# Technical data sheet

## Polarized retro-reflective photoelectric sensor set

Part no.: 50138508

## Set PRK5.R3/2N DTKS 30x50

### Contents

For Illustration purposes only

# Technical data

## Leuze

### Basic data

| | |
|---|---|
| Series | 5 |
| Operating principle | Reflection principle |
| Contains | Reflector DTKS 30x50 (50136770) |
| Application | Detection of empty bottles |

### Special version

| | |
|---|---|
| Special version | Article set |

### Optical data

| | |
|---|---|
| Operating range | 0.1 ... 0.3 m (guaranteed operating range), With reflector DTKS 30x50 |
| Operating range limit | 0.1 ... 0.3 m (typical operating range), With reflector DTKS 30x50 |
| Light source | LED, Red |
| Wavelength | 620 nm |
| Transmitted-signal shape | Pulsed |
| LED group | Exempt group (in acc. with EN 62471) |

### Electrical data

#### 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

| | |
|---|---|
| Type | Digital switching output |
| Voltage type | DC |
| Switching current, max. | 100 mA |
| Switching voltage | high: ≥($U_B$-2.5V) |
| | low: ≤ 2.5 V |

##### Switching output 1

| | |
|---|---|
| Switching element | Transistor, NPN |
| Switching principle | Light switching |

##### Switching output 2

| | |
|---|---|
| Switching element | Transistor, NPN |
| Switching principle | Dark switching |

### Time behavior

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

### Connection

| | |
|---|---|
| Number of connections | 1 Piece(s) |

#### Connection 1

| | |
|---|---|
| Function | Signal OUT |
| | Voltage supply |
| Type of connection | Cable |
| Cable length | 2,000 mm |
| Sheathing material | PUR |
| Cable color | Black |
| Number of conductors | 4 -wire |
| Wire cross section | 0.2 mm² |

### Mechanical data

| | |
|---|---|
| Dimension (W x H x L) | 14 mm x 32.5 mm x 20.2 mm |
| Housing material | Plastic |
| Plastic housing | ABS |
| Lens cover material | Plastic |
| Net weight | 70 g |
| Housing color | Black |
| | Red |
| Recommended tightening torque for M3 fastening | 0.9 N·m |

### 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 |
| Protection class | III |
| Approvals | c UL US |
| Standards applied | IEC 60947-5-2 |

### Classification

| | |
|---|---|
| Customs tariff number | 85365019 |
| ECLASS 5.1.4 | 27270902 |
| ECLASS 8.0 | 27270902 |
| ECLASS 9.0 | 27270902 |
| ECLASS 10.0 | 27270902 |
| ECLASS 11.0 | 27270902 |
| ECLASS 12.0 | 27270902 |
| ECLASS 13.0 | 27270902 |
| ECLASS 14.0 | 27270902 |
| ECLASS 15.0 | 27270902 |
| ECLASS 16.0 | 27270902 |
| ETIM 5.0 | EC002717 |
| ETIM 6.0 | EC002717 |
| ETIM 7.0 | EC002717 |
| ETIM 8.0 | EC002717 |
| ETIM 9.0 | EC002717 |
| ETIM 10.0 | EC002717 |

