



VL12-2P132 V12

PHOTOELECTRIC SENSORS





Ordering information

Туре	part no.
VL12-2P132	6026219

Other models and accessories → www.sick.com/V12

Illustration may differ



Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Dimensions (W x H x D)	12 mm x 12 mm x 55 mm
Housing design (light emission)	Cylindrical
Housing length	55 mm
Thread diameter (housing)	Round connector M12 x 1
Sensing range max.	0.03 m 2.8 m ¹⁾
Sensing range	0.03 m \dots 2.3 m $^{1)}$
Focus	Approx. 2.3°
Type of light	Visible red light
Light source	LED ²⁾
Light spot size (distance)	Ø 80 mm (2 m)
Angle of dispersion	Approx. 2.3°
Wave length	660 nm
Adjustment	None

¹⁾ Reflector PL80A.

 $^{^{2)}}$ Average service life: 100,000 h at TU = +25 °C.

Mechanics/electronics

Supply voltage U _B ± 10 % ²⁾ Current consumption 20 mA ³⁾ Switching output PNP Switching mode Light/dark switching Switching mode selector Selectable via L/D control cable Output current I _{max} . ≤ 100 mA ³⁾ Response time ≤ 1.25 ms ⁴⁾ Switching frequency 400 Hz ⁵⁾ Connection type Cable, 4-wire, 2 m ⁶⁾ Cable material Plastic, PVC Conductor cross section 0.14 mm² Cable diameter 0.3.75 mm Circuit protection B ⁸⁾ C ⁹⁾ D ¹⁰⁾ Protection class III Weight 5 4 g Polarisation filter ✓ Housing material Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature ~25 °C +70 °C Ambient temperature, storage ~25 °C +70 °C UL File No. NMFT2.E175606		
Current consumption 20 mA 3) Switching output PNP Switching mode Light/dark switching Selectable via L/D control cable Output current I _{max.} \$ 100 mA 3) Response time \$ 1.25 ms 4) Switching frequency 400 Hz 5) Connection type Cable, 4-wire, 2 m 6) Cable material Plastic, PVC Conductor cross section 0.14 mm² Cable diameter Ø 3.75 mm Circuit protection A 7) B 8) C 3) D 100 Protection class III Weight 54 g Polarisation filter ✓ Housing material Plastic, PMMA Enclosure rating Ambient operating temperature -25 °C +70 °C Ambient demanding material Pistic, PMO °C Ambient demanding material Polarisation guess and material Plastic, PMMA Enclosure rating Ambient operating temperature -25 °C +70 °C Ambient temperature, storage	Supply voltage U _B	10 V DC 30 V DC ¹⁾
Switching output Switching mode Light/dark switching Selectable via L/D control cable Output current I _{max} . Response time \$ 1.25 ms ⁴⁾ Switching frequency 400 Hz ⁵⁾ Cable, 4-wire, 2 m ⁶⁾ Cable material Plastic, PVC Conductor cross section Cable diameter Output protection A ⁷⁾ B ⁸⁾ B ⁹ C ⁹⁾ D ¹⁰⁾ Protection class III Weight 54 g Polarisation filter Weight Plastic, PMA Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating Metal, Nickel-plated brass/PA Ambient operating temperature -25 °C +70 °C Ambient temperature, storage	Ripple	± 10 % ²⁾
Switching mode Switching mode selector Selectable via L/D control cable Output current I _{max.} \$ 100 mA ³⁾ Response time \$ 1.25 ms ⁴⁾ Switching frequency 400 Hz ⁵⁾ Connection type Cable, 4-wire, 2 m ⁶⁾ Cable material Plastic, PVC Conductor cross section 0.14 mm² Cable diameter Ø 3.75 mm Circuit protection A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾ Protection class III Weight 54 g Polarisation filter Housing material Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating Ambient operating temperature Az °C +70 °C Ambient deperature, storage	Current consumption	20 mA ³⁾
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Output current I _{max} . ≤ 100 mA ³) Response time ≤ 1.25 ms ⁴) Switching frequency 400 Hz ⁵) Connection type Cable, 4-wire, 2 m ⁵) Cable material Plastic, PVC Conductor cross section 0.14 mm² Cable diameter Ø 3.75 mm Circuit protection A ⁻¹, B ⁻³, B ⁻³, C ⁻³, D ⁻¹₀) Protection class III Weight 54 g Polarisation filter ✓ Housing material Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating Plastic, PMMA Enclosure rating temperature -25 °C +70 °C Ambient temperature, storage -25 °C +70 °C	Switching mode	Light/dark switching
Response time Switching frequency 400 Hz ⁵⁾ Connection type Cable, 4-wire, 2 m ⁶⁾ Cable material Plastic, PVC Conductor cross section Cable diameter Ø 3.75 mm Circuit protection A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾ Protection class III Weight 54 g Polarisation filter ✓ Housing material Optics material Plastic, PMMA Enclosure rating Ambient operating temperature Ambient temperature, storage 5 ° C +70 ° C Ambient temperature, storage	Switching mode selector	Selectable via L/D control cable
Switching frequency Connection type Cable, 4-wire, 2 m 6) Cable material Plastic, PVC Conductor cross section 0.14 mm² Cable diameter Ø 3.75 mm Circuit protection A ⁷⁾ B ⁸ C ⁹⁾ C ⁹⁾ D ¹⁰⁾ Protection class III Weight 54 g Polarisation filter Housing material Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating Ambient operating temperature -25 °C +70 °C Ambient temperature, storage	Output current I _{max.}	\leq 100 mA $^{3)}$
Cable material Plastic, PVC Conductor cross section O.14 mm² Cable diameter Ø 3.75 mm Circuit protection A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾ Protection class III Weight 54 g Polarisation filter Housing material Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating Ambient operating temperature -25 °C +70 °C Ambient temperature, storage Cable, 4-wire, 2 m 6) Plastic, PVC O.14 mm² Ø 3.75 mm A ⁷⁾ B ⁸⁾ C 9)	Response time	≤ 1.25 ms ⁴⁾
Cable material Conductor cross section 0.14 mm² Cable diameter Ø 3.75 mm Circuit protection A 7) B 8) C 9) D 100) Protection class III Weight 54 g Polarisation filter Housing material Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating Ambient operating temperature -25 °C +70 °C Ambient temperature, storage	Switching frequency	400 Hz ⁵⁾
Conductor cross section Cable diameter Ø 3.75 mm A 7) B 8) C 9) D 10) Protection class III Weight 54 g Polarisation filter Housing material Optics material Plastic, PMMA Enclosure rating A 7) B 8) C 9) D 10) Protection class III Metal, Nickel-plated brass/PA Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +70 °C Ambient temperature, storage -25 °C +70 °C	Connection type	Cable, 4-wire, 2 m ⁶⁾
Cable diameter Ø 3.75 mm A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾ Protection class III Weight 54 g Polarisation filter Housing material Optics material Plastic, PMMA Enclosure rating Ambient operating temperature -25 °C +70 °C Ambient temperature, storage	Cable material	Plastic, PVC
Circuit protection A 7) B 8) C 9) D 10) Protection class III Weight 54 g Polarisation filter Housing material Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +70 °C Ambient temperature, storage	Conductor cross section	0.14 mm ²
B 8) C 9) D 10) Protection class III Weight Folarisation filter Housing material Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +70 °C -25 °C +70 °C	Cable diameter	Ø 3.75 mm
Weight 54 g Polarisation filter ✓ Housing material Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +70 °C Ambient temperature, storage -25 °C +70 °C	Circuit protection	B ⁸⁾ C ⁹⁾
Polarisation filter Housing material Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature −25 °C +70 °C Ambient temperature, storage −25 °C +70 °C	Protection class	III
Housing material Metal, Nickel-plated brass/PA Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +70 °C Ambient temperature, storage -25 °C +70 °C	Weight	54 g
Optics material Plastic, PMMA Enclosure rating IP67 Ambient operating temperature -25 °C +70 °C Ambient temperature, storage -25 °C +70 °C	Polarisation filter	√
Enclosure rating IP67 Ambient operating temperature -25 °C +70 °C Ambient temperature, storage -25 °C +70 °C	Housing material	Metal, Nickel-plated brass/PA
Ambient operating temperature -25 °C +70 °C -25 °C +70 °C -25 °C +70 °C	Optics material	Plastic, PMMA
Ambient temperature, storage -25 °C +70 °C	Enclosure rating	IP67
, , ,	Ambient operating temperature	-25 °C +70 °C
UL File No. NMFT2.E175606	Ambient temperature, storage	-25 °C +70 °C
	UL File No.	NMFT2.E175606

