



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

VL18L-4P324



Model Name > [VL18L-4P324](#)
Part No. > [6027430](#)



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, straight, straight |
| 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 ²⁾ |
| Type of light: | Visible red light |
| Light source: | Laser ³⁾ |
| Light spot (distance): | 9 mm (35 m) |
| Laser class: | 1 (IEC 60825-1) |
| Wave length: | 650 nm |
| Sensitivity adjustment: | Electronic, via control input C (0 V) manual, via teach-in button |
| Angle of dispersion: | 0.04 ° |

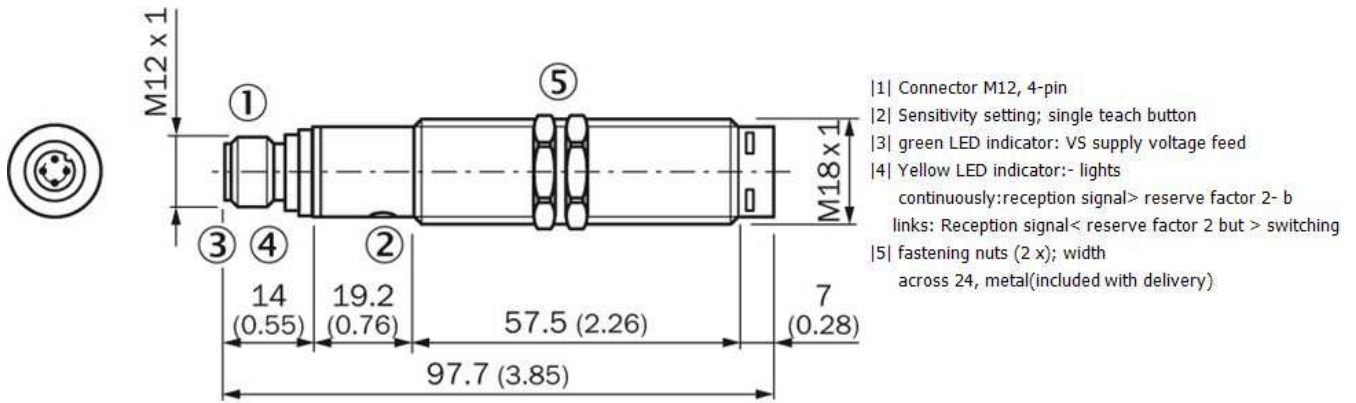
^{1) 2)} P250F ³⁾ Average service life of 100,000 h at $T_A = +25\text{ °C}$

Mechanics/electronics

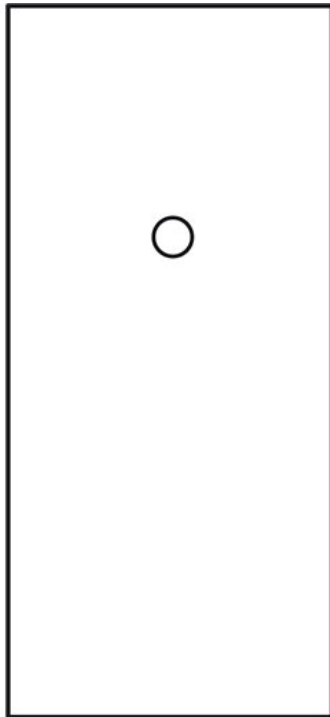
| | |
|------------------------------------|---|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Residual ripple: | ≤ 10 % ²⁾ |
| Power consumption: | ≤ 20 mA ³⁾ |
| Output type: | PNP, Light/dark-switching, Selectable via control input C |
| Output current I _{max.} : | ≤ 100 mA |
| Response time: | ≤ 0.625 ms ⁴⁾ |
| Switching frequency: | 800 Hz ⁵⁾ |
| Electrical connection: | Connector M12, 4-pin |
| Circuit protection:::: | A, B, C, D ^{6) 7) 8) 9)} |
| Protection class: | III |
| Weight: | 60 g |
| Polarisation filter: | ✓ |
| Housing material: | Nickel-plated brass/PC |
| 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.: | UL No. NRKH.E181493, CDRH-Konform (0312012-00) |

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 = interference suppression ⁸⁾ D = outputs overcurrent and short-circuit protected ⁹⁾ D = inputs and output reverse-polarity
protected

