

### 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!

**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.

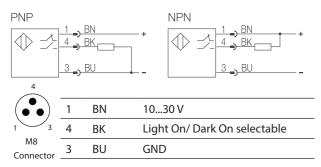
## Operating elements

1-00  $\sim$  1. Potentiometer for sensitivity adjustment

- 2. Potentiometer for light-on/dark-on selection <sup>2</sup> (*i*) •/• 3. LED Power on indicator

## Fig. 1: Display and operating elements

## Wiring diagramm



## Fig. 2: Connection diagram, pinouts

# Selectable output function

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

Slot wide	Slot sensor type
5 mm	PSUR-0x-1F
10 mm	PSUR-0x-2F
20 mm	PSUR-0x-3F
30 mm	PSUR-0x-4F
50 mm	PSUR-0x-5F
80 mm	PSUR-0x-6F
120 mm	PSUR-0x-7F
180 mm	PSUR-0x-8F
220 mm	PSUR-0x-9F
	x = P (PNP)
	N (NPN)

## 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.
- The gray area is the switch-over range in С which the switch is between normally open and normally closed. Avoid this area.

# Photoelectric Sensors **Red light Slot Sensors**

# Installation



Do not look into the light beam.

## Technical Data

Light type	Red
Wave lenght l	640 nm
Risk group acc. to IEC 62471:2009	Exempt Group
Ambient light rejection	5 kLux
Electrical data	
Supply voltage UB	1030 V DC
Voltage drop Ud at le	< 3 V (PNP)
-	< 2.5 V (NPN)
Rated operational current le	200 mA
No-load current lo	<u>&lt;</u> 35 mA
Switching frequency f	
PSUR 1F, 2F	3000 Hz
PSUR 3F 9F	1500 Hz
Hysteresis	
PSUR 1F, 2F, 3F, 4F	<u>≤</u> 0.1 mm
PSUR 5F	≤ 0.15 mm
PSUR 6F, 7F, 8F, 9F	<u>&lt;</u> 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-or
Output function indicator	yellow LED





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

Smallest detectable object				
PSUR 1F, 2F, 3F, 4F	0.3 mm			
PSUR 5F, 6F	0.4 mm			
PSUR 7F	0.5 mm			
PSUR 8F, 9F	0.6 mm			
Repeatibility				
PSUR 1F, 2F, 3F, 4F	0.02 mm			
PSUR 5F	0.04 mm			
PSUR 6F	0.06 mm			
PSUR 7F, 8F, 9F	0.08 mm			
Sensitivity adjustment	Pot: 0270°			
Mechanical data				
Connection type	M8-connector, 3-pole			
Housing material	GD Zn			
Active surface material	Glass			
Weight				
PSUR 1F	20 g			
PSUR 2F	23 g			
PSUR 3F	28 g			
PSUR 4F	36 g			
PSUR 5F	54 g			
PSUR 6F	77 g			
PSUR 7F	118 g			
PSUR 8F	190 g			
PSUR 9F	220 g			
Operating temperature Ta	−10 +60 °C			
	(14 140 °F)			
Enclosure rating per IEC 60529	IP 67			

## CAD files for sensors can be found at www.automationdirect.com