

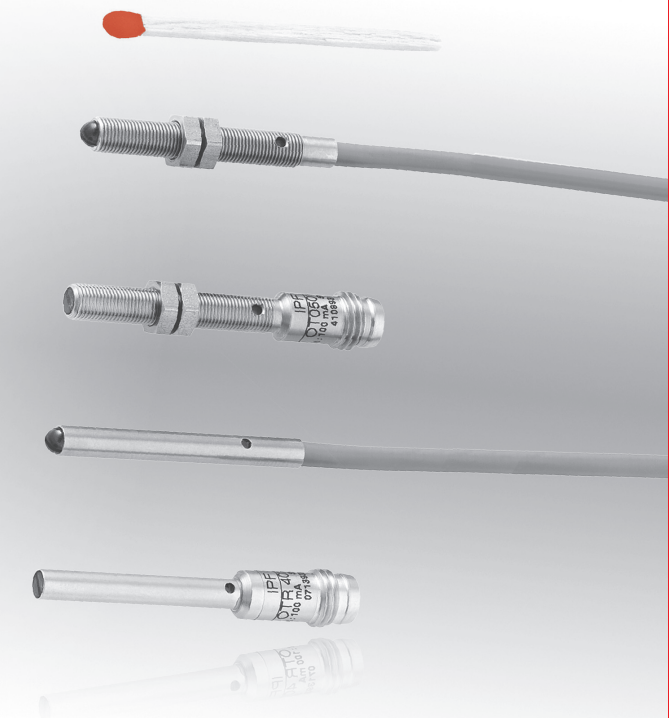
through-beam, diffuse reflection sensors 1100

dimensions round \varnothing 4mm
 thread M5x0.5

through-beam sensor	operating distance	250mm
dif. reflection sensor	sensing range	10mm
		20mm
		50mm

- ✓ large sensing ranges and smallest design
- ✓ devices with insensitive glass lens, diffuse reflection sensors with scratch-resistant sapphire tip
- ✓ function test via transmitter through-beam sensor
- ✓ infrared light
- ✓ stainless steel sleeve with high degree of protection IP67
- ✓ LED display for status and functional reserve
- ✓ connection with cable or 3-pin M8-connector

**subminiature devices
cylindrical light beam**



description

ipf electronic optical sensors in the versions \varnothing 4mm and M5 are the smallest devices of their kind with integrated amplifier. They feature a metal housing and are fully vacuum-potted.

Concentrating reflectors are part of the optical section. Filled with compound they provide for excellent durability in severe environmental conditions.

The electronic section has been executed in chip-on-board technology (no ceramic hybrid) making it insensitive to vibrations. This also avoids breakage of the printed circuit board due to mechanical stress. The glass lens resists scratches making it easy to clean.

IP67 protection is guaranteed thanks to resin-encapsulation.

Inductive proximity switches can be replaced, if they fail to perform for the required sensing range. Diffuse reflection

sensors with a cylindrical light beam can also be used for example inside a pipe or tubing.

These subminiature devices are used, where space is insufficient for larger light barriers. In addition to this they can serve as an alternative to fiber optic systems, because there is no need for an external amplifier.

A yellow LED displays the switching status. The LED flashes in case of an insufficient functional reserve (soiling or unfavorable alignment) displaying the function in the instable range. This facilitates the alignment when being assembled and soiling is recognized before the device fails.

