



Figure can vary

Part no.: 50137154
PRK3C/6G-M8
Polarized retro-reflective photoelectric sensor



Contents

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- Dimensioned drawings
- Electrical connection
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Technical data

| Basic data | |
|-------------------------------------|---|
| Series | 3C |
| Operating principle | Reflection principle |
| Optical data | |
| Operating range | Guaranteed operating range |
| Operating range | 0.1 ... 5 m , With reflector TK(S) 100x100 |
| Operating range limit | Typical operating range |
| Operating range limit | 0.1 ... 6 m , With reflector TK(S) 100x100 |
| Light source | LED , Red |
| LED light wavelength | 633 nm |
| Transmitted-signal shape | Pulsed |
| LED group | Exempt group (in acc. with EN 62471) |
| Electrical data | |
| Protective circuit | Polarity reversal protection Short circuit protected |
| Performance data | |
| Supply voltage U_B | 10 ... 30 V , DC , Incl. residual ripple |
| Residual ripple | 0 ... 15 % , From U_B |
| Open-circuit current | 0 ... 20 mA |
| Outputs | |
| Number of digital switching outputs | 2 Piece(s) |
| Switching outputs | |
| Voltage type | DC |
| Switching current, max. | 100 mA |
| Switching voltage | High: $\geq(U_B-2V)$ Low: $\leq 2V$ |
| Switching output 1 | |
| Assignment | Connection 1, pin 4 |
| Switching element | Transistor , Push-pull |
| Switching principle | Light switching (PNP)/dark switching (NPN) |
| Switching output 2 | |
| Assignment | Connection 1, pin 2 |
| Switching element | Transistor , Push-pull |
| Switching principle | Dark switching (PNP)/light switching (NPN) |
| Timing | |
| Switching frequency | 1,500 Hz |
| Response time | 0.33 ms |
| Readiness delay | 300 ms |
| Connection | |

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Connection 1

| | |
|--------------------|------------------------------|
| Type of connection | Connector |
| Function | Signal OUT Voltage supply |
| Thread size | M8 |
| Type | Male |
| Material | Metal |
| No. of pins | 4 -pin |

Mechanical data

| | |
|----------------------------|---|
| Dimension (W x H x L) | 11.4 mm x 34.2 mm x 18.3 mm |
| Housing material | Plastic , PC-ABS |
| Lens cover material | Plastic / PMMA |
| Net weight | 10 g |
| Housing color | Red |
| Type of fastening | Through-hole mounting Via optional mounting device |
| Compatibility of materials | ECOLAB |

Operation and display

| | |
|-----------------|------------|
| Type of display | LED |
| Number of LEDs | 2 Piece(s) |

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | -40 ... 60 °C |
| Ambient temperature, storage | -40 ... 70 °C |

