

- 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

CE C UL US EAC UK CA

Top View:

- Overall width: 65.5
- Distance from left edge to center of antenna: 26
- Antenna diameter: $\varnothing 5$
- Distance from antenna to center of receiver: 8
- Distance from antenna to center of transmitter: 62
- Distance from antenna to center of receiver: 11
- Distance from antenna to center of receiver: 9
- Distance from antenna to center of receiver: 63

Side View:

- Overall height: 88
- Distance from top edge to center of antenna: 6
- Distance from top edge to center of transmitter: 16
- Distance from top edge to center of receiver: 17.8
- Distance from top edge to center of receiver: 25
- Distance from top edge to center of receiver: 25.8
- Distance from top edge to center of receiver: 9.6
- Distance from top edge to center of receiver: M12x1

Front View:

- LED indicator: switching state
- LED indicator: operation
- Light/dark switch
- Sensitivity adjuster
- LED indicator: switching state

Internal View:

- Time adjuster for Off delay and one delay
- Time adjuster for On delay
- DIP-switch
- Internal connection
- Internal connection

Connector View:

- Connector view

Dimensions:

- 65.5
- 26
- 8
- $\varnothing 5$
- 62
- 11
- 9
- 63
- 88
- 6
- 16
- 17.8
- 25
- 25.8
- 9.6
- M12x1

Technical Data

General specifications

Effective detection range	0 ... 17 m
Reflector distance	0.05 ... 17 m
Threshold detection range	21 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. 290 mm at a distance of 17 m
Opening angle	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)	0 %

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

Output

Stability alarm 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		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	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
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

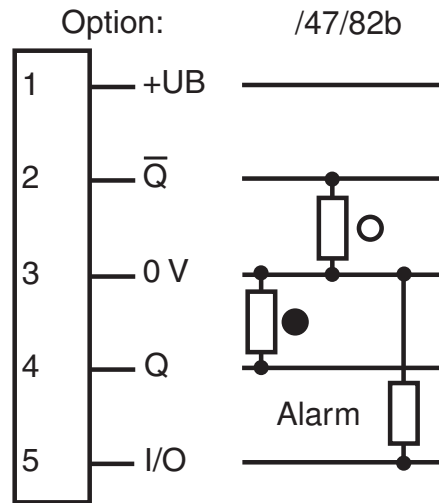
Housing width	25.8 mm
Housing height	88 mm
Housing depth	65.5 mm
Degree of protection	IP67
Connection	5-pin, M12 x 1 connector, 90° rotatable
Material	

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Technical Data

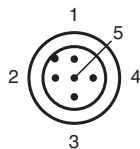
Housing	Plastic ABS
Optical face	plastic
Connector	metal
Mass	approx. 100 g

Connection Assignment



○ = Light on
● = Dark on

Connection Assignment



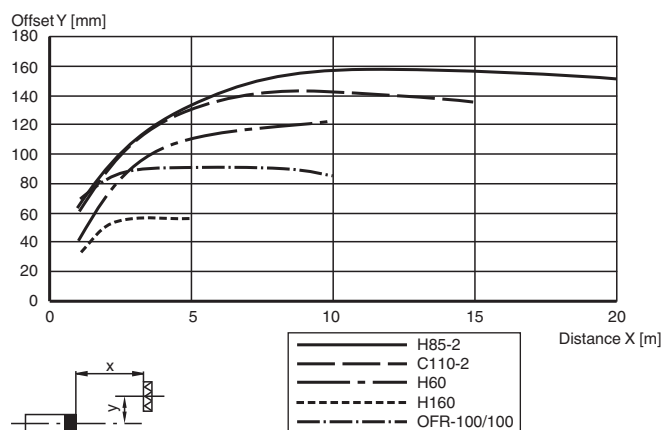
Wire colors in accordance with EN 60947-5-2

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

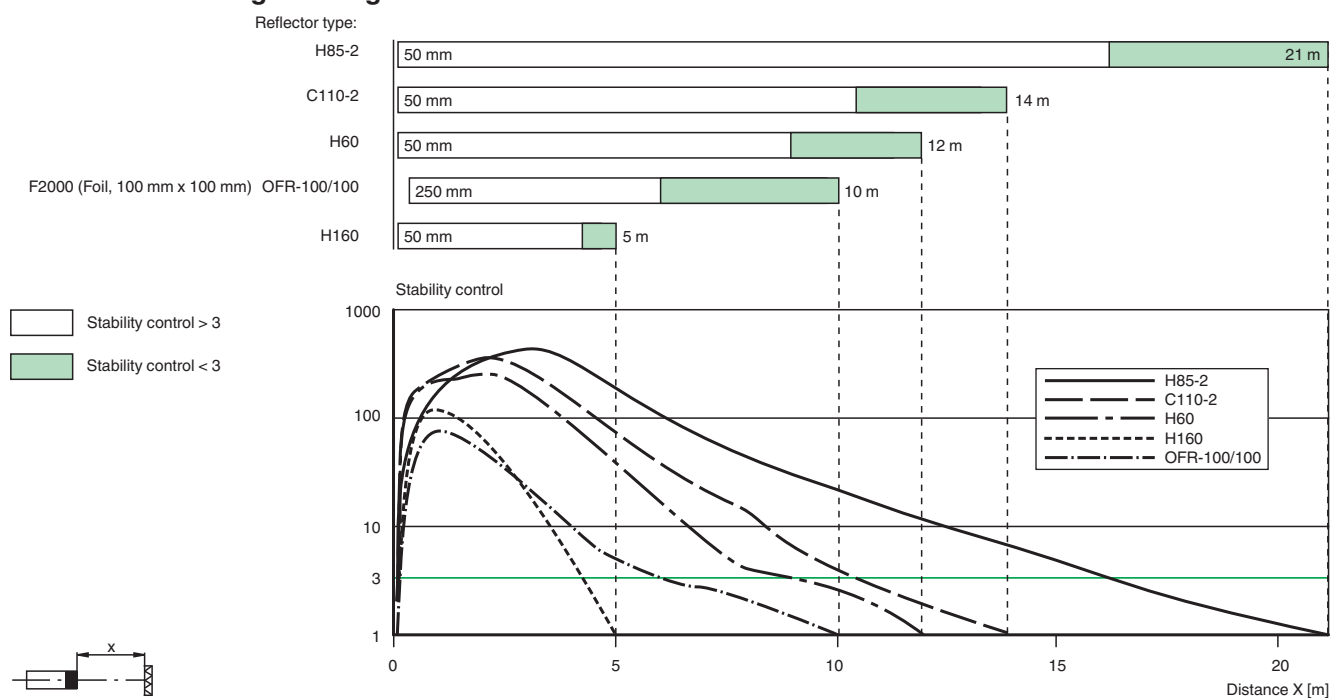
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Characteristic Curve

