

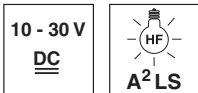
PRK46C

Retro-reflective photoelectric sensors with polarization filter

en 01-2015/06 50129621



30m



- Polarized retro-reflective photoelectric sensor with large operating range and high function reserve in visible red light
- Time-saving alignment through *brightVision®*
- Highly visible status displays
- Sensitivity adjustment and delay before start-up for optimal adaptation to the application
- Warning output for sustained availability (prefailure message)
- Activation input for sensor test
- Various switching output functions for universal connection to existing control environment
- A²LS active ambient light suppression for avoiding mutual interference
- Robust plastic housing in degrees of protection IP67 and IP69K

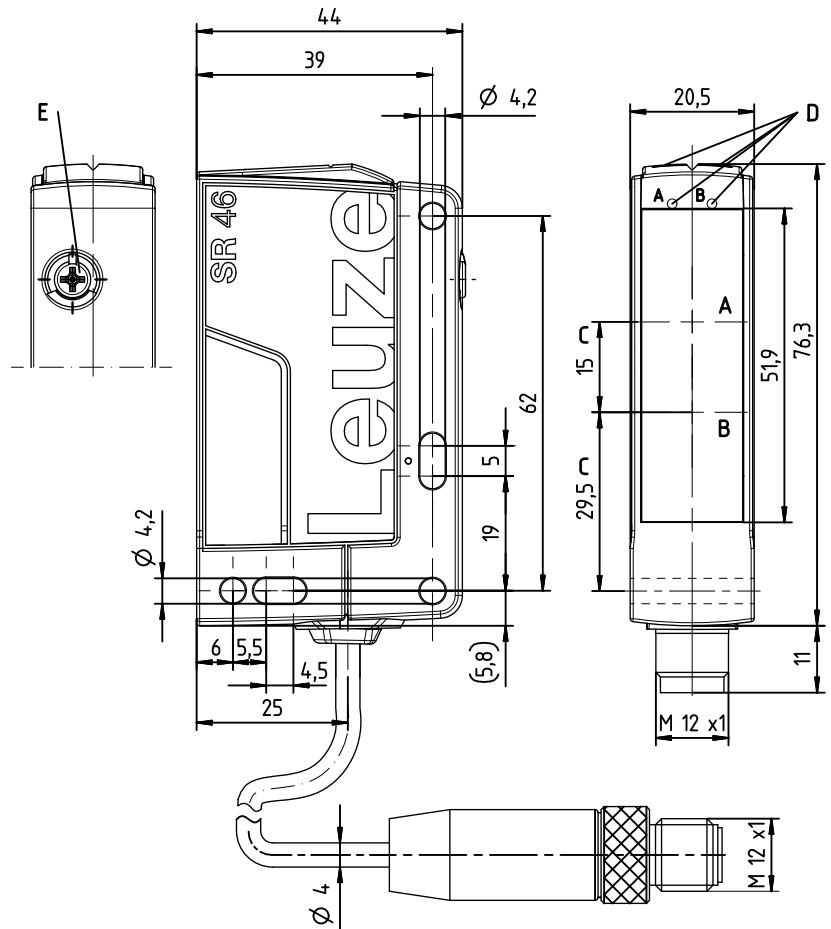


Accessories:

(available separately)

- Mounting systems (BT 46, BTU 300M, BT 300, BTU 346, BTU 900M)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Reflectors
- Reflective tapes

Dimensioned drawing



- A** Receiver
- B** Transmitter
- C** Optical axis
- DA** Green indicator diode
- DB** Yellow indicator diode
- E** Sensitivity 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

Selection pin 2

*)	OUT	IN
	OUT 2	Active
	Warn	
	NC	

We reserve the right to make changes • DS_PRK46C_en_50129621.fm

Specifications

Optical data

Typ. op. range limit (TK(S) 100x100) ¹⁾	30m
Operating range ²⁾	see tables
Operating range adjustment	225° potentiometer (PRK46C.1... only)
Light source ³⁾	LED (modulated light)
Wavelength	630nm (visible red light, polarized)

Timing

Switching frequency	500Hz
Response time	1ms
Delay before start-up	≤ 300ms

Electrical data

Operating voltage U_B ⁴⁾	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of U_B
Open-circuit current	≤ 20mA
Switching outputs/functions ⁵⁾	/4P /4W /48 /PX /2N 2 PNP switching outputs, antivalent 1 PNP switching output, light switching, 1 PNP warning output 1 PNP switching output, light switching, 1 activation input 1 PNP switching output, dark switching 2 NPN switching outputs, antivalent
Signal voltage high/low	≥ ($U_B - 2V$) / ≤ 2V
Output current	max. 100mA

Indicators

Green LED	ready
Yellow LED	light path free
Yellow LED, flashing	light path free, no function reserve

Mechanical data

Housing	plastic
Optics cover	plastic
Weight	with M12 connector: approx. 60g with 200mm cable and M12 connector: approx. 65g with 2000mm cable: approx. 100g
Connection type	M12 connector, 4-pin cable 200mm with M12 connector, 4-pin cable 2000mm, 4 x 0.21 mm ²

