



## Retroreflective area sensor

RLG28-55/40a/73c/136



- Retro-reflective area sensor with 6 light beams in standard photoelectric-sensor enclosure
- Connection compatibly replaces single beam photoelectric sensor
- Reliable detection of the front edge of the object irrespective of its shape and position
- Constant object detection from 12 mm within the entire detection area
- Reliable detection of all surfaces irrespective of the object texture
- Switches when contrast difference 10%
- Bright, highly visible transmitter beams guarantee convenient alignment of the sensor

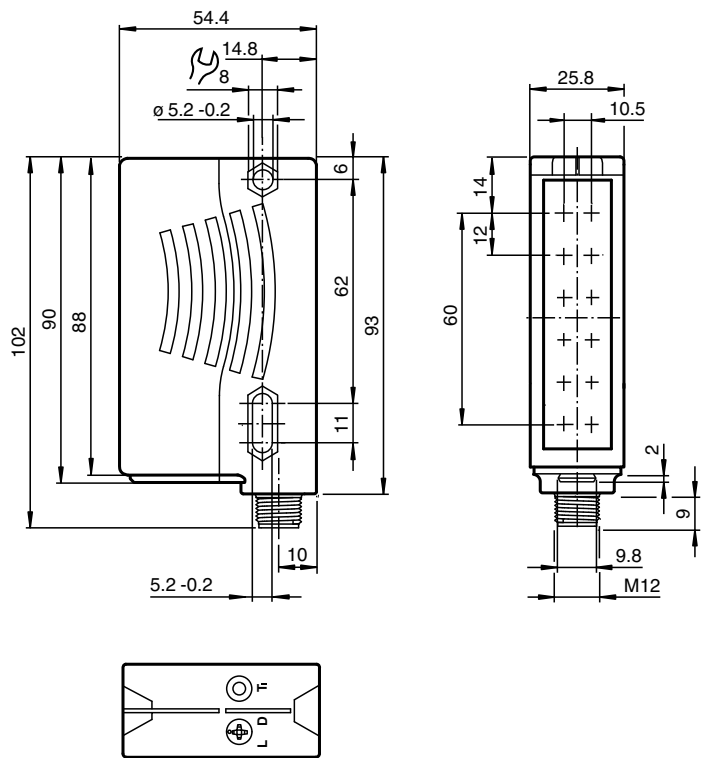
Retroreflective area sensor with 6 beams in a widely used standard photoelectric housing, red light, 4 m detection range, light/dark on switchable, push-pull output, M12 plug



### Function

The RLG28 retro-reflective area sensor contains several transmitters and receivers in one housing and with a reflector positioned opposite forms a 60 mm detection area over a sensing range of 4 m. When the light beams are interrupted by an object, the switching function is triggered. The smallest detectable object size is 12 mm. The RLG28 switches at a 10% contrast difference with a response time of 1 ms. An intelligent gain control compensates for effects such as dirt, misalignment, and temperature.

Dimensions



Technical Data

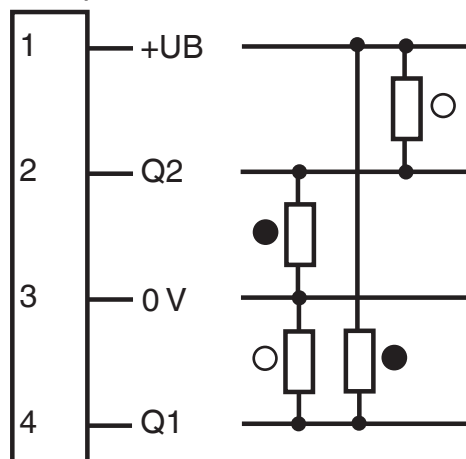
|                                             |                                                                                                                                                        |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General specifications</b>               |                                                                                                                                                        |
| Effective detection range                   | 0 ... 4 m                                                                                                                                              |
| Reflector distance                          | Reflector A80: 0.4 ... 4 m , H85-2 reflector: 0.2 ... 4 m , Foil reflector OFR-100/100: 0.4 ... 3 m                                                    |
| Threshold detection range                   | 5.6 m                                                                                                                                                  |
| Sensing range                               | typical 60 mm , Object has to cover the refelector completely in one dimension                                                                         |
| Reference target                            | Reflector A80 H85-2 reflector Foil reflector OFR-100/100                                                                                               |
| Light source                                | LED                                                                                                                                                    |
| Light type                                  | modulated visible red light , 625 nm                                                                                                                   |
| Polarization filter                         | yes                                                                                                                                                    |
| Number of beams                             | 6                                                                                                                                                      |
| Diameter of the light spot                  | approx. 220 mm at detection range 4 m                                                                                                                  |
| Angle of divergence                         | +/- 2.5 °                                                                                                                                              |
| Ambient light limit                         | 5000 Lux                                                                                                                                               |
| Resolution                                  | 12 mm                                                                                                                                                  |
| <b>Functional safety related parameters</b> |                                                                                                                                                        |
| MTTF <sub>d</sub>                           | 310 a                                                                                                                                                  |
| Mission Time (T <sub>M</sub> )              | 20 a                                                                                                                                                   |
| Diagnostic Coverage (DC)                    | 0 %                                                                                                                                                    |
| <b>Indicators/operating means</b>           |                                                                                                                                                        |
| Operation indicator                         | LED green, statically lit Power on<br>Undervoltage indicator: Green LED, pulsing (approx. 0.8 Hz)<br>short-circuit : LED green flashing (approx. 4 Hz) |