Characteristic response curve



Relative received light strength



Application



Mounting

Zeitfunktionen Fonctions de temporisation Funzioni di temporizzazione

Timer functions Funciones de tiempo

Zeitfunktion	Schaltungsart	Empfänger belichtet Empfänger dunkel
ON 1 2 3 4 Ohne	Hell Dunkel	EIN AUS
ON 1 2 3 4 GAN	Hell Dunkel	EIN AUS EIN AUS
ON 1 2 3 4 GAB	Hell Dunkel	EIN AUS EIN AUS
ON 1 2 3 4 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 1 2 3 4 Without	Light Dark	ON OFF
ON 1 2 3 4 ON delay	Light Dark	ON OFF ON OFF
ON 1 2 3 4 OFF delay	Light Dark	ON OFF ON OFF
ON 1 2 3 4 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 1 2 3 4 sans	clair foncé	activé désactivé
ON 1 2 3 4 GAN	clair foncé	activé désactivé activé désactivé
ON 1 2 3 4 GAB	clair foncé	activé désactivé activé désactivé
ON 1 2 3 4 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 1 2 3 4 Sin	Claro Oscuro	ON OFF
ON 1 2 3 4 GAN	Claro Oscuro	ON OFF ON OFF
ON 1 2 3 4 GAB	Claro Oscuro	ON OFF ON OFF
ON 1 2 3 4 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 1 2 3 4 Senza	Chiaro Scuro	Un Disattivo
ON 1 2 3 4 GAN	Chiaro Scuro	Un Disattivo Un Disattivo
ON 1 2 3 4 GAB	Chiaro Scuro	Un Disattivo Un Disattivo
ON 1 2 3 4 IAB	Chiaro Scuro	Un Disattivo Un Disattivo

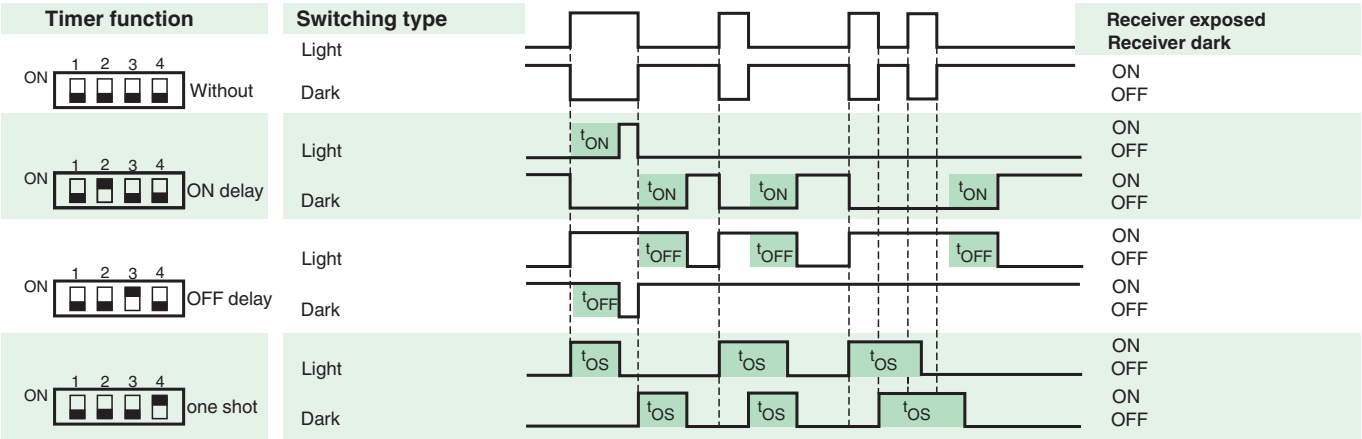
I tempi t_{AN} , t_{AB} e t_{IAB} sono regolabili tra 0,02 s e 1 s.

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-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	