

ONLINE DATA SHEET
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Photoelectric sensors
V180-2, Photoelectric retro-reflective sensor, Standard optics

VL180-2N41136



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V180-2, Photoelectric retro-reflective sensor, Standard optics

Model Name > VL180-2N41136
Part No. > 6037493





Illustration may differ

At a glance

- Lowest-cost M18 housing sensor on the market
- Sensing distance up to 7 m
- Polarizing filter ensures reliable detection of highly-reflective objects
- Bright power and signal LEDs with 360° visibility
- Includes reflector
- High switching frequencies up to 1000 Hz
- Available in a metal housing for applications in harsh environments
- Optical axis selectively axial or radial (90°)

Your benefits

- Lowest-cost M18 cylindrical sensor on the market reduces installation costs
- Bright red sender LED simplifies alignment and saves installation time
- Bright power and signal LEDs with 360° visibility offer quick and simple troubleshooting, reducing maintenance time and costs
- The flat and smooth lens reduces the collection of dust and dirt, ensuring safe operation with less maintenance and fewer costs
- Polarizing filter prevents false readings on reflective surfaces, reducing downtime

Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, Standard optics
Housing design (light emission):	Cylindrical, straight
Housing length:	62.9 mm
Thread diameter (housing):	M18 x 1
Optical axis:	axial
Sensing range max.:	0.05 m ... 7 m [1]
Sensing range:	0.05 m ... 6 m [2]
Type of light:	Visible red light
Light source:	LED [3]
Wave length:	645 nm
Angle of dispersion:	Ca. 4.5 °
Adjustment:	Potentiometer, 270 °
Light spot size (distance):	Ø 400 mm (6 m)

[1] [2] PL80A [3] Average service life of 100,000 h at T_A = +25 °C

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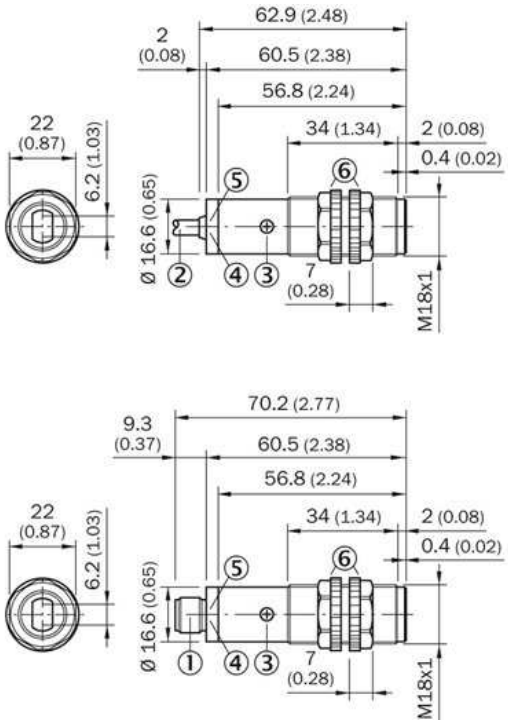
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC [1]
Residual ripple:	± 10 % [2]
Power consumption:	30 [3]
Output type:	NPN, open collector [4]
Switching mode:	Light/dark switching [5]
Switching mode selector:	Selectable via L/D control wire
Output current Imax.:	≤ 100 mA
Response time:	≤ 0.5 ms [6]
Switching frequency:	1,000 Hz [7]
Electrical connection:	Cable, 4-wire, 2 m [8]
Cable material:	PVC
Conductor cross-section:	0.18 mm²
Cable diameter:	Ø 3.8 mm
Circuit protection:::	A, B, D [9] [10] [11]
Protection class:	III
Weight:	62 g
Polarisation filter:	✓
Housing material:	Plastic, PBT/PC
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x), Reflector P250
Ambient temperature operation:	-25 °C ... +55 °C
Ambient storage temperature:	-40 °C ... +70 °C
Signal voltage NPN HIGH/LOW:	Approx. VS／< 1.8 V

[1] Limit values, operation in short-circuit protected network max. 8 A [2] May not exceed or fall short of V_S tolerances [3] Without load [4] [5] Control wire open: light-switching L.ON [6] Signal transit time with resistive load [7] With light/dark ratio 1:1 [8] Do not bend below 0 °C [9] A = V_S connections reverse-polarity protected [10] B = inputs and output reverse-polarity protected [11] D = outputs overcurrent and short-circuit protected

