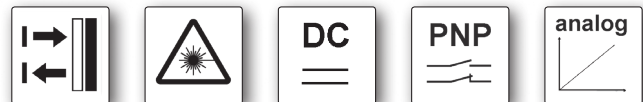


dimensions	<b>13.4 x 48.2 x 40mm</b>	
dif. reflection sensors	sensing range	<b>50 to 350mm</b>
dif. reflection sensors	sensing range	<b>50 to 550mm</b>



- ✓ **robust metal housing**
- ✓ **dif. reflection sensors with background suppression**
- ✓ **laser class 2**
- ✓ **high switching frequency**
- ✓ **LED display for switching state / soiling and operating voltage**
- ✓ **dif. reflection sensor with exclusive-OR switching output**
- ✓ **high ambient light shielding**
- ✓ **connection with 4-pin M8-connector**

**distance sensors, analog output 4 to 20mA / 0 to 10V, glass front window**



**description**

Today, optoelectronic sensors are essential components in many automated manufacturing processes. These highly accurate laser sensors are used everywhere parts need to be even more reliably detected, counted, measured or positioned contactless and quickly. They are used for the accurate position detection of objects made of metal, glass, plastic, wood, paper and much more.

The sensors of this series feature a glass lens in a sturdy aluminum housing. With the small red laser spot, they can always be easily and reliably aligned. Devices with a laser line are used for the detection of, e.g., rough surfaces.

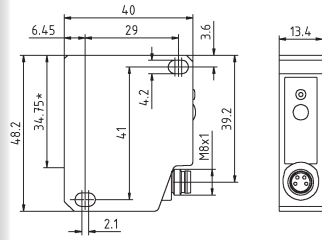
For the devices with analog output, possible soiling of the lens is signaled by the red LED. The distance setting is performed either via an external input or the teach button on the device. The functional principle of the diffuse

reflection sensor with background suppression is based on the triangulation method in which the object position is determined from the angle of the light reflected by the object. With all triangulation sensors, it must be ensured that the laser spot can be seen directly by the receiver lens and that there are no obstacles in front of this lens. The red LED lights up if the output is securely switched.

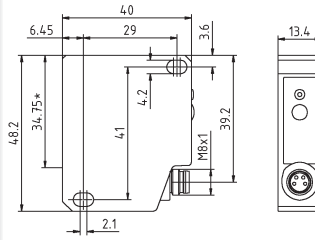
**application examples**

- ▶ detection of object edges with high precision
- ▶ check of parts of any form and color
- ▶ contactless position recognition
- ▶ pulse generator for counting devices
- ▶ recognition of the smallest of objects

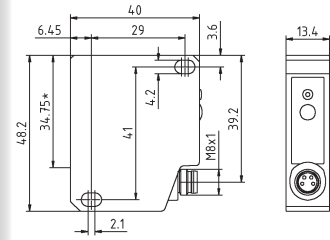
article-no.	PT490070	PT493070	PT490072
version	teach-in, laser spot	teach-in, laser line	teach-in, laser spot
output signal	4 ... 20mA	4 ... 20mA	4 ... 20mA
sensing range	50 ... 350mm	50 ... 350mm	50 ... 550mm
article-no.	PT490075	PT493075	-
version	teach-in, laser spot	teach-in, laser line	-
output signal	0 ... 10V DC	0 ... 10V DC	-
range	50 ... 350mm	50 ... 350mm	-



\*transmitter axis



\*transmitter axis



\*transmitter axis

### TECHNICAL DATA

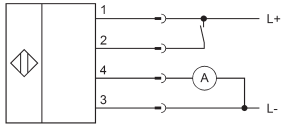
sensing range	50 ... 350mm	50 ... 350mm	50 ... 550mm
output signal	see above	see above	4 ... 20mA
operating voltage	12 ... 28V DC	12 ... 28V DC	12 ... 28V DC
current consumption (w/o load)	≤ 100mA	≤ 100mA	≤ 100mA
output current (max. load)	-	-	-
voltage drop (max. load)	-	-	-
transmitting element	red laser diode	red laser diode	red laser diode
wavelength	650nm	650nm	650nm
laser class	2	2	2
light beam form	point: Ø 1mm	line (wxh): 2mm x 4 ... 9mm	point: Ø 1mm
response/decay time	< 0.9ms	< 0.9ms	< 0.9ms
switching frequency	550Hz	550Hz	550Hz
display (soiling)	red LED	red LED	red LED
display (operation)	green LED	green LED	green LED
setting	external teach-in	external teach-in	external teach-in
resolution	0.1 ... 0.4mm	0.1 ... 0.4mm	0.1 ... 0.4mm
linearity deviation	±0.05 ... ±1.2mm	±0.05 ... ±1.2mm	±0.05 ... ±1.2mm
short-circuit protection	+	+	+
reverse polarity protection	L+ to L-	L+ to L-	L+ to L-
dimensions	13.4x48.2x40mm	13.4x48.2x40mm	13.4x48.2x40mm
material (housing)	aluminum	aluminum	aluminum
material (front screen)	glass	glass	glass
operating temperature	0 ... +50°C	0 ... +50°C	0 ... +50°C
degree 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 (universal holder)	AY000096	AY000096	AY000096

