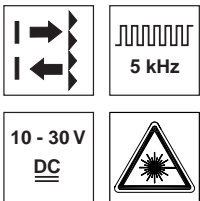


**PRKL 318 Laser retro-reflective photoelectric sensors with polarisation filter**

**Dimensioned drawing**

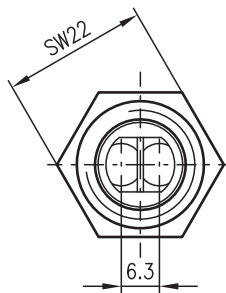
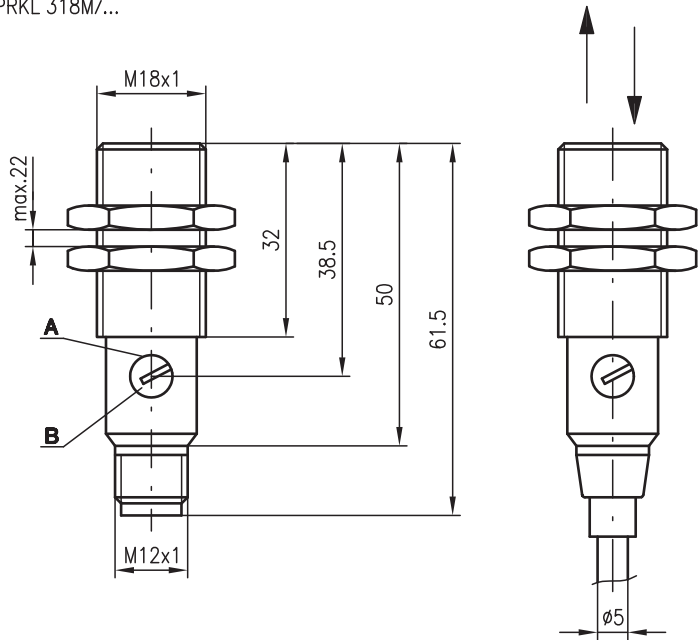
en 06-2011/01 50108669



**0.10 ... 15m**

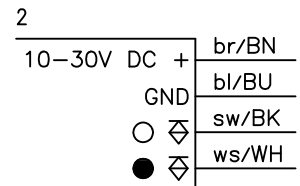
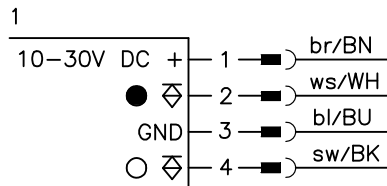
- Polarised retro-reflective photoelectric sensors with red laser light and straight optics
- Robust cylindrical stainless steel housing M18x1, protection class IP 67 for industrial application
- Fixed beam geometry, convergent
- High switching frequency
- Complementary switching outputs for light/dark switching or as a control function
- Very short construction for application in limited spaces

PRKL 318M/...



- A** Indicator diode
- B** Sensitivity adjustment

**Electrical connection**



**Accessories:**

(available separately)

- Mounting systems (BT 318, BT 318-ARH)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Reflectors
- Reflective tape

We reserve the right to make changes • DS\_PRKL318\_en.fm



## Specifications

### Optical data

|   |                                      |
|---|--------------------------------------|
| Typ. operating range limit (MTK(S) 50x50) <sup>1)</sup> | 0.10 ... 15.0m                       |
| Operating range <sup>2)</sup>                           | see tables                           |
| Light spot diameter                                     | see diagrams                         |
| Light source  | laser                                |
| Wavelength  | 650nm (visible red light, polarised) |
| Impulse duration  | 2µs                                  |
| Max. power  | 2.3mW                                |

### Timing

|                       |        |
|-----------------------|--------|
| Switching frequency   | 5000Hz |
| Response time         | 0.1ms  |
| Delay before start-up | ≤ 30ms |

