



Photoelectric sensors  
W280-2, Photoelectric retro-reflective sensor,  
Standard optics

WL280-2P4331



**Model Name** > [WL280-2P4331](#)  
**Part No.** > [6044732](#)



*Illustration may differ*

**At a glance**

- Highly visible red light spot thanks to the BrightLight LED
- Potentiometer for sensitivity control
- Light/dark switching (DC devices)
- Rotatable connector, cable connector or terminal chamber
- Versions for 10 - 30 V DC or 24 - 240 V DC/AC voltage supply
- Stainless steel mounting bracket and P250 reflector are included in delivery
- AC/DC devices (-2Hxxxx) are compliant with EN 61000-6-3 (electromagnetic interference for "residential, commercial and light-industrial environments")

**Your benefits**

- Less contamination due to high operating reserves, reducing downtime
- Simple and fast commissioning with the highly visible light spot of the BrightLight LED
- DC and AC/DC devices available in the same housing, allowing electrical flexibility
- Potentiometer adjustment for application-specific operation
- Light/dark switching provides application flexibility
- All necessary mounting and operating accessories are included in delivery, enabling quick and easy setup: since mounting bracket (stainless steel 1.4301) and reflector are included in delivery scope
- Polarizing filter ensures reliable detection, even with shiny targets



**Features**

Sensor/detection principle:	Photoelectric retro-reflective sensor, Standard optics
Dimensions (W x H x D):	23.5 mm x 74.5 mm x 63 mm
Housing design (light emission):	Rectangular
Sensing range max.::	0.01 m ... 12 m, 0.01 m ... 15 m <sup>1) 2)</sup>
Sensing range::	0.01 m ... 11 m, 0.01 m ... 13 m <sup>3) 4)</sup>
Type of light:	Visible red light
Light source:	BrightLight LED <sup>5)</sup>
Adjustment:	Potentiometer
Light spot size (distance):	Ø 260 mm (8 m)

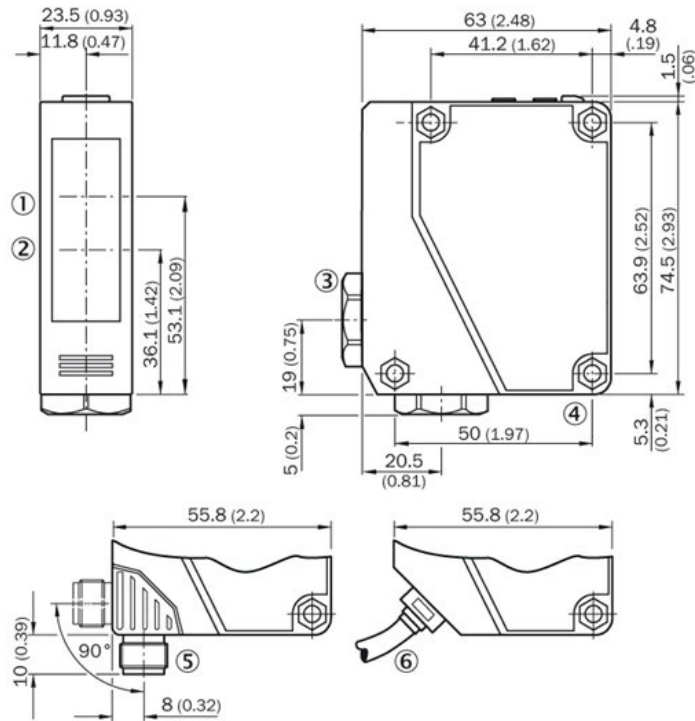
1) 3) PL80A 2) 4) P250 <sup>5)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	≤ 5 Vpp <sup>2)</sup>
Power consumption:	≤ 20 mA <sup>3)</sup>
Output type:	PNP
Switching mode:	Light/dark-switching
Output characteristic:	Open collector
Switching mode selector:	Selectable via light/dark rotary switch
Output current I <sub>max.</sub> :	100 mA
Response time:	≤ 0.5 ms <sup>4)</sup>
Switching frequency:	1,000 Hz <sup>5)</sup>
Connection type:	Cable gland
Circuit protection:::	A, B, C, D <sup>6)</sup> <sup>7)</sup> <sup>8)</sup> <sup>9)</sup>
Protection class:	III
Weight:	150 g
Polarisation filter:	✓
Special device:	-
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 66 IP 67
Items supplied:	Mounting bracket BEF-W280, Reflector P250
EMC:	EN 60947-5-2 <sup>10)</sup>
Ambient operating temperature:	-25 °C ... 55 °C
Ambient storage temperature:	-40 °C ... 70 °C

