

ONLINE DATA SHEET
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Photoelectric sensors
V180-2, Photoelectric proximity sensor, Background blanking

VTF180-2P42412



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V180-2, Photoelectric proximity sensor, Background blanking

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]

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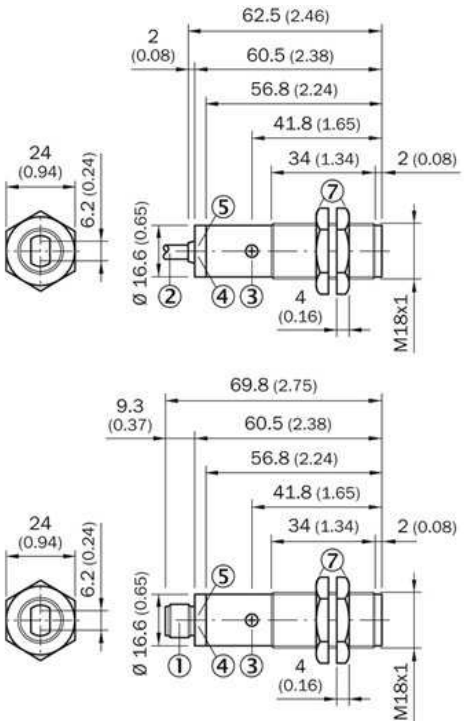
Power consumption:	≤ 30 mA [3]
Output type:	PNP, open collector [4]
Switching mode:	Light/dark switching [5]
Switching mode selector:	Selectable via L/D control wire
Output current Imax.:	≤ 100 mA
Response time:	≤ 0.5 ms [6]
Switching frequency:	1,000 Hz [7]
Electrical connection:	Connector M12, 4-pin
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: strentgh indicator
|7| fastening nuts (2 x); 24 mm hex, metal

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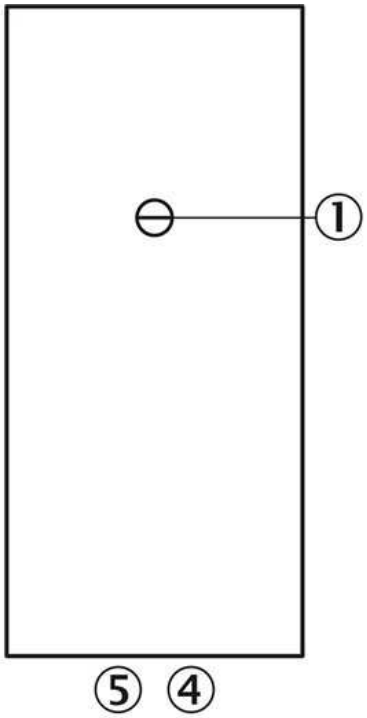
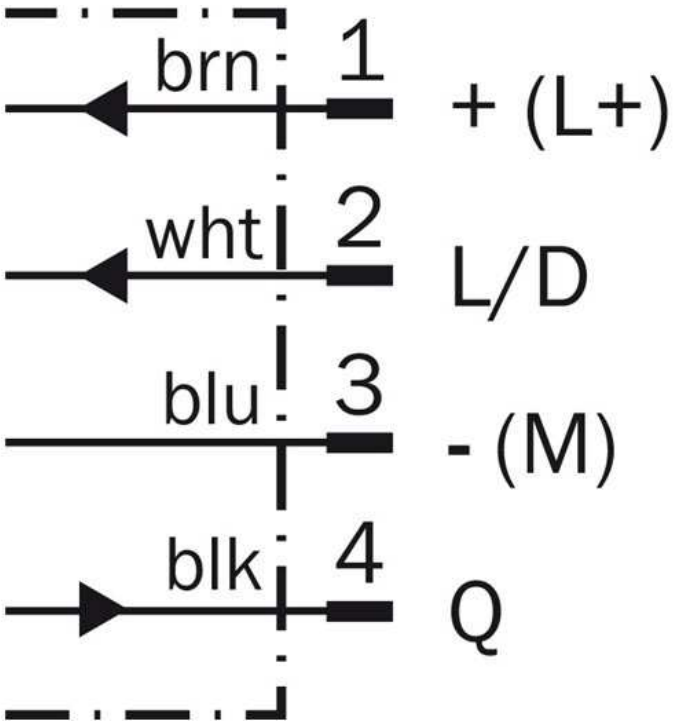
Adjustments possible



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

Connection diagram



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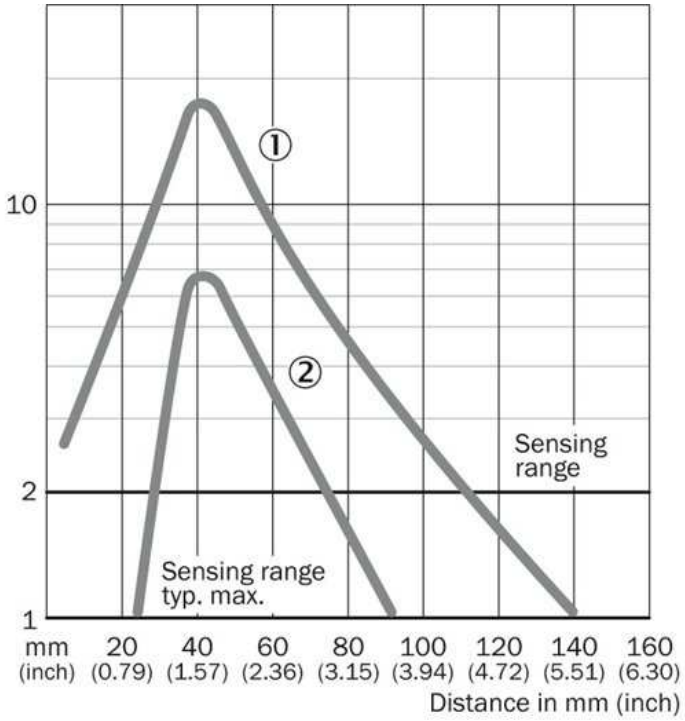
Characteristic curve

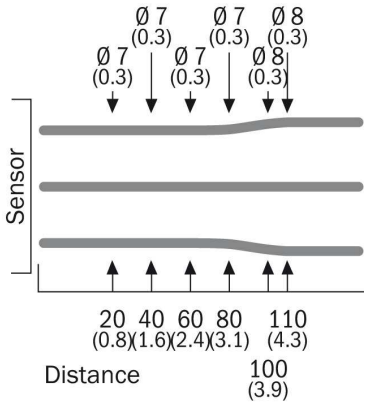


|1| Sensing range on white, 90 % remission
|2| Sensing range on grey, 18 % remission

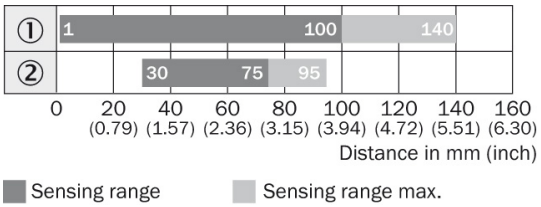
Connection type



Light spot size



Sensing range diagram



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