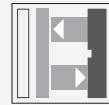




## Background suppression sensor

### RL28-8-H-700-IR/105/110

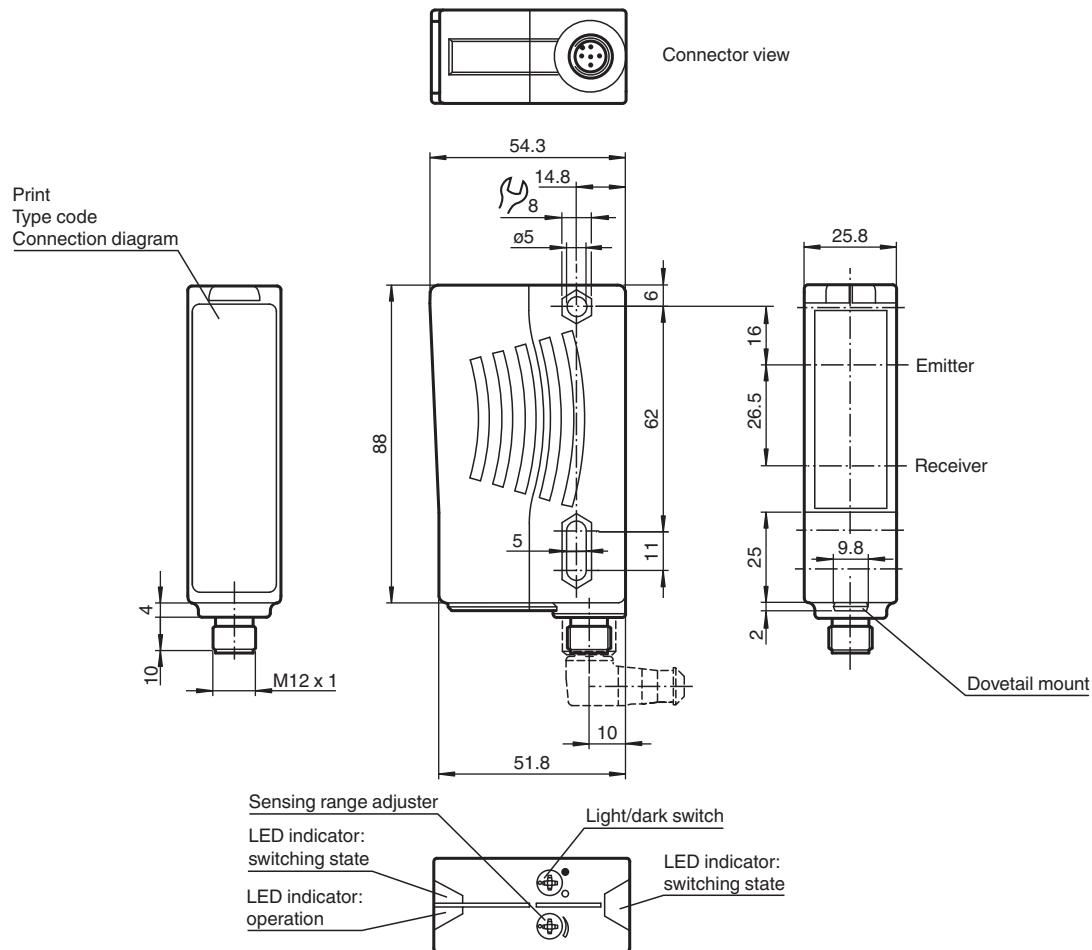


- Ultra bright LEDs for power on and switching state
- Minimal black-white difference through the infrared transmission LED
- Not sensitive to ambient light, even with energy saving lamps
- Waterproof, degree of protection IP67
- Protection class II

Background suppression sensor



## Dimensions



## Technical Data

### General specifications

Release date: 2021-11-11 Date of issue: 2021-11-11 Filename: 419617\_eng.pdf

Detection range	20 ... 700 mm
Detection range min.	20 ... 200 mm

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

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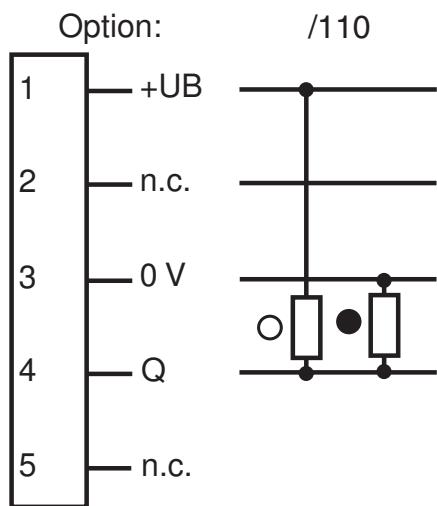
Singapore: +65 6779 9091  
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 PEPPERL+FUCHS

