnp, dark-on/light-on mode pnp, dark-on/light-on mode OS150000 OS150070 through-beam sensor transmitter transmitter cable M8-connector







TECHNICAL DATA

output signal** operating voltage current consumption (w/o load) output current (max. load)** voltage drop (max. load)** transmitting element (pulsed)* wavelength* readiness delay** sampling frequency** display (signal)** display (functional reserve)** sensitivity adjustment** short-circuit protection reverse polarity protection dimensions housing material front screen material operating voltage 10 36V 12 36V 10 3	DC 10 36V DC 0mA** ≤ 15mA* / ≤ 10mA 200mA 2V DC light LED, infrared light 880nm 100ms 1kHz	10 36V DC ≤ 15mA* / ≤ 10mA** 200mA 2V DC tt LED, infrared light 880nm 100ms 1kHz yellow LED
current consumption (w/o load) output current (max. load)** voltage drop (max. load)** transmitting element (pulsed)* wavelength* readiness delay** sampling frequency** display (signal)** display (functional reserve)** sensitivity adjustment** short-circuit protection reverse polarity protection dimensions housing material front screen material 200m/ 880nm 100m/ 880nm 100m/ 980nm 100m/ 990m/ 100m/	0mA** ≤ 15mA* / ≤ 10mA 200mA 2V DC light LED, infrared light 880nm 100ms 1kHz	A** ≤ 15mA* / ≤ 10mA** 200mA 2V DC tt LED, infrared light 880nm 100ms 1kHz yellow LED
output current (max. load)** voltage drop (max. load)** transmitting element (pulsed)* wavelength* readiness delay** sampling frequency** display (signal)** display (functional reserve)** sensitivity adjustment** potentiom test input* alarm output** short-circuit protection reverse polarity protection dimensions housing material front screen material 200m/ 820m/	200mA 2V DC light LED, infrared light 880nm 100ms 1kHz	200mA 2V DC t LED, infrared light 880nm 100ms 1kHz yellow LED
voltage drop (max. load)** transmitting element (pulsed)* wavelength* readiness delay** sampling frequency** display (signal)** yellow Lidisplay (functional reserve)** sensitivity adjustment** potentiom test input* short-circuit protection reverse polarity protection dimensions housing material front screen material LED, infrared Redner	2V DC light LED, infrared light 880nm 100ms 1kHz	2V DC LED, infrared light 880nm 100ms 1kHz yellow LED
transmitting element (pulsed)* wavelength* readiness delay** sampling frequency** display (signal)** yellow Li display (functional reserve)** sensitivity adjustment** potentiom test input* short-circuit protection reverse polarity protection dimensions housing material front screen material	light LED, infrared light 880nm 100ms 1kHz	LED, infrared light 880nm 100ms 1kHz yellow LED
wavelength* readiness delay** sampling frequency** display (signal)** yellow Li display (functional reserve)** sensitivity adjustment** potention test input* GND/0V: Pi alarm output** short-circuit protection reverse polarity protection dimensions housing material front screen material	880nm 100ms 1kHz	880nm 100ms 1kHz yellow LED
readiness delay** sampling frequency** display (signal)** display (functional reserve)** sensitivity adjustment** potentiom test input* alarm output** short-circuit protection reverse polarity protection dimensions housing material front screen material 100ms 1842 100ms 1842 100ms 1842 100ms 1842 100ms 10ms 10ms 10ms 10ms 10ms 10ms 10m	100ms 1kHz	100ms 1kHz yellow LED
sampling frequency** display (signal)** display (functional reserve)** sensitivity adjustment** potentiom test input* alarm output** short-circuit protection reverse polarity protection dimensions housing material front screen material plastic Pt glass	1kHz	1kHz yellow LED
display (signal)** display (functional reserve)** sensitivity adjustment** potention test input* alarm output** short-circuit protection reverse polarity protection dimensions housing material front screen material yellow Li green Li g		yellow LED
display (functional reserve)** green LE sensitivity adjustment** potentiom test input* GND/0V: Pi alarm output** - short-circuit protection + reverse polarity protection + dimensions 15x30x30 housing material plastic PE front screen material glass	D yellow LED	•
sensitivity adjustment** potentiom test input* alarm output** short-circuit protection reverse polarity protection dimensions housing material front screen material potentiom A SAD/0V: Pin GND/0V: Pin FIN SAD/0V: Pi		
test input* alarm output** short-circuit protection reverse polarity protection dimensions housing material front screen material GND/0V: Pin GND/0V: Pin 15x30x300 + glassian	D green LED	green LED
alarm output** short-circuit protection + reverse polarity protection + dimensions 15x30x30 housing material plastic PE front screen material glass	eter potentiometer	potentiometer
short-circuit protection + reverse polarity protection + dimensions 15x30x30 housing material plastic PE front screen material glass	4/bk GND/0V: Pin4/bk	k GND/0V: Pin4/bk
reverse polarity protection + dimensions 15x30x30 housing material plastic Pt front screen material glass	-	+
dimensions 15x30x30 housing material plastic Pt front screen material glass	+	+
housing material plastic PE front screen material glass	+	+
front screen material glass	nm 15x30x30mm	15x30x30mm
8	TP plastic PBTP	plastic PBTP
operating temperature -25 +5!	glass	glass
		-25 +55°C
degree of protection (EN 60529)	°C -25 +55°C	IP67
connection 3m PVC-cable	°C -25 +55°C IP67	
connection accessories -	IP67	oin M8-connector, 4-pin
mounting accessories (enclosed) AO0000	IP67	M8-connector, 4-pin e.g. VK200375
mounting accessories (universal holder) AY0001	1P67 4-wire M8-connector, 4-p e.g. VK200375	

