



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

VTB180-2N42417



Model Name > [VTB180-2N42417](#)
Part No. > [6043872](#)



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)

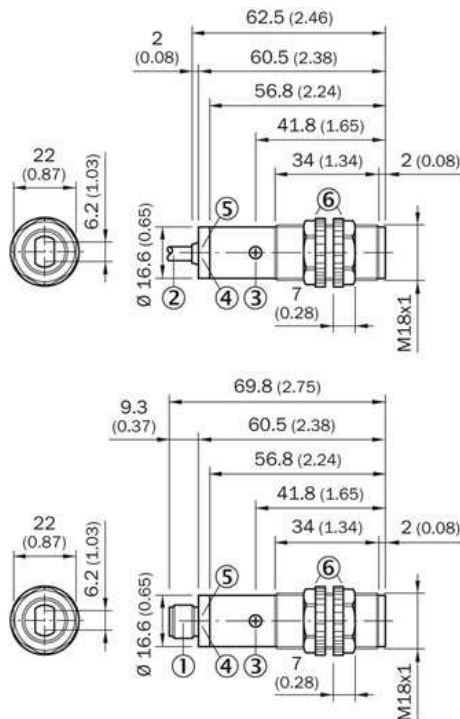
^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Residual ripple:	$\pm 10\%$ ²⁾
Power consumption:	$\leq 35\text{ mA}$ ³⁾
Output type:	NPN, 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⁾
Electrical connection:	Connector M12, 4-pin
Circuit protection:::	A, B, D ⁸⁾ ⁹⁾ ¹⁰⁾
Protection class:	III
Weight:	18 g
Housing material:	Plastic, PBT/PC
Optics material:	PMMA
Enclosure rating:	IP 67
Items supplied:	Fastening nuts (2 x)
Ambient temperature operation:	-25 °C ... +55 °C
Ambient storage temperature:	-40 °C ... +70 °C
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 1.8\text{ V}$

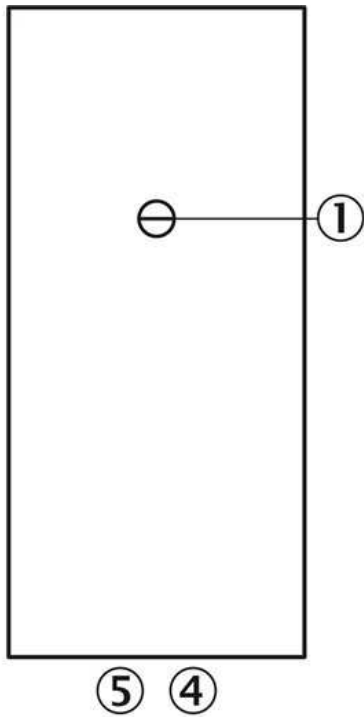
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ^{4) 5)} Control wire open: light-switching L.ON ⁶⁾ Signal transit time with resistive load ⁷⁾ With light/dark ratio 1:1 ⁸⁾ $A = V_S$ connections reverse-polarity protected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

Dimensional drawing



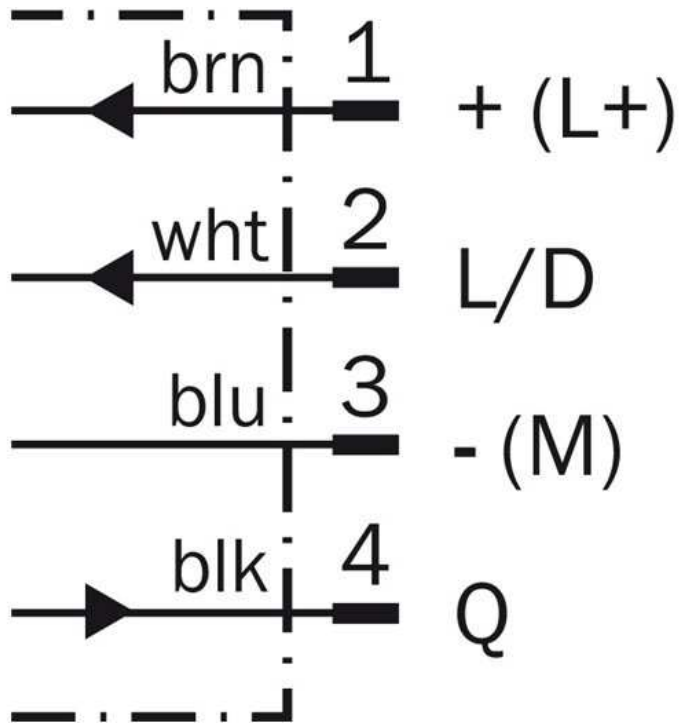
- [1] Connector M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity control (potentiometer, 270°)
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [6] fastening nuts (2 x); width across 22, PC

