



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

VL18L-3F324



**Model Name** > [VL18L-3F324](#)  
**Part No.** > [6034330](#)



*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 <sup>1)</sup>
Sensing range:	0.1 m ... 30 m <sup>2)</sup>
Type of light:	Visible red light
Light source:	Laser <sup>3)</sup>
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 °

<sup>1) 2)</sup> P250F <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

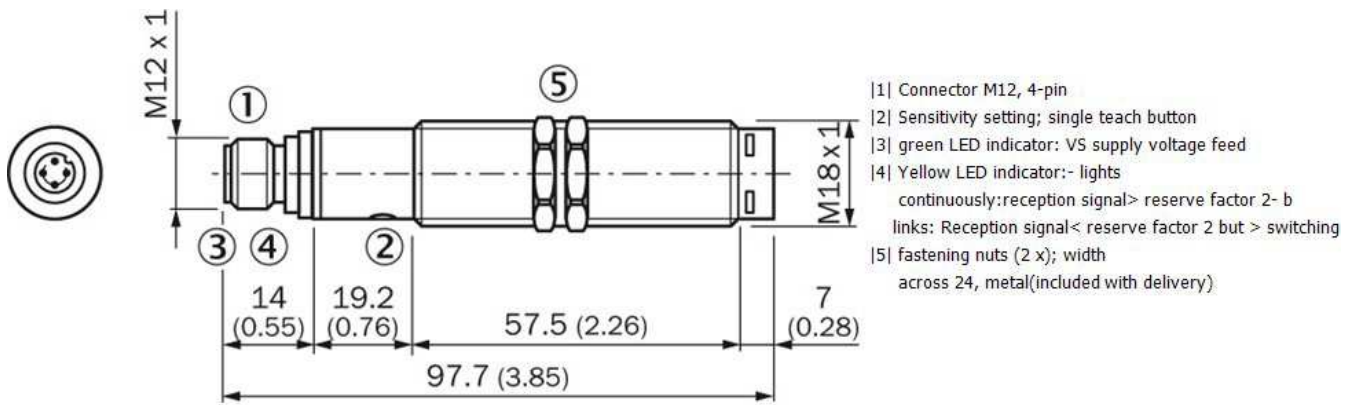
## Mechanics/electronics

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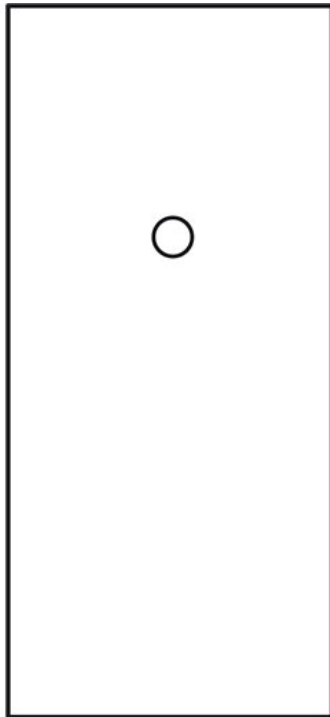
Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Residual ripple:	≤ 10 % <sup>2)</sup>
Power consumption:	≤ 20 mA <sup>3)</sup>
Output type:	PNP, Light-switching
Output current I <sub>max.</sub> :	≤ 100 mA
Response time:	≤ 0.625 ms <sup>4)</sup>
Switching frequency:	800 Hz <sup>5)</sup>
Electrical connection:	Connector M12, 4-pin
Circuit protection:::	A, B, C, D <sup>6) 7) 8) 9)</sup>
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)

<sup>1)</sup> Limit values <sup>2)</sup> May not exceed or fall short of V<sub>S</sub> tolerances <sup>3)</sup> Without load <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> A = V<sub>S</sub>  
connections reverse-polarity protected <sup>7)</sup> B = interference suppression <sup>8)</sup> D = outputs overcurrent and short-circuit protected <sup>9)</sup> D = inputs and output reverse-polarity  
protected

