Thru-beam sensor



CE c(UL **VISC**�) us

Model Number

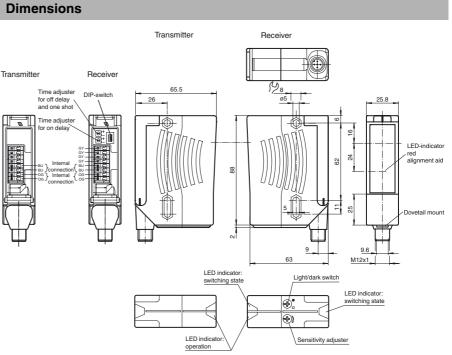
LD28/LV28-Z-F1/47/76a/82b/112

Thru-beam sensor with metal connector M12; 5-pin, 90° convertible

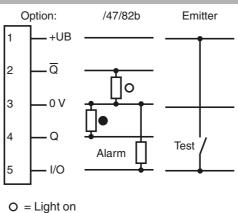
Features

- Universal series with highly versatile ٠ fields of use
- Resistant against noise: reliable operation under all conditions
- Highly visible LED as alignment aid in ٠ receiver optics
- Programmable time function GAN, ٠ GAB, IAB as well as GAN-IAB and GAN-GAB as double function
- Emitter with test input .
- Version with red light

LD28/LV28-Z-F1/47/76a/82b/112



Electrical connection









Refer to "General Notes Relating to Pepperl+Fuchs Product Information" Pepperl+Fuchs Group www.pepperl-fuchs.com

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LD28/	'LV28-2	Z-F1/47	7/76a/	′82b/	112

the function reserve for approx. 10 s (yellow and red LEDs flash).			
Emitter LD28-F1/75a/112 Resciver LV28-Z-F1/47/82b/112 General specifications 030 m Effective detection range 030 m Threshold detection range 40 m Light source LED Light source LED Light source LED Alignment aid Effective detection range Jameser of the light source East section Diameter of the light spot approx.0.6 m at 30 m Angle of divergence Fencitive series in structure s	Technical data		
Emitter LD28-F1/75a/112 Resciver LV28-Z-F1/47/82b/112 General specifications 030 m Effective detection range 030 m Threshold detection range 40 m Light source LED Light source LED Light source LED Alignment aid Effective detection range Jameser of the light source East section Diameter of the light spot approx.0.6 m at 30 m Angle of divergence Fencitive series in structure s			
Reserver LV28-Z-F1/47/82b/112 General specifications	• •		LD28-E1/76a/112
Effective detection range 030 m Threshold detection range 40 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 FI = 25 kHZ Diameter of the light spot approx.0.6 m t3 0 m Angle of divergence Emitter 1 2:, Receiver 5° Angle of divergence Emitter 1 2:, Receiver 5° MTTF _d 620 a Mission Time (T _M) 20 a Diagnostic Coverage (CC) 90 % Poperation indicator LED green Function indicator LED for lens Function indicator LED off: signal > 2 x switching point (function reserve) Sutch of signal < switching point			
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Angle of divergence Emitter 12*, Receiver 5* Ambient light limit 50000 Lux Functional safety related parameters Image: Content of	Transmitter frequency		F1 = 25 kHz
Receiver 5° Ambient light limit 50000 Lux Functional safety related parameters Environment Schwart Sc	Diameter of the light spot		approx. 0.6 m at 30 m
Functional safety related parameters 620 a MTFg 620 a Mission Time (T _M) 20 a Diagnostic Coverage (DC) 90 % Indicators/operating means Doperation indicator Question indicator LED green Function indicator LED yellow: 1. LED it constantly: signal > 2 x switching point (function reserve) 2. LED flashes: signal between 1 x switching point 3. LED off: signal < switching point	Angle of divergence		
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Operation indicator LED green Function indicator LED yelow: 1. LED it constantly: signal > 2 x switching point (function reserve) 2. LED fashes: signal between 1 x switching point and 2 x switching point Control elements 3. LED off: signal = switching point Sensitivity adjustment (Adjustment to < 25% of the effective operating range), Light-on/dark-on changeover switch	Diagnostic Coverage (DC)		90 %
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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	1		-
witching point 3. LED off: signal < switching point	Function indicator		 LED lit constantly: signal > 2 x switching point (function reserve)
Control elements sensitivity adjustment (Adjustment to < 25% of the effective operating range), Light-on/dark-on changeover switch			switching point
Operating voltage UB 10 30 V DC Ripple 10 % Emitter: \leq 50 mA No-load supply current Ig Emitter: \leq 50 mA Receiver: \leq 35 mA Emitter: \leq 35 mA Input emitter deactivation at +UB (max , $<$ 3 mA at 30 V DC) Output IPNP transistor, short-circuit protected, protected from reverse polarity, open collector, Umax = 30 V DC, Imax = 0.2 A The output becomes inactive if the signal level has fallen below the function reserve for approx. 10 s (yellow and red LEDs flash). Switching type light/dark on, switchable 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 requency f Timer function 0.5 ms Timer function ON delay (GAN), OFF delay (GAB), one shot (IAB), ON delay-oFF delay (GAN-GAB), programmable adjustment interval 0.02 s 1 s Conformity Product standard Product standard EN 60947-5-2 Ambient conditions 40 75 °C (-40 140 °F) Storage temperature -40 60 °C (-40 140 °F) Housing width 85.5 mm	Control elements		sensitivity adjustment (Adjustment to < 25% of the effective
No-load supply current 10 % No-load supply current I₀ Emitter: ≤ 50 mA Receiver: ≤ 35 mA Input Test input emitter deactivation at +U _B (I _{max} < 3 mA at 30 V DC)	Electrical specifications		
No-load supply current I₀ Emitter: ≤ 50 mA Receiver: ≤ 35 mA Input emitter deactivation at +U₀ (I _{max.} < 3 mA at 30 V DC)	Operating voltage	UB	10 30 V DC
Input Feceiver: ≤ 35 mA Input emitter deactivation at +U _B (I _{max.} < 3 mA at 30 V DC)	Ripple		10 %
Test input emitter deactivation at +U _B (I _{max.} < 3 mA at 30 V DC)	No-load supply current	Ι _Ο	
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Product standardEN 60947-5-2Ambient conditionsAmbient temperature-40 60 °C (-40 140 °F)Storage temperature-40 75 °C (-40 167 °F)Mechanical specificationsHousing width25.8 mmHousing height88 mmHousing depth65.5 mmDegree of protectionIP67Connection5-pin, M12 x 1 connectorMaterialImage: ConnectorHousingPlastic ABS	Timer function		one shot (GAN-IAB), ON delay-OFF delay (GAN-GAB), programmable
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Storage temperature-40 75 °C (-40 167 °F)Mechanical specificationsHousing width25.8 mmHousing height88 mmHousing depth65.5 mmDegree of protectionIP67Connection5-pin, M12 x 1 connectorMaterialHousingHousingPlastic ABS	Ambient conditions		
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Housing depth 65.5 mm Degree of protection IP67 Connection 5-pin, M12 x 1 connector Material Image: Material state of the sta	•		
Degree of protection IP67 Connection 5-pin, M12 x 1 connector Material Housing Plastic ABS			
Connection 5-pin, M12 x 1 connector Material Housing Plastic ABS	e 1		
Material Housing Plastic ABS	• •		
Housing Plastic ABS			5-pin, M12 x 1 connector
Optical face Plastic pane	-		
Mass 140 g (emitter and receiver)	•		•

