



**Photoelectric sensors**  
**W4S-3, Photoelectric retro-reflective sensor,**  
**autocollimation**

WL4S-3P2130



**Model Name** > [WL4S-3P2130](#)  
**Part No.** > [1042069](#)



*Illustration may differ*

#### At a glance

- Single-lens autocollimation optics
- All models with PinPoint LED technology provides a small intense, light spot
- Maximum sensing range of 5 m
- Long sensing ranges on small reflectors
- Quality monitoring thanks to IO-Link
- Key lock function, remote teach
- Diagnostics messages (contamination and short-circuit)

#### Your benefits

- Quick and easy alignment due to the PinPoint LED's small, well-defined, intense light spot
- Single-lens autocollimation optics sees through small gaps and bore holes, enabling efficient machine integration
- Long sensing ranges are obtained on small reflectors due to the small, intense light spot
- Quick and easy threshold adjustment (depending on type)
- Simple monitoring of detection quality
- Key lock function and parameter download prevent incorrect settings



#### Features

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric retro-reflective sensor, autocollimation |
| Dimensions (W x H x D):          | 12.2 mm x 41.8 mm x 17.3 mm                            |
| Housing design (light emission): | Rectangular                                            |
| Sensing range max.:              | 0 m ... 4 m <sup>1)</sup>                              |
| Sensing range:                   | 0 m ... 2.5 m <sup>2)</sup>                            |
| Type of light:                   | Visible red light                                      |
| Light source:                    | PinPoint LED <sup>3)</sup>                             |
| Light spot size (distance):      | Ø 45 mm (1.5 m)                                        |

<sup>1) 2)</sup> PL80A <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

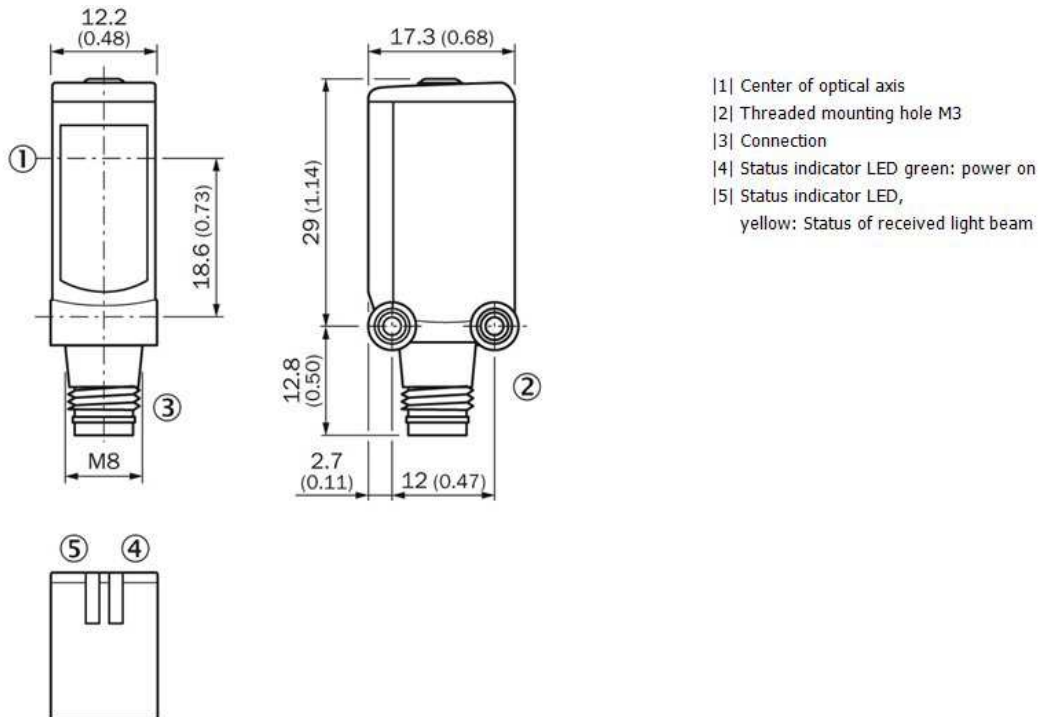
#### Mechanics/electronics

|                    |                                   |
|--------------------|-----------------------------------|
| Supply voltage:    | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple::           | < 5 Vpp <sup>2) 3)</sup>          |
| Power consumption: | ≤ 20 mA <sup>4)</sup>             |
| Output type:       | PNP                               |

