

PRK 46B

Retro-reflective photoelectric sensors with polarisation filter

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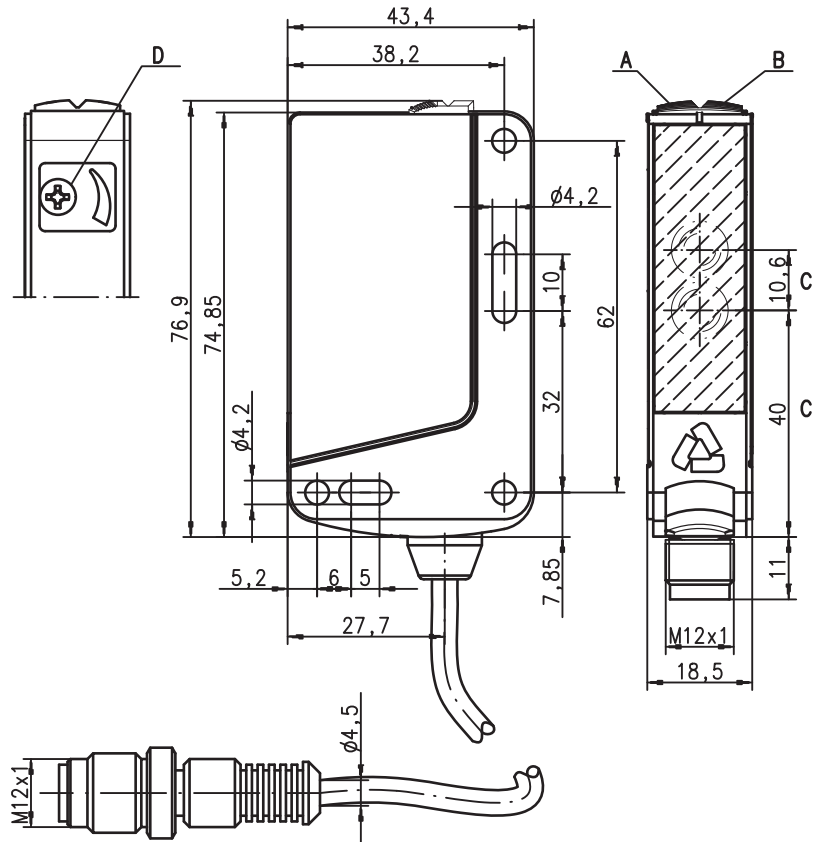


0.05 ... 18m



- Polarized retro-reflective photoelectric sensor
- Fast alignment through *brightVision*®
- A²LS - Active Ambient Light Suppression
- Push-pull switching outputs
- Relay output - for operation without reference potential
- Operating range adjustment
- Warning output - for increased availability

Dimensioned drawing



- A** Green indicator diode
B Yellow indicator diode
C Optical axis
D Optional operating range adjustment

Electrical connection

Connector, 4-pin

UB	1	br/BN
OUT/IN*)	2	ws/WH
GND	3	bl/BU
OUT1	4	sw/BK

Cable

UB	1	br/BN
OUT/IN*)	2	ws/WH
GND	3	bl/BU
OUT1	4	sw/BK

Relay output

24V DC +/-10% +	1	br/BN
	2	ws/WH
GND	3	bl/BU
	4	sw/BK

Selection pin 2

*)	OUT	IN
	OUT 2	active
	warn	
	NC	



Accessories:

(available separately)

- Mounting systems (BT 46, BT 46.1, BT 46.1.5, BT 46.2)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Reflectors
- Reflective tapes

We reserve the right to make changes • DS_PRK_46B_66_en.fm

Specifications

Optical data

Typ. op. range limit (TK(S) 100x100) ¹⁾

Operating range ²⁾

Light source ³⁾

Wavelength

0.05 ... 18m

see tables

LED (modulated light)

620nm (visible red light, polarized)

Timing

Switching frequency

Response time

Delay before start-up

transistor: 500Hz, relay: 20Hz

transistor: 1 ms, relay: 25ms

≤ 300ms

Electrical data

With transistor switching outputs

Operating voltage U_B ⁴⁾

Residual ripple

Open-circuit current

Switching output .../66. ...

.../44. ...

.../4. ...

Signal voltage high/low

Output current

With relay switching output

Operating voltage U_B

Open-circuit current

Switching output.../7D ...

