

## Technical data sheet

### Polarized retro-reflective photoelectric

Part no.: 50139557

PRK25C.D/PX-2000-M12

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- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
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Figure can vary



## Technical data

### Basic data

|                     |                                      |
|---------------------|--------------------------------------|
| Series              | 25C                                  |
| Operating principle | Reflection principle                 |
| Application         | Detection of stretch-wrapped objects |

### Optical data

|                          |                                                |
|--------------------------|------------------------------------------------|
| Operating range          | Guaranteed operating range                     |
| Operating range          | 0.05 ... 8 m, With reflector TK(S)<br>100x100  |
| Operating range limit    | Typical operating range                        |
| Operating range limit    | 0.05 ... 10 m, With reflector TK(S)<br>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 | 1 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 | Dark switching      |

### Timing

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

### Connection

#### Connection 1

|                    |                              |
|--------------------|------------------------------|
| Function           | Signal OUT<br>Voltage supply |
| Type of connection | Cable with connector         |
| Cable length       | 2,000 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                 | 55 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) |

### Environmental data

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

### Certifications

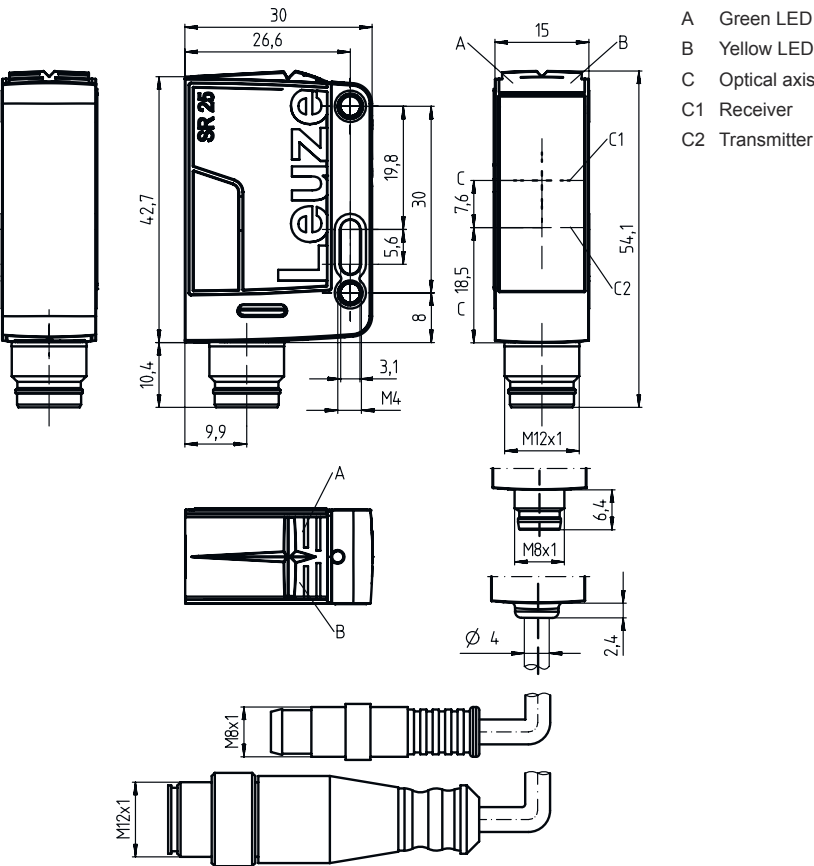
|                      |                 |
|----------------------|-----------------|
| Degree of protection | IP 67<br>IP 69K |
| Protection class     | III             |
| Certifications       | c UL US         |
| Standards applied    | IEC 60947-5-2   |

