



Model Number

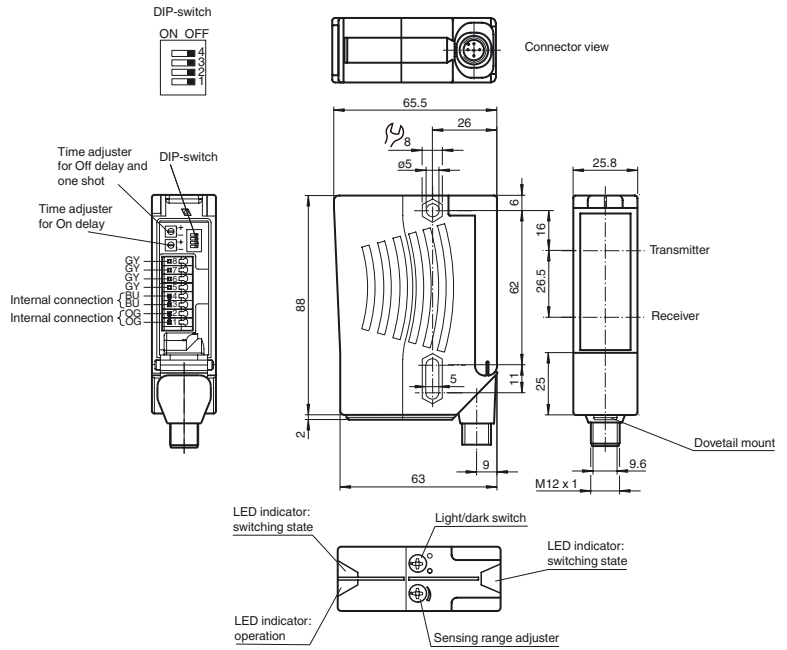
RL28-8-H-700-IR-Z/110/112

Background suppression sensor with metal connector M12; 5-pin, 90° convertible

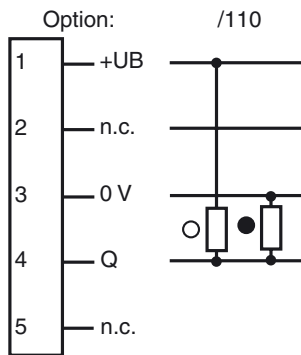
Features

- Ultra bright LEDs for power on and switching state
- Minimal black/white difference through the infrared transmission LED
- Programmable time function GAN, GAB, IAB and GAN-IAB as double function
- Not sensitive to ambient light, even with energy saving lamps
- Waterproof, protection degree IP67

Dimensions

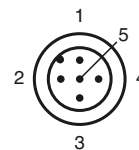


Electrical connection



○ = Light on
● = Dark on

Pinout



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Subject to modifications without notice

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Technical data**General specifications**

| | |
|-----------------------------------|---|
| Detection range | 20 ... 700 mm |
| Detection range min. | 20 ... 200 mm |
| Detection range max. | 20 ... 700 mm |
| Background suppression | max. + 10 % of the upper limit of the detection range |
| Light source | IREd |
| Light type | modulated infrared light , 880 nm |
| Black/White difference (6 %/90 %) | < 8 % |
| Diameter of the light spot | approx. 24 mm at a distance of 700 mm |
| Angle of divergence | transmitter 2° receiver 2° |
| Ambient light limit | 50000 Lux |

Functional safety related parameters

| | |
|--------------------------------|--------|
| MTTF _d | 1130 a |
| Mission Time (T _M) | 20 a |
| Diagnostic Coverage (DC) | 0 % |

Indicators/operating means

| | |
|-------------------|---|
| Operating display | LED green |
| Function display | 2 LEDs yellow ON: object inside the scanning range OFF: object outside the scanning range |
| Controls | Light/Dark switch |
| Controls | Detection range adjuster |

Electrical specifications

| | | |
|------------------------|----------------|----------------|
| Operating voltage | U _B | 10 ... 30 V DC |
| Ripple | | 10 % |
| No-load supply current | I ₀ | 40 mA |

Output

| | | |
|---------------------|---|--------|
| Switching type | light/dark on, switchable (selectable, light/dark switching is only activated if the receiver has 'dark on' selected.) | |
| Signal output | 1 push-pull output, short-circuit protected, reverse polarity protected | |
| Switching voltage | max. 30 V DC | |
| Switching current | max. 100 mA | |
| Switching frequency | f | 250 Hz |
| Response time | 2 ms | |
| Timer function | ON delay (GAN), OFF delay (GAB), one shot (IAB), ON delay-one shot (GAN-IAB), programmable adjustment interval 0.02 s ... 1 s | |

Ambient conditions

| | |
|---------------------|--------------------------------|
| Ambient temperature | -40 ... 60 °C (-40 ... 140 °F) |
| Storage temperature | -40 ... 75 °C (-40 ... 167 °F) |

Mechanical specifications

| | |
|-------------------|---|
| Protection degree | IP67 |
| Connection | 5-pin, M12 x 1 connector, 90° rotatable |
| Material | |
| Housing | Plastic ABS |
| Optical face | plastic |
| Connector | metal |
| Mass | approx. 100 g |

