



Photoelectric sensors
V180-2, Photoelectric proximity sensor,
Background blanking

VTF180-2P42412



Model Name > [VTF180-2P42412](#)
Part No. > [6041803](#)



Illustration may differ

At a glance

- Lowest-cost M18 housing sensor on the market
- Sensing distance up to 140 mm
- Bright power and signal LEDs with 360° visibility
- High switching frequencies up to 1000 Hz
- Available in a metal housing for applications in harsh environments
- Optical axis selectively axial or radial (90°)
- Wide product portfolio solves a broad range of applications

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



Features

Sensor/detection principle:	Photoelectric proximity sensor, Background blanking
Housing design (light emission):	Cylindrical, straight
Housing length:	69.8 mm
Thread diameter (housing):	M18 x 1
Optical axis:	axial
Sensing range max.:	1 mm ... 140 mm ¹⁾
Sensing range:	1 mm ... 100 mm ²⁾
Type of light:	Visible red light
Light source:	LED ³⁾
Wave length:	645 nm
Focus:	Focused, focus approx. 7 mm at 60 mm
Adjustment:	Potentiometer, 270 °
Light spot size (distance):	Ø 8 mm (100 mm)

^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

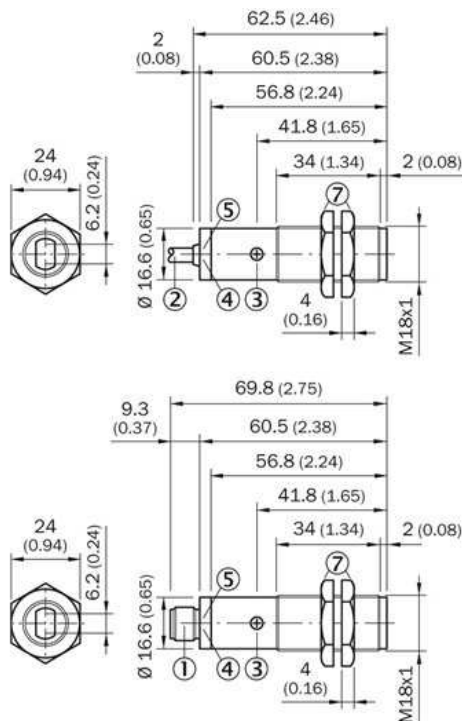
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Residual ripple:	± 10 % ²⁾

Power consumption:	≤ 30 mA 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} :	≤ 100 mA
Response time:	≤ 0.5 ms ⁶⁾
Switching frequency:	1,000 Hz ⁷⁾
Electrical connection:	Connector M12, 4-pin
Circuit protection:::	A, B, D ^{8) 9) 10)}
Protection class:	III
Weight:	47 g
Housing material:	Nickel-plated brass and PC, Metal
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x)
Special feature:	Focused optics
Ambient temperature operation:	-25 °C ... +55 °C
Ambient storage temperature:	-40 °C ... +70 °C
Signal voltage PNP HIGH/LOW:	Approx. VS - 1.8 V/0 V

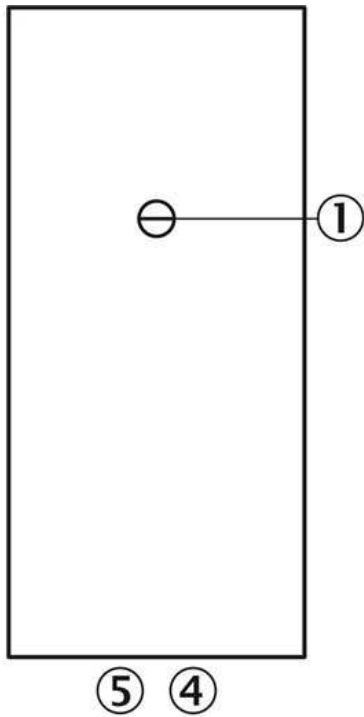
1) Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ^{4) 5)} Control wire open: dark-switching D.ON ⁶⁾ Signal transit time with resistive load ⁷⁾ With light/dark ratio 1:1 ⁸⁾ A = V_S connections reverse-polarity protected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

