

**LS 96**

**Throughbeam photoelectric sensors**

en 10-2012/08 50120809



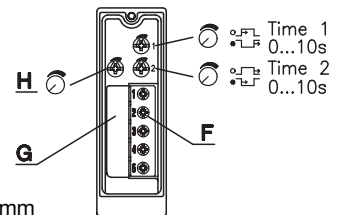
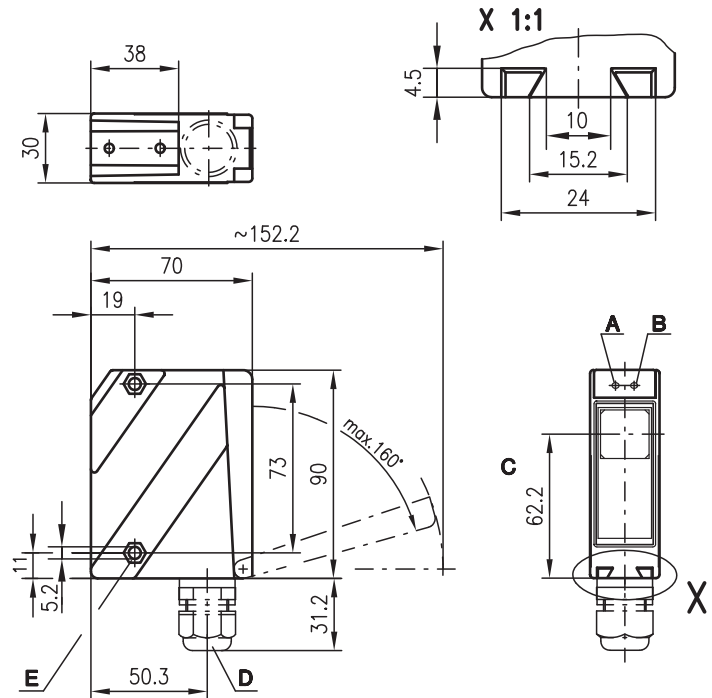
**65m  
150m**

20-230 V  
AC / DC



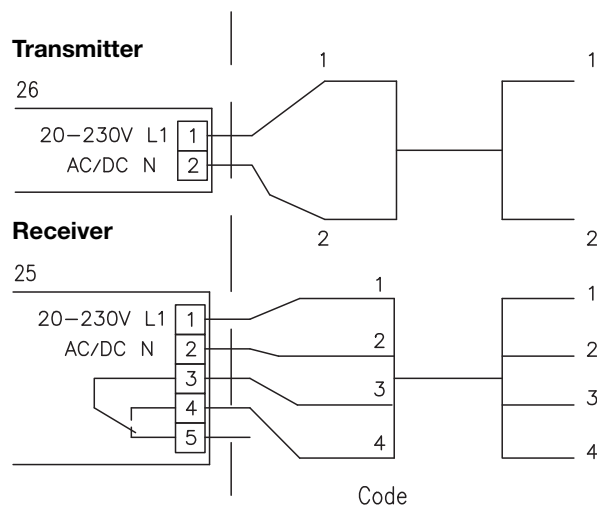
- Throughbeam photoelectric sensors with high performance reserve in infrared light
- Robust metal housing with glass cover or plastic housing, protection class IP 67/ IP 69K for industrial application
- All-mains design 20 ... 230VAC/DC
- Relay with change-over contact, sensitivity adjustment and delay before start-up for optimal adaptation to the application
- Connection via comfortable terminal compartment up to 1.5mm<sup>2</sup>
- Version with additional switching delay

**Dimensioned drawing**



- A** Green indicator diode
- B** Yellow indicator diode
- C** Optical axis
- D** Screwed cable gland M16x1.5 for Ø 5 ... 10mm
- E** Countersinking for SK nut M5, 4.2 deep
- F** Connection terminals
- G** Cable entry
- H** Sensitivity adjustment

**Electrical connection (example)**



We reserve the right to make changes • DS\_LS96MKR\_en\_50120809.fm



**Accessories:**

- (available separately)
- Mounting systems (BT 96, BT 96.1, UMS 96, BT 450.1-96)
  - Spark extinction
  - Alignment aid ARH 96

## Specifications

### Optical data

Typ. operating range limit <sup>1)</sup>  
 Operating range <sup>2)</sup>  
 Light source  
 Wavelength