## Technical Data

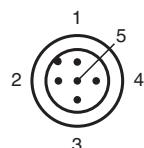
Detection range max.	20 ... 700 mm	
Background suppression	max. + 10 % of the upper limit of the detection range	
Light source	IRED	
Light type	modulated infrared light , 880 nm	
Black-white difference (6 %/90 %)	< 8 %	
Diameter of the light spot	approx. 24 mm at a distance of 700 mm	
Angle of divergence	transmitter 2° receiver 2°	
Ambient light limit	50000 Lux	
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>	720 a	
Mission Time (T <sub>M</sub> )	20 a	
Diagnostic Coverage (DC)	0 %	
<b>Indicators/operating means</b>		
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	
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	10 ... 30 V DC
Ripple		10 %
No-load supply current	I <sub>0</sub>	≤ 40 mA
<b>Output</b>		
Switching type	light/dark on switchable	
Signal output	1 push-pull (4 in 1) 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	
<b>Conformity</b>		
Product standard	EN 60947-5-2	
<b>Approvals and certificates</b>		
EAC conformity	TR CU 020/2011	
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	
<b>Ambient conditions</b>		
Ambient temperature	-40 ... 60 °C (-40 ... 140 °F)	
Storage temperature	-40 ... 75 °C (-40 ... 167 °F)	
<b>Mechanical specifications</b>		
Housing width	25.8 mm	
Housing height	88 mm	
Housing depth	54.3 mm	
Degree of protection	IP67	
Connection	5-pin, M12 x 1 connector	
Material		
Housing	Plastic ABS	
Optical face	plastic	
Connector	plastic	
Mass	70 g	

## Connection Assignment



○ = Light on  
 ● = Dark on

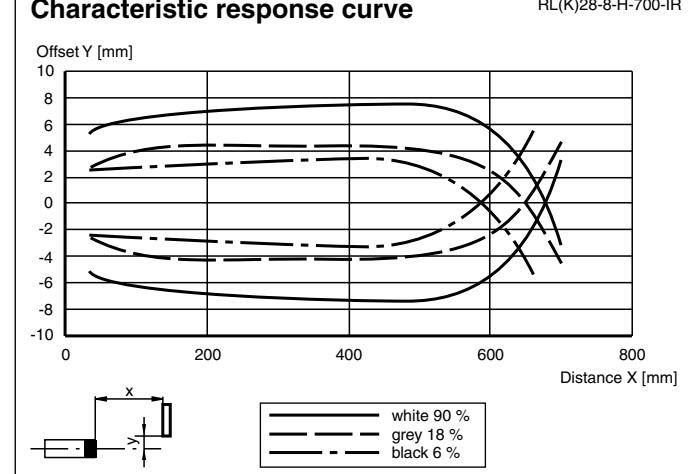
## Connection Assignment



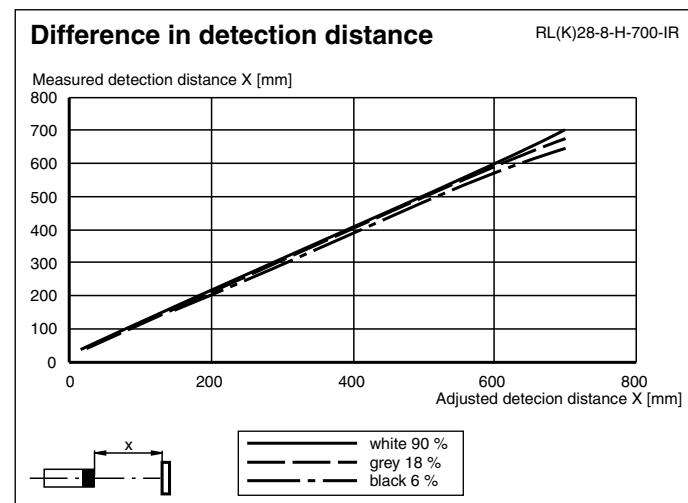
Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

## Characteristic Curve



## Characteristic Curve



## Application



## 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-22</b>	Mounting aid for RL* series
	<b>OMH-RLK29-HW</b>	Mounting bracket for rear wall mounting
	<b>OMH-RL28-C</b>	Weld slag cover model

## Additional 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 V DC ... 30 V DC: fit a protection diode, max. 200 mA