



## Retroreflective sensor ML300-55-2m-RT/25/98/102



- Miniature design
- Easy to use
- Visible red light
- 45° connector

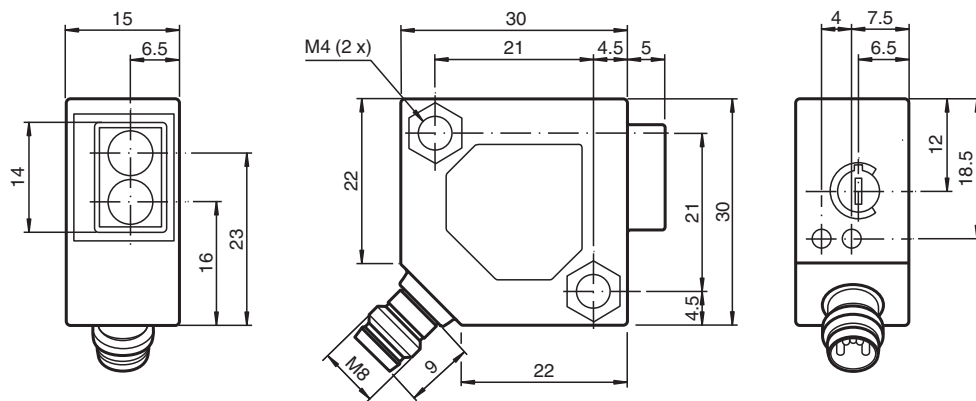
Retroreflective sensor for standard applications, miniature design, polarization filter, 3.5 m detection range, red light, light on, NPN output, M8 plug



### Function

The ML300 series has a robust miniature housing and all the standard functional principles. Of particular note are the sensors with analog output, which return a value proportional to the distance. The 45° plug/cable connection ensures flexible mounting. An LED indicates a weak signal, e.g. due to dirt.

### Dimensions



## Technical Data

### General specifications

|                            |                                      |
|----------------------------|--------------------------------------|
| Effective detection range  | 0 ... 2 m                            |
| Reflector distance         | 0.02 ... 2 m                         |
| Threshold detection range  | 3.5 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. 200 mm at 2 m                |
| Opening angle              | approx. 6 °                          |
| Ambient light limit        |                                      |
| Continuous light           | 10000 Lux                            |
| Modulated light            | 5000 Lux                             |

### Indicators/operating means

|                    |                                                                                        |
|--------------------|----------------------------------------------------------------------------------------|
| Function indicator | LED yellow: lights up when output is active<br>LED green: Sufficient stability control |
| Control elements   | sensitivity adjustment                                                                 |

### Electrical specifications

|                        |       |                |
|------------------------|-------|----------------|
| Operating voltage      | $U_B$ | 10 ... 30 V DC |
| Ripple                 |       | max. 10 %      |
| No-load supply current | $I_0$ | max. 25 mA     |

### Output

|                     |                |                                                                                   |
|---------------------|----------------|-----------------------------------------------------------------------------------|
| Switching type      | light-on       |                                                                                   |
| Signal output       |                | 1 NPN output, short-circuit protected, reverse polarity protected, open collector |
| Switching voltage   | max. 30 V DC   |                                                                                   |
| Switching current   |                | max. 0.1 A                                                                        |
| Voltage drop        | U <sub>d</sub> | ≤ 2 V DC                                                                          |
| Switching frequency | f              | 1000 Hz                                                                           |
| Response time       | 0.5 ms         |                                                                                   |

### Conformity

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

### Compliance with standards and directives

|                             |                                                   |
|-----------------------------|---------------------------------------------------|
| Standard conformity         |                                                   |
| Shock and impact resistance | EN 60947-5-7 30 g, 11 ms, all axes                |
| Vibration resistance        | EN 60947-5-7, 10-55 Hz/1.5 mm amplitude, all axes |

### Approvals and certificates

|              |                                                                    |
|--------------|--------------------------------------------------------------------|
| CCC approval | CCC approval / marking not required for products rated $\leq 36$ V |
|--------------|--------------------------------------------------------------------|

### Ambient conditions

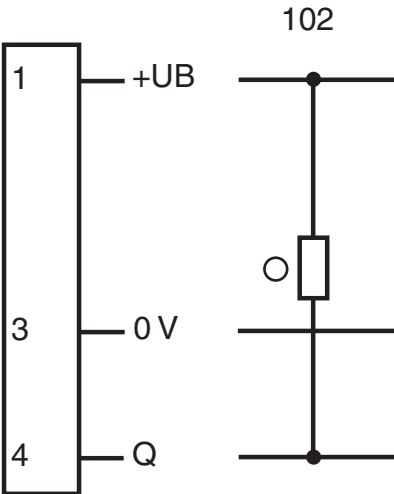
|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -25 ... 55 °C (-13 ... 131 °F) |
|---------------------|--------------------------------|

### Mechanical specifications

|                      |                         |
|----------------------|-------------------------|
| Housing width        | 30 mm                   |
| Housing height       | 30 mm                   |
| Housing depth        | 15 mm                   |
| Degree of protection | IP65                    |
| Connection           | M8 x 1 connector, 3-pin |
| Material             |                         |
| Housing              | ABS                     |
| Optical face         | plastic                 |
| Connector            | metal                   |
| Mass                 | 18 g                    |

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Connection Assignment



○ = Light on  
● = Dark on

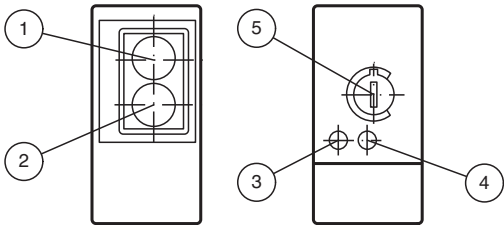
Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

