

**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.

**!** Danger of eye injury. Do not look into the laser beam! Laser protection regulations: The transmitter and the laser light barrier comply with laser class 1 in accordance with DIN EN 60825-1:2003-10. Therefore no additional protective measures are necessary for operation.

**CE** 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.

**Wiring diagram**

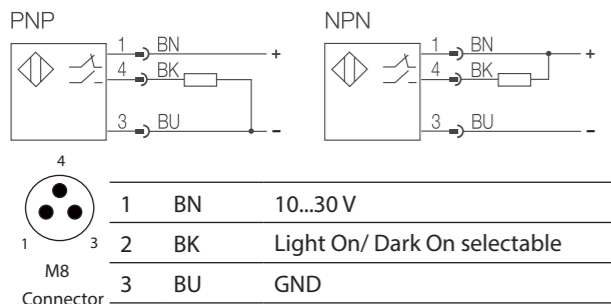


Fig. 1: Connection diagram, pinouts

Slot wide	Slot sensor type
80 mm	PSTL-0P-6F
80 mm	PSTL-0N-6F

**Installation**

**!** Danger! Danger of eye injury. Do not look into the laser beam.

The slot sensor should be mounted in a way, that no mechanical stress is exerted on the housing to avoid misalignment of emitter and receiver.

**Sensitivity adjustment**

1. Set pot fully CW.
2. If transparent object is not reliably detected, turn pot CCW until reliable detection is achieved.

**Note:** If pot position is close to fully CCW, the output may be active even with no object placed in the beam. This is due to technical reasons.

**Note:** After being exposed to extreme changes in temperature, it may be necessary to readjust the sensitivity for best object detection.

**Operating elements**

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

Fig. 2: Display and operating elements

**Selectable output function**

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



**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.

**Object detection**

Detection of transparent objects is achieved by use of parallel misalignment. A light beam is refracted at both surfaces of the object.

This leads to a certain offset between the light beam entering the object and the one exiting the object.

However, this only works if the object has a minimum thickness and enters the light beam at a certain angle.

To guarantee reliability, we recommend a minimum thickness of 2 mm and a angle of 30°.

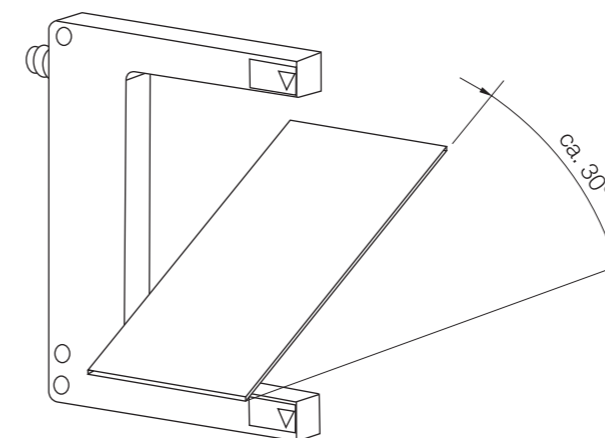


Fig. 3: Optimal position of the transparent object

**Technical Data**

Optical data (typ.)

Light type	Laser red
Pulse power P	≤ 100 μW
Wave length λ	650 nm
Laser class EN 60825-1	I
Ambient light rejection	5 kLux

Electrical data

Supply voltage U <sub>B</sub>	10...30 V DC
Voltage drop U <sub>d</sub> at I <sub>e</sub>	< 3 V (PNP) < 2.5 V (NPN)

Rated operational current I <sub>e</sub>	200 mA
No-load current I <sub>o</sub>	≤ 20 mA
Switching frequency f	5 kHz
Hysteresis	≤ 30 μm
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	50 μm
Repeatability	10 μm
Sensitivity adjustment	Pot: 0...270°
Excess gain	1.5

Mechanical data

Connection type	M8-connector, 3-pole
Housing material	GD Zn
Active surface material	Glass
Weight	135 g
Operating temperature T <sub>a</sub>	-10... +45 °C (14... 113 °F)
Enclosure rating per IEC 60529	IP 67

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

