



**Model Number**

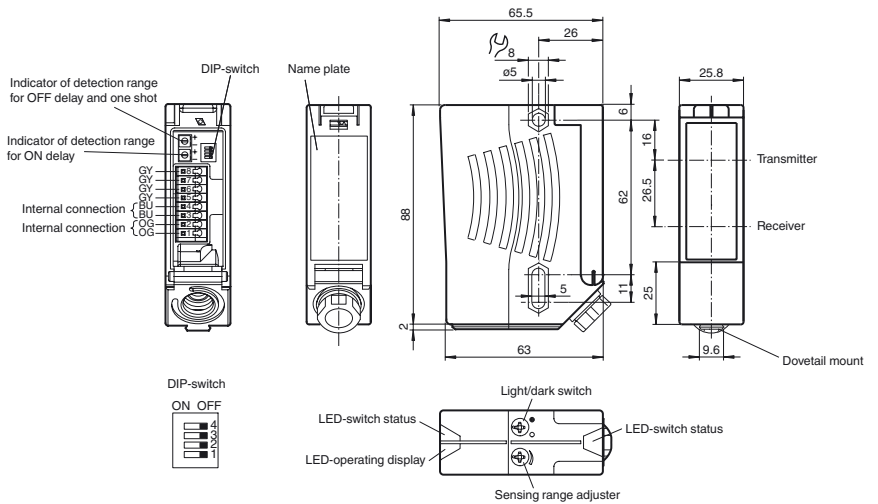
**RL28-8-H-700-RT-Z/49/116**

Background suppression sensor with terminal compartment

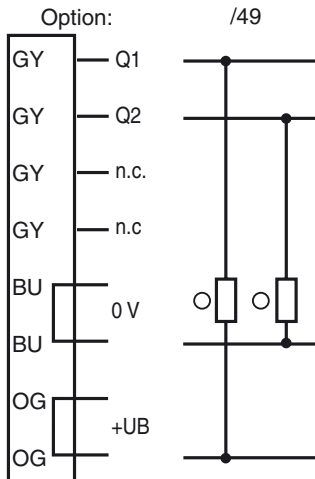
**Features**

- Ultra bright LEDs for power on and switching state
- Good alignability due to red transmission LED
- Programmable time function GAN, GAB, IAB as well as GAN-IAB and GAN-GAB as double function
- Not sensitive to ambient light, even with switched energy saving lamps
- Waterproof, degree of protection IP67
- Protection class II

**Dimensions**



**Electrical connection**



○ = Light on  
● = Dark on

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

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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	LED
Light type	modulated visible red light , 660 nm
Black/White difference (6 %/90 %)	< 20 %
Diameter of the light spot	approx. 15 mm at a distance of 700 mm
Angle of divergence	Emitter 1.2°, Receiver 2°
Ambient light limit	50000 Lux

**Functional safety related parameters**

MTTF <sub>d</sub>	720 a
Mission Time (T <sub>M</sub> )	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	Sensing range adjuster , Light-on/dark-on changeover switch

**Electrical specifications**

Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		10 %
No-load supply current	I <sub>0</sub>	≤ 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 NPN, 1 PNP synchronized-switching, 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
Timer function	ON delay (GAN), OFF delay (GAB), one shot (IAB), ON delay-one shot (GAN-IAB), ON delay-OFF delay (GAN-GAB), programmable adjustment interval 0.02 s ... 1 s	

**Conformity**

Product standard	EN 60947-5-2
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**Ambient conditions**

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

**Mechanical specifications**

Housing width	25.8 mm
Housing height	88 mm
Housing depth	65.5 mm
Degree of protection	IP67
Connection	terminal compartment with 8 spring-loaded terminals for wire cross section 0.5 ... 1.5 mm <sup>2</sup> , insulation stripping 7.5 ... 8.5 mm, M16 x 1.5 cable gland
Material	
Housing	Plastic ABS
Optical face	plastic
Mass	112 g