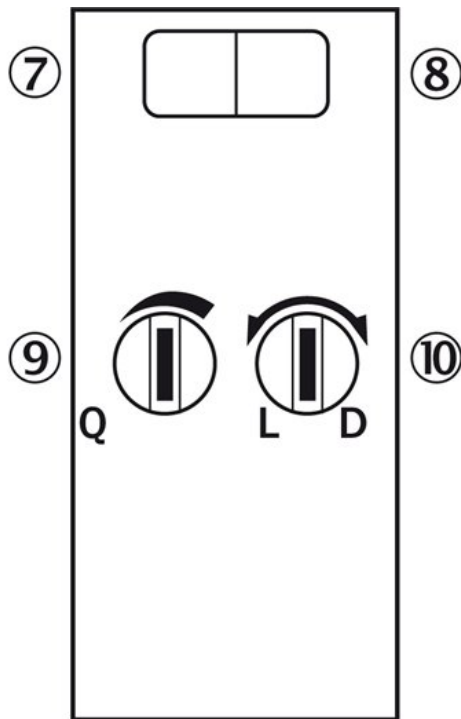
<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> A =  $V_S$  connections reverse-polarity protected <sup>7)</sup> B = inputs and output reverse-polarity protected <sup>8)</sup> C = interference suppression <sup>9)</sup> D = outputs overcurrent and short-circuit protected <sup>10)</sup> The AC/DC devices meet the interference suppression requirements for industrial use (interference suppression class A). When used in residential areas it can cause interference.

## Dimensional drawing



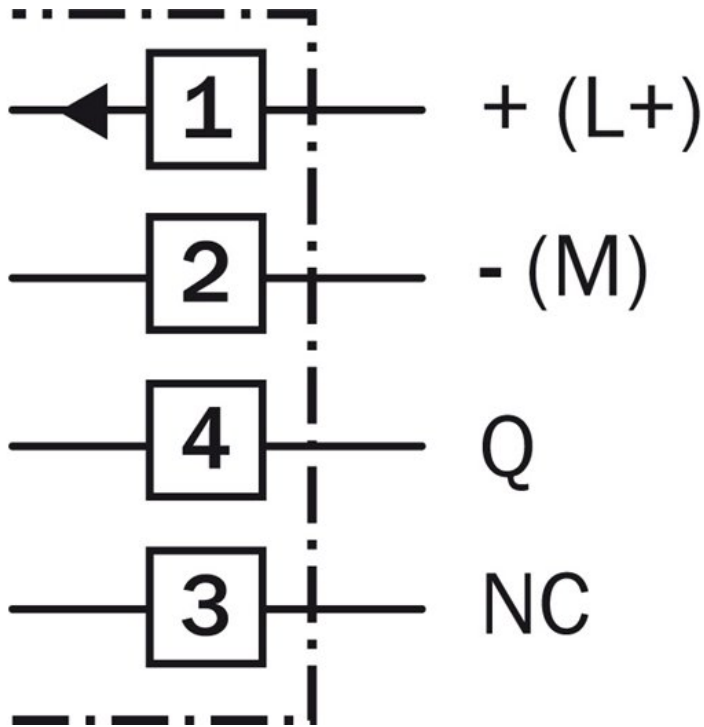
- |1| Center of optical axis, receiver
- |2| Center of optical axis, sender
- |3| Cable entry gland 3/8" for cable diameter 6 to 8 mm
- |4| Mounting hole, Ø 4.3 mm
- |5| Connector M12, 4-pin, 90°  
rotatable, can be locked with slider
- |6| Cable, 2 m, 3-pin, Ø 3,8 mm