Assembly

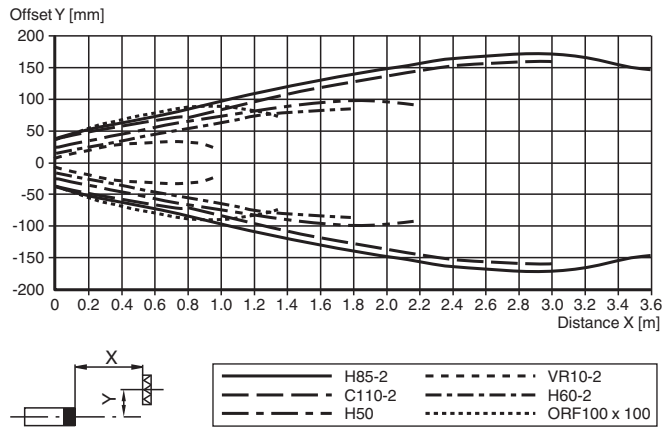


|   |                        |        |
|---|------------------------|--------|
| 1 | Receiver               |        |
| 2 | Emitter                |        |
| 3 | Switching state        | yellow |
| 4 | Stability control      | green  |
| 5 | Sensitivity adjustment |        |

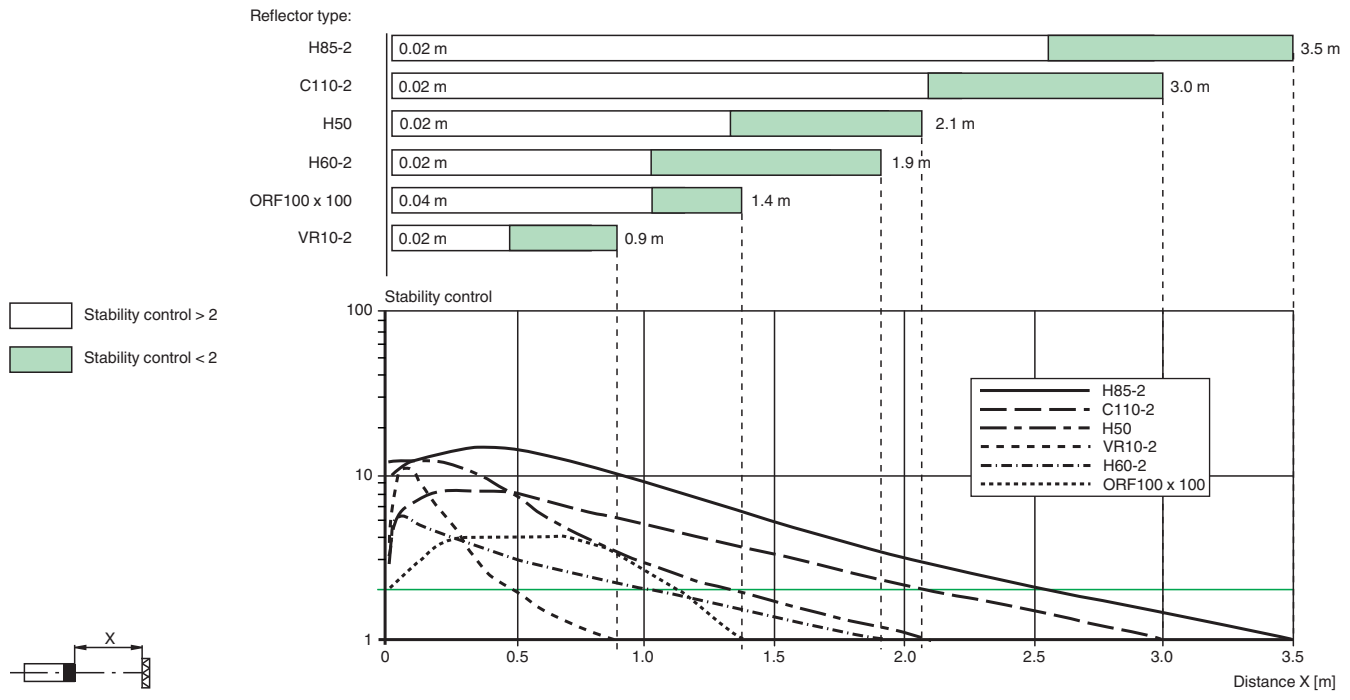
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Characteristic Curve

Characteristic response curve



Relative received light strength



Accessories

|                                                                                     |                     |                                                                        |
|-------------------------------------------------------------------------------------|---------------------|------------------------------------------------------------------------|
|  | <b>OMH-ML300-01</b> | Bracket for mounting ML300 series sensors                              |
|  | <b>V3-GM-2M-PVC</b> | Female cordset single-ended M8 straight A-coded, 3-pin, PVC cable grey |
|  | <b>V3-WM-2M-PVC</b> | Female cordset single-ended M8 angled A-coded, 3-pin, PVC cable grey   |
|  | <b>V3-WM-2M-PUR</b> | Female cordset single-ended M8 angled A-coded, 3-pin, PUR cable grey   |
|  | <b>REF-H85-2</b>    | Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes               |

Accessories

|                                                                                   |                    |                                                                    |
|-----------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------|
|  | <b>REF-C110-2</b>  | Reflector, round ø 84 mm, central mounting hole                    |
|  | <b>REF-H50</b>     | Reflector, rectangular 51 mm x 61 mm, mounting holes, fixing strap |
|  | <b>REF-H60-2</b>   | Reflector with mounting holes                                      |
|  | <b>OFR-100/100</b> | Reflective tape 100 mm x 100 mm                                    |

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