

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

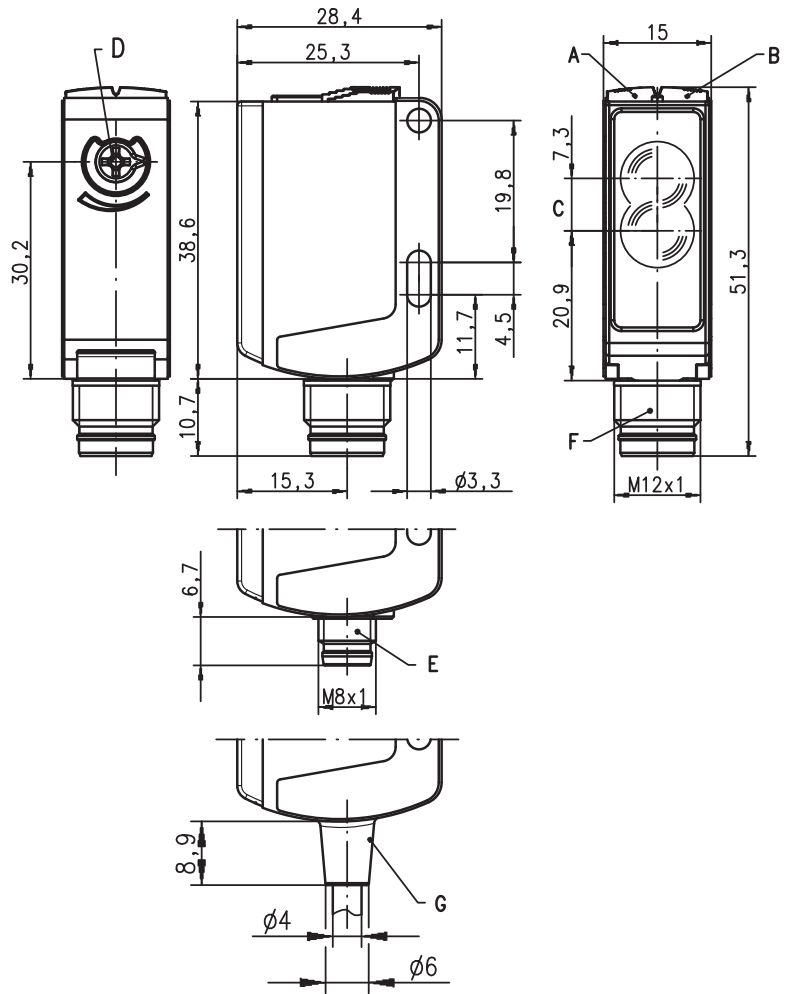


Accessories:

(available separately)

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

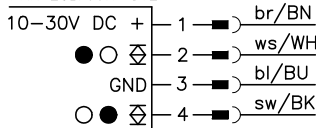
Dimensioned drawing



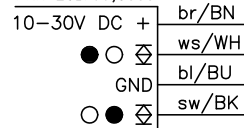
- A Green indicator diode
- B Yellow indicator diode
- C Optical axis
- D Operating range adjustment
- E Connector M8x1
- F Connector M12x1
- G Cable

Electrical connection

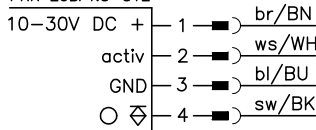
PRK 25B/66-S8
PRK 25B/66-S12
PRK 25B/66, 200-S12
PRK 25B/66.1-S12



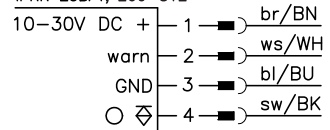
PRK 25B/66
PRK 25B/66,5000



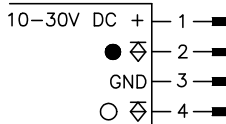
PRK 25B/4.8-S12



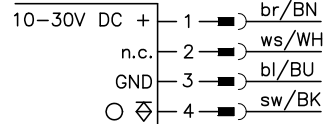
IPRK 25B/4-S12
IPRK 25B/4, 200-S12



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) ¹⁾ 0.05 ... 10m
 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 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
 Function characteristics $\geq (U_B - 2V) \leq 2V$
 Signal voltage high/low max. 100mA
 Output current fixed setting, adjustable with potentiometer for ".1 types"
 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 mm²),
 connector M8 or M12,
 cable 0.2m with connector M8 or M12

Connection type

Environmental data

Ambient temp. (operation/storage) ⁶⁾ -30°C ... +55°C/-30°C ... +60°C
 Protective circuit ⁷⁾ 2, 3
 VDE safety class ⁸⁾ 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) 6) 9)}

Options

Warning output autoControl warn PNP transistor, counting principle
 Signal voltage high/low $\geq (U_B - 2V) \leq 2V$
 Output current max. 100mA
Activation input activ
 Transmitter active/not active $\geq 8V \leq 2V$
 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)

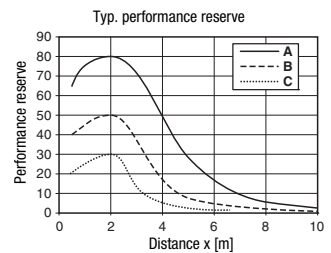
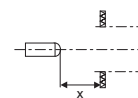
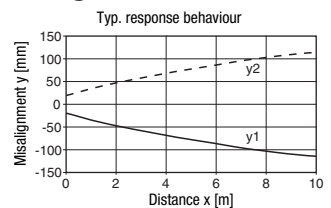
Tables

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	●	●	●	●	●	●	●	●	●	●	●