Certifications

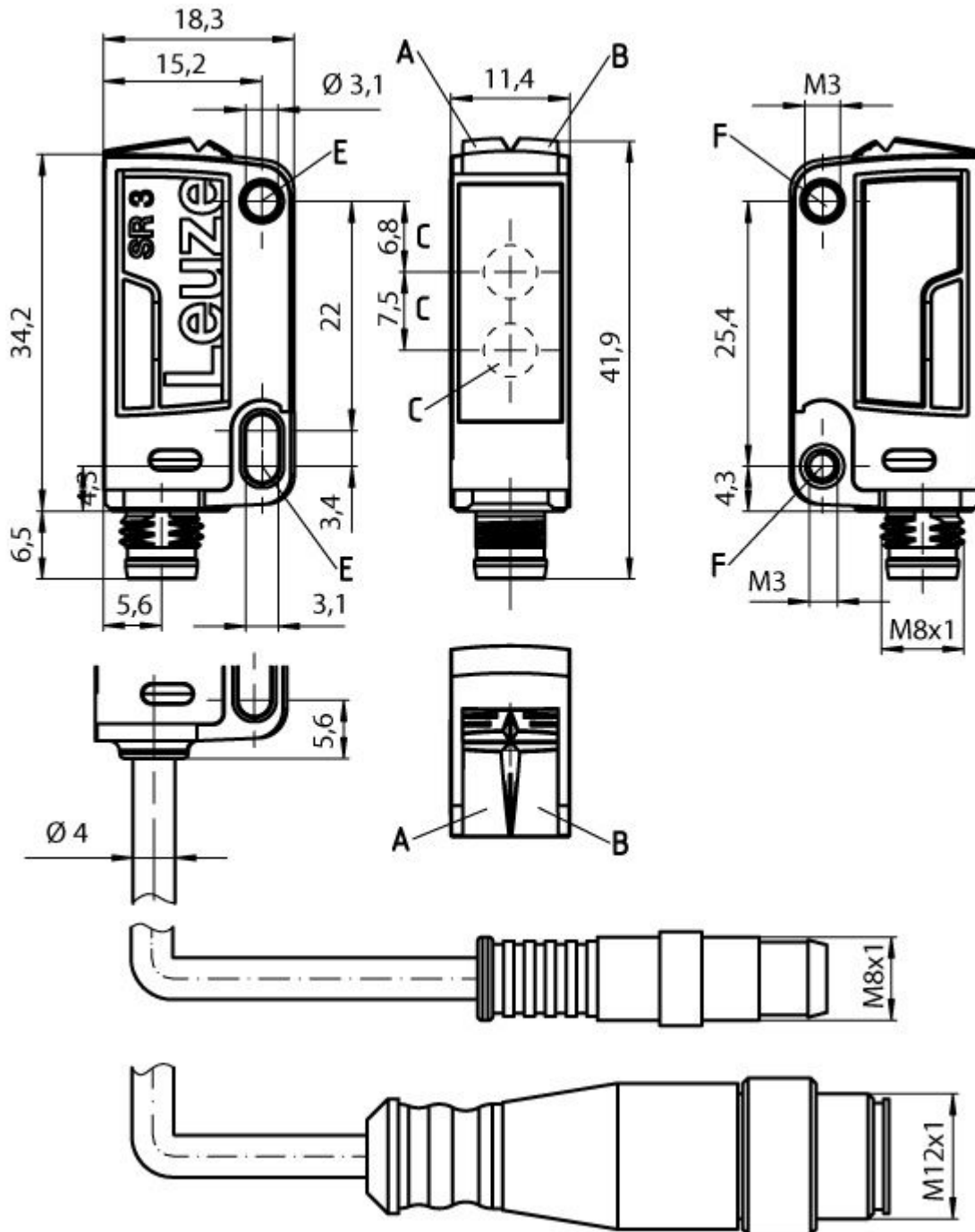
| | |
|----------------------|-----------------|
| Degree of protection | IP 67 IP 69K |
| Protection class | III |
| Certifications | c UL US |
| Standards applied | IEC 60947-5-2 |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0 | 27270902 |
| eCl@ss 9.0 | 27270902 |
| ETIM 5.0 | EC002717 |
| ETIM 6.0 | EC002717 |

Dimensioned drawings

All dimensions in millimeters



- A Green LED
- B Yellow LED
- C Optical axis
- E Mounting sleeve (standard)
- F Threaded sleeve (3C.B series)

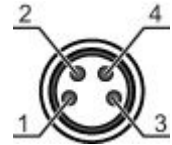
Electrical connection

| Connection 1 | |
|--------------------|------------------------------|
| Type of connection | Connector |
| Function | Signal OUT Voltage supply |

