



# Retroreflective sensor VL18-54-M/40a/118/128

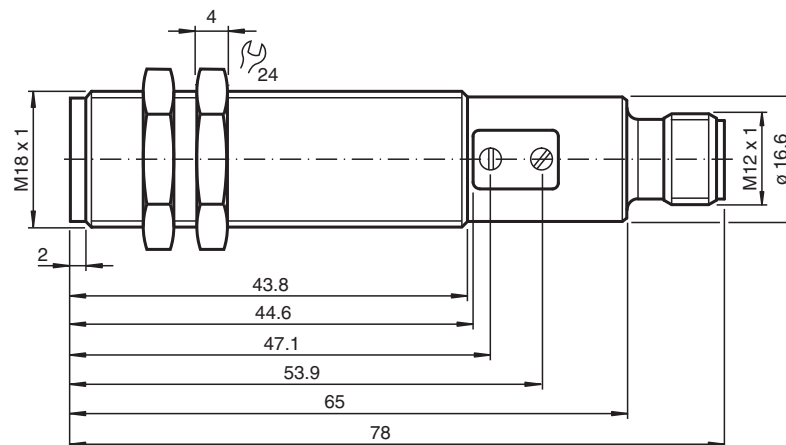


- Array control panel with highly visible LED display
- Flashing power on LED in case of short-circuit
- Multiple device installation possible, no mutual interference (no cross-talk)
- Not sensitive to ambient light, even with switched energy saving lamps
- Protection class II

Retroreflective sensor with polarization filter



## Dimensions



## Technical Data

### General specifications

|                           |             |
|---------------------------|-------------|
| Effective detection range | 0 ... 3.5 m |
| Threshold detection range | 4 m         |

Release date: 2022-08-08 Date of issue: 2022-08-08 Filename: 800112\_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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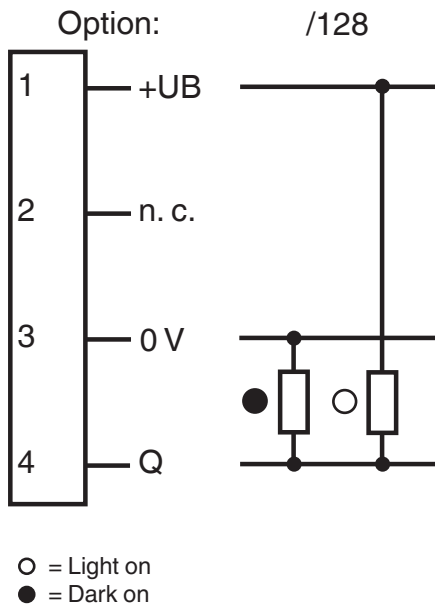
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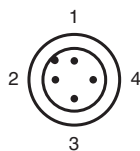
## Technical Data

