



## Retroreflective sensor RL28-55/49/82b/105

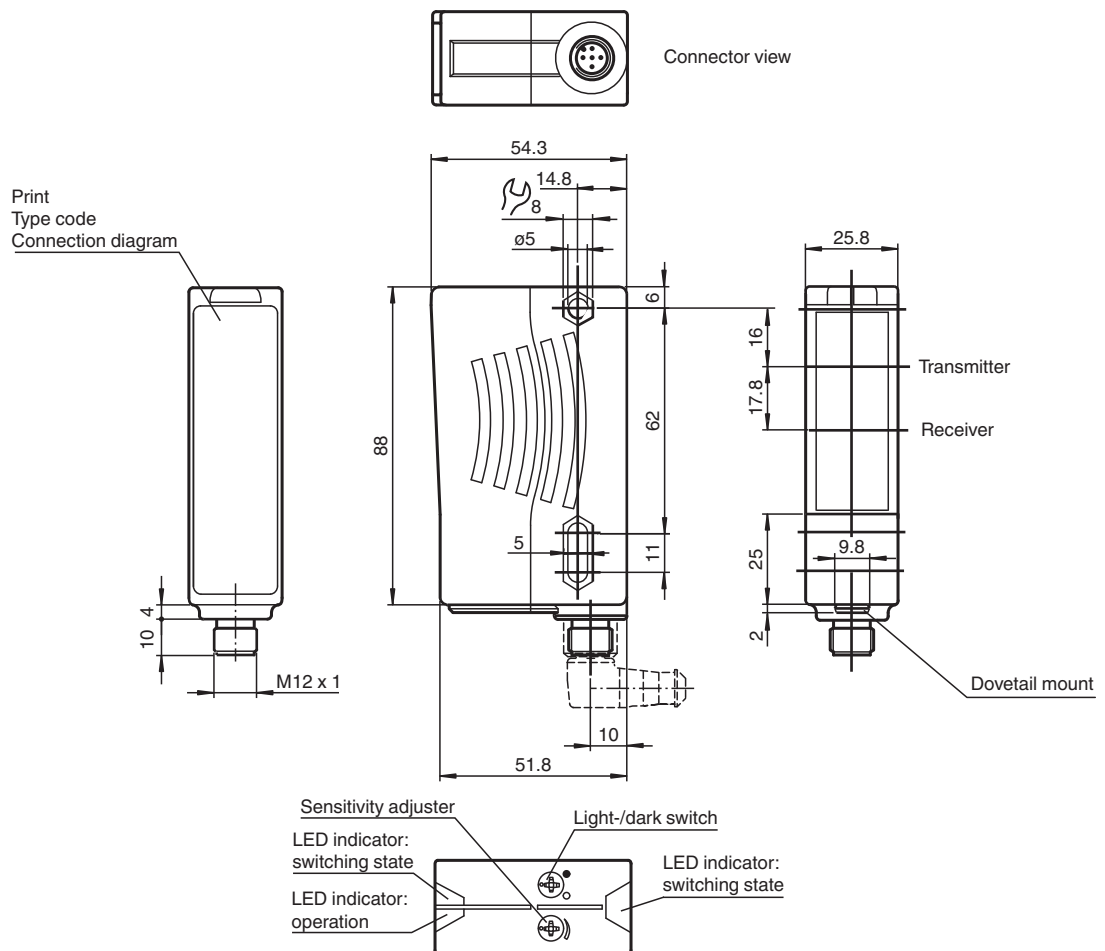


- Ultra bright LEDs for power on, weak signal indication and switching state
- Not sensitive to ambient light, even with switched energy saving lamps
- Waterproof, degree of protection IP67
- Protection class II

Retroreflective sensor with polarization filter



### Dimensions



## Technical Data

### General specifications

|                            |                                      |
|----------------------------|--------------------------------------|
| Effective detection range  | 0 ... 17 m                           |
| Reflector distance         | 0.05 ... 17 m                        |
| Threshold detection range  | 21 m                                 |
| Reference target           | H85-2 reflector                      |
| Light source               | LED                                  |
| Light type                 | modulated visible red light , 660 nm |
| Polarization filter        | yes                                  |
| Diameter of the light spot | approx. 290 mm at a distance of 17 m |
| Opening angle              | emitter 1.2°<br>receiver 2°          |
| Ambient light limit        | 80000 Lux                            |

