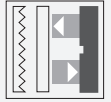




Retroreflective sensor

RL28-55-V-Z/49/76a/82b/116

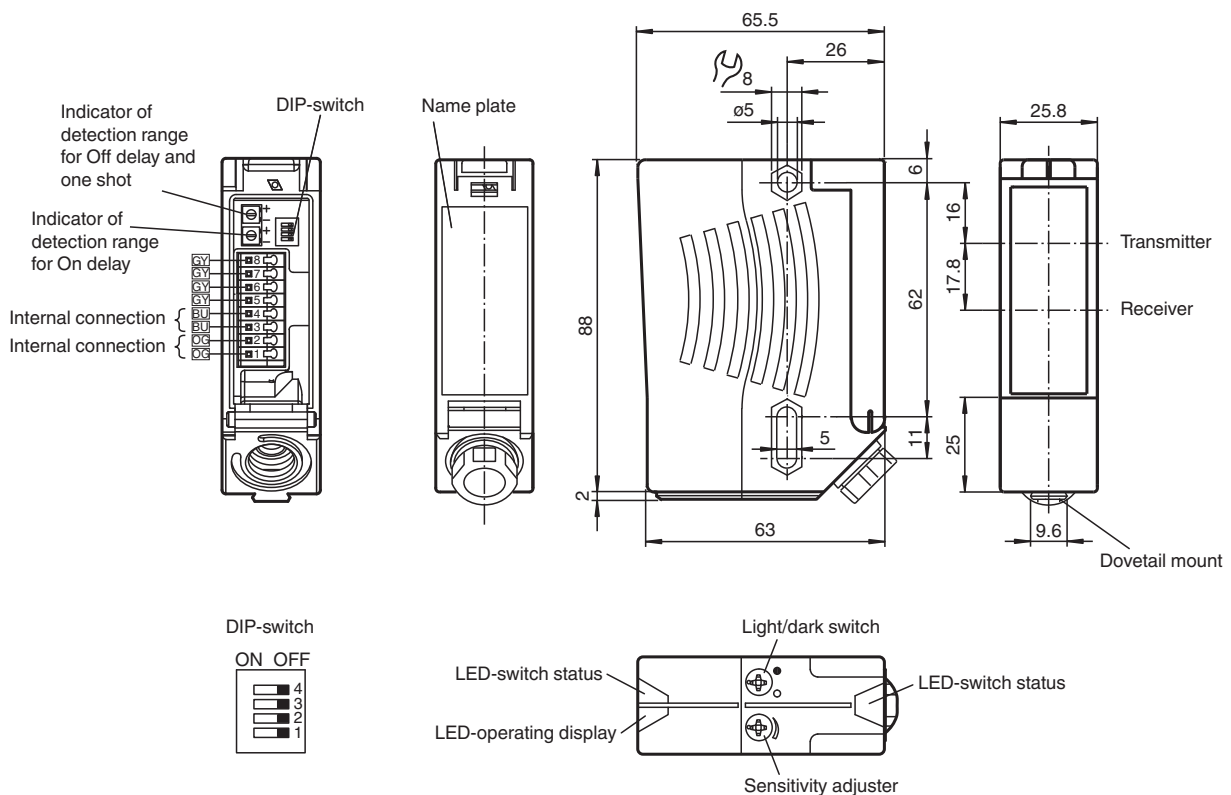


- Foreground suppression, suited to recording of sheet-shrink-wrapped objects
- Ultra bright LEDs for power on, weak signal indication and switching state
- Programmable time function GAN, GAB, IAB and GAN-IAB as double function
- Not sensitive to ambient light, even with switched energy saving lamps
- Waterproof, degree of protection IP67
- Protection class II

Retroreflective sensor with polarization filter



Dimensions



Technical Data

General specifications

Effective detection range	0 ... 13 m
Reflector distance	0.5 ... 13 m (blind range 0 ... 0.2 m faded out)
Threshold detection range	17 m
Reference target	H85-2 reflector
Light source	LED
Light type	modulated visible red light , 660 nm
Polarization filter	yes
Diameter of the light spot	approx. 220 mm at a distance of 13 m
Angle of divergence	emitter 1.2° receiver 2°
Ambient light limit	80000 Lux

Functional safety related parameters

MTTF _d	690 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	90 %

Indicators/operating means

Operation indicator	LED green
Function indicator	2 LEDs yellow, light up when light beam is free, flash when falling short of the stability control, off when light beam is interrupted
Control elements	sensitivity adjustment (Adjustment to < 25% of the effective operating range) , 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