## Technical Data

|                                   |       |                                                                                                                                                                                                                                                                          |
|-----------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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<br>Teach-In : LED yellow/green; equiphase flashing; 2,5 Hz<br>Changeover signal tracking: LED yellow, 1 Hz flashing / 2x flashing |
| Control elements                  |       | rotary switch for light/dark , Teach-In key                                                                                                                                                                                                                              |
| <b>Electrical specifications</b>  |       |                                                                                                                                                                                                                                                                          |
| Operating voltage                 | $U_B$ | 12 ... 30 V DC                                                                                                                                                                                                                                                           |
| Ripple                            |       | max. 10 %                                                                                                                                                                                                                                                                |
| No-load supply current            | $I_0$ | max. 50 mA                                                                                                                                                                                                                                                               |
| <b>Output</b>                     |       |                                                                                                                                                                                                                                                                          |
| Switching type                    |       | light/dark on, switchable                                                                                                                                                                                                                                                |
| Signal output                     |       | 2 push-pull (4 in 1) outputs, complementary, short-circuit proof, reverse polarity protected                                                                                                                                                                             |
| Switching voltage                 |       | max. 30 V DC                                                                                                                                                                                                                                                             |
| Switching current                 |       | max. 100 mA                                                                                                                                                                                                                                                              |
| Voltage drop                      | $U_d$ | $\leq 2.5$ V DC                                                                                                                                                                                                                                                          |
| Switching frequency               | $f$   | 230 Hz                                                                                                                                                                                                                                                                   |
| Response time                     |       | 1 ms                                                                                                                                                                                                                                                                     |
| <b>Conformity</b>                 |       |                                                                                                                                                                                                                                                                          |
| Product standard                  |       | EN 60947-5-2                                                                                                                                                                                                                                                             |
| <b>Approvals and certificates</b> |       |                                                                                                                                                                                                                                                                          |
| UL approval                       |       | cULus Listed, Class 2 Power Source                                                                                                                                                                                                                                       |
| CCC approval                      |       | CCC approval / marking not required for products rated $\leq 36$ V                                                                                                                                                                                                       |
| <b>Ambient conditions</b>         |       |                                                                                                                                                                                                                                                                          |
| Ambient temperature               |       | -30 ... 60 °C (-22 ... 140 °F)<br>-10 ... 40 °C (14 ... 104 °F) for inactive signal tracking                                                                                                                                                                             |
| Storage temperature               |       | -40 ... 70 °C (-40 ... 158 °F)                                                                                                                                                                                                                                           |
| <b>Mechanical specifications</b>  |       |                                                                                                                                                                                                                                                                          |
| Housing width                     |       | 25.8 mm                                                                                                                                                                                                                                                                  |
| Housing height                    |       | 88 mm                                                                                                                                                                                                                                                                    |
| Housing depth                     |       | 54.3 mm                                                                                                                                                                                                                                                                  |
| Degree of protection              |       | IP67                                                                                                                                                                                                                                                                     |
| Connection                        |       | 4-pin, M12 x 1 connector                                                                                                                                                                                                                                                 |
| Material                          |       |                                                                                                                                                                                                                                                                          |
| Housing                           |       | Plastic ABS                                                                                                                                                                                                                                                              |
| Optical face                      |       | Plastic pane                                                                                                                                                                                                                                                             |
| Mass                              |       | 100 g                                                                                                                                                                                                                                                                    |

## Connection Assignment

Option:



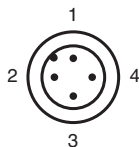
Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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○ = Light on

