Thru-beam sensor
LD61/LV61-Z/92/136

- Cost-optimized series for standard tasks in a special design
- Compact design
- Wide range of mounting options thanks to cubic housing design with M30 thread
- 360° high visibility LEDs
- Programmable ON-delay, OFF-delay, and One-shot timers
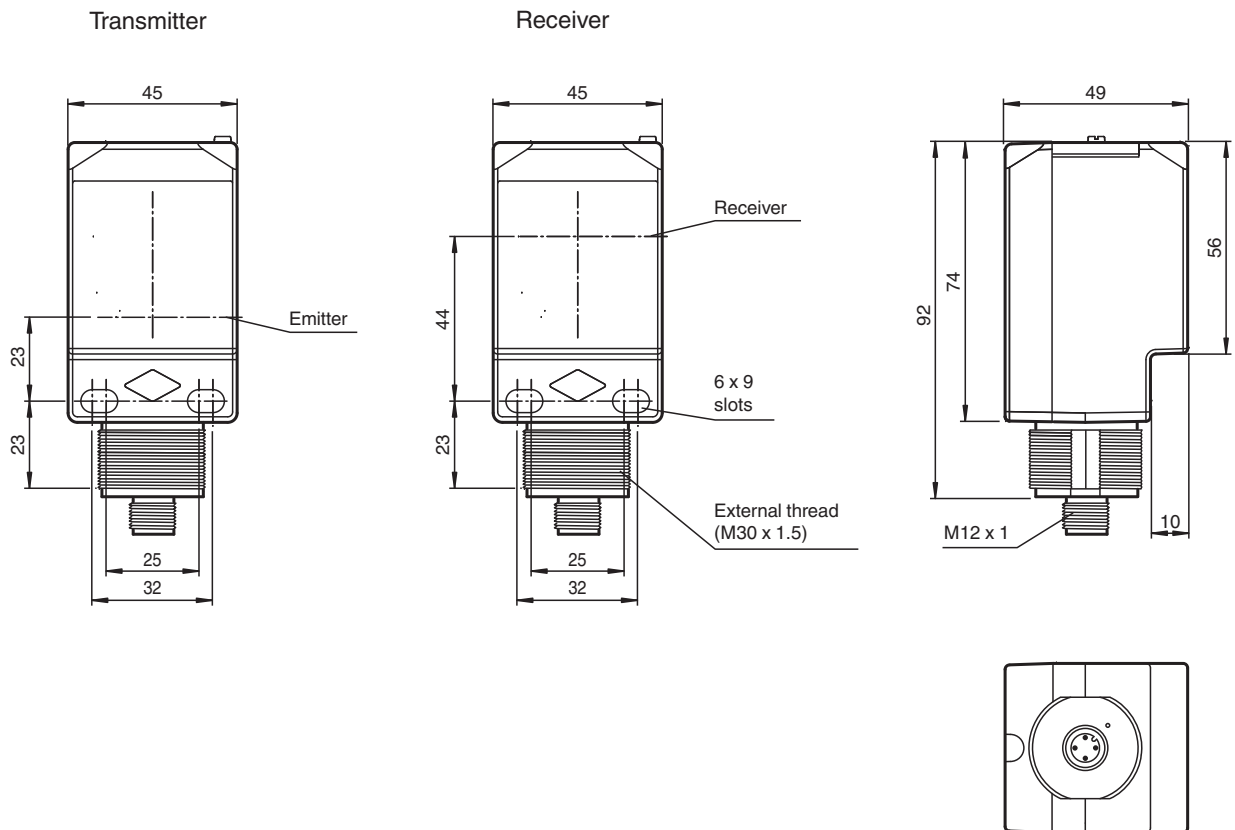- 4-in-1 output (push-pull)

Universal thru-beam sensor, large housing design, 60 m detection range, infrared light, light/dark on, detection range adjuster, DC version, 2 push-pull outputs, adjustable timer functions, M12 plug

CE ☐ c(UL)us UKCA

Function

The Series 61 sensor family is a comprehensive product line, offering five sensing modes. Each sensor is equipped with four LEDs that are highly visible from all directions, indicating Power-On, target presence and marginal excess gain. The widely recognized, polycarbonate housing provides a IP67 protection degree rating. Color-coded labels are clearly printed on the housing to easily identify the sensing mode. DC models offer a 4-in-1 output while AC/DC models have a SPDT relay output rated to 3 A. All versions come standard with an integral multifunction timer, sensitivity adjustment and Light-ON/Dark-ON switch. Series 61 sensors are cross-talk protected and have a high degree of resistance to ambient lighting. Each sensor can be mounted via front and rear slots, rear dovetail guide or M30 x 1.5 mounting base. Additionally, cabled sensor models provide ½" - 14 NPT internal threads for use with flexible conduit.

