

## Technical data sheet

### Polarized retro-reflective photoelectric

Part no.: 50139683

PRK25C.T3/4P-200-M12

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- Electrical connection
- Diagrams
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Figure can vary



## Technical data

### Basic data

|                     |                                                                           |
|---------------------|---------------------------------------------------------------------------|
| Series              | 25C                                                                       |
| Operating principle | Reflection principle                                                      |
| Application         | Detection of highly transparent bottles<br>Detection of transparent films |

### Special version

|                 |                 |
|-----------------|-----------------|
| Special version | Autocollimation |
|-----------------|-----------------|

### Optical data

|                          |                                           |
|--------------------------|-------------------------------------------|
| Operating range          | Guaranteed operating range                |
| Operating range          | 0 ... 3 m, With reflector TK(S) 100x100   |
| Operating range limit    | Typical operating range                   |
| Operating range limit    | 0 ... 3.6 m, With reflector TK(S) 100x100 |
| Light source             | LED, Red                                  |
| LED light wavelength     | 640 nm                                    |
| LED group                | Exempt group (in acc. with EN 62471)      |
| Transmitted-signal shape | Pulsed                                    |

### Electrical data

|                    |                                                         |
|--------------------|---------------------------------------------------------|
| Protective circuit | Polarity reversal protection<br>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: $\geq(U_B - 2.5V)$<br>low: $\leq 2.5V$ |

### Switching output 1

|                     |                     |
|---------------------|---------------------|
| Assignment          | Connection 1, pin 4 |
| Switching element   | Transistor, PNP     |
| Switching principle | Light switching     |

### Switching output 2

|                     |                     |
|---------------------|---------------------|
| Assignment          | Connection 1, pin 2 |
| Switching element   | Transistor, PNP     |
| Switching principle | Dark switching      |

### Timing

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

### Connection 1

|                    |                              |
|--------------------|------------------------------|
| Function           | Signal OUT<br>Voltage supply |
| Type of connection | Cable with connector         |
| Cable length       | 200 mm                       |
| Sheathing material | PUR                          |
| Cable color        | Black                        |
| Wire cross section | 0.2 mm <sup>2</sup>          |
| 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                 | 33 g                                                                 |
| Housing color              | Red                                                                  |
| Type of fastening          | Through-hole mounting with M4 thread<br>Via optional mounting device |
| Compatibility of materials | ECOLAB                                                               |

### Operation and display

|                                     |                        |
|-------------------------------------|------------------------|
| Type of display                     | LED                    |
| Number of LEDs                      | 2 Piece(s)             |
| Operational controls                | Teach button           |
| Function of the operational control | Sensitivity adjustment |

### Environmental data

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

### Certifications

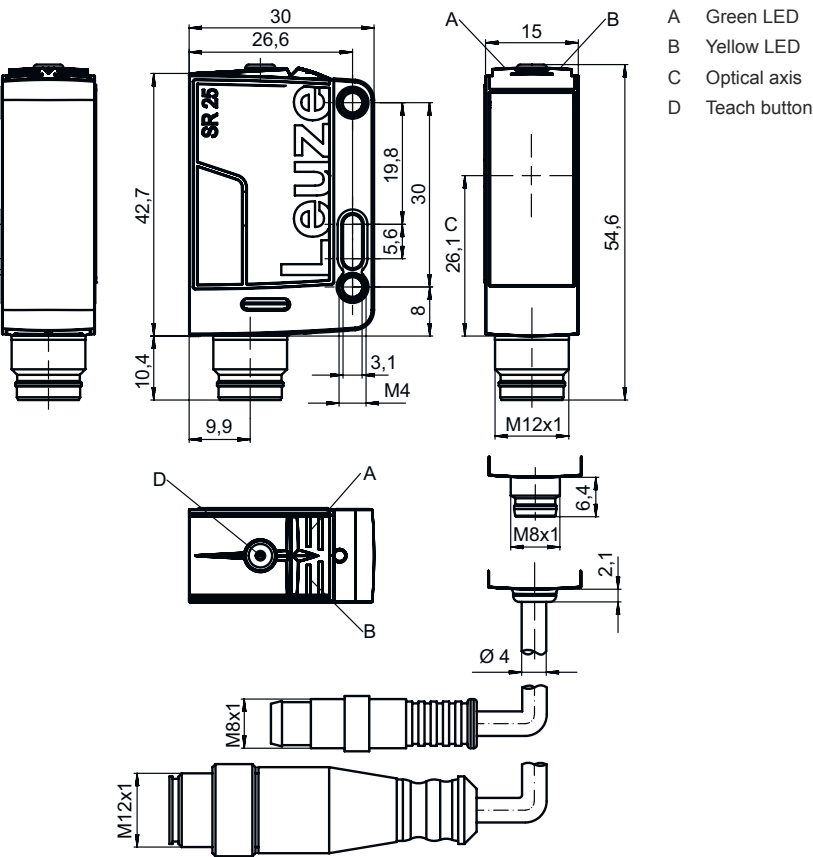
|                      |                 |
|----------------------|-----------------|
| Degree of protection | IP 67<br>IP 69K |
| Protection class     | III             |
| Certifications       | c UL US         |
| Standards applied    | IEC 60947-5-2   |

