

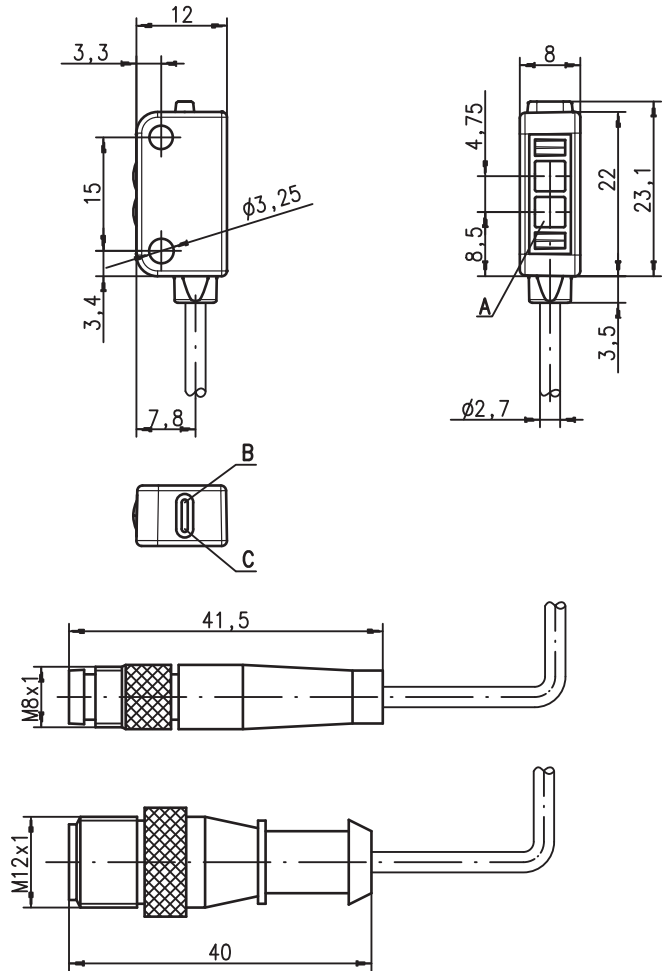
LSR 2

Miniature throughbeam photoelectric sensor

en 02-2010/08 50112212



Dimensioned drawing



- A Transmitter
- B Yellow indicator diode
- C Green indicator diode



0 ... 2m

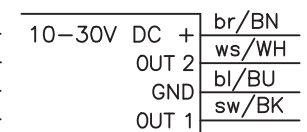
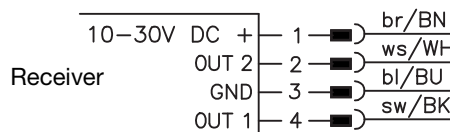
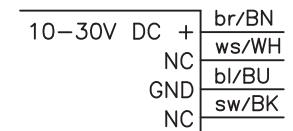
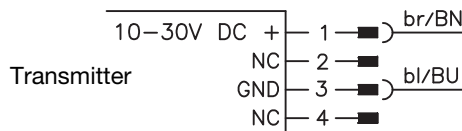


- Miniature throughbeam photoelectric sensor with visible red light
- Homogeneous, highly visible light spot by means of pin-point LED
- Universal connection options
- Miniature construction with temperature-stable plastic housing with protection class IP 67 and 2 inlaid metal fastening sleeves for secure mounting

Electrical connection

Plug connection, 4-pin

Cable, 4 wires



Accessories:

(available separately)

- Mounting device BT 002 M.5 (50112206)
- Cable with M8 or M12 connector (K-D ...)

We reserve the right to make changes • DS_LSR2_en.fm



Specifications

Optical data

| | |
|--|---------------------------|
| Typ. operating range limit ¹⁾ | 0 ... 2m |
| Operating range ²⁾ | 0 ... 1.6m |
| Light source ³⁾ | LED (modulated light) |
| Wavelength | 640nm (visible red light) |

Timing

| | |
|-----------------------|---------|
| Switching frequency | 385Hz |
| Response time | 1.3ms |
| Repeatability | 175µs |
| Delay before start-up | ≤ 120ms |

Electrical data

| | |
|---------------------------------------|---|
| Operating voltage U_B ⁴⁾ | 10 ... 30VDC (incl. residual ripple) |
| Residual ripple | ≤ 10% of U_B |
| Open-circuit current | ≤ 20mA |
| Switching output | .../42 OUT1 (pin 4): PNP light switching .../42D OUT2 (pin 2): NPN light switching OUT1 (Pin 4): PNP dark switching OUT2 (Pin 2): NPN dark switching |
| Output configuration | bipolar transistor with open collector, leakage current (OFF): PNP=10µA, NPN=200µA, saturation voltage (ON, at 50mA): PNP=1.45V, NPN=1.25V max. 50mA (per output and total) C ≤ 2.2µF |
| Output current | |
| Load | |