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# Dimensioned drawings

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All dimensions in millimeters
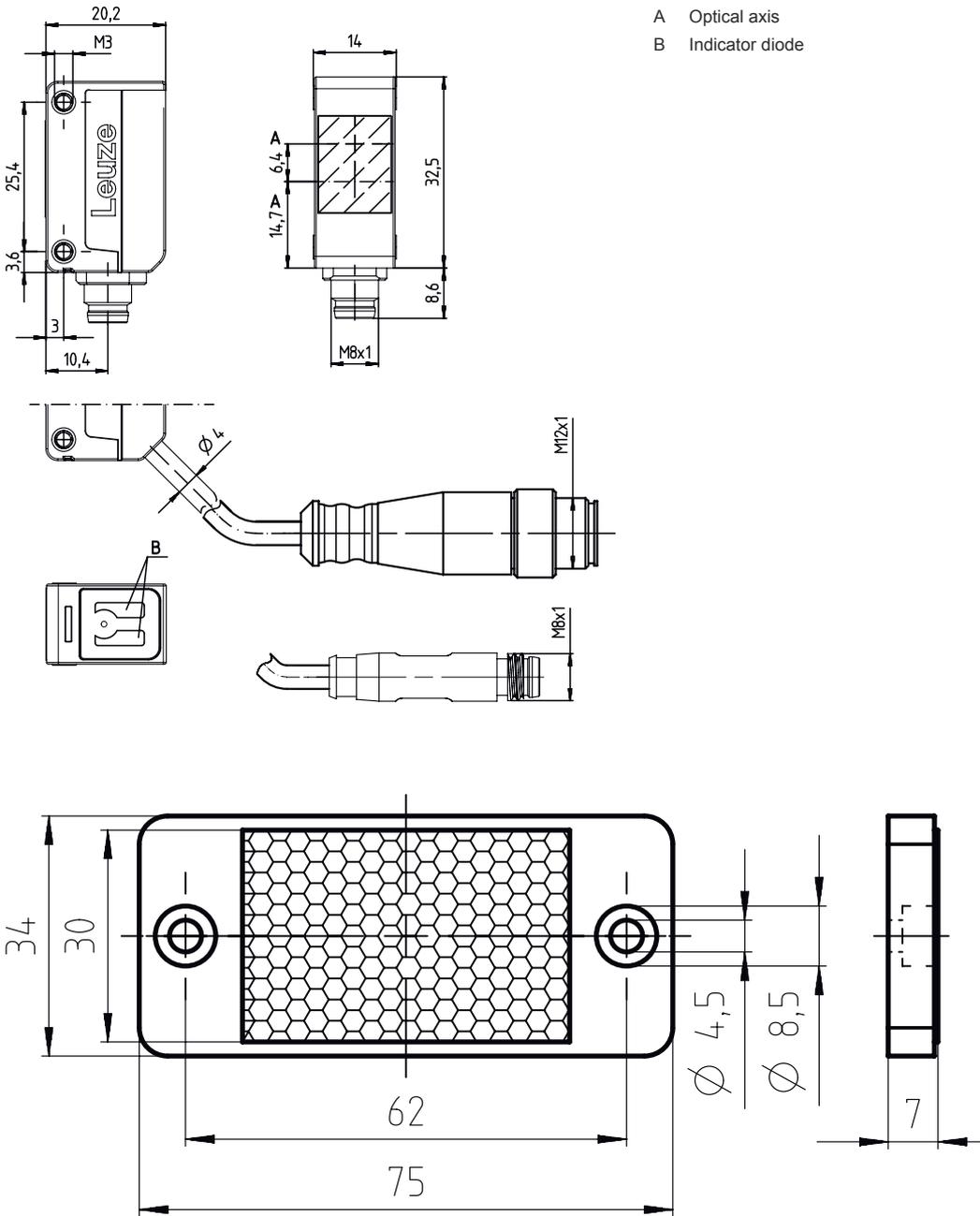
A    Optical axis

B    Indicator diode

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# Electrical connection

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## Connection 1

| Function | Signal OUT |
|---|---|
| | Voltage supply |
| **Type of connection** | Cable |
| **Cable length** | 2,000 mm |
| **Sheathing material** | PUR |
| **Cable color** | Black |
| **Number of conductors** | 4 -wire |
| **Wire cross section** | 0.2 mm² |

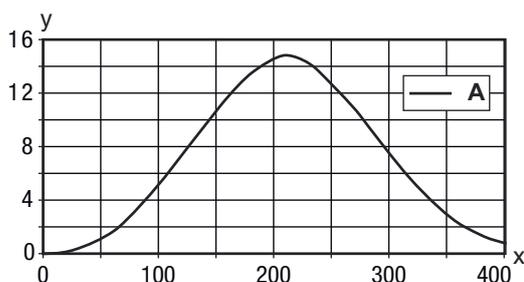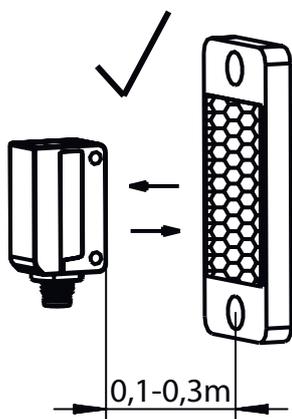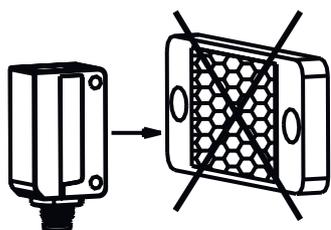| Conductor color | Conductor assignment |
|---|---|
| **Brown** | V+ |
| **White** | OUT 2 |
| **Blue** | GND |
| **Black** | OUT 1 |