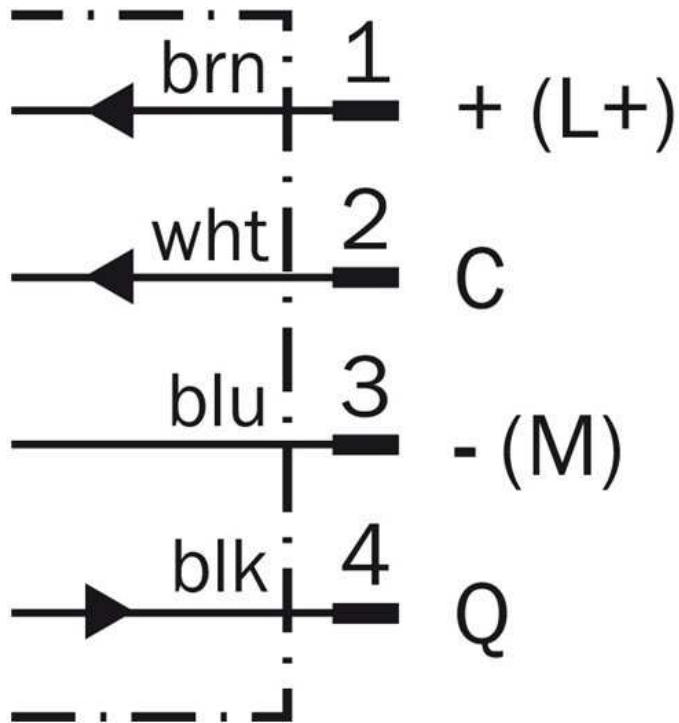
Dimensional drawing



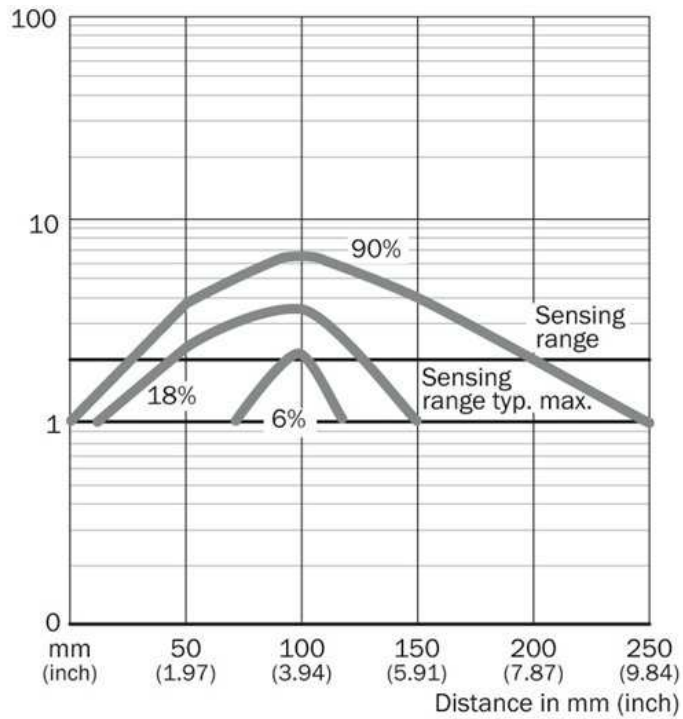
Adjustments possible



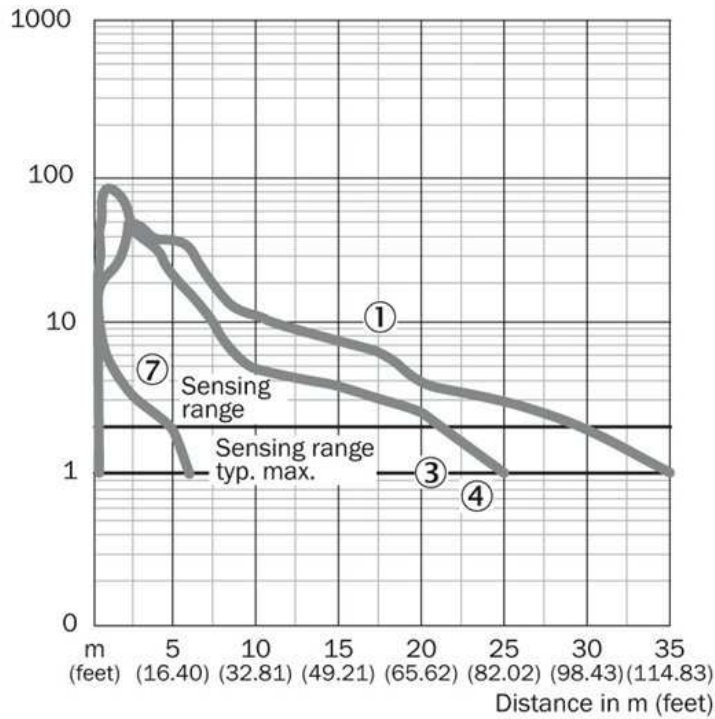
Connection diagram



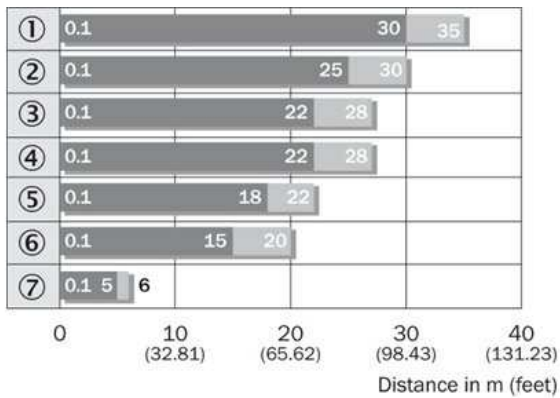
Characteristic curve



Characteristic curve



Sensing range diagram



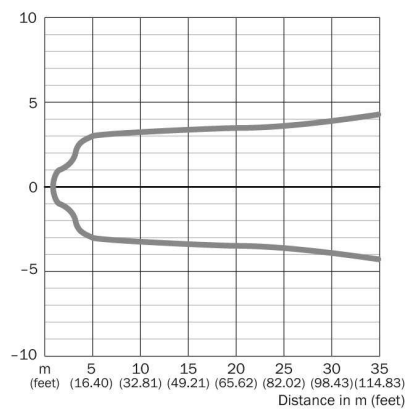
■ Operating range ■ Scanning range typ. max.

| 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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