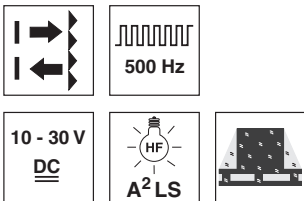


**PRK46C depol Retro-reflective photoelectric sensors with polarization filter**

en 01-2015/06 50129622



**20m**

- Polarized retro-reflective photoelectric sensor
- Highest functional reliability, even for depolarizing media (e.g., foil packaging, shrink-wrapped packages)
- Time-saving alignment through *brightVision*<sup>®</sup>
- 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
- A<sup>2</sup>LS active ambient light suppression for avoiding mutual interference
- Robust plastic housing in degrees of protection IP67 and IP69K

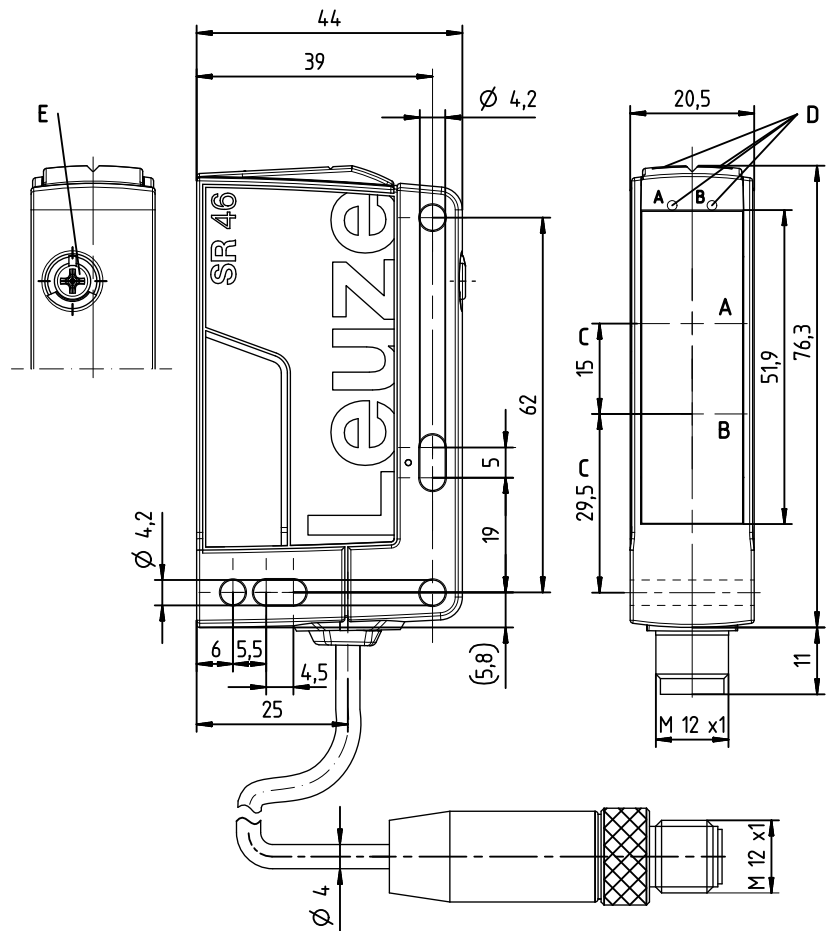


**Accessories:**

(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
- D<sub>A</sub>** Green indicator diode
- D<sub>B</sub>** Yellow indicator diode
- E** Sensitivity adjustment