### 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

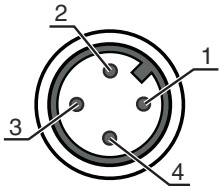


Electrical connection

Connection 1

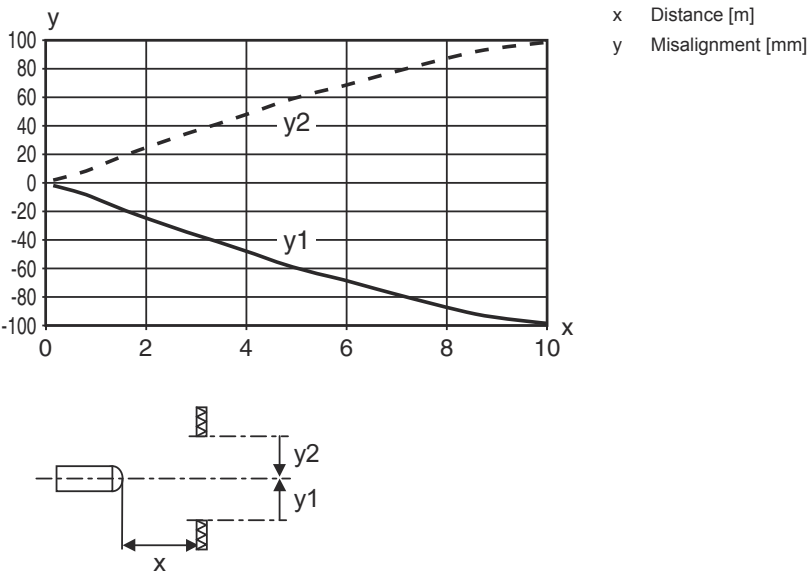
|                    |                      |
|--------------------|----------------------|
| Function           | Signal OUT           |
|                    | Voltage supply       |
| Type of connection | Cable with connector |
| Cable length       | 2,000 mm             |
| Sheathing material | PUR                  |
| 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   | n.c.           |
| 3   | GND            |
| 4   | OUT 1          |

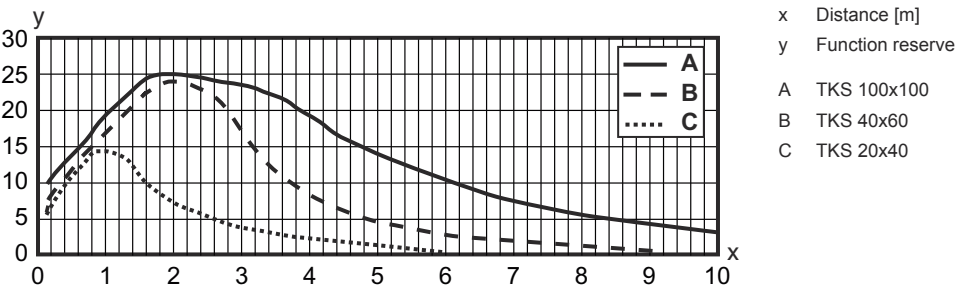


Diagrams

Typ. response behavior (TKS100x100)



Typ. function reserve



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 | 0.3 ... 5 m<br>0.22 ... 6 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 |



## Reflectors & reflective tapes

|                                                                                     | Part no. | Designation     | Operating range<br>Operating range | Description                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------|----------|-----------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | 50106119 | REF 4-A-100x100 | 0.25 ... 2 m<br>0.2 ... 2.5 m      | Design: Rectangular<br>Reflective surface: 100 mm x 100 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive                                                                              |
|    | 50110192 | REF 6-A-50x50   | 0.13 ... 3.5 m<br>0.1 ... 4 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      | 0.07 ... 8 m<br>0.05 ... 10 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                          |
|   | 50022816 | TKS 100X100     | 0.07 ... 8 m<br>0.05 ... 10 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       | 0.12 ... 2.5 m<br>0.08 ... 3 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       | 0.08 ... 4 m<br>0.06 ... 5 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   |

## 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                                                                                                                                                                                                                                                                  |

## Part number code

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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                                                                                                                                                                                                                                                                                                                                                           |
| <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)                                                                    |
| <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                                                                                                                                                  |
|-----------------------------------------------------------------------------------|----------|--------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50130657 | KD U-M12-4A-P1-050 | 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: PUR  |
|                                                                                   | 50130694 | KD U-M12-4W-P1-050 | 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: PUR |

### 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                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|----------|--------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 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 |

## Accessories

### Standard reflectors

|                                                                                   | Part no. | Designation   | Article         | Description                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------|----------|---------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50108300 | REF 4-A-50x50 | Reflective tape | Design: Rectangular<br>Reflective surface: 50 mm x 50 mm<br>Material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Self-adhesive                                                                              |
|  | 50022816 | TKS 100X100   | Reflector       | 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 |
|  | 50040820 | TKS 40X60     | Reflector       | 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 |

#### Note



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