### Electrical data

|                                       |                                     |
|---------------------------------------|-------------------------------------|
| Operating voltage $U_B$ <sup>3)</sup> | 10 ... 30VDC                        |
| Residual ripple                       | ≤ 10% of $U_B$                      |
| Open-circuit current                  | ≤ 20mA                              |
| Switching output                      | 2 transistor outputs, complementary |
| Function characteristics              | light/dark switching                |
| Signal voltage high/low               | ≥ ( $U_B - 1.6V$ ) / ≤ 1.6V         |
| Output current                        | max. 100mA                          |
| Sensitivity                           | adjustable                          |

### Indicators

|                  |   |
|------------------|---|
| Red LED          | light path free                         |
| LED red flashing | light path free, no performance reserve |

### Mechanical data

|                 |   |
|-----------------|---|
| Housing         | stainless steel   |
| Optics cover    | acrylic   |
| Weight          | 90g (cable), 20g (M12)                                  |
| Connection type | M12 connector, 4-pin<br>cable 2m, 4x0.25mm <sup>2</sup> |

### Environmental data

|                                   |  |
|-----------------------------------|--|
| Ambient temp. (operation/storage) | -25°C ... +60°C / -40°C ... +70°C  |
| Protective circuit <sup>4)</sup>  | 1, 2, 3, 4   |
| VDE safety class <sup>5)</sup>    | II, all-insulated  |
| Protection class                  | IP 67  |
| Laser class                       | 1 (according to EN 60825-1 and 21 CFR 1040.10<br>with Laser Notice No. 50) |
| Standards applied                 | IEC 60947-5-2, UL 508  |

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) For UL applications: for use in class 2 circuits according to NEC only
- 4) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs, 4=interference blanking
- 5) Rating voltage 250VAC

## Tables

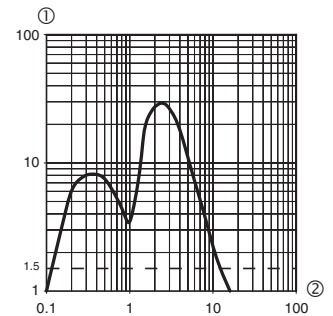
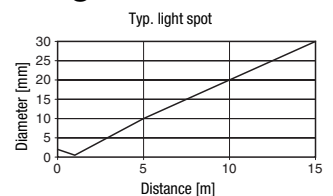
| Reflectors       | Operating range |
|------------------|-----------------|
| 1 TK(S) 100x100  | 0.15 ... 11.0m  |
| 2 MTK(S) 50x50   | 0.12 ... 12.0m  |
| 3 TK(S) 30x50    | 0.15 ... 5.0m   |
| 4 TK(S) 20x40    | 0.20 ... 7.0m   |
| 5 Tape 2 100x100 | 0.15 ... 1.5m   |

|   |      |      |      |
|---|------|------|------|
| 1 | 0.15 | 11.0 | 14.0 |
| 2 | 0.12 | 12.0 | 15.0 |
| 3 | 0.15 | 5.0  | 6.5  |
| 4 | 0.20 | 7.0  | 8.5  |
| 5 | 0.15 | 1.5  | 2.0  |

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

TK ... = adhesive  
 TKS ... = screw type  
 Tape 2 = adhesive

## Diagrams



Typical behaviour reflector distance / relative intensity of received light (with reflector MTK(S) 50x50)

1 Relative intensity of received light  
 2 Reflector distance in [m]

## Order guide

| Selection table    |                 | Order code →                          |                                   |  |  |  |  |
|--------------------|-----------------|---------------------------------------|-----------------------------------|--|--|--|--|
| Equipment ↓        |                 | PRKL 318M/P-S12<br>Part no. 500 83184 | PRKL 318M/P<br>Part no. 500 83183 |  |  |  |  |
| Housing            | Stainless steel | ●                                     | ●                                 |  |  |  |  |
| Connection         | M12 connector   | ●                                     |                                   |  |  |  |  |
|                    | Cable           |                                       | ●                                 |  |  |  |  |
| Switching output   | PNP             | ●                                     | ●                                 |  |  |  |  |
|                    | NPN             |                                       |                                   |  |  |  |  |
| Connection diagram |                 | 1                                     | 2                                 |  |  |  |  |

## Remarks

### Approved purpose:

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.