

## PRK 2

## Miniature retro-reflective photoelectric sensor with polarization filter

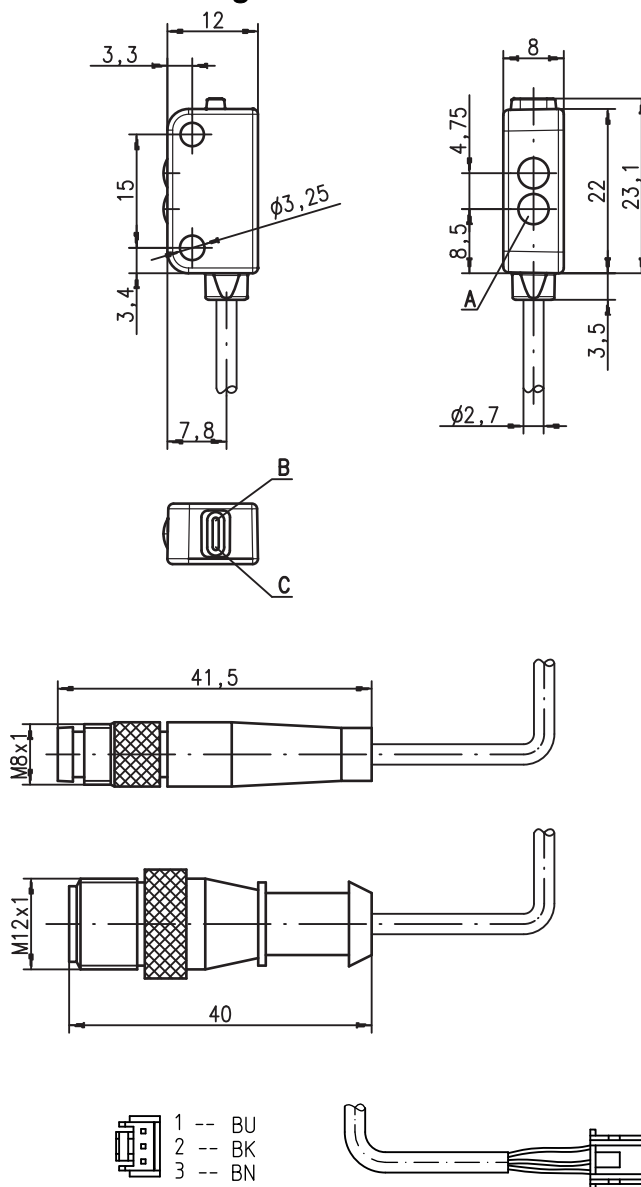
en 2022/03/29 50112210



0.07 ... 4m

- Miniature retro-reflective photoelectric sensor with visible red light
- Homogeneous, clearly visible light spot through pin-point LED
- Universal connection options
- Miniature construction with temperature-stable plastic housing with degree of protection IP 67 and 2 inlaid metal fastening sleeves for secure mounting

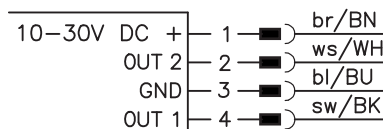
### Dimensioned drawing



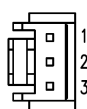
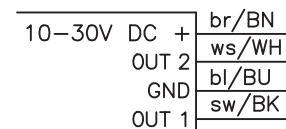
- A Transmitter
- B Yellow indicator diode
- C Green indicator diode

### Electrical connection

Connector, 4-pin



Cable, 4 wires



Pin	Color	Signal
1	BU	GND
2	BK	OUT
3	BN	10 - 30 V DC +

### 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

### Technical data

#### Optical data

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

#### Time behavior

Switching frequency	700Hz
Response time	0.72ms
Repeatability	175µs
Readiness delay	≤ 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

.../42D	OUT2 (pin 2): NPN light switching
Output configuration	OUT1 (Pin 4): PNP dark switching
	OUT2 (Pin 2): NPN dark switching
	Bipolar transistor with open collector,
	Leakage current (OFF):
	PNP=10µA, NPN=10µA,
	Saturation voltage (ON, at 50 mA):
	PNP=2V, NPN=2V
Output current	Max. 50mA (per output and total)
Load	C ≤ 2,2µF

#### Indicators

Green LED continuous light	Ready
Green LED flashing	Output overloaded
Yellow LED continuous light	Light path free
Yellow LED, flashing	Light path free, no function reserve

#### Mechanical data

Housing	Plastic (TPE), color: red RAL 3000
Optics cover	Plastic (PC)
Fastening	By means of 2 brass sleeves integrated in the housing
Weight	With 2 m cable: 50g
	With 150mm cable and connector: 20g
Connection type	2m cable, PVC, 4-wire, wire cross section 4x0.14mm <sup>2</sup> ,
	150mm cable with M8/M12 connector, 4-pin,
	300mm cable and JST connector, 3-pin
	500 mm cable and JST connector, 3-pin

#### Environmental data

Ambient temp. (operation/storage)	-30°C ... +55°C/-30°C ... +75°C
Protective circuit <sup>5)</sup>	1, 2, 3, 4
VDE protection class	III
Degree of protection	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 function reserve
- 2) Operating range: recommended range with function reserve
- 3) Average life expectancy 100,000h at an ambient temperature of 25°C
- 4) For UL applications: use is permitted exclusively in Class 2 circuits according to NEC
- 5) 1=overload protection, 2=polarity reversal protection, 3=short circuit protection for all transistor outputs, 4=transient protection max. ± 50V

### Notes

#### ● Approved purpose

The retro-reflective photoelectric sensors are optoelectronic 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 intended as personnel protection.

### 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	Film 4 50x50	0.12 ... 0.9m

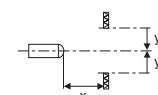
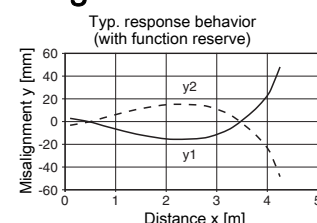
  

1	0.07		3.5	4
2	0.07	2.5	2.9	
3	0.02	1.3	1.5	
4	0.12	0.9	1.1	

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

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

### Diagrams



## PRK 2

## Miniature retro-reflective photoelectric sensor with polarization filter

### Part number code

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

<b>HRTR</b>	Miniature diffuse sensor 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>LSESR</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

#### Range (only with operating principle HRTR)

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

#### 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
<b>,300-JST</b>	PVC cable, length 300 mm with JST connector, 3-pin
<b>,500-JST</b>	PVC cable, length 500 mm with JST connector, 3-pin

### 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
PRK 2/42, 300-JST	50142332
PRK 2/42, 500-JST	50142333