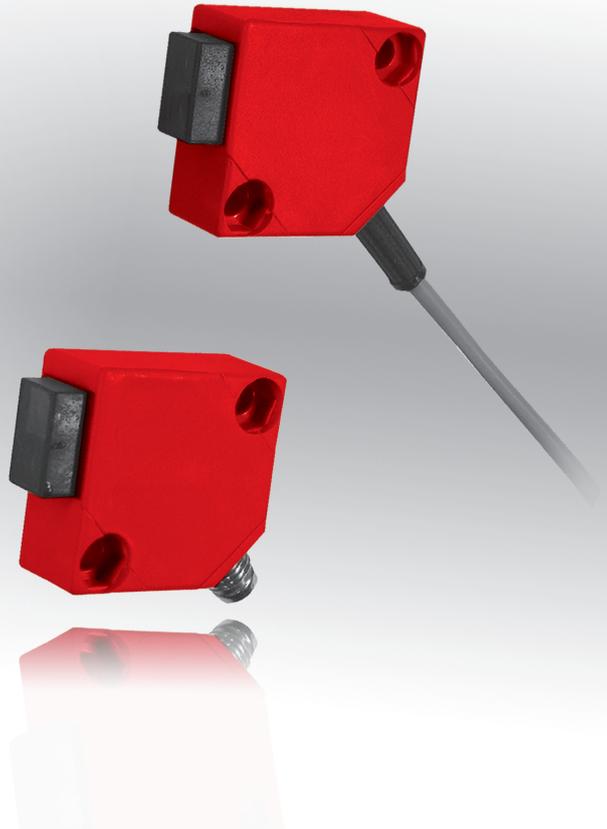


dimensions	15 x 30 x 30mm	
through-beam sensors	operating range	up to 12m
retro-reflective sensors	operating range	up to 4m
dif. reflection sensor	sensing range	up to 1200mm

- ✓ 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.

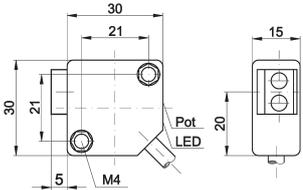
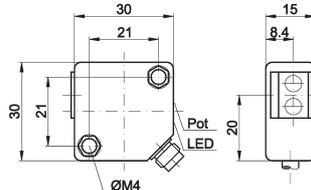
In addition, their independence of the sensing range relating to color and structure of the object surfaces is excellent. This is achieved by the principle of triangulation, which also obtains good background suppression.

application examples

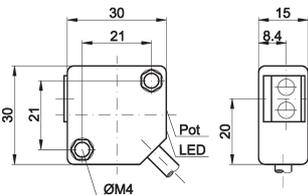
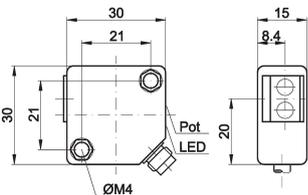
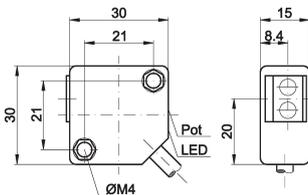
- ▶ reliable positioning tasks in automation technology
- ▶ presence checking by detection of different objects
- ▶ monitoring and edge detection of object and stacking heights
- ▶ contactless position recognition of small and large parts

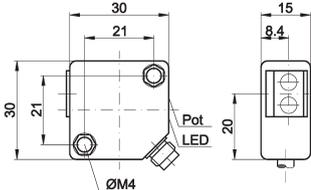
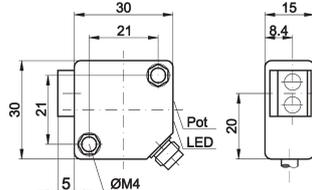
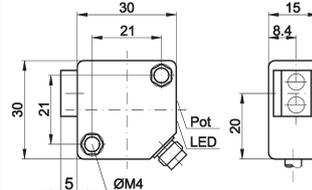
article-no.	OE150105	OE150175	OE150275
version	through-beam sensor receiver	through-beam sensor receiver	through-beam sensor receiver
output signal	pnp, dark-on mode	pnp, dark-on mode	pnp, light-on mode
connection	cable	M8-connector	M8-connector
article-no.	OS150005	OS150075	OS150075
version	through-beam sensor transmitter	through-beam sensor transmitter	through-beam sensor transmitter
connection	cable	M8-connector	M8-connector
operating range	6m	6m	6m
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
accessories (universal holder)	AY000114	AY000114	AY000114
* only transmitter			
** only receiver			

article-no.	OE150400	OE150470	OE150770
version	through-beam sensor receiver	through-beam sensor receiver	through-beam sensor receiver
connection	cable	M8-connector	M8-connector
output signal	pnp, dark-on/light-on mode	pnp, dark-on/light-on mode	pnp, dark-on mode, alarm
article-no.	OS150000	OS150070	OS150070
version	through-beam sensor transmitter	through-beam sensor transmitter	through-beam sensor transmitter
connection	cable	M8-connector	M8-connector
operating range	12m	12m	12m
TECHNICAL DATA			
operating range	12m	12m	12m
output signal**	pnp, dark-on/light-on mode	pnp, dark-on/light-on mode	pnp, dark-on mode, alarm
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)	IP67	IP67	IP67
connection	3m PVC-cable, 4-wire	M8-connector, 4-pin	M8-connector, 4-pin
connection accessories	-	e.g. VK200375	e.g. VK200375
mounting accessories (enclosed)	AO000045	AO000045	AO000045
accessories (universal holder)	AY000114	AY000114	AY000114
* only transmitter			
** only receiver			

