



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

VTF180-2N42417



Model Name > VTF180-2N42417
Part No. > 6037478



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, 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
Type of light:	Visible red light
Light source:	LED ²⁾
Light spot (distance):	Ø 8 mm (100 mm)
Wave length:	645 nm
Sensitivity adjustment:	Potentiometer, 270°

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

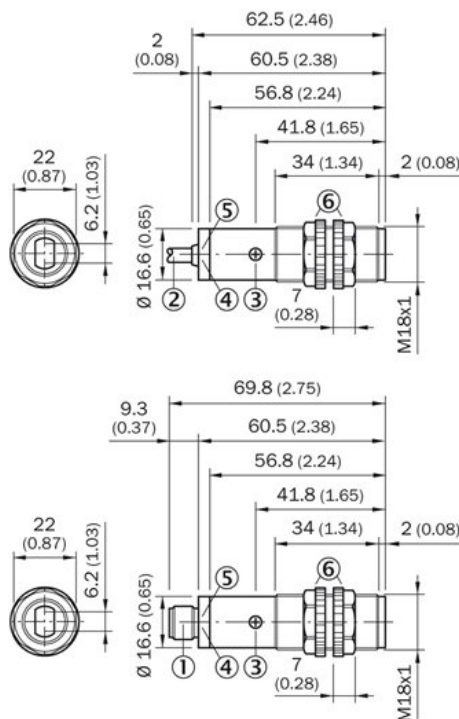
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	± 10 % ²⁾
Power consumption:	≤ 30 mA ³⁾

Switching output:	NPN, Light/dark-switching, Selectable via L/D control wire, open collector
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 1.8 \text{ V}$
Output current I_{max} :	$\leq 100 \text{ mA}$
Response time:	$\leq 0.5 \text{ ms}$ ⁵⁾
Switching frequency:	1,000 Hz ⁶⁾
Connection type:	Connector M12, 4-pin
Circuit protection:::	A, B, D ⁷⁾ 8) 9)
Protection class:	III
Weight:	18 g
Housing material:	PBT and PC
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x)
Special feature:	Focused optics
Ambient operating temperature:	-25 °C ... 55 °C
Ambient storage temperature:	-40 °C ... 70 °C

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

Dimensional drawing



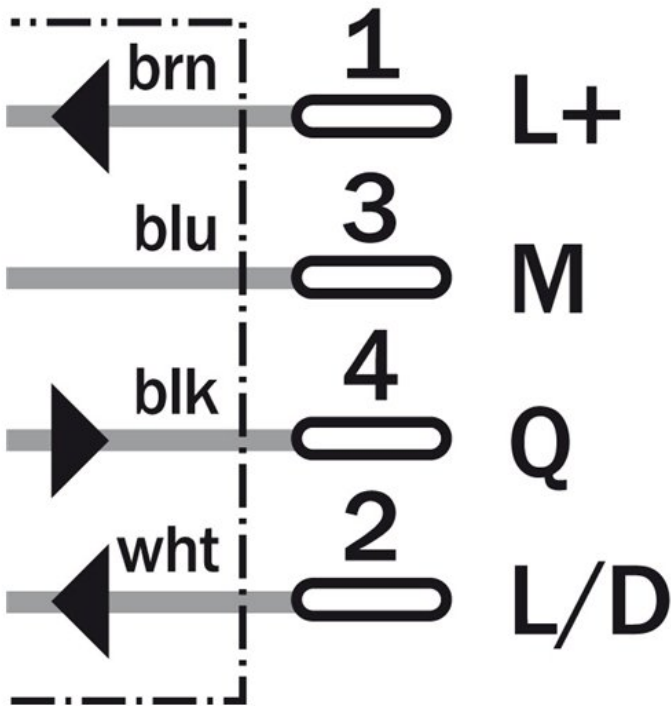
- [1] Connector M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity control (potentiometer, 270°)
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [6] fastening nuts (2 x); width across 22, PC

Adjustments possible

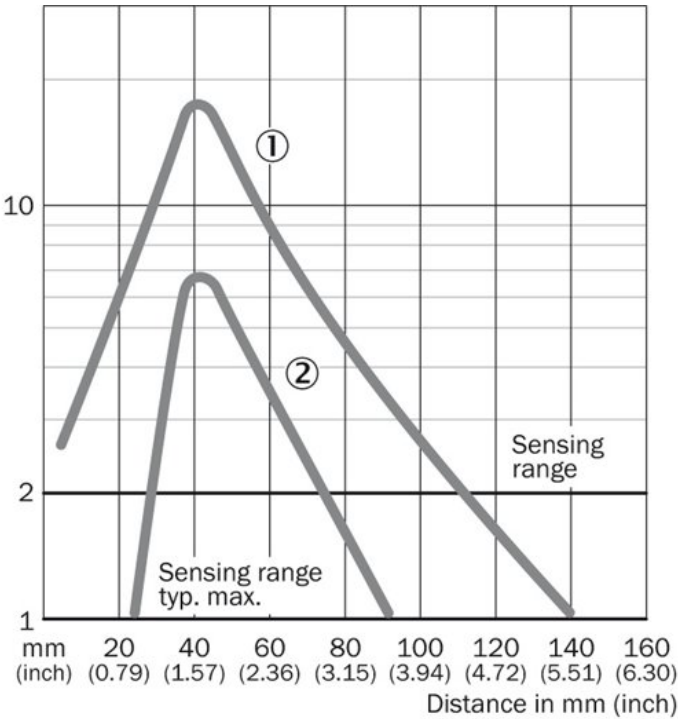


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

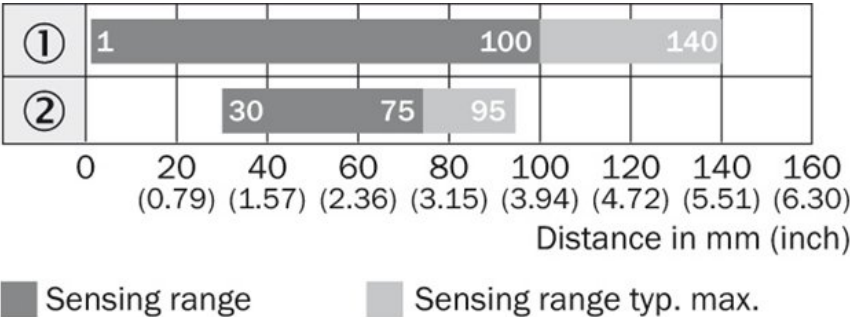
Connection diagram



Characteristic curve

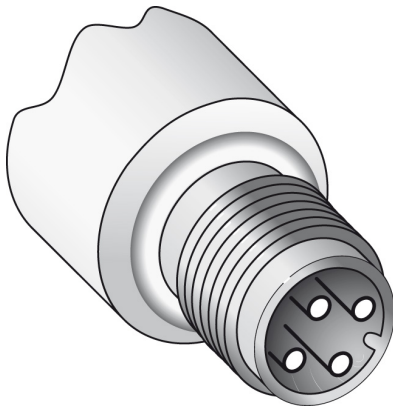


Sensing range diagram



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

Connection type



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