design **12 x 27 x 16.3mm**

diffuse reflection sensor sensing range **up to 130mm**

- ✓ **LED status displays**
- ✓ **integrated amplifier**
- ✓ **visible laser red light 650nm**
- ✓ **adjustable sensing range**
- ✓ **high sampling frequency and sensing range**
- ✓ **laser diffuse reflection sensor with background suppression by triangulation**
- ✓ **connection with 4-pin M8-connector**

subminiature device
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 3 to 130mm. Therefore the receiver device is mechanically readjusted. The repeatability of the laser focus (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 sampling frequency is 1000Hz). 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.

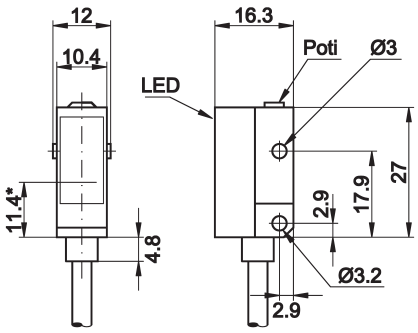
The sensors operate with visible red light, which allows for an easy alignment with the object to be detected. They have an exclusive-OR output (light-on, dark-on mode).

application examples

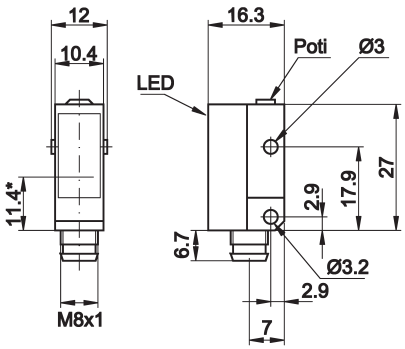
- ▶ detection of object edges with high precision
- ▶ check of parts of any form and color
- ▶ contactless position recognition
- ▶ pulse generator for counting devices
- ▶ detection of smallest objects

1700 diffuse reflection sensors

article-no.	**PT140400**	**PT140470**
version	**dif. reflection sensor with background suppression**	**dif. reflection sensor with background suppression**
connection	**cable**	**M8-connector**
operating range	**3 ... 130mm**	**3 ... 130mm**



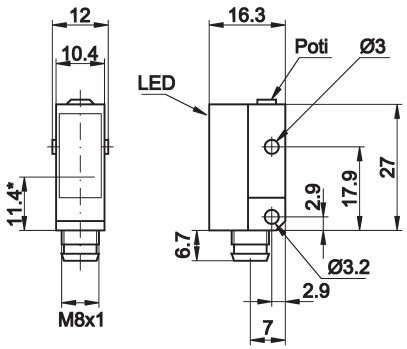
* transmitter axis



* transmitter axis

TECHNICAL DATA		
sensing range (min. adjusted)	3 ... 22mm	3 ... 22mm
sensing range (max. adjusted)	3 ... 130mm	3 ... 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
wave length	650nm	650nm
distance laser focus	40mm	40mm
laser class	2	2
response / decay time	< 0.25msec	< 0.25msec
display (signal)	yellow LED	yellow LED
display (operating)	green LED	green LED
sensitivity adjustment	mechanical, 5 revolutions	mechanical, 5 revolutions
repeat accuracy	< 0.2mm in laser focus	< 0.2mm in laser focus
short-circuit protection	+	+
reverse polarity protection	+	+
design	12x27x16.3mm	12x27x16.3mm
housing material	plastic	plastic
front screen material	PMMA	PMMA
operating temperature	-10 ... +50°C	-10 ... +50°C
system of protection (EN 60529)	IP65	IP67
connection	cable, 2m, PUR, 4-wire	M8-connector, 4-pin
connection accessories	-	e.g. **VK200371**, 2m, angular, PUR
mounting bracket	**AO000073**, included in the delivery	**AO000073**, included in the delivery
universal mounting	**AY000092**	**AY000092**

article-no.	**PT140475**
version	**dif. reflection sensor with background suppression, linear beam**
connection	**M8-connector**
operating range	**3 ... 130mm**



