



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

VTB180-2P41112



Model Name > [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)

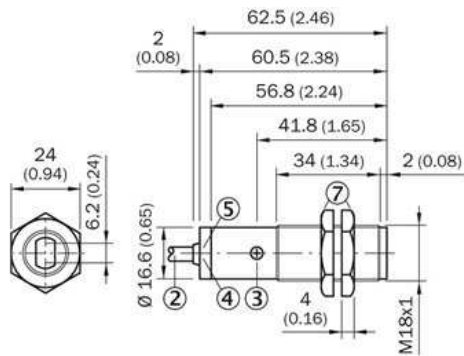
^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

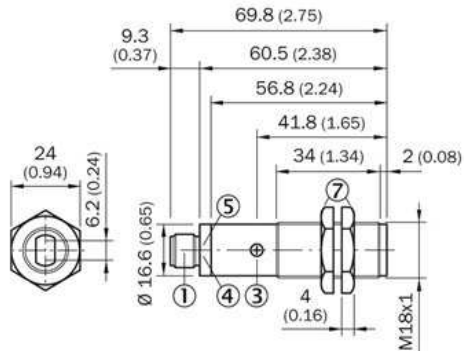
Supply voltage:	10 V DC ... 30 V DC ¹⁾
Residual ripple:	$\pm 10\%$ ²⁾
Power consumption:	$\leq 35\text{ mA}$ ³⁾
Output type:	PNP, open collector ⁴⁾
Switching mode:	Light/dark switching ⁵⁾
Switching mode selector:	Selectable via L/D control wire
Output current I _{max} :	$\leq 100\text{ mA}$
Response time:	$\leq 1\text{ ms}$ ⁶⁾
Switching frequency:	$\leq 500\text{ Hz}$ ⁷⁾
Electrical connection:	Cable, 4-wire, 2 m ⁸⁾
Conductor cross-section:	0.18 mm ²
Cable diameter:	$\varnothing 3.8\text{ mm}$
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 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⁾ 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

