

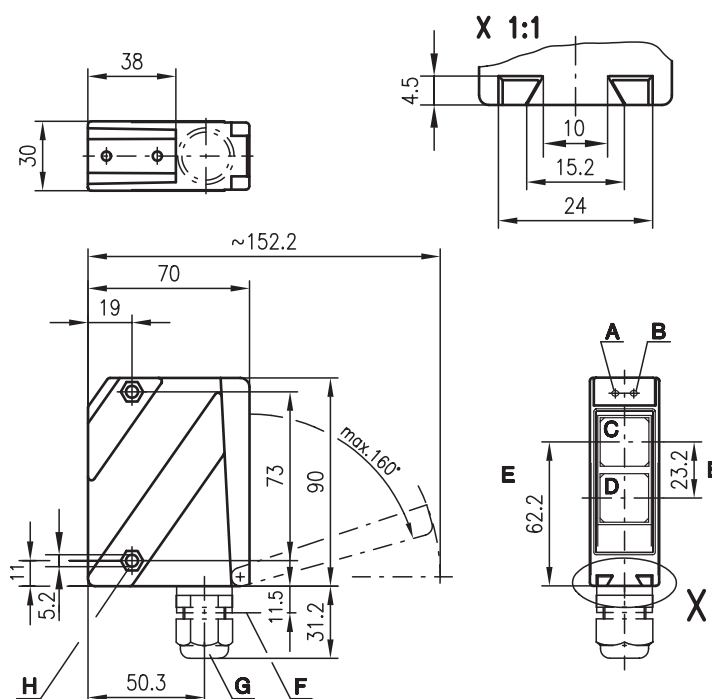
**PRK 96****Retro-reflective photoelectric sensors with polarisation filter****10m  
28m**

- Polarised retro-reflective photoelectric sensor with large operating range in visible red light
- Robust metal housing with glass cover or plastic housing, protection class IP 67 for industrial application
- Complementary outputs for standard applications and a wide range of input and output variants for optimum adaptation to the application
- Connection via M12 connector or terminal compartment
- Multiple options with warning output, activation input, switching delays and optics heating for use at low temperatures

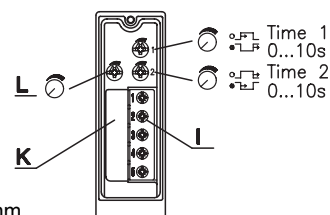
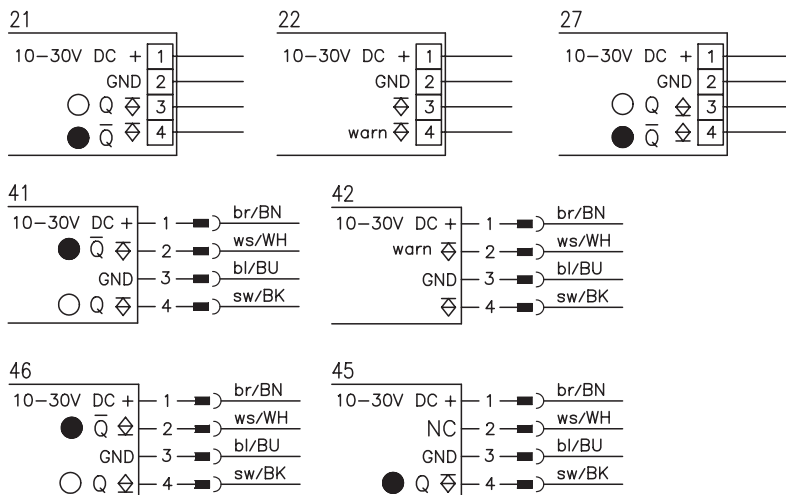
**Accessories:**

(available separately)

- Mounting systems (BT 96, BT 96.1, UMS 96, BT 450.1-96)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Reflectors
- Reflective tapes