Input

Test input	emitter deactivation with +Ub
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Output

Pre-fault indication output		1 PNP, inactive when falling short of the stability control for 10;s immediately inactive if 4 light beam interruptions take place
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	1000 Hz
Response time		0.5 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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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

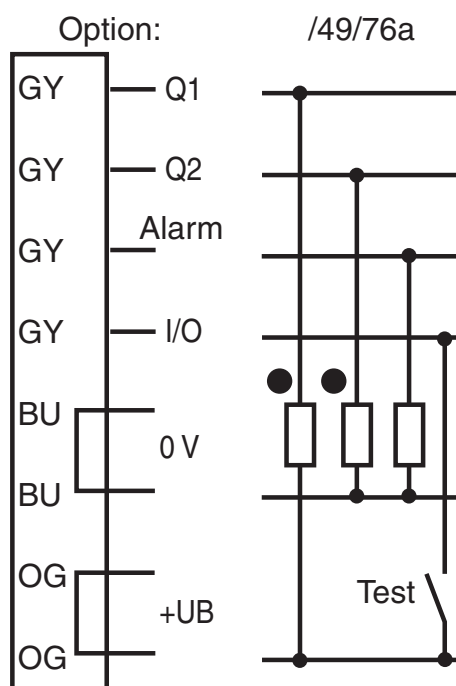
Housing width	25.8 mm
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Release date: 2021-11-11 Date of issue: 2021-11-11 Filename: 116667_eng.pdf

Technical Data

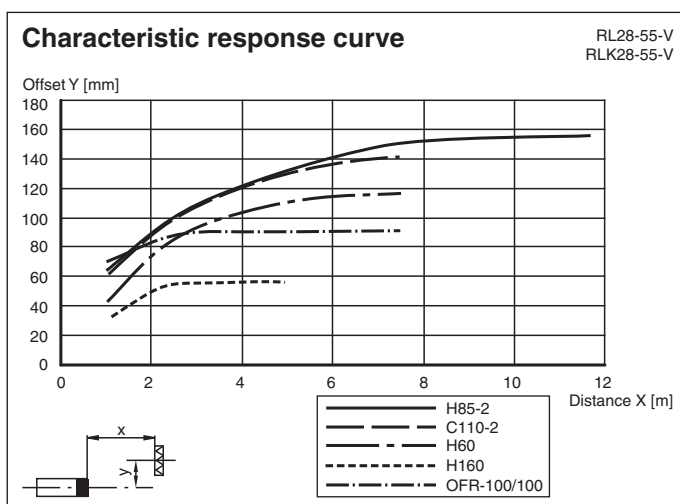
Housing height	88 mm
Housing depth	65.5 mm
Degree of protection	IP67
Connection	terminal compartment with 8 spring-loaded terminals for wire cross section 0.5 ... 1.5 mm ² , insulation stripping 7.5 ... 8.5 mm, M16 x 1.5 cable gland
Material	
Housing	Plastic ABS
Optical face	plastic
Mass	approx. 112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

