



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

WL280-2N2431



Model Name > [WL280-2N2431](#)
Part No. > [6044737](#)



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 ^{1) 2)}
Sensing range::	0.01 m ... 11 m, 0.01 m ... 13 m ^{3) 4)}
Type of light:	Visible red light
Light source:	LED ⁵⁾
Adjustment:	Potentiometer
Light spot size (distance):	Ø 260 mm (8 m)

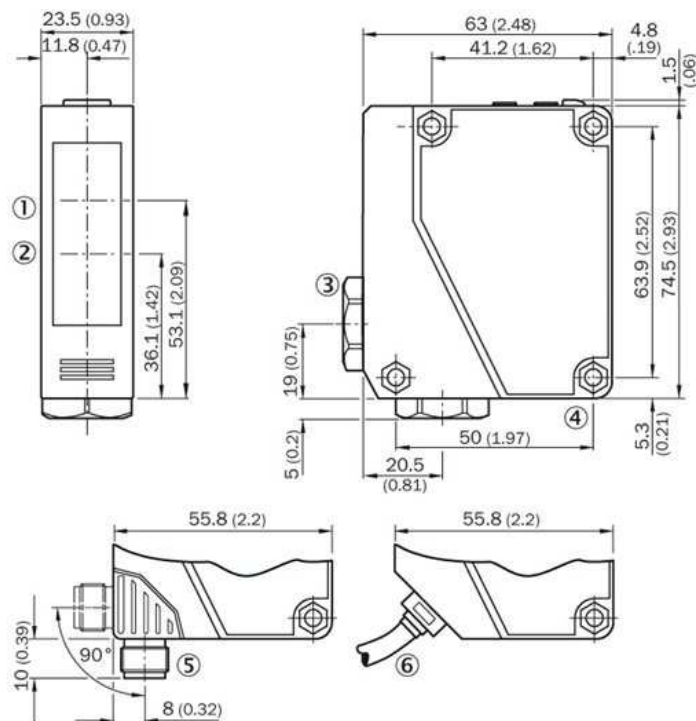
^{1) 3)} PL80A ^{2) 4)} P250 ⁵⁾ Average service life: 100,000 h at T_U = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Residual ripple:	$\leq 5 \text{ Vpp}$ ²⁾
Power consumption:	$\leq 20 \text{ mA}$ ³⁾
Output type:	NPN, open collector
Switching mode:	Light/dark switching
Switching mode selector:	Selectable via light/dark rotary switch
Output current I _{max} :	100 mA
Response time:	$\leq 0.5 \text{ ms}$ ⁴⁾
Switching frequency:	1,000 Hz ⁵⁾
Electrical connection:	Connector M12, 4-pin
Circuit protection:::	A, B, C, D ⁶⁾ ⁷⁾ ⁸⁾ ⁹⁾
Protection class:	III
Weight:	150 g
Polarisation filter:	✓
Special device:	-
Optics material:	PMMA
Enclosure rating:	IP 66 IP 67
Items supplied:	Mounting bracket BEF-W280, Reflector P250
EMC:	EN 60947-5-2 ¹⁰⁾
Ambient temperature operation:	-25 °C ... +55 °C
Ambient storage temperature:	-40 °C ... +70 °C
UL File No.:	NRKH2.E300503 & NRKH8.E300503
Housing material:	ABS, Plastic

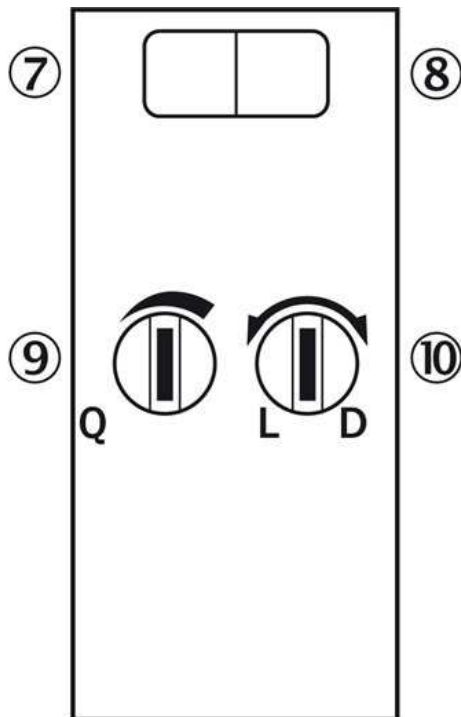
¹⁾ Limit values when operated in short-circuit protected network: max. 8 A ²⁾ May not exceed or fall below U_v tolerances ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾ With light/dark ratio 1:1 ⁶⁾ $A = V_S$ connections reverse-polarity protected ⁷⁾ B = inputs and output reverse-polarity protected ⁸⁾ C = interference suppression ⁹⁾ D = outputs overcurrent and short-circuit protected ¹⁰⁾ 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



