

PRK 25B

Retro-reflective photoelectric sensors with polarisation filter

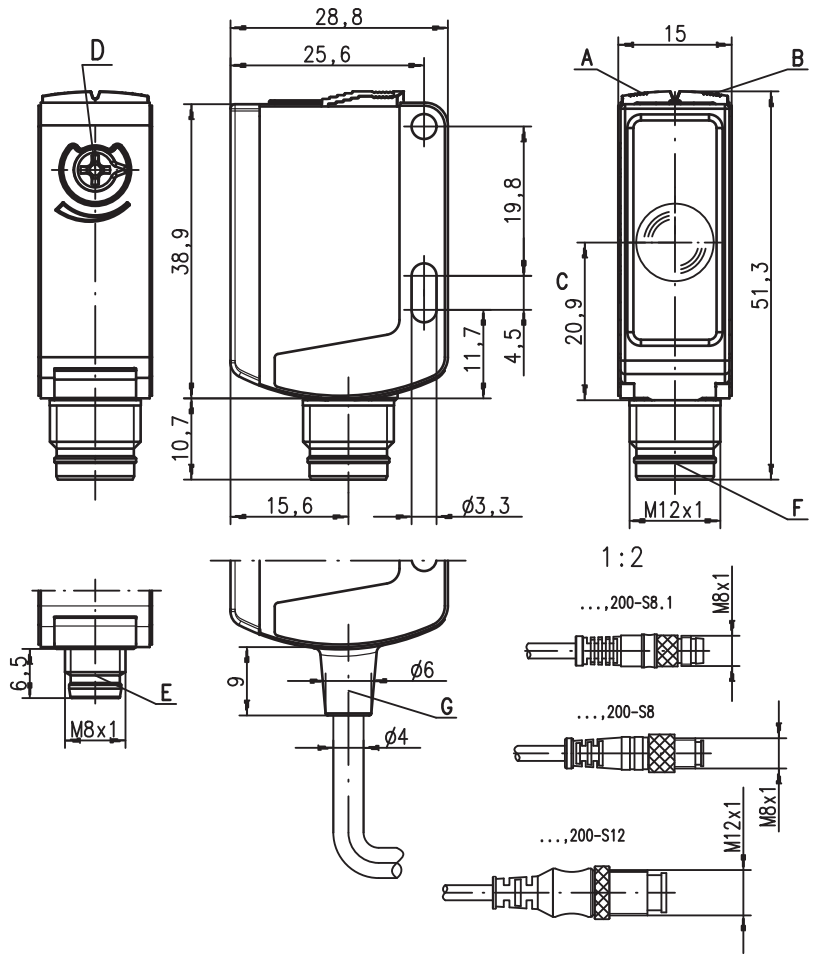
en 08-2016/03 50108777-02



0.05 ... 8m
 500 Hz
 10 - 30 V DC
 A²LS

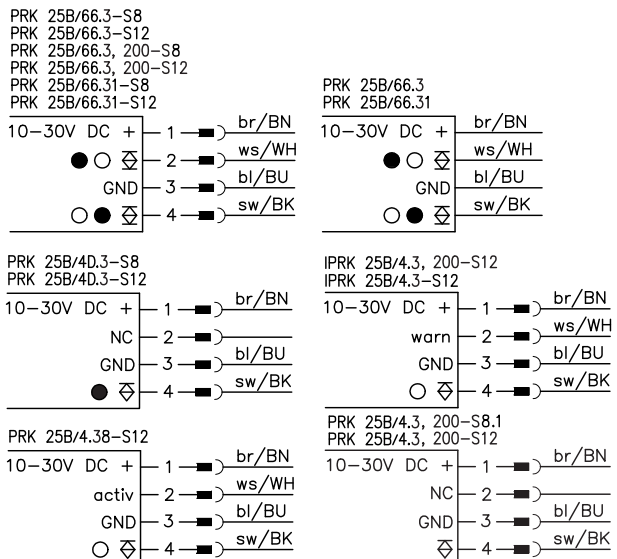
- Polarised retro-reflective photoelectric sensor with visible red light
- Highest functional reliability even for depolarising media, e.g. foil packaging
- Small and compact construction with robust plastic housing, protection class IP 66/IP 67 for industrial application
- Fast alignment through *brightVision*[®]
- A²LS - Active Ambient Light Suppression
- Push-pull switching outputs
- High switching frequency for detection of fast events
- Warning output for increased availability
- Operating range adjustment
- Snap-locking connector for time-saving installation

Dimensioned drawing



- A Green indicator diode
- B Yellow indicator diode
- C Optical axis
- D Operating range adjustment
- E Connector M8x1
- F Connector M12x1
- G Cable

Electrical connection



Accessories:

- (available separately)
- Mounting systems (BT 25, UMS 25...)
 - Cable with M8 or M12 connector (K-D ...)
 - Reflectors
 - Reflective tapes

We reserve the right to make changes • DS_PRK25B4663_en_50108777_02.fm

Specifications

Optical data

Typ. operating range limit (TK(S) 100x100) ¹⁾ 0.05 ... 8m
 Operating range ²⁾ see tables
 Light source ³⁾ LED (modulated light)
 Wavelength 620nm (visible red light, polarised)

Timing

Switching frequency 500Hz
 Response time 1ms
 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 ≤ 20mA
 Switching output ⁵⁾ .../66.3 2 push-pull switching outputs
 .../66.31 pin 2: PNP dark switching, NPN light switching
 IPRK.../4.3 pin 4: PNP light switching, NPN dark switching
 .../4.38 pin 4: PNP light switching, 1 warning output
 .../4D.3 pin 4: PNP light switching, 1 activation input
 PRK.../4.3 pin 4: PNP dark switching, pin 2: NC ⁶⁾
 pin 4: PNP light switching, pin 2: NC ⁶⁾
 light/dark switching
 Signal voltage high/low ≥ ($U_B - 2V$) / ≤ 2V
 Output current max. 100mA
 Operating range fixed setting, adjustable with potentiometer for ".31 types"

