



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

VTB180-2N41117



Model Name > [VTB180-2N41117](#)
Part No. > [6043871](#)



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-turn
Light spot size (distance):	Ø 15 mm (300 mm)

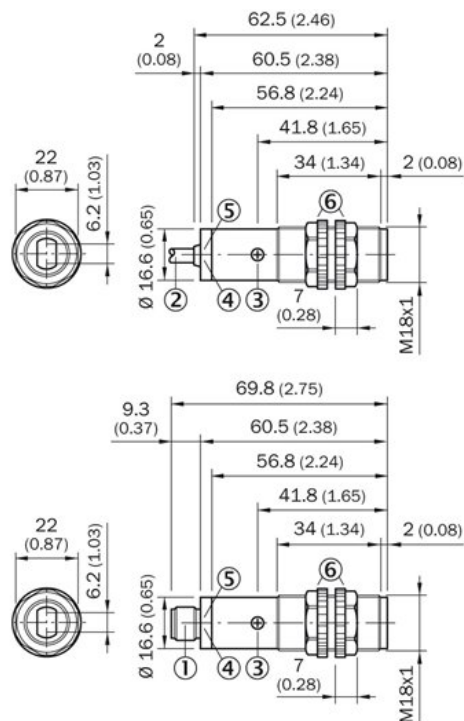
^{1) 2)} Object with 90 % reflectance (referred to standard white DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	± 10 %
Power consumption:	≤ 35 mA ²⁾
Output type:	NPN, open collector ³⁾
Switching mode:	Light/dark-switching ⁴⁾
Switching mode selector:	Selectable via L/D control wire
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 1.8 \text{ V}$
Output current I _{max} :	≤ 100 mA
Response time:	≤ 1 ms ⁵⁾
Switching frequency:	≤ 500 Hz ⁶⁾
Connection type:	Cable, 4-wire, 2 m ⁷⁾
Conductor cross-section:	0.18 mm ²
Cable diameter:	Ø 3.8 mm
Circuit protection:::	A, B, D ⁸⁾ ⁹⁾ ¹⁰⁾
Protection class:	III
Weight:	62 g
Housing material:	Plastic, PBT/PC
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

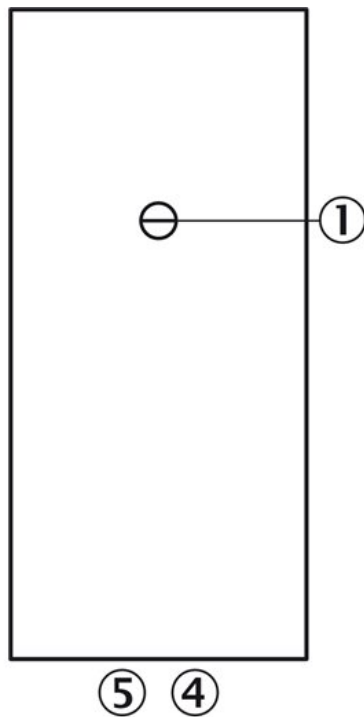
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ Without load ³⁾ ⁴⁾ Control wire open: light-switching L.ON ⁵⁾ Signal transit time with resistive load ⁶⁾ With light/dark ratio 1:1 ⁷⁾ Do not bend below 0 °C ⁸⁾ $A = V_S$ connections reverse-polarity protected ⁹⁾ B = inputs and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

Dimensional drawing



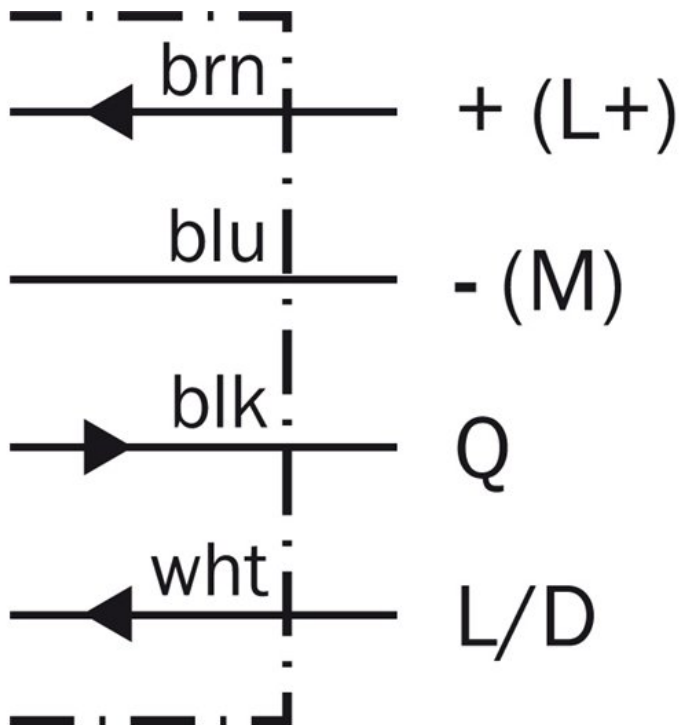
- [1] Connector M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity control (potentiometer, 270°)
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [6] fastening nuts (2 x); width across 22, PC