## Adjustments possible



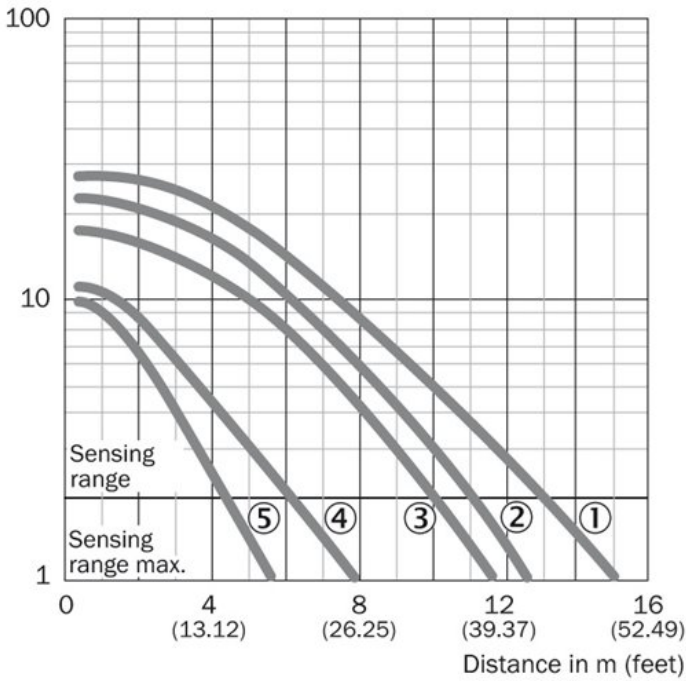
- |7| LED indicator green: Stability indicator
- |8| Status indicator LED,  
yellow: Status of received light beam
- |9| Sensing range adjustment: potentiometer
- |10| Light/dark selector

Connection diagram



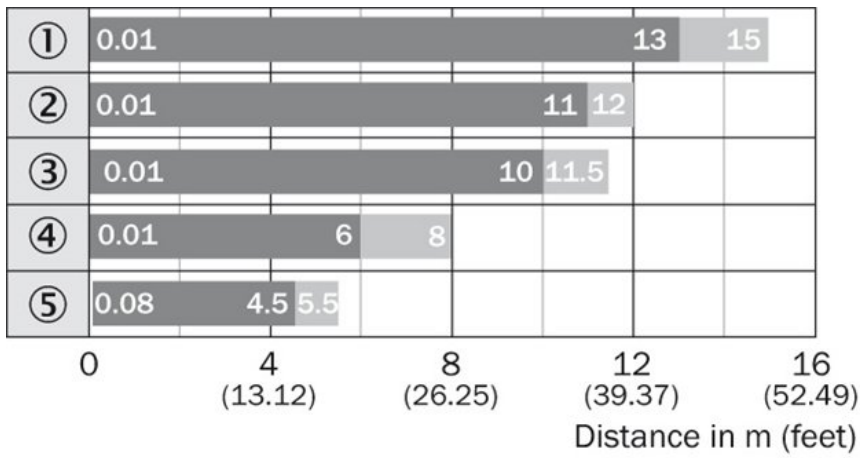
Characteristic curve

Function reserve



- [1] Reflector type PL80A, C110A
- [2] Reflector type P205
- [3] Reflector type PL50A, PL40A, PL30A, PL31A
- [4] Reflector type PL20A
- [5] Reflective tape Diamond Grade  
(100 mm x 100 mm/3.94 inch x 3.94 inch)

**Sensing range diagram**



- |1| Reflector type PL80A, C110A
- |2| Reflector type P205
- |3| Reflector type PL50A, PL40A, PL30A, PL31A
- |4| Reflector type PL20A
- |5| Reflective tape Diamond Grade  
(100 mm x 100 mm/3.94 inch x 3.94 inch)

■ Sensing range      ■ Sensing range max.

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