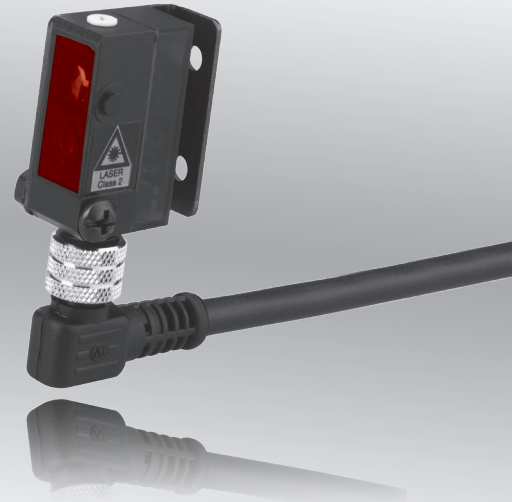


dimensions                    **12 x 27 x 16.3mm**

dif. reflection sensor    sensing range                    **up to 130mm**

- ✓ diffuse reflection laser sensor with background suppression by triangulation
- ✓ plastic housing
- ✓ LED status displays
- ✓ integrated amplifier
- ✓ visible laser red light 650nm
- ✓ adjustable sensing range
- ✓ high switching frequency and switching distances
- ✓ connection via cable or 4-pin M8-connector



**subminiature design  
linear light beam**



**description**

*ipf* sensors of the **PT14** series are optoelectronic proximity switches with a very precise laser beam course in an extremely small and compact design. The sensing range is adjustable from 22 to 130mm. Therefore the receiver device is mechanically adjusted. The repeat accuracy at the laser focus distance (Sn = 40mm) for a lateral approach is less than 0.2mm.

The sensor allows very accurate detection of the smallest objects, even in rapid production sequences (sensor switching frequency is 2000Hz).

Diffuse reflection laser sensors with background suppression are used as limit or position switches and pulse generators on automated machines and for production processes. With

utmost precision they detect minute objects made from metal, glass, plastic (films), wood, paper, etc.

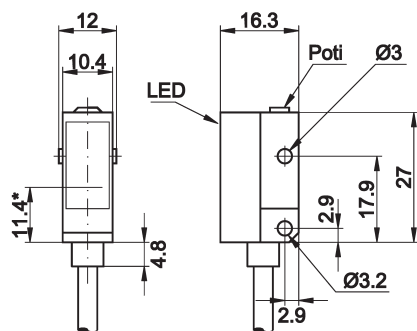
The sensors operate with visible red light, which allows for an easy alignment with the object to be detected. They have an exclusive OR-output (light-on, dark-on mode).

**application examples**

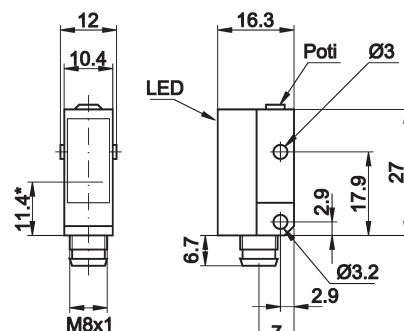
- ▶ detection of object edges with high precision
- ▶ check of parts of any form and color
- ▶ contactless position recognition
- ▶ pulse generator for counting devices
- ▶ recognition of the smallest of objects



article-no.	PT140400	PT140470
version	dif. reflection sensor with background suppression	dif. reflection sensor with background suppression
output signal	pnp, light-on/dark-on mode	pnp, light-on/dark-on mode
sensing range	22 ... 130mm	22 ... 130mm



\* transmitter axis

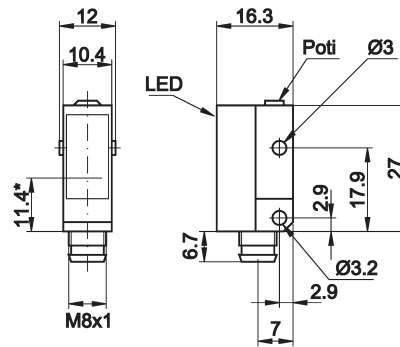


\* transmitter axis

### TECHNICAL DATA

sensing range	22 ... 130mm	22 ... 130mm
output signal	pnp, light-on/dark-on mode	pnp, light-on/dark-on mode
operating voltage	11 ... 30V DC	11 ... 30V DC
current consumption (w/o load)	≤ 30mA	≤ 30mA
output current (max. load)	100mA	100mA
voltage drop (max. load)	1.8V DC	1.8V DC
transmitting element (pulsed)	laser diode, red light	laser diode, red light
wavelength	650nm	650nm
laser focus distance	40mm	40mm
laser class	2	2
response/decay time	< 0.25ms	< 0.25ms
switching frequency	2kHz	2kHz
display (signal)	yellow LED	yellow LED
display (operation)	green LED	green LED
sensitivity adjustment	mechanical, 5 revolutions	mechanical, 5 revolutions
repeat accuracy	< 0.2mm at the laser focus distance	< 0.2mm at the laser focus distance
short-circuit protection	+	+
reverse polarity protection	+ (+Vs)	+ (+Vs)
dimensions	12x27x16.3mm	12x27x16.3mm
housing material	plastic	plastic
front screen material	PMMA	PMMA
operating temperature	-10 ... +50°C	-10 ... +50°C
degree of protection (EN 60529)	IP65	IP67
connection	cable, 2m, PUR, 4-wire	M8-connector, 4-pin
connection accessories	-	e.g. VK200375
mounting accessories	AO000073	AO000073
mounting accessories (universal holder)	AY000116	AY000116

article-no.	PT140475
version	diffuse reflection sensor with background suppression, linear beam
output signal	pnp, light-on/dark-on mode
sensing range	22 ... 130mm



