



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

VTF180-2F32412



Model Name > [VTF180-2F32412](#)
Part No. > [6044021](#)



Illustration may differ

At a glance

- Lowest-cost M18 housing sensor on the market
- Sensing distance up to 140 mm
- Bright power and signal LEDs with 360° visibility
- High switching frequencies up to 1000 Hz
- Available in a metal housing for applications in harsh environments
- Optical axis selectively axial or radial (90°)
- Wide product portfolio solves a broad range of applications

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 maintenance time and 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, Background blanking |
| Housing design (light emission): | Cylindrical, straight |
| Housing length: | 69.8 mm |
| Thread diameter (housing): | M18 x 1 |
| Optical axis: | axial |
| Sensing range max.: | 1 mm ... 140 mm ¹⁾ |
| Sensing range: | 1 mm ... 100 mm ²⁾ |
| Type of light: | Visible red light |
| Light source: | LED ³⁾ |
| Wave length: | 645 nm |
| Focus: | Focused, focus approx. 7 mm at 60 mm |
| Adjustment: | Potentiometer, 270 ° |
| Light spot size (distance): | Ø 8 mm (100 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

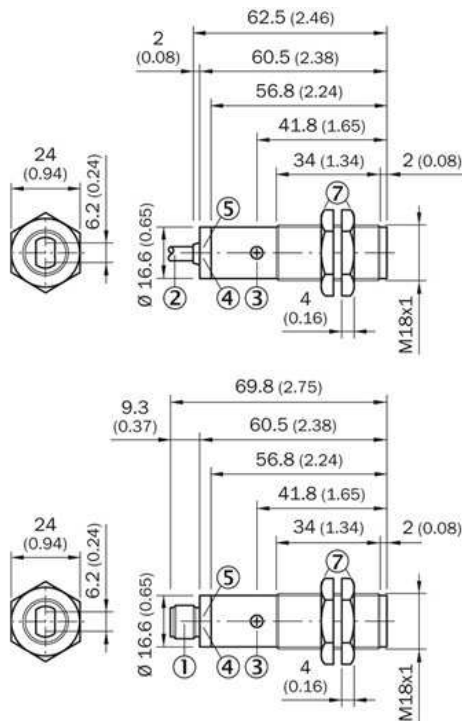
Mechanics/electronics

| | |
|------------------|-----------------------------------|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Residual ripple: | ± 10 % ²⁾ |

| | |
|------------------------------------|-----------------------------------|
| Power consumption: | ≤ 30 mA ³⁾ |
| Output type: | PNP, open collector |
| Switching mode: | Light switching |
| Output current I _{max.} : | ≤ 100 mA |
| Response time: | ≤ 0.5 ms ⁴⁾ |
| Switching frequency: | ± 1,000 Hz ⁵⁾ |
| Electrical connection: | Connector M12, 3-pin |
| Circuit protection::: | A, B, D ^{6) 7) 8)} |
| Protection class: | III |
| Weight: | 47 g |
| Housing material: | Nickel-plated brass and PC, Metal |
| Optics material: | PMMA |
| Enclosure rating: | IP 67 |
| Items supplied: | Fastening nuts (2 x) |
| Special feature: | Focused optics |
| 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 |

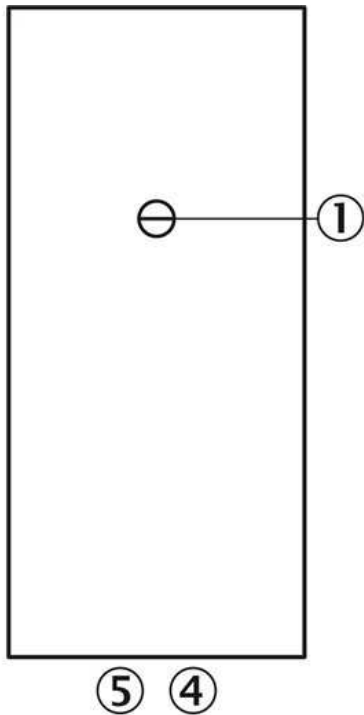
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾ With light/dark ratio 1:1 ⁶⁾ A = V_S connections reverse-polarity protected ⁷⁾ B = inputs and output reverse-polarity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