^{*} only transmitter

^{**} only receiver

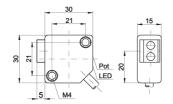


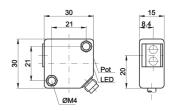


1900 through-beam, retro-reflective, dif. reflection sensors



article-no.	OR150105	OR150175
operating range	2m	2m
version	retro-reflective sensor with polarizing filter	retro-reflective sensor with polarizing filter
output	pnp, dark-on mode	pnp, dark-on mode
connection	cable	M8-connector
article-no.	-	OR150275
operating range		2m
version		retro-reflective sensor with polarizing filter
output		pnp, light-on mode
connection	-	M8-connector





TECHNICAL DATA

operating range	2m	2m
output signal	pnp, dark-on mode	see above
operating voltage	10 36V DC	10 36V DC
current consumption (w/o load)	≤15mA	≤15mA
output current (max.load)	200mA	200mA
voltage drop (max. load)	2V DC	2V DC
transmitting element (pulsed)	LED, red light	LED, red light
wavelength	660nm	660nm
readiness delay	100ms	100ms
sampling frequency	1kHz	1kHz
display (signal)	yellow LED	yellow LED
display (functional reserve)	green LED	green LED
sensitivity adjustment	potentiometer	potentiometer
alarm output	-	-
short-circuit protection	+	+
reverse polarity protection	+	+
dimensions	15x30x30mm	15x30x30mm
housing material	plastic PBTP	plastic PBTP
front screen material	glass	glass
operating temperature	-25 +55°C	-25 +55°C
degree of protection (EN 60529)	IP65	IP65
connection	2m cable, PVC, 3-wire	M8-connector, 3-pin
connection accessories	-	e.g. VK200075
mounting accessories	AO000045	AO000045
mounting accessories (universal ho	older) AY000114	AY000114





