

**PRK 2 Miniature retro-reflective photoelectric sensors with polarisation filter**

en 02-2010/08 50112210

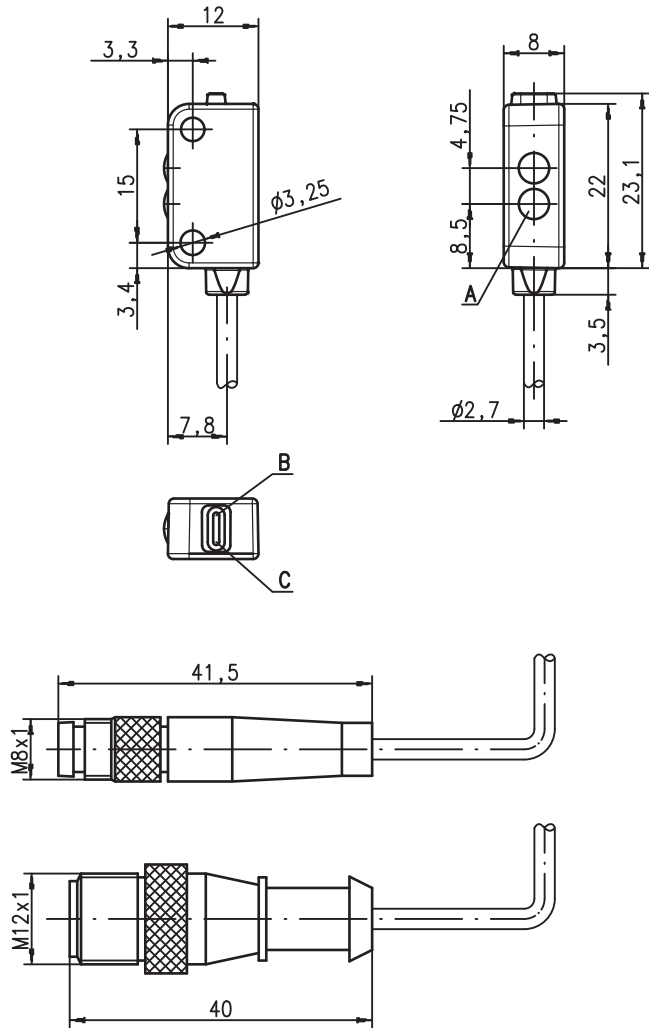


**0.07 ... 4m**



- Miniature polarised retro-reflective 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

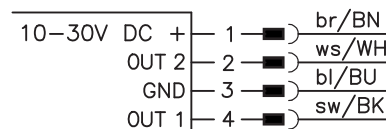
**Dimensioned drawing**



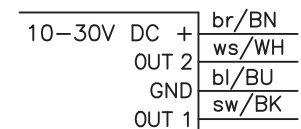
- A** Transmitter
- B** Yellow indicator diode
- C** Green indicator diode

**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 ...)
- Reflectors
- Reflective tapes

We reserve the right to make changes • DS\_PRK2\_en.fm



## Specifications

### Optical data

Typ. operating range limit <sup>1)</sup>	0.07 ... 4 m with reflector TKS 100x100
Operating range <sup>2)</sup>	see tables
Light beam characteristic	divergent, typ. light spot Ø 5mm at a distance of 200mm
Light source <sup>3)</sup>	LED (modulated light)
Wavelength	640nm (visible red light, polarised)

### Timing

Switching frequency	700Hz
Response time	0,72ms
Repeatability	175µs
Delay before start-up	≤ 120ms

### Electrical data

Operating voltage U <sub>B</sub> <sup>4)</sup>	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 10% of U <sub>B</sub>
Open-circuit current	≤ 20mA
Switching output	OUT1 (pin 4): PNP light switching 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 <sup>2</sup> , 150mm cable with M8/M12 connector, 4-pin

### Environmental data

Ambient temp. (operation/storage)	-20°C ... +55°C/-30°C ... +75°C
Protective circuit <sup>5)</sup>	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 retro-reflective 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

Reflectors		Operating range
1	TK(S) 100x100	0.07 ... 3.5m
2	TK 40x60	0.07 ... 2.5m
3	TK 20x40	0.02 ... 1.3m
4	Tape 4 50x50	0.12 ... 0.9m

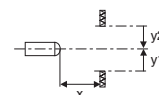
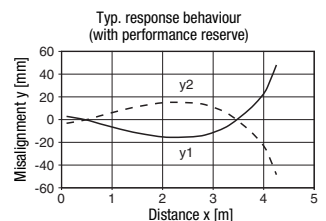
  

1	0.07		3.5	4
2	0.07	2.5	2.9	
3	0.02	1.3	1.5	
4	0.12	0.9	1.1	

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

TK ... = adhesive  
 TKS ... = screw type

## Diagrams



## Remarks

## PRK 2 Miniature retro-reflective photoelectric sensors with polarisation filter

### Type key

P	R	K	2	/	4	2	D					,	1	5	0	-	S	1	2
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#### Operating principle

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

#### Series

<b>2</b>	2 Series
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#### Switching output

<b>/42</b>	Bipolar transistor output open collector, OUT 1 (pin 4): PNP, OUT 2 (pin 2): NPN
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#### Switching output function

<b>N/A</b>	OUT 1 and OUT 2 both light switching
<b>D</b>	OUT 1 and OUT 2 both dark switching

#### Scanning range (only with operating principle HRTR)

<b>-15F</b>	Scanning range limit set to 15 mm
<b>-30F</b>	Scanning range limit set to 30 mm
<b>-50F</b>	Scanning range limit set to 50 mm

#### Electrical connection

<b>N/A</b>	Cable, PVC, standard length 2000mm, 4-wire
<b>,150-S8</b>	Cable, PVC, length 150mm with M8 connector, 4-pin, axial
<b>,150-S12</b>	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](http://www.leuze.com)

Order code	Part No.
PRK 2/42	50112136
PRK 2/42, 150-S8	50112137
PRK 2/42, 150-S12	50112138
PRK 2/42D	50112139
PRK 2/42D, 150-S8	50112140
PRK 2/42D, 150-S12	50112141

