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DATA SHEET

VL18L-4P324

V18
Photoelectric sensors

SICK
Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

VL18L-4P324

ORDERING INFORMATION

Type	part no.
VL18L-4P324	6027430

Further device versions and accessories at 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 97.7 mm
Housing design (light emission)	Cylindrical
Housing length	97.7 mm
Thread diameter (housing)	M18 x 1
Optical axis	Axial
Sensing range max.	0.1 m ... 35 m [1]
Sensing range	0.1 m ... 30 m [1]
Focus	0.04°
Type of light	Visible red light
Light source	Laser [2]
Light spot size (distance)	Ø 9 mm (35 m)
Angle of dispersion	0.04°
Wave length	650 nm
Laser class	1 (IEC 60825-1) [3]

[1] Reflector P250F.

[2] Average service life: 100,000 h at T_U = +25 °C.

[3] Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

[4] Electronically via control input C (0 V).

[5] Manual, via teach-in button.

Laser power output	0.4 mW
Adjustment	Cable, Single teach-in button (Sensitivity, Sensitivity) [4] [5]
Special applications	Detecting small objects

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MECHANICS/ELECTRONICS

Supply voltage U_B	10 V DC ... 30 V DC [1]
Ripple	± 10 % [2]
Current consumption	20 mA [3]
Switching output	PNP
Switching mode	Light/dark switching
Switching mode selector	Selectable via control input C
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 0.625 ms [4]
Switching frequency	800 Hz [5]
Connection type	Male connector M12, 4-pin
Circuit protection	A [6] B [7] C [8] D [9]
Protection class	III
Weight	60 g
Polarizing filter	✓
Housing material	Metal, Nickel-plated brass/PC
Optics material	Plastic, PC with protective glass pane
Enclosure rating	IP67
Ambient operating temperature	–15 °C ... +55 °C
Ambient temperature, storage	–25 °C ... +70 °C
UL File No.	NRKH.E181493, CDRH-conform (0312012-00)

[1] Limit values.

[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] A = V_S connections reverse-polarity protected.

[7] B = inputs and output reverse-polarity protected.

[8] C = interference suppression.

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

SAFETY-RELATED PARAMETERS

$MTTF_D$	451 years
DC_{avg}	0 %

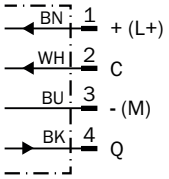
CERTIFICATES

EU declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓

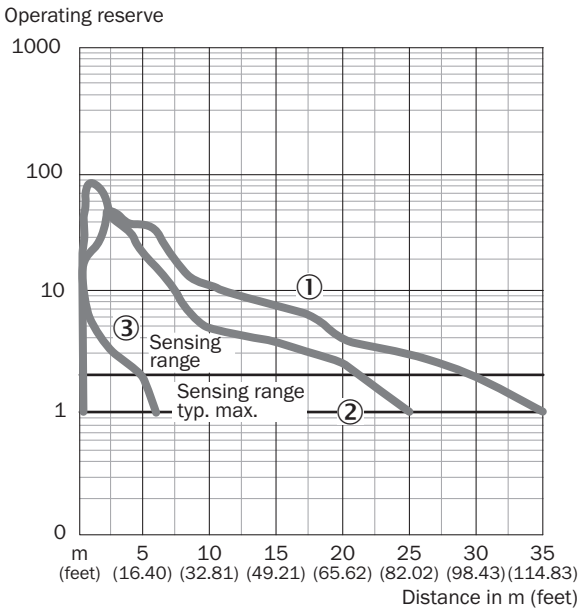
CONNECTION TYPE



CONNECTION DIAGRAM CD-099

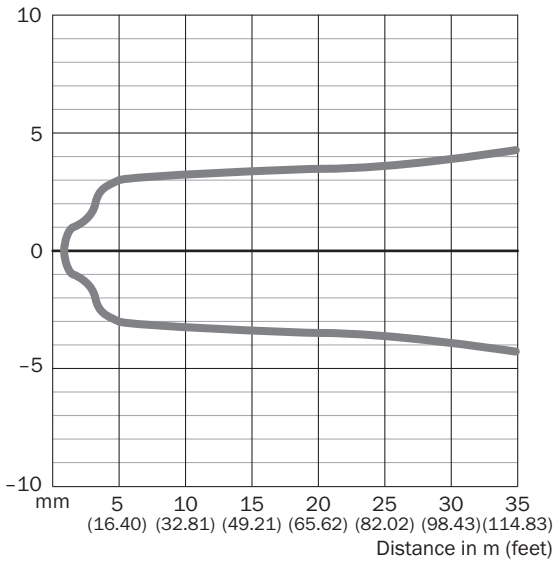


CHARACTERISTIC CURVE

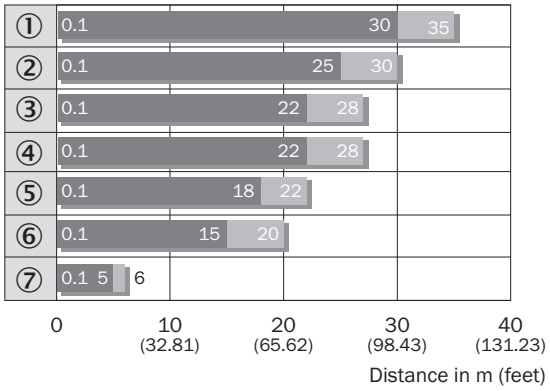


① Reflector P250F
② Reflector PL80A, P250
③ Reflective tape Diamond Grade

LIGHT SPOT SIZE VL18L

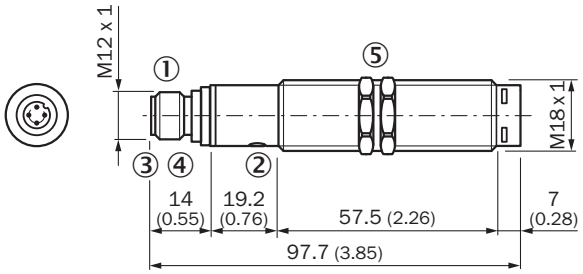


SENSING RANGE DIAGRAM VL18L



① Reflector P250F
② PL10F reflector
③ Reflector PL80A
④ Reflector P250
⑤ Reflector C110A
⑥ Reflector PL20F
⑦ Reflective tape Diamond Grade

DIMENSIONAL DRAWING AXIAL



Dimensions in mm (inch)
① M12 male device connector, 4-pin
② Sensitivity setting: single teach-in button
③ green LED indicator: V_S supply voltage feed
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, metal
⑤ (included with delivery)

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6027430

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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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