



Thru-beam sensor (pair) LA28/LK28-Z-F1/31/116



- Universal series with highly versatile fields of use
- Resistant against noise: reliable operation under all conditions
- Highly visible LED as alignment aid in receiver optics
- Programmable time function GAN, GAB, IAB as well as GAN-IAB and GAN-GAB as double function
- Version with red light
- Version with relay output

Thru-beam sensor



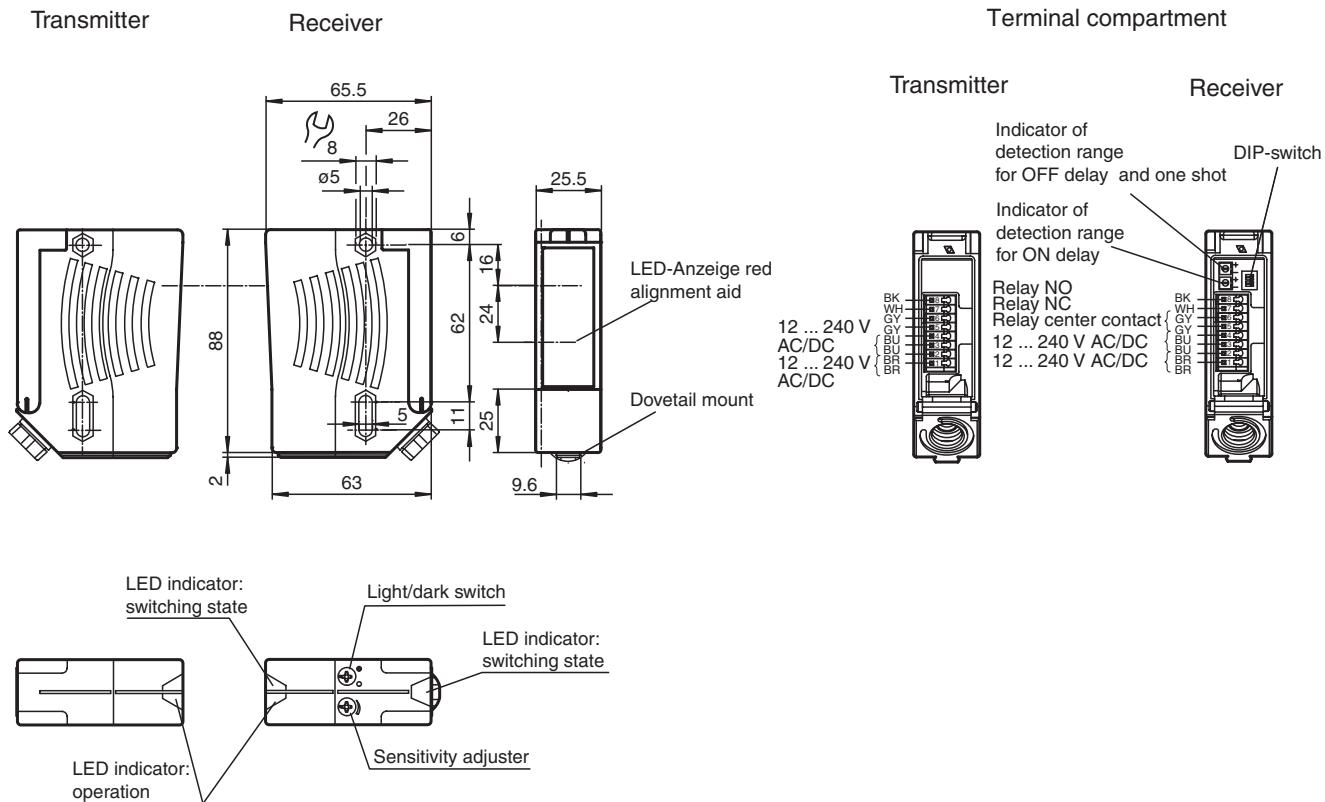
Function

The series 28 family of sensors can be universally used. It has a large range of models that allows it to be integrated into any automation environment. The sensors are contained in sturdy water resistant plastic housings with multiple fastening options and scratch resistant optical cover. Features such as a timer function, and functions including a light/dark switch, sensitivity adjuster and highly visible status LEDs make for less effort on the part of the user and streamline installation, setup and operation. Just about any task associated with positioning, moving, conveying and monitoring can be accomplished with these sensors.