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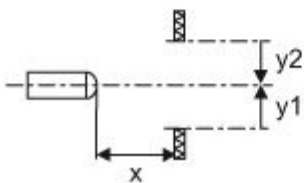
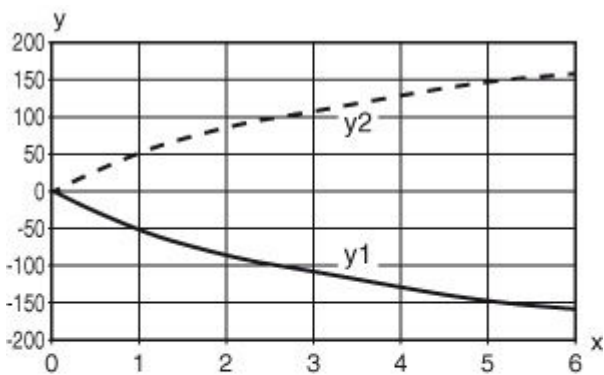
| Connection 1 | |
|--------------|--------|
| Thread size | M8 |
| Type | Male |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | |

| Pin | Pin assignment |
|-----|----------------|
| 1 | V+ |
| 2 | OUT 2 |
| 3 | GND |
| 4 | OUT 1 |



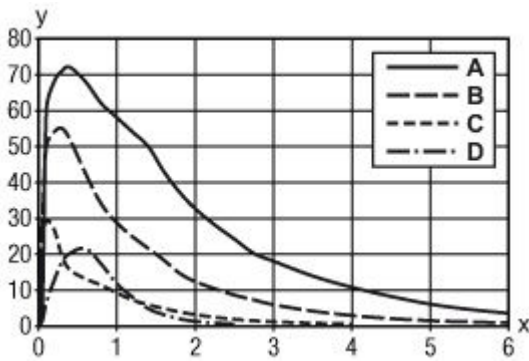
Diagrams

Typ. response behavior



x Distance [m]
y Misalignment [mm]

Typ. function reserve





x Distance [m]
y Function reserve
A TKS 100x100
B TKS 40x60
C TKS 20x40
D Film REF 4-A-50x50

Operation and display







LEDs

| LED | Display | Meaning |
|-----|--------------------------|--------------------------------------|
| 1 | Green, continuous light | Ready |
| 2 | Yellow, continuous light | Light path free |
| | Yellow, flashing | Light path free, no function reserve |

Reflectors & reflective tapes

| | Part no. | Designation | Operating range/ Operating range limit | Description |
|---|----------|---------------|---|---|
|  | 50108300 | REF 4-A-50x50 | 0.1 ... 1.2 m 0.1 ... 1.6 m | Design: Rectangular Reflective surface: 50 mm x 50 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive |
|  | 50003192 | TK 100x100 | 0.1 ... 5 m 0.1 ... 6 m | Design: Rectangular Reflective surface: 96 mm x 96 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Adhesive |

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| | Part no. | Designation | Operating range/ Operating range limit | Description |
|---|----------|-------------|---|--|
|  | 50003189 | TK 30x50 | 0.1 ... 1.2 m 0.1 ... 1.6 m | Design: Rectangular Reflective surface: 29 mm x 45 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Adhesive |
|  | 50024127 | TK 82.2 | 0.1 ... 1.2 m 0.1 ... 1.6 m | Design: Round Triple reflector size: 4 mm Reflection surface diameter: 79 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |
|  | 50022816 | TKS 100X100 | 0.1 ... 5 m 0.1 ... 6 m | Design: Rectangular Reflective surface: 96 mm x 96 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |
|  | 50081283 | TKS 20X40 | 0.1 ... 1.5 m 0.1 ... 2 m | Design: Rectangular Reflective surface: 16 mm x 38 mm Triple reflector size: 2.3 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |
|  | 50023525 | TKS 30X50 | 0.1 ... 1.2 m 0.1 ... 1.6 m | Design: Rectangular Reflective surface: 27 mm x 44 mm Triple reflector size: 3 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |
|  | 50040820 | TKS 40X60 | 0.1 ... 3 m 0.1 ... 3.6 m | Design: Rectangular Reflective surface: 37 mm x 56 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |

