VL18-4P2240V

V18

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
VL18-4P2240V	6035497

Other models and accessories ➜ www.sick.com/V18

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	With minimum distance to reflector (dual lens system)
Dimensions (W x H x D)	18 mm x 18 mm x 83 mm
Housing design (light emission)	Cylindrical
Housing length	83 mm
Thread diameter (housing)	M18 x 1
Optical axis	Axial
Sensing range max.	0.035 m ... 4.5 m [1]
Sensing range	0.035 m ... 4 m [1]
Focus	3°
Type of light	Visible red light
Light source	LED [2]
Light spot size (distance)	Ø 60 mm (1 m)
Angle of dispersion	3°
Wave length	660 nm
Adjustment	Single teach-in button (Sensing range) Manual, via Touch-Teach-in
Special feature	Detecting transparent objects
Special applications	Hygienic and washdown zones, Detecting transparent objects

[1] Reflector PL80A.
[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	35 mA [3]
Switching output	PNP [4]
Switching mode	Light/dark switching [4]
Switching mode selector	Selectable via L/D control cable
Signal voltage PNP HIGH/LOW	Approx. VS – 2.0 V / 0 V
Output current I$_{max.}$	≤ 100 mA
Response time	≤ 1 ms [5]
Switching frequency	500 Hz [6]
Attenuation along light beam	≥ 20 %
Connection type	Male connector M12, 4-pin [7]
Circuit protection	A [8] B [9] C [10] D [11]
Protection class	III
Weight	120 g
Housing material	Metal, Stainless steel V4A (1.4404, 316L)
Optics material	Plastic, Plan, PPS (Grilamid)
Enclosure rating	IP67 IP68 IP69K [12]
Special feature	Detecting transparent objects
Ambient operating temperature	–25 °C ... +80 °C [13]
Ambient temperature, storage	–40 °C ... +80 °C
UL File No.	FDA, UL No. NRKH.E181493 & cUL No. NRKH7.E181493

[1] Limit values.

[2] May not fall below or exceed U$_V$ tolerances.

[3] Without load, at VS 30 V DC.

[4] Control wire open: dark switching D.ON.

[5] Signal transit time with resistive load.

[6] With light/dark ratio 1:1.

[7] With gold plated contact pins, PPS with FDA certificate.

[8] A = V$_S$ connections reverse-polarity protected.

[9] B = interference suppression.

[10] D = outputs overcurrent and short-circuit protected.

[11] D = inputs and output reverse-polarity protected.

[12] With correct mounted IP69K connector.

[13] +100 °C at max 15 minutes.

Certificates

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

China RoHS	✓
cULus certificate	✓

Classifications

ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Adjustments
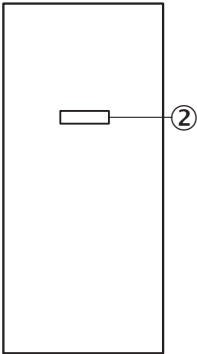
② Sensing range adjustment: Touch-Teach-In
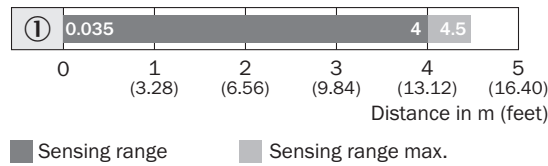
Connection type

Connection diagram Cd-087

BN	1	+ (L+)
WH	2	L/D
BU	3	– (M)
BK	4	Q
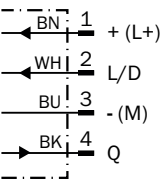
Characteristic curve VL18V, clear material detection
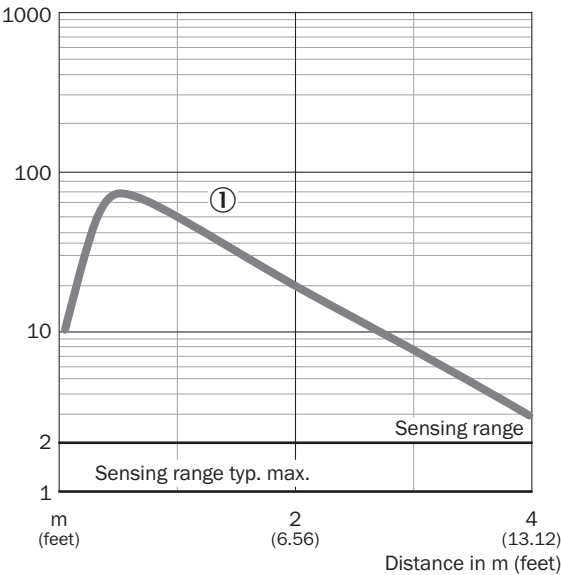
① Reflector PL80A