**Dimensioned drawing**

- A** Indicator diode green  
**B** Indicator diode yellow  
**C** Receiver  
**D** Transmitter  
**E** Optical axis  
**F** Device plug M12x1  
**G** Screwed cable gland M16x1.5 for Ø 5 ... 10mm  
**H** Countersinking for SK nut M5, 4.2 deep  
**I** Connection terminals  
**K** Cable entry  
**L** Sensitivity adjustment

**Electrical connection**

## Specifications

### Optical data

|                                                          |                                      |
|----------------------------------------------------------|--------------------------------------|
| Typ. operating range limit (TK(S) 100x100) <sup>1)</sup> | 10m/28m                              |
| Operating range <sup>2)</sup>                            | see tables                           |
| Light spot diameter                                      | approx. 130mm at 6m                  |
| Light source                                             | LED (modulated light)                |
| Wavelength                                               | 660nm (visible red light, polarised) |

### Timing

|                       |             |
|-----------------------|-------------|
| Switching frequency   | 1000Hz/20Hz |
| Response time         | 0.5ms/25ms  |
| Delay before start-up | ≤ 200ms     |

### Electrical data

|                          |                                      |
|--------------------------|--------------------------------------|
| Operating voltage $U_B$  | 10 ... 30VDC (incl. residual ripple) |
| Residual ripple          | ≤ 15% of $U_B$                       |
| Bias current             | ≤ 40mA, ≤ 75mA with optics heating   |
| Switching output         | PNP transistor                       |
| Function characteristics | light/dark switching (reversible)    |
| Signal voltage high/low  | ≥ ( $U_B - 2V$ ) / ≤ 2V              |
| Output current           | max. 100mA                           |
| Sensitivity              | adjustable                           |

### Indicators

|                     |                                         |
|---------------------|-----------------------------------------|
| LED green           | ready                                   |
| LED yellow          | light path free                         |
| LED yellow flashing | light path free, no performance reserve |

### Mechanical data

|                 |                            |
|-----------------|----------------------------|
| Housing         | polycarbonate              |
| Optics cover    | plastic                    |
| Weight          | 150g                       |
| Connection type | terminals or M12 connector |

### Environmental data

|                                   |                                   |
|-----------------------------------|-----------------------------------|
| Ambient temp. (operation/storage) | -20°C ... +55°C / -40°C ... +55°C |
| Protective circuit <sup>3)</sup>  | 1, 2, 3, 4                        |
| VDE safety class <sup>4)</sup>    | II, all-insulated                 |
| Protection class                  | IP 67                             |
| LED class                         | 1 (acc. to EN 60825-1)            |
| Standards applied                 | IEC 60947-5-2                     |

### Options

|                                      |                                           |
|--------------------------------------|-------------------------------------------|
| Warning output autoControl warn      | PNP transistor, 100mA, counting principle |
| Optics heating                       | for temperature changes, prevents fogging |
| Low temperature                      | to -35°C                                  |
| Switching delay (slow oper./release) | 0 ... 10s (separately adjustable)         |

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs, 4=interference blanking
- 4) Rating voltage 250VAC