Compliance with standards and directives

| | |
|---------------------|-------------------|
| Standard conformity | |
| Product standard | EN 60947-5-2:2007 |

Approvals and certificates

| | |
|--------------|--|
| UL approval | cULus |
| CCC approval | Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval. |

Accessories**OMH-05**

Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

OMH-07

Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

OMH-21

Mounting bracket

OMH-22

Mounting bracket

OMH-MLV11-K

dove tail mounting clamp

OMH-RLK29

Mounting bracket

OMH-RLK29-HW

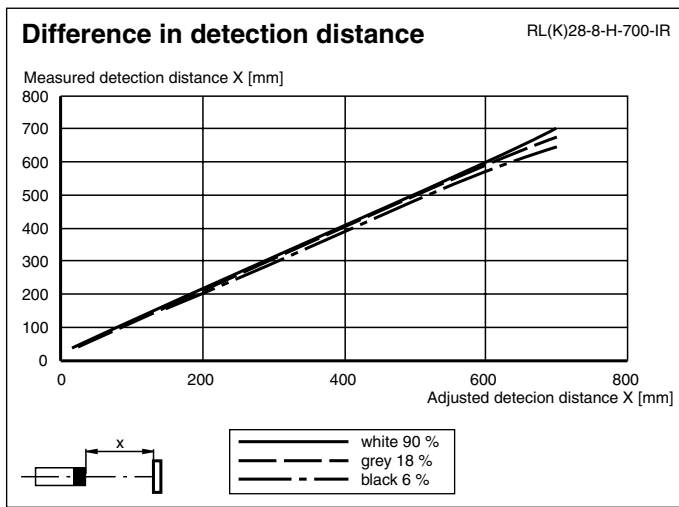
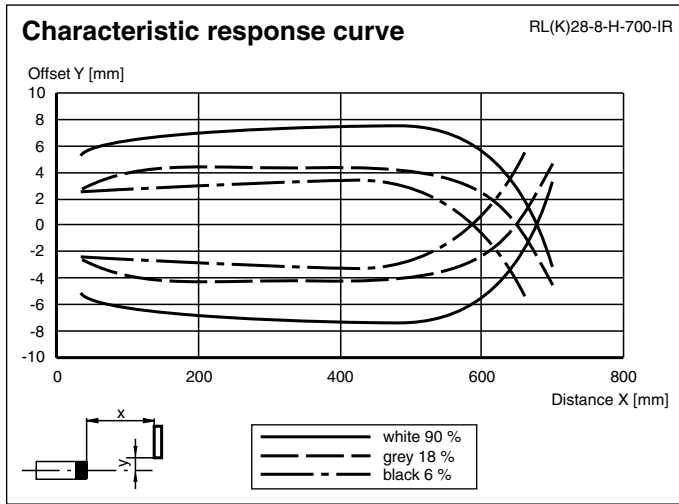
Mounting bracket for rear wall mounting

OMH-RL28-C

Protective cover

Other suitable accessories can be found at www.pepperl-fuchs.com

Curves/Diagrams



Timer functions

| Timer function | Switching type | Receiver exposed | Receiver dark |
|----------------|----------------|------------------|---------------|
| ON Without | Light | ON | OFF |
| ON ON delay | Light | ON | OFF |
| ON OFF delay | Light | ON | OFF |
| ON one shot | Light | ON | OFF |

Time t_{ON} , t_{OFF} and t_{OS} are adjustable from 0.02 to 1 seconds.
The Light-/Dark-Switch (Left, outer switch) is shown in the "Dark ON" position.

| Type | Description | Notes |
|------|----------------------------------|--|
| -Z | OFF delay timer | Adjustable time interval (0.02 s - 10 s) |
| | one shot timer | |
| | ON delay timer | |
| | ON delay timer / OFF delay timer | |
| | ON delay timer / one shot timer | |

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Additional information

Intended use:

The transmitter and receiver are located in the same housing for direct detection sensors with background masking. Marking of objects outside the detection range is achieved by arranging the angle between the transmitter and receiver (2 receiver elements).

Objects are detected independently of their surface structures, brightness and colour, as well as the brightness of the background.

Mounting instructions:

The sensors can be fastened directly with fixing screws or with a support bracket (not included with delivery).

The surface underneath must be flat to prevent the housing from moving when it is tightened into position. We recommend securing the nut and screw in place with spring washers to prevent the sensor from going out of adjustment.

Adjustment:

After the operating voltage is applied, the LED is lit green.

Align the sensor to the background. If the yellow LED is lit, the detection range should be reduced with the detection range adjuster until the yellow LED goes out.

Object direction:

Place the object to be detected at the desired maximum detection range and align the light spot to it. If the object is detected, the yellow LED lights up.

If it does not light up, the detection range must be adjusted on the potentiometer until it lights up when an object is detected.

Cleaning:

We recommend cleaning the optical surface and checking the screwed connection and other connections at regular intervals.