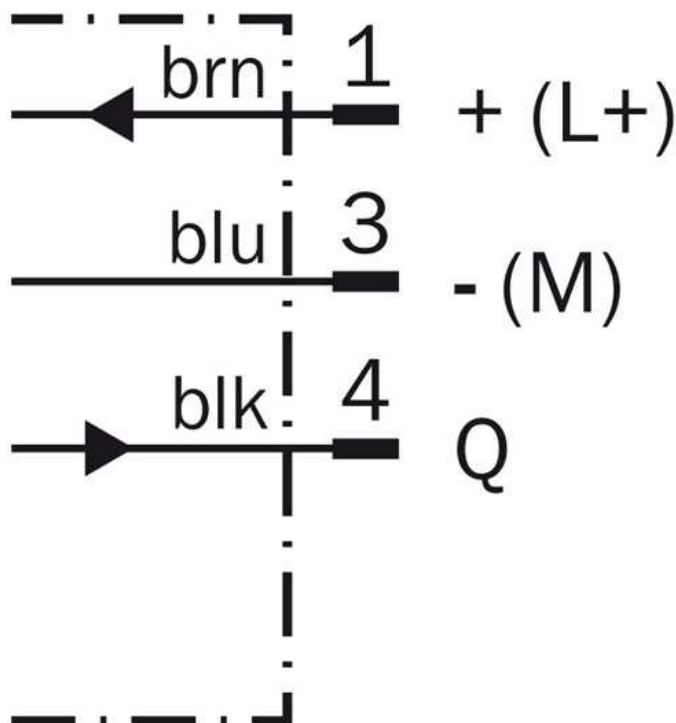
|                                    |                              |
|------------------------------------|------------------------------|
| Switching mode:                    | Light switching              |
| Output current I <sub>max</sub> :: | ≤ 100 mA                     |
| Response time:                     | < 0.5 ms <sup>5)</sup>       |
| Switching frequency:               | 1,000 Hz <sup>6)</sup>       |
| Connection type:                   | Connector M8, 3-pin          |
| Circuit protection:::              | A, C, D <sup>7)</sup> 8) 9)  |
| Protection class:                  | III                          |
| Weight:                            | 30 g                         |
| Polarisation filter:               | ✓                            |
| Special device:                    | -                            |
| Housing material:                  | ABS, Plastic                 |
| Optics material:                   | PMMA                         |
| Enclosure rating:                  | IP 67<br>IP 66               |
| Ambient operating temperature:     | -40 °C ... +60 °C            |
| Ambient storage temperature:       | -40 °C ... +75 °C            |
| UL File No.:                       | NRKH.E181493 & NRKH7.E181493 |

1) Limit values 2) 3) May not exceed or fall short of V<sub>S</sub> tolerances 4) Without load 5) Signal transit time with resistive load 6) With light/dark ratio 1:1 7) A = V<sub>S</sub>  
connections reverse-polarity protected 8) C = interference suppression 9) D = outputs overcurrent and short-circuit protected

