



Background suppression sensor

RL28-8-H-700-IR/47/105

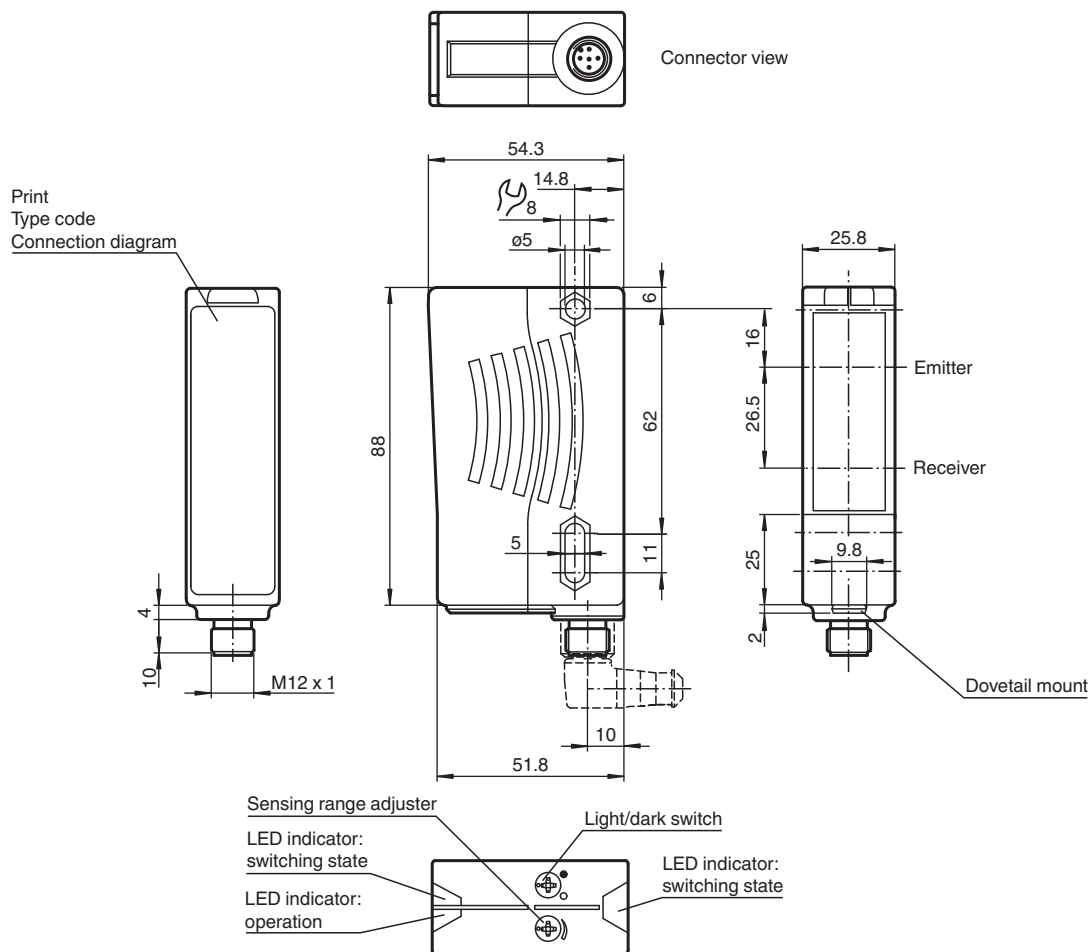


- Ultra bright LEDs for power on and switching state
- Minimal black-white difference through the infrared transmission LED
- Not sensitive to ambient light, even with switched energy saving lamps
- Waterproof, degree of protection IP67
- Protection class II

