



## Photoelectric sensors W11G-2, Photoelectric retro-reflective sensor, autocollimation

WL11G-2B2531P04



**Model Name** > [WL11G-2B2531P04](#)  
**Part No.** > [1047437](#)



*Illustration may differ*

#### At a glance

- Retro-reflective for detection of clear material objects
- Rugged housing for industrial use
- PinPoint LED technology with a highly visible light spot
- Space-saving plastic housing in chemically, thermally or mechanically resistant designs
- Dovetail mounting - standard mounting holes and oblong holes
- Highly visible 360° status LEDs
- Simple sensitivity adjustment via potentiometer

#### Your benefits

- Superior ASIC ensures reliable detection of transparent objects
- PinPoint LED technology provides a bright, small and precise light spot that enables quick and easy sensor alignment
- Precise switching characteristics ensure high performance even in changing application conditions
- Highly visible 360° status LEDs provide fast and easy commissioning
- Rugged housing design withstands harsh environments, reducing downtime and maintenance effort
- Uniform housing, mounting and connection systems reduce mounting and installation time
- High immunity to optical interferences reduces false readings and downtime



#### Features

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric retro-reflective sensor, autocollimation |
| Dimensions (W x H x D):          | 15.6 mm x 48.5 mm x 42 mm                              |
| Housing design (light emission): | Rectangular                                            |
| Sensing range max.:              | 0 m ... 4 m <sup>1)</sup>                              |
| Sensing range:                   | 0 m ... 4 m <sup>2)</sup>                              |
| Type of light:                   | Visible red light                                      |
| Light source:                    | LED <sup>3)</sup>                                      |
| Wave length:                     | 640 nm                                                 |
| Angle of dispersion:             | Ca. 1.5 °                                              |
| Adjustment:                      | Potentiometer, 11-turn                                 |
| Light spot size (distance):      | Ø 25 mm (1.5 m)                                        |
| Continuous threshold adaption:   | -                                                      |

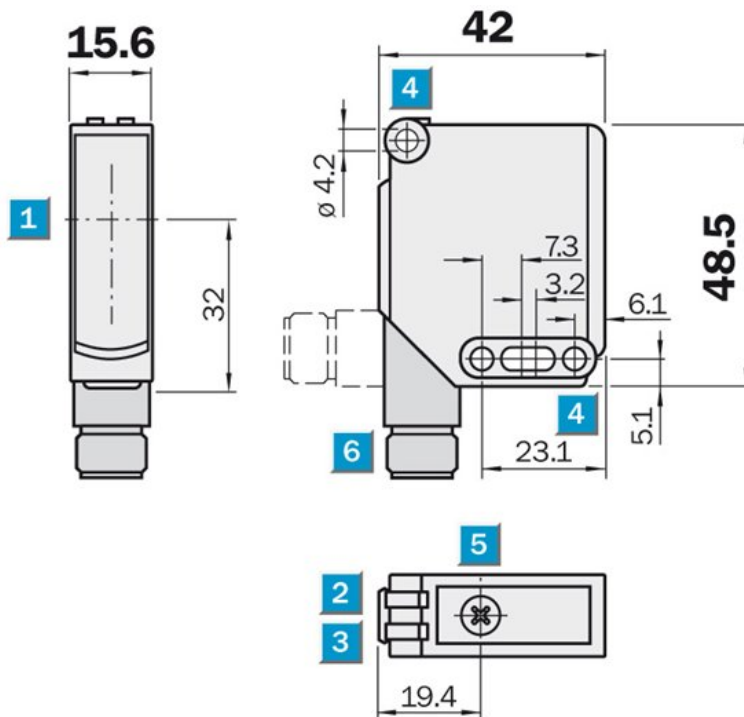
1) 2) PL80A 3) Average service life of 100,000 h at  $T_A = +25\text{ °C}$