Sensing range diagram

| | 0.035 | 4 | 4.5 |

| 0 | 1 (3.28) | 2 (6.56) | 3 (9.84) | 4 (13.12) | 5 (16.40) |

Distance in m (feet)

■ Sensing range   ■ Sensing range max.

|1| PL80A

Dimensional drawing VTF18V, VTE18V
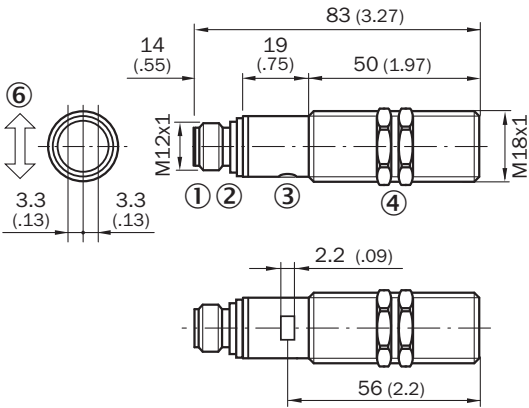
Dimensions in mm (inch)

① M12 male device connector, 4-pin
② Sensing range adjustment: Touch-Teach-In
③ Status indicator LED, green: signalizing Touch-Teach-in
④ Yellow LED indicator:
④ - lights continuously:
④ reception signal> reserve factor 2
④ - blinks: Reception signal< reserve factor 2 but > switching threshold 1
⑤ fastening nuts (2 x); width across 24, stainless steel

Recommended accessories

Other models and accessories ➜ www.sick.com/V18

	Brief description	Type	part no.
connectors and cables			
	• **Connection type head A:** Female connector, M12, 4-pin, straight • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Connection systems:** Flying leads • **Note:** This product is generally resistant to chemical cleaning agents (see ECOLAB). Please do not use cleaning agents of any other Kind., Not resistant against lactic acid & hydrogen peroxide (H2O2) • **Application:** Hygienic and washdown zones	DOL-1204-G05MNI	6052615
	• **Connection type head A:** Female connector, M12, 4-pin, straight • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PP • **Description:** Sensor/actuator cable, unshielded • **Connection systems:** Flying leads • **Note:** This product is generally resistant to chemical cleaning agents (see ECOLAB) and other chemical compounds such as H2O2 and CH2O2. Before permanent installation is carried out, the material's resistance to the cleaning agent being used must be checked., Resistant against lactic acid & hydrogen peroxide (H2O2) • **Application:** Hygienic and washdown zones, Drag chain operation	DOL-1204-G05MRN	6058476

Brief description	Type	part no.
Mounting systems		
• **Description:** Mounting bracket for M18 sensors • **Material:** Stainless steel • **Details:** Stainless steel • **Items supplied:** Without mounting hardware	BEF-WN-M18N	5320947
• **Description:** Plate N11N for universal clamp bracket • **Material:** Stainless steel • **Details:** Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) • **Items supplied:** Universal clamp (5322627), mounting hardware • **Usable for:** DeltaPac, Glare, WTD20E	BEF-KHS-N11N	2071081
• **Description:** Universal mounting bracket for reflectors • **Dimensions (W x H x L):** 85 mm x 90 mm x 35 mm • **Material:** Steel • **Details:** Steel, zinc coated • **Suitable for:** C110A, P250, PL20, PL30A, PL40A, PL80A	BEF-WN-REFX	2064574
reflectors and optics		
• **Description:** Chemically resistant, screw connection • **Dimensions:** 52 mm 61 mm • **Ambient operating temperature:** –20 °C ... +140 °C	P250 CHEM	5321097

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.

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