Thru-beam sensor LD28/LV28-F1/47/73c/76a

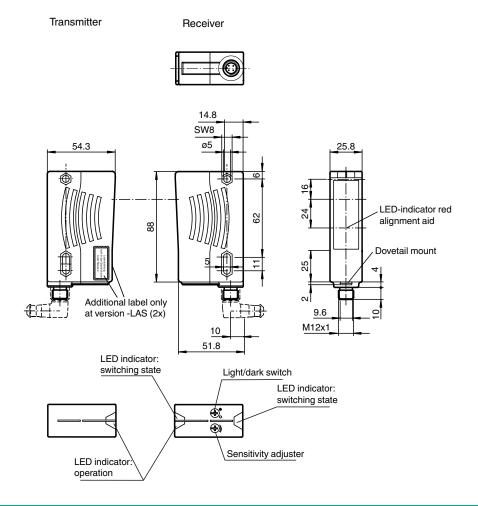


- Universal series with highly versatile fields of use
- Resistant against noise: reliable operation under all conditions
- Highly visible LED as alignment aid in receiver optics
- Emitter with test input
- Version with red light

Universal thru-beam sensor, large housing design, 30 m detection range, red light, 25 kHz transmission frequency, light/dark on, DC version, 2 PNP outputs, test input, M12 plug