# Diagrams

## Typ. function reserve

x   Distance [mm]

y   Function reserve

A   DTKS 30x50

## Mounting

0,1-0,3m

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# Operation and display

| LED | Display | Meaning |
|---|---|---|
| 1 | Yellow, continuous light | Light path free |
|  | Yellow, flashing | No function reserve |
| 2 | Green, continuous light | Operational readiness |

# Reflectors & reflective tapes

| | Part no. | Designation | Operating range<br>Operating range limit | Description |
|---|---|---|---|---|
| | 50136770 | DTKS 30x50 | 0.1 ... 0.3 m<br>0.1 ... 0.3 m | Design: Rectangular<br>Triple reflector size: 2.3 mm<br>Reflective surface: 25.9 mm x 42.5 mm<br>Material: Plastic<br>Base material: Plastic<br>Chemical designation of the material: PMMA<br>Fastening: Through-hole mounting, Adhesive |

# Part number code

Part designation: **AAA5d.EE/ ff-GG-hh-I**

| AAA5 | **Operating principle / construction**<br>HT5: diffuse reflection sensor with background suppression<br>LS5: throughbeam photoelectric sensor transmitter<br>LE5: throughbeam photoelectric sensor receiver<br>ET5: energetic diffuse reflection sensor<br>FT5: diffuse reflection sensor with fading<br>PRK5: retro-reflective photoelectric sensor with polarization filter |
|---|---|
| d | **Light type**<br>n/a: red light<br>I: infrared light |
| EE | **Equipment**<br>1: adjustable range<br>M: for semi-transparent objects<br>H: For the detection of transparent films<br>X: reinforced fading<br>3: teach-in via button<br>R: combination product for reflector DTKS 30x50 |
| ff | **Switching output / function / OUT1OUT2 (OUT1 = pin 4, OUT2 = pin 2)**<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>9: deactivation input (deactivation with high signal)<br>D: Deactivation input (deactivation with low signal) |
| GG | **Version**<br>P1: narrow light beam |
| hh | **Electrical connection**<br>n/a: cable, standard length 2000 mm, 4-wire<br>M8: M8 connector, 4-pin (plug)<br>M8.3: M8 connector, 3-pin (plug)<br>200-M8: cable, length 200 mm with M8 connector, 4-pin, axial (plug)<br>200-M8.3: cable, length 200 mm with M8 connector, 3-pin, axial (plug)<br>200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (plug)<br>M8.1: Snap-in, M8 connector, 4-pin (plug) |
| I | **Parameterization**<br>P1: different configuration |

| **Note** |
|---|
| ⮧ A list with all available device types can be found on the Leuze website at www.leuze.com. |

# Leuze

# 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. |

| ℹ | **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

- Sum of the output currents for both outputs, 50 mA for ambient temperatures > 40 °C

# Accessories

## Mounting technology - Mounting brackets

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
| | 50118542 | BT 200M.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 M3 screws<br>Type of mounting device: Adjustable<br>Material: Stainless steel |
| | 50124651 | BT 205M-10SET | Mounting device set | Contains: 10x<br>Design of mounting device: Angle, L-shape<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Rigid<br>Material: Metal |

## Mounting technology - Rod mounts

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
| | 50117255 | BTU 200M-D12 | Mounting system | Contains: 2x M3 x 16 screw, 2 M3 x 20 screws, 2x position washers<br>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 M3 screws<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |

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# Accessories

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

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