## Mechanics/electronics

|                                |                                                                                                |
|--------------------------------|------------------------------------------------------------------------------------------------|
| Supply voltage:                | 10 V DC ... 30 V DC <sup>1)</sup>                                                              |
| Ripple:                        | $\leq 5\text{ V}_{pp}$ <sup>2)</sup>                                                           |
| Power consumption:             | $\leq 30\text{ mA}$ <sup>3)</sup>                                                              |
| Output type:                   | NPN, PNP                                                                                       |
| Switching mode:                | Light/dark-switching                                                                           |
| Switching mode selector:       | 0 V or not connected, light-switching, $U_v$ , dark-switching, Selectable via L/D control wire |
| Signal voltage PNP HIGH/LOW:   | $U_v - 3\text{ V}$ / approx. 0 V                                                               |
| Signal voltage NPN HIGH/LOW:   | Approx. $U_v$ / $< 3\text{ V}$                                                                 |
| Output current $I_{max.}$ :    | 100 mA                                                                                         |
| Response time:                 | $\leq 330\text{ }\mu\text{s}$ <sup>4)</sup>                                                    |
| Switching frequency:           | 1,500 Hz <sup>5)</sup>                                                                         |
| Attenuation along light beam:  | $> 8\%$                                                                                        |
| Connection type:               | Connector M12, 5-pin                                                                           |
| Circuit protection:::          | A, C, D <sup>6) 7) 8)</sup>                                                                    |
| Protection class:              | II                                                                                             |
| Weight:                        | 120 g                                                                                          |
| Polarisation filter:           | ✓                                                                                              |
| Special device:                | ✓                                                                                              |
| Housing material:              | ABS, Plastic                                                                                   |
| Optics material:               | PMMA                                                                                           |
| Enclosure rating:              | IP 66<br>IP 67<br>IP 69K                                                                       |
| Items supplied:                | Reflector P250F                                                                                |
| Special feature:               | For transparent objects                                                                        |
| Ambient operating temperature: | $-30\text{ °C} \dots 60\text{ °C}$                                                             |
| Ambient storage temperature:   | $-40\text{ °C} \dots 75\text{ °C}$                                                             |
| UL File No.:                   | NRKH.E181493 & NRKH7.E181493                                                                   |

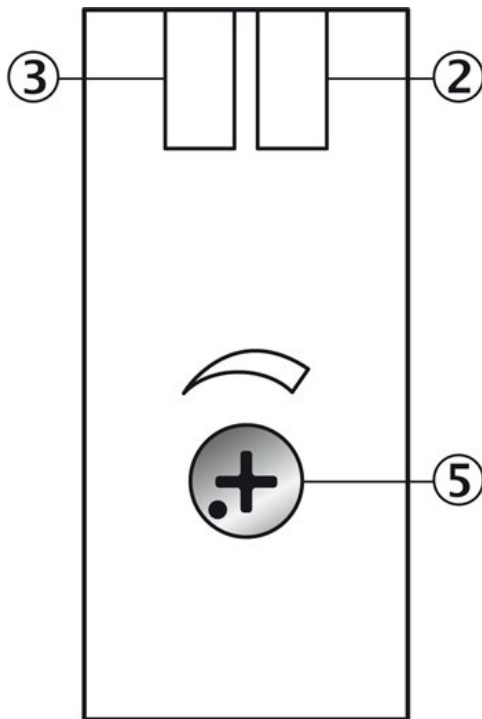
<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> A =  $V_S$  connections reverse-polarity protected <sup>7)</sup> C = interference suppression <sup>8)</sup> D = outputs overcurrent and short-circuit protected

## Dimensional drawing



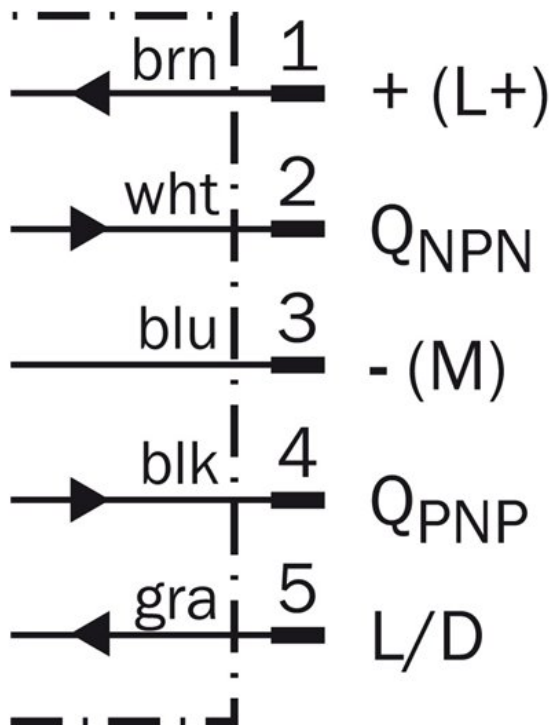
- |1| Center of optical axis
- |2| Status indicator LED green: power on
- |3| Status indicator LED, yellow: Status of received light beam
- |4| Mounting hole  $\varnothing 4.2$  mm
- |5| Sensitivity adjustment: poti