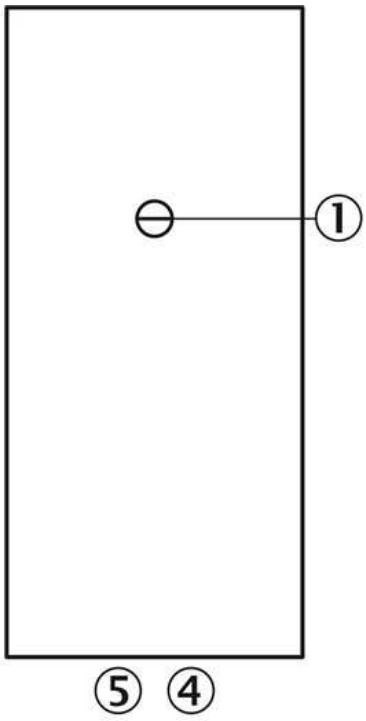
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Dimensional drawing



|1| Connector M12, 4-pin
|2| Connection cable 2 m
|3| Sensitivity control (potentiometer, 270°)
|4| LED indicator orange: switching output active
|5| LED indicator green: strentgh indicator
|6| fastening nuts (2 x); width across 22, PC

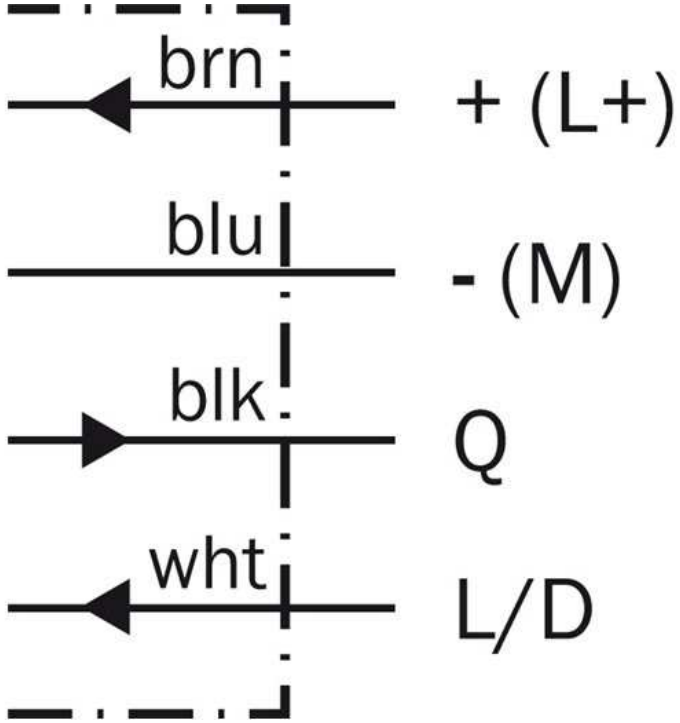
Adjustments possible



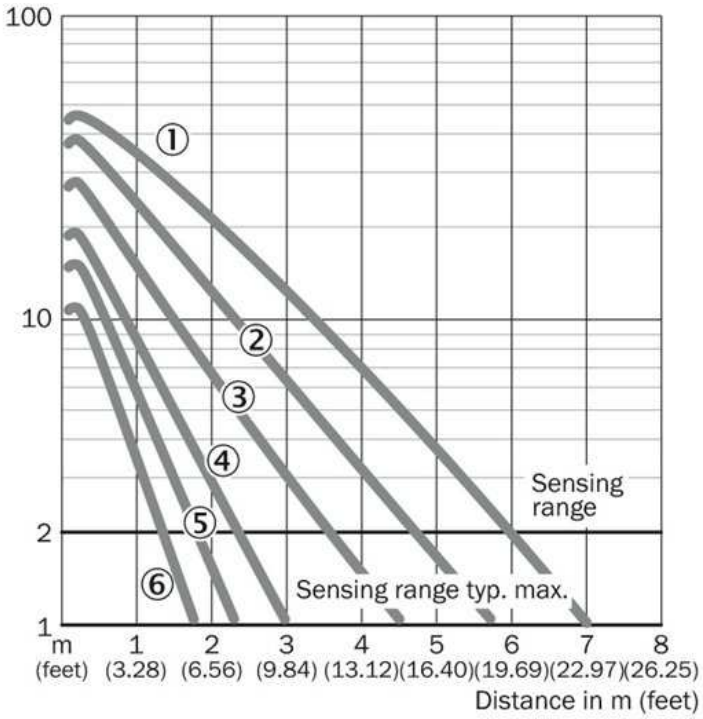
|3| Sensitivity adjustment 270°
|4| LED indicator orange: switching output active
|5| LED indicator green

