



Photoelectric sensors
V18 Laser, Photoelectric retro-reflective sensor,
Standard optics

VL18L-4P342



Model Name > [VL18L-4P342](#)
Part No. > [6027433](#)



Illustration may differ

At a glance

- Laser emitter LED enclosed in a cylindrical M18 housing
- Sensing distance up to 35 m
- Fast response time
- Straight or right-angle housing
- Durable metal housing
- IP 67
- Small visible light spot to detect small objects
- Laser class 1

Your benefits

- Lowest-cost laser sensor in M18 cylindrical housing saves installation costs
- Time saving installation and alignment with highly visible light spot
- Laser class 1 does not require increased safety measures or markings, reducing installation costs
- Fast response time ensures reliable object detection at high speeds and increases machine throughput
- Polarizing filter prevents false readings on reflective surfaces, reducing downtime



Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, Standard optics
Housing design (light emission):	Cylindrical, angled
Housing length:	107.7 mm
Thread diameter (housing):	M18 x 1
Optical axis:	radial
Sensing range max.:	0.1 m ... 35 m ¹⁾
Sensing range:	0.1 m ... 30 m ²⁾
Type of light:	Visible red light
Light source:	Laser ³⁾
Laser class:	1, 1 (IEC 60825-1)
Wave length:	650 nm
Angle of dispersion:	0.04 °
Adjustment:	Cable Single teach-in button
Light spot size (distance):	Ø 9 mm (35 m)
Laser power output:	0.4 mW

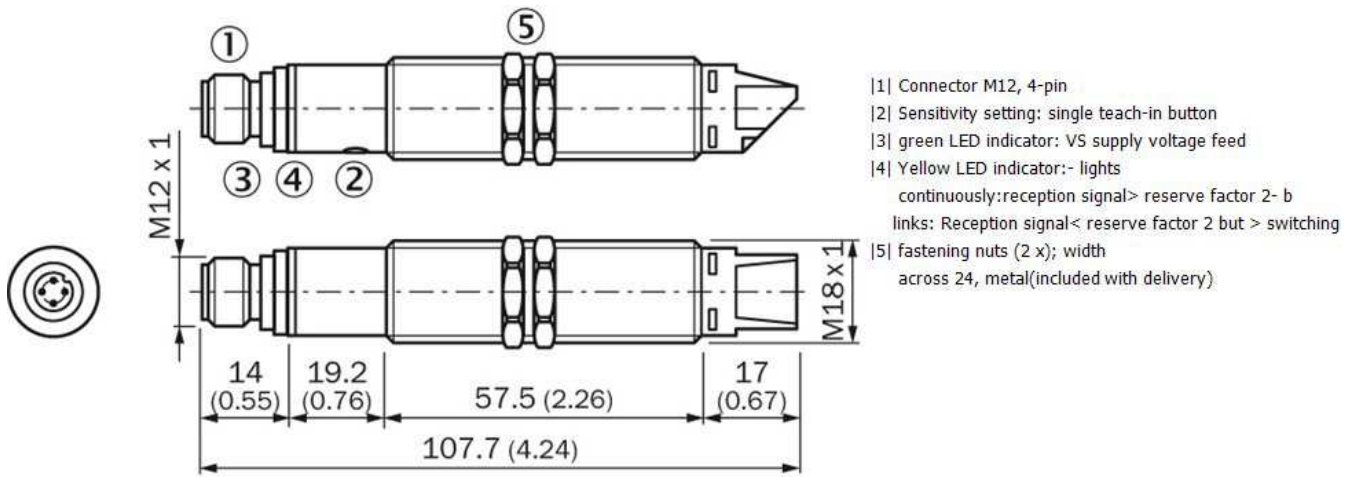
1) 2) P250F 3) Average service life of 100,000 h at $T_A = +25\text{ °C}$

