



Background suppression sensor

RL28-8-H-700-RT-Z/47/116

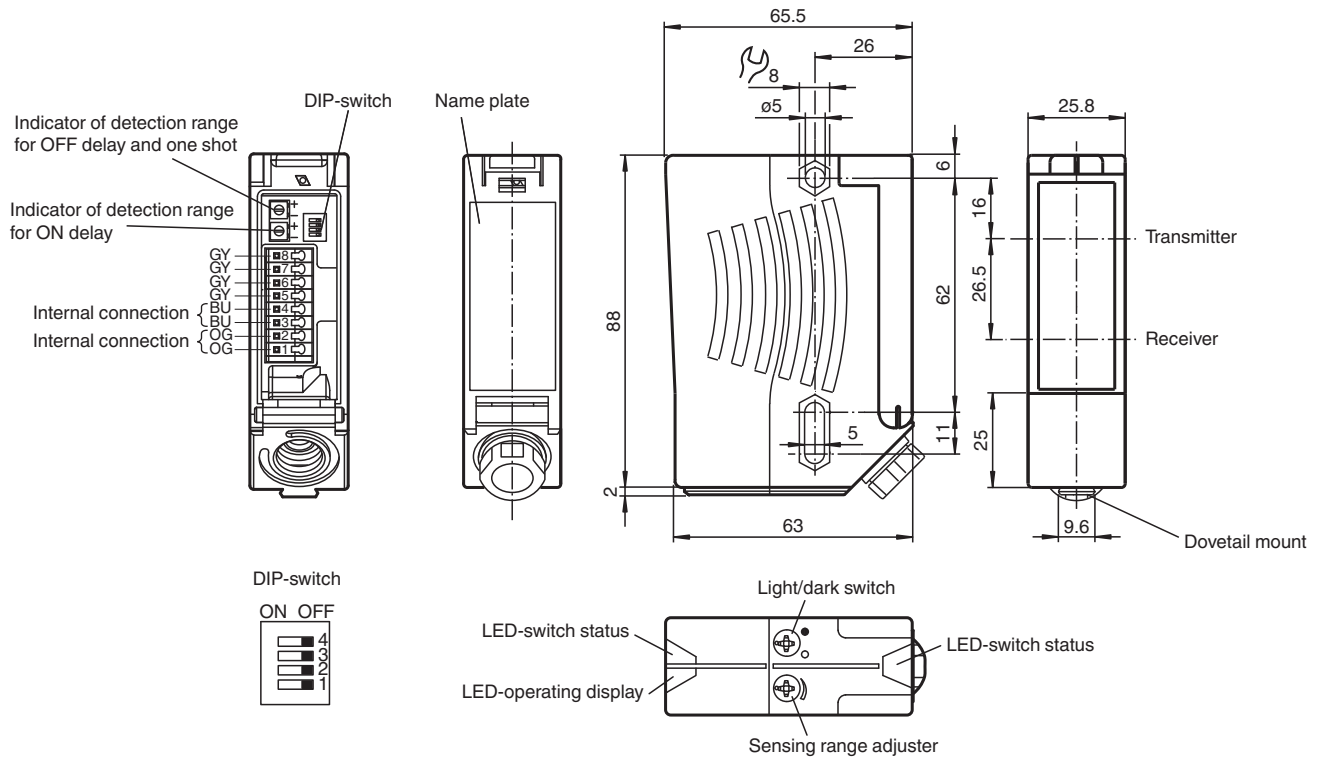


- Ultra bright LEDs for power on and switching state
- Good alignability due to red transmission LED
- Programmable time function GAN, GAB, IAB as well as GAN-IAB and GAN-GAB as double function
- Not sensitive to ambient light, even with switched energy saving lamps
- Waterproof, degree of protection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

Background suppression sensor



Dimensions



Release date: 2021-11-11 Date of issue: 2021-11-11 Filename: 421282_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

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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 _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 (selectable, light/dark switching is only activated if the receiver has 'dark on' selected.)
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
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
Approvals and certificates		
EAC conformity		TR CU 020/2011
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
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 ² , insulation stripping 7.5 ... 8.5 mm, M16 x 1.5 cable gland
Material		