Switching voltage/switching current

Switching power

Operating range

10 ... 30VDC (incl. residual ripple)

≤ 15% of U_B

≤ 20mA

2 push-pull switching outputs ⁵⁾

pin 2: PNP dark switching, NPN light switching

pin 4: PNP light switching, NPN dark switching

2 PNP switching outputs, pin 2: PNP dark switching,

pin 4: PNP light switching

PNP switching output, pin 4: light switching

≥ ($U_B - 2V$) ≤ 2V

max. 100mA

24VDC ±10%

≤ 30mA

relay, make-contact between pin 2 and pin 4,

dark switching ⁶⁾

30VAC/DC / max. 200mA

6VA, cos φ = 1

adjustable, 270° (PRK 46B/66.01-S12 only)

Indicators

Green LED

Yellow LED

Yellow LED, flashing

ready

light path free

light path free, no performance reserve

Mechanical data

Housing

Optics cover

Weight

plastic (PC-ABS)

plastic (PMMA)

with connector: 50g

with 2m cable: 90g

with cable and connector: 65g

M12 connector or

cable (4 x 0.21mm² cross section), cable length: 2m, or

cable with M12 connector, cable length: 200mm

Connection type

Environmental data

Ambient temp. (operation/storage)

Protective circuit ⁷⁾

VDE safety class ⁸⁾

Protection class

LED class

Standards applied

Certifications

-40°C ... +60°C/-40°C ... +70°C

2, 3

II, all-insulated

IP 67, IP 69K

1 (acc. to EN 60825-1)

IEC 60947-5-2

UL 508 ⁴⁾

Options

Warning output autoControl

Signal voltage high/low

Output current

Activation input active

Transmitter active/not active

Activation/disable delay

Input resistance

PNP transistor, counting principle

≥ ($U_B - 2V$) ≤ 2V

max. 100mA

≥ 8V/≤ 2V

≤ 1ms/≤ 2ms

10KΩ ± 10%

1) Typ. operating range limit: max. attainable range without performance reserve

2) Operating range: recommended range with performance reserve

3) Average life expectancy 100,000 h at an ambient temperature of 25°C

4) For UL applications: for use in class 2 circuits only

5) The push-pull switching outputs must not be connected in parallel

6) Suitable spark extinction must be provided with inductive or capacitive loads

7) 2=polarity reversal protection, 3=short-circuit protection for all transistor outputs

8) Rating voltage 50V

Tables

Reflectors			Operating range
1	TK(S)	100x100	0.05 ... 15m
2	TK 82.2		0.25 ... 11m
3	TK(S)	50x50	0.05 ... 10m
4	TK(S)	40x60	0.05 ... 8m
5	TK(S)	20x40	0.05 ... 3m
6	Tape 4	50x50	0.2 ... 2m

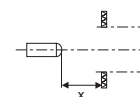
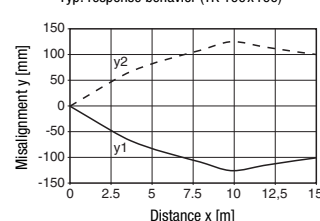
1	0.05			15	18
2	0.25		11		14
3	0.05		10	1	
4	0.05		8	1	
5	0.05	3	5		
6	0.2	2	3		

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

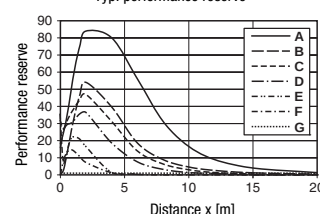
TK ... = adhesive
TKS ... = screw type
Tape 4 = adhesive

Diagrams

Typ. response behavior (TK 100x100)



Typ. performance reserve



- A TK 100x100
- B TK 82.2
- C TK 50x50
- D TKS 40x60
- E TKS 20x40
- F Tape 4 50x50
- G Switching point

Remarks

● Approved purpose:

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 46B

Retro-reflective photoelectric sensors with polarisation filter

Order guide

The sensors listed here are preferred types; current information at www.leuze.com.

	Designation	Part No.
With M12 connector		
Complementary switching output	PRK 46B/66-S12	50103070
Warning output, display low performance reserve	IPRK 46B/4-S12	50103074
Relay output, dark switching	PRK 46B/7D-S12	50103080
Cable with M12 connector		
Complementary switching output	PRK 46B/66, 200-S12	50103071
Cable, cable length 2m		
Complementary switching output	PRK 46B/66	50107068

Type key

I	P	R	K	4	6	B	/	4	D	.	2	-	S	1	2
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Operating principle

PRK	Polarized retro-reflective photoelectric sensor
IPRK	Polarized retro-reflective photoelectric sensor with warning output

Series

46B	46B Series
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Switching output

/66	Complementary push-pull switching outputs
/44	Complementary PNP switching outputs
/4	Pin 4 PNP switching output, pin 2 no contact, warning output or activation input
/6	Pin 4 push-pull switching output, pin 2 no contact
/7D	Relay, break-contact

Function characteristics

N/A	Pin 4 light switching; with push-pull, PNP light switching
D	Inverted switching logic

Special function

.2	No false switching to stretch-wrapped and shrink-wrapped containers
.8	Activation input
.01	Sensitivity adjustment

Combinations of functions are possible via two-digit code

Electrical connection

N/A	Cable, standard length 2000 mm
,200-S12	Cable, length 200 mm with M12 connector
-S12	M12 connector

