



VTF180-2P41112S03

V180

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | part no. |
|-------------------|----------|
| VTF180-2P41112S03 | 6054579 |

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

Illustration may differ



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 62.5 mm |
| Housing design (light emission) | Cylindrical |
| Housing length | 62.5 mm |
| Thread diameter (housing) | M18 x 1 |
| Optical axis | Axial |
| Sensing range max. | 1 mm ... 140 mm ¹⁾ |
| Sensing range | 1 mm ... 100 mm ¹⁾ |
| Type of light | Infrared light |
| Light source | LED ²⁾ |
| Light spot size (distance) | Ø 8 mm (100 mm) |
| 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 $T_U = +25^\circ\text{C}$.

Mechanics/electronics

| | |
|---|--|
| Supply voltage U_B | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | ± 10 % ²⁾ |
| Current consumption | 30 mA ³⁾ |
| Switching output | PNP ⁴⁾ |
| Switching mode | Light/dark switching ⁴⁾ |
| Switching mode selector | Selectable via L/D control cable |
| Signal voltage PNP HIGH/LOW | Approx. V_S - 1.8 V / 0 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 | Plastic, 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 | 95 g |
| Special device | ✓ |
| Housing material | Metal, Nickel-plated brass and PC |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP67 |
| Items supplied | Fastening nuts (2 x) |
| Special feature | Focused optics |
| Ambient operating temperature | -25 °C ... +55 °C |
| Ambient temperature, storage | -40 °C ... +70 °C |

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

²⁾ May not fall below or exceed U_y 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.

Safety-related parameters

| | |
|-------------------------|-------------|
| MTTF_D | 1,884 years |
| DC_{avg} | 0 % |

Certificates

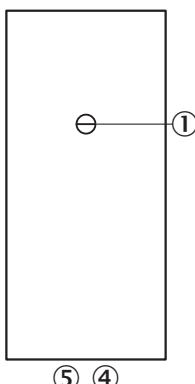
| | |
|-------------------------------------|---|
| EU declaration of conformity | ✓ |
|-------------------------------------|---|

| | |
|--|---|
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China-RoHS | ✓ |
| Photobiological safety (DIN EN 62471) certificate | ✓ |

Classifications

| | |
|-----------------------|----------|
| ECLASS 5.0 | 27270904 |
| ECLASS 5.1.4 | 27270904 |
| ECLASS 6.0 | 27270904 |
| ECLASS 6.2 | 27270904 |
| ECLASS 7.0 | 27270904 |
| ECLASS 8.0 | 27270904 |
| ECLASS 8.1 | 27270904 |
| ECLASS 9.0 | 27270904 |
| ECLASS 10.0 | 27270904 |
| ECLASS 11.0 | 27270904 |
| ECLASS 12.0 | 27270903 |
| ETIM 5.0 | EC002719 |
| ETIM 6.0 | EC002719 |
| ETIM 7.0 | EC002719 |
| ETIM 8.0 | EC002719 |
| UNSPSC 16.0901 | 39121528 |

Adjustments



③ sensitivity control 270°

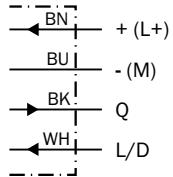
④ LED indicator orange: switching output active

⑤ LED indicator green

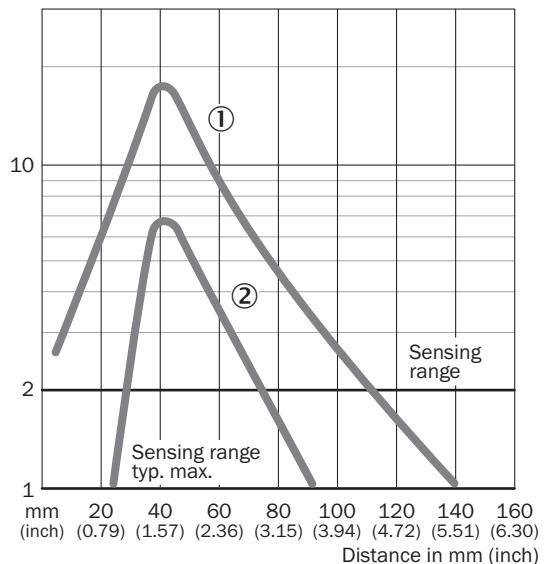
Connection type



Connection diagram Cd-089



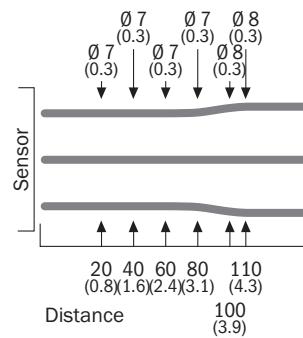
Characteristic curve VTF180-2, 140 mm, axial



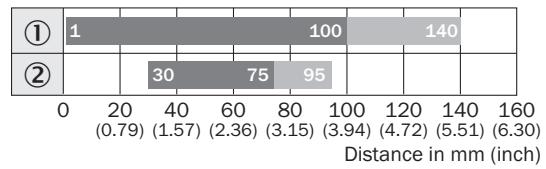
① Sensing range on white, 90% remission factor

② Sensing range on gray, 18% remission factor

Light spot size VTF180-2



Sensing range diagram VTF180-2, 140 mm, axial

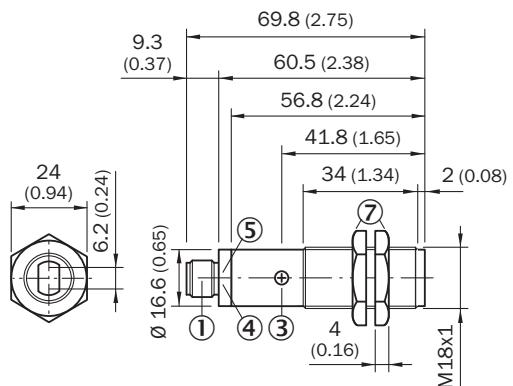
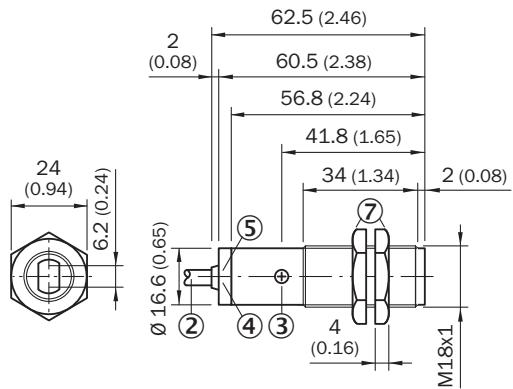


█ Sensing range █ Sensing range max.

① Sensing range on white, 90% remission factor

② Sensing range on gray, 18% remission factor

Dimensional drawing VTF180-2, VTE180-2, VTB180-2, metal, axial



Dimensions in mm (inch)

- ① M12 male device connector, 4-pin
- ② Connection cable 2 m
- ③ sensitivity control 270°
- ④ LED indicator orange: switching output active
- ⑤ LED indicator green: strength indicator
- ⑦ Fastening nuts (2x); width across 24, metal

Recommended accessories

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

| | Brief description | Type | part no. |
|---|---|------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none">• Connection type head A: Male connector, M12, 4-pin, straight, A-coded• Description: Unshielded• Connection systems: Screw-type terminals• Permitted cross-section: ≤ 0.75 mm² | STE-1204-G | 6009932 |

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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.

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