through-beam, retro-reflective, dif. reflection sensors 1900

-		
article-no.	OR150400	OR150470
operating range	4m	4m
version	retro-reflective sensor with polarizing filter	retro-reflective sensor with polarizing filte
output	pnp, light-on/dark-on mode	pnp, light-on/dark-on mode
connection	cable	M8-connector
connection	capie	M8-connector
article-no.	OR150700	OR150770
operating range	4m	4m
version	retro-reflective sensor with polarizing filter	retro-reflective sensor with polarizing filte
output	pnp, dark-on mode, alarm	pnp, dark-on mode, alarm
connection	cable	M8-connector
	30 21 Pot 8	30 21 LED R
TECHNICAL DATA operating range output signal	4m see above	4m see above
operating voltage	10 36V DC	10 36V DC
current consumption (w/o load)	≤20mA	≤ 20mA
output current (max. load)	200mA	200mA
voltage drop (max. load)	2V DC	2V DC
transmitting element (pulsed)	LED, red light	LED, red light
wavelength	660nm	660nm
readiness delay	100ms	100ms
sampling frequency	1kHz	1kHz
display (signal)	yellow LED	yellow LED
display (functional reserve)	green LED	green LED
sensitivity adjustment	potentiometer	potentiometer
alarm output	see above	see above
short-circuit protection	+	+
reverse polarity protection	+	+
dimensions	15x30x30mm	15x30x30mm
	plastic PBTP	plastic PBTP
housing material		glass
	מומני	צומזז
front screen material	glass -25 +55°C	
front screen material operating temperature	-25 +55°C	-25 +55°C
front screen material operating temperature degree of protection (EN 60529)	-25 +55°C IP67	-25 +55°C IP67
front screen material operating temperature degree of protection (EN 60529) connection	-25 +55°C IP67 3m cable, PVC, 4-wire	-25 +55°C IP67 M8-connector, 4-pin
front screen material operating temperature degree of protection (EN 60529) connection connection accessories	-25 +55°C IP67 3m cable, PVC, 4-wire -	-25 +55°C IP67 M8-connector, 4-pin e.g. VK200375
housing material front screen material operating temperature degree of protection (EN 60529) connection connection accessories mounting accessories (enclosed) mounting accessories (universal hold	-25 +55°C IP67 3m cable, PVC, 4-wire - AO000045	-25 +55°C IP67 M8-connector, 4-pin





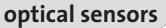
1900 through-beam, retro-reflective, dif. reflection sensors



article-no. version sensing range output signal connection	OT150105 dif. reflection sensor, energetic 600mm pnp, light-on mode cable	OT150175 dif. reflection sensor, energetic 600mm pnp, light-on mode M8-connector	OT150400 dif. reflection sensor, energetic 1200mm pnp, light-on/dark-on mode cable
article-no.	OT150205		OT150700
version	dif. reflection sensor, energetic	-	dif. reflection sensor, energetic
sensing range	600mm	-	1200mm
output signal	pnp, dark-on mode		pnp, light-on mode, alarm
connection	30 21 8.4 Pot Number 15 8.4 Po	30 21 Pot DED	cable 30 21 Pot NED P
TECHNICAL DATA			
sensing range	600mm	600mm	1200mm
output signal	see above	pnp, light-on mode	see above
operating voltage	10 36V DC	10 36V DC	10 36V DC
current consumption (w/o load)	≤ 20mA	≤ 20mA	≤ 20mA
output current (max. load)	200mA	200mA	200mA
voltage drop (max. load)	2V DC	2V DC	2V DC
hysteresis	≤ 10%	≤ 10%	≤ 10%
norm trimming plate transmitting element (pulsed)	200x200mm, white LED, infrared light	200x200mm, white LED, infrared light	200x200mm, white LED, infrared light
wavelength	880nm	880nm	880nm
readiness delay	100ms	100ms	100ms
sampling frequency	1kHz	1kHz	1kHz
display (signal)	yellow LED	yellow LED	yellow LED
display (functional reserve)	green LED	green LED	green LED
sensitivity adjustment	potentiometer	potentiometer	potentiometer
alarm output		-	see above
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
dimensions	15x30x30mm	15x30x30mm	15x30x30mm
housing material	plastic PBTP	plastic PBTP	plastic PBTP
front screen material	glass	glass	glass
operating temperature	-25 +55°C	-25 +55°C	-25 +55°C
degree of protection (EN 60529)	IP65	IP65	IP67
connection connection accessories	2m PVC-cable, 3-wire -	M8-connector, 3-pin e.g. VK200075	3m PVC-cable, 4-wire
mounting accessories (enclosed)		-	AO000045
mounting accessories	AO000045	AO000045	-
mounting accessories (universal h		AY000114	AY000114