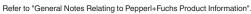
Dimensions



Technical Data

System components

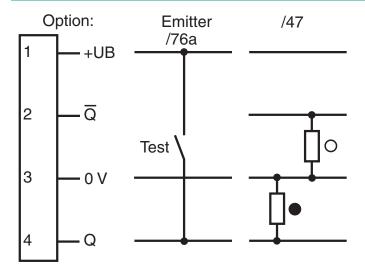
Emitter LD28-F1/73C/76A



MTTFd 620 a Mission Time (Tw) 20 a Diagnostic Coverage (DC) 90 % miciactor/soperating means LED green Function indicator LED yellow: Function indicator LED by sellow: Function indicator LED by sellow: Control elements asensitivity adjustment (Adjustment to < 25% of the effective operating range), Light-ordark-on changeover switch in gooint and 2 x switching point Control elements asensitivity adjustment (Adjustment to < 25% of the effective operating range), Light-ordark-on changeover switch Electrical specifications Us Operating voltage Us 10 30 V DC Ripple 10 % No-load supply current Is emitter: ≤ 55 mA Receiver: ≤ 35 mA Receiver: ≤ 35 mA Receiver: ≤ 35 mA Receiver: ≤ 35 mA specification structure Ight/dark on, switchable Signal output light/dark on, switchable Signal output 2 PNP, complementary, short-circuit protected, reverse polarity protected , open collectors Switching voltage max. 30 V DC Switching frequency f 1000 Hz Switching frequency f 1000 Hz	Technical Data		
Effective detection range	Receiver		LV28-F1/47/73c
Effective detection range 40 m Threshold detection range 40 m Light source LED Light type modulated visible red light, 660 nm Alignment aid LED red (in receiver lens) illuminated constantly, beam is interrupted, fassible, reaction several personal persona			24201 11411100
Threshold detection range	·		0 30 m
Light you	ŭ .		
Light type	· ·		
Alignment aid Transmitter frequency File 25 kHz Dameler of the light spot Angle of divergence Angle of divergence Ambient light limit Transmitter frequency Dameler of the light spot Angle of divergence Ambient light limit Transmitter frequency Transmitter frequency Dameler of the light spot Angle of divergence Ambient light limit December of the light spot Angle of divergence Ambient light limit December of the light spot Dameler of divergence Bellief 12°; Receiver 5°; Receiver 5°; Receiver 6°; Rec			
Illuminated constantly, beam is interrupted, flashes, reacting awtiching point, and will flashes, reacting awtiching point, and so flashes, reacting awtiching point, and so flashes, reacting awtiching point, and so flashes, reacting awtiching point and so flashes, reacting awtiching point and so flashes, and so fla	• •		_
Diameter of the light spot	Alignment ald		illuminated constantly: béam is interrupted, flashes: reaching switching point,
Ambient light limit	Transmitter frequency		F1 = 25 kHz
Receiver 6°	Diameter of the light spot		approx. 0.6 m at 30 m
### ### ### ### ### ### ### ### ### ##	Angle of divergence		
MTTFa 620 a Mission Time (T _M) 20 a Diagnostic Coverage (DC) 90 % Indicators/operating means Very possible of the possibility signal ≥ 2 x switching point (function reserve) 1. LED lit constantly, signal ≥ 2 x switching point (function reserve) 1. LED in these: signal between 1 x switching point and 2 x swit	Ambient light limit		50000 Lux
Mission Time (T _M) 20 a Diagnostic Coverage (DC) 90 % midicators/operating means LED green Function indicator LED yellow:	Functional safety related parameters		
Diagnostic Coverage (DC) 90 %	MTTF _d		620 a
### Description indicator LED green	Mission Time (T _M)		20 a
Operation indicator LED green Function indicator LED yellow:	Diagnostic Coverage (DC)		90 %
LED yellow: 1.LED without 1	Indicators/operating means		
1. LED lit constantly: signal > 2 x switching point (function reserve) 2. LED flashes: signal setwent 1 x switching point and 2 x switching point 3. LED offs: signal x switching point and 2 x switching point and 2 x switching point 3. LED offs: signal x switching point and 2 x switching po	Operation indicator		LED green
Carbon	Function indicator		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
Operating voltage U _B 10 30 V DC Ripple 10 % No-load supply current I ₀ Emitter: ≤ 55 mA Receiver: ≤ 35 mA Receiv	Control elements		
Flipple	Electrical specifications		
No-load supply current I₀ Emitter: ≤ 55 mA Receiver: ≤ 35 mA R	Operating voltage	U _B	10 30 V DC
nput Dutput Dutput 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 current max. 200 mA Switching frequency f 1000 Hz Response time 0.5 ms Conformity EN 60947-5-2 Approvals and certificates EAC conformity EAC conformity TR CU 020/2011 Protection class II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 UL approval cULus Listed , Class 2 power source CCC approval CCC approval / marking not required for products rated ≤36 V Ambient temperature -40 60 °C (-40 140 °F) Storage temperature -40 60 °C (-40 140 °F) Mechanical specifications -40 60 °C (-40 140 °F) Housing width 25.8 mm Housing height 88 mm Housing depth 54.3 mm	Ripple		10 %
Test input emitter deactivation at +U ₈ (I _{max.} < 3 mA at 30 V DC) Dutput Switching type Iight/dark on, switchable 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 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 UL approval CULus Listed Class 2 power source CCC approval CCC approval / marking not required for products rated ≤36 V 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 54.3 mm	No-load supply current	I ₀	
Switching type Signal output Signal output Signal output Switching voltage Switching voltage Switching current Switching frequency Response time Conformity Product standard Approvals and certificates EAC conformity TR CU 020/2011 Protection class UL approval CCC approval Ambient conditions Ambient temperature Ambient temperature Standard Aucustandard Aucustandard Aucustandard Aucustandard CCC 40 140 °F) Storage temperature Aucustandard Au	Input		