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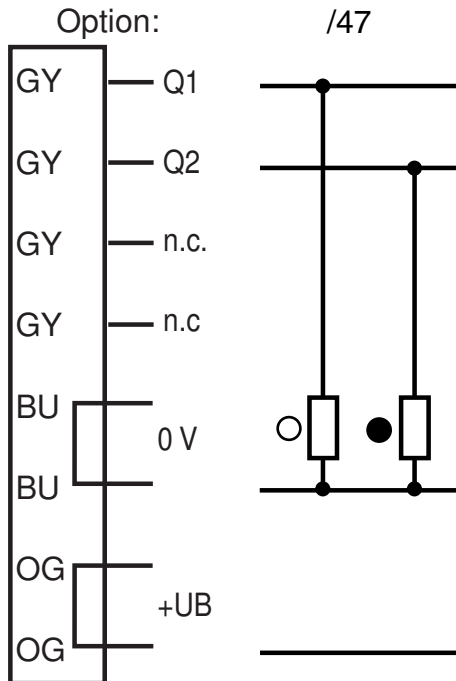
Pepperl+Fuchs Group
www.pepperl-fuchs.comUSA: +1 330 486 0001
fa-info@us.pepperl-fuchs.comGermany: +49 621 776 1111
fa-info@de.pepperl-fuchs.comSingapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

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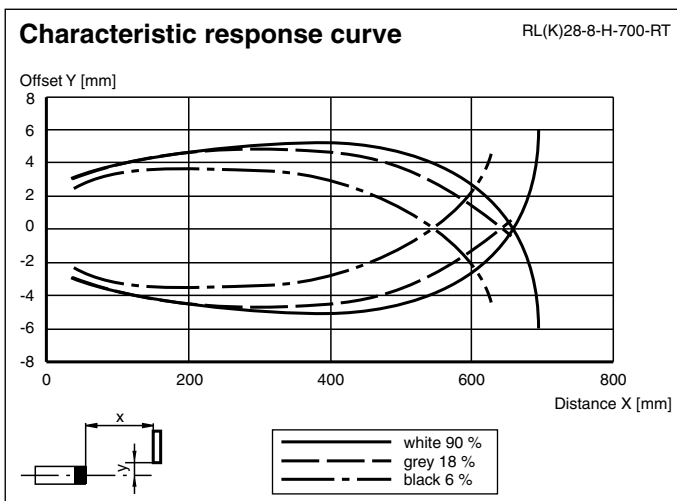
Housing	Plastic ABS
Optical face	plastic
Mass	112 g

Connection Assignment



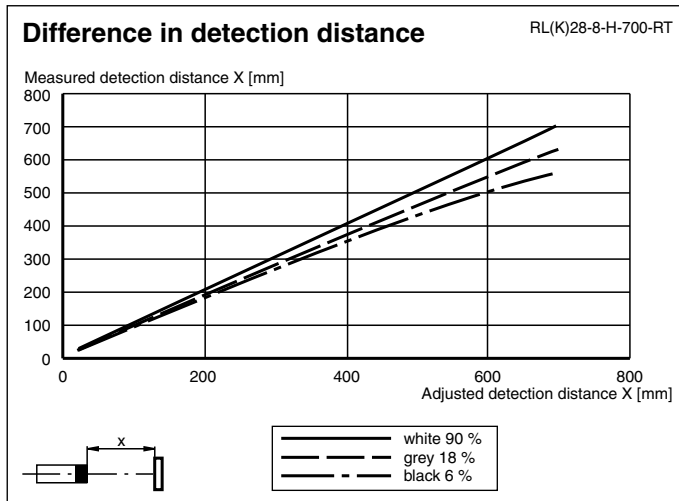
- = Light on
- = Dark on

Characteristic Curve



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Characteristic Curve



Application



Mounting

Zeitfunktionen / Fonctions de temporisation / Funzioni di temporizzazione / Timer functions / Funciones de tiempo

Zeitfunktion	Schaltungsart		Empfänger belichtet Empfänger dunkel
ON Ohne	Hell Dunkel		EIN AUS
ON GAN	Hell Dunkel		EIN AUS EIN AUS
ON GAB	Hell Dunkel		EIN AUS EIN AUS
ON IAB	Hell Dunkel		EIN AUS EIN AUS

Die Zeit t_{AN} , t_{AB} und t_{IAB} sind von 0,02 - 1 Sekunde einstellbar.
Der H/D-Schalter (Schalter links außen) ist in Stellung Dunkelschaltung dargestellt.

