PRK 2 Miniature retro-reflective photoelectric sensor with polarization filter

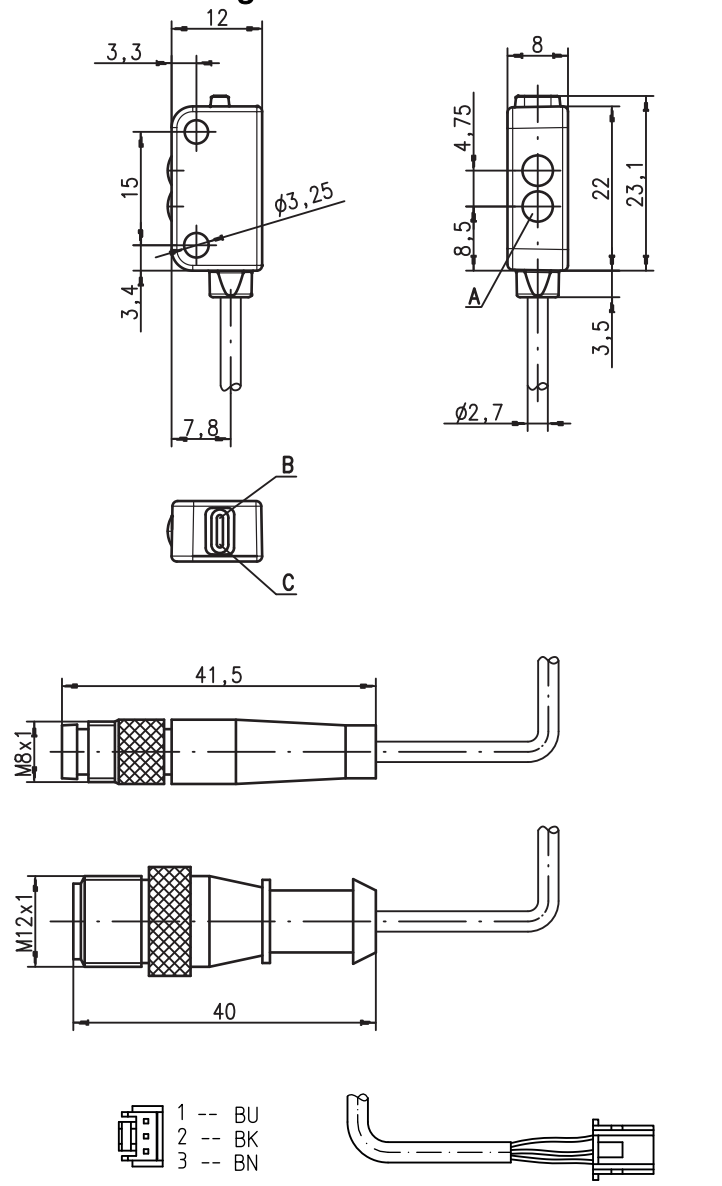
2024/03/04 50112210

Figure can vary

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 drawings



A Transmitter
B Yellow indicator diode
C Green indicator diode

All dimensions in millimeters

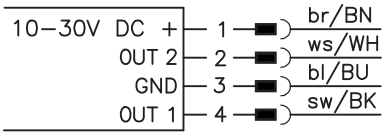
Accessories:

(available separately)

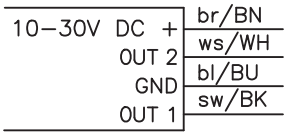
- Mounting device BT 002 M.5 (50112206)
- Cable with M8 or M12 connector (K-D …)
- Reflectors
- Reflective tapes

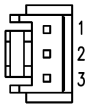
Electrical connection

Connector, 4-pin



Cable, 4 wires





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

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Technical data

Optical data

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

Time behavior

Switching frequency		700 Hz
Response time		0.72 ms
Repeatability		175 µs
Readiness delay		≤ 120 ms

Electrical data

Operating voltage U_B [4]		10 … 30 VDC (incl. residual ripple)
Residual ripple		≤ 10 % of U_B
Open-circuit current		≤ 20 mA
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
Output configuration		Bipolar transistor with open collector, Leakage current (OFF): PNP = 10 µA, NPN = 10 µA, Saturation voltage (ON, at 50 mA): PNP=2V, NPN=2V
Output current		Max. 50 mA (per output and total)
Load		C ≤ 2,2 µF

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)
Optics cover	Plastic (PC)
Fastening	By means of 2 brass sleeves integrated in the housing
Weight	With 2 m cable: 50 g With 150 mm cable and connector: 20 g
Connection type	2 m cable, PVC, 4-wire, wire cross section 4 x 0.14 mm², 150 mm cable with M8/M12 connector, 4-pin, 300 mm 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 [5]	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 100,000 h 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. ± 50 V

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 … 3.5 m
2	TK	40x60	0.07 … 2.5 m
3	TK	20x40	0.02 … 1.3 m
4	Film 4	50x50	0.12 … 0.9 m

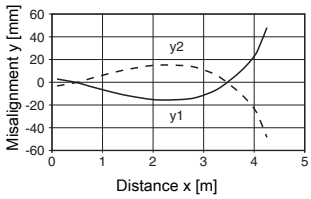
1	0.07		3.5	4
2	0.07	2.5	2.9	
3	0.02	1.3	1.5	
4	0.12	0.9	1.1	

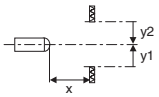
Operating range [m]
Typ. operating range limit [m]

TK … = adhesive
TKS … = screw type

Diagrams

Typ. response behavior
(with function reserve)





PRK 2 Miniature retro-reflective photoelectric sensor with polarization filter

Part number code

PRK 2 /42 D ,150-S12

Operating principle

HRTR	Miniature diffuse sensor 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

Range (only with operating principle HRTR)

-15F	Maximum range set to 15 mm
-30F	Maximum range set to 30 mm
-50F	Maximum range 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
,300-JST	PVC cable, length 300 mm with JST connector, 3-pin
,500-JST	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**

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

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