



VTE180-2N41147

V180-2

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
VTE180-2N41147	6037481

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

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Energetic
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 ... 500 mm ¹⁾
Sensing range	1 mm ... 350 mm ¹⁾
Focus	Approx. 1.5°
Type of light	Visible red light
Light source	LED ²⁾
Light spot size (distance)	Ø 20 mm (400 mm)
Angle of dispersion	Approx. 1.5°
Wave length	645 nm
Adjustment	Potentiometer, 270° (Sensing range)

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	$\pm 10\%$ ²⁾
Current consumption	30 mA ³⁾
Switching output	NPN ⁴⁾
Switching mode	Light/dark switching ⁴⁾
Switching mode selector	Selectable via L/D control cable
Signal voltage NPN HIGH/LOW	Approx. $V_S / < 1.8\text{ V}$
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	Plastic, PVC
Conductor cross section	0.18 mm ²
Cable diameter	$\varnothing 3.8\text{ mm}$
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
Items supplied	Fastening nuts (2 x)
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: light switching L.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

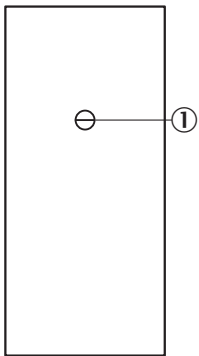
MTTF_D	1,999 years
DC_{avg}	0 %

Classifications

ECLASS 5.0	27270903
ECLASS 5.1.4	27270903
ECLASS 6.0	27270903

ECLASS 6.2	27270903
ECLASS 7.0	27270903
ECLASS 8.0	27270903
ECLASS 8.1	27270903
ECLASS 9.0	27270903
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC001821
ETIM 6.0	EC001821
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Adjustments



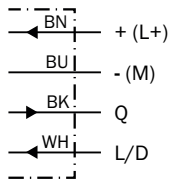
- ③ Sensitivity control 270°
- ④ LED indicator orange: switching output active
- ⑤ LED indicator green

Connection type



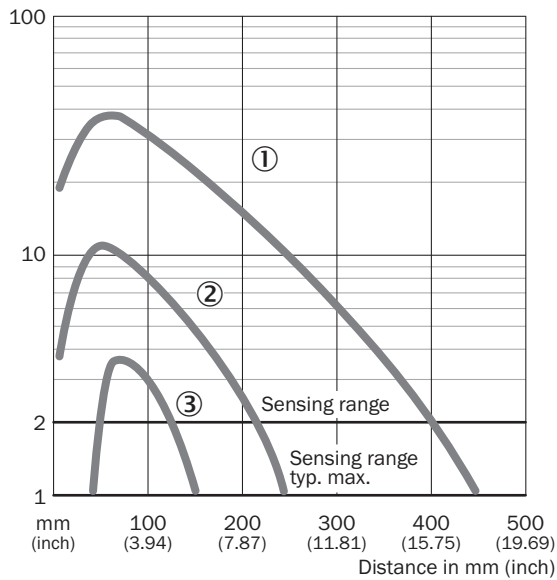
Connection diagram

Cd-089



Characteristic curve

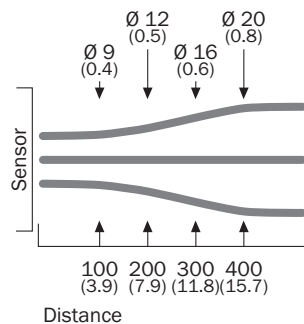
VTE180-2, 450 mm, radial



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

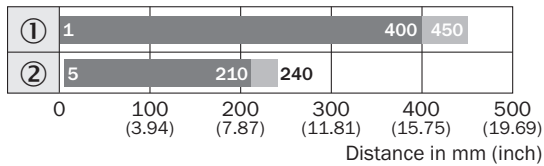
Light spot size

VTE180-2, 400 mm, 500 mm



Sensing range diagram

VTE180-2, 450 mm, radial

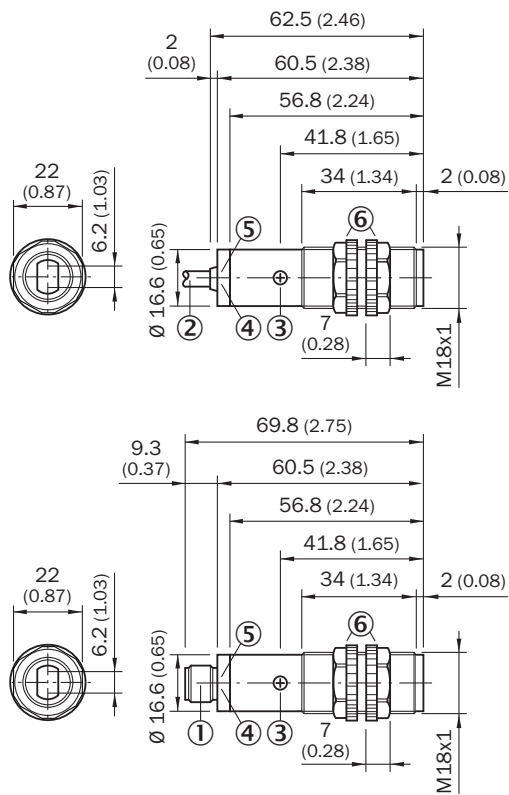


■ Sensing range ■ Sensing range max.

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

Dimensional drawing (Dimensions in mm (inch))


VTF180-2, VTE180-2, VTB180-2, plastic, axial



- ① M12 male device connector, 4-pin
- ② Connection cable 2 m
- ③ Sensitivity control (potentiometer, 270°)
- ④ LED indicator orange: switching output active
- ⑤ LED indicator green: strength indicator
- 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.
Others			
	<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

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