



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

VTB180-2P41112



Type > [VTB180-2P41112](#)
Part No. > [6043869](#)



Illustration may differ

At a glance

- Detecting presence and positioning in:
 - - Storage/conveying technology
 - - Material handling technology
 - - Packaging industry
 - - Transportation industry
 - - Automotive industry
 - - Wood industry
- Applications with limited space behind the sensor (radial types)

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 installation and maintenance costs
- The flat and smooth lens reduces the collection of dust and dirt, ensuring safe operation with less maintenance and fewer costs
- Sensors with background suppression for reliable detection of challenging objects



Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Housing design (light emission):	Cylindrical, straight
Thread diameter (housing):	M18 x 1
Optical axis:	Axial
Sensing range max.:	10 mm ... 350 mm ¹⁾
Sensing range:	30 mm ... 200 mm ²⁾
Type of light:	Visible red light
Light source:	LED ³⁾
Wave length:	632 nm
Angle of dispersion:	Ca. 2.8 °
Adjustment:	Potentiometer, 4 turns
Light spot size (distance):	Ø 15 mm (300 mm)

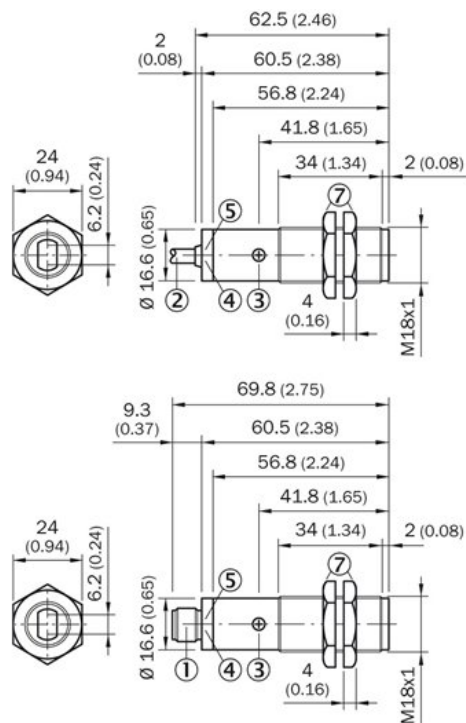
^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	$\pm 10 \%$ ²⁾
Current consumption:	$\leq 35 \text{ mA}$ 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:	$\leq 1 \text{ ms}$ ⁶⁾
Switching frequency:	$\leq 500 \text{ Hz}$ ⁷⁾
Connection type:	Cable, 4-wire, 2 m ⁸⁾
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
Housing material:	Nickel-plated brass and PC, Metal
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x)
Ambient operating temperature:	-25 °C ... +55 °C
Ambient storage temperature:	-40 °C ... +70 °C
Signal voltage PNP HIGH/LOW:	Approx. VS - 1.8 V / 0 V

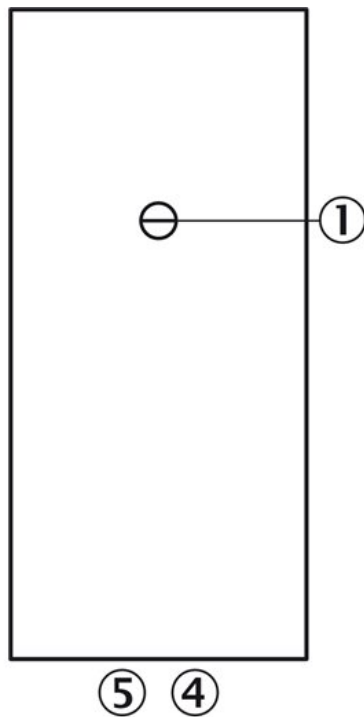
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ^{4) 5)} Control wire open: dark-switching D.ON ⁶⁾ Signal transit time with resistive load ⁷⁾ With light/dark ratio 1:1 ⁸⁾ Do not bend below 0 °C ⁹⁾ $A = V_S$ connections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

