



VTF18-4N1240

V18

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
VTF18-4N1240	6012822

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

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background blanking
Dimensions (W x H x D)	18 mm x 18 mm x 78 mm
Housing design (light emission)	Cylindrical
Housing length	78 mm
Thread diameter (housing)	M18 x 1
Optical axis	Axial
Sensing range max.	3 mm ... 100 mm ¹⁾
Sensing range	3 mm ... 90 mm
Type of light	Infrared light
Light source	LED ²⁾
Light spot size (distance)	Ø 3 mm (50 mm)
Adjustment	Potentiometer, 270° (Sensing range)
Special feature	Focused optics

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⁾
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¹⁾ Limit values.
²⁾ May not exceed or fall below U_V tolerances.
³⁾ Without load.
⁴⁾ Control wire open: light switching L.ON.
⁵⁾ Signal transit time with resistive load.
⁶⁾ With light/dark ratio 1:1.
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.

Ripple	$\pm 10\%$ ²⁾
Current consumption	30 mA ³⁾
Switching output	NPN ⁴⁾
Switching mode	Light/dark switching ⁴⁾
Switching mode selector	Selectable via L/D control cable
Output current I_{max.}	≤ 100 mA
Response time	≤ 2 ms ⁵⁾
Switching frequency	250 Hz ⁶⁾
Connection type	Male connector M12, 4-pin
Circuit protection	A ⁷⁾ B ⁸⁾ C ⁹⁾ D ¹⁰⁾
Protection class	III
Weight	120 g
Housing material	Metal, Nickel-plated brass
Optics material	Plastic, PMMA
Enclosure rating	IP67
Special feature	Focused optics
Ambient operating temperature	-25 °C ... +70 °C
UL File No.	NMFT2.E175606

- 1) Limit values.
2) May not exceed or fall below U_v tolerances.
3) Without load.
4) Control wire open: light switching L.ON.
5) Signal transit time with resistive load.
6) With light/dark ratio 1:1.
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.

Safety-related parameters

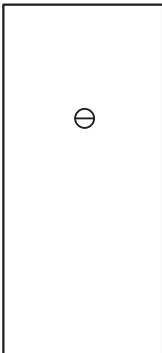
MTTF_D	786 years
DC_{avg}	0 %

Classifications

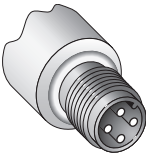
eCl@ss 5.0	27270904
eCl@ss 5.1.4	27270904
eCl@ss 6.0	27270904
eCl@ss 6.2	27270904
eCl@ss 7.0	27270904
eCl@ss 8.0	27270904
eCl@ss 8.1	27270904
eCl@ss 9.0	27270904

eCl@ss 10.0	27270904
eCl@ss 11.0	27270904
eCl@ss 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Adjustments

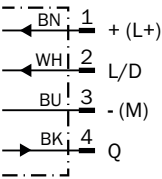


Connection type

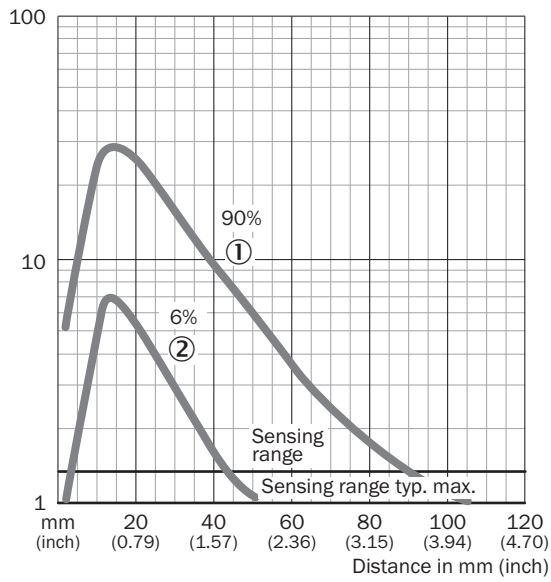


Connection diagram

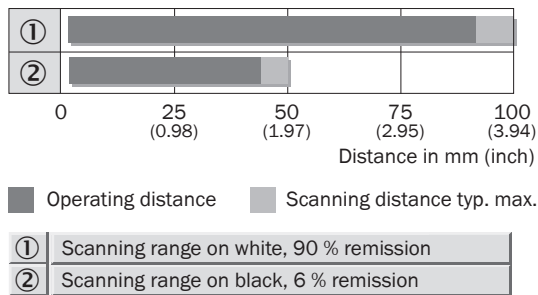
Cd-087



Characteristic curve



Sensing range diagram



Technical drawings of two types of hydraulic cylinders, Type 1 and Type 2, showing dimensions in millimeters (mm) and inches (in).

Type 1 (Left):

- Side View (Top):**
 - Stroke: 3 (0.12)
 - Mounting flange diameter: Ø 18 (0.71)
 - Mounting flange thickness: 1.2 (0.05)
 - Mounting flange width: 17.6 (0.69)
 - Stroke length: 42.5 (1.67)
 - Overall length: 63.6 (2.50)
 - Mounting flange to end distance: 2.3 (0.09)
- Side View (Bottom):**
 - Stroke: 1.4 (0.06)
 - Mounting flange diameter: Ø 18 (0.71)
 - Mounting flange thickness: 1.1 (0.43)
 - Mounting flange width: 17.6 (0.69)
 - Stroke length: 42.5 (1.67)
 - Overall length: 78 (3.07)
 - Mounting flange to end distance: 2.3 (0.09)

Type 2 (Right):

- Side View (Top):**
 - Stroke: 3 (0.12)
 - Mounting flange diameter: Ø 18 (0.71)
 - Mounting flange thickness: 1.2 (0.05)
 - Mounting flange width: 17.6 (0.69)
 - Stroke length: 42.5 (1.67)
 - Overall length: 60.6 (2.39)
 - Mounting flange to end distance: 2.3 (0.09)
- Side View (Bottom):**
 - Stroke: 1.4 (0.06)
 - Mounting flange diameter: Ø 18 (0.71)
 - Mounting flange thickness: 1.1 (0.43)
 - Mounting flange width: 17.6 (0.69)
 - Stroke length: 42.5 (1.67)
 - Overall length: 75 (2.95)
 - Mounting flange to end distance: 2.3 (0.09)

A cross-section of the cylinder body is shown at the bottom center.

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware	BEF-WN-M18	5308446
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: male connector, M12, 4-pin, straight Cable: unshielded	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.”

WORLDWIDE PRESENCE:

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