

## Technical data sheet

### Ultrasonic distance sensor

Part no.: 50149552  
DMU230-6000/LV-M12

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For illustration purposes only



## Technical data

### Basic data

|          |                     |
|----------|---------------------|
| Series   | 200                 |
| Contains | 2x M30 mounting nut |

### Special version

|                 |                       |
|-----------------|-----------------------|
| Special version | Multiplex operation   |
|                 | Synchronous operation |

### Characteristic parameters

|      |           |
|------|-----------|
| MTTF | 297 years |
|------|-----------|

### Ultrasonic specifications

|                      |        |
|----------------------|--------|
| Ultrasonic frequency | 80 kHz |
| Direction of beam    | Front  |
| Opening angle        | 14 °   |

### Measurement data

|                               |                  |
|-------------------------------|------------------|
| Measurement range             | 600 ... 6,000 mm |
| Resolution                    | 1.0 mm           |
| Resolution of analog output   | 2 mm             |
| Repeatability                 | 0.07 %           |
| Reference value repeatability | End value        |
| Temperature drift             | 0.2 %/K          |
| Linearity error               | 0.5 %            |

### Electrical data

|                    |                         |
|--------------------|-------------------------|
| Protective circuit | Short circuit protected |
|--------------------|-------------------------|

#### Performance data

|                      |                        |
|----------------------|------------------------|
| Supply voltage $U_B$ | 18 ... 30 V, DC        |
| Residual ripple      | 0 ... 10 %, From $U_B$ |
| Open-circuit current | 0 ... 45 mA            |
| Switching hysteresis | 20 mm                  |

#### Outputs

|                                     |                 |
|-------------------------------------|-----------------|
| Number of analog outputs            | 1 Piece(s)      |
| Number of digital switching outputs | 1 Piece(s)      |
| Load resistance                     | 10,000 $\Omega$ |

#### Analog outputs

##### Analog output 1

|      |         |
|------|---------|
| Type | Voltage |
|------|---------|

#### Switching outputs

|                         |                 |
|-------------------------|-----------------|
| Voltage type            | DC              |
| Switching current, max. | 100 mA          |
| Switching voltage       | low: $\leq 2$ V |

##### Switching output 1

|                     |                                                      |
|---------------------|------------------------------------------------------|
| Switching element   | Transistor, Push-pull                                |
| Switching principle | IO-Link / light switching (PNP)/dark switching (NPN) |

### Time behavior

|                     |        |
|---------------------|--------|
| Switching frequency | 2 Hz   |
| Response time       | 250 ms |
| Readiness delay     | 300 ms |

### Interface

|                  |                |
|------------------|----------------|
| Type             | IO-Link        |
| IO-Link          |                |
| COM mode         | COM2           |
| Profile          | Common Profile |
| Min. cycle time  | COM2 = 2.3 ms  |
| Frame type       | 2.2            |
| Specification    | V1.1           |
| Device ID        | 3096           |
| SIO-mode support | No             |

### Connection

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

#### Connection 1

|                    |                |
|--------------------|----------------|
| Function           | Signal OUT     |
|                    | Teach input    |
|                    | Voltage supply |
| Type of connection | Connector      |
| Thread size        | M12            |
| Type               | Male           |
| Material           | Metal          |
| No. of pins        | 4 -pin         |
| Encoding           | A-coded        |

### Mechanical data

|                                      |                                                        |
|--------------------------------------|--------------------------------------------------------|
| Design                               | Cylindrical                                            |
| Dimension ( $\varnothing \times L$ ) | 45.5 mm x 78 mm                                        |
| Thread size                          | M30 x 1.5 mm                                           |
| Housing material                     | Metal                                                  |
| Metal housing                        | Nickel-plated brass                                    |
| Ultrasonic transducer material       | Piezoceramics (contains lead zirconium titanate (PZT)) |
| Net weight                           | 190 g                                                  |
| Housing color                        | Silver                                                 |