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
accessories (universal holder)	AY000114	AY000114

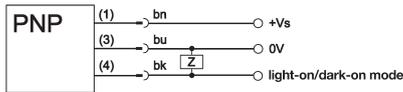
article-no.	OR150400	OR150470
operating range	4m	4m
version	retro-reflective sensor with polarizing filter	retro-reflective sensor with polarizing filter
output	pnp, light-on/dark-on mode	pnp, light-on/dark-on mode
connection	cable	M8-connector
article-no.	OR150700	OR150770
operating range	4m	4m
version	retro-reflective sensor with polarizing filter	retro-reflective sensor with polarizing filter
output	pnp, dark-on mode, alarm	pnp, dark-on mode, alarm
connection	cable	M8-connector
TECHNICAL DATA		
operating range	4m	4m
output signal	see above	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
housing material	plastic PBTP	plastic PBTP
front screen material	glass	glass
operating temperature	-25 ... +55°C	-25 ... +55°C
degree of protection (EN 60529)	IP67	IP67
connection	3m cable, PVC, 4-wire	M8-connector, 4-pin
connection accessories	-	e.g. VK200375
mounting accessories (enclosed)	AO000045	AO000045
accessories (universal holder)	AY000114	AY000114

article-no.	OT150105	OT150175	OT150400
version	dif. reflection sensor, energetic	dif. reflection sensor, energetic	dif. reflection sensor, energetic
sensing range	600mm	600mm	1200mm
output signal	pnp, light-on mode	pnp, light-on mode	pnp, light-on/dark-on mode
connection	cable	M8-connector	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	cable	-	cable
			
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	200x200mm, white	200x200mm, white	200x200mm, white
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
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	2m PVC-cable, 3-wire	M8-connector, 3-pin	3m PVC-cable, 4-wire
connection accessories	-	e.g. VK200075	-
mounting accessories (enclosed)	-	-	AO000045
mounting accessories	AO000045	AO000045	-
accessories (universal holder)	AY000114	AY000114	AY000114

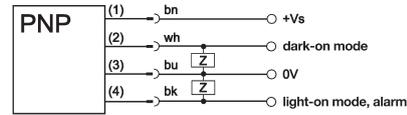
article-no.	OT150470	OT150471	OT150176
version	dif. reflection sensor, energetic	dif. reflection sensor background suppression	dif. reflection sensor background suppression
sensing range	1200mm	15 ...150mm	15 ...150mm
output signal	pnp, light-on/dark-on mode	pnp, light-on/dark-on mode	pnp, light-on mode
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	-	-
			
TECHNICAL DATA			
sensing range	1200mm	15 ...150mm	15 ...150mm
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	≤ 10%	≤ 5%	≤ 5%
norm trimming plate	200x200mm, white	100x100mm, white	100x100mm, white
transmitting element (pulsed)	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
accessories (universal holder)	AY000114	AY000114	AY000114

connection

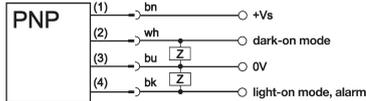
through-beam, retro-reflective, diffuse reflection sensors 3-pin



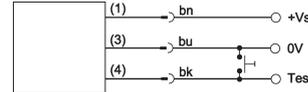
through-beam, retro-reflective, diffuse reflection sensors 4-pin



diffuse reflection sensors 4-pin



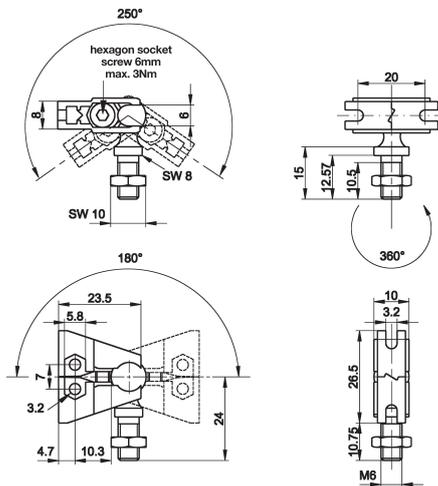
through-beam sensors, transmitter, 3- and 4-pin



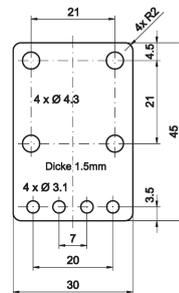
note: For the through-beam transmitters with test input, cable sockets with integrated LED display must not be used!!
in case of 3-pin devices the wh = white (2) connection is not available

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

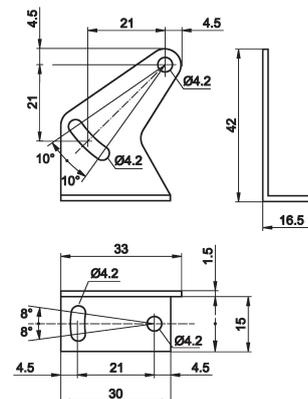
mounting accessories (universal holder) AY000114
consisting of **base module** ...



... 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