



Figure can vary

Part no.: 50139551
PRK25C/48-M12
Polarized retro-reflective photoelectric sensor



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Technical data

| Basic data | |
|-------------------------------------|---|
| Series | 25C |
| Operating principle | Reflection principle |
| Special design | |
| Special design | Activation input |
| Optical data | |
| Operating range | Guaranteed operating range |
| Operating range | 0.05 ... 10 m , With reflector TK(S) 100x100 |
| Operating range limit | Typical operating range |
| Operating range limit | 0.05 ... 12 m , With reflector TK(S) 100x100 |
| Light source | LED , Red |
| LED light wavelength | 640 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 |
| Inputs | |
| Number of activation inputs | 1 Piece(s) |
| Activation inputs | |
| Voltage type | DC |
| Switching voltage | high: $\geq 8V$ Low: $\leq 2V$ |
| Switching voltage high, min. | 8 V |
| Switching voltage low, max. | 2 V |
| Input resistance | 10,000 Ω , -10 ... 10 % |
| Activation input 1 | |
| Assignment | Connection 1, pin 2 |
| Active switching state | High |
| Outputs | |
| Number of digital switching outputs | 1 Piece(s) |
| Switching outputs | |
| Voltage type | DC |
| Switching current, max. | 100 mA |
| Switching voltage | high: $\geq (U_B - 2.5V)$ low: $\leq 2.5V$ |
| Switching output 1 | |
| Assignment | Connection 1, pin 4 |
| Switching element | Transistor , PNP |
| Switching principle | Light switching |
| Timing | |

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| | |
|---------------------|----------|
| Switching frequency | 1,500 Hz |
| Response time | 0.33 ms |
| Readiness delay | 300 ms |

Connection
Connection 1

| | |
|--------------------|---|
| Function | Signal IN Signal OUT Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | PUR |
| No. of pins | 4 -pin |
| Encoding | A-coded |

Mechanical data

| | |
|----------------------------|--|
| Dimension (W x H x L) | 15 mm x 42.7 mm x 30 mm |
| Housing material | Plastic , ABS |
| Lens cover material | Plastic |
| Net weight | 22 g |
| Housing color | Red |
| Type of fastening | Through-hole mounting with M4 thread 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

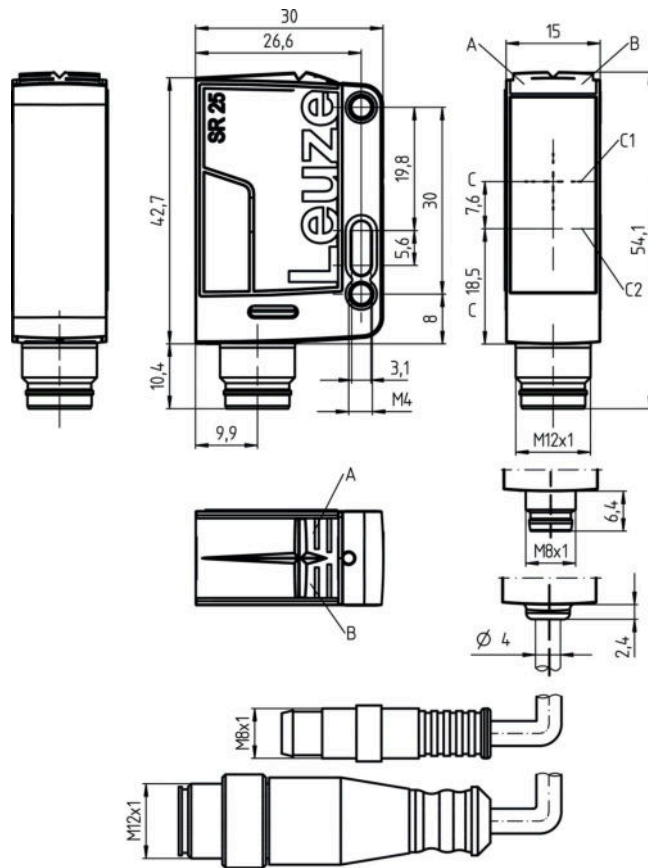
| | |
|----------------------|-----------------|
| Degree of protection | IP 67 IP 69K |
| Protection class | III |
| Certifications | c UL US |
| Standards applied | IEC 60947-5-2 |

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

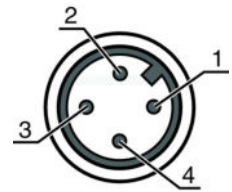


- A Green LED
- B Yellow LED
- C Optical axis
- C1 Receiver
- C2 Transmitter

Electrical connection

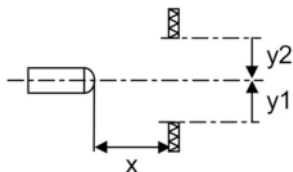
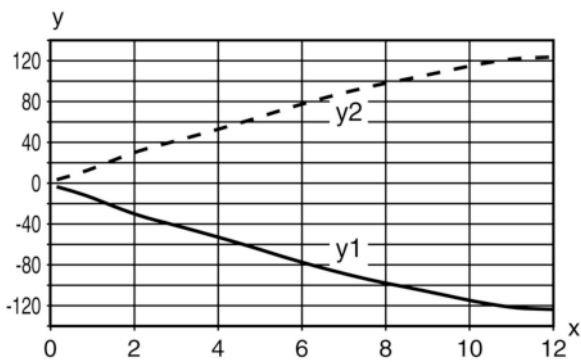
| Connection 1 | |
|--------------------|---|
| Function | Signal IN Signal OUT Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | PUR |
| No. of pins | 4 -pin |
| Encoding | A-coded |

