

## Technical data sheet

### Ultrasonic sensor

Part no.: 50149526

HTU208-100/PT-M8

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For illustration purposes only



## Technical data

### Basic data

|                     |                                                          |
|---------------------|----------------------------------------------------------|
| Series              | 200                                                      |
| Operating principle | Diffuse reflection principle with background suppression |
| Contains            | 2x M8 mounting nut                                       |

### Special version

|                 |             |
|-----------------|-------------|
| Special version | Teach input |
|-----------------|-------------|

### Characteristic parameters

|      |           |
|------|-----------|
| MTTF | 909 years |
|------|-----------|

### Ultrasonic specifications

|                      |                            |
|----------------------|----------------------------|
| Operating range      | 0.02 ... 0.1 m             |
| Operating range      | Guaranteed operating range |
| Ultrasonic frequency | 484 kHz                    |
| Shape of sound lobe  | standard                   |
| Direction of beam    | Front                      |
| Opening angle        | 12 °                       |
| Adjustment range     | 20 ... 100 mm              |

### Measurement data

|                               |           |
|-------------------------------|-----------|
| Resolution                    | 0.1 mm    |
| Repeatability                 | 0.3 %     |
| Reference value repeatability | End value |
| Temperature drift             | 0.2 %/K   |

### Electrical data

|                    |                                                         |
|--------------------|---------------------------------------------------------|
| Protective circuit | Polarity reversal protection<br>Short circuit protected |
|--------------------|---------------------------------------------------------|

### Performance data

|                      |                        |
|----------------------|------------------------|
| Supply voltage $U_B$ | 18 ... 30 V, DC        |
| Residual ripple      | 0 ... 10 %, From $U_B$ |
| Open-circuit current | 0 ... 30 mA            |
| Switching hysteresis | 1 mm                   |

### Inputs

|                        |            |
|------------------------|------------|
| Number of teach inputs | 1 Piece(s) |
|------------------------|------------|

### Teach inputs

|                   |                                    |
|-------------------|------------------------------------|
| Voltage type      | DC                                 |
| Switching voltage | high: $\geq 9V$<br>low: $\leq 2 V$ |

### Teach input 1

|                        |      |
|------------------------|------|
| Active switching state | High |
|------------------------|------|

### Outputs

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

### Switching outputs

|                         |                 |
|-------------------------|-----------------|
| Voltage type            | DC              |
| Switching current, max. | 150 mA          |
| Switching voltage       | low: $\leq 2 V$ |

### Switching output 1

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

### Time behavior

|                     |        |
|---------------------|--------|
| Switching frequency | 20 Hz  |
| Response time       | 25 ms  |
| Readiness delay     | 300 ms |

### Connection

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

### Connection 1

|                    |                                             |
|--------------------|---------------------------------------------|
| Function           | Signal OUT<br>Teach input<br>Voltage supply |
| Type of connection | Connector                                   |
| Thread size        | M8                                          |
| Type               | Male                                        |
| Material           | Metal                                       |
| No. of pins        | 4 -pin                                      |

### Mechanical data

|                                      |                                                        |
|--------------------------------------|--------------------------------------------------------|
| Design                               | Cylindrical                                            |
| Dimension ( $\varnothing \times L$ ) | 8 mm x 70 mm                                           |
| Thread size                          | M8 x 1 mm                                              |
| Housing material                     | Metal                                                  |
| Metal housing                        | Nickel-plated brass                                    |
| Ultrasonic transducer material       | Piezoceramics (contains lead zirconium titanate (PZT)) |
| Net weight                           | 10 g                                                   |
| Housing color                        | Silver                                                 |

### Operation and display

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 1 Piece(s) |

### Environmental data

|                                |               |
|--------------------------------|---------------|
| Ambient temperature, operation | -25 ... 70 °C |
| Ambient temperature, storage   | -25 ... 70 °C |

### Certifications

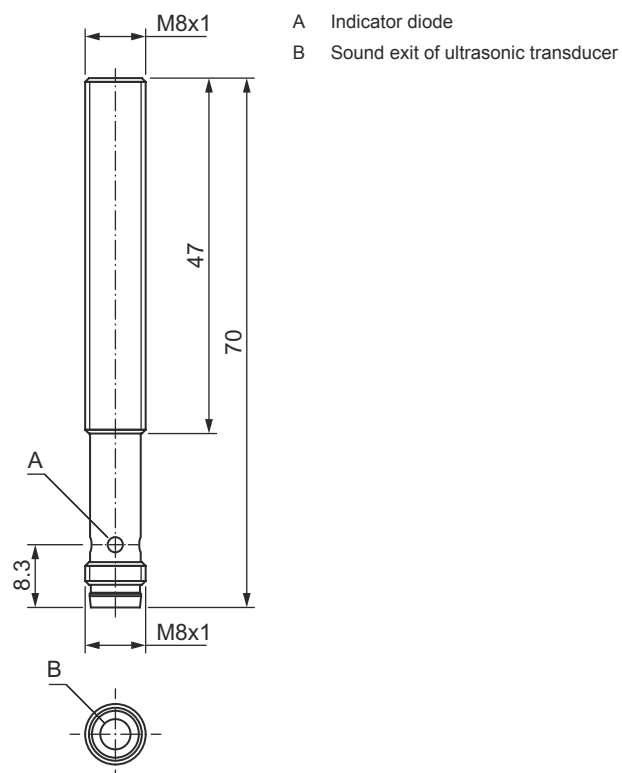
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | III           |
| Approvals            | c UL US       |
| Standards applied    | IEC 60947-5-2 |

