Data sheet

VTE180-2N41042S01

V180

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
VTE180-2N41042S01	6047904

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

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	± 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 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 0.5 ms [5]
Switching frequency	1,000 Hz [6]
Connection type	Cable, 4-wire, 3 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
Special device	✓
Housing material	Metal, Nickel-plated brass and 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_V 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

$MTTF_D$	1,899 years
DC_{avg}	0 %

Certificates

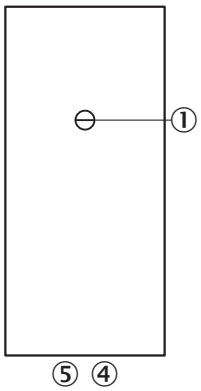
EU declaration of conformity	✓
UK declaration of conformity	✓

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

Classifications

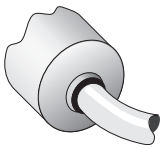
ECLASS 5.0	27270903
ECLASS 5.1.4	27270903
ECLASS 6.0	27270903
ECLASS 6.2	27270903
ECLASS 7.0	27270903
ECLASS 8.0	27270903
ECLASS 8.1	27270903
ECLASS 9.0	27270903
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC001821
ETIM 6.0	EC001821
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Adjustments

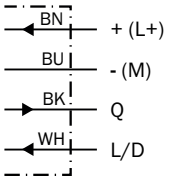


③ sensitivity control 270°
④ LED indicator orange: switching output active
⑤ LED indicator green

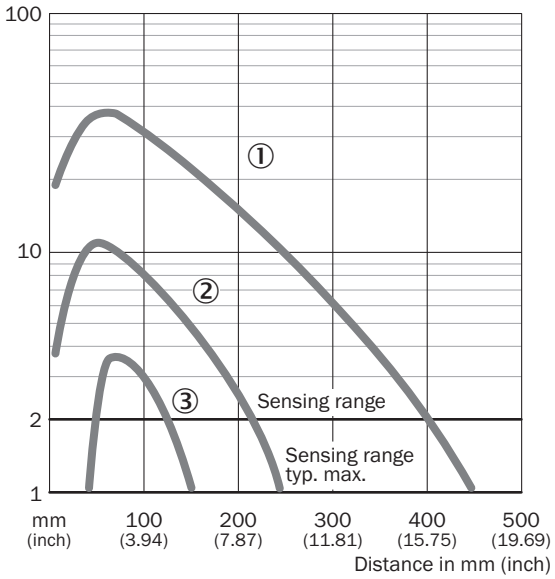
Connection type



Connection diagram Cd-089

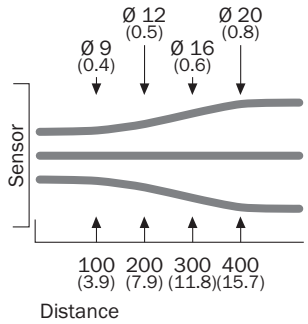


Characteristic curve VTE180-2, 450 mm, radial

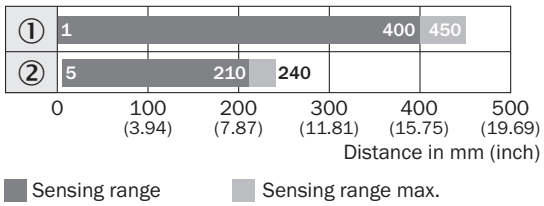


① Sensing range on white, 90% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on black, 6% remission factor

Light spot size VTE180-2, 400 mm, 500 mm

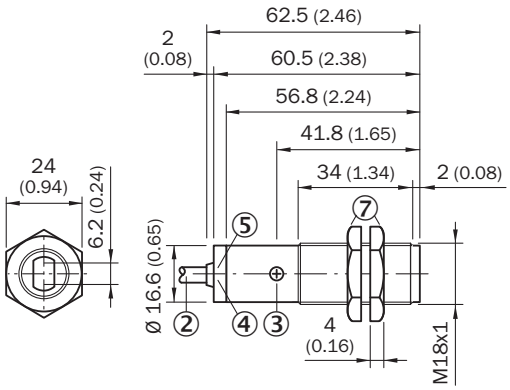


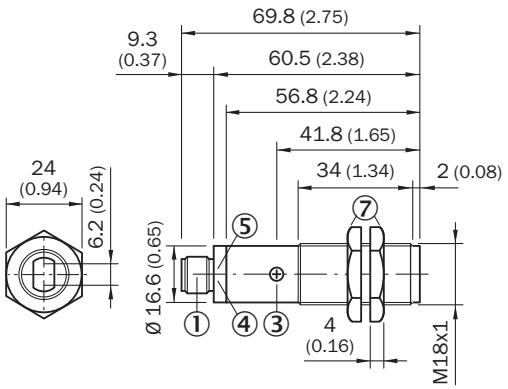
Sensing range diagram VTE180-2, 450 mm, radial



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.
Mounting systems			
	• **Description:** Mounting bracket for M18 sensors • **Material:** Steel • **Details:** Steel, zinc coated • **Items supplied:** Without mounting hardware • **Suitable for:** GR18, V180-2, V18, W15, Z1, Z2	BEF-WN-M18	5308446
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.”

WORLDWIDE PRESENCE:

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