

PRK 55

Retro-reflective photoelectric sensors with polarization filter

en 05-2010/01 50106857-02

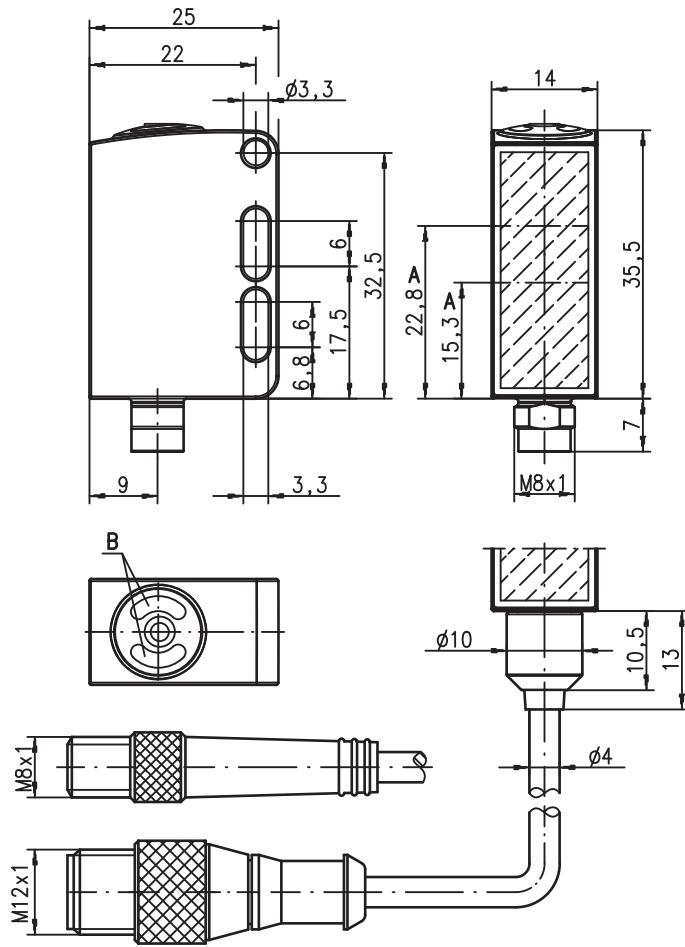


0.02 ... 6m



- Polarized retro-reflective photoelectric sensor, standard optics with visible red light
- 316L stainless steel housing in WASH-DOWN-Design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Paperless device identification
- Scratch resistant and non-diffusive plastic front cover
- Fast alignment through *brightVision*®
- A²LS- Active Ambient Light Suppression
- High switching frequency for detection of fast events

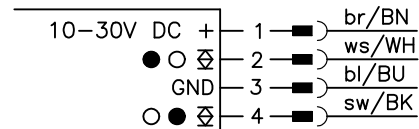
Dimensioned drawing



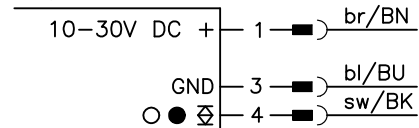
A Optical axis
B Indicator diode

Electrical connection

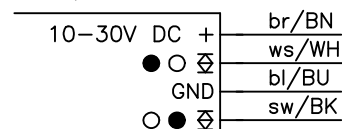
Plug connection, 4-pin (with/without cable)



Plug connection, 3-pin



Cable, 4 wires



Accessories:

(available separately)

- Cable with M8 or M12 connector (K-D ...)
- Reflectors for the foods industry
- Reflectors for the pharmaceutical industry
- Reflective tapes
- Mounting devices

We reserve the right to make changes • DS_PRK55_en.fm

Specifications

Optical data

Typ. op. range limit (TK(S) 100x100) ¹⁾	0.02 ... 6m
Operating range ²⁾	see tables
Light source ³⁾	LED (modulated light)
Wavelength	620nm (visible red light, polarized)

Timing

Switching frequency	1000Hz
Response time	0.5ms
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	≤ 14mA
Switching output ⁵⁾	.../66 2 push-pull switching outputs pin 2: PNP dark switching, NPN light switching pin 4: PNP light switching, NPN dark switching light/dark switching
Function characteristics	$\geq (U_B - 2V) / \leq 2V$
Signal voltage high/low	max. 100mA
Output current	fixed setting
Operating range	

Indicators

Green LED	ready
Yellow LED	light path free
Flashing yellow LED	light path free, no performance reserve