Application

- Object tracking in material handling, and the packaging sector
- Material flow monitoring
- Bin occupancy check in storage technology
- Fine positioning in high-bay warehouses
- Presence and height monitoring on pallet conveyors
- Single-beam protection for automatic industrial gates and elevator doors
- Protection at automatic gates

Dimensions



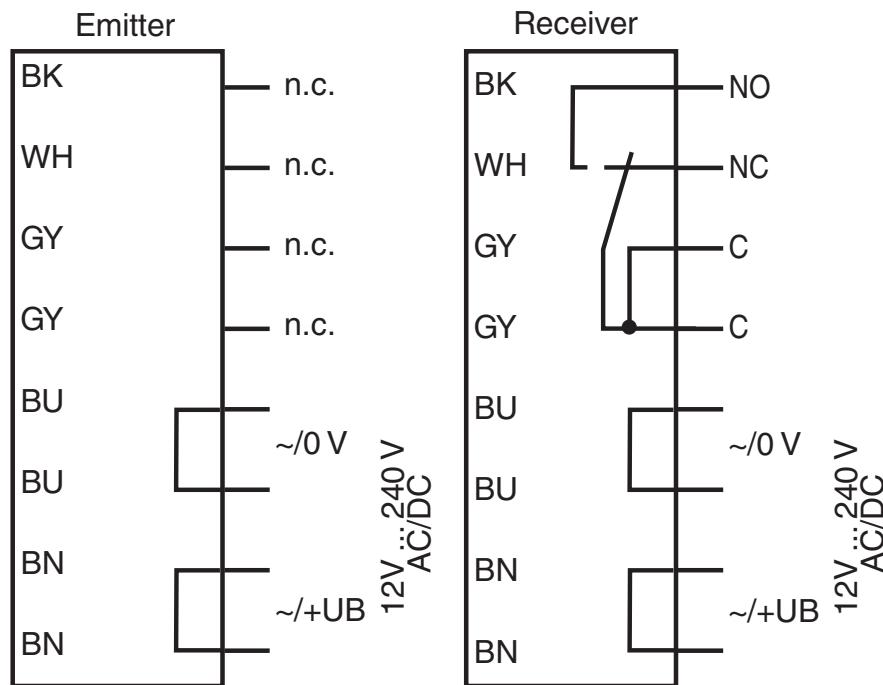
Technical Data

System components	
Emitter	LA28-F1/116
Receiver	LK28-Z-F1/31/116
General specifications	
Effective detection range	0 ... 65 m
Threshold detection range	90 m
Light source	LED
Light type	modulated visible red light
Alignment aid	LED red (in receiver lens) illuminated constantly: beam is interrupted, flashes: reaching switching point, off: sufficient stability control
Transmitter frequency	F1 = 25 kHz
Diameter of the light spot	approx. 1.3 m at 65 m
Opening angle	Emitter 1.2°, Receiver 5°
Ambient light limit	50000 Lux
Functional safety related parameters	
MTTF _d	490 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %
Indicators/operating means	
Operation indicator	LED green

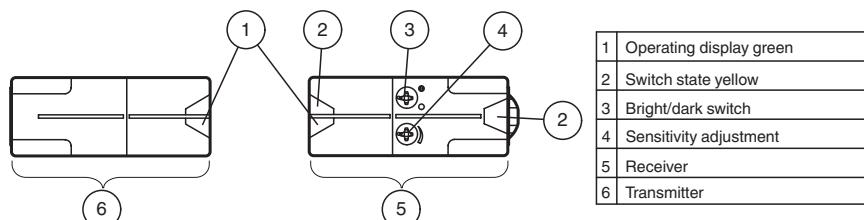
Technical Data

Function indicator		
		LED yellow: 1. LED lit constantly: signal > 2 x switching point (function reserve) 2. LED flashes: signal between 1 x switching point and 2 x switching point 3. LED off: signal < switching point
Control elements		sensitivity adjustment (Adjustment to < 25% of the effective operating range) , Light-on/dark-on changeover switch
Electrical specifications		
Operating voltage	U_B	12 ... 240 V AC/DC
Power consumption	P_0	≤ 3.5 VA
Output		
Switching type	light/dark on, switchable . (selectable, light/dark switching is only activated if the receiver has 'dark on' selected.)	
Signal output	Relay, 1 alternator	
Switching voltage	max. 250 V AC/DC	
Switching current	max. 2 A	
Switching power	DC: max. 50 W AC: max. 500 VA	
Switching frequency	f	25 Hz
Response time	20 ms	
Timer function	ON delay (GAN), OFF delay (GAB), one shot (IAB), ON delay-OFF delay (GAN-GAB), programmable adjustment range 0.1 ...10 s	
Conformity		
Product standard	EN 60947-5-2	
Approvals and certificates		
Protection class	II, rated insulation voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 Output circuit insulated from control circuit in accordance with IEC 61140. Caution! The protection class 2 is only valid when the terminal compartment is closed.	
UL approval	cULus Listed Caution: This equipment is considered as open-type equipment. It must be mounted within an enclosure, that is suitably designed for protection against internal fire and personal injury resulting from accessibility to live parts according UL 508.	
CCC approval	Certified by China Compulsory Certification (CCC)	
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	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 pane	
Mass	200 g (emitter and receiver)	

