



Photoelectric sensors
W27-3, Photoelectric retro-reflective sensor,
Standard optics

WL27-3F2431S11



Model Name > [WL27-3F2431S11](#)
Part No. > [1044330](#)



Illustration may differ

At a glance

- Long sensing range with a high operating reserve
- Quick alignment with red emitting LED
- Resistant to ambient noise such as crosstalk from another sensor
- Optional front screen heating and time delays
- Operating temperature: -40 °C - +60 °C
- UL approval

Your benefits

- Resistant to contamination due to high operating reserve
- Optional features, such as time delays, enhance functionality when needed
- Resistant to vibrations, reducing downtime
- Reliable operation in harsh environments with temperatures as low as -40 °C
- Durable housing with reinforced mounting holes withstands harsh conditions
- Quick alignment with red emitting LED



Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, Standard optics
Dimensions (W x H x D):	24.6 mm x 80.6 mm x 54 mm
Housing design (light emission):	Rectangular
Sensing range max.:	0.1 m ... 15 m ¹⁾
Sensing range:	0.1 m ... 11 m ²⁾
Type of light:	Visible red light
Light source:	LED ³⁾
Wave length:	660 nm
Time type:	Switch on delay
Delay time:	≤70 ms, Adjustable via time delay selector switch: ≤30 ms
Angle of dispersion:	Ca. 1.5 °
Adjustment:	Potentiometer
Light spot size (distance):	Ø 220 mm (10 m)

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

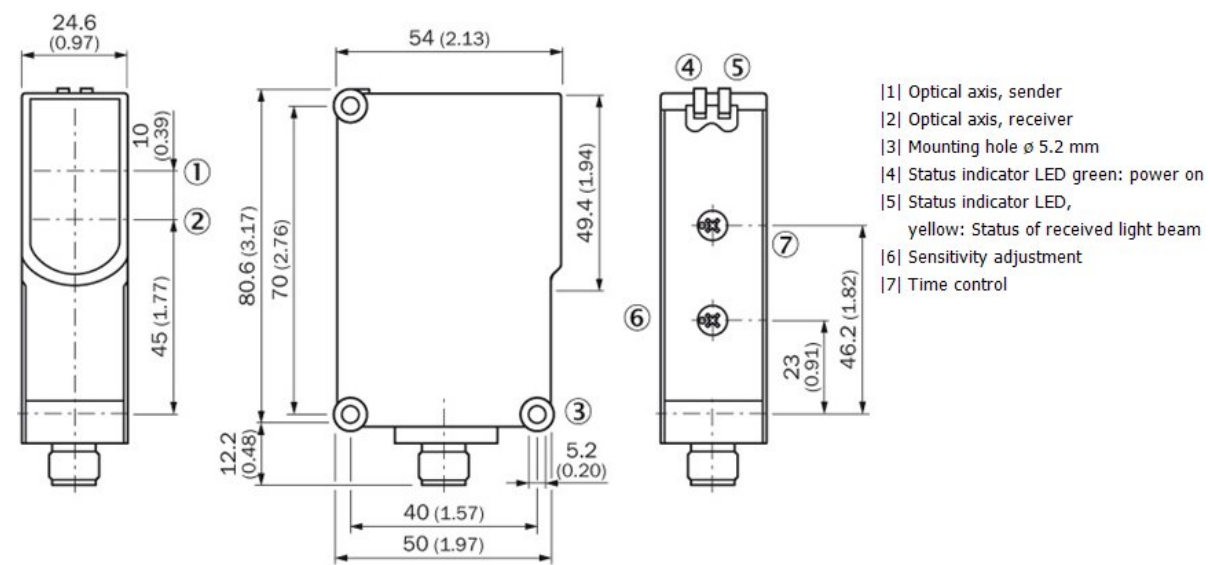
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Power consumption:	≤ 30 mA ²⁾

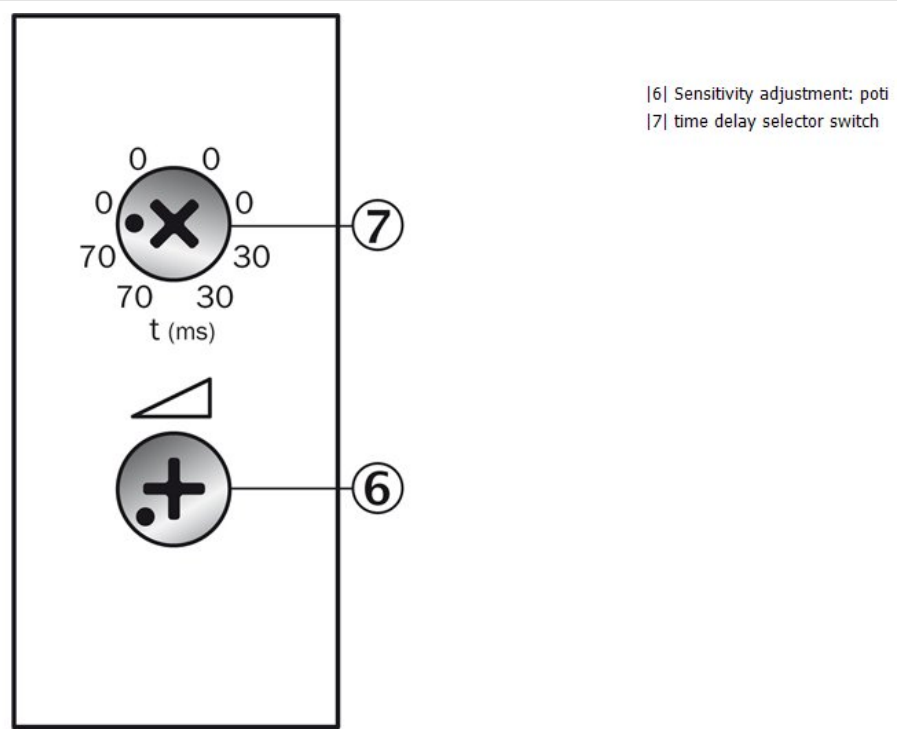
Output type:	PNP
Output function:	Complementary
Switching mode:	Light/dark-switching
Signal voltage PNP HIGH/LOW:	Approx. VS - 2.5 V / 0 V
Output current I _{max} :	≤ 100 mA
Response time:	≤ 200 µs ³⁾
Switching frequency:	2,500 Hz ⁴⁾
Connection type:	Connector M12, 4-pin
Circuit protection:::	A, B, C ^{5) 6) 7)}
Protection class:	II ⁸⁾
Weight:	100 g
Polarisation filter:	✓
Special device:	✓
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 69K
Special features:	Higher switching frequency, Time delay: switch on delay of 30 ms or 70 ms
Ambient operating temperature:	-40 °C ... 60 °C
Ambient storage temperature:	-40 °C ... 75 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493