## Order guide

| Selection table |                               | Order code →                            |                                         |                                         |                                         |                                         |                                         |                                           |                                         |
|-----------------|-------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-------------------------------------------|-----------------------------------------|
| Equipment ↓     |                               | PRK 96K/P-1360-21<br>Part No. 500 25163 | PRK 96K/P-1360-41<br>Part No. 500 25165 | PRK 96K/P-3368-41<br>Part No. 500 41042 | PRK 96K/P-1380-21<br>Part No. 500 25164 | PRK 96K/P-1380-41<br>Part No. 500 25166 | PRK 96K/P-1365-45<br>Part No. 501 03003 | PRK 96K/P-1360.1-41<br>Part No. 501 03216 | PRK 96K/N-1380-46<br>Part No. 500 81325 |
| Housing         | metal                         |                                         |                                         |                                         |                                         |                                         |                                         |                                           |                                         |
|                 | plastic                       | ●                                       | ●                                       | ●                                       | ●                                       | ●                                       | ●                                       | ●                                         | ●                                       |
| Light source    | red light (10m)               | ●                                       | ●                                       |                                         | ●                                       | ●                                       | ●                                       | ●                                         | ●                                       |
|                 | red light (28m)               |                                         |                                         | ●                                       |                                         |                                         |                                         |                                           |                                         |
| Connection      | terminals                     | ●                                       |                                         |                                         | ●                                       |                                         |                                         |                                           |                                         |
|                 | M12 connector                 |                                         | ●                                       | ●                                       |                                         | ●                                       | ●                                       | ●                                         | ●                                       |
| Features        | switching delay               |                                         |                                         |                                         | ●                                       | ●                                       |                                         |                                           | ●                                       |
|                 | warning output                |                                         |                                         |                                         |                                         |                                         |                                         |                                           |                                         |
|                 | activation input              |                                         |                                         |                                         |                                         |                                         |                                         |                                           |                                         |
|                 | PIN 2 = NC *                  |                                         |                                         |                                         |                                         |                                         | ●                                       | ●                                         |                                         |
|                 | PIN 4 = dark switching        |                                         |                                         |                                         |                                         |                                         | ●                                       |                                           |                                         |
|                 | PIN 4 = light/dark reversible |                                         |                                         |                                         |                                         |                                         |                                         | ●                                         |                                         |
|                 | NPN switching output          |                                         |                                         |                                         |                                         |                                         |                                         |                                           | ●                                       |

## Tables

### 10m models

| Reflectors       | Operating range |
|------------------|-----------------|
| 1 TK(S) 100x100  | 0.3 ... 8m      |
| 2 MTK(S) 50x50   | 0.3 ... 7m      |
| 3 TK(S) 30x50    | 0.3 ... 4.5m    |
| 4 TK(S) 20x40    | 0.3 ... 3m      |
| 5 TK(S) 82       | 0.3 ... 6m      |
| 6 Tape 2 100x100 | 0.3 ... 4m      |

|   |     |     |     |
|---|-----|-----|-----|
| 1 | 0.1 | 8   | 10  |
| 2 | 0.1 | 7   | 8.5 |
| 3 | 0.1 | 4.5 | 5   |
| 4 | 0.1 | 3   | 4   |
| 5 | 0.1 | 6   | 7.5 |
| 6 | 0.1 | 4   | 5.5 |

### 28m models

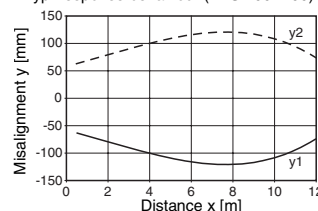
| Reflectors                                                                          |       |         | Operating range |    |
|-------------------------------------------------------------------------------------|-------|---------|-----------------|----|
|  |       |         |                 |    |
| 1                                                                                   | TK(S) | 100x100 | 0.3 ... 28m     |    |
| 1                                                                                   | 0.1   |         | 26              | 28 |

- ☐ Operating range [m]
- ☐ Typ. operating range limit [m]

## Diagrams

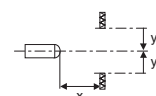
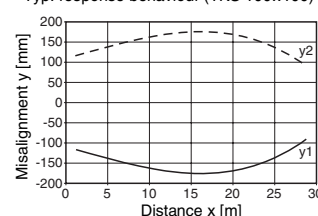
### 10m models

Typ. response behaviour (TKS 100x100)



### 28m models

Typ. response behaviour (TKS 100x100)



## Remarks

- The polarised retro-reflexive photoelectric sensor is also available with an integrated AS-i chip for direct connection to the AS-i system.
- \*For direct connection to AS-i I/O coupling modules (PRK 96K/P-1365-45 and PRK 96K/P-1360.1-41)