Dimensional drawing



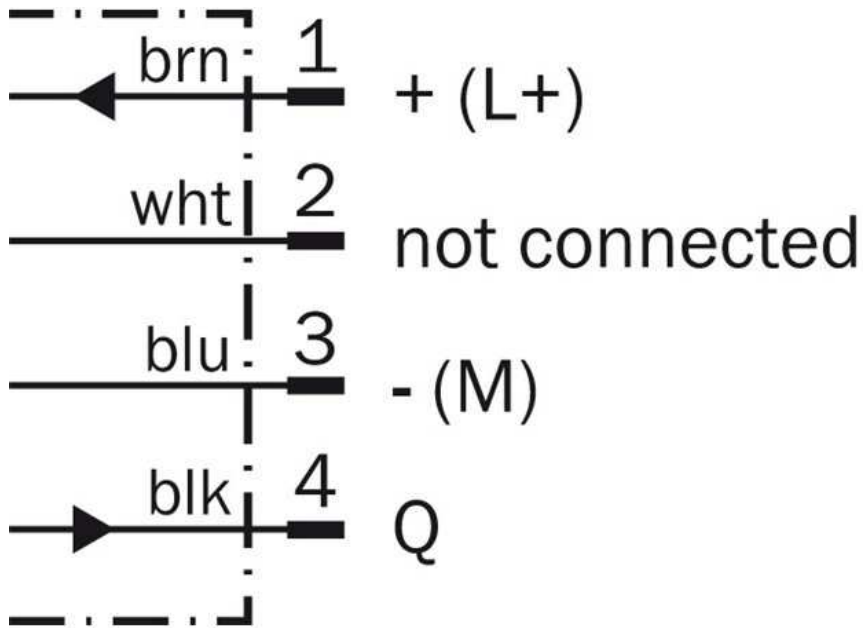
- [1] Connector M12, 4-pin
- [2] Connection cable 2 m
- [3] Sensitivity adjustment 270°
- [4] LED indicator orange: switching output active
- [5] LED indicator green: strength indicator
- [7] fastening nuts (2 x); 24 mm hex, metal

Adjustments possible

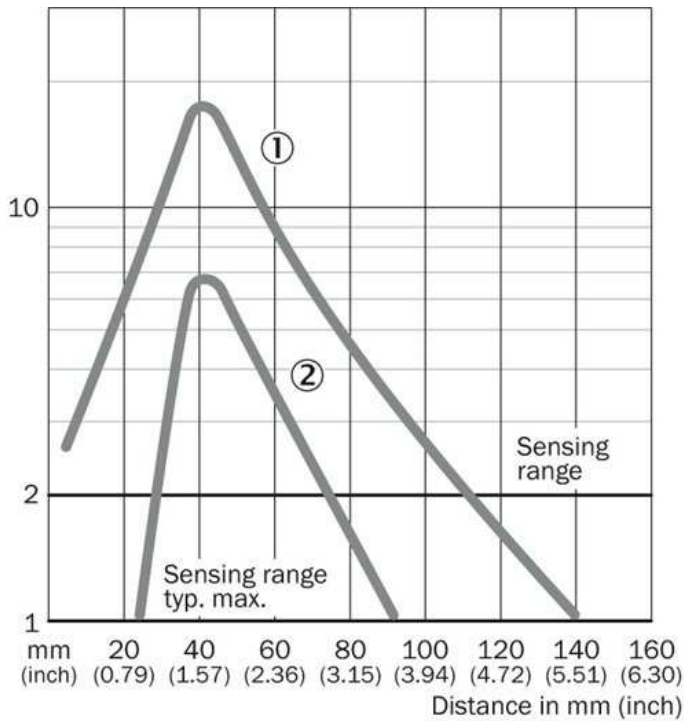


- |3| Sensitivity adjustment 270°
- |4| LED indicator orange: switching output active
- |5| LED indicator green

Connection diagram



Characteristic curve

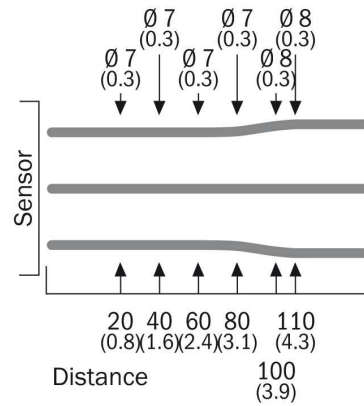


- |1| Sensing range on white, 90 % remission
- |2| Sensing range on grey, 18 % remission

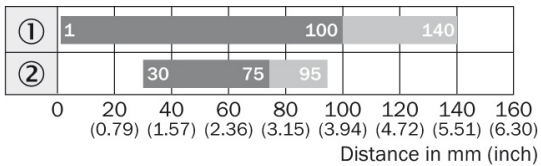
Connection type



Light spot size



Sensing range diagram



■ Sensing range ■ Sensing range max.

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