¹⁾ Limit values.

Certificates

EU declaration of conformity	1
UK declaration of conformity	✓
ACMA declaration of conformity	1
Moroccan declaration of conformity	1
China RoHS	✓

 $^{^{2)}}$ May not fall below or exceed U_{V} tolerances.

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

 $^{^{6)}}$ Do not bend below 0 $^{\circ}\text{C}.$

 $^{^{7)}}$ A = V_S connections reverse-polarity protected.

 $^{^{8)}}$ B = inputs and output reverse-polarity protected.

⁹⁾ C = interference suppression.

 $^{^{10)}}$ D = outputs overcurrent and short-circuit protected.

cRUus 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



Connection type

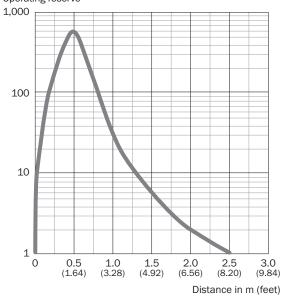


Connection diagram Cd-089

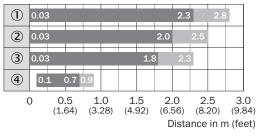


Characteristic curve



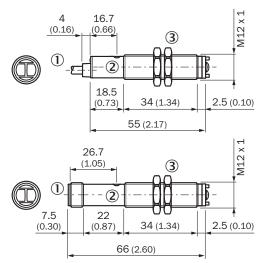


Sensing range diagram



- Sensing range
- Sensing range max.
- ① Reflector PL80A
- 2 Reflector C110
- 3 Reflector PL50A, PL40A, P250
- ④ Reflective tape Diamond Grade

Dimensional drawing



Dimensions in mm (inch)

- ① Cable or connector M12, 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 (2x); width across 17, metal

Recommended accessories

Other models and accessories → www.sick.com/V12

	Brief description	Туре	part no.
Mounting syst	tems		
40	Description: Mounting bracket for M12 sensors Material: Steel Details: Steel, zinc coated Items supplied: Without mounting hardware	BEF-WN-M12	5308447
3 A 10	 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: Rectangular, screw connection Dimensions: 51 mm 61 mm Ambient operating temperature: -30 °C +65 °C 	P250	5304812

	Brief description	Туре	part no.
connectors ar	nd 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

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."

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