



# VTE180-2F32444

V180-2

CYLINDRICAL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	Part no.
VTE180-2F32444	6044025

Other models and accessories → [www.sick.com/V180-2](http://www.sick.com/V180-2)

Illustration may differ



## Detailed technical data

### Features

<b>Sensor/ detection principle</b>	Photoelectric proximity sensor, Energetic
<b>Dimensions (W x H x D)</b>	18 mm x 18 mm x 83.8 mm
<b>Housing design (light emission)</b>	Cylindrical
<b>Housing length</b>	83.8 mm
<b>Optical axis</b>	Radial
<b>Sensing range max.</b>	1 mm ... 450 mm <sup>1)</sup>
<b>Sensing range</b>	1 mm ... 400 mm <sup>1)</sup>
<b>Type of light</b>	Visible red light
<b>Light source</b>	LED <sup>2)</sup>
<b>Light spot size (distance)</b>	Ø 20 mm (400 mm)
<b>Angle of dispersion</b>	Approx. 1.5°
<b>Wave length</b>	645 nm
<b>Adjustment</b>	Potentiometer, 270° (Sensing range)

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033).

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

### Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	± 10 % <sup>2)</sup>
<b>Power consumption</b>	30 mA <sup>3)</sup>
<b>Switching output</b>	PNP

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

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

<b>Switching mode</b>	Light switching
<b>Signal voltage PNP HIGH/LOW</b>	Approx. $V_S - 1.8 \text{ V} / 0 \text{ V}$
<b>Output current <math>I_{\text{max}}</math></b>	$\leq 100 \text{ mA}$
<b>Response time</b>	$\leq 0.5 \text{ ms}^{4)}$
<b>Switching frequency</b>	$1,000 \text{ Hz}^{5)}$
<b>Connection type</b>	Connector M12, 3-pin
<b>Circuit protection</b>	A <sup>6)</sup> B <sup>7)</sup> D <sup>8)</sup>
<b>Protection class</b>	III
<b>Weight</b>	47 g
<b>Housing material</b>	Metal, Nickel-plated brass and PC
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67
<b>Ambient operating temperature</b>	$-25 \text{ }^\circ\text{C} \dots +55 \text{ }^\circ\text{C}$
<b>Ambient storage temperature</b>	$-40 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$

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) 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.

## Safety-related parameters

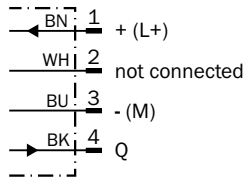
<b>MTTF<sub>D</sub></b>	1,884 years
<b>DC<sub>avg</sub></b>	0%

## Classifications

<b>ECl@ss 5.0</b>	27270903
<b>ECl@ss 5.1.4</b>	27270903
<b>ECl@ss 6.0</b>	27270903
<b>ECl@ss 6.2</b>	27270903
<b>ECl@ss 7.0</b>	27270903
<b>ECl@ss 8.0</b>	27270903
<b>ECl@ss 8.1</b>	27270903
<b>ECl@ss 9.0</b>	27270903
<b>ECl@ss 10.0</b>	27270904
<b>ECl@ss 11.0</b>	27270904
<b>ETIM 5.0</b>	EC001821
<b>ETIM 6.0</b>	EC001821
<b>ETIM 7.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

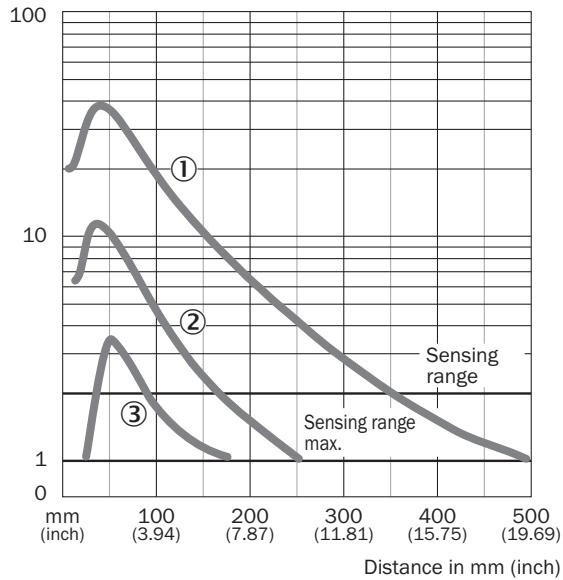
Connection diagram

Cd-066



Characteristic curve

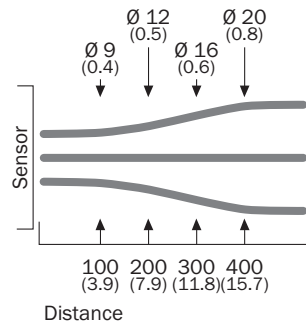
VTE180-2, 500 mm, axial



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

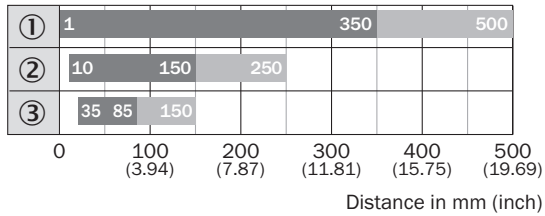
Light spot size

VTE180-2, 400 mm, 500 mm



## Sensing range diagram

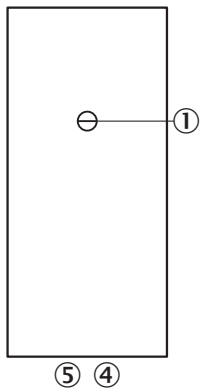
VTE180-2, 500 mm, axial



■ Sensing range      ■ Sensing range max.

- ① Sensing range on white, 90% remission
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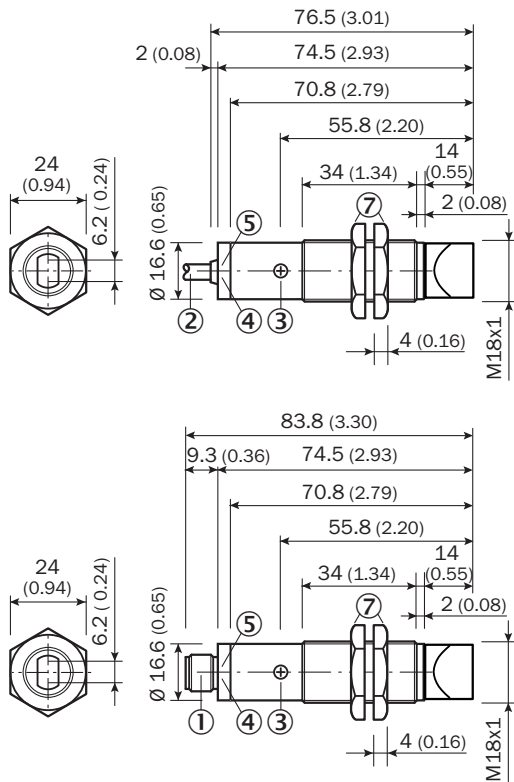
## Adjustments possible



- 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, metal, radial



- 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

## 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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)