

## Technical data sheet

### Throughbeam photoelectric sensor

Part no.: 50144169

LE23/N



Figure can vary

#### Contents

- Technical data
- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
- Suitable transmitters
- Part number code
- Notes
- Accessories



## Technical data

### Basic data

|                     |                       |
|---------------------|-----------------------|
| Series              | 23                    |
| Operating principle | Throughbeam principle |
| Device type         | Receiver              |

### Optical data

|                       |                            |
|-----------------------|----------------------------|
| Operating range       | Guaranteed operating range |
| Operating range       | 0 ... 8 m                  |
| Operating range limit | Typical operating range    |
| Operating range limit | 0 ... 10 m                 |

### 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 ... 15 mA                            |

### Outputs

|                                     |            |
|-------------------------------------|------------|
| Number of digital switching outputs | 1 Piece(s) |
|-------------------------------------|------------|

### Switching outputs

|                         |                        |
|-------------------------|------------------------|
| Voltage type            | DC                     |
| Switching current, max. | 100 mA                 |
| Switching voltage       | high: $\geq(U_B - 2V)$ |
|                         | Low: $\leq 2V$         |

### Switching output 1

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

### Timing

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

### Connection

#### 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 | 3 -wire              |
| Wire cross section   | 0.14 mm <sup>2</sup> |

### Mechanical data

|                       |                             |
|-----------------------|-----------------------------|
| Dimension (W x H x L) | 11.4 mm x 34.2 mm x 18.3 mm |
| Housing material      | Plastic, PC-ABS             |
| Lens cover material   | Plastic / PMMA              |
| Net weight            | 50 g                        |
| Housing color         | Black                       |
|                       | Red                         |

### 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

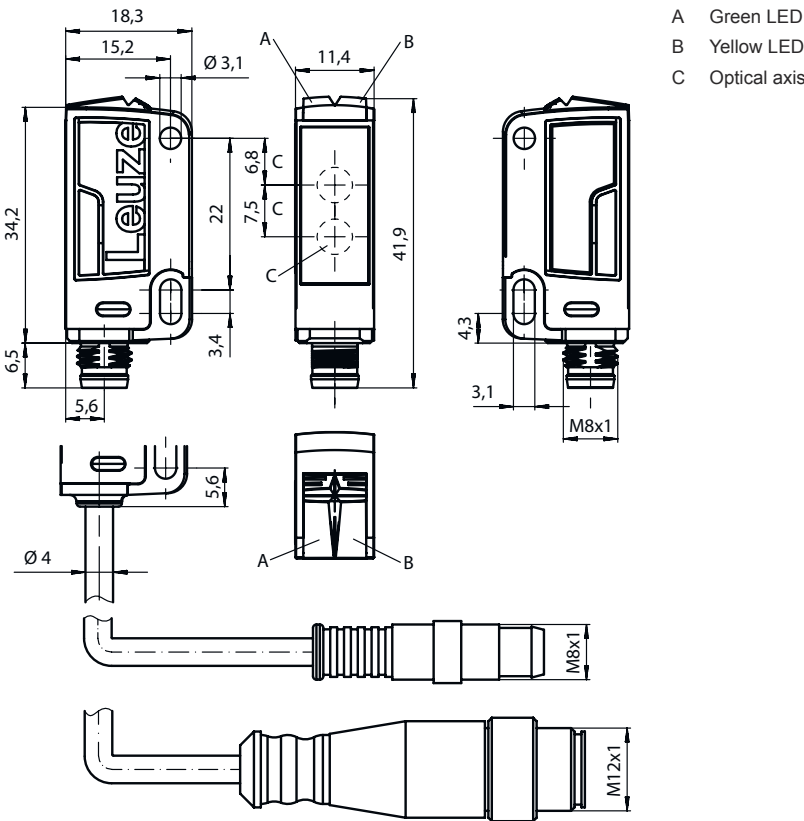
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | III           |
| Certifications       | c UL US       |
| Standards applied    | IEC 60947-5-2 |

### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0            | 27270901 |
| eCl@ss 9.0            | 27270901 |
| ETIM 5.0              | EC002716 |
| ETIM 6.0              | EC002716 |

Dimensioned drawings

All dimensions in millimeters



Electrical connection

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 | 3 -wire        |
| Wire cross section   | 0.14 mm²       |

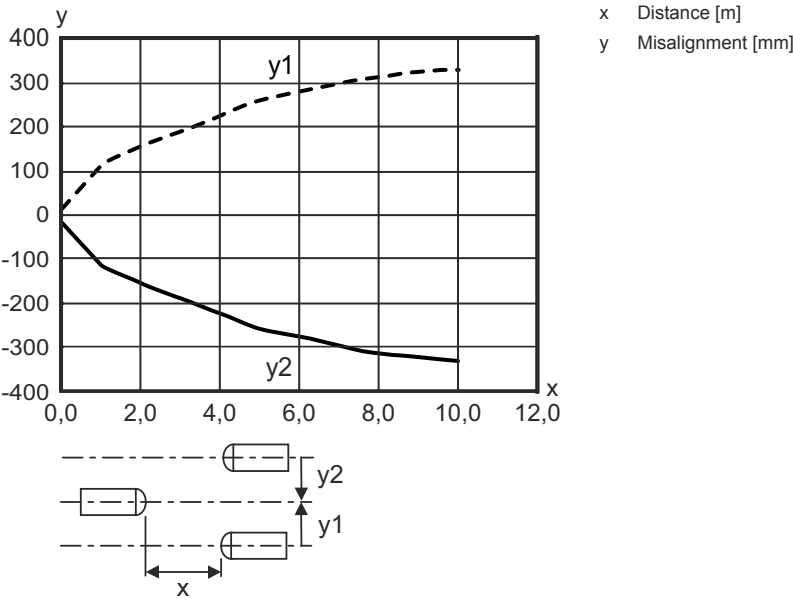
Conductor color

Conductor assignment

|       |       |
|-------|-------|
| Brown | V+    |
| Black | OUT 1 |
| Blue  | GND   |

Diagrams

Typ. response behavior



Operation and display

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

Suitable transmitters

|  | Part no. | Designation | Article                                      | Description                                                                                                               |
|--|----------|-------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|  | 50138444 | LS23/XX     | Throughbeam photoelectric sensor transmitter | Operating range limit: 0 ... 15 m<br>Light source: LED, Red<br>Supply voltage: DC<br>Connection: Cable, 2,000 mm, 3 -wire |

Part number code

Part designation: AAA23.GJ/ ff-HH

|       |                                                                                                                                                                                                                                                                                                                                                                                        |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AAA23 | <b>Operating principle / construction</b><br>HT23: diffuse reflection sensor with background suppression<br>PRK23: retro-reflective photoelectric sensor with polarization filter<br>LS23: throughbeam photoelectric sensor transmitter<br>LE23: throughbeam photoelectric sensor receiver<br>ET23: energetic diffuse reflection sensor<br>FT23: diffuse reflection sensor with fading |
| G     | <b>Equipment</b><br>T: autocollimation principle (single lens) for highly transparent bottles without tracking                                                                                                                                                                                                                                                                         |
| J     | <b>Operating range adjustment</b><br>3: teach-in via button                                                                                                                                                                                                                                                                                                                            |

## Part number code

|    |                                                                                                                                                                                                                                                                                                   |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ff | <b>Switching output / function / OUT1OUT2 (OUT1 = pin 4, OUT2 = pin 2)</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                   |
| HH | <b>Electrical connection</b><br>n/a: cable, standard length 2000 mm, 3-wire<br>M8: M8 connector, 4-pin (plug)<br>200-M12: cable, length 200 mm with M12 connector, 4-pin, axial (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)

## 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 | 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                                      |

## Accessories

### 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                                             |
|  | 50117255 | BTU 200M-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 M3 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.