

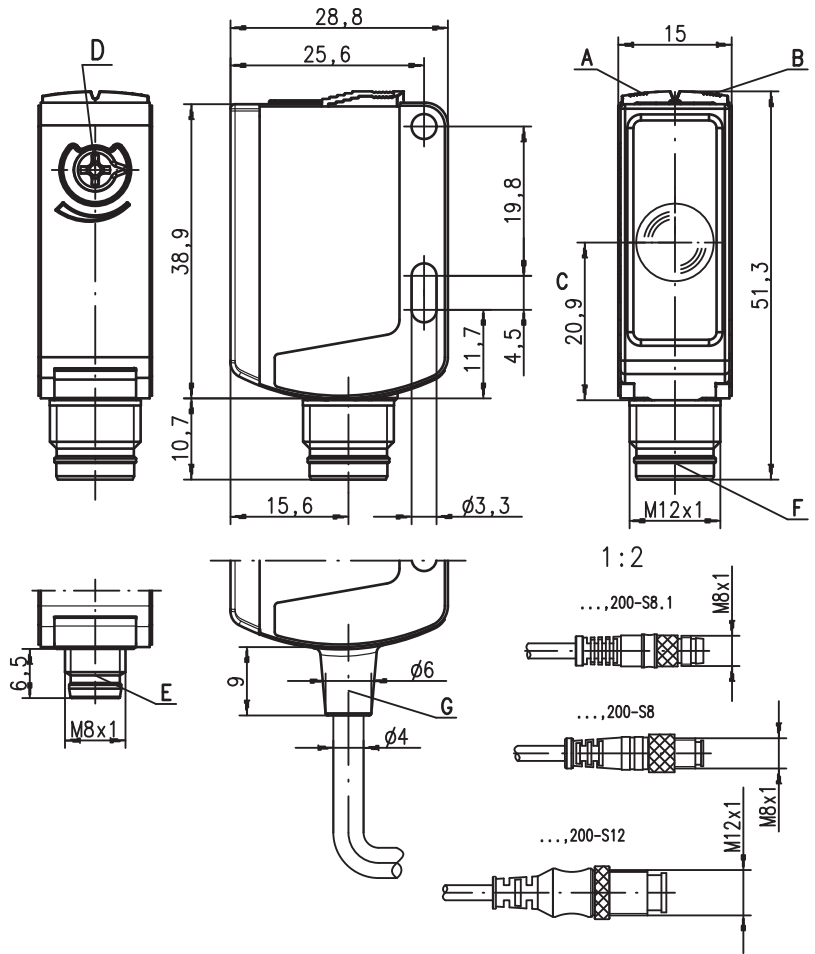
PRK 25B

Retro-reflective photoelectric sensors with polarisation filter

en 08-2016/03 50108777-02

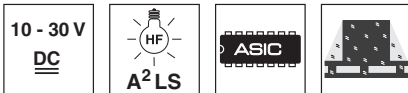
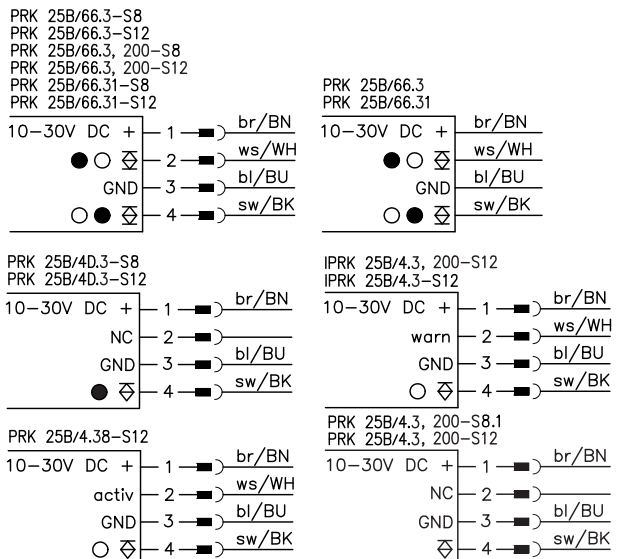


Dimensioned drawing



- 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



- 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



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) <sup>1)</sup> 0.05 ... 8m  
 Operating range <sup>2)</sup> see tables  
 Light source <sup>3)</sup> 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  $U_B$  <sup>4)</sup> 10 ... 30VDC (incl. residual ripple)  
 Residual ripple ≤ 15% of  $U_B$   
 Open-circuit current ≤ 20mA  
 Switching output <sup>5)</sup> .../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 <sup>6)</sup>  
 pin 4: PNP light switching, pin 2: NC <sup>6)</sup>  
 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 mm<sup>2</sup>),  
 connector M8 or M12,  
 cable 0.2m with connector M8 or M12

Connection type

### Environmental data

Ambient temp. (operation/storage) <sup>7)</sup> -40°C ... +55°C / -40°C ... +60°C  
 Protective circuit <sup>8)</sup> 2, 3  
 VDE safety class <sup>9)</sup> 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 <sup>4)</sup> <sup>10)</sup>

### 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)

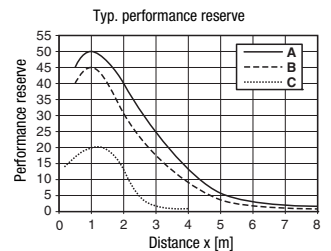
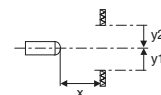
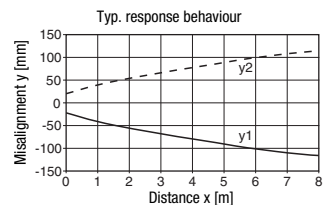
## Tables

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**
**Retro-reflective photoelectric sensors with polarisation filter**
**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 <sup>1)</sup>					●				●						●			●
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

