

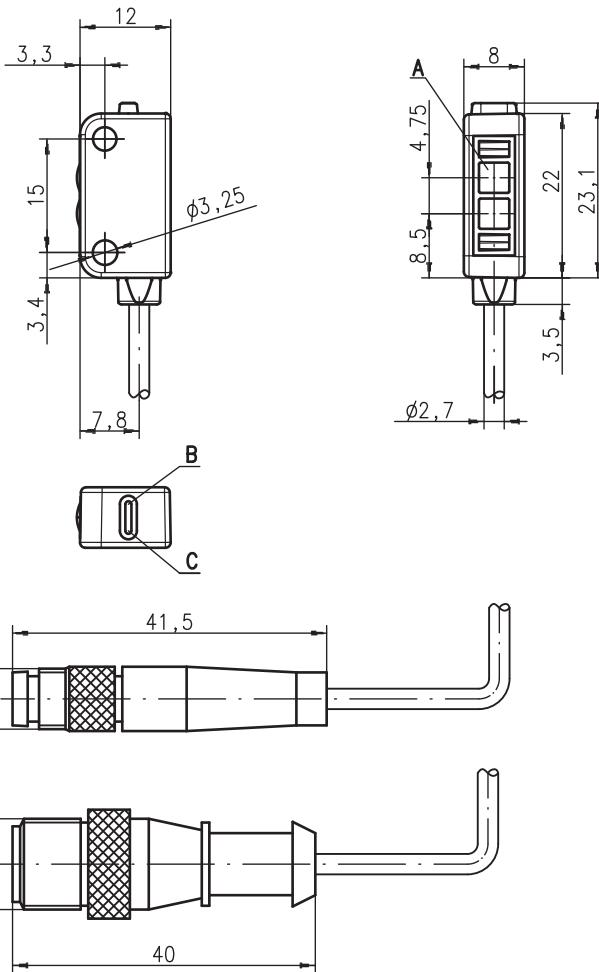


Figure can vary

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
- Activation input (option)

Dimensioned drawings



A Transmitter
B Yellow indicator diode
C Green indicator diode

All dimensions in millimeters

Accessories:

(available separately)

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

Electrical connection

Transmitter

Receiver

| | | | | |
|---------------------------|-------------|---------|-------------|---------|
| Plug connection, 4-pin | 10–30V DC + | 1 br/BN | 10–30V DC + | 1 br/BN |
| | NC 2 | bl/BU | OUT 2 | 2 bl/BU |
| Plug connection, 3-pin | GND 3 | | GND 3 | 3 sw/BK |
| | NC 4 | | OUT 1 | 4 sw/BK |
| Cable, 4 wires | 10–30V DC + | 1 br/BN | 10–30V DC + | 1 br/BN |
| | GND 3 | bl/BU | GND 3 | bl/BU |
| | activ 4 | sw/BK | OUT 1 | 4 sw/BK |
| | 10–30V DC + | br/BN | 10–30V DC + | br/BN |
| | NC | ws/WH | OUT 2 | 2 ws/WH |
| | GND | bl/BU | GND | bl/BU |
| | NC | sw/BK | OUT 1 | 4 sw/BK |

Technical data

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 OUT2 (pin 2): NPN light switching .../42D OUT1 (Pin 4): PNP dark switching OUT2 (Pin 2): NPN dark switching .../4 OUT1 (pin 4): PNP light switching bipolar transistor with open collector, leakage current (OFF): PNP=10µA, NPN=10µA, saturation voltage (ON, at 50mA): PNP=2V, NPN=2V max. 50mA (per output and total) $C \leq 2.2\mu F$ |
| Output configuration | |
| 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) |
| 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 (Recognized Component Mark for Canada and USA) |

Options

| | |
|--|-------------------|
| Activation input activ (only LSSR 2.8, 150-S8.3) | - |
| Transmitter active/not active | $\geq 8V \leq 2V$ |
| Activation/disable delay | $\leq 1ms$ |

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. $\pm 50V$

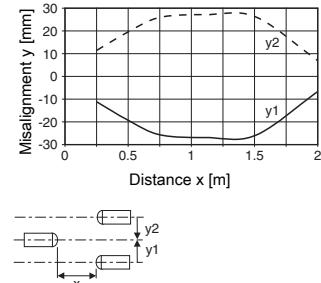
Tables

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

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

Diagrams

Typ. response behavior



NOTES



Operate in accordance with intended use!

↳ This product is not a safety sensor and is not intended as personnel protection.

↳ The product may only be put into operation by competent persons.

↳ Only use the product in accordance with the intended use.

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

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

Part number code

LSSR 2 / 42 D , 150 - S12

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
2.8 With activation input

Switching output

| | |
|------------|--|
| I42 | Bipolar transistor output open collector, OUT 1 (pin 4): PNP, OUT 2 (pin 2): NPN |
| I4 | Bipolar transistor output open collector, OUT 1 (pin 4): PNP, OUT 2 (pin 2): does not exist |

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)

| Scanning range (only with operating principle) |
|--|
| -15F Scanning range limit set to 15mm |
| -30F Scanning range limit set to 30mm |
| -50F Scanning range limit set to 50mm |

Electrical connection

| Electrical Connection | |
|-----------------------|---|
| N/A | Cable, PVC, standard length 2000mm, 4-wire |
| .150-S8 | Cable, PVC, length 150mm with M8 connector, 4-pin, axial |
| .150-S8.3 | Cable, PVC, length 150mm with M8 connector, 3-pin, axial |
| .150-S12 | Cable, PVC, length 150mm 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 2.8, 150-S8.3 | 50116172 |
| LSSR 2, 150-S12 | 50112129 |

receiver

| | |
|---------------------|----------|
| LSER 2/42 | 50112130 |
| LSER 2/42, 150-S8 | 50112131 |
| LSER 2/4, 150-S8.3 | 50116173 |
| LSER 2/42, 150-S12 | 50112132 |
| LSER 2/42D | 50112133 |
| LSER 2/42D, 150-S8 | 50112134 |
| LSER 2/42D, 150-S12 | 50112135 |