

# LS 96

## Throughbeam photoelectric sensors

en 2019/05/08 50120809-01



65m  
150m

20-230 V  
AC / DC

- Throughbeam photoelectric sensors with high function reserve in infrared light
- Robust metal housing with glass cover or plastic housing, degree of protection 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

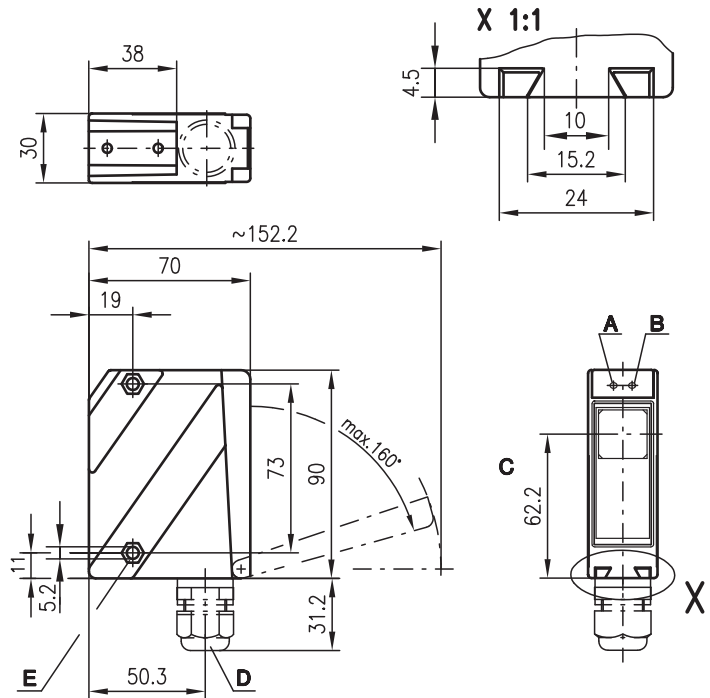


### Accessories:

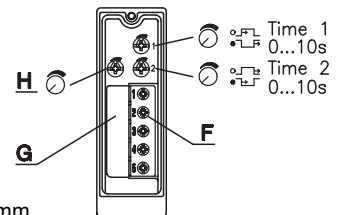
(available separately)

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

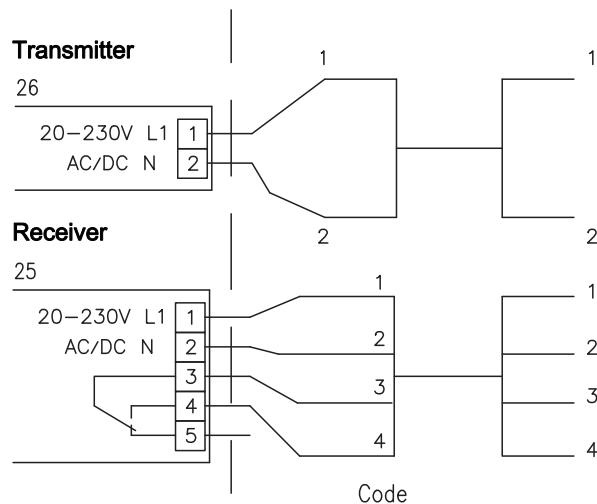
### Dimensioned drawing



- 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-

## Technical data

### 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

### Time behavior

Switching frequency 20Hz  
Response time 25ms  
Readiness delay ≤ 200ms

### Electrical data

Operating voltage  $U_B$  20 ... 230VAC, 50/60Hz  
20 ... 230VDC  
Power consumption ≤ 1.5VA  
Switching output <sup>3)</sup> Relay, 1 change-over contact

Function  
Switching voltage, relay 250VAC/DC  
Switching current, relay 250VAC, 3A/30V, 3A  
Open-circuit current 750VA,  $\cos\phi=1$   
Sensitivity Adjustable

### Indicators

Green LED  
Yellow LED  
Yellow LED, flashing

Ready  
Light path free  
Light path free, no function 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) -30°C ... +60°C/-40°C ... +70°C  
Protective circuit <sup>4)</sup> 1, 2, 3  
VDE protection class <sup>5)</sup> II, all-insulated  
Degree of protection IP 67, IP 69K <sup>6)</sup>  
Light source Exempt group (in acc. with EN 62471)  
Standards applied IEC 60947-5-2

### Additional functions

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

- 1) Typ. operating range limit: max. attainable range without function reserve
- 2) Operating range: recommended range with function 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 intended as personnel protection.

## Order guide

| Selection table |                       | Order code →                                                        |                                                                     |                                                                     |                                                                     |                                                                     |  |
|-----------------|-----------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|--|
| Equipment ↓     |                       | LS 96K/R-1310-2<br>Part No. 50025253 (Tr)<br>Part No. 50025257 (Re) | LS 96K/R-1320-2<br>Part No. 50025253 (Tr)<br>Part No. 50025256 (Re) | LS 96M/R-1310-2<br>Part No. 50080081 (Tr)<br>Part No. 50080080 (Re) | LS 96M/R-3310-2<br>Part No. 50080081 (Tr)<br>Part No. 50031651 (Re) | LS 96K/R-131P-2<br>Part No. 50030405 (Tr)<br>Part No. 50030406 (Re) |  |
| Housing         | Metal                 |                                                                     |                                                                     | ●                                                                   | ●                                                                   |                                                                     |  |
|                 | Plastic               | ●                                                                   | ●                                                                   |                                                                     |                                                                     | ●                                                                   |  |
| Light source    | Infrared light (50m)  | ●                                                                   | ●                                                                   | ●                                                                   |                                                                     | ●                                                                   |  |
|                 | Infrared light (120m) |                                                                     |                                                                     |                                                                     | ●                                                                   |                                                                     |  |
| Connection      | Terminals             | ●                                                                   | ●                                                                   | ●                                                                   | ●                                                                   | ●                                                                   |  |
| Features        | Switching delay       |                                                                     | ●                                                                   |                                                                     |                                                                     |                                                                     |  |
|                 | UL approval           |                                                                     |                                                                     | ●                                                                   |                                                                     |                                                                     |  |

## Tables

### 65m models

|   |    |    |
|---|----|----|
| 0 | 50 | 65 |
|---|----|----|

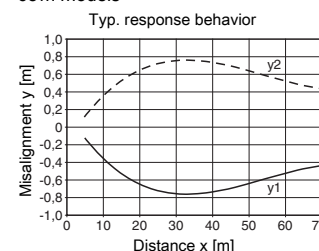
### 150m models

|   |     |     |
|---|-----|-----|
| 0 | 120 | 150 |
|---|-----|-----|

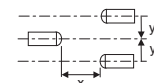
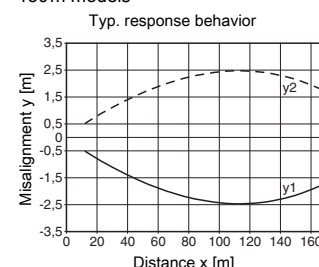
Operating range [m]  
Typ. operating range limit [m]

## Diagrams

### 65m models



### 150m models



## Notes

- 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