PRK 95 Retro-reflective photoelectric sensors with polarisation filter

0 … 3m

10 - 30 V DC

- Retro-reflective photoelectric sensors for safe detection of transparent media (e.g. clear glass, PE, foil)
- User controlled sensitivity adjustment with high resolution allows detection of transparent objects
- 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
- Polarisation filter blocks unwanted reflections

IEC 60947...

IEC 60947...

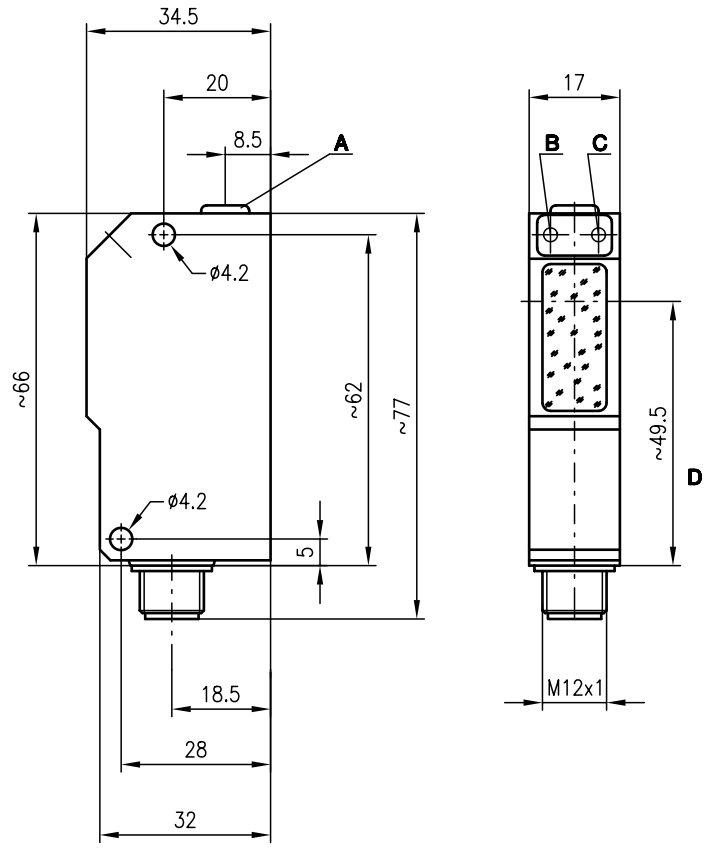
IP 69K
IP 67

Accessories:

(available separately)

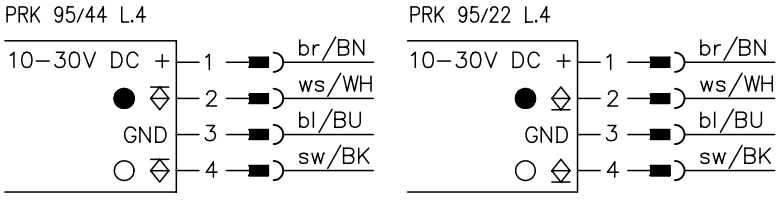
- Mounting systems (BT 95, UMS 1, UMS 96-95)
- M12 connectors (KD …)
- Reflectors
- Reflective tapes

Dimensioned drawing



A Sensitivity adjustment
B Switching indicator yellow
C Operation indicator green
D Optical axis

Electrical connection



Specifications

Optical data

Typ. operating range limit (TK(S) 100x100) [1]	0 … 3m
Operating range [2]	see tables
Light beam characteristic	divergent
Light source	LED (modulated light)
Wavelength	660nm (visible red light, polarised)
Gap detection	≤ 5mm in the range between 0 … 300mm

Timing

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

Electrical data

Operating voltage U_B	10 … 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of U_B
Bias current	≤ 35mA
Switching output	2 PNP or 2 NPN transistor outputs, complementary
Function characteristics	light/dark switching
Signal voltage high/low	≥ (U_B-2V)/≤ 2V
Output current	max. 100mA
Sensitivity	adjustable with 10-turn potentiometer

Indicators

LED green	ready
LED yellow, slowly flashing	operating point 1 **clear glass** transition from quickly flashing to slowly flashing / light path free
LED yellow, quickly flashing	operating point 2 **coloured glass** transition from continuous light to quickly flashing / light path free
LED yellow, continuous light	operating point 3 **non transparent media** continuous light/light path free

Mechanical data

Housing	diecast zinc
Optics cover	glass
Weight	90g
Connection type	M12 connector, stainless steel, 4-pin

Environmental data

Ambient temp. (operation/storage)[3]	-25°C (-30°C) … +55°C/-40°C … +55°C
Protective circuit [4]	2, 3
VDE safety class [5]	II, all-insulated
Protection class	IP 67, IP 69K [6]
LED class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2

1) Typ. operating range limit: max. attainable range without performance reserve
2) Operating range: recommended range with performance reserve
3) -30°C with operating voltage continuously applied
4) 2=polarity reversal protection, 3=short-circuit protection for all outputs
5) Rating voltage 250VAC
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

Order guide

	Designation	Part No.
With PNP switching output	PRK 95/44 L.4	500 25609
With NPN switching output	PRK 95/22 L.4	500 29051

Tables

	Reflectors		Operating range
1	TK(S)	100x100	0 … 1.8m
2	MTK(S)	50x50	0 … 1.8m
3	TK(S)	30x50	0 … 1.1m
4	TK(S)	20x40	0 … 1.0m
5	Tape 2	100x100	0 … 0.4m

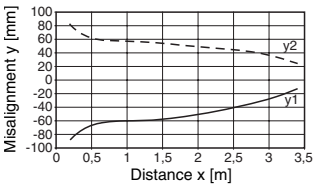
1	0		1.8	3
2	0		1.8	3
3	0	1.1	1.8	
4	0	1.0	1.7	
5	0	0.4	0.7	

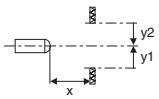
Operating range [m]
Typ. operating range limit [m]

TK … = adhesive
TKS … = screw type
Tape 2 = adhesive

Diagrams

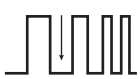
Typ. response behaviour (TK 100x100)





Remarks

- The retro-reflective photoelectric sensor is also available with integrated AS-i chip for direct connection to the AS-i system.

Objects	Adjustment (indicator LED yellow)
Clear glass, PE, foil	Operating pt. 1 
Coloured glass	Operating pt. 2 
Opaque objects	Operating pt. 3