**65m**  
 0 ... 65m  
 0 ... 50m  
 LED (modulated light)  
 880nm (infrared)

**150m**  
 0 ... 150m  
 0 ... 120m

### Timing

Switching frequency  
 Response time  
 Delay before start-up

20Hz  
 25ms  
 ≤ 200ms

### Electrical data

Operating voltage U<sub>B</sub>

20 ... 230VAC, 50/60Hz  
 20 ... 230VDC

Power consumption  
 Switching output <sup>3)</sup>  
 Function characteristics  
 Switching voltage, relay  
 Switching current, relay  
 Open-circuit current  
 Sensitivity

≤ 1.5VA  
 relay, 1 change-over contact  
 break-contact/make-contact  
 250VAC/DC  
 250VAC, 3A/30V, 3A  
 750VA, cosφ=1  
 adjustable

### Indicators

Green LED  
 Yellow LED  
 Yellow LED, flashing

ready  
 light path free  
 light path free, no performance reserve

### Mechanical data

Housing  
 Optics cover  
 Weight  
 Connection type

### Metal housing

diecast zinc  
 glass  
 380g  
 terminals

### Plastic housing

polycarbonate  
 plastic  
 150g  
 terminals

### Environmental data

Ambient temp. (operation/storage)  
 Protective circuit <sup>4)</sup>  
 VDE safety class <sup>5)</sup>  
 Protection class  
 Light source  
 Standards applied

-30°C ... +60°C/-40°C ... +70°C  
 1, 2, 3  
 II, all-insulated  
 IP 67, IP 69K <sup>6)</sup>  
 exempt group (in acc. with EN 62471)  
 IEC 60947-5-2

### Options

**Switching delay** (slow oper./release) 0 ... 10s (separately adjustable)

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) Suitable spark extinction must be provided with inductive or capacitive loads
- 4) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs
- 5) Rating voltage 250VAC
- 6) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test

### Approved purpose:

This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.

## Order guide

Selection table		Order code →					
Equipment ↓		LS 96K/R-1310-2 Part No. 50025253 (Tr) Part No. 50025257 (Re)	LS 96K/R-1320-2 Part No. 50025253 (Tr) Part No. 50025256 (Re)	LS 96M/R-1310-2 Part No. 50080081 (Tr) Part No. 50080080 (Re)	LS 96M/R-3310-2 Part No. 50080081 (Tr) Part No. 50031651 (Re)	LS 96K/R-131P-2 Part No. 50030405 (Tr) Part No. 50030406 (Re)	
Housing	metal						
	plastic	●	●	●	●	●	
Light source	infrared light (50m)	●	●	●		●	
	infrared light (120m)				●		
Connection	terminals	●	●	●	●	●	
Features	switching delay		●				
	UL homologation			●			

## Tables

65m models

0	50	65
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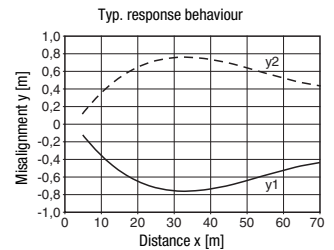
150m models

0	120	150
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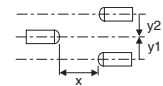
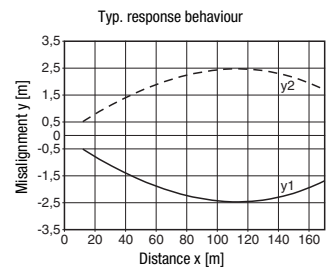
Operating range [m]  
 Typ. operating range limit [m]

## Diagrams

### 65m models



### 150m models



## Remarks

- LS 96K/R-131P-2  
 P = Reduction M16

LS = Pair consisting of  
 LSS = Transmitter  
 LSE = Receiver

**LS 96K/R-1310-2**  
 LSS 96K-1350-26  
 LSE 96K/R-1310-25

**LS 96K/R-1320-2**  
 LSS 96K-1350-26  
 LSE 96K/R-1320-25

**LS 96M/R-1310-2**  
 LSS 96M-1350-26  
 LSE 96M/R-1310-25

**LS 96M/R-3310-2**  
 LSS 96M-1350-26  
 LSE 96M/R-3310-25

**LS 96K/R-131P-2**  
 LSS 96K-135P-26  
 LSE 96K/R-131P-25