## Adjustments possible

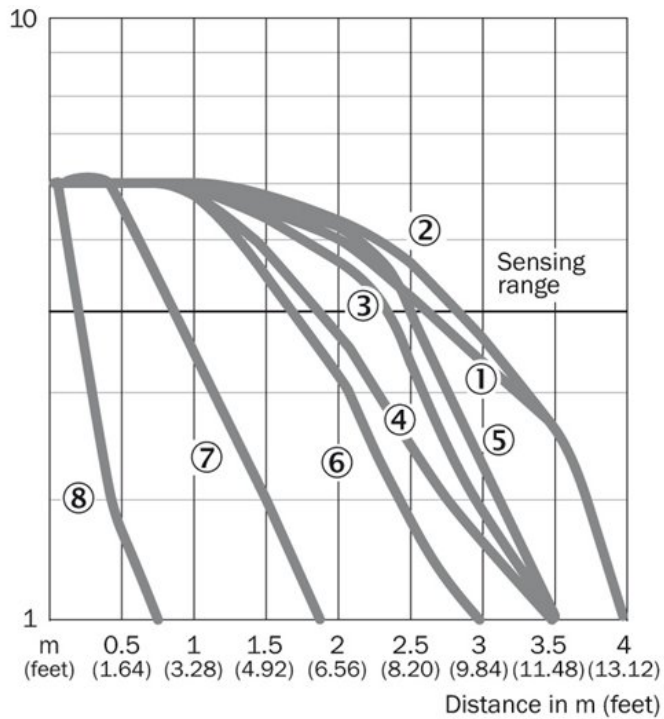


- |2| Status indicator LED green: power on
- |3| Status indicator LED, yellow: Status of received light beam
- |5| Sensitivity adjustment

## Connection diagram

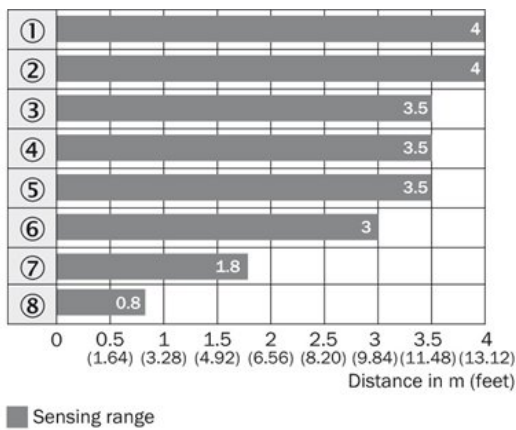


## Characteristic curve



- [1] PL80A
- [2] C110A
- [3] P250F
- [4] PL50A
- [5] PL40A
- [6] PL30A
- [7] PL20A
- [8] Reflective tape Diamond Grade

Sensing range diagram

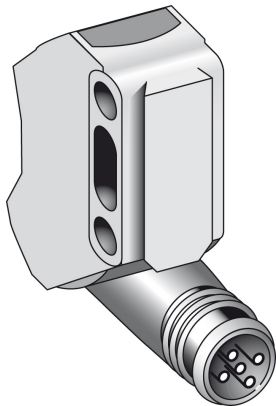


- |1| PL80A
- |2| C110A
- |3| P250F
- |4| PL50A
- |5| PL40A
- |6| PL30A
- |7| PL20A
- |8| Reflective tape Diamond Grade

Reflector type

- ① PL80A
- ② C110A
- ③ P250F
- ④ PL50A
- ⑤ PL40A
- ⑥ PL30A
- ⑦ PL20A
- ⑧ Reflective tape Diamond Grade

Connection type



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