### Functional safety related parameters

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 950 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 0 %   |

### Indicators/operating means

|                     |                                                                                                                                        |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Operation indicator | LED green                                                                                                                              |
| Function indicator  | 2 LEDs yellow, light up when light beam is free, flash when falling short of the stability control, off when light beam is interrupted |
| Control elements    | sensitivity adjustment (Adjustment to < 25% of the effective operating range) , Light-on/dark-on changeover switch                     |

### Electrical specifications

|                        |                |                |
|------------------------|----------------|----------------|
| Operating voltage      | U <sub>B</sub> | 10 ... 30 V DC |
| Ripple                 |                | 10 %           |
| No-load supply current | I <sub>0</sub> | ≤ 40 mA        |

### Output

|                        |   |                                                                                                                                       |
|------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------|
| Stability alarm output |   | 1 PNP, inactive when falling short of the stability control for 10;s<br>immediately inactive if 4 light beam interruptions take place |
| Switching type         |   | light/dark on switchable                                                                                                              |
| Signal output          |   | 1 NPN, 1 PNP synchronized-switching, short-circuit protected, reverse polarity<br>protected , open collectors                         |
| Switching voltage      |   | max. 30 V DC                                                                                                                          |
| Switching current      |   | max. 200 mA                                                                                                                           |
| Switching frequency    | f | 1000 Hz                                                                                                                               |
| Response time          |   | 0.5 ms                                                                                                                                |

### Conformity

|                  |              |
|------------------|--------------|
| Product standard | EN 60947-5-2 |
|------------------|--------------|

### Approvals and certificates

|                  |                                                                                 |
|------------------|---------------------------------------------------------------------------------|
| Protection class | II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 |
| UL approval      | E87056 , cULus Listed , class 2 power supply , type rating 1                    |

### Ambient conditions

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -40 ... 60 °C (-40 ... 140 °F) |
| Storage temperature | -40 ... 60 °C (-40 ... 140 °F) |

### Mechanical specifications

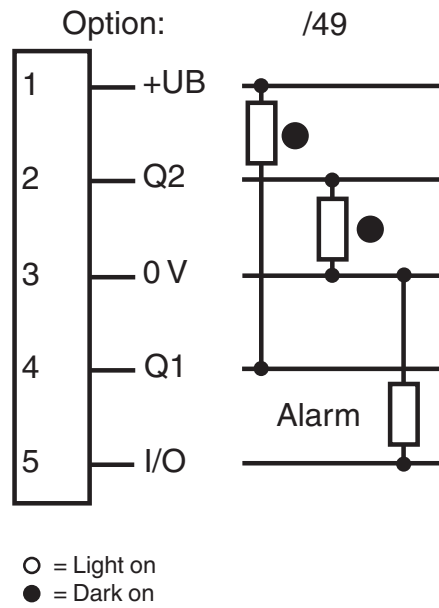
|                      |                          |
|----------------------|--------------------------|
| Housing width        | 25.8 mm                  |
| Housing height       | 88 mm                    |
| Housing depth        | 54.3 mm                  |
| Degree of protection | IP67                     |
| Connection           | 5-pin, M12 x 1 connector |
| Material             |                          |
| Housing              | Plastic ABS              |
| Optical face         | plastic                  |
| Connector            | plastic                  |

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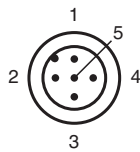
Technical Data

|      |      |
|------|------|
| Mass | 70 g |
|------|------|

Connection Assignment



Connection Assignment



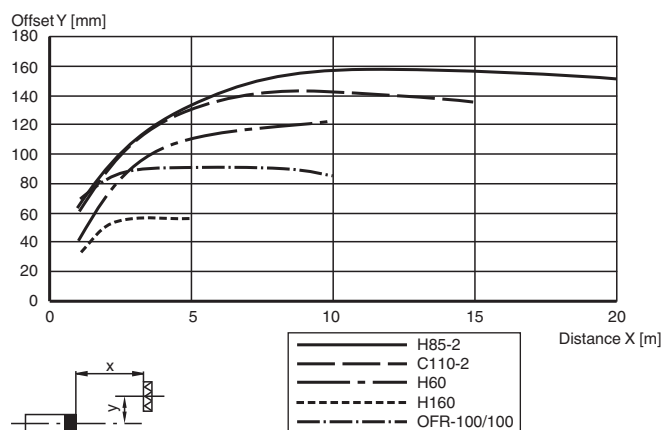
Wire colors in accordance with EN 60947-5-2