Mechanical data

Housing	AISI 316L stainless steel, DIN X2CrNiMo17132, W.No1.4404
Housing design	WASH-DOWN-Design
Housing roughness ⁶⁾	$R_a \leq 2.5$
Connector	AISI 316L stainless steel, DIN X2CrNiMo17132, W.No1.4404
Optics cover	coated plastic (PMMA), scratch resistant and non-diffusive
Operation	with M8 connector: 40g
Weight	with 200mm cable and M12 connector: 60g
	with 5000mm cable: 110g
Connection type	M8 connector, 4-pin, 0.2m cable with M12 connector, 4-pin, 5m cable, 4 x 0.20mm ²

Environmental data

Ambient temp. (operation/storage) ⁷⁾	-30°C ... +70°C / -30°C ... +70°C
Protective circuit ⁸⁾	2, 3
VDE safety class ⁹⁾	III
Protection class	IP 67, IP 69K ¹⁰⁾
Environmentally tested acc. to	ECOLAB, CleanProof+
LED class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2
Certifications	UL 508 ⁴⁾
Chemical resistance	tested in accordance with ECOLAB and CleanProof+ (see remarks)

Options

Signal voltage high/low	$\geq (U_B - 2V) / \leq 2V$
Output current	max. 100mA

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) Average life expectancy 100,000h at an ambient temperature of 25°C
- 4) For UL applications: for use in class 2 circuits according to NEC only
- 5) The push-pull switching outputs must not be connected in parallel
- 6) Typical value for the stainless steel housing
- 7) Operating temperatures of +70°C permissible only briefly (≤ 15min)
- 8) 2=polarity reversal protection, 3=short-circuit protection for all transistor outputs
- 9) Rating voltage 50V
- 10) Only in combination with M12 connector

Approved purpose

The photoelectric sensors are optical electronic sensors for optical, contactless detection of objects.

This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.

Tables

Reflectors in food quality		Operating range
1	TK(S) 100x100	0.02 ... 5.0m
2	TK 40x60	0.02 ... 3.0m
3	TK 20x40	0.02 ... 1.5m
4	Tape 4 50x50	0.02 ... 1.2m

1	0.02			5	6
2	0.02		3	3.6	
3	0.02	1.5		2	
4	0.02	1.2		1.6	

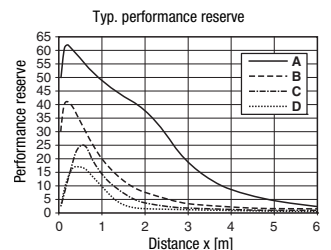
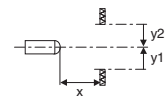
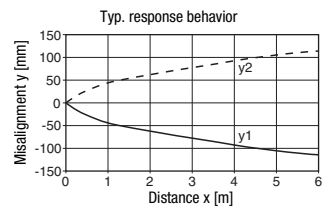
Pharmaceutical reflectors		Operating range
1	TK(S) 40x60.P	0.02 ... 2.4m
2	TK(S) 20x40.P	0.02 ... 1.6m
3	TK(S) 20.P	0.02 ... 1.1m
4	MTK(S) 14x23.P	0.02 ... 0.7m
5	TK 10.P	0.02 ... 0.4m

1	0.02			2.4	2.8
2	0.02			1.6	2.0
3	0.02	1.1		1.3	
4	0.02	0.7		0.8	
5	0.02	0.4		0.5	

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

TK ... = adhesive
 TKS ... = screw type

Diagrams



- A TK 100x100
- B TKS 40x60
- C TKS 20x40
- D Tape 4: 50x50

Remarks

A list of tested chemicals can be found in the first part of the product description.

PRK 55
Retro-reflective photoelectric sensors with polarization filter
Order guide

Selection table		Order code →			
Equipment ↓		PRK 55/66-S8 Part No. 50105804	PRK 55/66, 200-S12 Part No. 50105805	PRK 55/6-S8.3 Part No. 50107600	PRK 55/66, 5000 Part No. 50111966
Switching output	1 x Push-pull switching output			●	
	2 x Push-pull switching output	●	●		●
Switching function	1 PNP light switching and NPN dark switching output	●	●	●	●
	1 PNP dark switching and NPN light switching output	●	●		●
Connection	M8 connector, metal, 4-pin	●			
	M8 connector, metal, 3-pin			●	
	cable 200mm with M12 connector, 4-pin		●		
	cable 5000mm, 4 wires				●
Indicators	green LED: ready	●	●	●	●
	yellow LED: switching output	●	●	●	●

