



**Model Number**

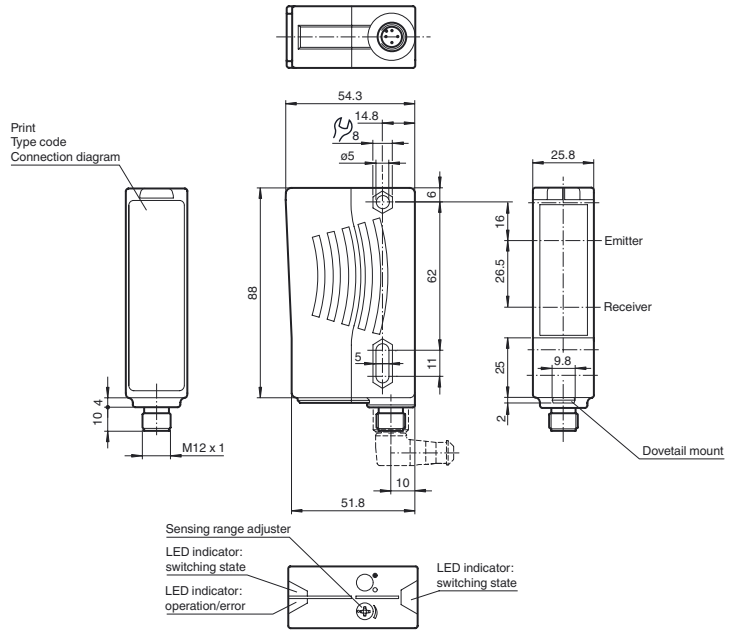
**RL28-8-H-400-RT-B3B/73c**

Background suppression sensor with 4-pin, M12 x 1 plastic connector

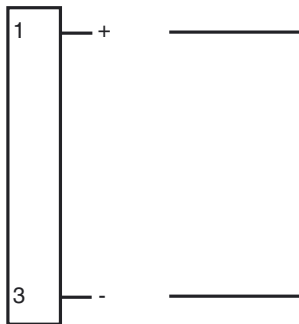
**Features**

- Sensor with AS interface according to Spec. 2.11
- 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, protection degree IP67
- Protection class II

**Dimensions**

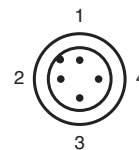


**Electrical connection**



○ = 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 ... 400 mm
Detection range min.	20 ... 150 mm
Detection range max.	20 ... 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 %)	< 10 %
Diameter of the light spot	approx. 12 mm at a distance of 400 mm
Angle of divergence	Emitter 1.2°, Receiver 2°
Ambient light limit	50000 Lux

**Functional safety related parameters**

MTTF <sub>d</sub>	1480 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	60 %

**Indicators/operating means**

Operating display	dual-LED green/red green: AS-Interface voltage, normal operation red: communication error or address 0 red/green flashing: peripherie fault
Function display	2 LEDs yellow ON: object inside the scanning range OFF: object outside the scanning range

**Electrical specifications**

Operating voltage	U <sub>B</sub>	26.5 ... 31.6 V via AS-Interface network , min. 18.5 V
No-load supply current	I <sub>0</sub>	≤ 40 mA

**Input**

Test input	Data bit D2: 0: emitter on 1: emitter off
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**Output**

Switching type	light/dark on switchable via AS-i bus system	
Signal output	AS-Interface	
Switching frequency	f	250 Hz
Response time	2 ms	
Timer function	Impulsed off-delay IAB, 50 ms, switchable via AS-Interface	

**Ambient conditions**

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

**Mechanical specifications**

Protection degree	IP67
Connection	connector M12 x 1, 4-pin
Material	
Housing	Plastic ABS
Optical face	plastic
Connector	plastic
Mass	70 g

**Compliance with standards and directives**

Standard conformity	
Product standard	EN 60947-5-2:2007
Standards	EN 50295 AS-i Complete Spec 2.11

**Approvals and certificates**

Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.

**Accessories****VBP-HH1-V3.0-KIT**

AS-Interface Handheld with accessory

**VBP-HH1**

Handheld programming device

**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**

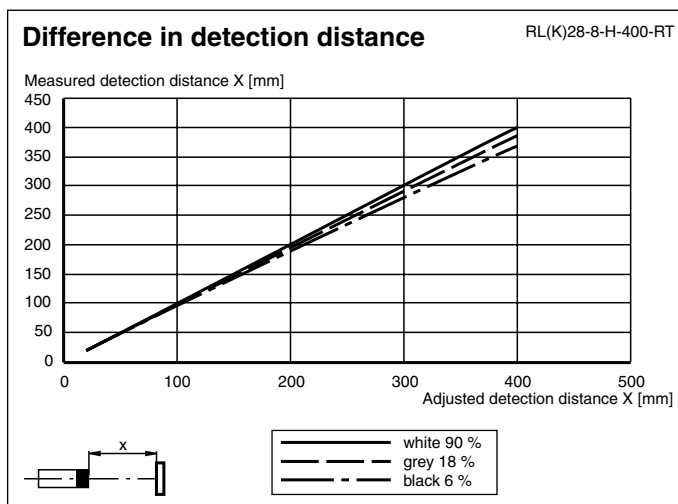
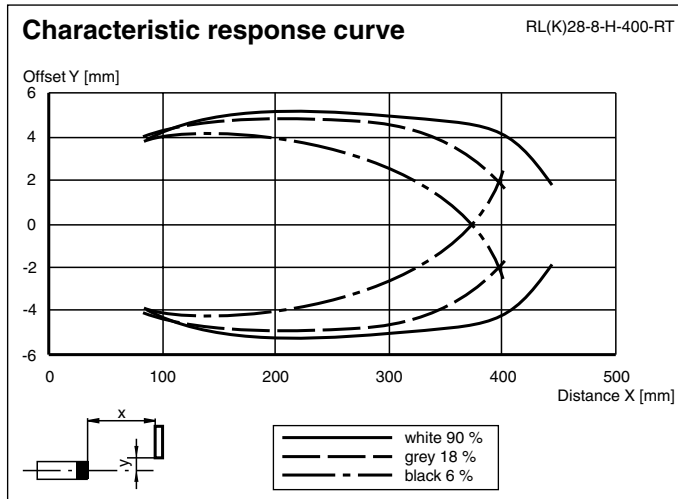
Mounting bracket for rear wall mounting

**OMH-RL28-C**

Protective cover

Other suitable accessories can be found at [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)

## Curves/Diagrams



## AS-Interface programming

<F id="261">Address preset to 00, can be changed via Busmaster or programming devices

IO-Code 3

ID-Code A

ID2 1

## • Data bit

<F id="263">Bitfunction

D0 Switch output (0=object detected, 1=no object detected) applies to P1=0

D1 not used

D2 Test function (0=emitter ON, 1=emitter OFF)

D3 not used

## • Parameter bit

<F id="263">Bitfunction (1/0)

P0 not used

P1 Light/dark-changeover switch (0=DS, 1=HS)

P2 Time function IAB, 50 ms (0=time ON, 1=time OFF)

P3 not used

## 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.