application examples

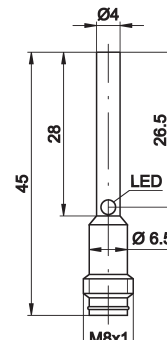
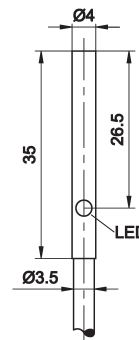
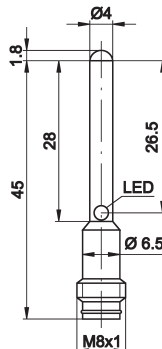
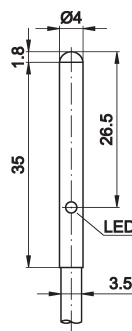
- ▶ pulse generators
- ▶ limit switches
- ▶ position switches

article-no.	OER40100	OER40170
version	through-beam receiver	through-beam receiver
operating range	250mm	250mm
connection	cable	M8-connector
article-no.	OSR40000	OSR40070
version	through-beam transmitter	through-beam transmitter
operating range	250mm	250mm
connection	cable	M8-connector
TECHNICAL DATA		
operating range	250mm	250mm
output signal	pnp, no *	pnp, no *
operating voltage	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 5mA (receiver) / ≤ 10mA (transmitter)	≤ 5mA (receiver) / ≤ 10mA (transmitter)
output current (max. load)	100mA *	100mA *
voltage drop (max. load)	2.0V DC	2.0V DC
readiness delay	20ms	20ms
transmitting element (pulsed)	LED, infrared light	LED, infrared light
wavelength	880nm	880nm
sampling frequency	250Hz *	250Hz *
response/decay time	2.5ms *	2.5ms *
display (signal/stand-by)	yellow LED * / yellow flashing	yellow LED * / yellow flashing
short-circuit protection	+	+
reverse polarity protection	+	+
design	Ø 4mm	Ø 4mm
length (thread/complete)	- / 35mm	- / 45mm
housing material	stainless steel	stainless steel
lens material	glass	glass
operating temperature	0 ... +55°C	0 ... +55°C
degree of protection (EN 60529)	IP67	IP67
connection	2m PVC-cable, 3-wire	M8-connector, 3-pin
connection accessories	-	e.g. VK200075
mounting accessories (clip)	AY000044	AY000044
* only receiver		

through-beam, diffuse reflection sensors 1100

article-no.	OE050100	OE050170
version	through-beam receiver	through-beam receiver
operating range	250mm	250mm
connection	cable	M8-connector
article-no.	OS050000	OS050070
version	through-beam transmitter	through-beam transmitter
operating range	250mm	250mm
connection	cable	M8-connector
TECHNICAL DATA		
operating range	250mm	250mm
output signal	pnp, no *	pnp, no *
operating voltage	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 5mA (receiver) / ≤ 10mA (transmitter)	≤ 5mA (receiver) / ≤ 10mA (transmitter)
output current (max. load)	100mA *	100mA *
voltage drop (max. load)	2.0V DC	2.0V DC
readiness delay	20ms	20ms
transmitting element (pulsed)	LED, infrared light	LED, infrared light
wavelength	880nm	880nm
sampling frequency	250Hz *	250Hz *
response/decay time	2.5ms *	2.5ms *
display (signal/stand-by)	yellow LED * / yellow flashing	yellow LED * / yellow flashing
short-circuit protection	+	+
reverse polarity protection	+	+
design	M5x0.5	M5x0.5
length (thread/complete)	30mm / 35mm	30mm / 45mm
housing material	stainless steel	stainless steel
lens material	glass	glass
operating temperature	0 ... +55°C	0 ... +55°C
degree of protection (EN 60529)	IP67	IP67
connection	2m PVC-cable, 3-wire	M8-connector, 3-pin
connection accessories	-	e.g. VK200075
mounting accessories (clip)	AY000045	AY000045
mounting accessories (universal holder)	AY000115	AY000115
* only receiver		

article-no.	OTR40104	OTR40174	OTR40100	OTR40170
version (light beam)	dif. refl. sensor (cylindrical)	dif. refl. sensor (cylindrical)	dif. refl. sensor	dif. refl. sensor
sensing range	10mm	10mm	50mm	50mm
connection	cable	M8-connector	cable	M8-connector
article-no.	OTR40105	OTR40175	-	-
version (light beam)	dif. refl. sensor (cylindrical)	dif. refl. sensor (cylindrical)	-	-
sensing range	20m	20m	-	-
connection	cable	M8	-connector	-



