VTF180-2P41114

V180

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	part no.
VTF180-2P41114	6043805

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 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 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]
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 mm²
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 fall below or exceed 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 %

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓

China-RoHS	✓
cRUus certificate	✓
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
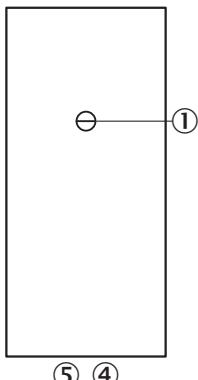
③ sensitivity control 270°
④ LED indicator orange: switching output active
⑤ LED indicator green

Connection type
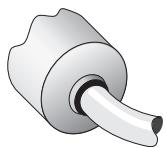
Connection diagram Cd-089

```
BN ──── + (L+)
BU ──── - (M)
BK ──── Q
WH ──── L/D
```
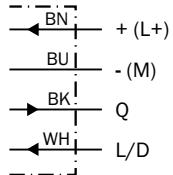
## Characteristic curve VTF180-2, 130 mm, radial

① Sensing range on white, 90% remission factor
② Sensing range on gray, 18% remission factor
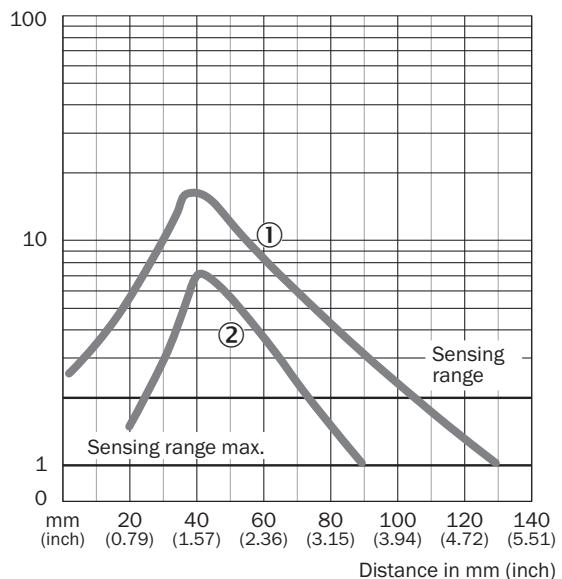
Light spot size VTF180-2
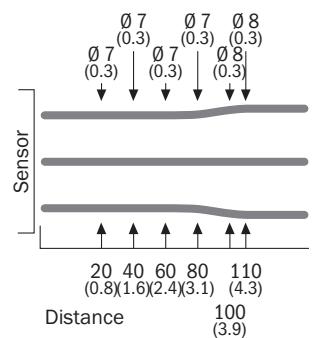
Sensing range diagram VTF180-2, 130 mm, radial

Sensing range
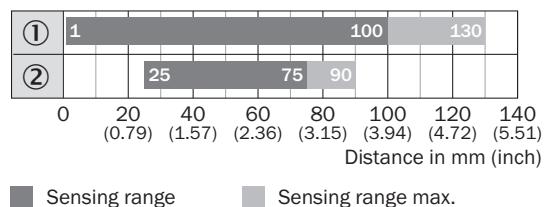
Sensing range max.

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

Dimensional drawing VTF180-2, VTE180-2, metal, radial
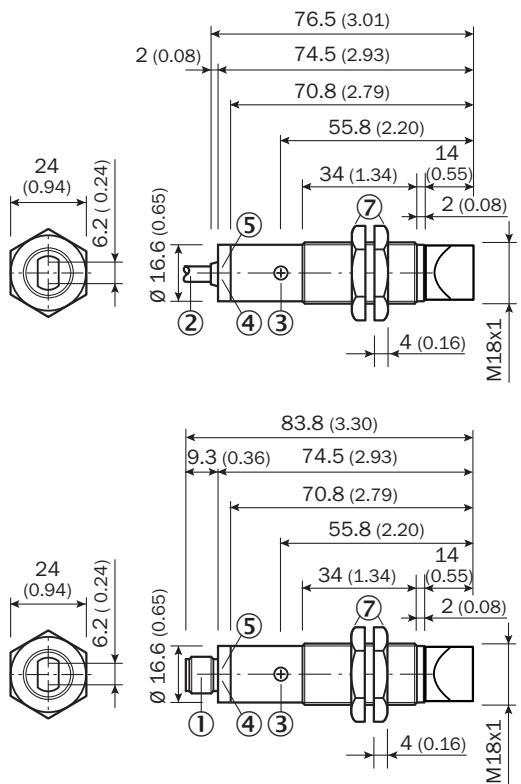
Dimensions in mm (inch)

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

	Brief description	Type	part no.
connectors and cables			
	• **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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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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