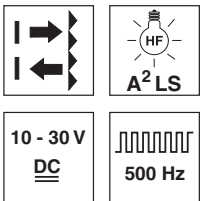


PRK49C

Retro-reflective photoelectric sensors with polarization filter

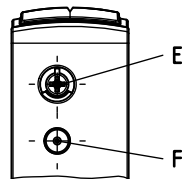
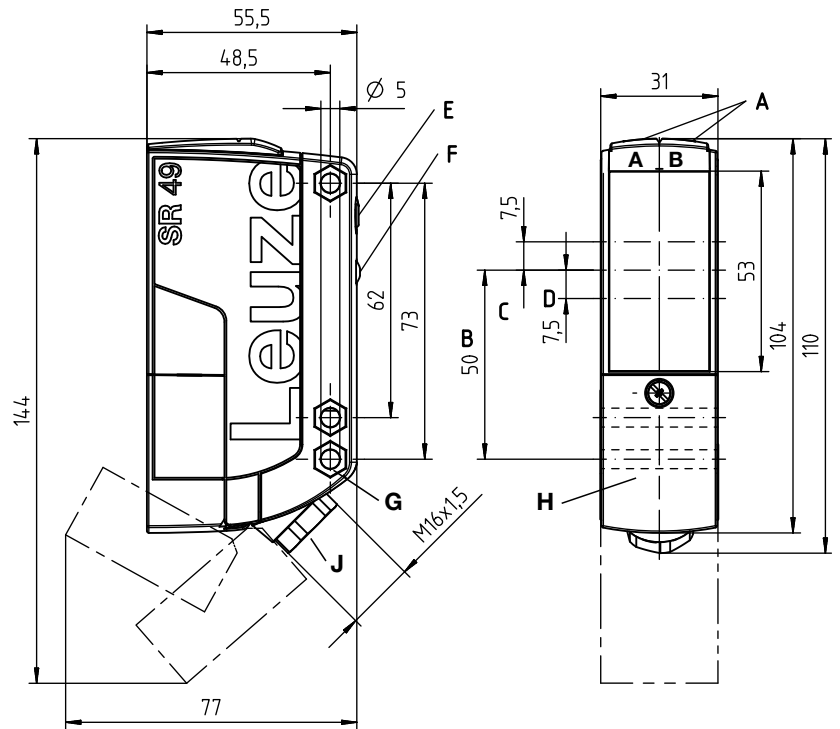
en 01-2016/06 50134383



30m

- Polarized retro-reflective photoelectric sensor with large operating range and high function reserve in visible red light
- A²LS active ambient light suppression for avoiding mutual interference
- Robust plastic housing, degree of protection IP 67 and IP 69K for industrial application
- Sensitivity adjustment and delay before start-up for optimal adaptation to the application
- Light/dark switching and time module activation via teach button for time-saving integration in existing evaluation environment
- Space-saving installation thanks to front access to the connection compartment
- Extremely time-saving connection by means of spring terminals (up to 1.5 mm²)

Dimensioned drawing



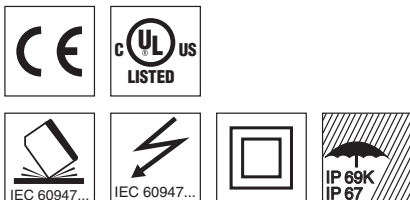
- A_A** Green indicator diode
- A_B** Yellow indicator diode
- B** Optical axis
- C** Receiver
- D** Transmitter
- E** Sensitivity adjustment
- F** Teach button for light/dark switching / time module activation
- G** Countersinking for SK nut M5, 4.2 deep
- H** Connection compartment with spring terminals
- J** Cable entry with M16x1.5 screw fitting for Ø5 ... 10mm

Electrical connection

10-30V DC	1
GND	2
OUT 1	3
OUT / IN	4
NC	5

Selection of terminal 4

OUT	IN
OUT 2	Active
Warn	
NC	



Accessories:

(available separately)

- Mounting systems (BTU 460, BT 96, BT 96.1, BT 450.1-96)
- Reflectors/reflective tapes

We reserve the right to make changes • DS_PRK49CTB_en_50134383.fm

Technical data

Optical data

Typ. op. range limit (TK(S) 100x100) ¹⁾
 Operating range ²⁾
 Light spot diameter
 Light source ³⁾
 Wavelength
 Polarization filter

PRK49C...

30m
 See tables
 Approx. 130mm at 6m
 LED (modulated light)
 630nm (visible red light)
 Yes

Timing

Switching frequency 500Hz
 Response time 1ms
 Readiness delay ≤ 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 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 $\geq (U_B - 2V) \leq 2V$
 Output current Max. 100mA
 Sensitivity Adjustable using 225° potentiometer (only PRK49C.1...)