Adjustments possible

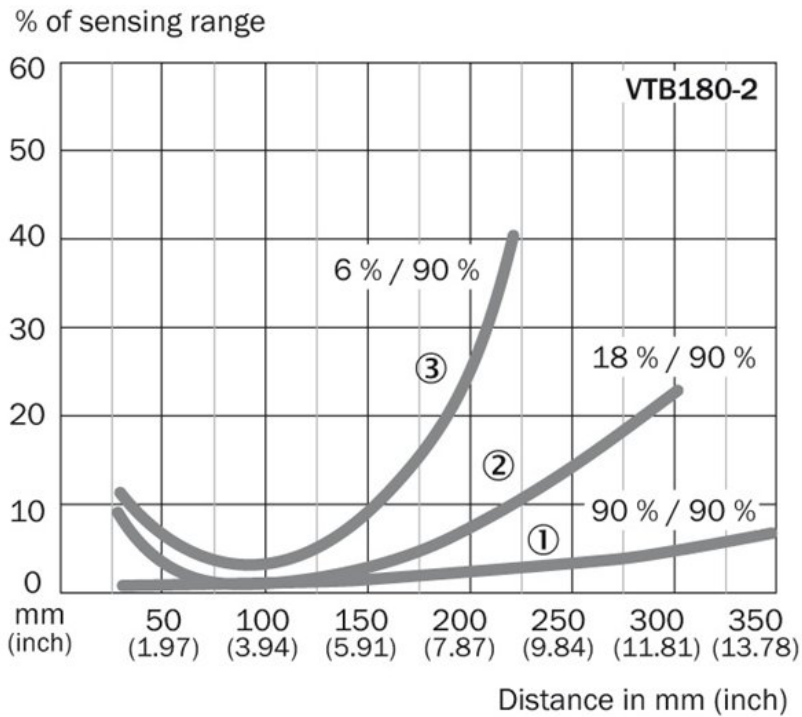


- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green

Connection diagram

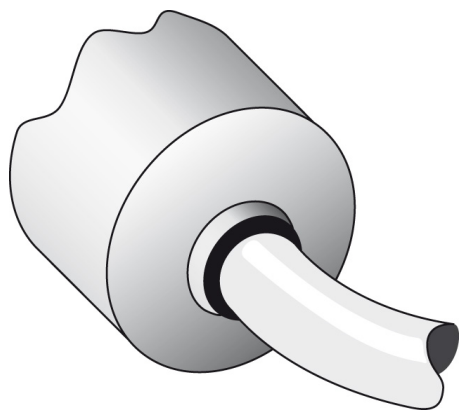


Characteristic curve

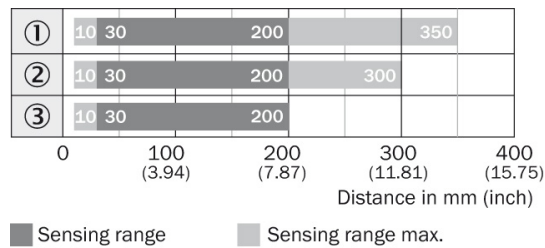


- [1] Sensing range on white, 90 % remission
- [2] Sensing range on grey, 18 % remission
- [3] Sensing range on black, 6 % remission

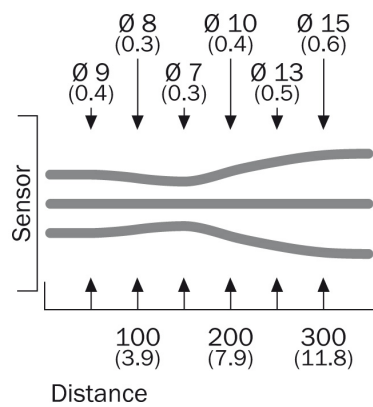
Connection type



Sensing range diagram



Light spot size



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