LSR 2

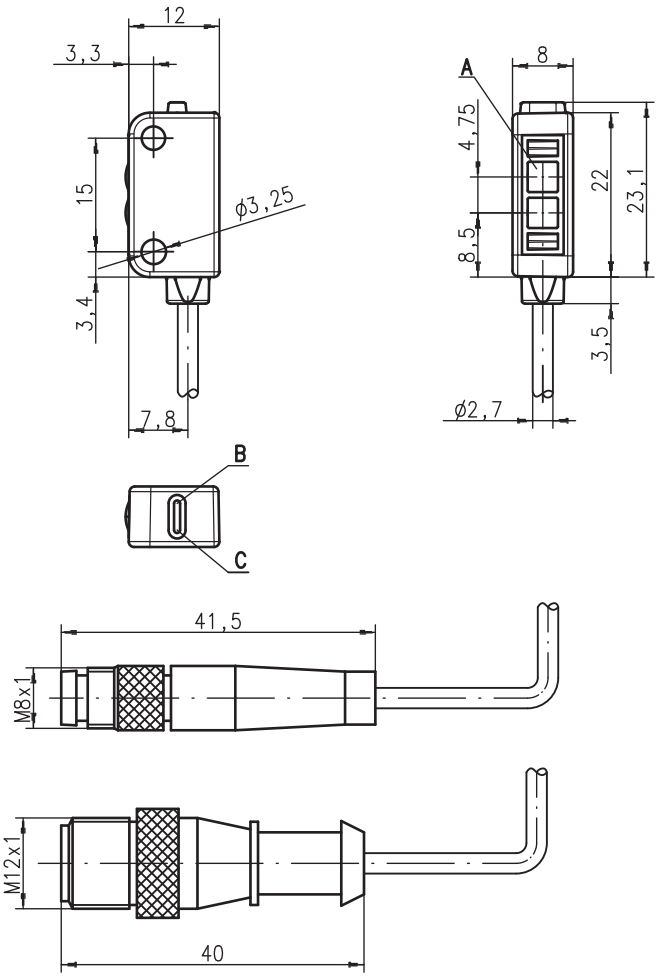
Miniature throughbeam photoelectric sensor

en 05-2020/01/16 50112212

0 … 2m

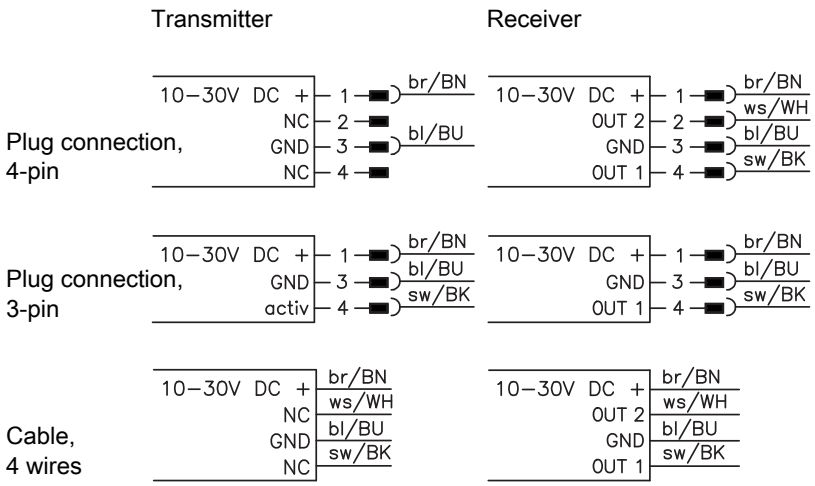
- Miniature throughbeam photoelectric sensor with visible red light
- Homogeneous, highly visible light spot by means of pin-point LED
- Universal connection options
- Miniature construction with temperature-stable plastic housing with protection class IP 67 and 2 inlaid metal fastening sleeves for secure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

Dimensioned drawing



A Transmitter
B Yellow indicator diode
C Green indicator diode

Electrical connection



We reserve the right to make changes • DS_LSR2_en_50112212.fm

IEC 60947... IEC 60947... IP 67

Accessories:

(available separately)

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

Leuze electronic GmbH + Co. KG
info@leuze.de • www.leuze.com
In der Braike 1 D-73277 Owen Tel. +49 (0) 7021 573-0

ПРОМЭЛЕКТРОНИКА / sales@prom-elec.com

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 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
Output configuration		bipolar transistor with open collector, leakage current (OFF): PNP=10µA, NPN=10µA, saturation voltage (ON, at 50mA): PNP=2V, NPN=2V
Output current		max. 50mA (per output and total)
Load		C ≤ 2.2µF

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 4x0.14mm², 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	≥ 8V/≤ 2V
Activation/disable delay	≤ 1ms

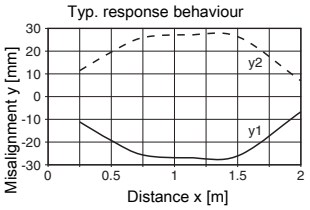
1) Typ. operating range limit: max. attainable range without performance reserve
2) Operating range: recommended range with performance reserve
3) Average life expectancy 100,000h at an ambient temperature of 25°C
4) For UL applications: for use in class 2 circuits according to NEC only
5) 1=overload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

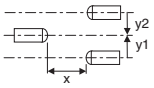
Tables

0	1.6	2

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

Diagrams





Remarks

Operate in accordance with intended use!

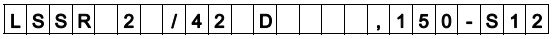
- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with the intended use.

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

LSR = Complete light axis
LSSR = Transmitter
LSER = Receiver

LSR 2 — Miniature throughbeam photoelectric sensor

Type key



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

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

-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-S8.3	Cable, PVC, length 150 mm with M8 connector, 3-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 2.8, 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

ПРОМЭЛЕКТРОНИКА / sales@prom-elec.com