Mechanics/electronics

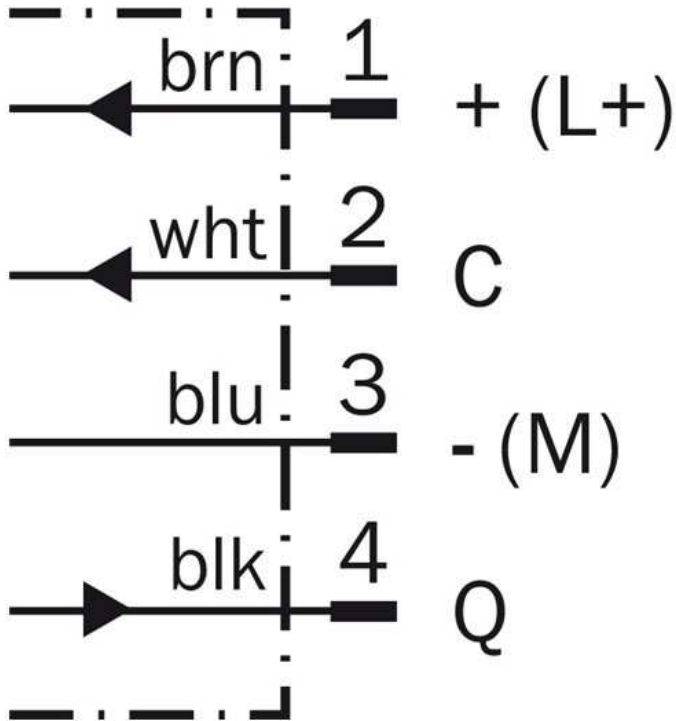
Supply voltage:	10 V DC ... 30 V DC ¹⁾
Residual ripple:	$\leq 10\%$ ²⁾
Power consumption:	$\leq 20\text{ mA}$ ³⁾
Output type:	PNP
Switching mode:	Light/dark switching
Switching mode selector:	Selectable via control input C
Output current I _{max.} :	$\leq 100\text{ mA}$
Response time:	$\leq 0.625\text{ ms}$ ⁴⁾
Switching frequency:	800 Hz ⁵⁾
Electrical connection:	Cable, 2 m
Circuit protection:::	A, B, C, D ^{6) 7) 8) 9)}
Protection class:	III
Weight:	60 g
Polarisation filter:	✓
Front screen heating:	-
Optics material:	PC with protective glass pane
Enclosure rating:	IP 67
Ambient temperature operation:	-15 °C ... +55 °C
Ambient storage temperature:	-25 °C ... +70 °C
UL File No.:	NRKH.E181493, CDRH-conform (0312012-00)
Housing material:	Nickel-plated brass/PC, Metal

1) Limit values 2) May not exceed or fall short of V_S 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