Indicators

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

Mechanical data

Housing Polycarbonate
 Optics cover Plastic
 Weight 150g
 Connection type Spring terminals, max. wire cross section 1.5mm²

Environmental data

Ambient temp. (operation/storage) -40°C ... +60°C/-40°C ... +70°C
 Protective circuit ⁶⁾ 1, 2, 3
 VDE safety class ⁷⁾ II, all-insulated
 Degree of protection IP 67, IP 69K ⁸⁾
 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) 9)}

Additional functions

Switching function (teach level 1) Light switching (factory setting) or dark switching
 Time module (teach level 2) Active: dropout delay 500ms
 Not active: no dropout delay (factory setting)
 Warning output PNP transistor, counting principle
 Signal voltage high/low $\geq (U_B - 2V) \leq 2V$
 Output current Max. 100mA

Activation input Transmitter active/not active $\geq 8V \leq 2V$
 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) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all transistor outputs
- 7) Rating voltage 50V
- 8) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test
- 9) 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)

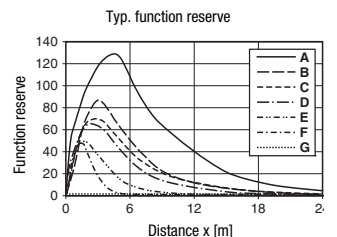
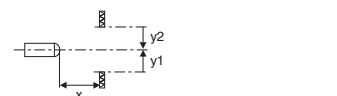
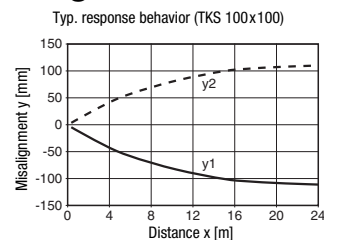
Tables

Reflectors	Operating range
1 TK(S) 100x100	0.3 ... 24m
2 MTK(S) 50x50	0.3 ... 15m
3 TK(S) 30x50	0.3 ... 12m
4 TK(S) 20x40	0.3 ... 8m
5 TK(S) 82	0.3 ... 15m
6 Tape 4 50x50	0.3 ... 4m

1	0.1	24	30
2	0.1	15	18
3	0.1	12	15
4	0.1	8	10
5	0.1	15	18
6	0.1	4	5

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

Diagrams



- A TK 100x100
- B TK 82.AT
- C MTKS 50x50.1
- D TKS 40x60
- E TKS 20x40
- F Tape 4 50x50
- G Switching point

Notes

Observe 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 its intended use.

PRK49C

Retro-reflective photoelectric sensors with polarization filter

Part number code

P R K 4 9 C . 1 / 4 P - T B

Operating principle

PRK Retro-reflective photoelectric sensors with polarization filter

Series

49C 49C series

Light type

free Red light

Setting

1 Sensitivity adjustment via potentiometer

Pin assignment OUT1 (terminal 3)

2 NPN, light switching

N NPN, dark switching

4 PNP, light switching

P PNP, dark switching

Pin assignment OUT/IN (terminal 4)

X Not used

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

TB Terminal block - terminal compartment with spring terminals (5 x 1.5mm²)

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.

Terminal compartment with spring terminals (5 x 1.5mm²)

OUT1: PNP light switching; OUT2: PNP dark switching

PRK49C/4P-TB

50134446

OUT1: PNP light switching; IN: activation input active high; sensitivity adjustment

PRK49C.1/48-TB

50134449

OUT1: NPN light switching; OUT2: NPN dark switching; sensitivity adjustment

PRK49C.1/2N-TB

50134448

OUT1: PNP light switching; OUT2: PNP dark switching; sensitivity adjustment

PRK49C.1/4P-TB

50134447

Teach procedure for sensor




Note

Factory setting: **light switching,
time module not active**


Light/dark switching

Adjusting the switching behavior

<p>Teach level 1</p>	<p>Press teach button (2 to 7s) until both LEDs (green/yellow) flash synchronously. Release teach button – switchover is complete. The yellow LED then indicates the current setting of the switching output for 3s:</p> <p>ON = light switching = output OUT1 (terminal 3) light switching output OUT2 (terminal 4) dark switching</p> <p>OFF = dark switching = output OUT1 (terminal 3) dark switching output OUT2 (terminal 4) light switching</p>	
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Activation/deactivation of the time module

Setting a dropout delay

<p>Teach level 2</p>	<p>Press teach button (7 to 12s) until both LEDs (green/yellow) flash alternately. Release teach button – activation/deactivation is complete. The yellow LED then indicates the current setting of the dropout delay for 3s:</p> <p>ON = time module not active = no dropout delay</p> <p>OFF = time module active = dropout delay: 500ms¹⁾</p> <p><small>1) Additional models on request</small></p>	
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Dropout delay: if the object is no longer present, the output switches with a time delay.