Background suppression sensor



Dimensions



Release date: 2026-06-15 Date of issue: 2026-06-15 Filename: 419614_eng.pdf

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

PEPPERL+FUCHS

Technical Data

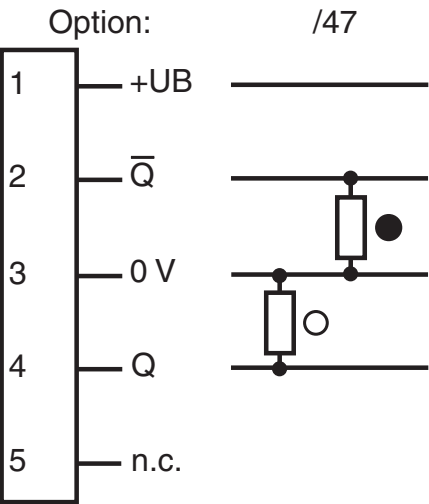
General specifications			
Detection range			20 ... 700 mm
Detection range min.			20 ... 200 mm
Detection range max.			20 ... 700 mm
Background suppression			max. + 10 % of the upper limit of the detection range
Light source			IREd
Light type			modulated infrared light , 880 nm
Black-white difference (6 %/90 %)			< 8 %
Diameter of the light spot			approx. 24 mm at a distance of 700 mm
Opening angle			transmitter 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			Sensing range adjuster , Light-on/dark-on changeover 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
Conformity			
Product standard			EN 60947-5-2
Approvals and certificates			
UL approval			E87056 , cULus Listed , class 2 power supply , type rating 1
Ambient conditions			
Ambient temperature			-40 ... 60 °C (-40 ... 140 °F)
Storage temperature			-40 ... 60 °C (-40 ... 140 °F)
Mechanical specifications			
Degree of protection			IP67
Connection			5-pin, M12 x 1 connector
Material			
Housing			plastic
Optical face			plastic
Connector			plastic
Mass			70 g
Dimensions			
Height			88 mm
Width			25.8 mm
Depth			54.3 mm

Release date: 2026-06-15 Date of issue: 2026-06-15 Filename: 419614_eng.pdf

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

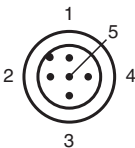
Pepperl+Fuchs Group
www.pepperl-fuchs.comUSA: +1 330 486 0001
fa-info@us.pepperl-fuchs.comGermany: +49 621 776 1111
fa-info@de.pepperl-fuchs.comSingapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com
 **PEPPERL+FUCHS**

Connection Assignment



○ = Light on
● = Dark on

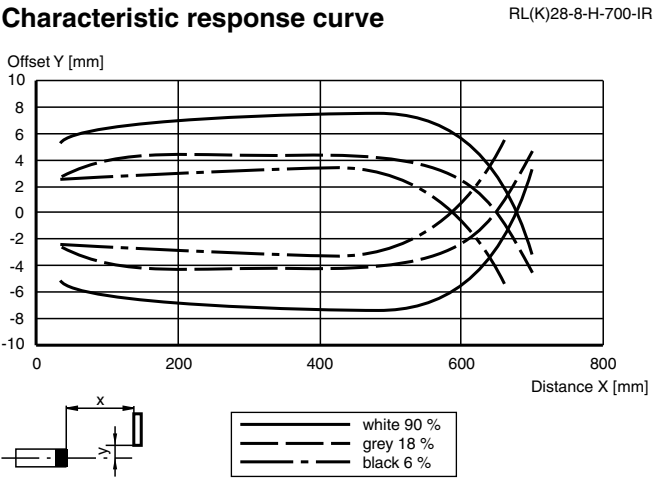
Connection Assignment



Wire colors in accordance with EN 60947-5-2

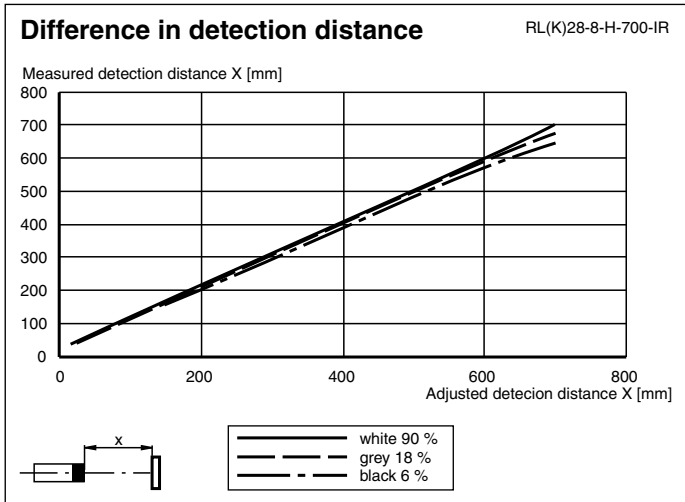
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)
5	GY	(gray)

Characteristic Curve



Release date: 2026-06-15 Date of issue: 2026-06-15 Filename: 419614_eng.pdf

Characteristic Curve



Application



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