

RK 318

Retro-reflective photoelectric sensors

Dimensioned drawing

en 07-2014/07 50108659-01

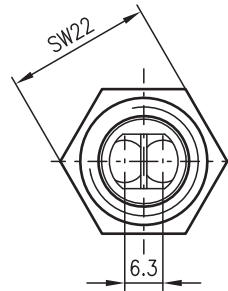
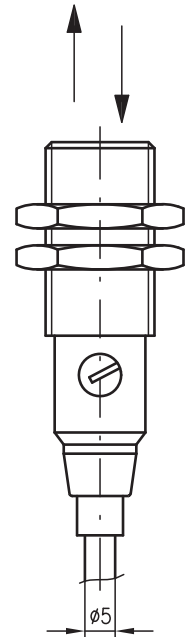
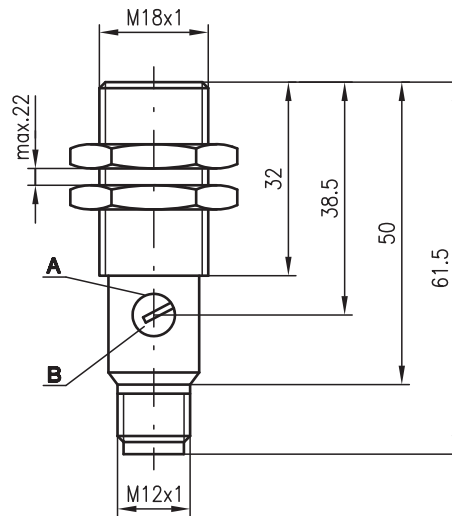


0.02 ... 6.0m

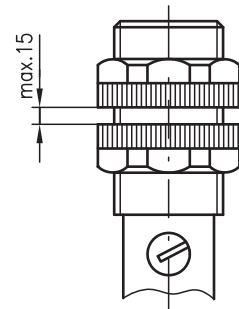


- Retro-reflective photoelectric sensors with straight optics using infrared light
- Robust cylindrical stainless steel or plastic housing M18x1, protection class IP 67 for industrial application
- Complementary switching outputs for light/dark switching or as a control function
- Very short construction for application in limited spaces

RK 318M/...

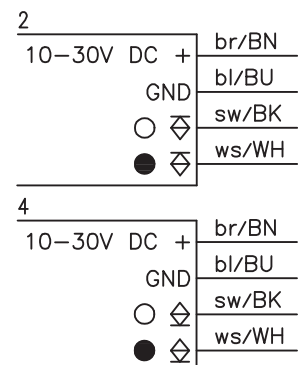
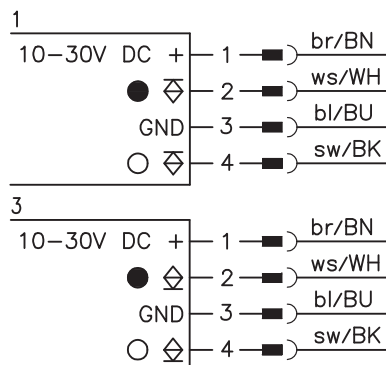


RK 318K/...



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

Electrical connection



We reserve the right to make changes • DS_RK318_en_50108659_01.fm



Accessories:

(available separately)

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

Specifications

Optical data

| | |
|--|-----------------------|
| Typ. operating range limit (TK(S) 100x100) ¹⁾ | 0.02 ... 6.0m |
| Operating range ²⁾ | see tables |
| Light source | LED (modulated light) |
| Wavelength | 950nm |

Timing

| | |
|-----------------------|--------|
| Switching frequency | 1000Hz |
| Response time | 0.5ms |
| Delay before start-up | ≤ 30ms |

Electrical data

| | |
|---------------------------------------|-------------------------------------|
| Operating voltage U_B ³⁾ | 10 ... 30VDC |
| Residual ripple | ≤ 10% of U_B |
| Bias current | ≤ 15mA |
| 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

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

Mechanical data

| | |
|-----------------|---|
| Housing | polyamide 12 or stainless steel |
| Optics cover | polyamide 12 |
| Weight | 90g (cable), 20g (M12) |
| Connection type | M12 connector, 4-pin cable 2m, 4x0.25mm ² |

Environmental data

| | |
|-----------------------------------|--|
| Ambient temp. (operation/storage) | -25°C ... +65°C / -40°C ... +70°C |
| Protective circuit ⁴⁾ | 1, 2, 3, 4 |
| VDE safety class ⁵⁾ | II, all-insulated |
| Protection class | IP 67 |
| Light source | exempt group (in acc. with EN 62471) |
| Standards applied | IEC 60947-5-2 |
| Certifications | UL 508, C22.2 No.14-13 ³⁾ ⁶⁾ |

- 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
- 6) 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)

Order guide

| Selection table | | Order code → | | | | | | | |
|--------------------|-----------------|------------------------------------|--------------------------------|------------------------------------|--------------------------------|------------------------------------|--------------------------------|------------------------------------|--------------------------------|
| Equipment ↓ | | RK 318K/P-S12 Part No. 50081343 | RK 318K/P Part No. 50081344 | RK 318M/P-S12 Part No. 50081345 | RK 318M/P Part No. 50081346 | RK 318K/N-S12 Part No. 50082142 | RK 318K/N Part No. 50083162 | RK 318M/N-S12 Part No. 50082143 | RK 318M/N Part No. 50083234 |
| Housing | plastic | ● | ● | | | ● | ● | | |
| | stainless steel | | | ● | ● | | | ● | ● |
| Connection | M12 connector | ● | | ● | ● | ● | | ● | |
| | cable | | ● | | ● | | ● | | ● |
| Switching output | PNP | ● | ● | ● | ● | | | ● | ● |
| | NPN | | | | | ● | ● | ● | ● |
| Connection diagram | | 1 | 2 | 1 | 2 | 3 | 4 | 3 | 4 |

Tables

| Reflectors | Operating range |
|------------------|-----------------|
| 1 TK(S) 100x100 | 0.03 ... 4.6m |
| 2 MTK(S) 50x50 | 0.02 ... 4.0m |
| 3 TK(S) 30x50 | 0.03 ... 2.2m |
| 4 TK(S) 20x40 | 0.06 ... 1.9m |
| 5 Tape 2 100x100 | 0.15 ... 2.5m |

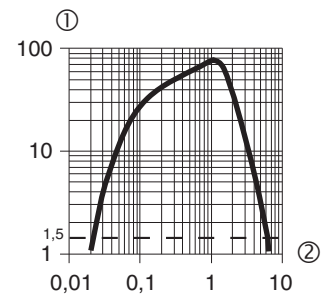
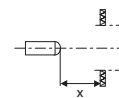
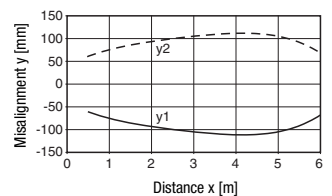
| | | | | |
|---|------|-----|-----|-----|
| 1 | 0.03 | | 4.6 | 6.0 |
| 2 | 0.02 | | 4.0 | 5.4 |
| 3 | 0.03 | 2.2 | 3.2 | |
| 4 | 0.06 | 1.9 | 2.9 | |
| 5 | 0.15 | 2.5 | 3.5 | |

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

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

Diagrams

Typ. response behaviour (TK 100x100)



Typical behaviour reflector distance / relative intensity of received light (with reflector TK(S) 100x100)

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

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.