## Technical data

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| ECLASS 5.1.4          | 27272803 |
| ECLASS 8.0            | 27272803 |
| ECLASS 9.0            | 27272803 |
| ECLASS 10.0           | 27272803 |
| ECLASS 11.0           | 27272803 |
| ECLASS 12.0           | 27272803 |
| ECLASS 13.0           | 27272803 |
| ECLASS 14.0           | 27272803 |
| ECLASS 15.0           | 27272803 |
| ETIM 5.0              | EC001849 |
| ETIM 6.0              | EC001849 |
| ETIM 7.0              | EC001849 |
| ETIM 8.0              | EC001849 |
| ETIM 9.0              | EC001849 |
| ETIM 10.0             | EC001849 |

## Dimensioned drawings

All dimensions in millimeters

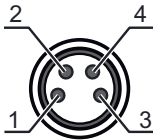


Electrical connection

Connection 1

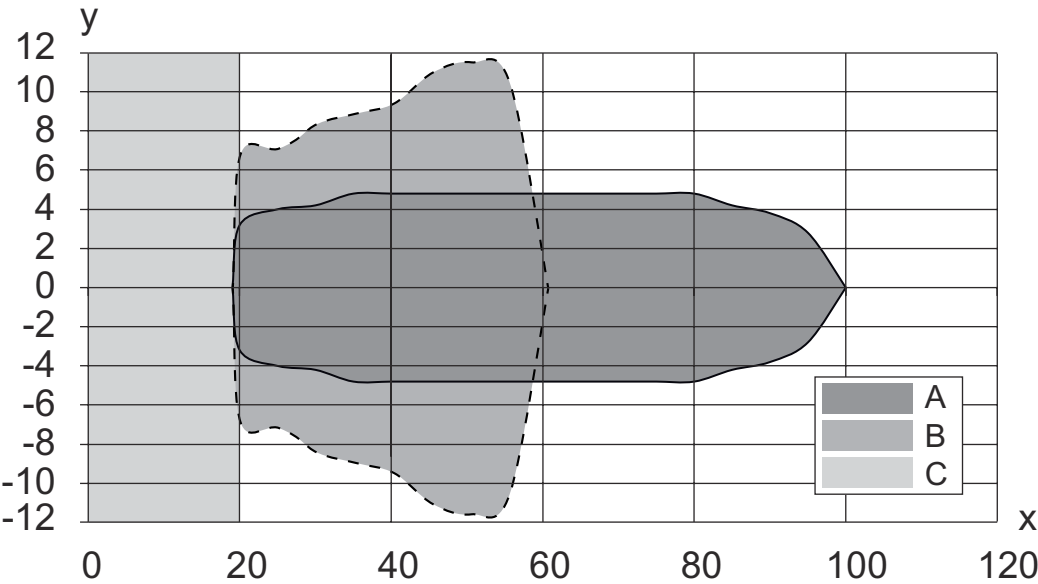
|                    |                |
|--------------------|----------------|
| Function           | Signal OUT     |
|                    | Teach input    |
|                    | Voltage supply |
| Type of connection | Connector      |
| Thread size        | M8             |
| Type               | Male           |
| Material           | Metal          |
| No. of pins        | 4 -pin         |

| Pin | Pin assignment |
|-----|----------------|
| 1   | V+             |
| 2   | IN 1           |
| 3   | GND            |
| 4   | OUT 1          |



Diagrams

Typ. response behavior



- x Object distance [mm]
- y Sound cone width [mm]
- A Plate 20 x 20 mm
- B Rod Ø 10 mm
- C Minimum distance in mm

Operation and display

| LED | Display                  | Meaning                          |
|-----|--------------------------|----------------------------------|
| 1   | Yellow, continuous light | Switching output/switching state |

## Part number code

Part designation: **AAA2BB-xxxx/CD-EE**

|             |                                                                                                                                                                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AAA</b>  | <b>Operating principle</b><br>HTU: Ultrasonic sensor, scanning principle, with background suppression<br>DMU: Ultrasonic sensor, distance measurement                                                                                              |
| <b>2BB</b>  | <b>Design</b><br>208: Cylindrical with M8 thread<br>212: Cylindrical with M12 thread<br>218: Cylindrical with M18 thread<br>230: Cylindrical with M30 thread                                                                                       |
| <b>xxxx</b> | <b>Operating range</b><br>Operating range in millimeters                                                                                                                                                                                           |
| <b>C</b>    | <b>Switching output / function OUT 1/IN: Pin 4</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>L: IO-Link |
| <b>D</b>    | <b>Switching output / function OUT 2/IN: pin 2</b><br>T: teach-in via cable<br>A: Analog current output<br>V: Analog voltage output                                                                                                                |
| <b>EE</b>   | <b>Electrical connection</b><br>M8: M8 connector, 4-pin (plug)<br>M12: M12 connector, 4-pin (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.

## Accessories

### Connection technology - Connection cables

|  | Part no. | Designation       | Article          | Description                                                                                                                                                              |
|--|----------|-------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50130850 | KD U-M8-4A-V1-050 | Connection cable | Connection 1: Connector, M8, Axial, Female, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5.000 mm<br>Sheathing material: PVC  |
|  | 50130871 | KD U-M8-4W-V1-050 | Connection cable | Connection 1: Connector, M8, Angled, Female, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5.000 mm<br>Sheathing material: PVC |

Accessories

Mounting technology - Mounting brackets

|                                                                                  | Part no. | Designation | Article          | Description                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------|----------|-------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50113550 | BT D08M.5   | Mounting bracket | Diameter, inner: 8 mm<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: Stainless steel |

Mounting technology - Rod mounts

|                                                                                   | Part no. | Designation | Article | Description                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------|----------|-------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50111497 | MC 008K     | Clamp   | Diameter, inner: 8 mm<br>Design of mounting device: Mounting clamp<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Rigid<br>Material: Plastic |

Note



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