### 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



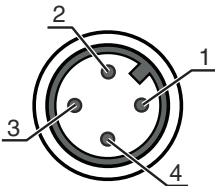
Electrical connection

Connection 1

|                    |                      |
|--------------------|----------------------|
| Function           | Signal OUT           |
|                    | Voltage supply       |
| Type of connection | Cable with connector |
| Cable length       | 200 mm               |
| Sheathing material | PUR                  |
| Cable color        | Black                |
| Wire cross section | 0.2 mm²              |
| Thread size        | M12                  |
| Type               | Male                 |
| Material           | PUR                  |
| No. of pins        | 4 -pin               |
| Encoding           | A-coded              |

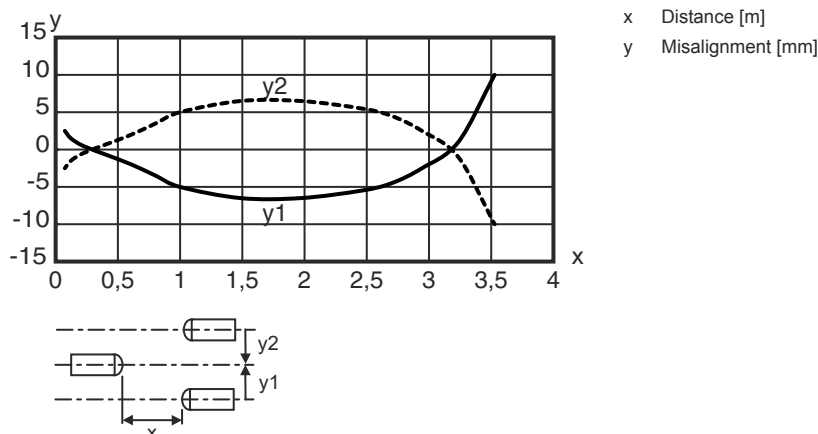
Pin Pin assignment

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



## Diagrams

Typ. response behavior (TKS100x100)



## Operation and display

| 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<br>Operating range | Description                                                                                                                                                                                                                            |
|--|----------|---------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50117583 | MTKS 50x50.1  | 0 ... 2 m<br>0 ... 2.4 m           | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Triple reflector size: 1.2 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |
|  | 50108300 | REF 4-A-50x50 | 0 ... 0.5 m<br>0 ... 0.6 m         | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive                                                                                |
|  | 50110192 | REF 6-A-50x50 | 0 ... 1.3 m<br>0 ... 1.5 m         | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Triple reflector size: 0.3 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive                                               |
|  | 50003192 | TK 100x100    | 0 ... 3 m<br>0 ... 3.6 m           | Design: Rectangular<br>Reflective surface: 96 mm x 96 mm<br>Triple reflector size: 4 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Adhesive                          |

## Reflectors & reflective tapes

|                                                                                    | Part no. | Designation | Operating range<br>Operating range | Description                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------|----------|-------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | 50022816 | TKS 100X100 | 0 ... 3 m<br>0 ... 3.6 m           | Design: Rectangular<br>Reflective surface: 96 mm x 96 mm<br>Triple reflector size: 4 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive   |
|   | 50081283 | TKS 20X40   | 0 ... 1.1 m<br>1.3 ... 2.4 m       | Design: Rectangular<br>Reflective surface: 16 mm x 38 mm<br>Triple reflector size: 2.3 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |
|   | 50040820 | TKS 40X60   | 0 ... 2 m<br>0 ... 2.4 m           | Design: Rectangular<br>Reflective surface: 37 mm x 56 mm<br>Triple reflector size: 4 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive   |
|  | 50109257 | TKS 40x60.1 | 0 ... 1.9 m<br>0 ... 2.3 m         | Design: Rectangular<br>Reflective surface: 37 mm x 56 mm<br>Triple reflector size: 2.3 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |

## Part number code

Part designation: **AAA25C d EE-f.GGH/IJ-K**

|               |                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AAA25C</b> | <b>Operating principle / construction</b><br>HT25C: diffuse reflection sensor with background suppression<br>PRK25C: retro-reflective photoelectric sensor with polarization filter<br>LS25C: throughbeam photoelectric sensor transmitter<br>LE25C: throughbeam photoelectric sensor receiver<br>DRT25C: Dynamic reference diffuse sensor                                                                               |
| <b>d</b>      | <b>Light type</b><br>n/a: red light<br>I: infrared light                                                                                                                                                                                                                                                                                                                                                                 |
| <b>EE</b>     | <b>Light source</b><br>n/a: LED<br>L1: laser class 1<br>L2: laser class 2                                                                                                                                                                                                                                                                                                                                                |
| <b>f</b>      | <b>Preset range (optional)</b><br>n/a: operating range acc. to data sheet<br>xxxF: preset range [mm]                                                                                                                                                                                                                                                                                                                     |
| <b>GG</b>     | <b>Equipment</b><br>A: autocollimation principle (single lens)<br>S: small light spot<br>D: detection of stretch-wrapped objects<br>X: extended model<br>HF: suppression of HF illumination (LED)<br>XL: extra long light spot<br>T: autocollimation principle (single lens) for highly transparent bottles without tracking<br>TT: autocollimation principle (single lens) for highly transparent bottles with tracking |
| <b>H</b>      | <b>Operating range adjustment</b><br>1: 270° potentiometer<br>2: multiturn potentiometer<br>3: teach-in via button                                                                                                                                                                                                                                                                                                       |

## Part number code

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>i</b> | <b>Switching output/function OUT 1/IN: Pin 4 or black conductor</b><br>2: NPN transistor output, light switching<br>N: NPN transistor output, dark switching<br>4: PNP transistor output, light switching<br>P: PNP transistor output, dark switching<br>X: pin not used<br>8: activation input (activation with high signal)<br>L: IO-Link interface (SIO mode: PNP light switching, NPN dark switching)<br>6: push-pull switching output, PNP light switching, NPN dark switching<br>G: push-pull switching output, PNP dark switching, NPN light switching |
| <b>J</b> | <b>Switching output / function OUT 2/IN: pin 2 or white conductor</b><br>2: NPN transistor output, light switching<br>N: NPN transistor output, dark switching<br>4: PNP transistor output, light switching<br>P: PNP transistor output, dark switching<br>W: warning output<br>X: pin not used<br>6: push-pull switching output, PNP light switching, NPN dark switching<br>T: teach-in via cable<br>G: push-pull switching output, PNP dark switching, NPN light switching                                                                                  |
| <b>K</b> | <b>Electrical connection</b><br>n/a: cable, standard length 2000 mm, 4-wire<br>200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug)<br>M8: M8 connector, 4-pin (plug)<br>M12: M12 connector, 4-pin (plug)<br>200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug)                                                                                                                                                                                                                                                             |

### Note



↗ A list with all available device types can be found on the Leuze website at [www.leuze.com](http://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)

## Further information

- 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                                                                                                                                                  |
|-----------------------------------------------------------------------------------|----------|--------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50130652 | KD U-M12-4A-V1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PVC  |
|                                                                                   | 50130690 | KD U-M12-4W-V1-050 | Connection cable | Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PVC |

### Mounting technology - Mounting brackets

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

### Mounting technology - Rod mounts

|                                                                                     | Part no. | Designation  | Article         | Description                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|----------|--------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50117829 | BTP 200M-D12 | Mounting system | Design of mounting device: Protection hood<br>Fastening, at system: For 12 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal                                             |
|  | 50117252 | BTU 300M-D12 | Mounting system | Design of mounting device: Mounting system<br>Fastening, at system: For 12 mm rod, Sheet-metal mounting<br>Mounting bracket, at device: Screw type, Suited for M4 screws<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |

### Standard reflectors

|                                                                                     | Part no. | Designation | Article   | Description                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------|----------|-------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50109257 | TKS 40x60.1 | Reflector | Design: Rectangular<br>Reflective surface: 37 mm x 56 mm<br>Triple reflector size: 2.3 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |

## Accessories

### Micro-triad-type reflectors

|                                                                                   | Part no. | Designation  | Article   | Description                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------|----------|--------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50117583 | MTKS 50x50.1 | Reflector | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Triple reflector size: 1.2 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA8N<br>Fastening: Through-hole mounting, Adhesive |

#### Note



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