



Photoelectric sensors
V180-2, Photoelectric proximity sensor, energetic

VTE180-2N41184



Model Name > [VTE180-2N41184](#)
Part No. > [6043820](#)



Illustration may differ

At a glance

- Lowest-cost M18 housing sensor on the market
- Long sensing distances: 100 mm, 400 mm, 800 mm (max. 1,100 mm)
- Bright power and signal LEDs with 360° visibility
- Wide product portfolio solves a broad range of applications
- High switching frequencies up to 1000 Hz
- Available in a metal housing for applications in harsh environments
- Optical axis selectively axial or radial (90°)

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



Features

| | |
|----------------------------------|---|
| Sensor/detection principle: | Photoelectric proximity sensor, energetic |
| Housing design (light emission): | Cylindrical, angled |
| Housing length: | 76.5 mm |
| Optical axis: | radial |
| Sensing range max.: | 1 mm ... 900 mm ¹⁾ |
| Sensing range: | 1 mm ... 650 mm ²⁾ |
| Type of light: | Visible red light |
| Light source: | LED ³⁾ |
| Wave length: | 645 nm |
| Angle of dispersion: | Ca. 1.2 ° |
| Adjustment: | Potentiometer, 270 ° |
| Light spot size (distance): | Ø 30 mm (800 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

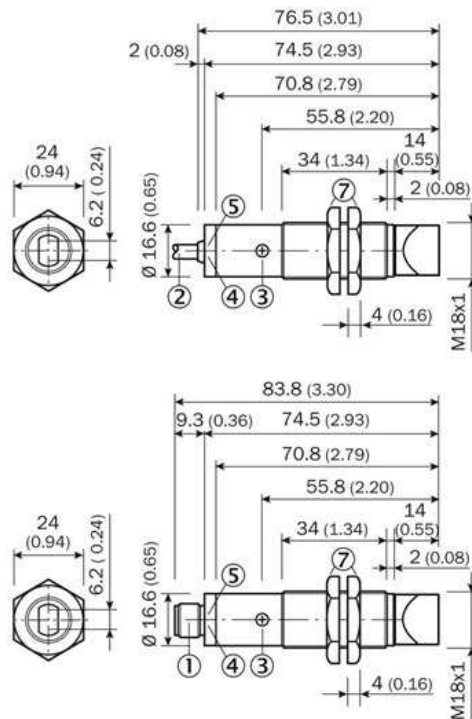
Mechanics/electronics

| | |
|--------------------|-----------------------------------|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Residual ripple: | ± 10 % ²⁾ |
| Power consumption: | ≤ 30 mA ³⁾ |

| | |
|-----------------------------------|---|
| Output type: | NPN ⁴⁾ |
| Switching mode: | Light/dark switching ⁵⁾ |
| Output current I _{max} : | ≤ 100 mA |
| Response time: | ≤ 0.5 ms ⁶⁾ |
| Switching frequency: | 1,000 Hz ⁷⁾ |
| Electrical connection: | Cable, 4-wire, 2 m ⁸⁾ |
| Cable material: | PVC |
| 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 |
| Ambient temperature operation: | -25 °C ... +55 °C |
| Ambient storage temperature: | -40 °C ... +70 °C |
| Signal voltage NPN HIGH/LOW: | Approx. V _S / < 1.8 V |

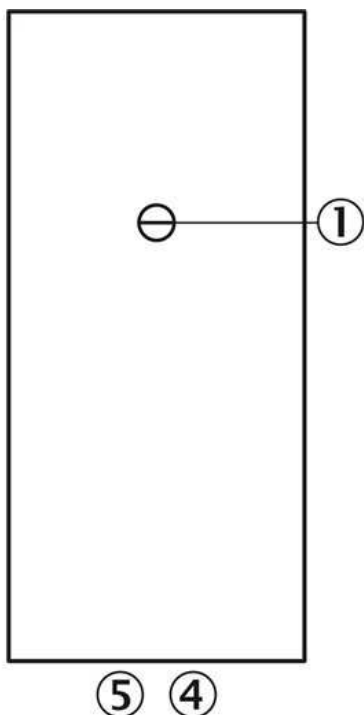
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ^{4) 5)} Control wire open: light-switching L.ON ⁶⁾ Signal transit time with resistive load ⁷⁾ With light/dark ratio 1:1 ⁸⁾ Do not bend below 0 °C ⁹⁾ A = V_S connections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