through-beam, retro-reflective, dif. reflection sensors 1900

article-no.	OT150470	OT150471	OT150176
version	dif. reflection sensor, energetic	dif. reflection sensor	dif. reflection sensor
		background suppression	background suppression
sensing range	1200mm	15150mm	15150mm
output signal	pnp, light-on/dark-on mode	pnp, light-on/dark-on mode	pnp, light-on mode
connection	M8-connector	M8-connector	M8-connector
article-no.	OT151470	-	-
version	dif. reflection sensor, energetic	-	-
sensing range	1200mm	-	-
output signal	npn, light-on/dark-on mode	-	-
connection	M8-connector		
article-no.	OT150770	-	-
version	dif. reflection sensor, energetic		
sensing range	1200mm	-	-
output signal	pnp, light-on mode, alarm	-	-
connection	M8-connector		
	30 21 21 Pot R	30 21 8.4 Pot 8	30 21 8.4 Pot 8
TECHNICAL DATA sensing range	1200mm	15150mm	15150mm
output signal	see above	pnp, light-on/dark-on mode	pnp, light-on mode
operating voltage	10 36V DC	10 36V DC	10 36V DC
current consumption (w/o load)	≤ 20mA	≤ 25mA	≤ 25mA
output current (max. load)	200mA	200mA	200mA
voltage drop (max. load)	2V DC	2V DC	2V DC
hysteresis norm trimming plate	≤ 10%	≤ 5% 100x100mm, white	≤ 5% 100x100mm, white
transmitting element (pulsed)	200x200mm, white LED, infrared light	LED, red light	LED, red light
wavelength	880nm	660nm	660nm
readiness delay	100ms	100ms	100ms
sampling frequency	1kHz	0.5kHz	0.5kHz
display (signal)	yellow LED	yellow LED	yellow LED
display (functional reserve)	green LED	green LED	green LED
sensitivity adjustment	potentiometer	potentiometer	potentiometer
alarm output	see above		
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
dimensions	15x30x30mm	15x30x30mm	15x30x30mm
housing material	plastic PBTP	plastic PBTP	plastic PBTP
front screen material	glass	glass	glass
operating temperature	-25 +55°C	-25 +55°C	-25 +55°C
degree of protection (EN 60529)	IP67	IP67	IP65
connection	M8-connector, 4-pin	M8-connector, 4-pin	M8-connector, 3-pin
connection accessories	e.g. VK200375	e.g. VK200375	e.g. VK200075
mounting accessories (enclosed)	AO000045	AO000045	-
mounting accessories			AO000045
mounting accessories (universal h	older) AY000114	AY000114	AY000114



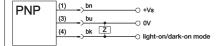


1900 through-beam, retro-reflective, dif. reflection sensors

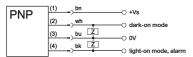


connection

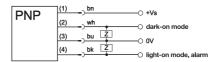
through-beam, retro-reflective, diffuse reflection sensors 3-pin



diffuse reflection sensors 4-pin



through-beam, retro-reflective, diffuse reflection sensors 4-pin



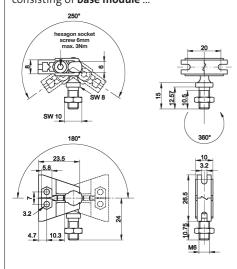
through-beam sensors, transmitter, 3- and 4-pin



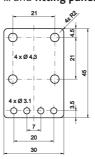
note: For the through-beam transmitters with test input, cable sockets with integrated LED display must not be used!! in case of 3-pin devices the wh = white (2) connection is not available

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

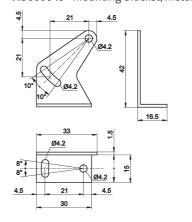
mounting accessories (universal holder) AY000114 consisting of base module ...



... and fitting panel



AO000045 mounting bracket, metal



ACCESSORIES

article-no.	description	note
AY000088	base module *	jaw: stainless steel, ball pin: galvanized steel
AY000114	mounting kit for sensors Ox15	stainless steel
AO000045	mounting bracket for sensors Ox15	

^{*} 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



ipf electronic gmbh