Switching type Signal output Signal output Signal output Switching voltage Switching voltage Switching current Switching frequency Switching outrent Switching voltage Switch	Test input		emitter deactivation at $+U_B$ ($I_{max.}$ < 3 mA at 30 V DC)
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 Conformity Product standard EAC conformity Protection class II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 UL approval cULus Listed , Class 2 power source CCC approval CCC approval CCC approval marking not required for products rated ≤36 V 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 54.3 mm	Output		
Switching voltage max. 30 V DC Switching current max. 200 mA Switching frequency f 1000 Hz Response time 0.5 ms Conformity Product standard EN 60947-5-2 Approvals and certificates EAC conformity TR CU 020/2011 Protection class III, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 UL approval cULus Listed , Class 2 power source CCC approval CCC approval / marking not required for products rated ≤36 V 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 depth 54.3 mm	Switching type		light/dark on, switchable
max. 200 mA Switching frequency f 1000 Hz Response time 0.5 ms Conformity Product standard Approvals and certificates EAC conformity Protection class UL approval CCC a	Signal output		collectors
Switching frequency Response time 0.5 ms Conformity Product standard Approvals and certificates EAC conformity Protection class II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 UL approval CCC approval CCC approval CCC approval Ambient conditions Ambient temperature Ambient temperature Auchient specifications Housing width Housing height Housing depth 54.3 mm	Switching voltage		max. 30 V DC
Response time 0.5 ms 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 UL approval CULus Listed , Class 2 power source CCC approval CCC approval / marking not required for products rated ≤36 V 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 54.3 mm	Switching current		max. 200 mA
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 UL approval cULus Listed , Class 2 power source CCC approval CCC approval for products rated ≤36 V 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 54.3 mm	Switching frequency	f	1000 Hz
Product standard EN 60947-5-2 Approvals and certificates EAC conformity TR CU 020/2011 Protection class III, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 UL approval cULus Listed , Class 2 power source CCC approval CCC approval / marking not required for products rated ≤36 V 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 54.3 mm	Response time		0.5 ms
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 UL approval CCC approval CCC approval / marking not required for products rated ≤36 V 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 Housing depth 54.3 mm	Conformity		
EAC conformity Protection class II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 UL approval CCC approval 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 Housing depth 54.3 mm	Product standard		EN 60947-5-2
II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1 UL approval cULus Listed , Class 2 power source CCC approval CCC approval / marking not required for products rated ≤36 V 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 54.3 mm	Approvals and certificates		
UL approval cULus Listed , Class 2 power source CCC approval CCC approval / marking not required for products rated ≤36 V Ambient conditions -40 60 °C (-40 140 °F) Storage temperature -40 75 °C (-40 167 °F) Mechanical specifications -40 75 °C (-40 167 °F) Housing width 25.8 mm Housing height 88 mm Housing depth 54.3 mm	EAC conformity		TR CU 020/2011
CCC approval CCC approval / marking not required for products rated ≤36 V 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 54.3 mm	Protection class		II, rated voltage ≤ 250 V AC with pollution degree 1-2 according to IEC 60664-1
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 54.3 mm	UL approval		cULus Listed , Class 2 power source
Ambient temperature -40 60 °C (-40 140 °F) Storage temperature -40 75 °C (-40 167 °F) Wechanical specifications Housing width 25.8 mm Housing height 88 mm Housing depth 54.3 mm	CCC approval		CCC approval / marking not required for products rated ≤36 V
Storage temperature -40 75 °C (-40 167 °F) Mechanical specifications Housing width 25.8 mm Housing height 88 mm Housing depth 54.3 mm	Ambient conditions		
Housing width 25.8 mm Housing height 88 mm Housing depth 54.3 mm	Ambient temperature		-40 60 °C (-40 140 °F)
Housing width 25.8 mm Housing height 88 mm Housing depth 54.3 mm	Storage temperature		-40 75 °C (-40 167 °F)
Housing width 25.8 mm Housing height 88 mm Housing depth 54.3 mm	Mechanical specifications		
Housing height 88 mm Housing depth 54.3 mm			25.8 mm
Housing depth 54.3 mm			
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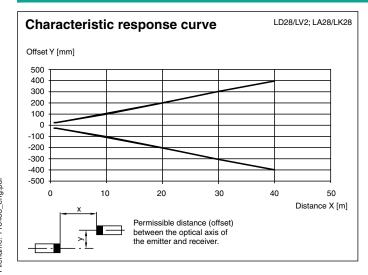
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Connection	Plastic connector M12 x 1, 4-pin
Material	
Housing	Plastic ABS
Optical face	Plastic pane
Mass	140 g (emitter and receiver)

Connection Assignment

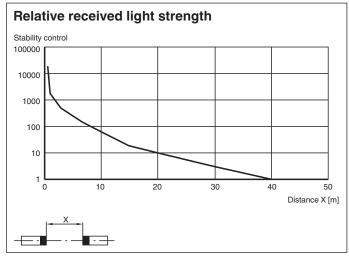


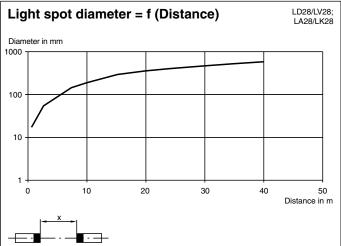
- O = Light on
- = Dark on

Characteristic Curve



Thru-beam sensor





Accessories

6	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