



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

VTF180-2P41117



Model Name > [VTF180-2P41117](#)
Part No. > [6037479](#)



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:	62.5 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

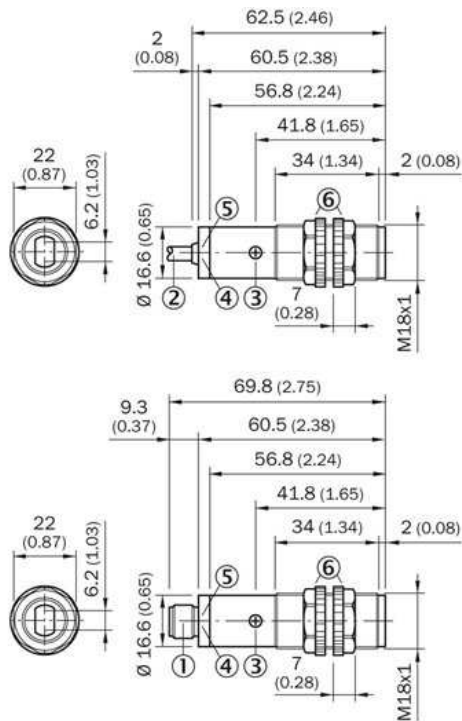
Mechanics/electronics

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

Power consumption:	$\leq 30 \text{ mA}$ 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} :	$\leq 100 \text{ mA}$
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:	62 g
Housing material:	Plastic, PBT/PC
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. V _S - 1.8 V / 0 V

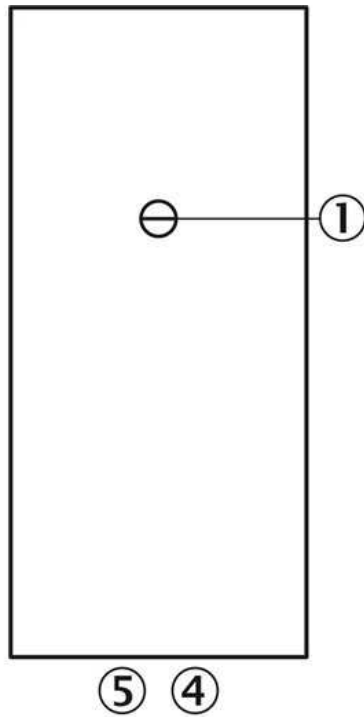
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ^{4) 5)} Control wire open: dark-switching D.ON ⁶⁾ Signal transit time with resistive load ⁷⁾ With light/dark ratio 1:1 ⁸⁾ Do not bend below 0 °C ⁹⁾ A = V_S connections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

Dimensional drawing



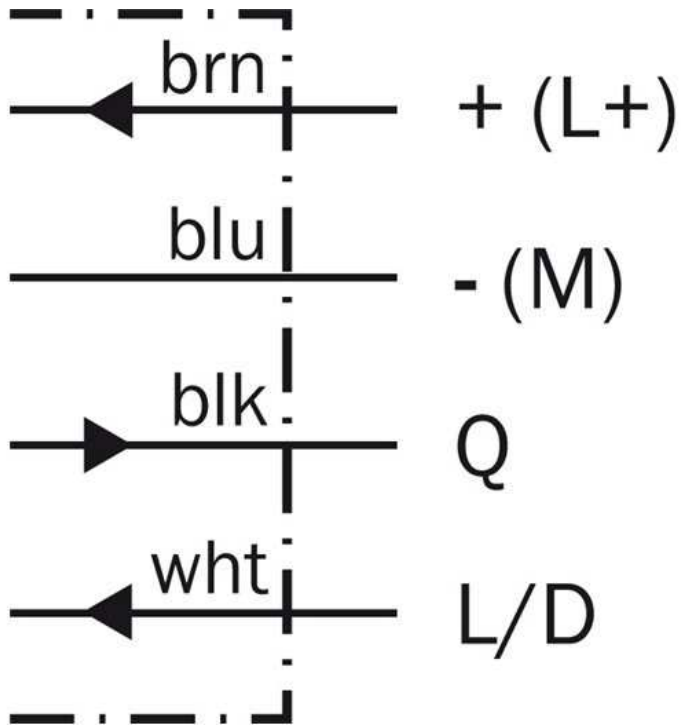
- [1] Connector M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity control (potentiometer, 270°)
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [6] fastening nuts (2 x); width across 22, PC