### Operation and display

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 2 Piece(s) |

### Environmental data

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

### Certifications

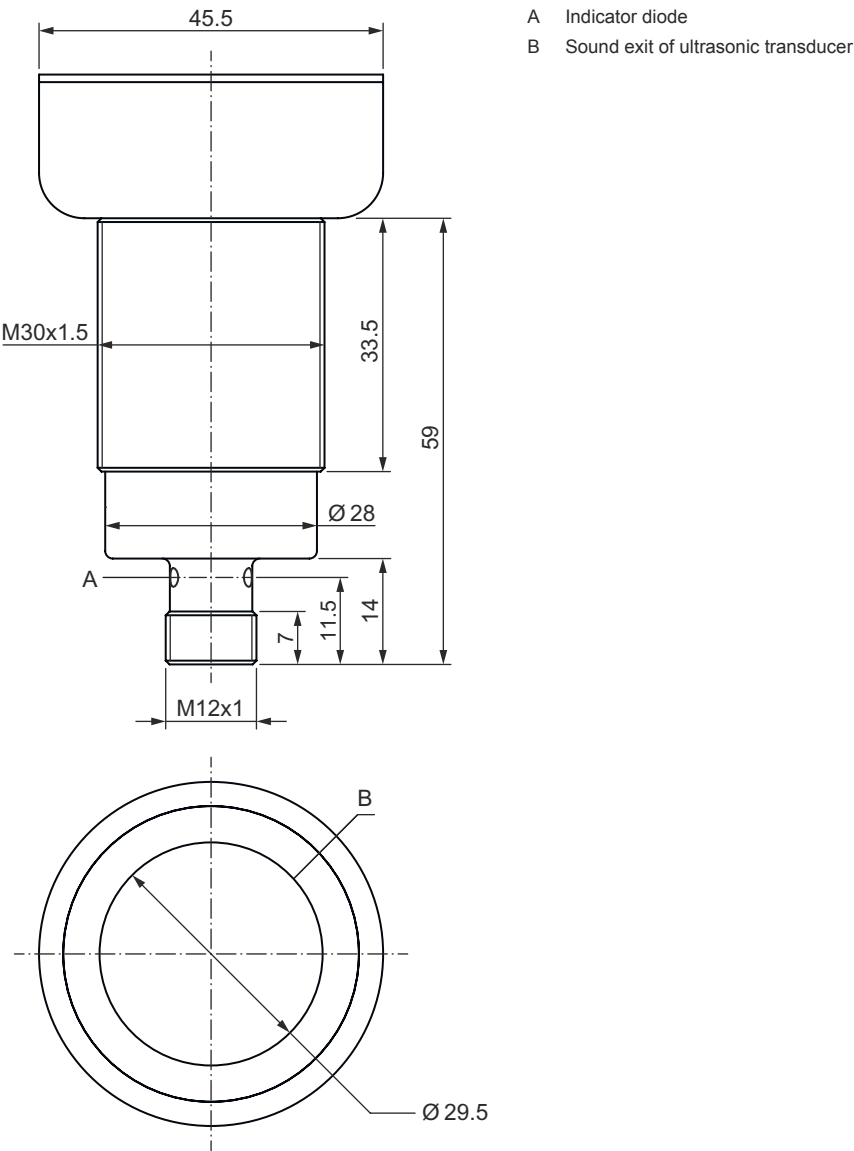
|                      |               |
|----------------------|---------------|
| Degree of protection | IP 67         |
| Protection class     | III           |
| Approvals            | c UL US       |
| Standards applied    | IEC 60947-5-2 |

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 |
| ECLASS 16.0           | 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        | M12            |
| Type               | Male           |
| Material           | Metal          |
| No. of pins        | 4 -pin         |
| Encoding           | A-coded        |

