



VL18-4P3140V

V18

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
VL18-4P3140V	6035495

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.	0.1 m ... 5 m ¹⁾
Sensing range	0.1 m ... 4.5 m ¹⁾
Focus	2.5°
Type of light	Visible red light
Light source	LED ²⁾
Light spot size (distance)	Ø 200 mm (4.5 m)
Angle of dispersion	2.5°
Wave length	660 nm
Adjustment	None
Special applications	Hygienic and washdown zones

¹⁾ Reflector PL80A.

²⁾ Average service life: 100,000 h at T_J = +25 °C.

Mechanics/electronics

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	$\pm 10\%$ 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. $V_S - 2.0\text{ V} / 0\text{ V}$
Output current I_{max}	$\leq 100\text{ mA}$
Response time	$\leq 1\text{ ms}$ ⁵⁾
Switching frequency	500 Hz ⁶⁾
Connection type	Male connector M12, 4-pin ⁷⁾
Circuit protection	A ⁸⁾ B ⁹⁾ C ¹⁰⁾ D ¹¹⁾
Protection class	III
Weight	120 g
Polarizing filter	✓
Housing material	Metal, Stainless steel V4A (1.4404, 316L)
Optics material	Plastic, Plan, PMMA, surface hardened and tempered
Enclosure rating	IP67 IP68 IP69K ¹²⁾
Ambient operating temperature	$-25\text{ °C} \dots +80\text{ °C}$
Ambient temperature, storage	$-40\text{ °C} \dots +80\text{ °C}$
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 V_S 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.

Safety-related parameters

MTTF_D	370 years
DC_{avg}	0 %

Certificates

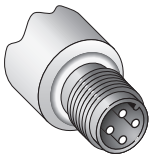
EU declaration of conformity	✓
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UK declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓

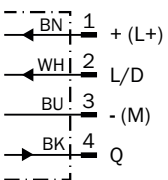
Classifications

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

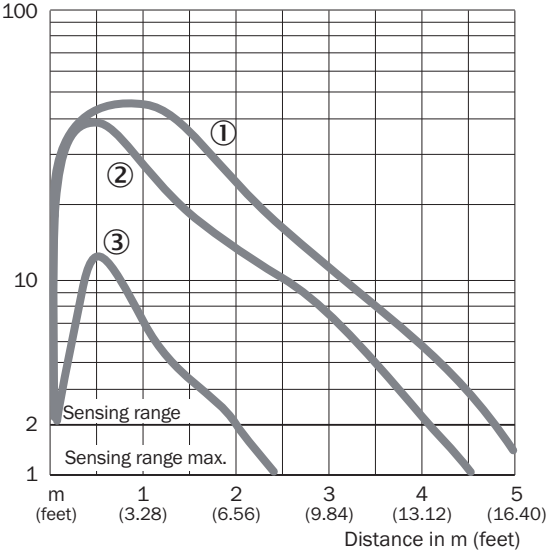
Connection type



Connection diagram Cd-087

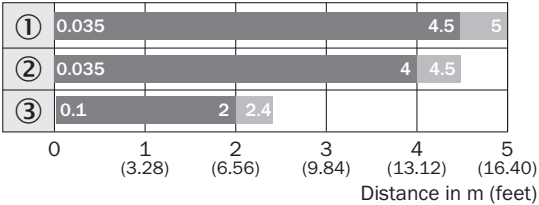


Characteristic curve VL18V



- ① Reflector PL80A
- ② Reflector C110A
- ③ Reflector P250 CHEM

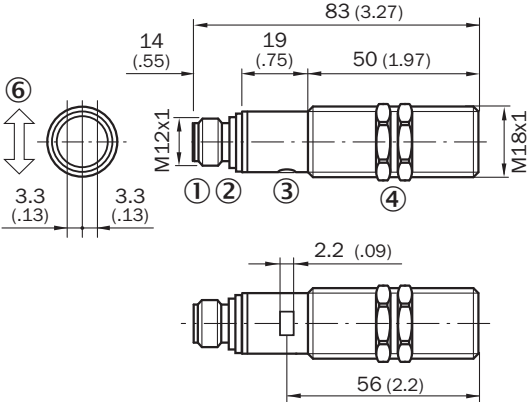
Sensing range diagram VL18V



■ Sensing range ■ Sensing range max.

- ① Reflector PL80A
- ② Reflector C110A
- ③ Reflective tape Diamond Grade

Dimensional drawing VL18V, VSE18V









Dimensions in mm (inch)

- ① M12 male device connector, 4-pin
- ② Yellow LED indicator:
 - ② - lights continuously:
 - ② reception signal > reserve factor 2
 - ② - blinks: Reception signal < reserve factor 2 but > switching threshold 1
- ③ 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			
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, unshielded • 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 • 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: Uncontaminated zones, Hygienic and washdown zones, Zones with chemicals 	DOL-1204-G05MNI	6052615
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, unshielded • 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 • 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, Robot, cold bending resistant, seawater resistant 	DOL-1204-G05MRN	6058476
Mounting systems			
	<ul style="list-style-type: none"> • Description: Mounting bracket for M18 sensors • Material: Stainless steel • Details: Stainless steel • Items supplied: Without mounting hardware 	BEF-WN-M18N	5320947
	<ul style="list-style-type: none"> • 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
	<ul style="list-style-type: none"> • 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

	Brief description	Type	part no.
reflectors and optics			
	<ul style="list-style-type: none">• 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.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com