

Slot wide	Slot sensor type
30 mm	PSUL-0x-4F
50 mm	PSUL-0x-5F
80 mm	PSUL-0x-6F
120 mm	PSUL-0x-7F

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.

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.

Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated Jun 24, 2007.

Caution! The use of controls or adjustments or performance of procedure other than those specified herein may result in hazardous radiation exposure.

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

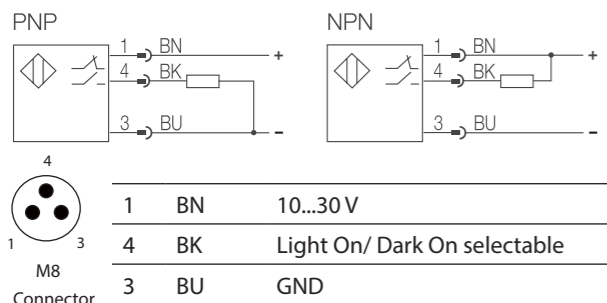


Fig. 1: Connection diagram, pinouts

Operating elements

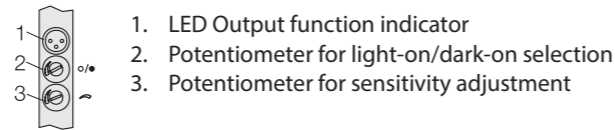


Fig. 2: Display and operating elements

Selectable output function

- NO = dark-on
- NC = light-on

Sensitivity adjustment

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

Select between light-on and dark-on

- Dark on: Pot is full CCW. When an object breaks the beam, the output switches on and the LED comes on.
- 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 which the switch is between normally open and normally closed. Avoid this area.

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.

Technical Data

Optical data (typ.)	
Light type	Laser red
Pulse power P	≤ 100 μW
Wave length λ	650 nm
Pulse width t	≤ 8 μs
Pulse frequency	25 kHz
Laser class EN 60825-1	1
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	≤ 20 mA
Switching frequency f	5 kHz

Hysteresis	
PSUL 4F	≤ 20 μm
PSUL 5F	≤ 25 μm
PSUL 6F	≤ 30 μm
PSUL 7F	≤ 50 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	
PSUL 4F	0.05 mm
PSUL 5F	0.08 mm
PSUL 6F	0.1 mm
PSUL 7F	0.15 mm
Repeatability	
PSUL 4F/5F/6F	10 μm
PSUL 7F	15 μm
Sensitivity adjustment	Pot: 0...270°
Excess gain	15

Mechanical data	
Connection type	M8-connector, 3-pole
Housing material	GD Zn
Active surface material	Glass
Weight	
PSUL 4F	66 g
PSUL 5F	110 g
PSUL 6F	135 g
PSUL 7F	210 g
Operating temperature T _a	-10... +60 °C (14... 140 °F)
Enclosure rating per IEC 60529	IP 67

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

