



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

VL180-2P41131



Model Name > [VL180-2P41131](#)
Part No. > [6041818](#)



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)

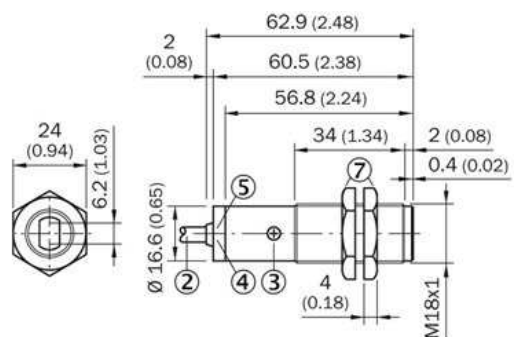
^{1) 2)} PL80A ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

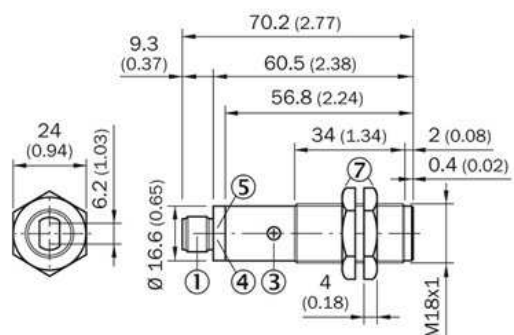
Supply voltage:	10 V DC ... 30 V DC ¹⁾
Residual ripple:	$\pm 10\%$ ²⁾
Power consumption:	30 ³⁾
Output type:	PNP, open collector ⁴⁾
Switching mode:	Light/dark switching ⁵⁾
Switching mode selector:	Selectable via L/D control wire
Output current I _{max} :	$\leq 100\text{ mA}$
Response time:	$\leq 0.5\text{ ms}$ ⁶⁾
Switching frequency:	1,000 Hz ⁷⁾
Electrical connection:	Cable, 4-wire, 2 m ⁸⁾
Cable material:	PVC
Conductor cross-section:	0.18 mm ²
Cable diameter:	Ø 3.8 mm
Circuit protection:::	A, B, D ⁹⁾ ¹⁰⁾ ¹¹⁾
Protection class:	III
Weight:	95 g
Polarisation filter:	✓
Housing material:	Nickel-plated brass and PC, Metal
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 PNP HIGH/LOW:	Approx. V _S - 1.8 V / 0 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: dark-switching D.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

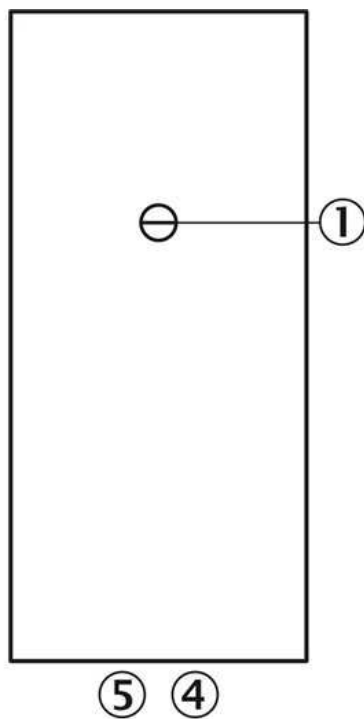
Dimensional drawing



- [1] Connector M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [7] fastening nuts (2 x); 24 mm hex, metal

