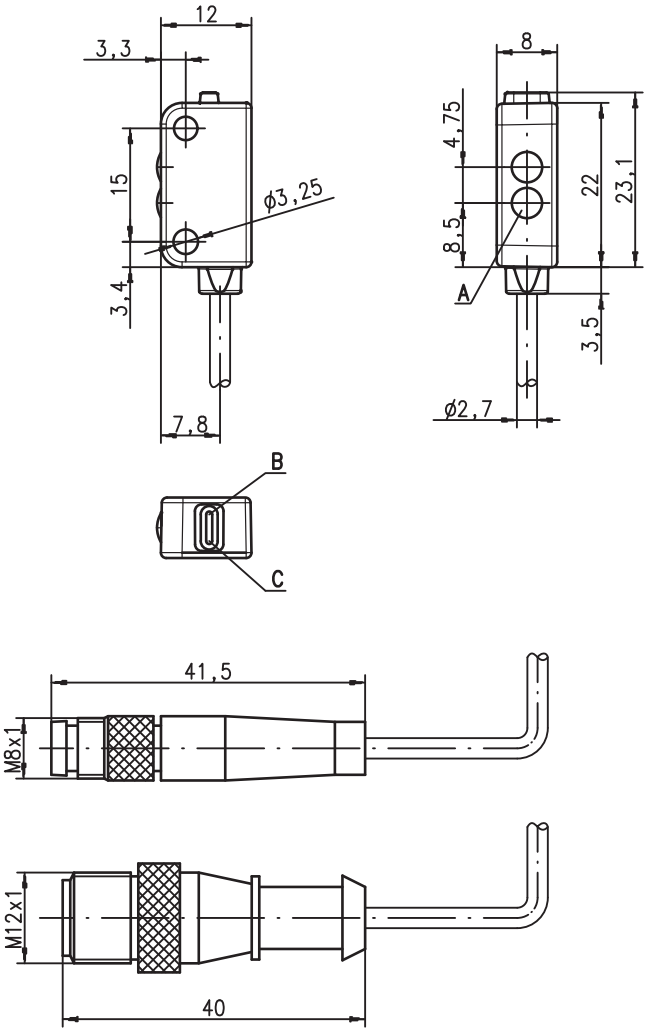
PRK 2 Miniature retro-reflective photoelectric sensors with polarisation filter

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

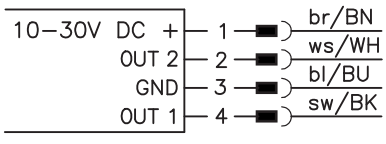
Dimensioned drawing



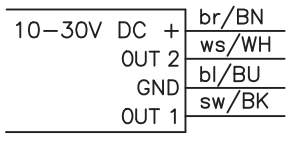
A Transmitter
B Yellow indicator diode
C Green indicator diode

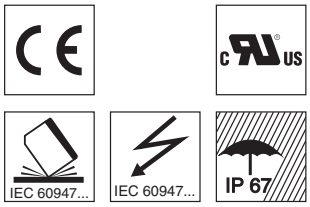
Electrical connection

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

Specifications

Optical data

Typ. operating range limit [1]		0.07 … 4m with reflector TKS 100x100
Operating range [2]		see tables
Light beam characteristic		divergent, typ. light spot Ø 5mm at a distance of 200mm
Light source [3]		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_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
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
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 (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

Tables

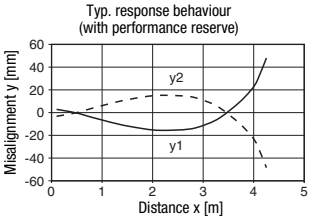
Reflectors			Operating range
1	TK(S)	100x100	0.07 … 3.5m
2	TK	40x60	0.07 … 2.5m
3	TK	20x40	0.02 … 1.3m
4	Tape 4	50x50	0.12 … 0.9m

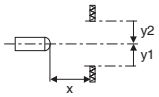
1	0.07		3.5	4
2	0.07	2.5	2.9	
3	0.02	1.3	1.5	
4	0.12	0.9	1.1	

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

TK … = adhesive
TKS … = screw type

Diagrams





Remarks

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.

PRK 2 Miniature retro-reflective photoelectric sensors with polarisation filter

Type key

PRK 2 / 42 D , 150 - S 12

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

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

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-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.
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