**Approvals and certificates**

Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 Caution! The protection class 2 is only valid when the terminal compartment is closed.
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**

Mounting bracket

**OMH-RLK29-HW**

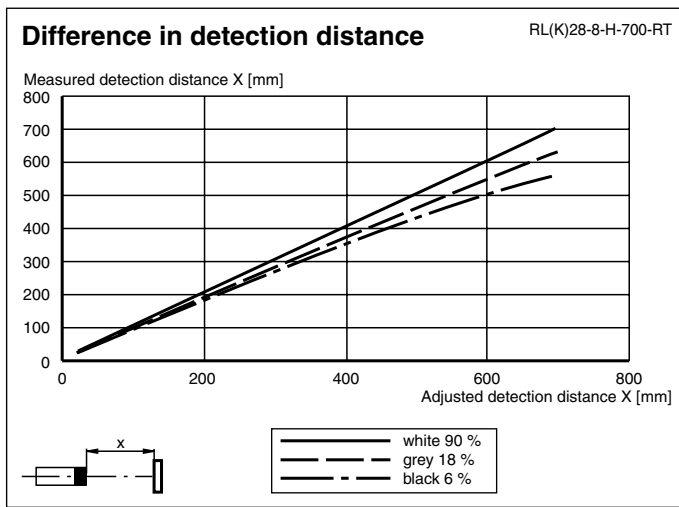
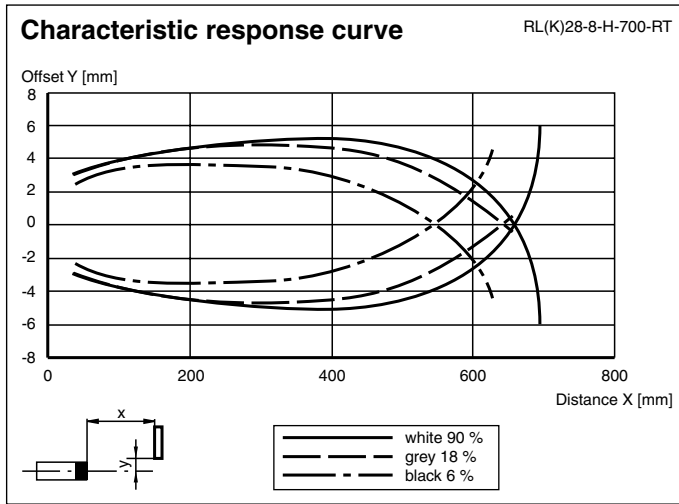
Mounting bracket for rear wall mounting

**OMH-RL28-C**

Weld slag cover model

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

Curves/Diagrams



Timer functions

Timer function	Switching type	Receiver exposed	Receiver dark
ON  Without	Light	ON	OFF
	Dark	OFF	ON
ON  ON delay	Light	ON	OFF
	Dark	ON	OFF
ON  OFF delay	Light	ON	OFF
	Dark	ON	OFF
ON  one shot	Light	ON	OFF
	Dark	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 - 1 s)
	one shot timer	
	ON delay timer	
	ON delay timer / OFF delay timer	
	ON delay timer / one shot timer	

Additional information

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

**Mounting instructions:**

There are two bore holes for mounting the sensor with M5 bolts. The base surface must be flat to avoid distorting the housing during mounting. It is advisable to secure the bolts with spring washers so that the sensor does not become misaligned.

Outdoor installation:

The sensor must be protected against rain and splash-water, possibly must a cover be installed.

**Adjustment:**

Adjust the sensor on the background. After the connecting to the power supply the green LED illuminates. In case the yellow LEDs illuminate too, the detection range needs to be reduced with the detection range adjuster, until the yellow LEDs is switched off. If the object is moved into the detection range the yellow LEDs illuminates.

**Driving inductive loads:**

If the sensor are used to drive inductive loads, the following safety procedures must be carried out:

For operating voltage of 10 ... 30 V DC: fit a protection diode, max. 200 mA