Adjustments possible

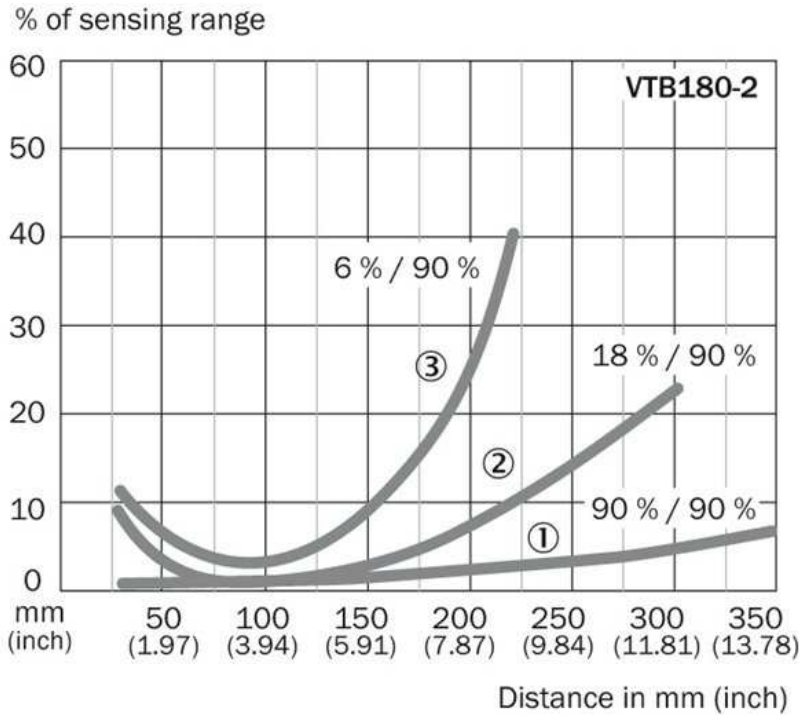


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

Connection diagram



Characteristic curve

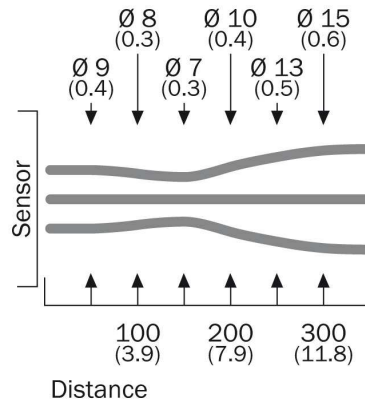


- |1| Sensing range on white, 90 % reemission
- |2| Sensing range on grey, 18 % reemission
- |3| Sensing range on black, 6 % reemission

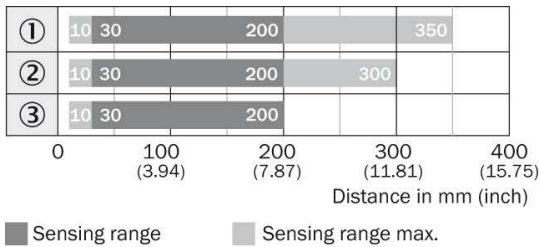
Connection type



Light spot size



Sensing range diagram



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