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



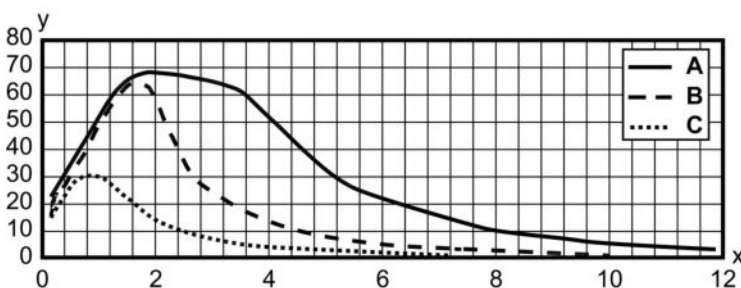
Diagrams

Typ. response behavior (TKS100x100)



x Distance [m]
y Misalignment [mm]

Typ. function reserve




x Distance [m]
y Function reserve
A TKS 100x100
B TKS 40x60
C TKS 20x40

Operation and display


LEDs

| LED | Display | Meaning |
|-----|--------------------------|--------------------------------------|
| 1 | Green, continuous light | Operational readiness |
| 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 |
|---|----------|-----------------|---|--|
|  | 50117583 | MTKS 50x50.1 | 0.05 ... 6.5 m 0.05 ... 7.5 m | Design: Rectangular Reflective surface: 50 mm x 50 mm Triple reflector size: 1.2 mm Material: Plastic Base material: Plastic Chemical designation of the material: PMMA8N Fastening: Through-hole mounting, Adhesive |
|  | 50106119 | REF 4-A-100x100 | 0.12 ... 2.5 m 0.08 ... 3 m | Design: Rectangular Reflective surface: 100 mm x 100 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive |
|  | 50110192 | REF 6-A-50x50 | 0.08 ... 4.5 m 0.05 ... 5.3 m | Design: Rectangular Reflective surface: 50 mm x 50 mm Triple reflector size: 0.3 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive |
|  | 50003192 | TK 100x100 | 0.05 ... 10 m 0.05 ... 12 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 |
|  | 50022816 | TKS 100X100 | 0.05 ... 10 m 0.05 ... 12 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 | 0.05 ... 3 m 0.05 ... 3.5 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 |

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| | Part no. | Designation | Operating range/ Operating range limit | Description |
|---|----------|-------------|---|--|
|  | 50040820 | TKS 40X60 | 0.05 ... 5 m 0.05 ... 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: **AAA25C d EE-f.GGH/iJ-K**

| | |
|--------|---|
| AAA25C | Operating principle / construction: HT25C: diffuse reflection sensor with background suppression PRK25C: retro-reflective photoelectric sensor with polarization filter LS25C: throughbeam photoelectric sensor transmitter LE25C: throughbeam photoelectric sensor receiver DRT25C: Dynamic reference diffuse sensor |
| 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 | Preset range (optional): n/a: operating range acc. to data sheet xxxF: preset range [mm] |
| GG | Equipment: A: autocollimation principle (single lens) S: small light spot D: detection of stretch-wrapped objects X: extended model HF: suppression of HF illumination (LED) XL: extra long light spot T: autocollimation principle (single lens) for highly transparent bottles without tracking TT: autocollimation principle (single lens) for highly transparent bottles with tracking |
| H | Operating range adjustment: 1: 270° potentiometer 2: multiturn potentiometer 3: teach-in via button |
| 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 X: pin not used 8: activation input (activation with high signal) L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching) |
| 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 W: warning output X: pin not used 6: push-pull switching output, PNP light switching, NPN dark switching T: teach-in via cable |
| K | Electrical connection: n/a: cable, standard length 2000 mm, 4-wire 200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug) M8: M8 connector, 4-pin (plug) M12: M12 connector, 4-pin (plug) 200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug) |

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Note

A list with all available device types can be found on the Leuze 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:

- Only for use in "class 2" circuits
- 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)

- Light source: Average life expectancy 100,000 h at an ambient temperature of 25 °C
- Sum of the output currents for both outputs 100 mA


Accessories

Connection technology - Connection cables


| | Part no. | Designation | Article | Description |
|---|----------|--------------------|------------------|--|
|    | 50130657 | KD U-M12-4A-P1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PUR |
|    | 50130694 | KD U-M12-4W-P1-050 | Connection cable | Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PUR |

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Mounting technology - Mounting brackets

| | Part no. | Designation | Article | Description |
|---|----------|-------------|------------------|---|
|  | 50118543 | BT 300M.5 | Mounting bracket | Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type, Suited for M4 screws Type of mounting device: Adjustable Material: Stainless steel |

Mounting technology - Rod mounts

| | Part no. | Designation | Article | Description |
|---|----------|--------------|-----------------|--|
|  | 50117252 | BTU 300M-D12 | Mounting system | Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, Sheet-metal mounting Mounting bracket, at device: Screw type, Suited for M4 screws Type of mounting device: Clampable, Adjustable, Turning, 360° Material: Metal |

Standard reflectors

| | 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 |
|  | 50022816 | TKS 100X100 | Reflector | 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 |
|  | 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 |

Note

A list with all available accessories can be found on the Leuze electronic website in the Download tab of the article detailed page.