

PRK 25B

Retro-reflective photoelectric sensors with polarisation filter

en 07-2016/05 50108917-02



0.05 ... 10m



- Polarised retro-reflective photoelectric sensor with visible red light
- High performance reserve
- 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
- Parallel connection of switching outputs
- Warning output for increased availability
- Operating range adjustment

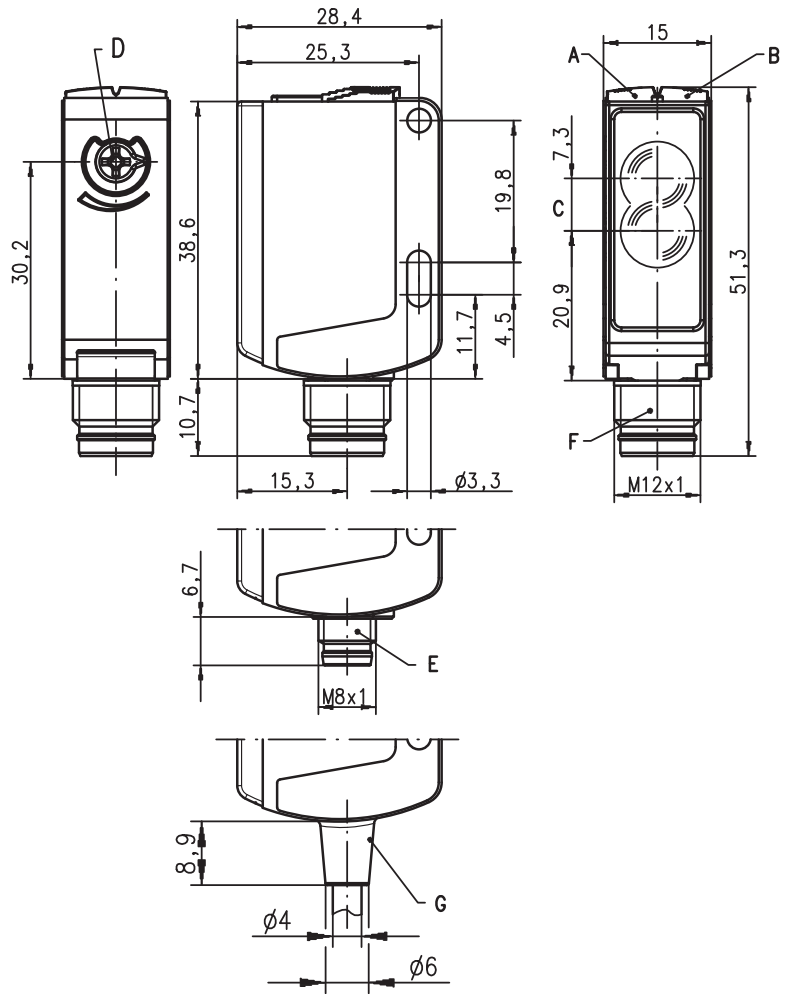


Accessories:

(available separately)

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

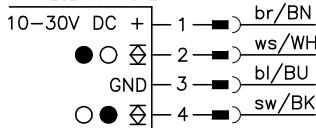
Dimensioned drawing



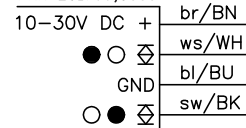
- A Green indicator diode
- B Yellow indicator diode
- C Optical axis
- D Operating range adjustment
- E Connector M8x1
- F Connector M12x1
- G Cable

Electrical connection

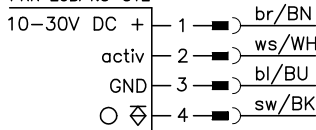
PRK 25B/66-S8  
PRK 25B/66-S12  
PRK 25B/66, 200-S12  
PRK 25B/66.1-S12