● = Dark on

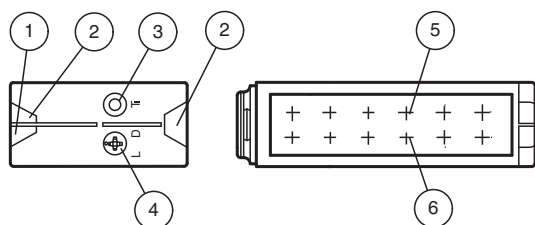
## Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

## Assembly



|   |                   |        |
|---|-------------------|--------|
| 1 | Operating display | green  |
| 2 | Signal display    | yellow |
| 3 | TEACH-IN button   |        |
| 4 | Light/dark switch |        |
| 5 | Emitter           |        |
| 6 | Receiver          |        |

## 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-RLK29-HW</b> | Mounting bracket for rear wall mounting                                 |
|  | <b>OMH-K01</b>      | dove tail mounting clamp                                                |
|  | <b>REF-H85-2</b>    | Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes                |
|  | <b>V1-G-2M-PVC</b>  | Female cordset single-ended M12 straight A-coded, 4-pin, PVC cable grey |
|  | <b>V1-G-2M-PUR</b>  | Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey |
|  | <b>V1-W-2M-PUR</b>  | Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey   |
|  | <b>REF-A80</b>      | Reflector, rectangular 80 mm x 50 mm, self-adhesive                     |

Release date: 2021-09-29 Date of issue: 2021-09-29 Filename: 210597\_eng.pdf

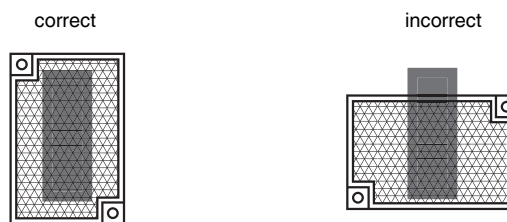
## Additional Information

### Mounting:

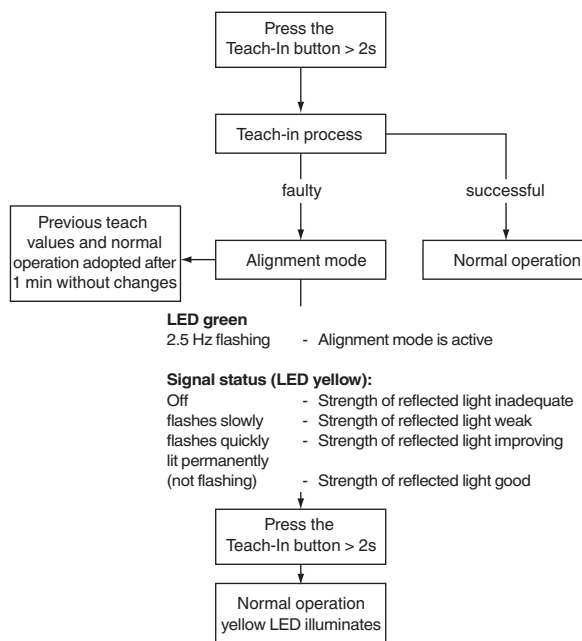
Ensure that the red light transmitted by the sensor fully illuminates the reflector.

To ensure optimal detection, the entire 60 mm detection field must appear on the reflector.

To check this illumination, look at the reflector from over the top of the sensor housing.



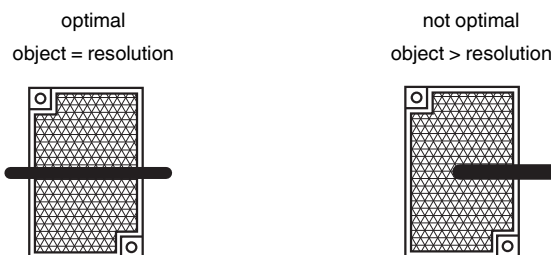
### Teach-in:



More stringent adjustment requirements: Ensure that the device is correctly aligned in the near range of 0.2 m ... 0.6 m.

### Object detection after successful Teach-in

The target should be large enough so that the reflector is always completely covered in one dimension!



### Signal tracking:

#### Active:

- At variable temperature
- Objects located in the light path that lie below the switching point. These objects result in a readjustment of the emitter. This allows these objects to be taught in or taught out.

#### Inactive:

- Function not available

To alter the signal tracking, press the Teach-in button for > 10 seconds. The current status is displayed. Briefly pressing the Teach-in button changes the mode.