Accessories

OMH-05

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

OMH-07

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

OMH-21 Mounting bracket

OMH-22 Mounting bracket

OMH-MLV11-K dove tail mounting clamp

OMH-RLK29-HW Mounting bracket for rear wall mounting

OMH-RL28-C Weld slag cover model

V15-G-2M-PUR

Female cordset, M12, 5-pin, PUR cable

Other suitable accessories can be found at www.pepperl-fuchs.com

Approvals and certificates

Germany: +49 621 776 1111

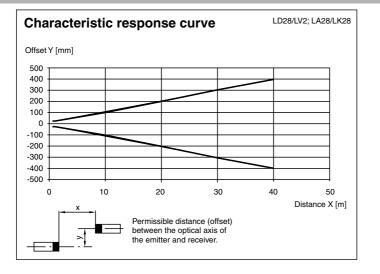
fa-info@de.pepperl-fuchs.com

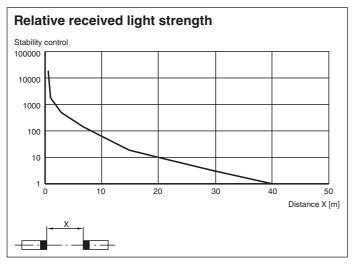
Singapore: +65 6779 9091 fa-info@sg.pepperl-fuchs.com

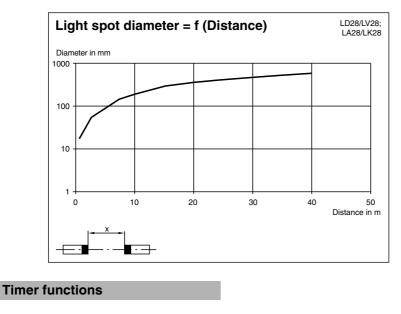
Protecti

Protection class	II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 Output circuit basis insulation of input circuit according to EN 50178, rated insulation voltage 230 V AC Caution! The protection class 2 is only valid when the terminal compartment is closed.
UL approval	cULus Listed , Class 2 power source
CCC approval	CCC approval / marking not required for products rated \leq 36 V

Curves/Diagrams







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Refer to "General Notes Relating to Pepperl+Fuchs Product Information" USA: +1 330 486 0001 fa-info@us.pepperl-fuchs.com

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Timer function	Switching type		Receiver exposed Receiver dark
ON ON Without	Light Dark		ON OFF
1 2 3 4	Light		ON OFF
ON I ON delay	Dark		ON OFF
1 2 3 4	Light		ON OFF
ON OFF delay	Dark	¹ OFF	ON OFF
1 2 3 4	Light	tos tos tos	ON OFF
ON ON ONE shot	Dark	tos tos tos	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.

Туре	Description	Notes
-Z	OFF delay timer	Adjustable time interval
	one shot timer	(0.02 s - 1 s)
	ON delay timer	
	ON delay timer / OFF delay timer	
	ON delay timer / one shot timer	

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