Model Number
VT18-8-400-M-LAS/32/40a/118
Diffuse mode sensor with 4-pin, M12 x 1 connector

Features
• M18 threaded housing made of brass, nickel plated
• Visible red light, pulsed LASER light
• Array control panel with highly visible LED display
• Flashing power on LED in case of short-circuit
• Multiple device installation possible, no mutual interference (no cross-talk)
• Not sensitive to ambient light, even with switched energy saving lamps
• Protection class II

Dimensions

Electrical connection

Pinout
Diffuse mode sensor

VT18-8-400-M-LAS/32/40a/118

Technical data

General specifications
- Detection range: 0 ... 400 mm, adjustable
- Detection range min.: 0 ... 25 mm
- Detection range max.: 0 ... 400 mm
- Light source: laser diode
- Light type: modulated visible red light

Laser nominal ratings
- Note: LASER LIGHT, DO NOT STARE INTO BEAM
- Laser class: 1
- Wave length: 655 nm
- Beam divergence: 31.5 mrad
- Pulse length: 4 μs
- Repetition rate: 11.91 kHz
- max. pulse energy: 4.95 nJ
- Diameter of the light spot: approx. 0.5 mm at a distance of 120 mm
- Optical face: frontal
- Ambient light limit: 30000 Lux
- Hysteresis: H < 15 %

Functional safety related parameters
- MTTFd: 700 a
- Mission Time (T_m): 20 a
- Diagnostic Coverage (DC): 0 %

Indicators/operating means
- Operation indicator: LED green, flashes in case of short-circuit
- Function indicator: LED yellow, lights up with receiver lit
- Control elements: Detection range adjuster, light/dark switch

Electrical specifications
- Operating voltage: U_B: 10 ... 30 V DC, class 2
- No-load supply current: I_0: < 25 mA
- Protection class: II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1

Output
- Switching type: light/dark on, switchable
- Signal output: 1 PNP output, short-circuit protected, reverse polarity protected, open collector
- Switching voltage: 30 V DC
- Switching current: max. 200 mA
- Switching frequency: f: 500 Hz
- Response time: 1 ms

Ambient conditions
- Ambient temperature: -25 ... 55 °C (-13 ... 131 °F)
- Storage temperature: -30 ... 70 °C (-22 ... 158 °F)

Mechanical specifications
- Protection degree: IP67
- Connection: connector M12 x 1, 4-pin (Vario-Quick quick connect technology)
- Material
  - Housing: brass, nickel-plated
  - Optical face: plastic
- Mass: 60 g

Compliance with standards and directives
- Standard conformity

Approvals and certificates
- Protection class: II, rated voltage ≤ 300 V AC with pollution degree 1-2 according to IEC 60664-1
- UL approval: cULus Listed, Type 1 enclosure
- CCC approval: CCC approval / marking not required for products rated ≤36 V

Accessories
- OMH-VL18
  - Mounting Bracket with swivel nut
- BF 18
  - Mounting flange, 18 mm
- BF 18-F
  - Mounting flange with dead stop, 18 mm
- BF 5-30
  - Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm
- V1-G-2M-PUR
  - Female cordset, M12, 4-pin, PUR cable
- V1-W-2M-PUR
  - Female cordset, M12, 4-pin, PUR cable

Other suitable accessories can be found at www.pepperl-fuchs.com
**Curves/Diagrams**

### Characteristic response curve

**VT18-8-400-LAS**

- **Offset Y [mm]**: The graph shows the characteristic response curve with varying offsets against distance.
- **Distance X [mm]**: The x-axis represents the distance in millimeters, ranging from 0 to 450.

### Relative received light strength

**VT18-8-400-LAS**

- **Stability control**: The graph illustrates the relative received light strength with stability control for different object colors.
- **Distance X [mm]**: The x-axis represents the distance in millimeters, ranging from 0 to 450.

### Detection ranges

**VT18-8-400-LAS**

- **Object colour**: The graph shows the detection ranges for black, grey, and white objects.
- **Distance [mm]**: The x-axis represents the distance in millimeters, ranging from 0 to 450.
Curves/Diagrams

Emission divergence

<table>
<thead>
<tr>
<th>Light spot dimensions [mm]</th>
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<tbody>
<tr>
<td>12</td>
</tr>
<tr>
<td>10</td>
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<tr>
<td>8</td>
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<td>6</td>
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<td>4</td>
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<td>2</td>
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Distance X [mm]

Adjustment

Sensitivity adjustment
- Turn sensitivity adjuster (counterclockwise) to minimum position.
- Place the object to be detected in the sensing range and turn the sensitivity adjuster clockwise until the yellow indication LED lights up. This setting indicates the position A of the sensitivity adjuster.
- Remove the object. Increase the sensitivity slowly (turning the sensitivity adjuster clockwise) until the yellow LED lights up again. This setting indicates the position B of the sensitivity adjuster.

Note:
In case of no background object, the LED won't light up, even in MAX. adjustment. In that case take care, that in normal operation conditions no temporal background object can appear in the sensing range (e.g. parked pallets). If this can not be excluded, place (only for adjustment matter) an object at the appropriate location. Then repeat this adjustment step. After finishing the adjustment this temporal object should be removed.
- For optimal setting, now turn the sensitivity adjuster to the middle position between the positions A and B.

Laser notice laser class 1
- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Attach the device so that the warning is clearly visible and readable.
- The warning accompanies the device and should be attached in immediate proximity to the device.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.