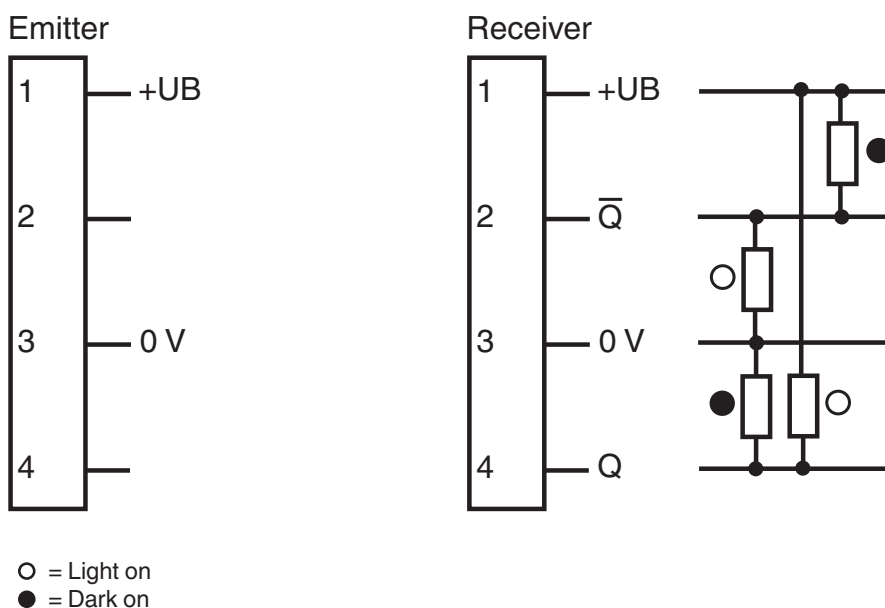Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group
www.pepperl-fuchs.com
USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com
Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com
Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

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Dimensions

Transmitter

Receiver

Emitter

Receiver

6 x 9 slots

External thread (M30 x 1.5)

M12 x 1

Technical Data

System components		
Emitter		LD61/92
Receiver		LV61-Z/92/136
General specifications		
Effective detection range		0 ... 60 m
Threshold detection range		85 m
Light source		IRED
Light type		modulated infrared light , 850 nm
Diameter of the light spot		approx. 1600 mm at a distance of 60 m
Opening angle		Emitter: 1.5 ° , Receiver: 1.5 °
Ambient light limit		5000 Lux ; according to EN 60947-5-2
Indicators/operating means		
Operation indicator		2 LEDs green
Function indicator		2 LEDs yellow Receiver: receiver LED yellow, lights up when light beam is free, flashes when falling short of the operating reserve ; OFF when light beam is interrupted
Control elements		Light-on/dark-on changeover switch
Control elements		Sensing range adjuster
Control elements		Time adjuster (0 ... 50 ms)
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC
Ripple		10 %
No-load supply current	I_0	≤ 35 mA

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www.pepperl-fuchs.com	fa-info@us.pepperl-fuchs.com	fa-info@de.pepperl-fuchs.com	fa-info@sg.pepperl-fuchs.com

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Technical Data

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 240 V AC
Output		
Switching type		light/dark on, switchable
Signal output		2 push-pull (4 in 1) outputs, short-circuit protected, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 100 mA
Voltage drop	U_d	≤ 2.5 V
Switching frequency	f	500 Hz
Response time		≤ 1 ms
Timer function		DIP switch for selection of operating modes
Compliance with standards and directives		
Standard conformity		
Product standard		EN 60947-5-2:2007 IEC 60947-5-2:2007
Approvals and certificates		
UL approval		cULus
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-40 ... 55 °C (-40 ... 131 °F)
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications		
Housing width		45 mm
Housing height		73.7 mm
Housing depth		48.6 mm
Degree of protection		IP67
Connection		M12 connector, 4-pin
Material		
Housing		PC (glass-fiber-reinforced Makrolon)
Optical face		PMMA
Mass		Emitter: 120 g Receiver: 120 g
Tightening torque, fastening screws		< 2 Nm

Connection Assignment

Emitter

1	+UB
2	
3	0 V
4	

Receiver

1	+UB
2	$\overline{Q}$
3	0 V
4	Q

○ = Light on
● = Dark on

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Connection Assignment

Wire colors in accordance with EN 60947-5-2

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

Assembly
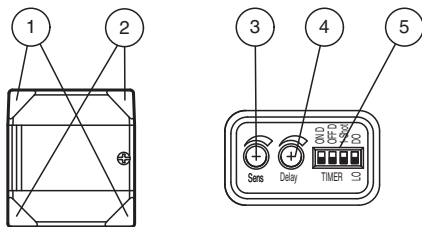
1	Operating display	green
2	Signal display	yellow
3	Sensing range adjuster	
4	Time adjuster	
5	DIP-switches	