Dimensional drawing



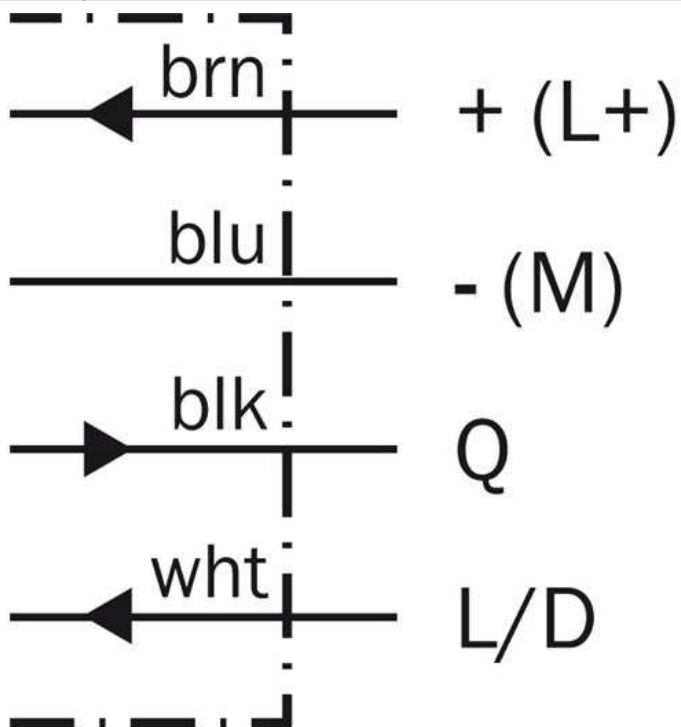
- [1] Connector M12, 3-pin / Connector M12, 3-pin
- [2] Connection cable 2 m
- [3] Sensitivity control; Potentiometer 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green, stability indicator:
LED lights continuously = light reception < 0.9 / > 1.1; LED off = light reception > 0.9 / < 1.1
- [7] Metal housing, fastening nuts (2 x); width across 24

Adjustments possible

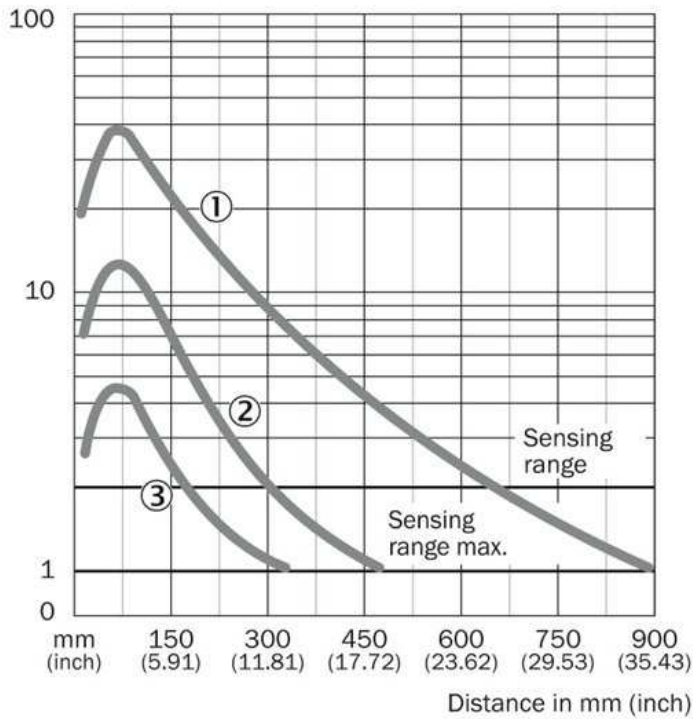


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

Connection diagram

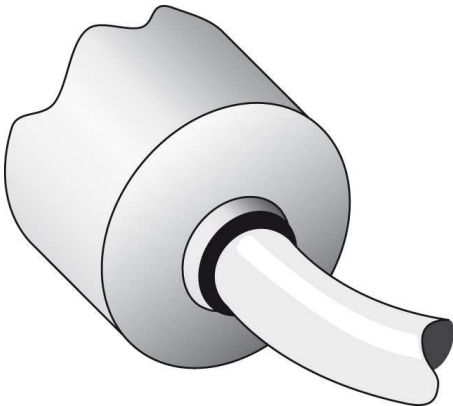


Characteristic curve

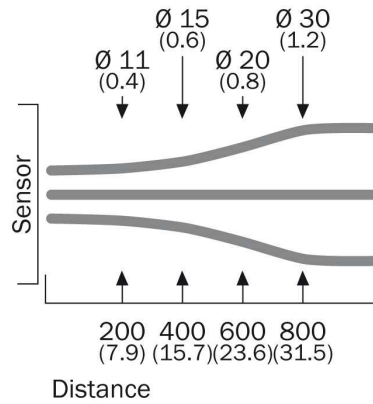


- |1| Sensing range on white, 90 % remission
- |2| Sensing range on grey, 18 % remission
- |3| Sensing range on black, 6 % remission

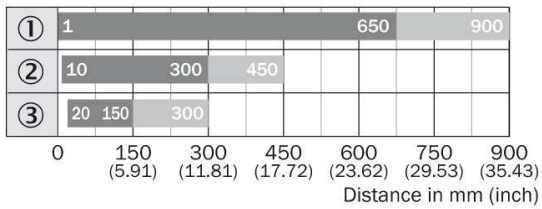
Connection type



Light spot size



Sensing range diagram



■ Sensing range ■ Sensing range max.

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