PRK 18	Retro-reflective photoelectric sensors with polarisation filter

en 05-2014/05   50110545-01

0 … 5m

10 - 30 V
DC

- Retro-reflective photoelectric sensor using visible red light, with or without polarisation filter
- The autocollimation principle used ensures that the device functions reliably over the entire range (0 … max.)
- Small construction with glass cover and robust zinc diecast housing, protection class IP 67/IP 69K for industrial application
- Light or dark switching by reversing the polarity of the operating voltage
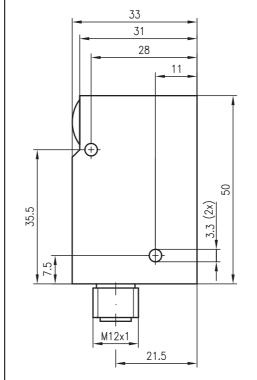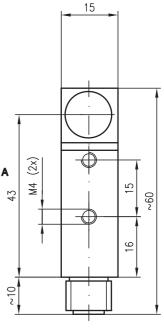- Mounting holes and M4 threads for easy mounting

CE

c(UL)us LISTED
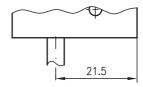
IEC 60947…   IEC 60947…   IP 69K IP 67

Accessories:

(available separately)

- M12 connectors (KD …)
- Reflectors

We reserve the right to make changes • DS_PRK184_en_50110545_01.fm

Dimensioned drawing

A   Optical axis

Electrical connection

PRK 18/4, 6000
PRK 18/4 L
RKR 18/4, 6000
RKR 18/4 L

GND	10−30V DC +	1	
NC	NC	2	
10−30V DC +	GND	3	
●	○	4	

Specifications

Optical data
Typ. operating range limit (TK(S) 100x100) [1]	0 … 5m
Operating range [2]	see tables
Light source	LED (modulated light)
Wavelength	660nm (visible red light, polarised)

Timing
Switching frequency	1000Hz
Response time	0.5ms
Delay before start-up	≤100ms

Electrical data
Operating voltage U_B [3] [4]	10 … 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of U_B
Open-circuit current	≤ 35mA
Switching output	PNP transistor output
Function characteristics	dark or light switching (by reversing the polarity of U_B)
Signal voltage high/low	≥ (U_B-2V)/≤ 2V
Output current	max. 100mA

Indicators
Yellow LED (sensor back)	switching output

Mechanical data
Housing	diecast zinc
Optics	glass
Weight	150g
Connection type	M12 connector, 4-pin, stainless steel, or cable, cable length 6000mm

Environmental data
Ambient temp. (operation/storage)	-25°C … +55°C/-40°C … +70°C
Protective circuit [5]	2, 3
VDE safety class	III
Protection class	IP 67, IP 69K [6]
Light source	free group (in accordance with EN 62471)
Standards applied	IEC 60947-5-2
Certifications	UL 508, C22.2 No.14-13 [4] [7]

1) Typ. operating range limit: max. attainable range without performance reserve
2) Operating range: recommended range with performance reserve
3) Functional extra-low voltage with reliable disconnection or protective extra-low voltage (VDE 0100/T 410)
4) For UL applications: for use in class 2 circuits according to NEC only
5) 2=polarity reversal protection, 3=short-circuit protection for all outputs
6) 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
7) 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)

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.
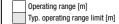↳ Only use the product in accordance with the intended use.

Tables

PRK 18/4…

	Reflectors		Operating range
1	TK(S)	100x100	0 … 4.0m
2	MTK(S)	50x50	0 … 3.5m
3	TK(S)	30x50	0 … 2.0m
4	TK(S)	20x40	0 … 1.5m
5	Tape 6	50x50	0 … 2.5m

RKR 18/4…

	Reflectors		Operating range
1	TK(S)	100x100	0 … 4.0m
4	TK(S)	20x40	0 … 1.5m
5	Tape 6	50x50	0 … 2.5m
6	TK	20	0 … 0.8m
7	Tape 4	20x20	0 … 0.7m
8	TG 6		0 … 0.4m
9	TG 15		0 … 0.5m

1	0			4.0	5.0
2	0			3.5	4.5
3	0		2.0	2.5	
4	0	1.5	2.0		
5	0		2.5	3.0	
6	0	0.8	1.0		
7	0	0.7	0.8		
8	0	0.4	0.5		
9	0	0.5	0.6		

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

TK … = adhesive
TKS … = screw type
Tape = adhesive

Diagrams

Typ. response behaviour (TK 100x100)

Remarks

● For foil 6 the sensor's side edge must be aligned parallel to the side egde of the reflective tape.

Order guide

	Designation	Part No.
With 6m cable, with polarisation filter	PRK 18/4, 6000	50033244
M12 connector, with polarisation filter	PRK 18/4 L	50081254
With 6m cable, without polarisation filter	RKR 18/4, 6000	50102730
M12 connector, without polarisation filter	RKR 18/4 L	50102731