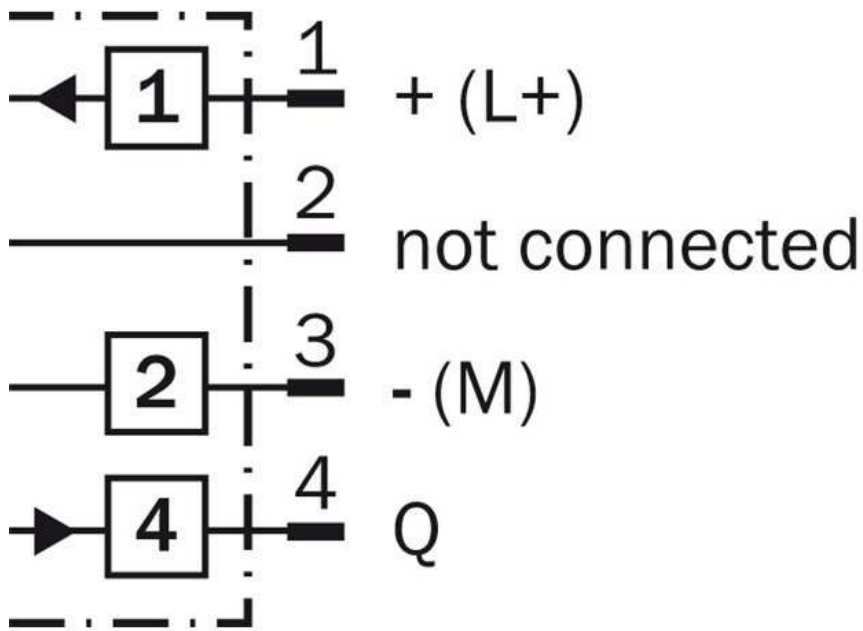
- |1| Center of optical axis, receiver
- |2| Center of optical axis, sender
- |3| Cable entry gland 3/8" for cable diameter 6 to 8 mm
- |4| Mounting hole, Ø 4.3 mm
- |5| Connector M12, 4-pin, 90°
rotatable, can be locked with slider
- |6| Cable, 2 m, 3-wire, Ø 3,8 mm

Adjustments possible



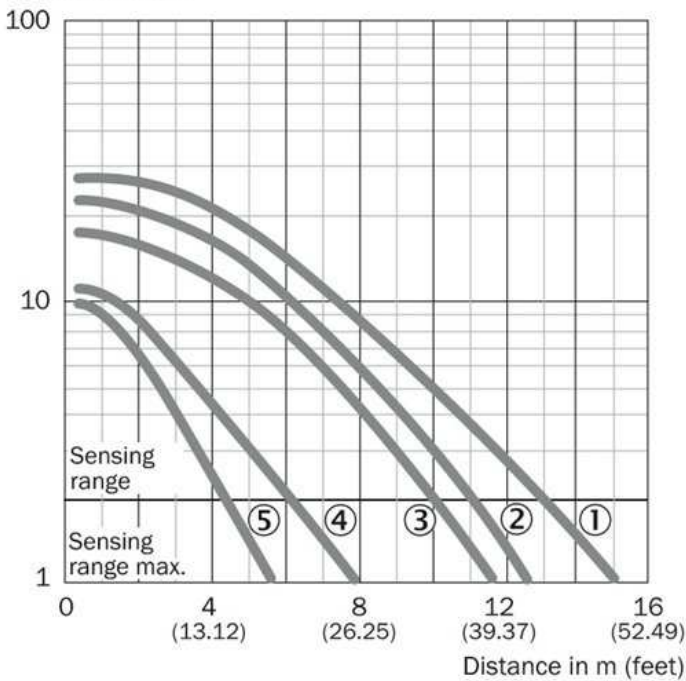
- |7| LED indicator green: Stability indicator
- |8| Status indicator LED,
yellow: Status of received light beam
- |9| Sensing range adjustment: potentiometer
- |10| Light/dark selector

Connection diagram



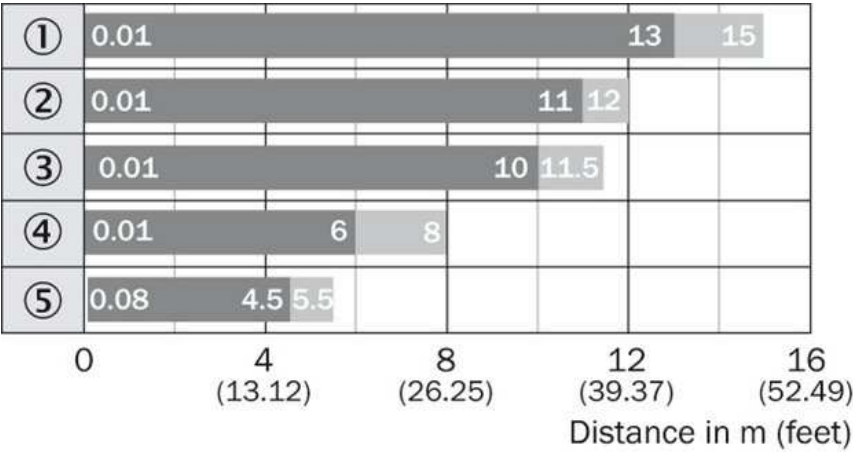
Characteristic curve

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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