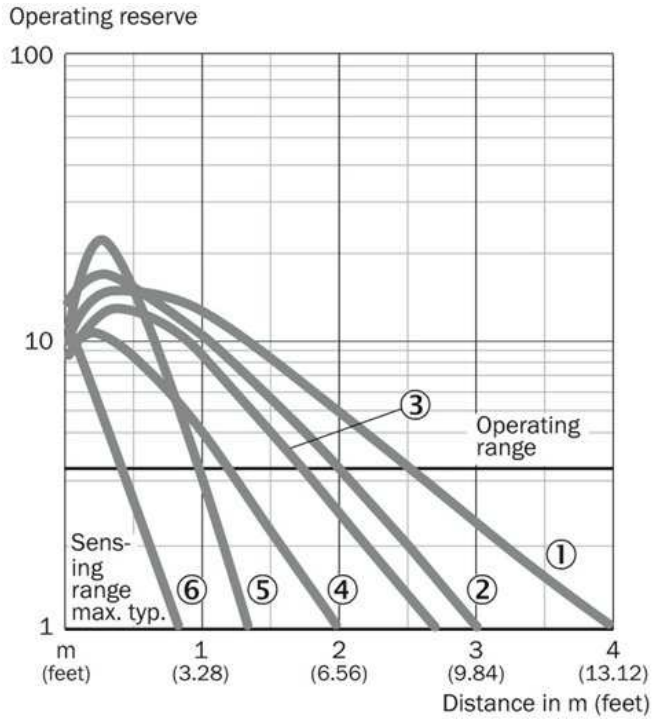
## Dimensional drawing



Connection diagram

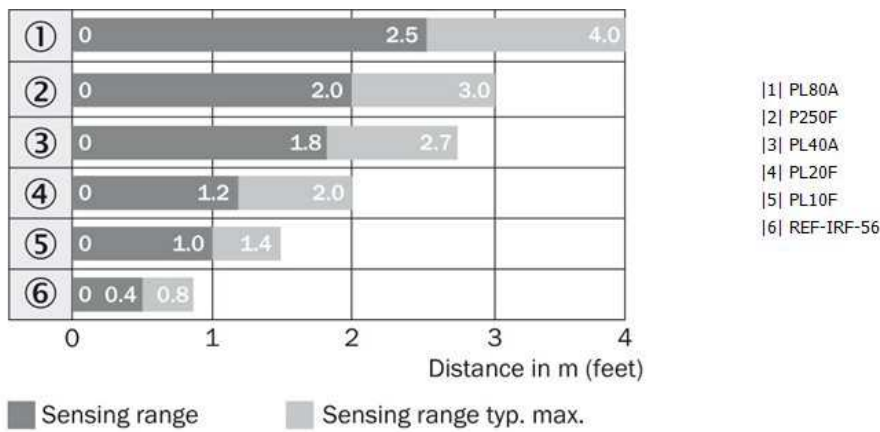


Characteristic curve



- |1| PL80A
- |2| P250F
- |3| PL40A
- |4| PL20F
- |5| PL10F
- |6| REF-IRF-56

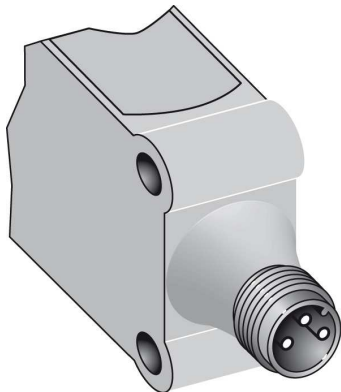
Sensing range diagram



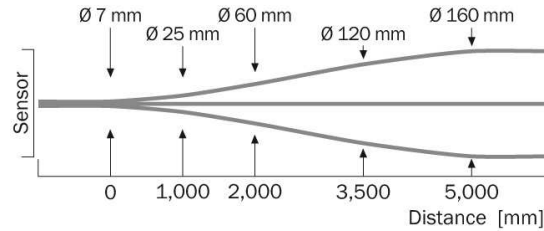
Reflector-type

- ① PL80A
- ② PL250F
- ③ PL40A
- ④ PL20F
- ⑤ PL10F
- ⑥ REF-IRF-56

Connection type



Light spot size



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