Indicators

Green LED ready
 Yellow LED light path free
 Yellow LED, flashing light path free, no performance reserve

Mechanical data

Housing plastic (PC-ABS)
 Optics cover plastic (PMMA)
 Weight with connector: 15g
 with 200mm cable and connector: 30g
 with 2m cable: 55g
 cable 2m (cross section 4x0.21 mm²),
 connector M8 or M12,
 cable 0.2m with connector M8 or M12

Connection type

Environmental data

Ambient temp. (operation/storage) ⁷⁾ -40°C ... +55°C / -40°C ... +60°C
 Protective circuit ⁸⁾ 2, 3
 VDE safety class ⁹⁾ II
 Protection class IP 66, IP 67
 Light source free group (in accordance with EN 62471)
 Standards applied IEC 60947-5-2
 Certifications UL 508, C22.2 No.14-13 ⁴⁾ ¹⁰⁾

Options

Warning output autoControl warn PNP transistor, counting principle
 Signal voltage high/low ≥ ($U_B - 2V$) / ≤ 2V
 Output current max. 100mA
Activation input active
 Transmitter active/not active ≥ 8V / ≤ 2V
 Activation/disable delay ≤ 1ms
 Input resistance 10KΩ ± 10%

- 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) Pin 2: unassigned, hence especially suitable for the connection to AS-interface I/O coupling modules
- 7) UL certified in the temperature range -30°C to 60°C
- 8) 2=polarity reversal protection, 3=short-circuit protection for all transistor outputs
- 9) Rating voltage 50V
- 10) 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)

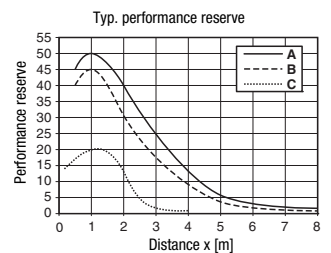
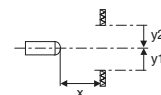
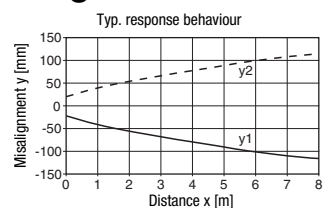
Tables

Reflectors		Operating range	
1	TK(S) 100x100	0.05 ... 6.0m	
2	TK(S) 40x60	0.05 ... 3.0m	
3	TK(S) 20x40	0.05 ... 2.0m	
1	0.02		6 8
2	0.02	3	4
3	0.02	2	3

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

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

Diagrams



- A TK(S) 100x100
- B TK(S) 40x60
- C TK(S) 20x40

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.

UL REQUIREMENTS

Enclosure Type Rating: Type 1

For Use in NFPA 79 Applications only.

Adapters providing field wiring means are available from the manufacturer. Refer to manufacturers information.

CAUTION – the use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION ! Si d'autres dispositifs d'alignement que ceux préconisés ici sont utilisés ou s'il est procédé autrement qu'indiqué, cela peut entraîner une exposition à des rayonnements et un danger pour les personnes.

PRK 25B
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Order guide

Selection table		Order code →																
Equipment ↓		PRK 25B/66.3-S12 Part No. 50104236	PRK 25B/66.3-S8 Part No. 50104237	PRK 25B/66.3 Part No. 50104238	PRK 25B/66.3, 200-S8 Part No. 50104239	PRK 25B/66.3, 200-S12 Part No. 50104240	PRK 25B/4D.3-S8 Part No. 50104241	PRK 25B/4D.3-S12 Part No. 50104242	IPRK 25B/4.3-S12 Part No. 50104246	IPRK 25B/4.3.200-S12 Part No. 50108111	PRK 25B/4.38-S12 Part No. 50104247	PRK 25B/66.31-S12 Part No. 50104243	PRK 25B/66.31-S8 Part No. 50104244	PRK 25B/66.31 Part No. 50104245	PRK 25B/4.3.200-S12 Part No. 5010924	PRK 25B/4.3.200-S8.1 Part No. 5010874	PRK 25B/44.3-S12 Part No. 50117202	PRK 25B/44.3.200-S12 Part No. 50120578
Switching output	2 x Push-pull switching output	●	●	●	●	●						●	●	●				
	1 x PNP output						●	●			●					●	●	
	2 x PNP output								●	●							●	●
Switching function	1 PNP light switching and NPN dark switching output	●	●	●	●	●						●	●	●				
	1 PNP dark switching and NPN light switching output	●	●	●	●	●						●	●	●				
	1 x PNP light switching output								●	●	●					●	●	●
	1 x PNP dark switching output						●	●									●	●
	1 warning output								●	●								●
Connection	M8 connector, 4-pin		●				●						●					
	M12 connector, 4-pin	●						●	●		●	●					●	
	cable 2.000 mm			●										●				
	cable 200 mm with M8 connector, 4-pin				●													
	cable 200 mm with M12 connector, 4-pin cable 200 mm with M8 connector, 4-pin ¹⁾					●				●						●		●
Indicators	green LED: ready	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	yellow LED: light path free	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Options	operating range adjustment via potentiometer											●	●	●				
	activation input										●							
	for direct connection to AS-i I/O coupling modules						●	●							●	●		
	high functional reliability even for depolarising media, e.g. foil packaging	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

1) Acc. to IEC 61076-2-101, NM construction with snap locking