\* transmitter axis

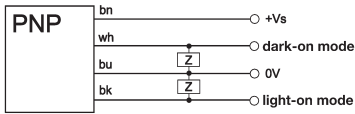
**TECHNICAL DATA**

sensing range	22 ... 130mm
output signal	pnp, light-on/dark-on mode
operating voltage	11 ... 30V DC
current consumption (w/o load)	≤ 30mA
output current (max. load)	100mA
voltage drop (max. load)	1.8V DC
transmitting element (pulsed)	laser diode red light
wavelength	650nm
laser focus distance	40mm
laser class	1
response/decay time	< 0.25ms
switching frequency	2kHz
display (signal)	yellow LED
display (operation)	green LED
sensitivity adjustment	mechanical, 5 revolutions
repeat accuracy	< 0.2mm at the laser focus distance
short-circuit protection	+
reverse polarity protection	+ (+Vs)
dimensions	12x27x16.3mm
housing material	plastic
front screen material	PMMA
operating temperature	-10 ... +50°C
degree of protection (EN 60529)	IP67
connection	M8-connector, 4-pin
connection accessories	e.g. <b>VK200375</b>
mounting accessories	<b>AO000073</b>
mounting accessories (universal holder)	<b>AY000116</b>



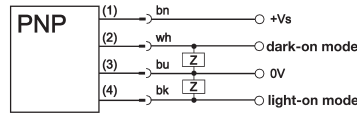
### connection

#### cable device

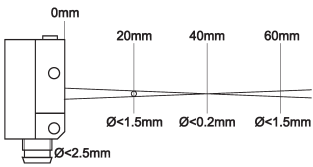


**wire colors:** bn = brown (1), wh = white (2), bu = blue (3), bk = black (4)

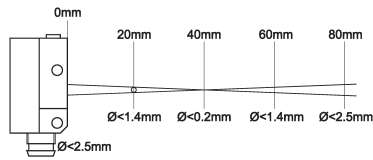
#### connector device



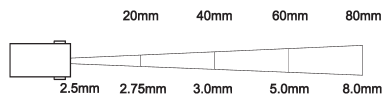
#### laser beam course PT1404X0



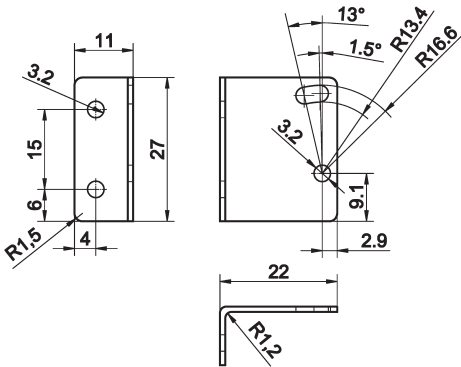
#### laser beam course PT140475



#### laser line PT140475



#### mounting accessories mounting AO000073



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

**laser class 2**

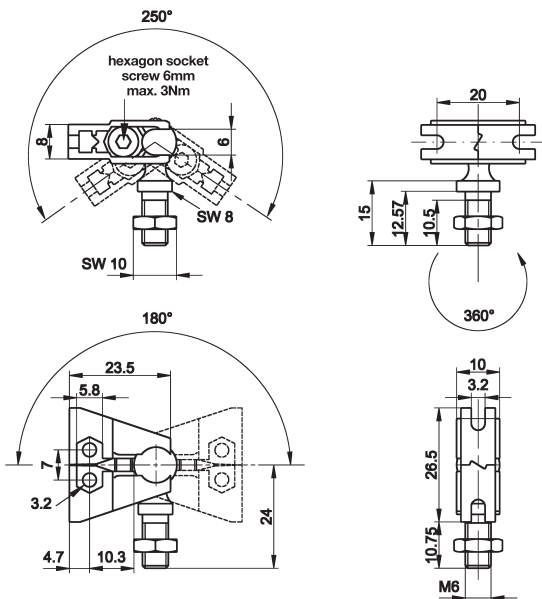
according to DIN EN 60825

wavelength 650nm

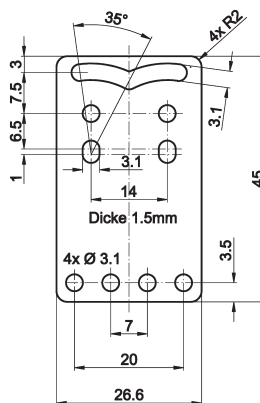
max. output power < 1mW



#### universal mounting AY000116 consisting of base module



#### ... and fitting panel



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)