|                                             |                |                                                                                                                                   |
|---------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Reference target                            |                | H50 reflector                                                                                                                     |
| Light source                                |                | LED                                                                                                                               |
| Light type                                  |                | modulated visible red light , 632 nm                                                                                              |
| Polarization filter                         |                | yes                                                                                                                               |
| Diameter of the light spot                  |                | 200 mm at a distance of 3500 mm                                                                                                   |
| Opening angle                               |                | 3 °                                                                                                                               |
| Optical face                                |                | frontal                                                                                                                           |
| Ambient light limit                         |                | 30000 Lux ; according to EN 60947-5-2:2007                                                                                        |
| Hysteresis                                  | H              | < 15 %                                                                                                                            |
| <b>Functional safety related parameters</b> |                |                                                                                                                                   |
| MTTF <sub>d</sub>                           |                | 700 a                                                                                                                             |
| Mission Time (T <sub>M</sub> )              |                | 20 a                                                                                                                              |
| Diagnostic Coverage (DC)                    |                | 0 %                                                                                                                               |
| <b>Indicators/operating means</b>           |                |                                                                                                                                   |
| Operation indicator                         |                | LED green, flashes in case of short-circuit                                                                                       |
| Function indicator                          |                | LED yellow, light with free light beam , flashes when falling short of the stability control , OFF when light beam is interrupted |
| Control elements                            |                | Sensitivity adjuster, light/dark switch                                                                                           |
| <b>Electrical specifications</b>            |                |                                                                                                                                   |
| Operating voltage                           | U <sub>B</sub> | 10 ... 30 V DC , class 2                                                                                                          |
| No-load supply current                      | I <sub>0</sub> | < 25 mA                                                                                                                           |
| Protection class                            |                | II , rated voltage ≤ 50 V AC with pollution degree 1-2 according to IEC 60664-1                                                   |
| <b>Output</b>                               |                |                                                                                                                                   |
| Switching type                              |                | light/dark on, switchable                                                                                                         |
| Signal output                               |                | Push-pull (4 in 1) output short-circuit protected overvoltage protected                                                           |
| Switching voltage                           |                | 30 V DC                                                                                                                           |
| Switching current                           |                | max. 200 mA                                                                                                                       |
| Voltage drop                                | U <sub>d</sub> | ≤ 2.5 V DC                                                                                                                        |
| Switching frequency                         | f              | 500 Hz                                                                                                                            |
| Response time                               |                | 1 ms                                                                                                                              |
| <b>Conformity</b>                           |                |                                                                                                                                   |
| Product standard                            |                | EN 60947-5-2                                                                                                                      |
| <b>Approvals and certificates</b>           |                |                                                                                                                                   |
| EAC conformity                              |                | TR CU 020/2011                                                                                                                    |
| UL approval                                 |                | cULus Listed, Type 1 enclosure                                                                                                    |
| CCC approval                                |                | CCC approval / marking not required for products rated ≤36 V                                                                      |
| <b>Ambient conditions</b>                   |                |                                                                                                                                   |
| Ambient temperature                         |                | -25 ... 70 °C (-13 ... 158 °F)                                                                                                    |
| Storage temperature                         |                | -30 ... 70 °C (-22 ... 158 °F)                                                                                                    |
| Relative humidity                           |                | 90 % , noncondensing                                                                                                              |
| <b>Mechanical specifications</b>            |                |                                                                                                                                   |
| Degree of protection                        |                | IP67                                                                                                                              |
| Connection                                  |                | 4-pin, M12 x 1 connector                                                                                                          |
| <b>Material</b>                             |                |                                                                                                                                   |
| Housing                                     |                | brass, nickel-plated                                                                                                              |
| Optical face                                |                | PMMA                                                                                                                              |
| Mass                                        |                | 60 g                                                                                                                              |

Connection Assignment



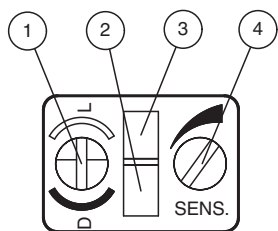
Connection Assignment



Wire colors in accordance with EN 60947-5-2

|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |

Assembly

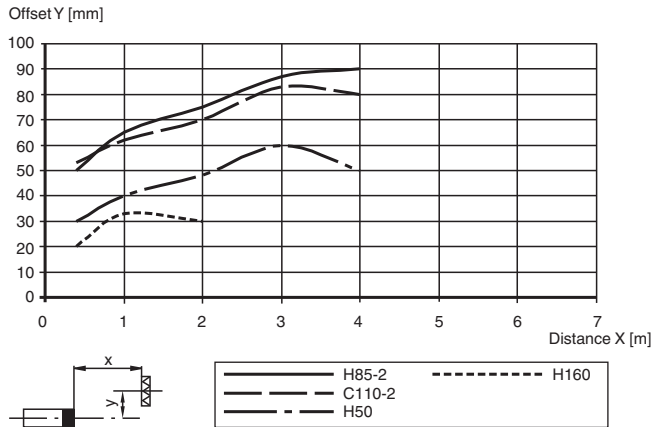


|   |                        |        |
|---|------------------------|--------|
| 1 | Light/dark switch      |        |
| 2 | Operating display      | green  |
| 3 | Switch state           | yellow |
| 4 | Sensitivity adjustment |        |

