



Photoelectric sensors W9-3, Photoelectric retro-reflective sensor, autocollimation

WL9M4-3N2232



Model Name > [WL9M4-3N2232](#)
Part No. > [1051893](#)



Illustration may differ

At a glance

- High-performance retro-reflective sensor in ultra-rugged VISTAL™ housing
- PinPoint LED for highly visible and precise light spot
- Autocollimation optics
- Variable mounting with M4 hole pattern
- Wide range of connection options

Your benefits

- Rugged VISTAL™ housing provides reliable installation and operation
- Reliable object detection in all situations using best-in-class performance
- Quick and easy alignment with reliable object detection due to the highly visible PinPoint light spot
- M4 slotted hole mounting for multiple mounting possibilities
- One housing with a wide range of options makes machine integration easy
- Variety of accessories for simple mounting



Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, autocollimation
Dimensions (W x H x D):	12.2 mm x 49.8 mm x 23.6 mm
Housing design (light emission):	Rectangular
Mounting hole:	M4
Sensing range max.:	0 m ... 5 m ¹⁾
Sensing range:	0 m ... 3 m ²⁾
Type of light:	Visible red light
Light source:	PinPoint LED ³⁾
Wave length:	650 nm
Teach-in:	Single teach-in button
Adjustment:	Teach-in
Light spot size (distance):	Ø 45 mm (1.5 m)

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

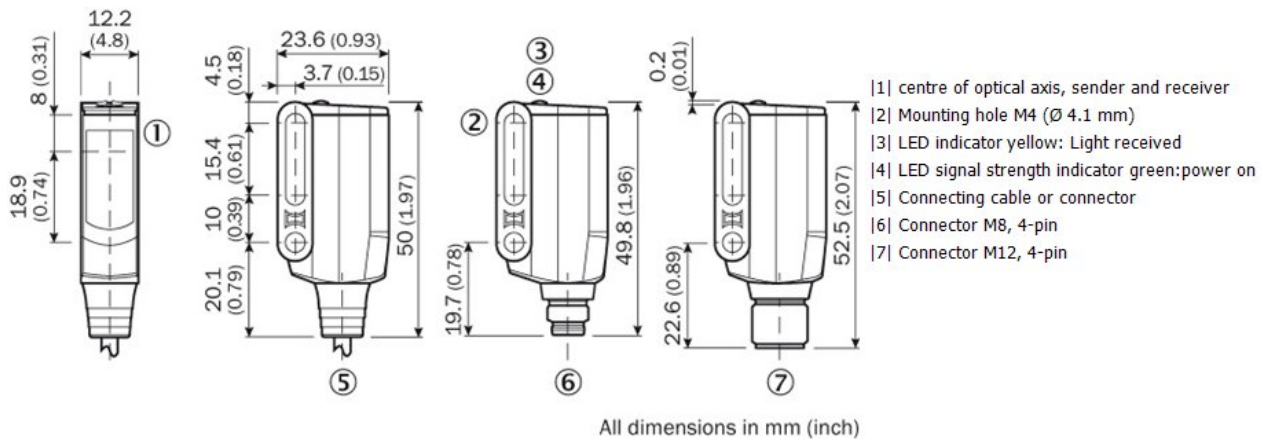
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Power consumption:	≤ 30 mA ²⁾
Output type:	NPN ³⁾
Output function:	Complementary

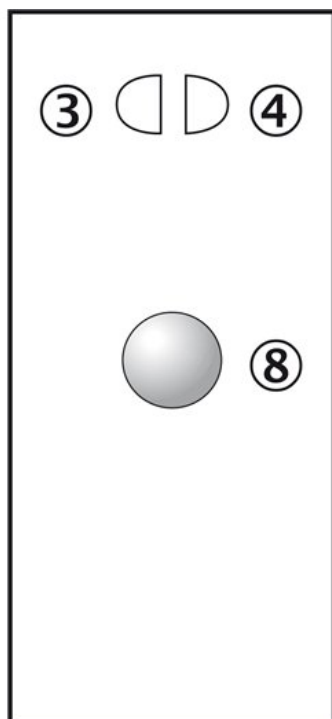
Switching mode:	Light/dark-switching ⁴⁾
Output current I _{max.} :	≤ 100 mA ⁵⁾
Response time:	< 0.5 ms ⁶⁾
Switching frequency:	1,000 Hz ⁷⁾
Connection type:	Connector M8, 4-pin
Circuit protection:::	A, B, C ⁸⁾ ⁹⁾ ¹⁰⁾
Protection class:	III
Weight:	13 g
Polarisation filter:	✓
Housing material:	Plastic, VISTAL
Optics material:	PMMA
Enclosure rating:	IP 66 IP 67 IP 69K
Ambient operating temperature:	-40 °C ... 60 °C
Ambient storage temperature:	-40 °C ... 75 °C
UL File No.:	NRKH.E181493

- ¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ Without load ³⁾ ⁴⁾ Q = light-switching ⁵⁾ As of Tu 50 °C, a max. load current I_{max.} = 50 mA is permitted ⁶⁾ Signal transit time with resistive load ⁷⁾ With light/dark ratio 1:1 ⁸⁾ A = V_S connections reverse-polarity protected ⁹⁾ B = inputs and output reverse-polarity protected ¹⁰⁾ C = interference suppression