TECHNICAL DATA

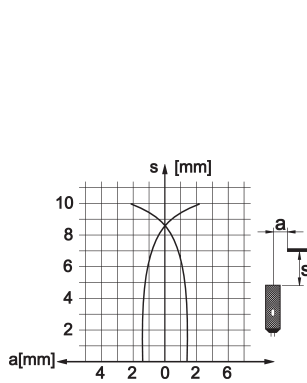
sensing range	see above	see above	see above	see above
output signal	pnp, no	pnp, no	pnp, no	pnp, no
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 15mA	≤ 15mA	≤ 15mA	≤ 15mA
output current (max. load)	100mA	100mA	100mA	100mA
voltage drop (max. load)	2.0V DC	2.0V DC	2.0V DC	2.0V DC
readiness delay	20ms	20ms	20ms	20ms
transmitting element (pulsed)	LED, infrared light	LED, infrared light	LED, infrared light	LED, infrared light
wavelength	880nm	880nm	880nm	880nm
sampling frequency	250Hz	250Hz	250Hz	250Hz
response/decay time	2.5ms	2.5ms	2.5ms	2.5ms
display (signal)	yellow LED	yellow LED	yellow LED	yellow LED
short-circuit protection	+	+	+	+
reverse polarity protection	+	+	+	+
design	Ø 4mm	Ø 4mm	Ø 4mm	Ø 4mm
length (thread/complete)	- / 36.8mm	- / 46.8mm	- / 35mm	- / 45mm
housing material	stainless steel	stainless steel	stainless steel	stainless steel
lens material	sapphire	sapphire	glass	glass
operating temperature	0 ... +55°C	0 ... +55°C	0 ... +55°C	0 ... +55°C
degree of protection (EN60529)	IP67	IP67	IP67	IP67
connection	2m PVC-cable, 3-wire	M8-connector, 3-pin	2m PVC-cable, 3-wire	M8-connector, 3-pin
connection accessories	-	e.g. VK200075	-	e.g. VK200075
mounting accessories (clip)	AY000044	AY000044	AY000044	AY000044

through-beam, diffuse reflection sensors 1100

article-no.	OT050104	OT050174	OT050100	OT050170
version (light beam)	dif. refl. sensor (cylindrical)	dif. refl. sensor (cylindrical)	dif. refl. sensor	dif. refl. sensor
sensing range	10mm	10mm	50mm	50mm
connection	cable	M8-connector	cable	M8-connector
article-no.	OT050105	OT050175	-	-
version (light beam)	dif. refl. sensor (cylindrical)	dif. refl. sensor (cylindrical)	-	-
sensing range	20m	20m	-	-
connection	cable	M8-connector	-	-
TECHNICAL DATA				
sensing range	see above	see above	see above	see above
output signal	pnp, no	pnp, no	pnp, no	pnp, no
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 15mA	≤ 15mA	≤ 15mA	≤ 15mA
output current (max. load)	100mA	100mA	100mA	100mA
voltage drop (max. load)	2.0V DC	2.0V DC	2.0V DC	2.0V DC
readiness delay	20ms	20ms	20ms	20ms
transmitting element (pulsed)	LED, infrared light	LED, infrared light	LED, infrared light	LED, infrared light
wavelength	880nm	880nm	880nm	880nm
sampling frequency	250Hz	250Hz	250Hz	250Hz
response/decay time	2.5ms	2.5ms	2.5ms	2.5ms
display (signal)	yellow LED	yellow LED	yellow LED	yellow LED
short-circuit protection	+	+	+	+
reverse polarity protection	+	+	+	+
design	M5x0.5	M5x0.5	M5x0.5	M5x0.5
length (thread/complete)	30mm/36.8mm	30mm/46.8mm	30mm/35mm	30mm/45mm
housing material	stainless steel	stainless steel	stainless steel	stainless steel
lens material	sapphire	sapphire	glass	glass
operating temperature	0 ... +55°C	0 ... +55°C	0 ... +55°C	0 ... +55°C
degree of protection (EN60529)	IP67	IP67	IP67	IP67
connection	2m PVC-cable, 3-wire	M8-connector, 3-pin	2m PVC-cable, 3-wire	M8-connector, 3-pin
connection accessories	-	e.g. VK200075	-	e.g. VK200075
mounting accessories (clip)	AY000045	AY000045	AY000045	AY000045
mounting accessories (universal holder)	AY000115	AY000115	AY000115	AY000115

