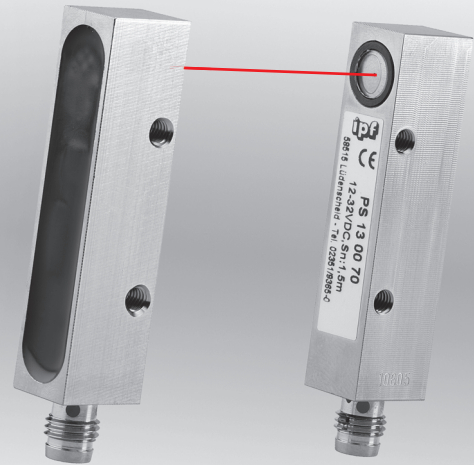


dimensions	12 x 64 x 14mm	
through-beam sensors	range	1.5m 5.0m 6.0m

- ✓ robust metal housing
- ✓ lateral lenses for confined mounting conditions
- ✓ high resolution and insensitive to soiling
- ✓ interference filter
- ✓ exact adjustment with angle or flange
- ✓ integrated amplifier
- ✓ high switching frequency and switching distances
- ✓ visible red light, pulsed
- ✓ insensitive to ambient light



**economically priced version in aluminum housing**

DC  
=

PNP  
NPN

M8  
⊙

**description**

Series 13 *ipf* laser sensors are optoelectronic proximity switches with a very precise laser beam course. Their design is also exceptionally small and compact. The range lies between 1m and 6m.

Through the use of round apertures there is a homogenous distribution of light within the laser beam.

The laser light beam emitted through a precision lens (aspherical lens made of glass) allows the recognition of the smallest of objects (e.g. threads) even in the case of a large transmitter/receiver distance.

As limit switches, position switches and pulse generators in automatic systems and production sequences, laser through-beam sensors offer secure solutions to process related problems.

They detect very small objects made of metal, glass, plastic,

wood, paper etc. with extreme accuracy.

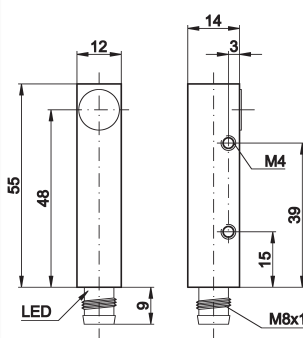
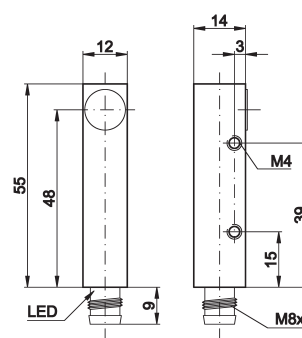
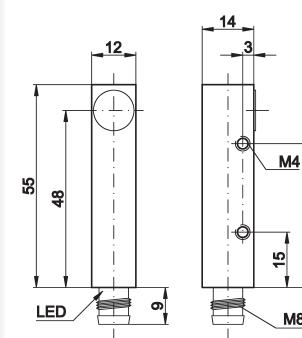
The sensors work with a visible red light and as such, can be easily aligned to one another.

The laser power of the transmitter can be set via the current control input. In addition, this input allows the laser to be switched off, thus enabling the laser through-beam sensors to be tested (test input).

**application examples**

- ▶ ejection check for articles from tools
- ▶ reference point sensor for positioning tasks
- ▶ detection of very small parts (wires / pins / bores)
- ▶ completeness checks for mounting tasks
- ▶ detection of very fast moving parts
- ▶ measurement tasks via integration of slit diaphragms

article-no.	PS130070	PS130071	PS130072
version	through-beam transmitter	through-beam transmitter	through-beam transmitter
range	1.5m	1m	6m
article-no.	PE130170	PE130171	PE130172
version	through-beam receiver	through-beam receiver	through-beam receiver
output	pnp, dark-on mode nnp, light-on mode	pnp, dark-on mode nnp, light-on mode	pnp, dark-on mode nnp, light-on mode

### TECHNICAL DATA

range	1.5m	1m	6m
aperture	0.5mm	0.3mm	2.0mm
resolution *	typ. 0.1mm	typ. 0.1mm	typ. 0.1mm
output *	pnp, dark-on mode nnp, light-on mode	pnp, dark-on mode nnp, light-on mode	pnp, dark-on mode nnp, light-on mode
operating voltage	12 ... 32V DC	12 ... 32V DC	12 ... 32V DC
current consumption (w/o load)	≤ 60mA (transmitter) ≤ 30mA (receiver)	≤ 60mA (transmitter) ≤ 30mA (receiver)	≤ 60mA (transmitter) ≤ 30mA (receiver)
output current (max. load) *	100mA	100mA	100mA
voltage drop (max. load) *	2.0V DC	2.0V DC	2.0V DC
transmitting element (pulsed)	laser LED	laser LED	laser LED
wavelength	670nm, red light	670nm, red light	670nm, red light
laser class	2	2	2
switching frequency *	1kHz	1kHz	1kHz
display (signal) *	yellow LED	yellow LED	yellow LED
display (operation)	green LED	green LED	green LED
repeat accuracy *	5µm	3µm	20µm
test input	+	+	+
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
dimensions	12x64x14mm	12x64x14mm	12x64x14mm
length (thread/complete)	- / 64mm	- / 64mm	- / 64mm
housing material	nickel-plated brass	nickel-plated brass	nickel-plated brass
lens material	glass	glass	glass
operating temperature	-20 ... +50°C	-20 ... +50°C	-20 ... +50°C
degree of protection (EN 60529)	IP67	IP67	IP67
connection	M8-connector, 3-pin	M8-connector, 3-pin	M8-connector, 3-pin
connection accessories	e.g. <b>VK200075</b> PUR, angular	e.g. <b>VK200075</b> PUR, angular	e.g. <b>VK200075</b> PUR, angular
mounting accessories	bracket: <b>AP000019</b> flange: <b>AP000020</b>	bracket: <b>AP000019</b> flange: <b>AP000020</b>	bracket: <b>AP000019</b> flange: <b>AP000020</b>