Indicators

| | |
|--------------------------------|---|
| Green LED in continuous light | ready |
| Green LED, flashing | output overloaded |
| Yellow LED in continuous light | light path free |
| Yellow LED, flashing | light path free, no performance reserve |

Mechanical data

| | |
|-----------------|---|
| Housing | plastic (TPE), color: red RAL 3000 |
| Optics cover | plastic (PC) |
| Attachment | by means of 2 brass sleeves integrated in the housing |
| Weight | with 2m cable: 50g with 150mm cable and connector: 20g |
| Connection type | 2m cable, PVC, 4-wire, core cross section 4x0.14mm ² , 150mm cable with M8/M12 connector, 4-pin |

Environmental data

| | |
|-----------------------------------|--|
| Ambient temp. (operation/storage) | -20°C ... +55°C/-30°C ... +75°C |
| Protective circuit ⁵⁾ | 1, 2, 3, 4 |
| VDE safety class | III |
| Protection class | IP 67 |
| LED class | 1 (acc. to EN 60825-1) |
| Standards applied | IEC 60947-5-2 |
| Certifications | cURus (Recognised Component Mark for Canada and USA) |

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) Average life expectancy 100,000h at an ambient temperature of 25°C
- 4) For UL applications: for use in class 2 circuits according to NEC only
- 5) 1=overload protection, 2=polarity reversal protection, 3=short circuit protection for all transistor outputs, 4=transient protection max. ± 50V

Remarks

● Approved purpose

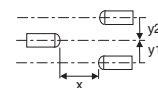
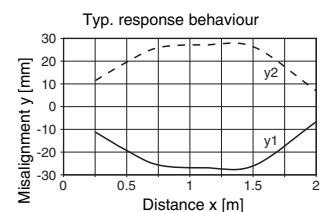
The throughbeam photoelectric sensors are optical electronic sensors for optical, contactless detection of objects. This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.

Tables

| | | |
|---|-----|---|
| 0 | 1.6 | 2 |
|---|-----|---|

| | |
|--------------------------|--------------------------------|
| <input type="checkbox"/> | Operating range [m] |
| <input type="checkbox"/> | Typ. operating range limit [m] |

Diagrams



Remarks

A light axis consists of a transmitter and a receiver with the following designations:

| | | |
|------|---|---------------------|
| LSR | = | Complete light axis |
| LSSR | = | Transmitter |
| LSER | = | receiver |

LSR 2

Miniature throughbeam photoelectric sensor

Type key

L S S R 2 / 4 2 D , 1 5 0 - S 1 2

Operating principle

| | |
|-------------|--|
| HRTR | Miniature light scanners with background suppression, red light |
| PRK | Miniature retro-reflective photoelectric sensor with polarization filter |
| LSSR | Miniature throughbeam photoelectric sensor, red-light transmitter |
| LSER | Miniature throughbeam photoelectric sensor, red-light receiver |

Series

| | |
|----------|----------|
| 2 | 2 Series |
|----------|----------|

Switching output

| | |
|------------|--|
| /42 | Bipolar transistor output open collector, OUT 1 (pin 4): PNP, OUT 2 (pin 2): NPN |
|------------|--|

Switching output function

| | |
|------------|--------------------------------------|
| N/A | OUT 1 and OUT 2 both light switching |
| D | OUT 1 and OUT 2 both dark switching |

Scanning range (only with operating principle HRTR)

| | |
|-------------|-----------------------------------|
| -15F | Scanning range limit set to 15 mm |
| -30F | Scanning range limit set to 30 mm |
| -50F | Scanning range limit set to 50 mm |

Electrical connection

| | |
|-----------------|--|
| N/A | Cable, PVC, standard length 2000 mm, 4-wire |
| ,150-S8 | Cable, PVC, length 150 mm with M8 connector, 4-pin, axial |
| ,150-S12 | Cable, PVC, length 150 mm with M12 connector, 4-pin, axial |

Order guide

The sensors listed here are preferred types; current information at www.leuze.com

| Order code | Part No. |
|---------------------|----------|
| Transmitter | |
| LSSR 2 | 50112127 |
| LSSR 2, 150-S8 | 50112128 |
| LSSR 2, 150-S12 | 50112129 |
| receiver | |
| LSER 2/42 | 50112130 |
| LSER 2/42, 150-S8 | 50112131 |
| LSER 2/42, 150-S12 | 50112132 |
| LSER 2/42D | 50112133 |
| LSER 2/42D, 150-S8 | 50112134 |
| LSER 2/42D, 150-S12 | 50112135 |