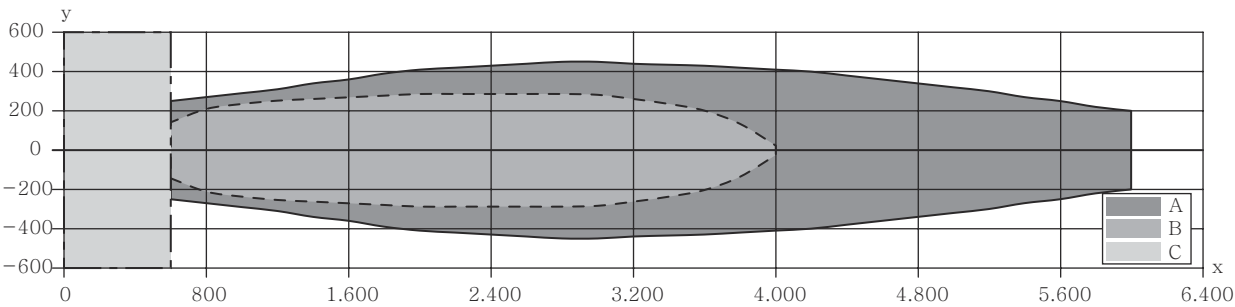
Electrical connection

| Pin | Pin assignment  |
|-----|-----------------|
| 1   | V+              |
| 2   | OUT mA          |
| 3   | GND             |
| 4   | IO-Link / OUT 1 |



Diagrams

Typ. response behavior



- x Object distance [mm]  
y Sound cone width [mm]  
A Plate 200 x 200 mm  
B Rod Ø 25 mm  
C Minimum distance in mm

Operation and display

| LED | Display                  | Meaning                          |
|-----|--------------------------|----------------------------------|
| 1   | Green, continuous light  | Operational readiness            |
|     | Green, flashing          | IO-Link communication            |
|     | Yellow, continuous light | Switching output/switching state |

Part number code

Part designation: AAA2BB-xxxx/CD-EE

|      |                                                                                                                                                                                                                                                    |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AAA  | <b>Operating principle</b><br>HTU: Ultrasonic sensor, scanning principle, with background suppression<br>DMU: Ultrasonic sensor, distance measurement                                                                                              |
| 2BB  | <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                                                                                       |
| xxxx | <b>Operating range</b><br>Operating range in millimeters                                                                                                                                                                                           |
| C    | <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 |

## Part number code

|                                                                                                                                                                                                                                |                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D                                                                                                                                                                                                                              | <b>Switching output / function OUT 2/IN: pin 2</b><br>T: teach-in via cable<br>A: Analog output current (factory setting) and voltage<br>V: Analog voltage output |
| EE                                                                                                                                                                                                                             | <b>Electrical connection</b><br>M8: M8 connector, 4-pin (plug)<br>M12: M12 connector, 4-pin (plug)                                                                |
| <b>Note</b><br> A list with all available device types can be found on the Leuze website at <a href="http://www.leuze.com">www.leuze.com</a> . |                                                                                                                                                                   |

## Notes

|                                                                                                                |                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>Observe intended use!</b> |                                                                                                                                                                                                                                                                                 |
|                                | <ul style="list-style-type: none"> <li>This product is not a safety sensor and is not intended as personnel protection.</li> <li>The product may only be put into operation by competent persons.</li> <li>Only use the product in accordance with its intended use.</li> </ul> |

## Accessories

### Connection technology - Connection unit

|                                                                                    | Part no. | Designation           | Article        | Description                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------|----------|-----------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50144900 | MD 798i-11-82/L5-2222 | IO-Link master | Current consumption, max.: 11,000 mA<br>Interface: IO-Link, Automatic protocol detection, EtherNet IP, Modbus TCP, PROFINET<br>Connections: 12 Piece(s)<br>Sensor connections: 8 Piece(s)<br>Degree of protection: IP 67, IP 65, IP 69K |

### 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 |

## Accessories

### Mounting technology - Mounting brackets

|                                                                                  | Part no. | Designation | Article          | Description                                                                                                                                                                                                                    |
|----------------------------------------------------------------------------------|----------|-------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50113510 | BT D30M.5   | Mounting bracket | Diameter, inner: 30.2 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                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------|----------|-------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50111503 | MC 030K     | Clamp   | Diameter, inner: 30 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.