



VTF180-2P41114

V180-2

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
VTF180-2P41114	6043805

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_U = +25 °C.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC ¹⁾
Ripple	± 10 % ²⁾

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.

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}	$\leq 100 \text{ mA}$
Response time	$\leq 0.5 \text{ ms}$ 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	95 g
Housing material	Metal, Nickel-plated brass and 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

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.

Safety-related parameters

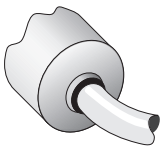
MTTF_D	1,884 years
DC_{avg}	0 %

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

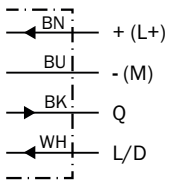
eCl@ss 9.0	27270904
eCl@ss 10.0	27270904
eCl@ss 11.0	27270904
eCl@ss 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Connection type



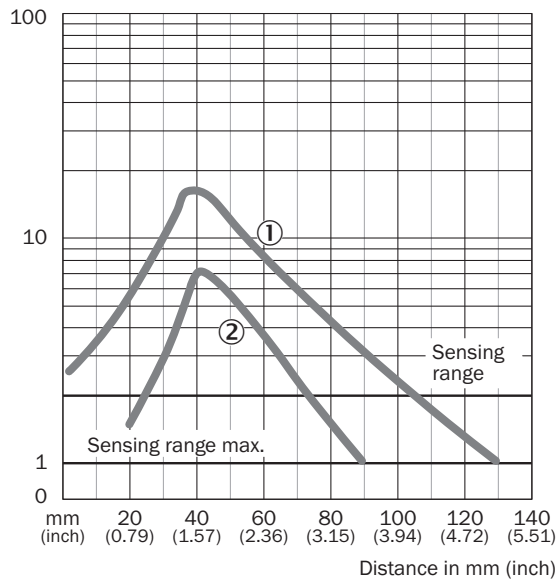
Connection diagram

Cd-089



Characteristic curve

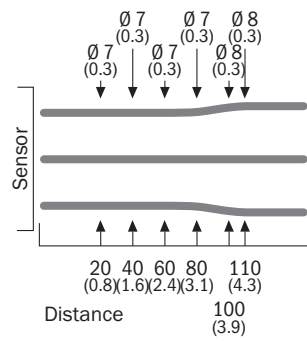
VTF180-2, 130 mm, radial



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

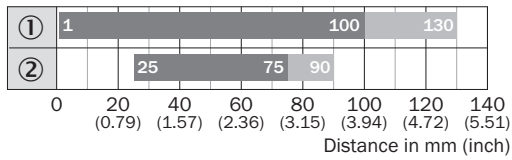
Light spot size

VTF180-2



Sensing range diagram

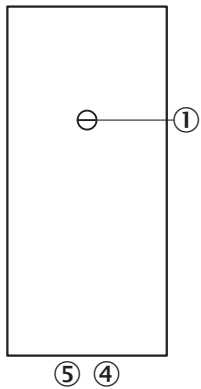
VTF180-2, 130 mm, radial



■ Sensing range ■ Sensing range max.

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

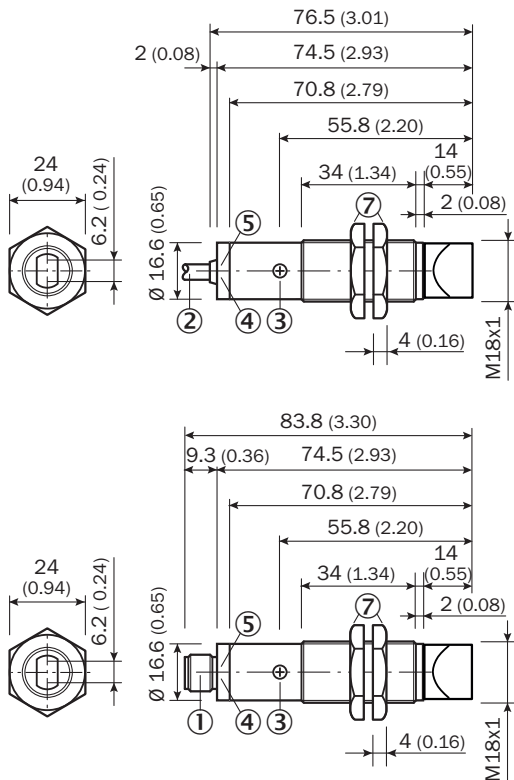
Adjustments



- 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, 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

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

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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.

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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