Dimensional drawing



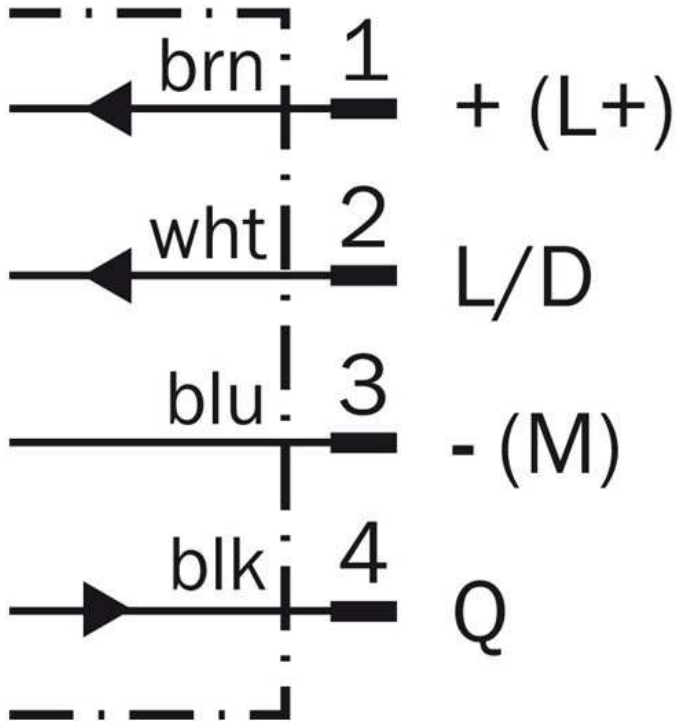
- [1] Connector M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [7] fastening nuts (2 x); 24 mm hex, metal

Adjustments possible

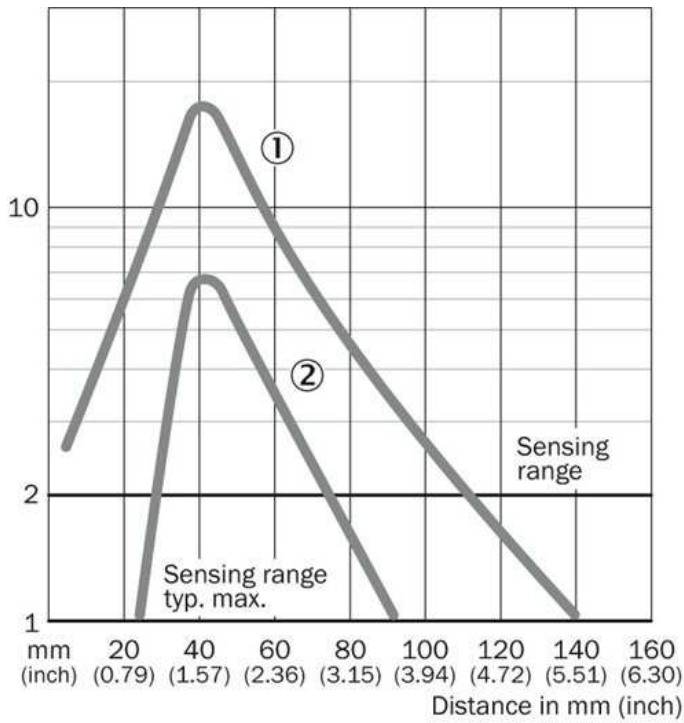


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

Connection diagram



Characteristic curve

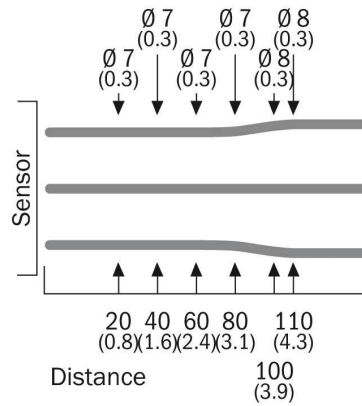


- |1| Sensing range on white, 90 % remission
- |2| Sensing range on grey, 18 % remission

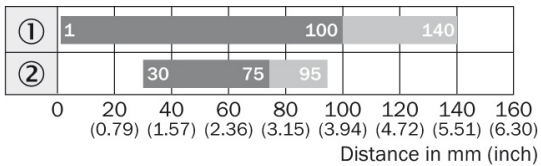
Connection type



Light spot size



Sensing range diagram



■ Sensing range ■ Sensing range max.

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