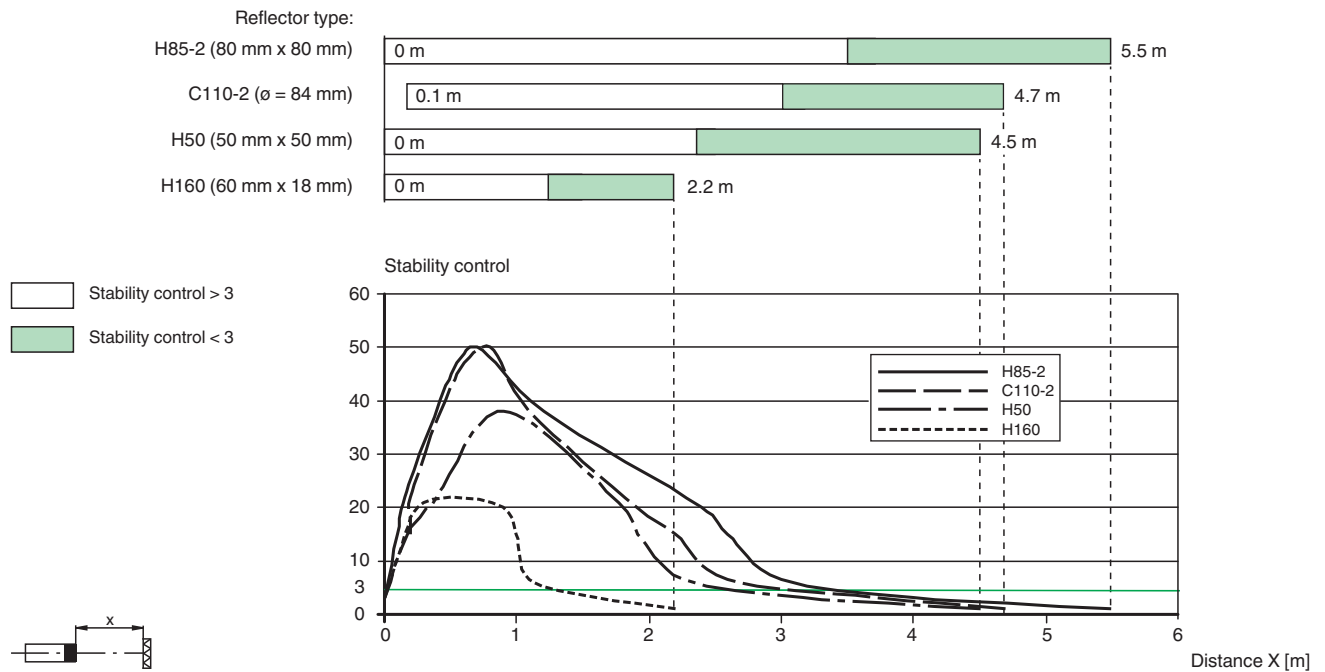
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Characteristic Curve

Characteristic response curve



Relative received light strength



Accessories

|                                                                                     |                  |                                                                                   |
|-------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------|
|  | <b>CPZ18B03</b>  | Mounting Bracket with swivel nut                                                  |
|  | <b>BF 18</b>     | Mounting flange, 18 mm                                                            |
|  | <b>BF 18-F</b>   | Plastic mounting adapter, 18 mm                                                   |
|  | <b>BF 5-30</b>   | Universal mounting bracket for cylindrical sensors with a diameter of 5 ... 30 mm |
|  | <b>REF-H85-2</b> | Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes                          |

Accessories

|                                                                                   |                |                                                                    |
|-----------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------|
|  | <b>REF-H50</b> | Reflector, rectangular 51 mm x 61 mm, mounting holes, fixing strap |
|-----------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------|

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