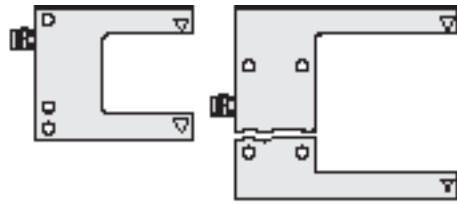


# Photoelectric Sensors


## Infrared Slot Sensors for liquid detection





Slot wide	Slot sensor type
30 mm	PSTI-0x-4F
30mm	PSTI-0x-4F
80mm	PSTI-0x-6F
80mm	PSTI-0x-6F

x = P (PNP)  
N (NPN)

### Safety Notes

 These photoelectric sensors may not be used in applications where personal safety depends on proper function of the devices (not safety designed per EU machine guideline). Read these operating instructions carefully before putting the device into service.

 Caution! Red light beam!  
Glare and irritation of the eyes.  
**DO NOT LOOK INTO THE LIGHT BEAM!**

 The CE Marking confirms that our products conform to the EC Directives 2004/108/EEC (EMC) and the EMC Law. In our EMC Laboratory, which is accredited by the DATech for Testing of Electromagnetic Compatibility, proof has been documented that these products meet the EMC requirements of the harmonized standard EN 60947-5-2.

### Application area



These fork sensors are ideal for detecting liquids which have a volume share of water of at least 15%. The medium can be completely transparent or colored. In the case of pure water a thickness level of approx. 2 mm is sufficient for reliable detection. For liquids with a lower proportion of water the layer must be correspondingly thicker in order to ensure error-free detection.

Thin coatings of the media on the container walls up to a thickness of approx. 0.5 mm can be masked out by setting the sensitivity potentiometer.




Sensing through curved glass bottles or thick-walled containers may result in incorrect values due to refraction effects.

Some examples of detectable media:  
Water, milk, household cleaners, thick dishwashing detergents, ketchup, water in a hose having a 2 mm inside diameter.

### Sensitivity adjustment

-  a Minimum sensitivity for small part detection, but sensor is more sensitive to ambient light, contamination etc.: Pot is full CCW
-  b Maximum sensitivity, but limits small part detection: Pot is full CW

### Select between light-on and dark-on

-  a Dark-on: Pot is full CCW. When an object breaks the beam, the output switches on and the LED comes on.
-  b Light-on: Pot is full CW. When an object breaks the beam, the output switches off and the LED goes off.
-  c The gray area is the switch-over range in which the switch is between normally open and normally closed. Avoid this area.

### Operating elements

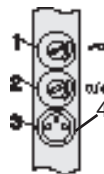
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1. Potentiometer for sensitivity adjustment
  2. Potentiometer for light-on/dark-on selection
  3. LED Power on indicator
  4. Output function indicator LED yellow

Fig. 1: Display and operating elements

### Wiring diagram

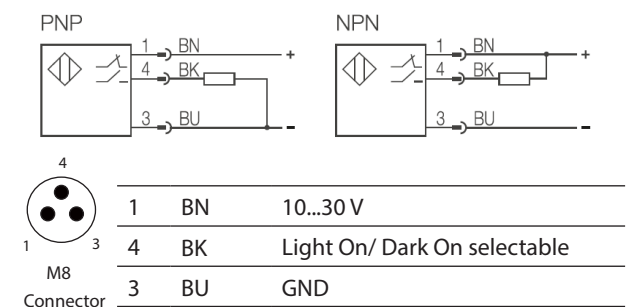


Fig. 2: Connection diagram, pinouts

### Selectable output function

1. NO = dark-on
2. NC = light-on

### Installation



Caution!  
Do not look into the light beam.

The sensor must be installed as to prevent a direct line of eyesight to the light source, even during operation.

### Technical Data

Optical data (typ.)	
Light type	Infrared
Wave length	1480 nm
Risk group acc. to IEC 62471:2009	Exempt Group
Ambient light rejection	5 kLux
Electrical data	
Supply voltage $U_B$	10...30 V DC
Voltage drop $U_d$ at $I_e$	< 3 V (PNP) < 2.5 V (NPN)
Rated operational current $I_e$	200 mA
No-load current $I_o$	≤ 35 mA
Switching frequency	2000 Hz
Hysteresis	≤ 0.2 mm*
Output depending on type	PNP or NPN
Short circuit protected	yes
Reverse polarity protected	yes
Output function selectable	NC/NO light-on/dark-on
Output function indicator	yellow LED
Smallest detectable object	
PSTI 4F	0.6 mm*
PSTI 6F	0.8 mm*

Repeatability	
PSTI 4F, 6F	0.1 mm*
Sensitivity adjustment	Pot: 0...270°
Mechanical data	
Connection type	M8-connector, 3-pole
Housing material	GD Zn
Active surface material	Glass
Weight	
PSTI 4F	66 g
PSTI 6F	135 g
Operating temperature $T_a$	-10... +60 °C (14... 140 °F)
Enclosure rating per IEC 60529	IP 67

\* Data applies to solid targets

CAD files for sensors can be found at  
[www.automationdirect.com](http://www.automationdirect.com)