Dimensional drawing



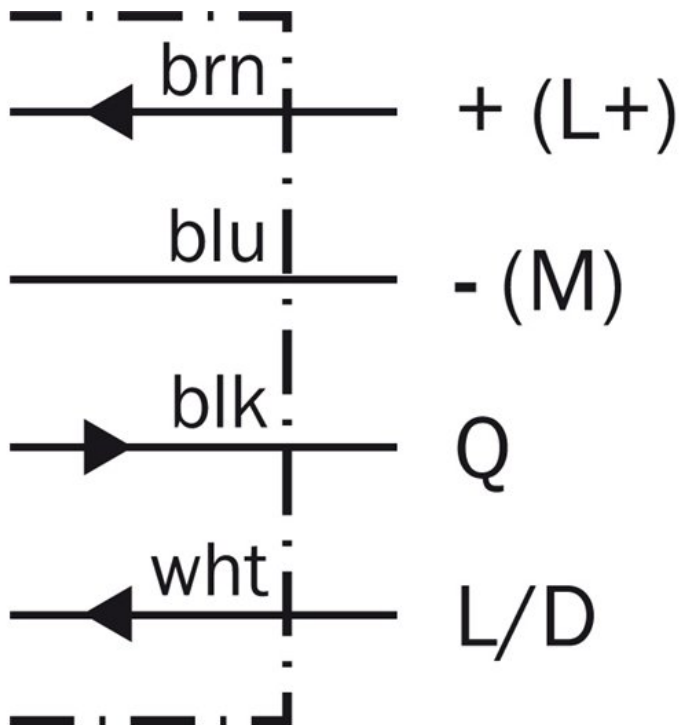
- [1] Connector M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [7] fastening nuts (2 x); 24 mm hex, metal

Adjustments possible

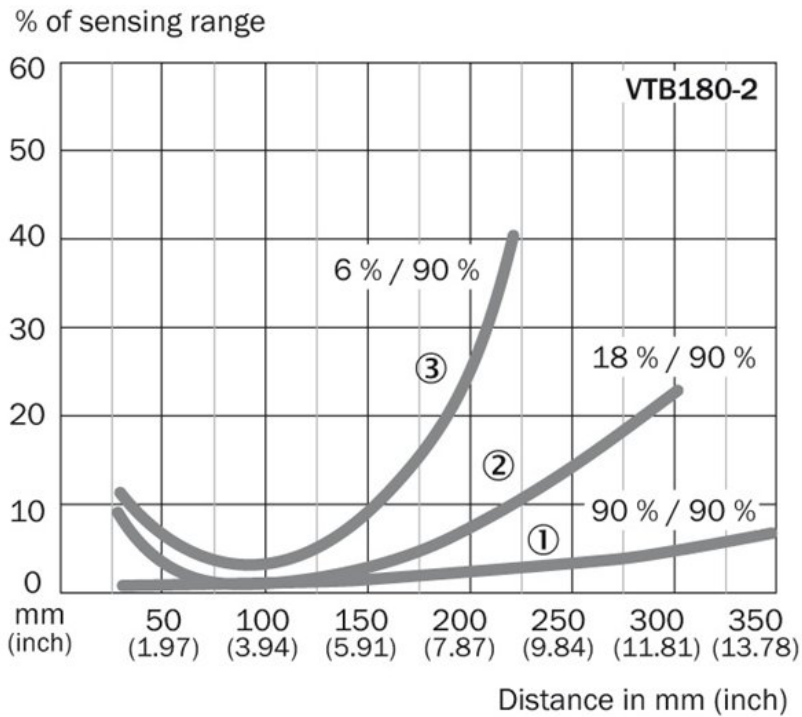


- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green

Connection diagram

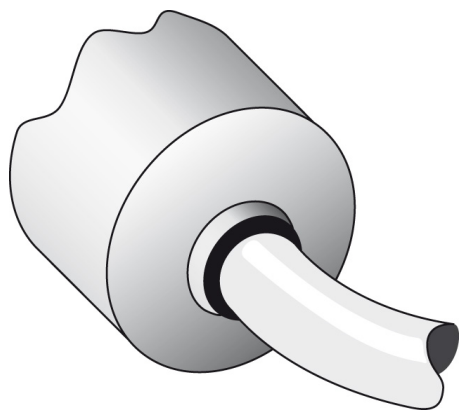


Characteristic curve

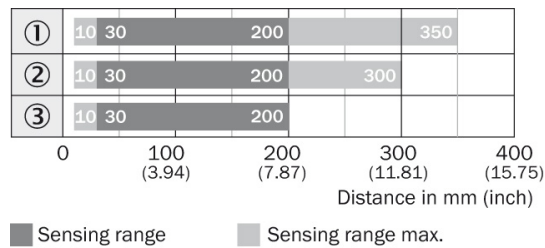


- [1] Sensing range on white, 90 % remission
- [2] Sensing range on grey, 18 % remission
- [3] Sensing range on black, 6 % remission

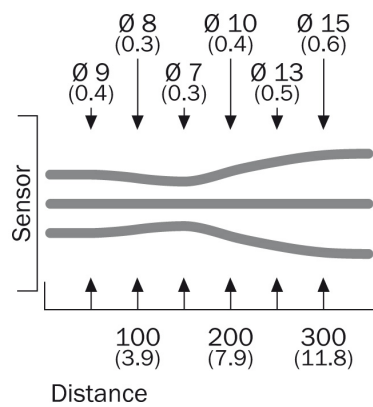
Connection type



Sensing range diagram



Light spot size



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