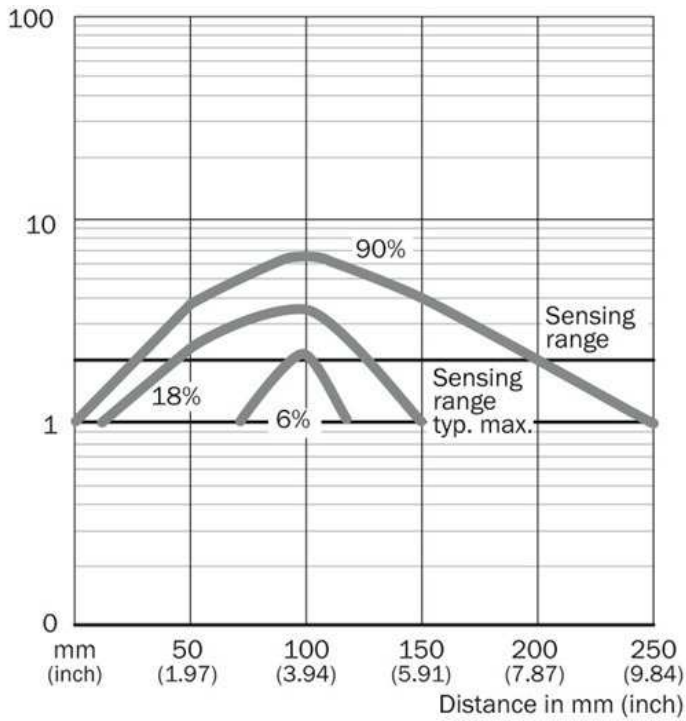
Dimensional drawing



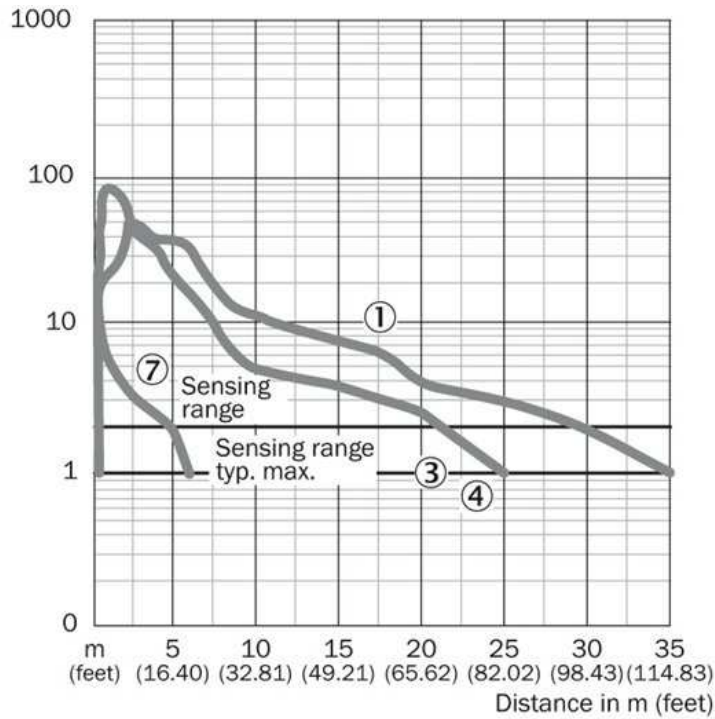
Connection diagram



Characteristic curve

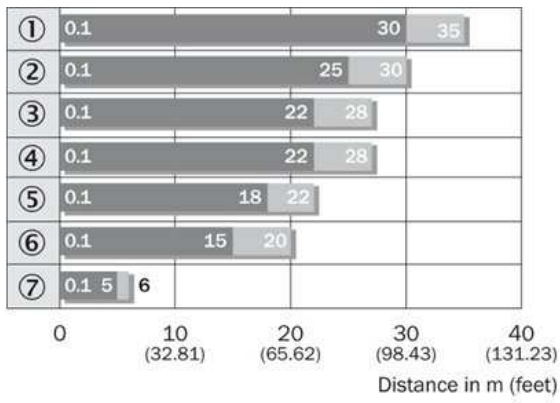


Characteristic curve



- |1| P250F
- |3| PL80A
- |4| P250
- |7| Reflective tape Diamond Grade

Sensing range diagram



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

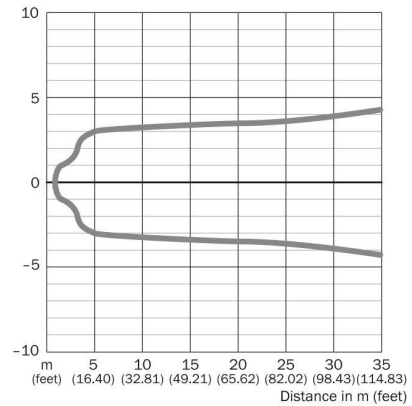
■ Operating range ■ Scanning range typ. max.

	Reflector type	Operating range
①	P250F	0.1 (.33) ... 30 (131.23)
②	PL10F	0.1 (.33) ... 25 (82.02)
③	PL80A	0.1 (.33) ... 22 (72.18)
④	P 250	0.1 (.33) ... 22 (72.18)
⑤	C110	0.1 (.33) ... 18 (59.06)
⑥	PL10F	0.1 (.33) ... 15 (49.21)
⑦	Reflective tape „Diamond Grade“	0.1 (.33) ... 5 (16.4)

Connection type



Light spot size



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