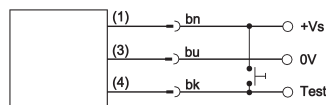
\* only receiver



article-no.	<b>PS130075</b>	<b>PS130076</b>
version	<b>through-beam transmitter</b>	<b>through-beam transmitter</b>
range	<b>5m</b>	<b>1m</b>
article-no.	<b>PE130175</b>	<b>PE130176</b>
version	<b>through-beam receiver</b>	<b>through-beam receiver</b>
output	<b>pnp, light-on mode npn, dark-on mode</b>	<b>pnp, light-on mode npn, dark-on mode</b>
<b>TECHNICAL DATA</b>		
range	5m	1m
aperture	1.0mm	0.7mm
resolution *	typ. 0.1mm	typ. 0.5mm
output *	pnp, light-on mode npn, dark-on mode	pnp, light-on mode npn, dark-on mode
operating voltage	12 ... 32V DC	12 ... 32V DC
current consumption (w/o load)	≤ 60mA (transmitter) ≤ 30mA (receiver)	≤ 60mA (transmitter) ≤ 30mA (receiver)
output current (max. load) *	100mA	100mA
voltage drop (max. load) *	2.0V DC	2.0V DC
transmitting element (pulsed)	laser LED	laser LED
wavelength	670nm, red light	670nm, red light
laser class	2	2
switching frequency *	1kHz	1kHz
display (signal) *	yellow LED	yellow LED
display (operation)	green LED	green LED
repeat accuracy *	10µm	7µm
test input	+	-
short-circuit protection	+	+
reverse polarity protection	+	+
dimensions	12x64x14mm	12x64x14mm
length (thread/complete)	- / 64mm	- / 64mm
housing material	nickel-plated brass	red anodized aluminum
lens material	glass	plastic
operating temperature	-20 ... +50°C	-20 ... +50°C
degree of protection (EN 60529)	IP67	IP67
connection	M8-connector, 3-pin	M8-connector, 3-pin
connection accessories	e.g. <b>VK200075</b> PUR, angular	e.g. <b>VK200075</b> PUR, angular
mounting accessories	bracket: <b>AP000019</b> flange: <b>AP000020</b>	bracket: <b>AP000019</b> flange: <b>AP000020</b>
* only receiver		

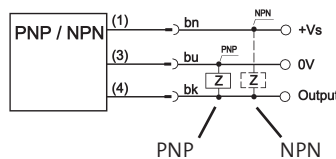
### connection

#### through-beam transmitter



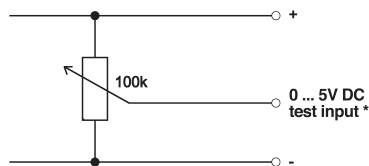
wire colors: bn = brown (1), bu = blue (3), bk = black (4)

#### through-beam receiver



dark-on mode

Do not connect simultaneously!  
light-on mode



test input (\* not for PS130076)

**Caution! Laser Radiation!**  
**Do not stare into the beam!**

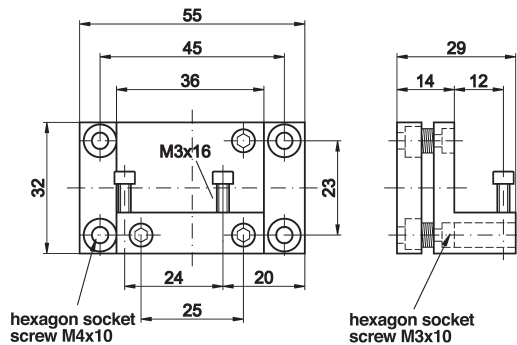
**laser diode**

wavelength 670nm  
max. output power < 1mW  
**laser class 2**

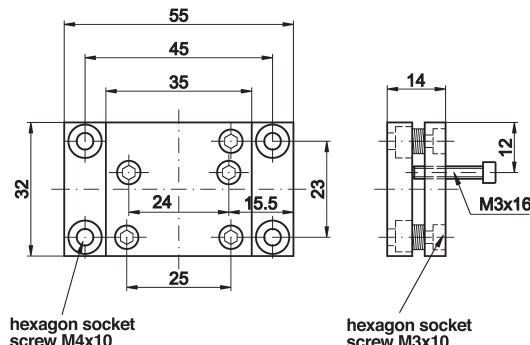
The transmitting power can be controlled via the test input of the transmitter!  
test input **0V**: transmitting power **100%**  
test input **0V to 5V**: transmitting power **100% to 0% continuously adjustable**

Voltages at the test input exceeding **5V** will cause the transmitter to be **switched off!**  
In case of an open test input the transmitting power is approx. 60%.

#### angle AP000019



#### flange AP000020



For an exact adjustment of the laser beam, the laser transmitter should be mounted on an angle or a flange!

article-no.	description	
AP000019	accessory laser, precision bracket for alignment,	aluminum
AP000020	accessory laser, precision flange for alignment,	aluminum

This data sheet contains the standard versions only. Kindly request the availability of other output and connection versions.  
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](http://www.ipf-electronic.com)