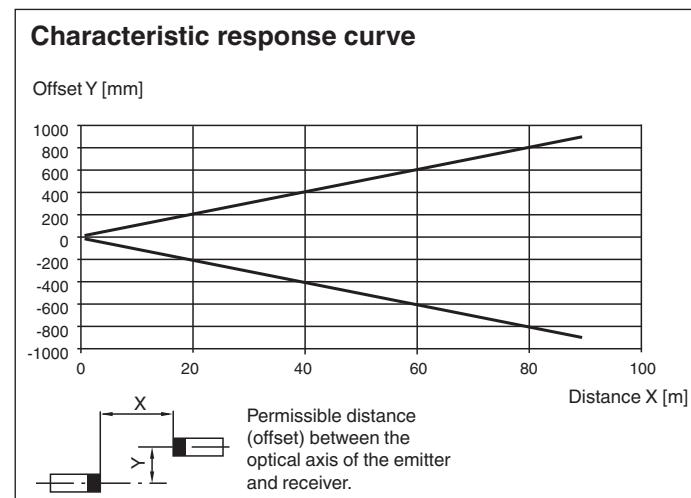
Connection Assignment



Assembly



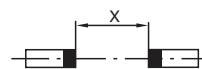
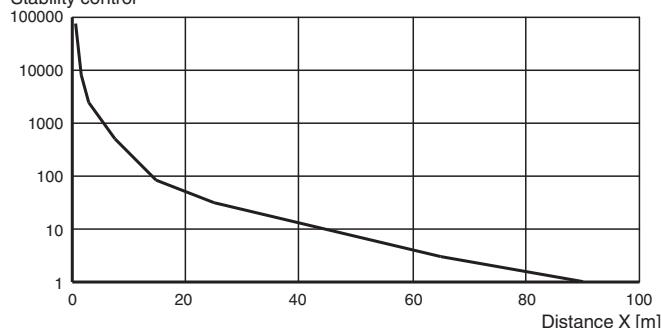
Characteristic Curve



Characteristic Curve

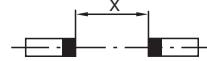
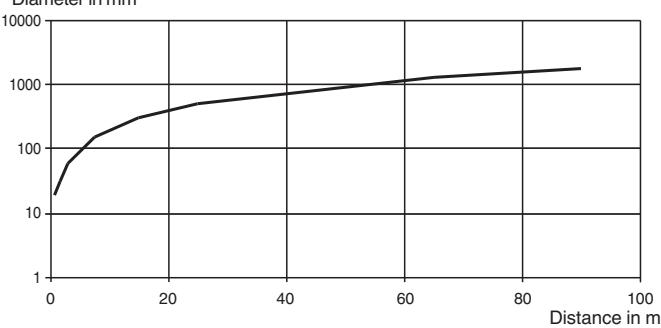
Relative received light strength

Stability control

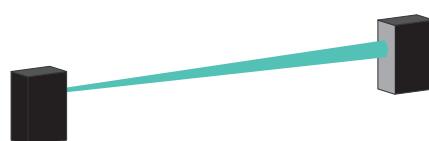


Light spot diameter = f (Distance)

Diameter in mm



Application



Accessories



OMH-05

Mounting aid for round steel \varnothing 12 mm or sheet 1.5 mm ... 3 mm

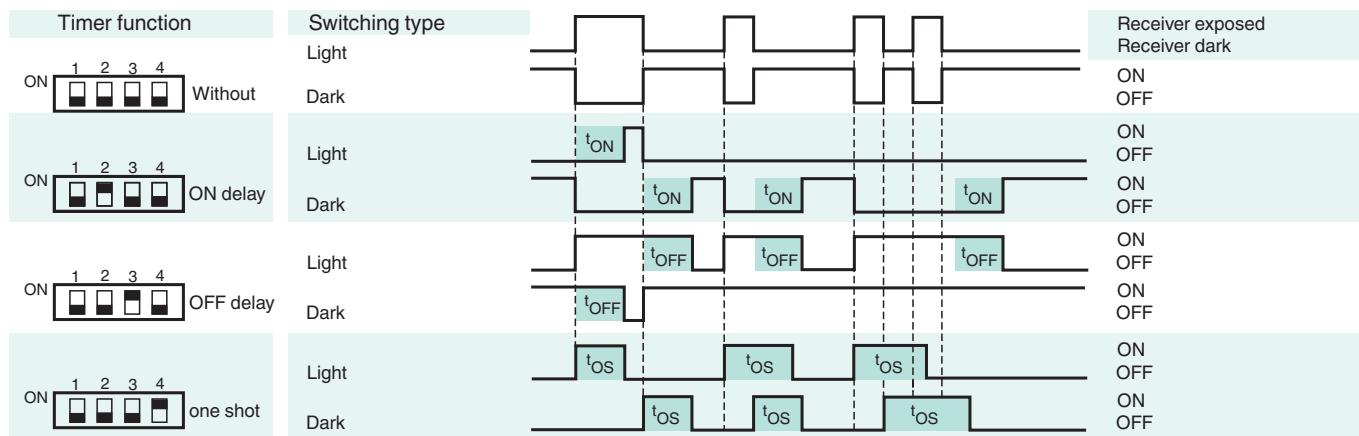
OMH-21

Mounting bracket: mounting aid for sensors in the RL* series

Accessories

	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 0.1 to 10 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 (0.1 s - 10 s)
	one shot timer	
	ON delay timer	
	ON delay timer / OFF delay timer	
	ON delay timer / one shot timer	