Environmental data

Ambient temp. (operation/storage)	-40°C ... +60°C / -40°C ... +70°C
Protective circuit ⁶⁾	2, 3
VDE safety class ⁷⁾	II, all-insulated
Degree of protection	IP 67, IP 69K
Light source	exempt group (in acc. with EN 62471)
Standards applied	IEC 60947-5-2
Certifications	UL 508, CSA C22.2 No.14-13 ⁴⁾ ⁸⁾

Options

Warning output	PNP transistor, counting principle
Signal voltage high/low	≥ ($U_B - 2V$) / ≤ 2V
Output current	max. 100mA
Activation input	
Transmitter active/not active	≥ 8V / ≤ 2V
Activation/disable delay	≤ 1ms / ≤ 2ms
Input resistance	10KΩ ± 10%

- 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: for use in class 2 circuits only
- 5) See part number code
- 6) 2=polarity reversal protection, 3=short circuit protection for all transistor outputs
- 7) Rating voltage 50V
- 8) These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)

Tables

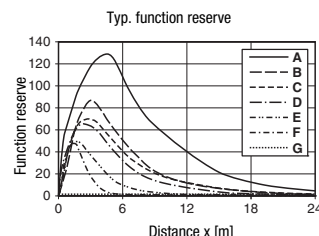
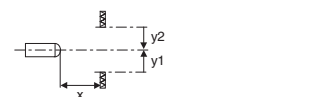
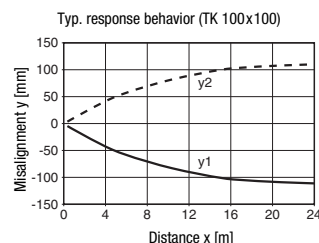
Reflectors	Operating range
1 TK(S) 100x100	0.3 ... 24m
2 TK 82.2	0.3 ... 15m
3 MTKS 50x50.1	0.3 ... 15m
4 TK(S) 40x60	0.3 ... 12m
5 TK(S) 20x40	0.3 ... 8m
6 Tape 4 50x50	0.3 ... 4m

1 0.3	24	30
2 0.3	15	18
3 0.3	15	18
4 0.3	12	15
5 0.3	8	10
6 0.3	4	5

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

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

Diagrams



- A TK 100x100
- B TK 82.2
- C MTKS 50x50.1
- D TKS 40x60
- E TKS 20x40
- F Tape 4 50x50
- G Switching point

Remarks

Operate in accordance with intended use!

- ⚠ This product is not a safety sensor and is not intended as personnel protection.
- ⚠ The product may only be put into operation by competent persons.
- ⚠ Only use the product in accordance with the intended use.

PRK46C

Retro-reflective photoelectric sensors with polarization filter

Part number code

P	R	K	4	6	C	.	D	1	/	4	P	-	2	0	0	-	M	1	2
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Operating principle

RK	Retro-reflective photoelectric sensor
PRK	Retro-reflective photoelectric sensors with polarization filter

Series

46C	46C series
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Light type

Free	Red light
I	Infrared light

Equipment

D	Depolarizing media
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Setting

1	Sensitivity adjustment via potentiometer
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Pin assignment of OUT1 (connector pin 4 / black cable wire)

2	NPN, light switching
N	NPN, dark switching
4	PNP, light switching
P	PNP, dark switching

Pin assignment of OUT/IN (connector pin 2 / white cable wire)

X	Not assigned
2	NPN, light switching
N	NPN, dark switching
4	PNP, light switching
P	PNP, dark switching
8	Activation input (active high)
W	Warning output, PNP light switching

Connection technology

M12	M12 connector, 4-pin
200-M12	Cable 200 mm with M12 connector, 4-pin
Free	Cable 2000 mm

Order guide

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

Red-light retro-reflective photoelectric sensors with polarization filter	Designation	Part no.
With M12 connector, 4-pin		
OUT1: PNP light switching; OUT2: PNP dark switching	PRK46C/4P-M12	50127012
OUT1: PNP light switching; OUT2: warning output PNP active high	PRK46C/4W-M12	50127021
OUT1: NPN light switching; OUT2: NPN dark switching	PRK46C/2N-M12	50127018
OUT1: PNP light switching; IN: activation input active high	PRK46C/48-M12	50127016
OUT1: PNP light switching; OUT2: PNP dark switching; sensitivity adjustment	PRK46C.1/4P-M12	50127015
Cable 0.2m with M12 connector, 4-pin		
OUT1: PNP light switching; OUT2: PNP dark switching	PRK46C/4P-200-M12	50127014
OUT1: PNP dark switching; OUT2: no contact ¹⁾	PRK46C/PX-200-M12	50127017
Cable 2m		
OUT1: PNP light switching; OUT2: PNP dark switching	PRK46C/4P	50127013
OUT1: NPN light switching; OUT2: NPN dark switching	PRK46C/2N	50127019

1) Direct connection to AS-i coupling modules possible