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DATA SHEET

VTB18-4P1240VS01

V18
Photoelectric sensors

SICK
Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

VTB18-4P1240VS01

ORDERING INFORMATION

Type	part no.
VTB18-4P1240VS01	6037754

Further device versions and accessories at www.sick.com/V18

DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
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
Sensing range max.	0 mm ... 100 mm [1]
Sensing range	0 mm ... 100 mm
Type of light	Visible red light
Light source	LED [2]
Light spot size (distance)	Ø 3 mm (100 mm)
Wave length	660 nm
Adjustment	Single teach-in button (Sensing range) Manual, via Touch-Teach-in
Special applications	Hygienic and washdown zones

[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	50 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	≤ 1.25 ms [5]
Switching frequency	400 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
Special device	✓
Housing material	Metal, Stainless steel V4A (1.4404, 316L)
Optics material	Plastic, Plan, PPS (Grilamid)
Enclosure rating	IP67 IP68 IP69K [12]
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.

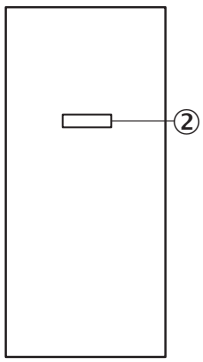
[13] +100 °C at max 15 minutes.

CERTIFICATES

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

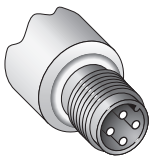
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓

ADJUSTMENTS

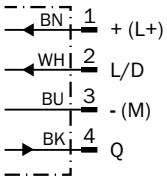


② Sensing range adjustment: Touch-Teach-In

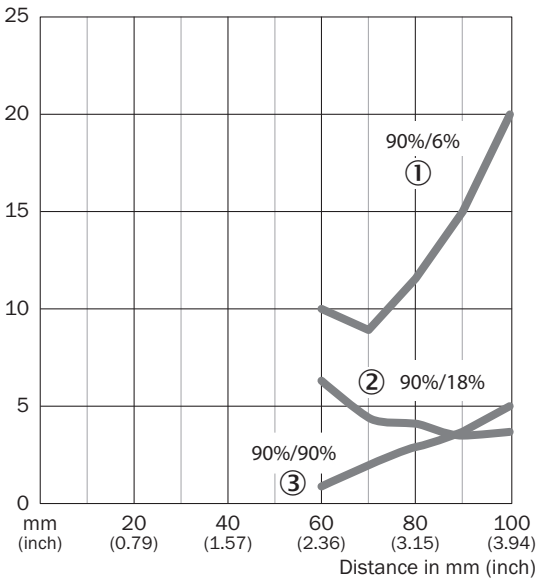
CONNECTION TYPE



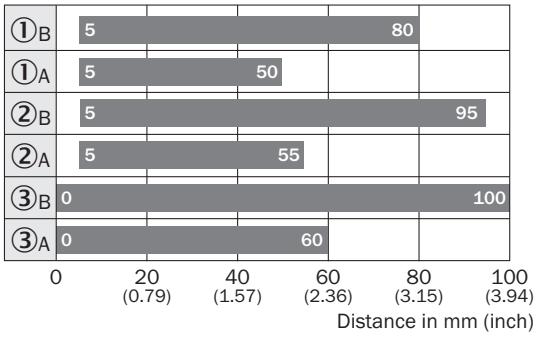
CONNECTION DIAGRAM CD-087



CHARACTERISTIC CURVE

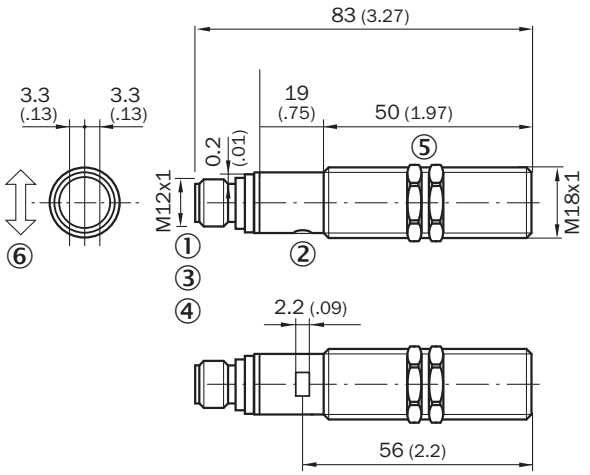


SENSING RANGE DIAGRAM



① Sensing range on black, 6 % remission
② Sensing range on gray, 18 % remission
③ Sensing range on white, 90 % remission
A Sensing range adjuster on MIN
B Sensing range adjuster on MAX

DIMENSIONAL DRAWING VTB18V



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 LED indicator yellow: Status of received light beam
⑤ fastening nuts (2 x); width across 24, stainless steel
⑥ Standard direction of the material being detected

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/6037754

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SICK AT A GLANCE

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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.

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