

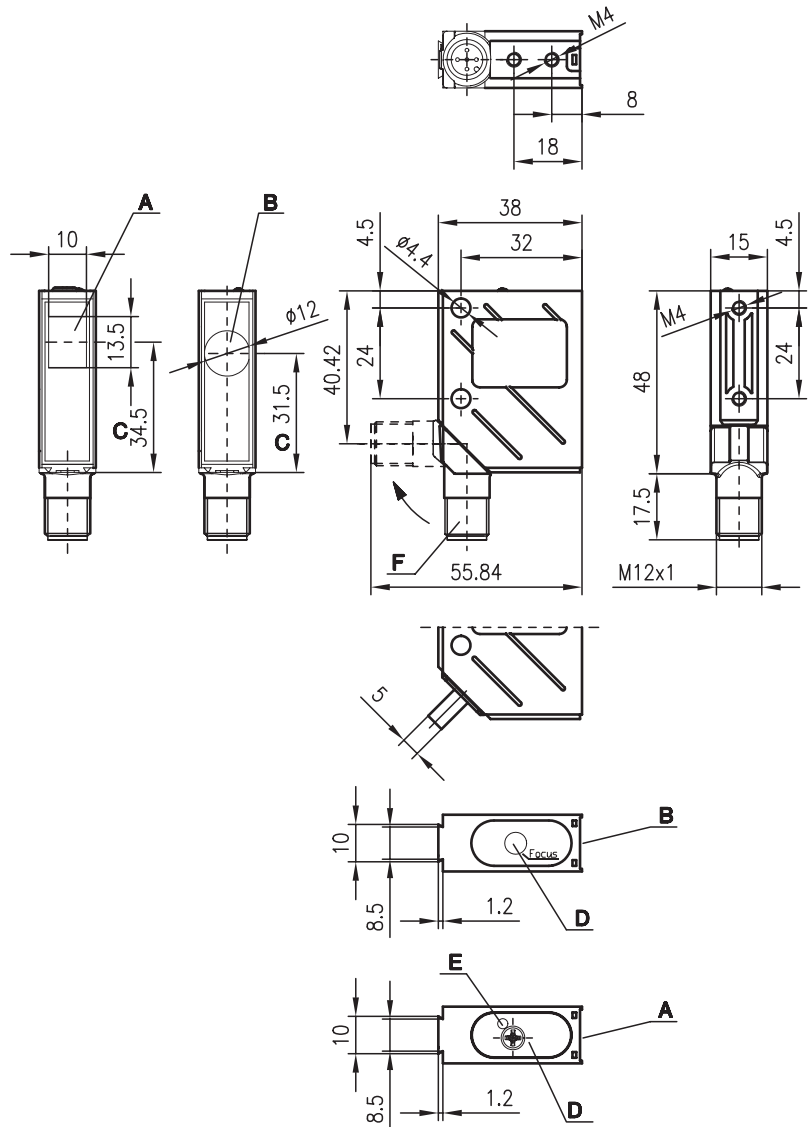


LSRL 8

Laser throughbeam photoelectric sensors



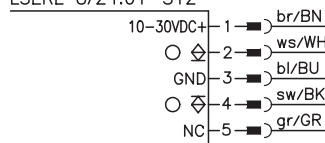
Dimensioned drawing



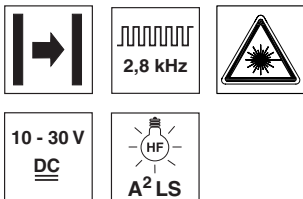
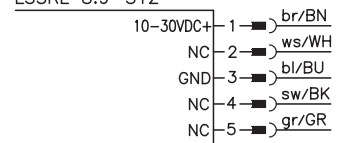
- A Receiver
- B Transmitter
- C Optical axis
- D Operational control
- E LED yellow
- F 90° turning connector

Electrical connection

LSRL 8/24.01
LSRL 8/24.01-S12

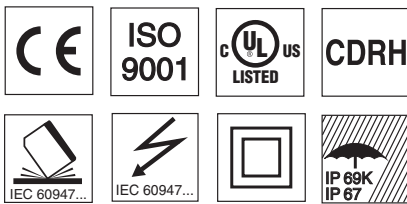


LSSRL 8.9
LSSRL 8.9-S12



100m

- Laser, red light
- A²LS - active suppression of extraneous light
- Adjustable focus
- M12 turning connector or cable connection



Accessories:

(available separately • see page 74)

- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Mounting systems
- Diaphragms
- Control guard

We reserve the right to make changes • 8_a02e_fm

Specifications

Optical data

| | |
|--|--------------------------------------|
| Typ. operating range limit ¹⁾ | 100m |
| Operating range ²⁾ | 60m |
| Light spot diameter | ≥ 0.1mm adjustable (see diagrams) |
| Focus adjustment range | 140mm ... ∞ (see diagrams) |
| Beam spread | ≥ 0.5mrad |
| Light source | laser |
| Wavelength | 670nm (visible red light, polarised) |
| Laser warning notice | see remarks |

Timing

| | |
|-----------------------|---------|
| Switching frequency | 2800Hz |
| Response time | 0.18ms |
| Delay before start-up | ≤ 100ms |

Electrical data

| | |
|--------------------------|------------------------------------|
| Operating voltage U_B | 10 ... 30VDC |
| Residual ripple | ≤ 15% of U_B |
| Bias current | ≤ 35mA |
| Switching output | PNP and NPN transistor output |
| Function characteristics | light switching |
| Signal voltage high/low | ≥ ($U_B - 2V$) / ≤ 2V |
| Output current | max. 100mA |
| Sensitivity | adjustable with 270° potentiometer |

Indicators

| | |
|-------------------------------|---|
| LED yellow, receiver | light path free |
| LED yellow flashing, receiver | light path free, no performance reserve |

Mechanical data

| | |
|---------------------|--|
| Housing | metal |
| Optics cover | glass |
| Weight (plug/cable) | 70g/140g |
| Connection type | M 12 connector, 5-pin (turning), or cable: 2000mm, 5x0.25mm ² |

Environmental data

| | |
|-----------------------------------|-----------------------------------|
| Ambient temp. (operation/storage) | -10°C ... +40°C / -40°C ... +70°C |
| Protective circuit ³⁾ | 2, 3 |
| VDE safety class ⁴⁾ | II, all-insulated |
| Protection class ⁵⁾ | IP 67, IP 69K ⁶⁾ |
| Laser class | 2 (acc. to EN 60825-1) |
| Standards applied | IEC 60947-5-2 |

- 1) Typ. operating range limit: max. attainable range without performance reserve, focus = ∞
- 2) Operating range: recommended range with performance reserve, focus = 2m
- 3) 2=polarity reversal protection, 3=short-circuit protection for all outputs
- 4) Rating voltage 250VAC
- 5) In stop position of the turning connector (turning connector locked)
- 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

Order guide

| | Designation | Part No. |
|----------------------------|-------------------|-----------|
| With M 12 connector | | |
| Transmitter and receiver | LSRL 8/24.91-S12 | |
| Transmitter | LSSRL 8.9-S12 | 500 36358 |
| Receiver | LSERL 8/24.01-S12 | 500 36359 |
| With 2m cable | | |
| Transmitter and receiver | LSRL 8/24.91 | |
| Transmitter | LSSRL 8.9 | 500 37083 |
| Receiver | LSERL 8/24.01 | 500 37084 |

Tables

without diaphragm:

| | | |
|---|----|-----|
| 0 | 60 | 100 |
|---|----|-----|

with pin diaphragm in front of receiver¹⁾:

| | | |
|---|---|----|
| 0 | 8 | 10 |
|---|---|----|

with slit diaphragm in front of receiver¹⁾:

| | | |
|---|----|----|
| 0 | 16 | 20 |
|---|----|----|

□ Operating range [m] *

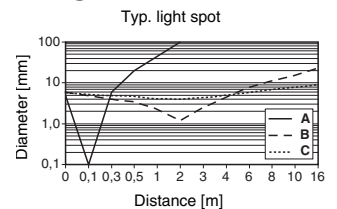
▒ Typ. operating range limit [m] **

* for focus adjusted to 2m

** for focus adjusted to ∞

1) see remarks

Diagrams



A focus = 0.125m

B focus = 2m

C focus = 16m

Remarks

- Smallest object for the complete operating range with
 - pin diaphragm: $\varnothing=0.7$ mm,
 - slit diaphragm: $\varnothing=1.0$ mm

| | |
|--|-------|
| LASER LIGHT DO NOT STARE INTO BEAM | |
| Maximum Output: | 2.6mW |
| Pulse duration: | 6µs |
| Wavelength: | 670nm |
| CLASS 2 LASER PRODUCT EN60825-1:2003-10 | |