Adjustments possible

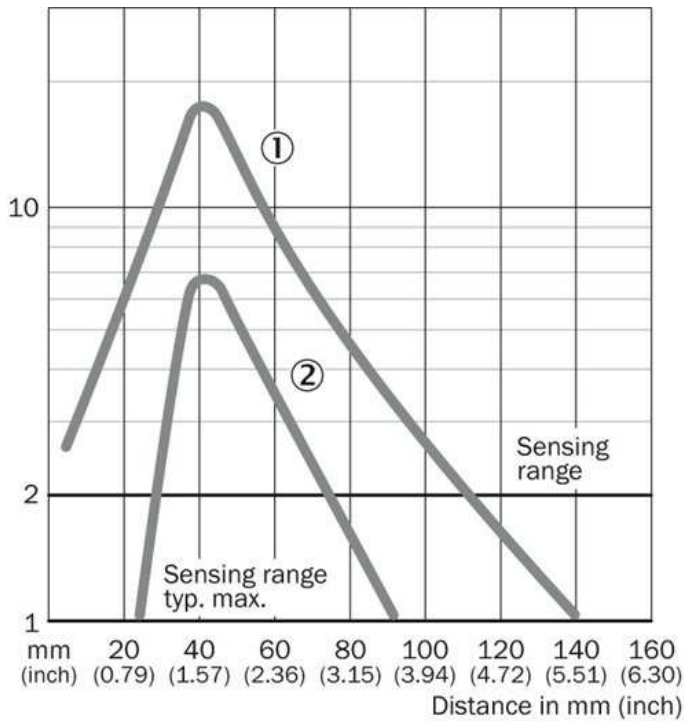


- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green

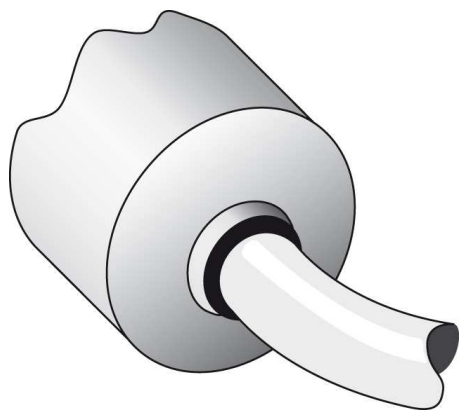
Connection diagram



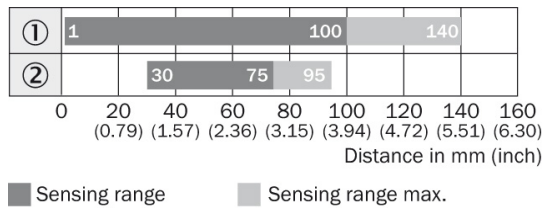
Characteristic curve



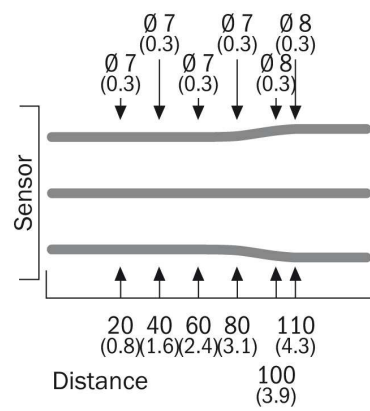
Connection type



Sensing range diagram



Light spot size



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