# Technical data sheet

## Throughbeam photoelectric sensor receiver

Part no.: 50139697

# LE25C.1/4P-M12



For Illustration purposes only

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**The Sensor People**

# Technical data

# Leuze

## Basic data

| | |
|---|---|
| Series | 25C |
| Operating principle | Throughbeam principle |
| Device type | Receiver |

## Optical data

| | |
|---|---|
| Operating range | see transmitter |
| 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

| | |
|---|---|
| Type | Digital switching output |
| Voltage type | DC |
| Switching current, max. | 100 mA |
| Switching voltage | high: ≥($U_B$-2V) |
| | low: ≤ 2 V |

##### 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 |

## Time behavior

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

## Connection

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

### Connection 1

| | |
|---|---|
| Function | 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 |
| Plastic housing | 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 |
| Recommended tightening torque for M3 fastening | 0.9 N·m |
| Recommended tightening torque for M4 fastening | 1.4 N·m |
| Compatibility of materials | ECOLAB |

## Operation and display

| | |
|---|---|
| Operational controls | 270° potentiometer |
| 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 |
| | IP 69K |
| Protection class | III |
| Approvals | c UL US |
| Standards applied | IEC 60947-5-2 |

## Classification

| | |
|---|---|
| Customs tariff number | 85365019 |
| ECLASS 5.1.4 | 27270901 |
| ECLASS 8.0 | 27270901 |
| ECLASS 9.0 | 27270901 |
| ECLASS 10.0 | 27270901 |
| ECLASS 11.0 | 27270901 |
| ECLASS 12.0 | 27270901 |
| ECLASS 13.0 | 27270901 |
| ECLASS 14.0 | 27270901 |
| ECLASS 15.0 | 27270901 |
| ECLASS 16.0 | 27270901 |
| ETIM 5.0 | EC002716 |
| ETIM 6.0 | EC002716 |
| ETIM 7.0 | EC002716 |
| ETIM 8.0 | EC002716 |
| ETIM 9.0 | EC002716 |
| ETIM 10.0 | EC002716 |

# Dimensioned drawings

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All dimensions in millimeters

A    Green LED
B    Yellow LED
C    Optical axis
D    Potentiometer

# Electrical connection

| Function | 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** | OUT 2 |
| **3** | GND |
| **4** | OUT 1 |
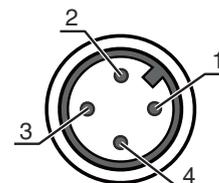
# Diagrams

## Typ. response behavior



x    Distance [m]

y    Misalignment [m]
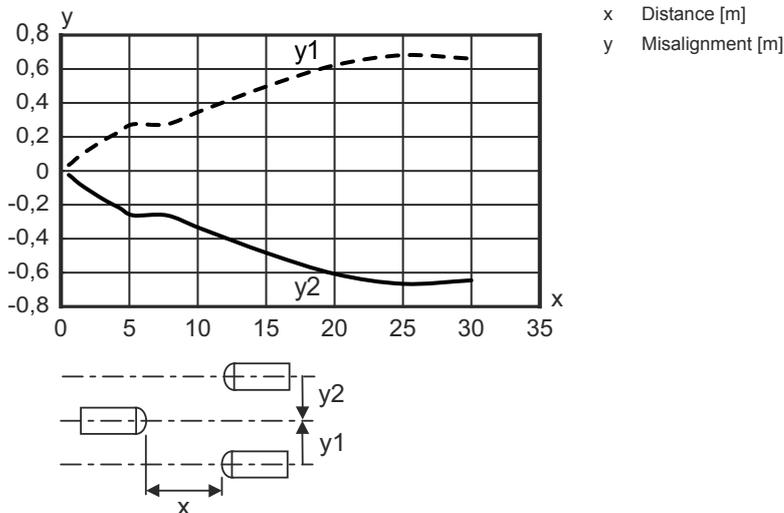
## Suitable transmitters

| | Part no. | Designation | Operating range<br>Operating range limit | Description |
|---|---|---|---|---|
| | 50139689 | LS25C/8X-M12 | 0 ... 25 m<br>0 ... 30 m | Special version: Activation input<br>Operating range limit: 0 ... 30 m<br>Light source: LED, Red<br>Supply voltage: DC<br>Connection: Connector, M12, PUR, 4 -pin |
| | 50139688 | LS25C/XX-M12 | 0 ... 25 m<br>0 ... 30 m | Operating range limit: 0 ... 30 m<br>Light source: LED, Red<br>Supply voltage: DC<br>Connection: Connector, M12, PUR, 4 -pin |

## Part number code

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

| AAA25C | **Operating principle / construction**<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 |
|---|---|
| d | **Light type**<br>n/a: red light<br>I: infrared light |
| EE | **Light source**<br>n/a: LED<br>PP: Power PinPoint® LED<br>L1: laser class 1<br>L2: laser class 2 |

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# Part number code

| | | |
|---|---|---|
| **f** | | **Preset range (optional)**<br>n/a: operating range acc. to data sheet<br>xxxF: Preset range [mm] |
| **GG** | | **Equipment**<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<br>F: Foreground suppression<br>R: greater operating range<br>SL: Slit diaphragm |
| **H** | | **Operating range adjustment**<br>1: 270° potentiometer<br>2: multiturn potentiometer<br>3: teach-in via button<br>R: greater operating range |
| **i** | | **Switching output/function OUT 1/IN: Pin 4 or black conductor**<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 |
| **J** | | **Switching output / function OUT 2/IN: pin 2 or white conductor**<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<br>8: activation input (activation with high signal) |
| **K** | | **Electrical connection**<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)<br>M8.1: Snap-in, M8 connector, 4-pin (plug) |

| **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.<br><br>♦ The product may only be put into operation by competent persons.<br><br>♦ Only use the product in accordance with its intended use. |

## Notes

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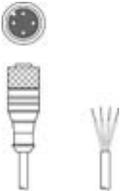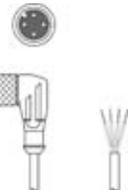| For UL applications: |
| :--- |
| ✎ Only for use in "class 2" circuits |

## Further information

- 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 | Application: Chemical resistant<br>Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin<br>Connector, LED: No<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 | Application: Chemical resistant<br>Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin<br>Connector, LED: No<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 |

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# Accessories

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| Part no. | Designation | Article | Description |
|----------|-------------|---------|-------------|
| 50117252 | BTU 300M-D12 | Mounting system | Contains: 2x M4 x 25 screw, 2x M4 x 20 screw, 4x 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 M4 screws<br>Type of mounting device: Clampable, Adjustable, Turning, 360°<br>Material: Metal |

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