



Model Number

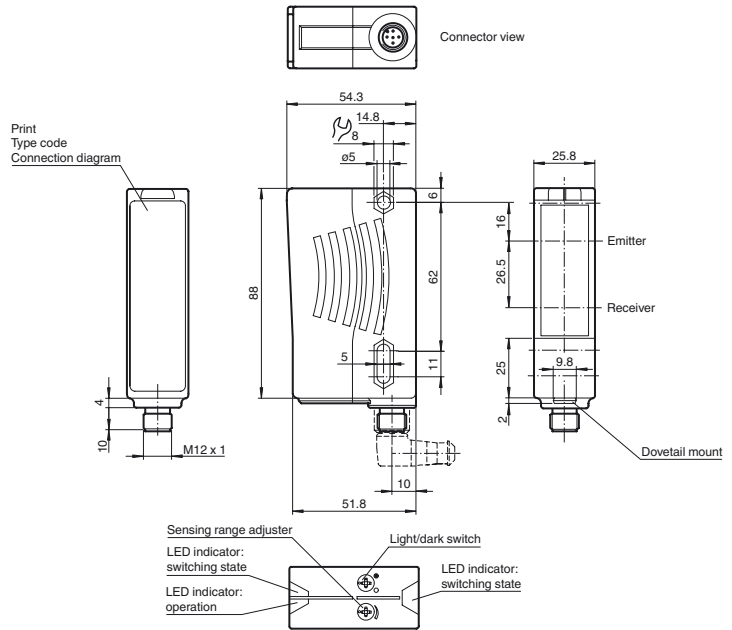
RL28-8-H-400-FFP-RT/47/105

Background suppression sensor with 5-pin, M12 x 1 plastic connector

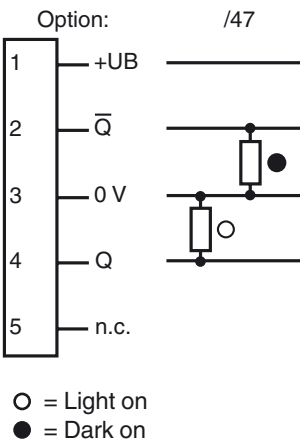
Features

- Special range of application: Specialised fine positioning
- Ultra bright LEDs for power on and switching state
- Good alignability due to red transmission LED
- Not sensitive to ambient light, even with switched energy saving lamps
- Waterproof, degree of protection IP67
- Protection class II

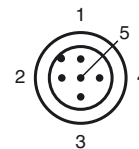
Dimensions



Electrical connection



Pinout



Release date: 2015-10-28 14:33 Date of issue: 2015-10-28 117317_eng.xml

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

Technical data**General specifications**

| | |
|---------------------------------|---|
| Detection range | 20 ... 400 mm |
| Detection range min. | 20 ... 150 mm |
| Detection range max. | 20 ... 400 mm |
| Adjustment range | 150 ... 400 mm |
| Background suppression | max. + 10 % of the upper limit of the detection range |
| Light source | LED |
| Light type | modulated visible red light , 660 nm |
| Black/White difference (6%/90%) | < 15 % |
| Diameter of the light spot | 4 mm x 4 mm at a distance of 250 mm |
| Angle of divergence | Emitter 1.2°, Receiver 2° |
| Ambient light limit | 50000 Lux |

Functional safety related parameters

| | |
|--------------------------------|-------|
| MTTF _d | 720 a |
| Mission Time (T _M) | 20 a |
| Diagnostic Coverage (DC) | 0 % |

Indicators/operating means

| | |
|---------------------|---|
| Operation indicator | LED green |
| Function indicator | 2 LEDs yellow ON: object inside the scanning range OFF: object outside the scanning range |
| Control elements | Detection range adjuster , Light/Dark switch |

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 | |
| Signal output | 2 PNP, complementary, short-circuit protected, reverse polarity protected , open collectors | |
| Switching voltage | max. 30 V DC | |
| Switching current | max. 200 mA | |
| Switching frequency | f | 250 Hz |
| Response time | 2 ms | |

Ambient conditions

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

Mechanical specifications

| | |
|----------------------|--------------------------|
| Degree of protection | IP67 |
| Connection | 5-pin, M12 x 1 connector |
| Material | |
| Housing | Plastic ABS |
| Optical face | plastic |
| Connector | plastic |
| Mass | 70 g |

Compliance with standards and directives

| | |
|---------------------------|---|
| Directive conformity | |
| EMC Directive 2004/108/EC | EN 60947-5-2:2007 + A1:2012 |
| Standard conformity | |
| Product standard | EN 60947-5-2:2007 + A1:2012 IEC 60947-5-2:2007 + A1:2012 |
| Standards | UL 60947-5-2: 2014 EN 62471:2008 |

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 |

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-HW

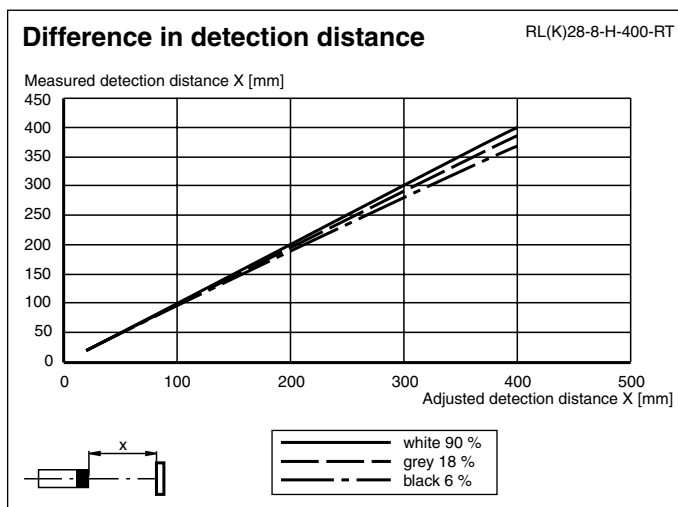
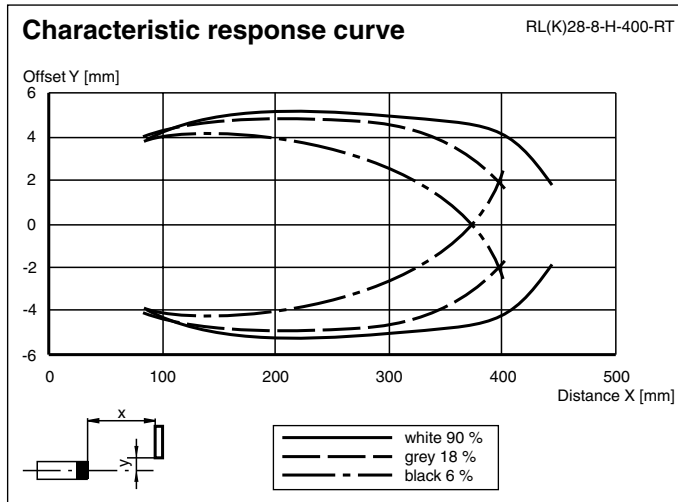
Mounting bracket for rear wall mounting

OMH-RL28-C

Weld slag cover model

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

Curves/Diagrams



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.