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Connection diagram



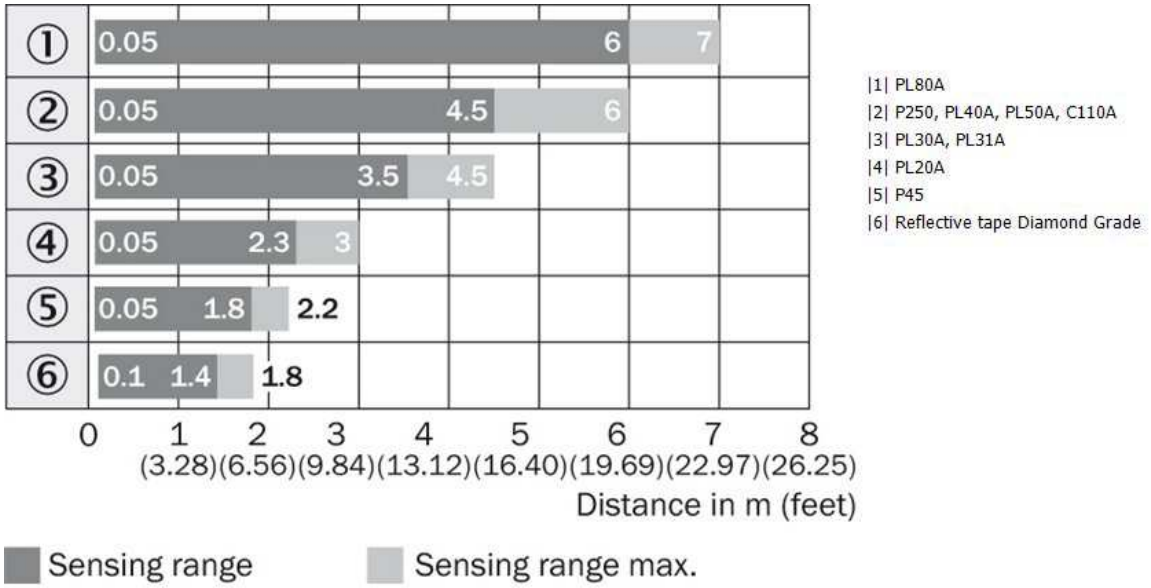
Characteristic curve



|1| PL80A
|2| P250, PL40A, PL50A, C110A
|3| PL30A, PL31A
|4| PL20A
|5| P45
|6| Reflective tape Diamond Grade

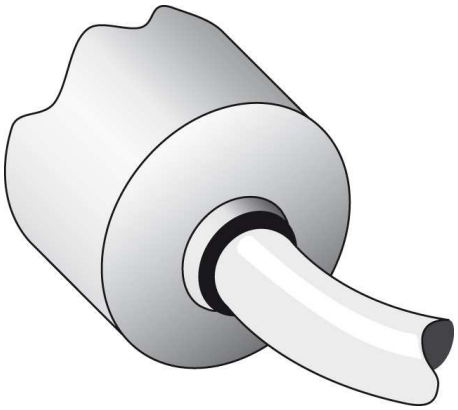
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Sensing range diagram

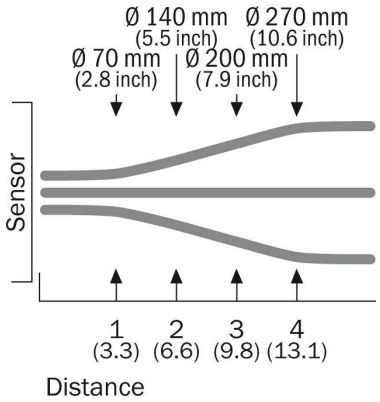


|1| PL80A
|2| P250, PL40A, PL50A, C110A
|3| PL30A, PL31A
|4| PL20A
|5| P45
|6| Reflective tape Diamond Grade

Connection type



Light spot size



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