¹⁾ Limit values, operation in short-circuit protected network max. 8 A
 ²⁾ Without load
 ³⁾ Signal transit time with resistive load
 ⁴⁾ With light/dark ratio 1:1 and inactive time delay
 ⁵⁾ A = V_S connections reverse-polarity protected
 ⁶⁾ B = inputs and output reverse-polarity protected
 ⁷⁾ C = interference suppression
 ⁸⁾ Reference voltage
 50 V DC

Dimensional drawing



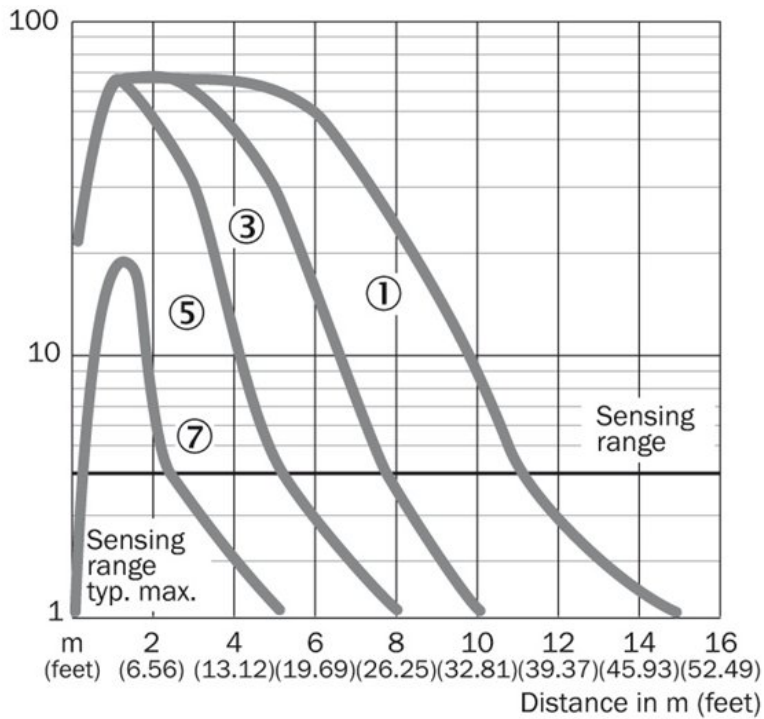
Adjustments possible



Connection diagram

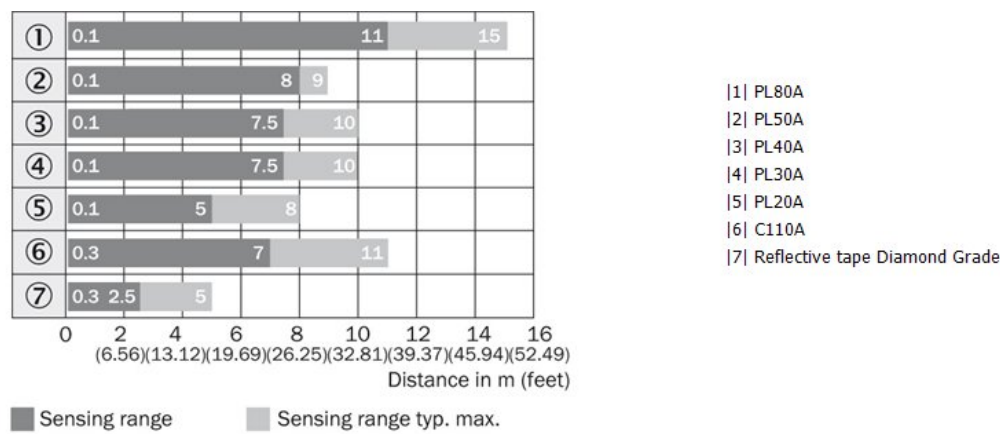


Characteristic curve



- [1] PL80A
- [3] PL40A
- [5] PL20A
- [7] Reflective tape Diamond Grade

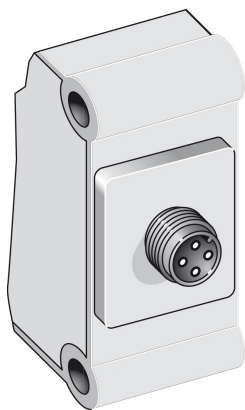
Sensing range diagram



Reflector type

- ① PL80A
- ② PL50A
- ③ PL40A
- ④ PL30A
- ⑤ PL20A
- ⑥ C110
- ⑦ Reflective tape Diamond Grade

Connection type



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