Characteristic Curve
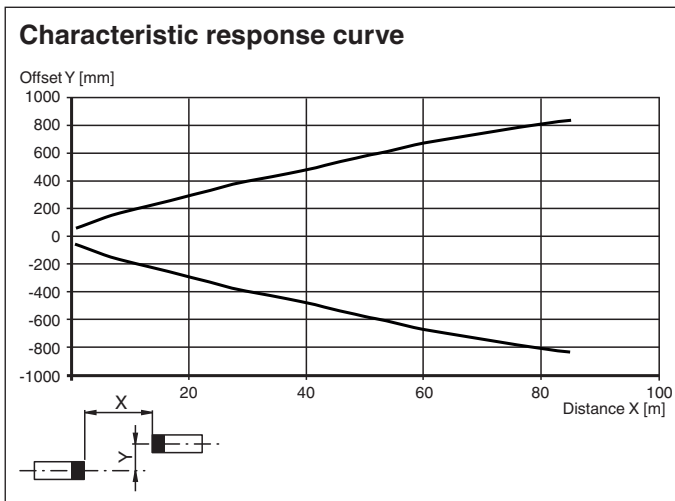
Characteristic response curve

Offset Y [mm]

Distance X [m]

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Characteristic Curve

Relative received light strength

Stability control

Light spot diameter

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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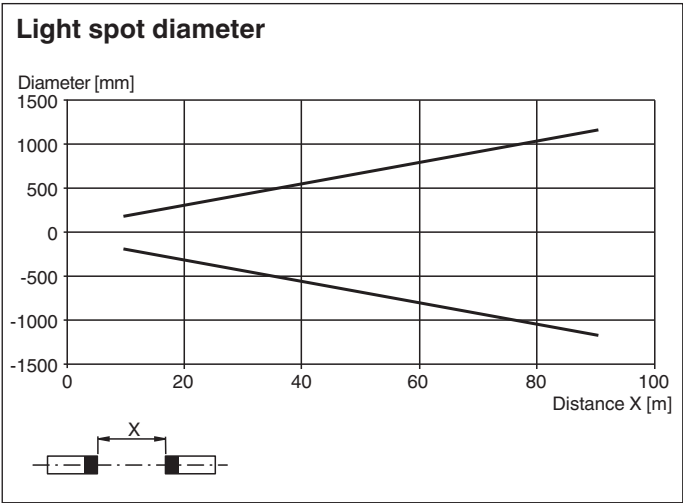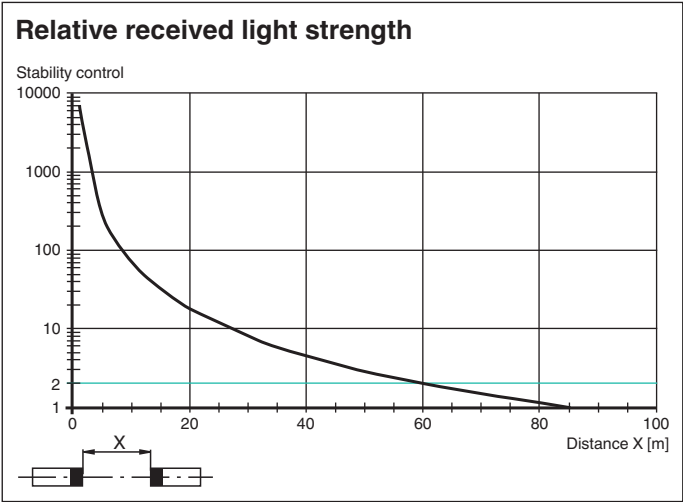
Characteristic Curve

Timer Functions

Switching Type L.ON	Detection Status / Operation Mode	Waveform
		Light Received / No Light Received
Timer (OFF ON, ON D OFF D 1-Shot DO)	No Delay (Timer OFF)	ON / OFF
Timer (OFF ON, ON D OFF D 1-Shot DO)	ON Delay	ON / OFF — T
Timer (OFF ON, ON D OFF D 1-Shot DO)	OFF Delay	ON / OFF — T
Timer (OFF ON, ON D OFF D 1-Shot DO)	One-Shot Delay	ON / OFF — T
Timer (OFF ON, ON D OFF D 1-Shot DO)	ON Delay and OFF Delay	ON / OFF — T

Switching Type D.ON	Detection Status / Operation Mode	Waveform
		Light Received / No Light Received
Timer (OFF ON, ON D OFF D 1-Shot DO)	No Delay (Timer OFF)	ON / OFF
Timer (OFF ON, ON D OFF D 1-Shot DO)	ON Delay	ON / OFF — T
Timer (OFF ON, ON D OFF D 1-Shot DO)	OFF Delay	ON / OFF — T
Timer (OFF ON, ON D OFF D 1-Shot DO)	One-Shot Delay	ON / OFF — T
Timer (OFF ON, ON D OFF D 1-Shot DO)	ON Delay and OFF Delay	ON / OFF — T

DIP-Switch position →

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Accessories

	MPZB01	Mounting bracket with vertical slots
	MPZB02	Mounting bracket with circular slots
	MPZB06	Ball and Swivel Mounting Bracket
	MPZB07	Ball and Swivel Vertical Mounting Plate

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www.pepperl-fuchs.com   fa-info@us.pepperl-fuchs.com   fa-info@de.pepperl-fuchs.com   fa-info@sg.pepperl-fuchs.com

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