article-no.	PT490370	PT490375
version	teach-in, laser spot background suppression	teach-in, laser line background suppression
output signal	pnp, no/nc	pnp, no/nc
sensing range	50 ... 550mm	50 ... 550mm
	<p>*transmitter axis</p>	<p>*transmitter axis</p>
<b>TECHNICAL DATA</b>		
sensing range	50 ... 550mm	50 ... 550mm
output signal	PNP, NO / NC	PNP, NO / NC
operating voltage	12 ... 28V DC	12 ... 28V DC
current consumption (w/o load)	≤ 80mA	≤ 80mA
output current (max. load)	100mA	100mA
voltage drop (max. load)	< 2.8V DC	< 2.8V DC
transmitting element	red laser diode	red laser diode
wavelength	650nm	650nm
laser class	2	2
light beam form	point: Ø 1mm	line (wxh): 2mm x 4 ... 13mm
response/decay time	< 5ms/< 15ms	< 5ms/< 15ms
switching frequency	50Hz	50Hz
display (signal)	red LED	red LED
display (operation)	green LED	green LED
setting	external teach-in	external teach-in
resolution	-	-
linearity deviation	-	-
short-circuit protection	+	+
reverse polarity protection	L+ to L-	L+ to L
dimensions	13.4x48.2x40mm	13.4x48.2x40mm
housing material	aluminum	aluminum
front screen material	glass	glass
operating temperature	0 ... +50°C	0 ... +50°C
degree of protection (EN 60529)	IP67	IP67
connection	M8-connector, 4-pin	M8-connector, 4-pin
connection accessories	e.g. VK200375	e.g. VK200375
mounting accessories (universal holder)	AY000096	AY000096



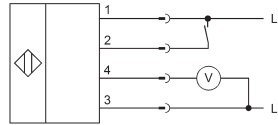
### connection

#### PT490070, PT493070, PT490072



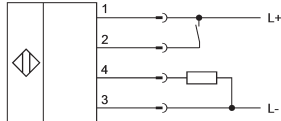
1 = L+, 2 = teach-in, 3 = L-, 4 = 4-20mA

#### PT490075, PT493075



1 = L+, 2 = teach-in, 3 = L-, 4 = 0-10V


#### PT490370, PT490375



1 = L+, 2 = teach-in, 3 = L-, 4 = PNP NO/NC

wire colors: 1 = BN (brown), 2 = WH (white), 3 = BU (blue), 4 = BK (black)

**Caution, laser radiation!**  
Do not stare into the beam!

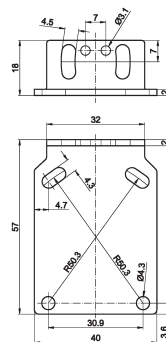
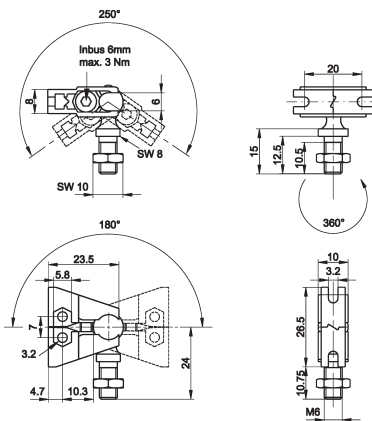


**laser class 2**

according to DIN EN 60825-1  
wavelength 630 ... 680nm  
max. output power 1mW

universal mounting AY000096  
consisting of base module ...

and fitting panel



### ACCESSORIES

article-no.	description	note
AY000088	base module*	jaw: stainless steel, ball pin: galvanized steel
AY000096	mounting kit for sensors PT49	stainless steel

\* The **AY000088** base module is contained in every mounting kit.

Material of bolts and nuts: galvanized steel

This data sheet contains only the available standard versions. Please contact us for other output and connection versions.

We would be happy to provide you with the appropriate cable socket for the connector devices. A list can be found in catalog section „Accessories“ under „Cable sockets **ipf-SENSORFLEX**®“ or in the search window on our website [www.ipf.de](http://www.ipf.de) with search term „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](http://www.ipf-electronic.com)