Part number code

Part designation: **AAA 3C d EE-f.GG H/i J-K**

| | |
|-------|---|
| AAA3C | Operating principle / construction: HT3C: diffuse reflection sensor with background suppression LS3C: throughbeam photoelectric sensor transmitter LE3C: throughbeam photoelectric sensor receiver PRK3C: retro-reflective photoelectric sensor with polarization filter |
| d | Light type: n/a: red light l: infrared light |
| EE | Light source: n/a: LED L1: laser class 1 L2: laser class 2 |
| f | Pre-set range (optional): n/a: operating range acc. to data sheet XXXX: pre-set range [mm] |

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| | |
|----|---|
| GG | Equipment: n/a: standard A: autocollimation principle (single lens) for positioning tasks B: housing model with two M3 threaded sleeves, brass F: permanently set range L: long light spot S: small light spot T: autocollimation principle (single lens) for highly transparent bottles without tracking TT: autocollimation principle (single lens) for highly transparent bottles with tracking V: V-optics XL: extra long light spot |
| H | Operating range adjustment: n/a with HT: range adjustable via 8-turn potentiometer n/a with retro-reflective photoelectric sensors (PRK): operating range not adjustable 1: 270° potentiometer 3: teach-in via button 6: auto-teach |
| i | Switching output/function OUT 1/IN: Pin 4 or black conductor: 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: push-pull switching output, PNP dark switching, NPN light switching /L: IO-Link 8: activation input (activation with high signal) X: pin not used |
| J | Switching output / function OUT 2/IN: pin 2 or white conductor: 2: NPN transistor output, light switching N: NPN transistor output, dark switching 4: PNP transistor output, light switching P: PNP transistor output, dark switching 6: push-pull switching output, PNP light switching, NPN dark switching G: push-pull switching output, PNP dark switching, NPN light switching W: warning output X: pin not used 8: activation input (activation with high signal) 9: deactivation input (deactivation with high signal) T: teach-in via cable |
| K | Electrical connection: n/a: cable, standard length 2000 mm, 4-wire 5000: cable, standard length 5000 mm, 4-wire M8: M8 connector, 4-pin (plug) M8.3: M8 connector, 3-pin (plug) 200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug) 200-M8.3: cable, length 200 mm with M8 connector, 3-pin, axial (plug) 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug) |

Note

A list with all available device types can be found on the Leuze electronic website at www.leuze.com.

Notes
Observe 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 its intended use.

For UL applications:



- For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).
- 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)

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- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C
- Response time: For short decay times, an ohmic load of approx. 5 kOhm is recommended
- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C
- The push-pull switching outputs must not be connected in parallel.

Accessories


Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|--|----------|-------------------|------------------|--|
|  | 50130850 | KD U-M8-4A-V1-050 | Connection cable | Connection 1: Connector, M8, Axial, Female, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |
|  | 50130871 | KD U-M8-4W-V1-050 | Connection cable | Connection 1: Connector, M8, Angled, Female, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |

Mounting technology - Mounting brackets



| | Part no. | Designation | Article | Description |
|---|----------|-------------|-----------------|--|
|  | 50060511 | BT 3 | Mounting device | Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Metal |

Mounting technology - Rod mounts


| | Part no. | Designation | Article | Description |
|---|----------|--------------|-----------------|---|
|  | 50117255 | BTU 200M-D12 | Mounting system | Contains: 2x M3 x 16 screw, 2x M3 x 20 screw, 2x position washers Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal |

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Standard reflectors

| | Part no. | Designation | Article | Description |
|---|----------|-------------|-----------|--|
|  | 50081283 | TKS 20X40 | Reflector | Design: Rectangular Reflective surface: 16 mm x 38 mm Triple reflector size: 2.3 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |
|  | 50040820 | TKS 40X60 | Reflector | Design: Rectangular Reflective surface: 37 mm x 56 mm Triple reflector size: 4 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |

Reflective tapes for standard applications

| | Part no. | Designation | Article | Description |
|--|----------|---------------|-----------------|---|
|  | 50108300 | REF 4-A-50x50 | Reflective tape | Design: Rectangular Reflective surface: 50 mm x 50 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive |