



VTF180-2P41119

V180-2

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|----------------|----------|
| VTF180-2P41119 | 6043810 |

Other models and accessories → www.sick.com/V180-2

Detailed technical data

Features

| | |
|--|-------------------------------------|
| Functional principle | Photoelectric proximity sensor |
| Functional principle detail | Background blanking |
| Dimensions (W x H x D) | 18 mm x 18 mm x 76.5 mm |
| Housing design (light emission) | Cylindrical |
| Housing length | 76.5 mm |
| Optical axis | Radial |
| Sensing range max. | 1 mm ... 130 mm ¹⁾ |
| Sensing range | 1 mm ... 100 mm ¹⁾ |
| Type of light | Visible red light |
| Light source | LED ²⁾ |
| Light spot size (distance) | Ø 8 mm (100 mm) |
| Wave length | 645 nm |
| Adjustment | Potentiometer, 270° (Sensing range) |
| Special feature | Focused optics |

¹⁾ Object with 90% remission (based on standard white, DIN 5033).

²⁾ Average service life: 100,000 h at T_J = +25 °C.

Mechanics/electronics

| | |
|-----------------------|-----------------------------------|
| Supply voltage | 10 V DC ... 30 V DC ¹⁾ |
|-----------------------|-----------------------------------|

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not exceed or fall below U_V tolerances.

³⁾ Without load.

⁴⁾ Control wire open: dark switching D.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.

| | |
|---|--|
| Ripple | ± 10 % ²⁾ |
| Current consumption | 30 mA ³⁾ |
| Switching output | PNP ⁴⁾ |
| Switching mode | Light/dark switching ⁴⁾ |
| Signal voltage PNP HIGH/LOW | Approx. $V_S - 1.8 \text{ V} / 0 \text{ V}$ |
| Output current I_{\max} | ≤ 100 mA |
| Response time | ≤ 0.5 ms ⁵⁾ |
| Switching frequency | 1,000 Hz ⁶⁾ |
| Connection type | Cable, 4-wire, 2 m ⁷⁾ |
| Cable material | PVC |
| Conductor cross section | 0.18 mm ² |
| Cable diameter | Ø 3.8 mm |
| Circuit protection | A ⁸⁾ B ⁹⁾ D ¹⁰⁾ |
| Protection class | III |
| Weight | 62 g |
| Housing material | Plastic, PBT/PC |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP67 |
| Special feature | Focused optics |
| Ambient operating temperature | -25 °C ... +55 °C |
| Ambient temperature, storage | -40 °C ... +70 °C |

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⁵⁾ Signal transit time with resistive load.

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Safety-related parameters

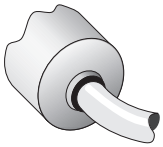
| | |
|-------------------------|-------------|
| MTTF_D | 1,982 years |
| DC_{avg} | 0 % |

Classifications

| | |
|---------------------|----------|
| eCl@ss 5.0 | 27270904 |
| eCl@ss 5.1.4 | 27270904 |
| eCl@ss 6.0 | 27270904 |
| eCl@ss 6.2 | 27270904 |
| eCl@ss 7.0 | 27270904 |
| eCl@ss 8.0 | 27270904 |

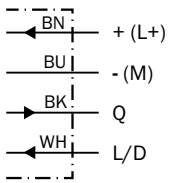
| | |
|-----------------------|----------|
| eCl@ss 8.1 | 27270904 |
| eCl@ss 9.0 | 27270904 |
| eCl@ss 10.0 | 27270904 |
| eCl@ss 11.0 | 27270904 |
| eCl@ss 12.0 | 27270903 |
| ETIM 5.0 | EC002719 |
| ETIM 6.0 | EC002719 |
| ETIM 7.0 | EC002719 |
| ETIM 8.0 | EC002719 |
| UNSPSC 16.0901 | 39121528 |

Connection type



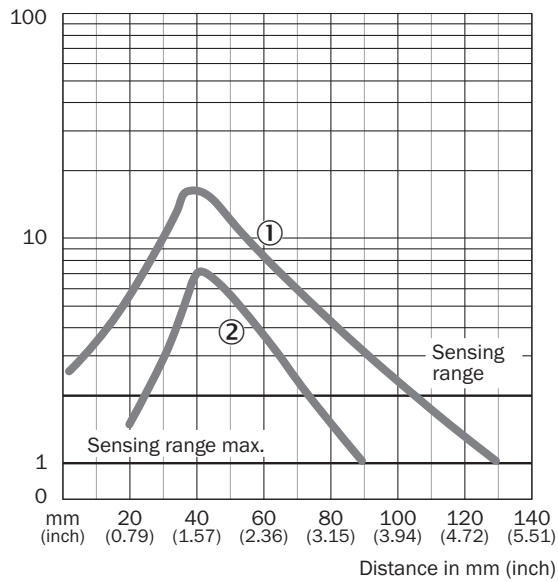
Connection diagram

Cd-089



Characteristic curve

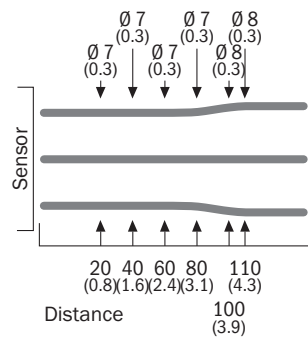
VTF180-2, 130 mm, radial



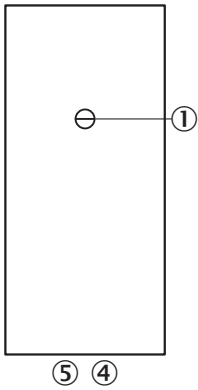
- ① Sensing range on white, 90% remission
- ② Sensing range on gray, 18% remission

Light spot size

VTF180-2



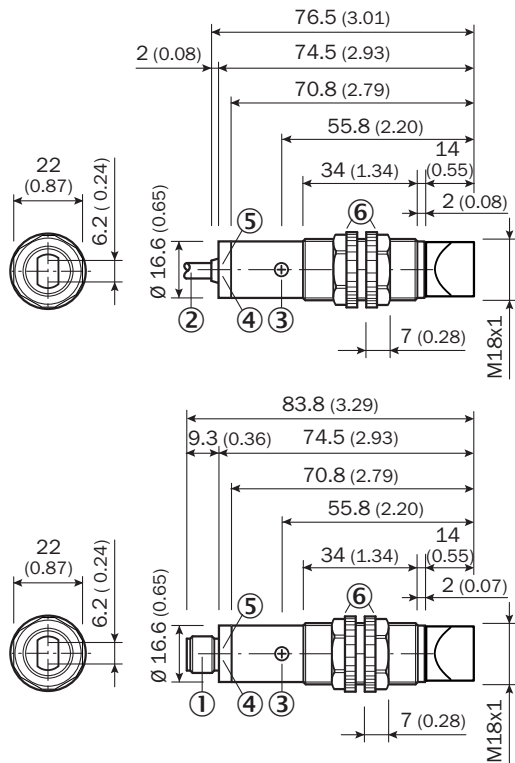
Adjustments



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

Dimensional drawing (Dimensions in mm (inch))


VTF180-2, VTE180-2, plastic, radial



- ① Connector M12
- 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
- ⑥ Fastening nuts (2 x); A/F 22, PC

Recommended accessories

Other models and accessories → www.sick.com/V180-2

| | Brief description | Type | Part no. |
|---|---|------------|----------|
| Plug connectors and cables | | | |
|  | Head A: male connector, M12, 4-pin, straight Cable: unshielded | STE-1204-G | 6009932 |

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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