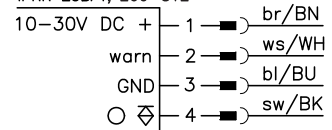
PRK 25B/66  
PRK 25B/66,5000



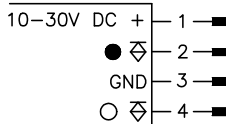
PRK 25B/4.8-S12



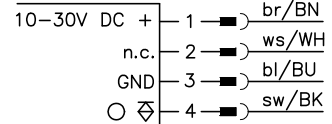
IPRK 25B/4-S12  
IPRK 25B/4, 200-S12



PRK 25B/44-S12



PRK 25B/4, 200-S8.1



We reserve the right to make changes • DS\_PRK25B4466\_en\_50108917\_02.fm

## Specifications

### Optical data

Typ. op. range limit (TK(S) 100x100) <sup>1)</sup> 0.05 ... 10m  
 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 2 push-pull switching outputs  
 .../66.1 pin 2: PNP dark switching, NPN light switching  
 .../44 pin 4: PNP light switching, NPN dark switching  
 Pin 2: PNP dark switching  
 pin 4: PNP light switching  
 IPRK.../4 1 PNP switching output light switching, 1 warning output  
 PRK.../4 1 PNP switching output light switching, pin 2: not connected  
 .../4.8 1 PNP switching output light switching, 1 activation input  
 light/dark switching  
 Signal voltage high/low ≥ ( $U_B - 2V$ ) ≤ 2V  
 Output current max. 100mA  
 Operating range fixed setting, adjustable with potentiometer for ".1 types"

Function characteristics  
 Signal voltage high/low  
 Output current  
 Operating range

### 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/5m (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>6)</sup> -30°C ... +55°C/-30°C ... +60°C  
 Protective circuit <sup>7)</sup> 2, 3  
 VDE safety class <sup>8)</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>6)</sup> <sup>9)</sup>

### Options

**Warning output autoControl warn** PNP transistor, counting principle  
 Signal voltage high/low ≥ ( $U_B - 2V$ ) ≤ 2V  
 Output current max. 100mA  
**Activation input activ**  
 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) UL certified in the temperature range -30°C to 60°C
- 7) 2=polarity reversal protection, 3=short-circuit protection for all transistor outputs
- 8) Rating voltage 50V
- 9) 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)

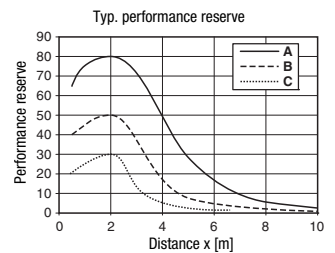
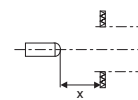
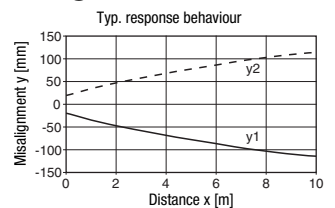
## Tables

Reflectors		Operating range	
1	TK(S) 100x100	0.05 ... 8.0m	
2	TK(S) 40x60	0.05 ... 4.0m	
3	TK(S) 20x40	0.05 ... 2.5m	
1	0,05	8	10
2	0,05	4	5
3	0,05	2,5	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		PRK 25B/66-S12 Part No. 50104223	PRK 25B/66-S8 Part No. 50104224	PRK 25B/66 Part No. 50104225	PRK 25B/66,5000 Part No. 50133395	PRK 25B/66, 200-S12 Part No. 50104226	PRK 25B/4,8-S12 Part No. 50104227	IPRK 25B/4-S12 Part No. 50104228	IPRK 25B/4, 200-S12 Part No. 50104229	PRK 25B/66,1-S12 Part No. 50104230	PRK 25B/44-S12 Part No. 50109432	PRK 25B/4, 200-S8,1 Part No. 50113771
Equipment ↓		Order code →										
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 dark switching output										●	
	1 x PNP light switching output						●	●	●		●	●
	1 warning output							●	●			
Connection	M8 connector, 4-pin		●									
	M12 connector, 4-pin	●					●	●		●	●	
	cable 2.000mm			●								
	cable 5.000mm				●							
	cable 200mm with M12 connector, 4-pin					●			●			
	cable 200mm with M8 snap-in connector, 4-pin											●
Indicators	green LED: ready	●	●	●	●	●	●	●	●	●	●	●
	yellow LED: light path free	●	●	●	●	●	●	●	●	●	●	●
Options	operating range adjustment via potentiometer									●		
	activation input						●					
	high performance reserve	●	●	●	●	●	●	●	●	●	●	●