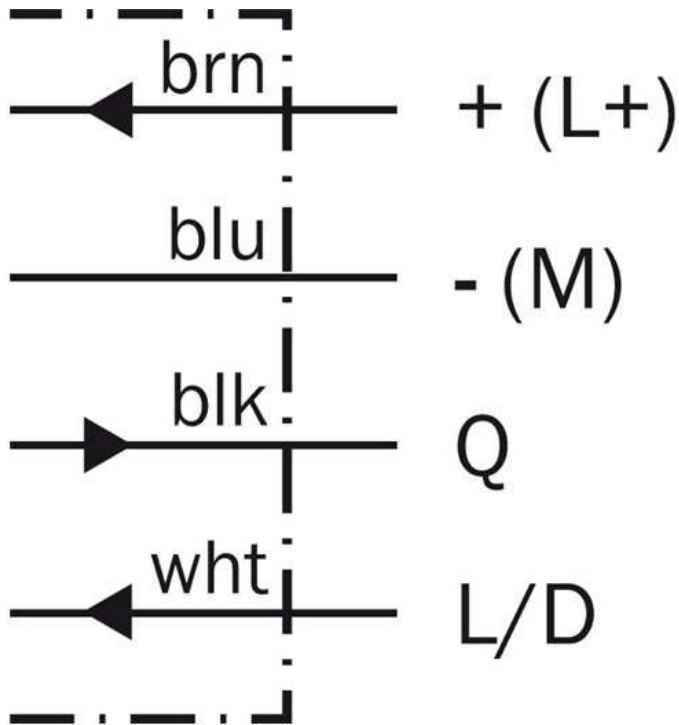


Adjustments possible

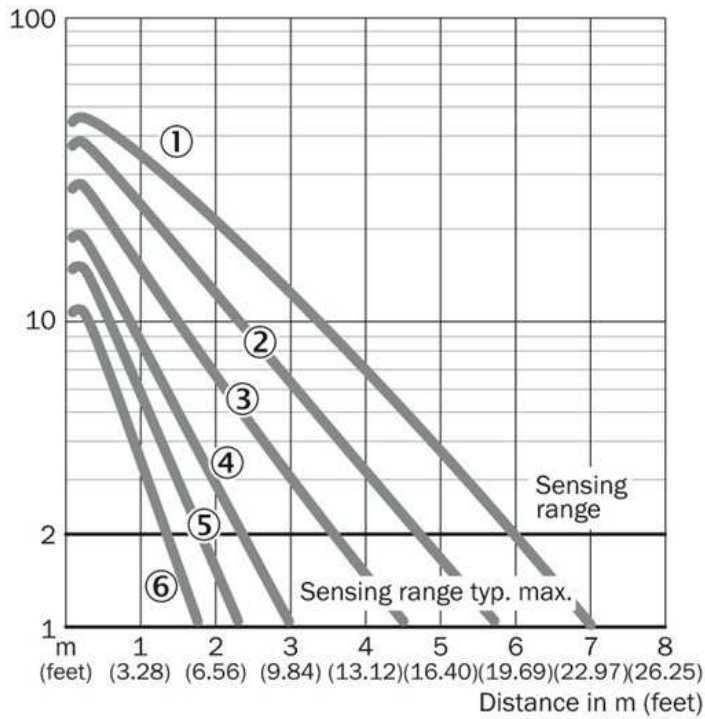


- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green

Connection diagram

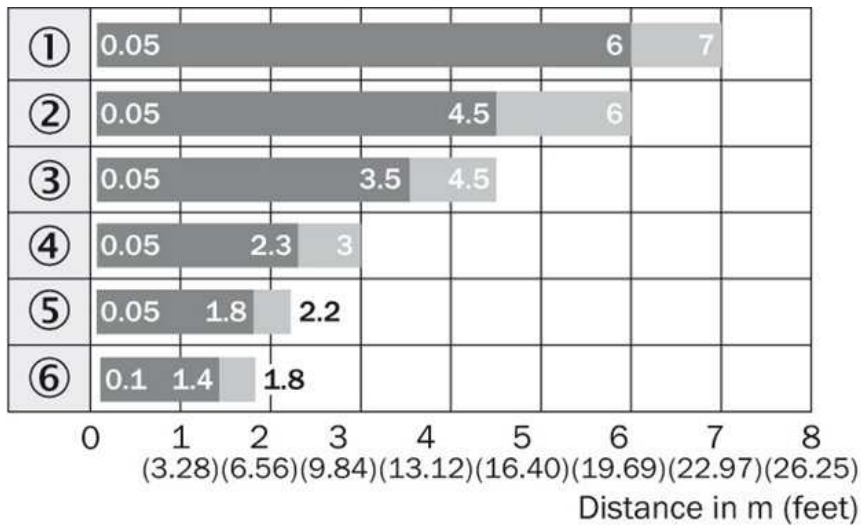


Characteristic curve



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

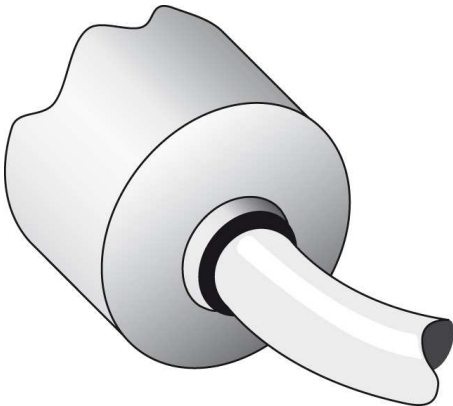
Sensing range diagram



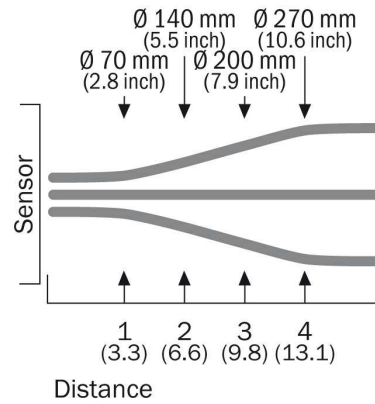
- |1| PL80A
- |2| P250, PL40A, PL50A, C110A
- |3| PL30A, PL31A
- |4| PL20A
- |5| P45
- |6| Reflective tape Diamond Grade

■ Sensing range ■ Sensing range max.

Connection type



Light spot size



Australia

Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg

Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil

Phone +55 11 3215-4900
E-Mail marketing@sick.com.br

Canada

Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika

Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China

Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland

Phone +49 211 5301-301
E-Mail info@sick.de

España

Phone +34 93 480 31 00
E-Mail info@sick.es

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain

Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India

Phone +91-22-4033 8333
E-Mail info@sick-india.com

Israel

Phone +972-4-6881000
E-Mail info@sick-sensors.com

Italia

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország

Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland

Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge

Phone +47 67 81 50 00
E-Mail sick@sick.no

Österreich

Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska

Phone +48 22 837 40 50
E-Mail info@sick.pl

România

Phone +40 356 171 120
E-Mail office@sick.ro

Russia

Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore

Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija

Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa

Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea

Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi

Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige

Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan

Phone +886 2 2375-6288
E-Mail sales@sick.com.tw

Türkiye

Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates

Phone +971 (0) 4 88 65 878
E-Mail info@sick.ae

USA/México

Phone +1(952) 941-6780
1 (800) 325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at www.sick.com