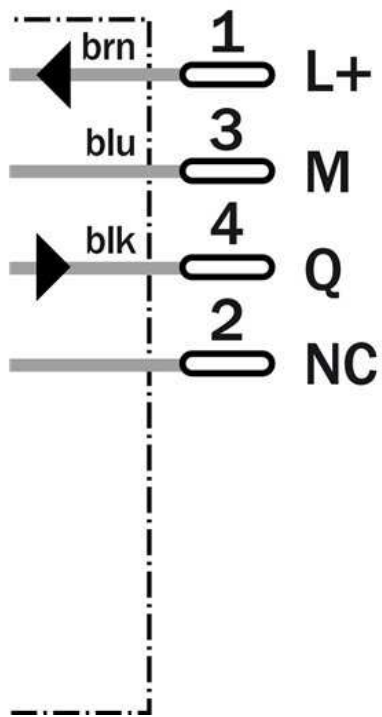
## Dimensional drawing



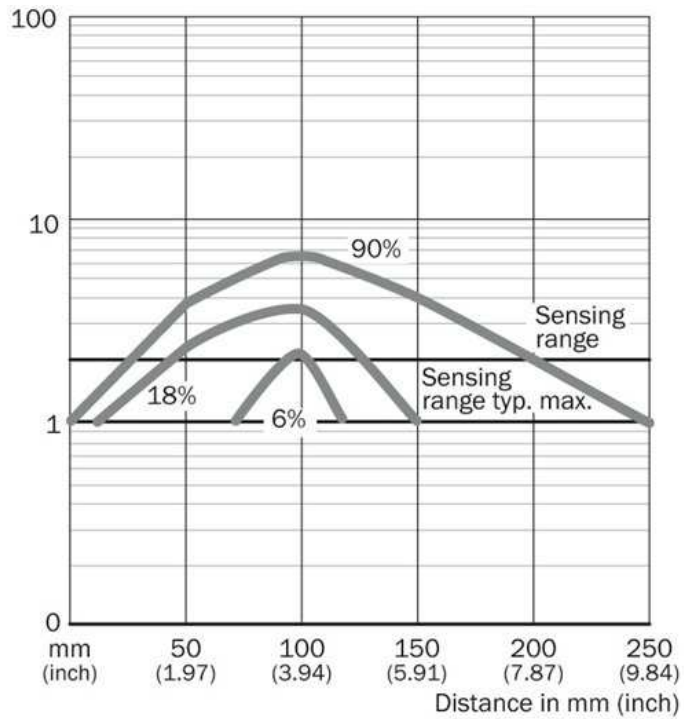
## Adjustments possible



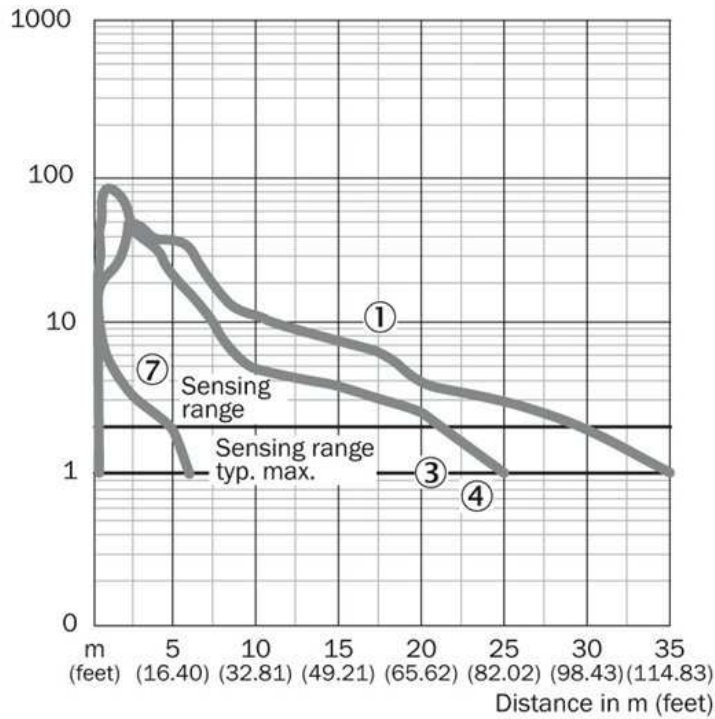
## Connection diagram



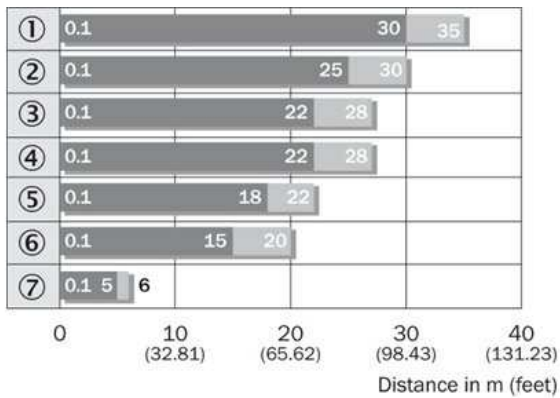
## Characteristic curve



## Characteristic curve



## Sensing range diagram

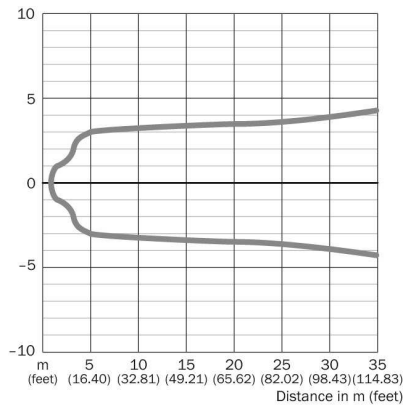


■ Operating range    ■ Scanning range typ. max.

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)

## Light spot size

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