**Electrical connection**

Connector, 4-pin

U <sub>B</sub>	1	br/BN
OUT/IN <sup>*)</sup>	2	ws/WH
GND	3	bl/BU
OUT1	4	sw/BK

Cable

U <sub>B</sub>	1	br/BN
OUT/IN <sup>*)</sup>	2	ws/WH
GND	3	bl/BU
OUT1	4	sw/BK

Selection pin 2

<sup>*)</sup>	OUT	IN
	OUT 2	Active
	Warn	
	NC	

We reserve the right to make changes • DS\_PRK46Cdepol\_en\_50129622.fm

## Specifications

### Optical data

Typ. op. range limit (TK(S) 100x100) <sup>1)</sup>	20m
Operating range <sup>2)</sup>	see tables
Operating range adjustment	225° potentiometer (PRK46C.D1... only)
Light source <sup>3)</sup>	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 $U_B$ <sup>4)</sup>	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of $U_B$
Open-circuit current	≤ 20mA
Switching outputs/functions <sup>5)</sup>	/4P 2 PNP switching outputs, antivalent /4W 1 PNP switching output, light switching, 1 PNP warning output
	/48 1 PNP switching output, light switching, 1 activation input
	/PX 1 PNP switching output, dark switching
	/2N 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: with 200mm cable and M12 connector: with 2000mm cable:	approx. 60g approx. 65g approx. 100g
Connection type	M12 connector, 4-pin cable 200mm with M12 connector, 4-pin cable 2000mm, 4 x 0.21 mm <sup>2</sup>	

### Environmental data

Ambient temp. (operation/storage)	-40°C ... +60°C / -40°C ... +70°C
Protective circuit <sup>6)</sup>	2, 3
VDE safety class <sup>7)</sup>	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 <sup>4) 8)</sup>

### Options

<b>Warning output</b>	PNP transistor, counting principle
Signal voltage high/low	≥ ( $U_B - 2V$ ) / ≤ 2V
Output current	max. 100mA
<b>Activation input</b>	
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

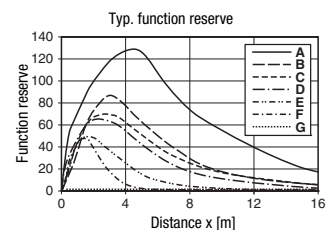
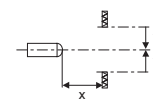
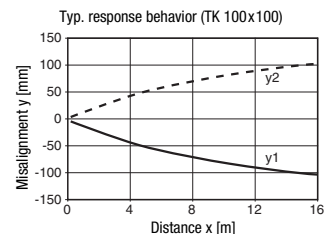
Reflectors	Operating range
1 TK(S) 100x100	0.1 ... 16m
2 TK 82.2	0.4 ... 10m
3 MTKS 50x50.1	0.1 ... 10m
4 TK(S) 40x60	0.1 ... 8m
5 TK(S) 20x40	0.1 ... 4m
6 Tape 4 50x50	0.3 ... 2m

1	0.1	16	20
2	0.4	10	12
3	0.1	10	12
4	0.1	8	10
5	0.1	4	5
6	0.3	2	3

□ 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 depol 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

### Light type

- Free** Red light
- I** Infrared light

### Equipment

- D** Depolarizing media

### Setting

- 1** Sensitivity adjustment via potentiometer

### 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](http://www.leuze.com).

<b>Red-light retro-reflective photoelectric sensors with polarization filter</b>	<b>Designation</b>	<b>Part no.</b>
<b>With M12 connector, 4-pin</b>		
OUT1: PNP light switching; OUT2: PNP dark switching	PRK46C.D/4P-M12	50127024
OUT1: PNP light switching; OUT2: warning output PNP active high	PRK46C.D/4W-M12	50127030
OUT1: PNP dark switching; OUT2: no contact <sup>1)</sup>	PRK46C.D/PX-M12	50127027
OUT1: PNP light switching; IN: activation input active high	PRK46C.D/48-M12	50127029
OUT1: NPN light switching; OUT2: NPN dark switching	PRK46C.D/2N-M12	50127032
OUT1: PNP light switching; OUT2: PNP dark switching; sensitivity adjustment	PRK46C.D1/4P-M12	50129753
OUT1: PNP dark switching; OUT2: no contact <sup>1)</sup> ; sensitivity adjustment	PRK46C.D1/PX-M12	50127028
<b>Cable 0.2m with M12 connector, 4-pin</b>		
OUT1: PNP light switching; OUT2: PNP dark switching	PRK46C.D/4P-200-M12	50127026
OUT1: PNP dark switching; OUT2: no contact <sup>1)</sup>	PRK46C.D/PX-200-M12	50127031
<b>Cable 2m</b>		
OUT1: PNP light switching; OUT2: PNP dark switching	PRK46C.D/4P	50127025

1) Direct connection to AS-i coupling modules possible