*** transmitter axis**

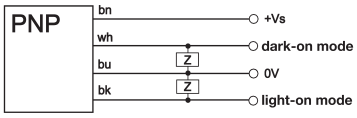
TECHNICAL DATA

sensing range (min. adjusted)	3 ... 22mm
sensing range (max. adjusted)	3 ... 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
wave length	650nm
distance laser focus	40mm
laser class	2
response / decay time	< 0.25msec
display (signal)	yellow LED
display (operating)	green LED
sensitivity adjustment	mechanical, 5 revolutions
repeat accuracy	< 0.2mm in laser focus
short-circuit protection	+
reverse polarity protection	+
design	12x27x16.3mm
housing material	plastic
front screen material	PMMA
operating temperature	-10 ... +50°C
system of protection (EN 60529)	IP67
connection	M8-connector, 4-pin
connection accessories	e.g. **VK200371**, 2m, angular, PUR
mounting bracket	**AO000073**, included in the delivery
universal mounting	**AY000092**

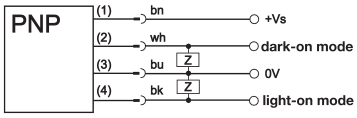
1700 diffuse reflection sensors

connection

cable device

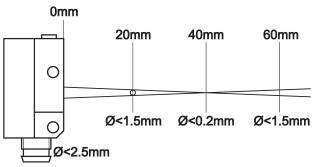


connector device

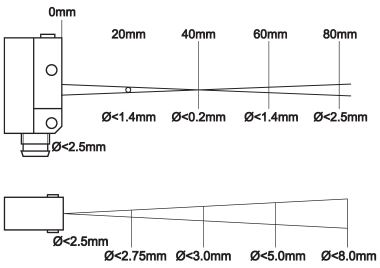


wire colors: bn = brown (1), wh = white (2), bu = blue (3), bk =black (4)

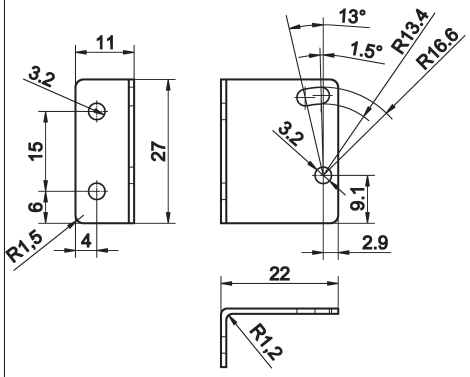
laser beam course PT1404X0



laser beam course PT140475



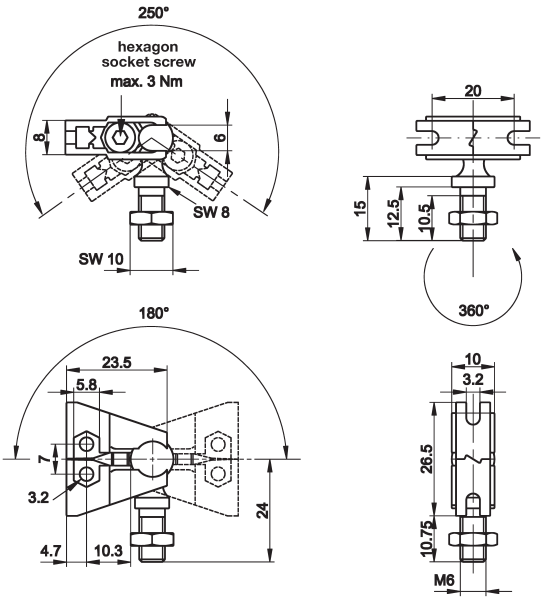
mounting bracket AO000073



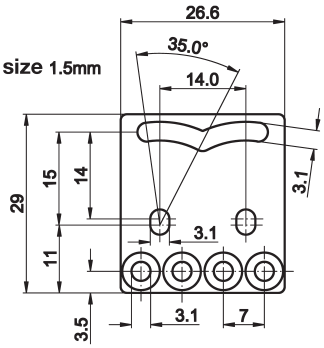
Caution! Laser Radiation!
Do not stare into the beam!

Class 2 Laser
according to DIN EN 60825
Wave length 650nm
max. Output < 1mW

universal mounting AY000092 composed of **base module**...



... and **fitting panel**



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.