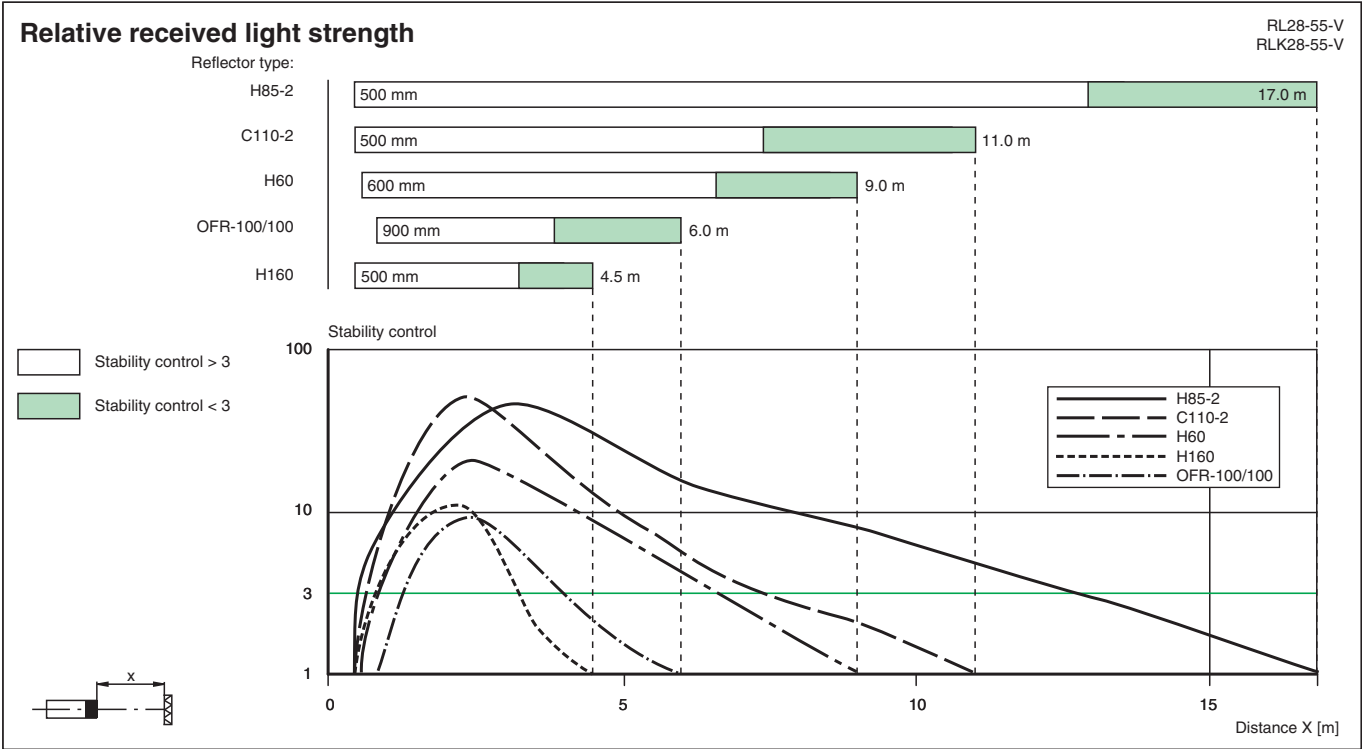
Connection Assignment



- = Light on
● = Dark on

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

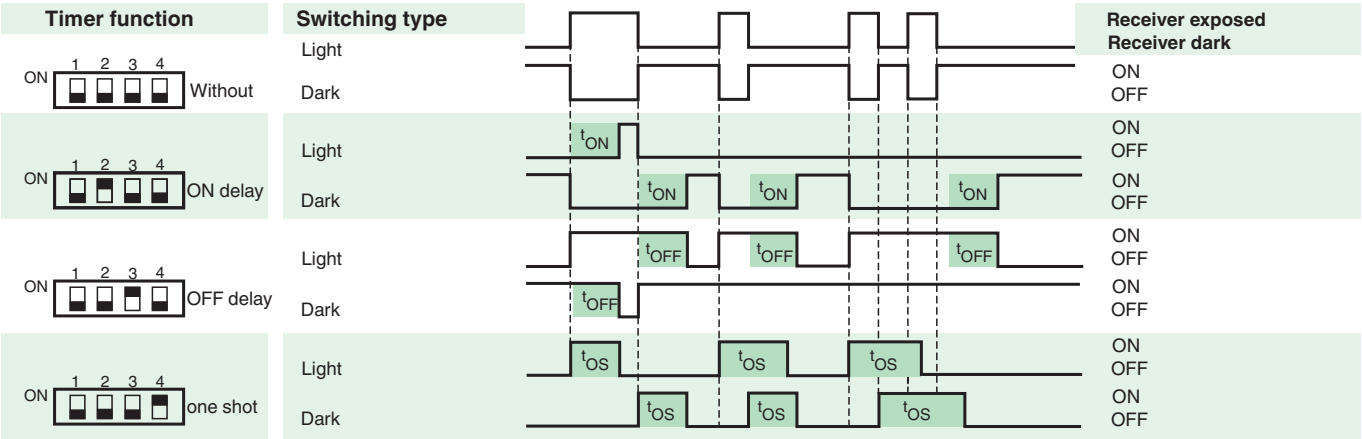
I tempi t_{AN} , t_{AB} e t_{IAB} sono regolabili tra 0,02 s e 1 s.

L'interruttore chiaro/scuro (interruttore sul lato esterno sinistro) è rappresentato in posizione di azionamento in scuro.

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	