|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |
| 5 | GY | (gray)  |

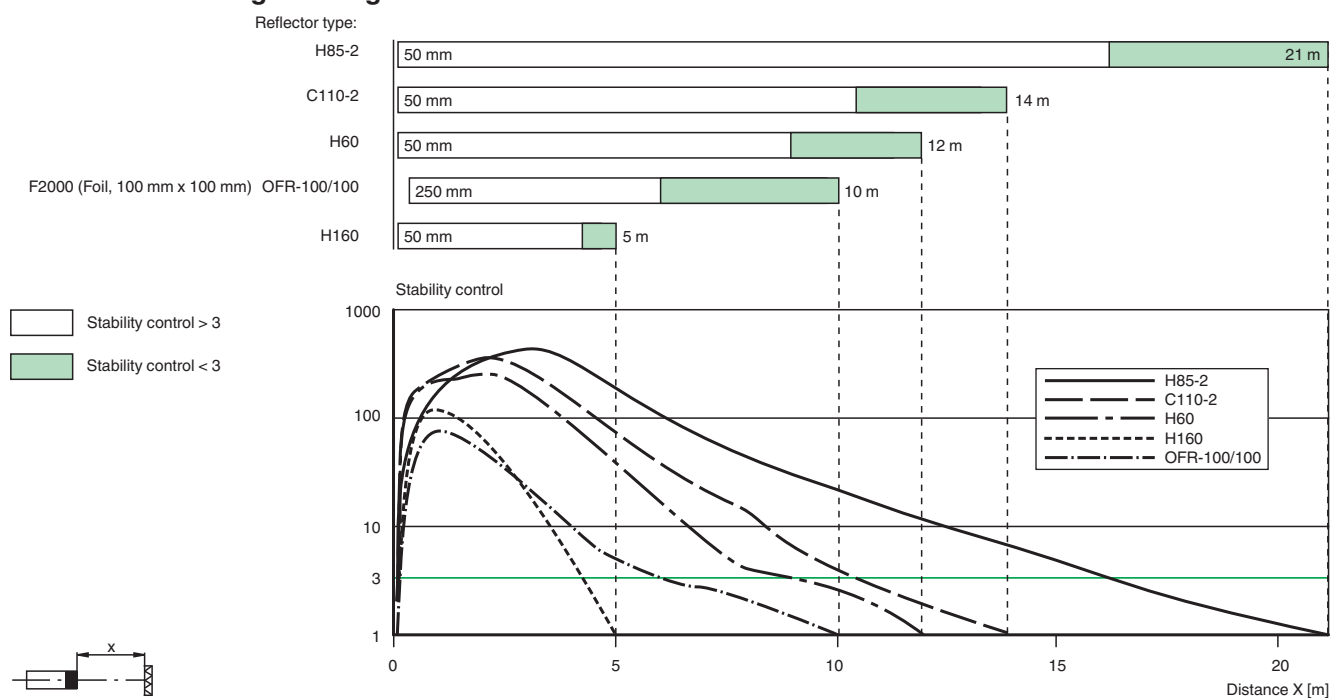
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## Characteristic Curve

### Characteristic response curve



### Relative received light strength



## Application



## Accessories

|                                                                                   |                     |                                                               |
|-----------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------|
|  | <b>OMH-05</b>       | Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm |
|  | <b>OMH-21</b>       | Mounting bracket: mounting aid for sensors in the RL* series  |
|  | <b>OMH-22</b>       | Mounting aid for RL* series                                   |
|  | <b>OMH-RLK29-HW</b> | Mounting bracket for rear wall mounting                       |
|  | <b>OMH-RL28-C</b>   | Weld slag cover model                                         |