Dimensional drawing

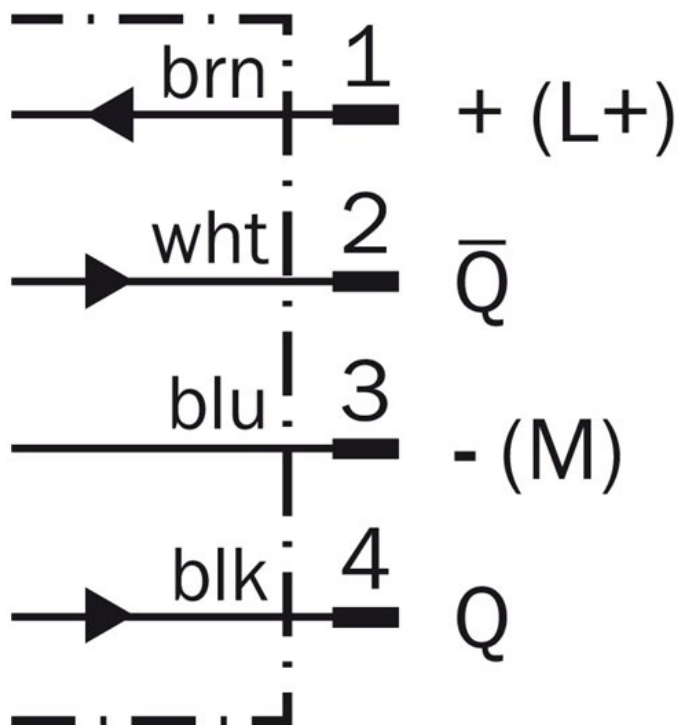


Adjustments possible

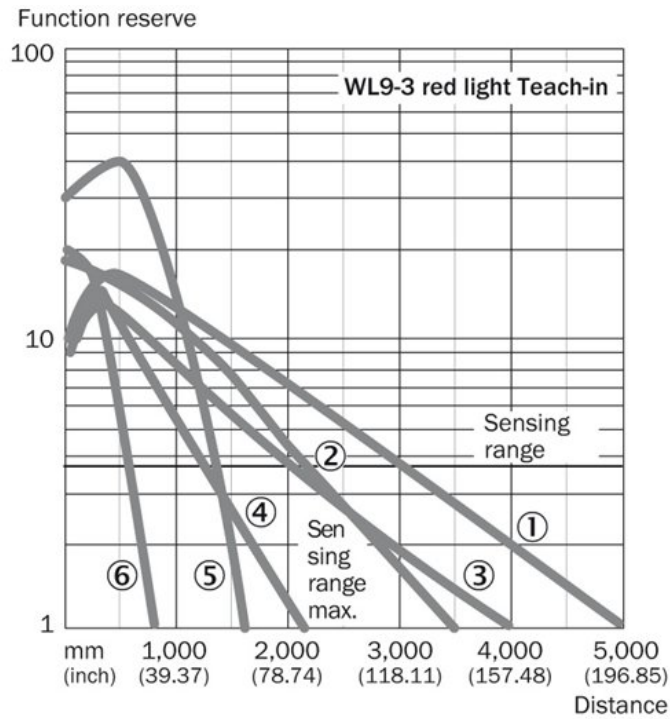


- |3| LED indicator yellow: Light received
- |4| LED signal strength indicator green: power on
- |8| Teach-in button

Connection diagram

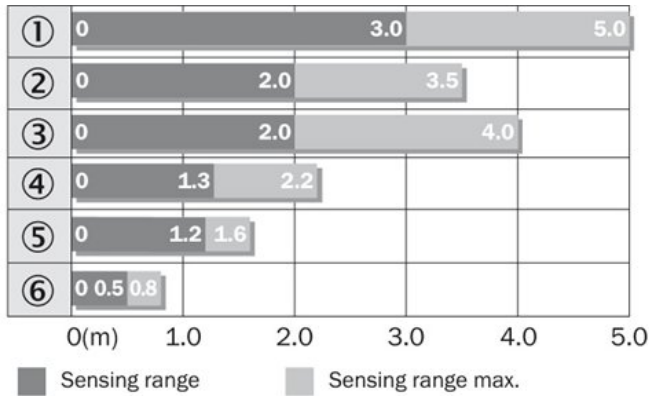


Characteristic curve



- |1| PL80A
- |2| P250
- |3| PL40A
- |4| PL20A
- |5| PL10F
- |6| REF-IRF-56

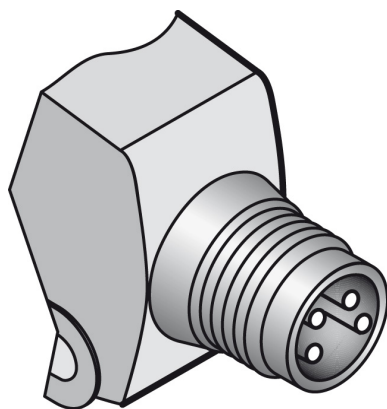
Sensing range diagram



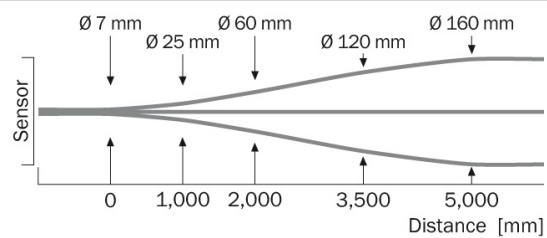
- |1| PL80A
- |2| P250F
- |3| PL40A
- |4| PL20F
- |5| PL10F
- |6| REF-IRF-56

	Reflector type	Sensing range
①	PL80A	0 ... 3.0 m
②	PL250F	0 ... 2.0 m
③	PL40A	0 ... 2.0 m
④	PL20F	0 ... 1.3 m
⑤	PL10F	0 ... 1.2 m
⑥	REF-IRF-56	0 ... 0.5 m

Connection type



Light spot size



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