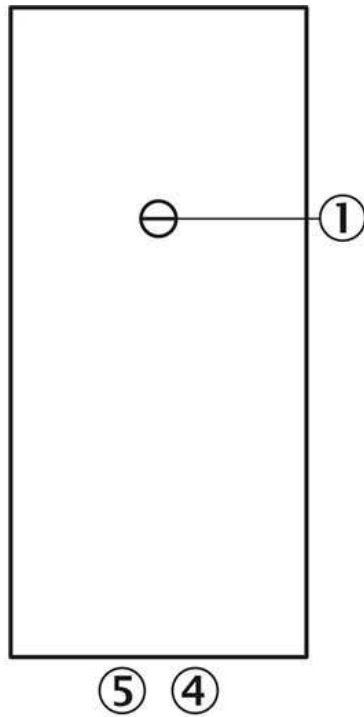
Dimensional drawing



- |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

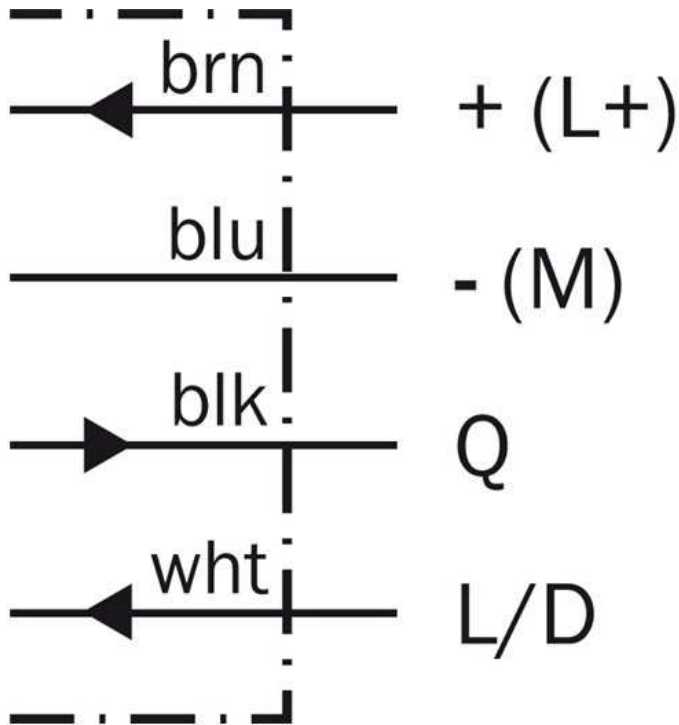


Adjustments possible

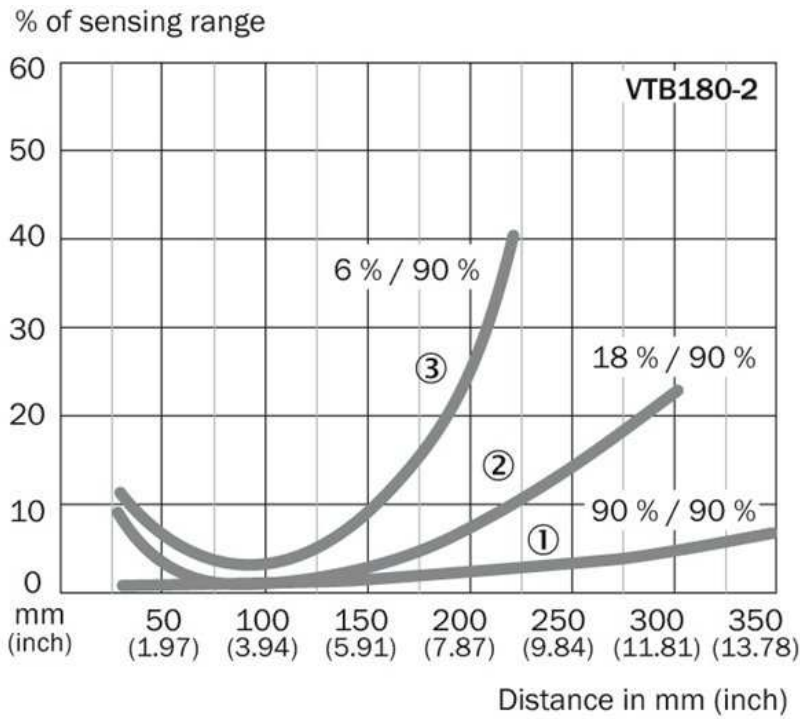


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

Connection diagram

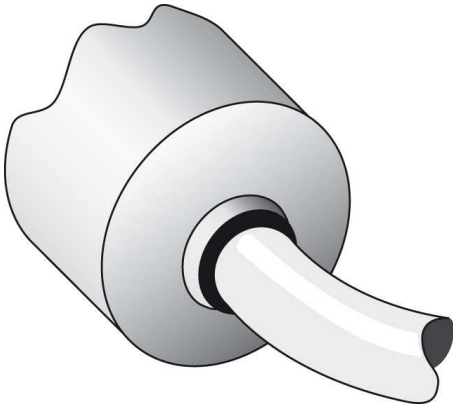


Characteristic curve

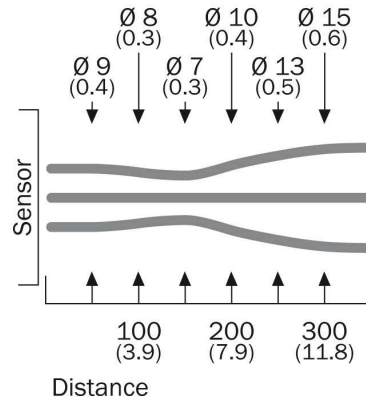


- [1] Sensing range on white, 90 % remission
- [2] Sensing range on grey, 18 % remission
- [3] Sensing range on black, 6 % remission

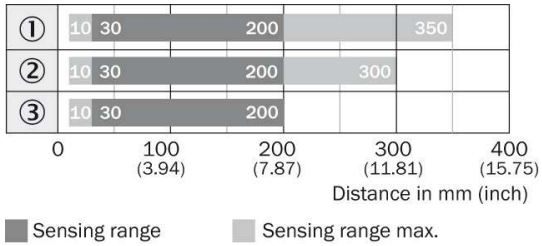
Connection type



Light spot size



Sensing range diagram



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