Timer function	Switching type		Receiver exposed Receiver dark
ON Without	Light Dark		ON OFF
ON ON delay	Light Dark		ON OFF ON OFF
ON OFF delay	Light Dark		ON OFF ON OFF
ON one shot	Light Dark		ON OFF 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.

Fonction de temporisation	Mode de commutation		Récepteur éclairé Récepteur non éclairé
ON sans	clair foncé		activé désactivé
ON GAN	clair foncé		activé désactivé activé désactivé
ON GAB	clair foncé		activé désactivé activé désactivé
ON IAB	clair foncé		activé désactivé activé désactivé

Les temps t_{AN} , t_{AB} et t_{IAB} sont réglables de 0,02 ... 1 s.
Le commutateur H/D (commutateur à l'extrême gauche) est représenté en position commutation obscur.

Función de tiempo	Modo de conmutación		Receptor recibiendo luz Receptor oscuro
ON Sin	Claro Oscuro		ON OFF
ON GAN	Claro Oscuro		ON OFF ON OFF
ON GAB	Claro Oscuro		ON OFF ON OFF
ON IAB	Claro Oscuro		ON OFF ON OFF







El tiempo t_{AN} , t_{AB} y t_{IAB} es ajustable entre 0,02 y 1 segundos.
El conmutador H/D (conmutador exterior izquierdo) está representado en posición de reducción de la luz.

Funzione tempo	Modo di commutazione		Ricevitore illuminato Ricevitore scuro
ON Senza	Chiaro Scuro		Un Disattivo
ON GAN	Chiaro Scuro		Un Disattivo Un Disattivo
ON GAB	Chiaro Scuro		Un Disattivo Un Disattivo
ON IAB	Chiaro Scuro		Un Disattivo Un Disattivo

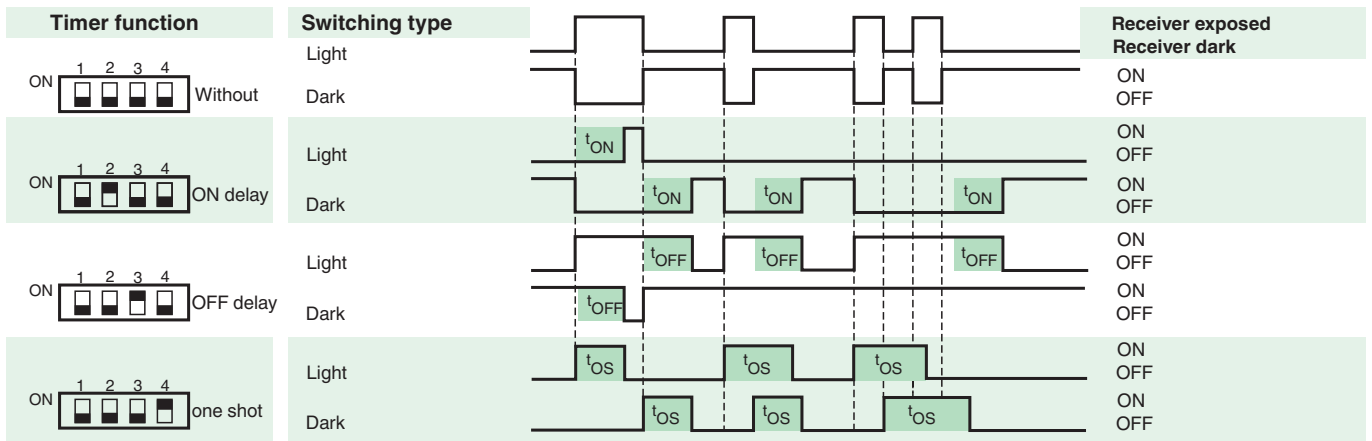
I tempi t_{AN} , t_{AB} e t_{IAB} sono regolabili tra 0,02 s e 1 s.
L'interruttore chiaro/scuro (interruttore sul lato esterno sinistro) è rappresentato in posizione di azionamento in scuro.

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Accessories

	OMH-05	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
	OMH-21	Mounting bracket: mounting aid for sensors in the RL* series
	OMH-22	Mounting aid for RL* series
	OMH-RLK29	Mounting bracket
	OMH-RLK29-HW	Mounting bracket for rear wall mounting
	OMH-RL28-C	Weld slag cover model

Timer functions



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

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

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