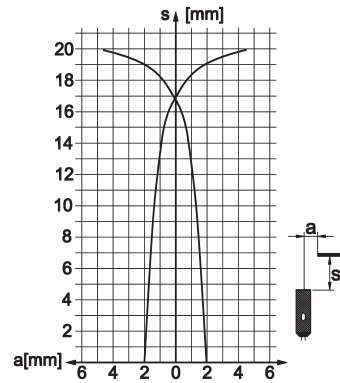
response curves

OTR401x4 / OT0501x4



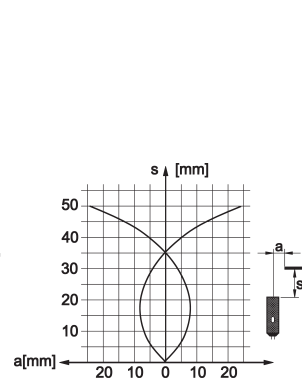
norm trimming plate 100x100mm white

OTR401x5 / OT0501x5



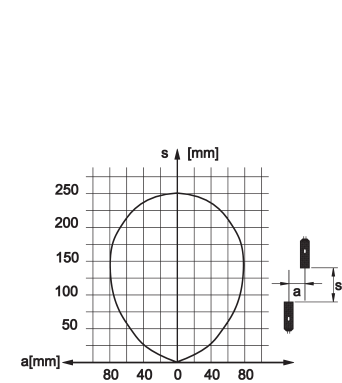
norm trimming plate 100x100mm white

OTR401x0 / OT0501x0



norm trimming plate 100x100mm white

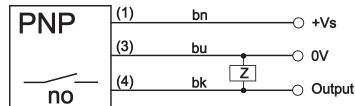
OER40xx0 / OE050xx0



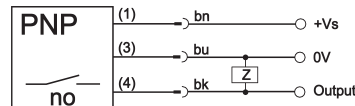
alignment receiver/transmitter

connection

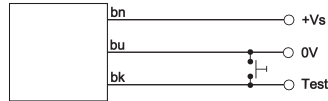
cable device dif. reflection sensor and through-beam receiver



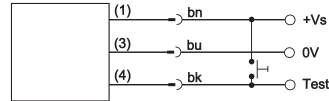
connector device dif. reflection sensor and through-beam receiver



cable device through-beam transmitter

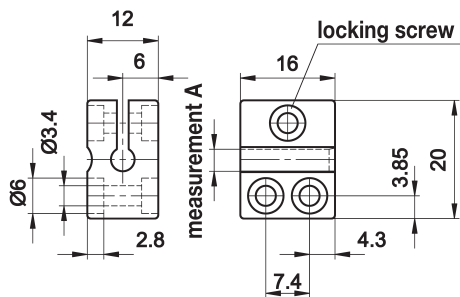


connector device through-beam transmitter



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

quick clip



ACCESSORIES

article-no.	description	sensor diameter	article material	screw material
AY000044	quick clip	4mm (measurement A)	PA6	galvanized steel
AY000045	quick clip	5mm (measurement A)	PA6	galvanized steel
AY000088	base module *		jaw: stainless steel, ball pin: galvanized steel	
AY000115	mounting kit for M5 sensors		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