



# LBV310-LKAGDRAMX

LBV3xx

LEVEL SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type             | part no. |
|------------------|----------|
| LBV310-LKAGDRAMX | 6052998  |

Other models and accessories → [www.sick.com/LBV3xx](http://www.sick.com/LBV3xx)

Illustration may differ



### Detailed technical data

#### Features

|                              |  |
|------------------------------|--|
| <b>Medium</b>                | Bulk solids  |
| <b>Measurement</b>           | Switch   |
| <b>Probe type</b>            | Tuning fork  |
| <b>Probe length</b>          | 220 mm   |
| <b>Process pressure</b>      | -1 bar ... 25 bar  |
| <b>Process temperature</b>   | -50 °C ... +150 °C   |
| <b>Fill material density</b> | ≥ 0.008 g/cm <sup>3</sup>  |
| <b>Particle size</b>         | < 10 mm  |
| <b>ATEX approval</b>         | ATEX II 1/2G, 2G Ex db IIC T6...T1 Ga/Gb, Gb, ATEX II 1D, 1/2D, 2D Ex ta/tb/tb IIIC Tx Da, Da/Db, Db |
| <b>Type examination</b>      | PTB 17 ATEX 1002 X, BVS 17 ATEX E 099  |

#### Performance

|                                   |  |
|-----------------------------------|--|
| <b>Accuracy of sensor element</b> | ± 10 mm  |
| <b>Reproducibility</b>            | ≤ 5 mm   |
| <b>Response time</b>              | 500 ms <sup>1)</sup><br>1,000 ms <sup>2)</sup> |
| <b>MTBF</b>                       | 4,61*10 <sup>6</sup> h                         |

<sup>1)</sup> When covered.

<sup>2)</sup> When uncovered.

#### Electronics

|                                |   |
|--------------------------------|---|
| <b>Communication interface</b> | -   |
| <b>Supply voltage</b>          | 20 V DC ... 72 V DC<br>20 V AC ... 253 V AC |
| <b>Power consumption</b>       | 5 mA ... 30 mA                              |
| <b>Initialization time</b>     | < 2 s                                       |
| <b>VDE protection class 1</b>  | ✓   |

|                         |                                |
|-------------------------|--------------------------------|
| <b>Connection type</b>  | M20 x 1.5                      |
| <b>Output signal</b>    | Double relay (DPDT)            |
| <b>Electronics</b>      | Double relay (DPDT)            |
| <b>Hysteresis</b>       | 10 mm                          |
| <b>Output current</b>   | > 10 µA; < 3A AC, 1A DC        |
| <b>Inductive load</b>   | 750 VA 54 W                    |
| <b>Capacitive load</b>  | 750 VA 54 W                    |
| <b>Contact load</b>     | Min. 50 mW / max. 750 VA, 54 W |
| <b>Enclosure rating</b> | IP66<br>IP67                   |

### Mechanics

|                           |                               |
|---------------------------|-------------------------------|
| <b>Wetted parts</b>       | Stainless steel 1.4404 / 316L |
| <b>Process connection</b> | G 1½ A PN 25                  |
| <b>Housing material</b>   | Aluminum                      |
| <b>Sensor material</b>    | Stainless steel 1.4404        |

### Ambient data

|                                      |                   |
|--------------------------------------|-------------------|
| <b>Ambient operating temperature</b> | -40 °C ... +80 °C |
| <b>Ambient temperature, storage</b>  | -40 °C ... +80 °C |

### Classifications

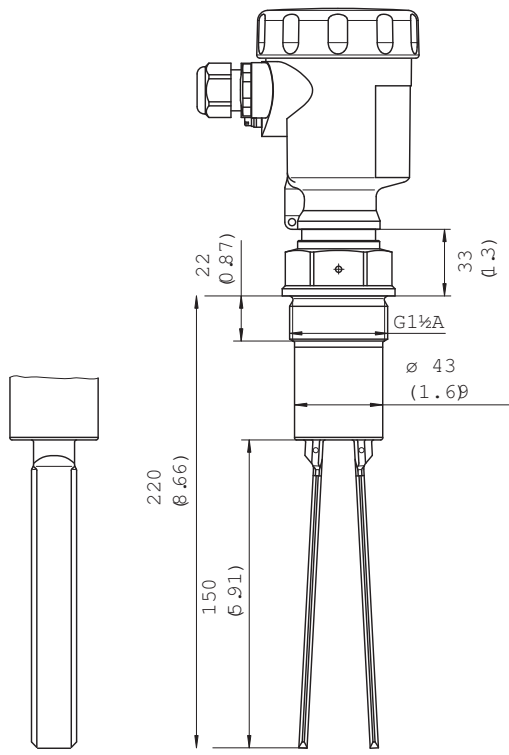
|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.0</b>     | 27273202 |
| <b>ECLASS 5.1.4</b>   | 27273202 |
| <b>ECLASS 6.0</b>     | 27273202 |
| <b>ECLASS 6.2</b>     | 27273202 |
| <b>ECLASS 7.0</b>     | 27273202 |
| <b>ECLASS 8.0</b>     | 27273202 |
| <b>ECLASS 8.1</b>     | 27273202 |
| <b>ECLASS 9.0</b>     | 27273202 |
| <b>ECLASS 10.0</b>    | 27273202 |
| <b>ECLASS 11.0</b>    | 27273202 |
| <b>ECLASS 12.0</b>    | 27273106 |
| <b>ETIM 5.0</b>       | EC002654 |
| <b>ETIM 6.0</b>       | EC002654 |
| <b>ETIM 7.0</b>       | EC002654 |
| <b>ETIM 8.0</b>       | EC002654 |
| <b>UNSPSC 16.0901</b> | 41111938 |

### Certificates

|                                       |   |
|---------------------------------------|---|
| <b>EU declaration of conformity</b>   | ✓ |
| <b>UK declaration of conformity</b>   | ✓ |
| <b>ACMA declaration of conformity</b> | ✓ |
| <b>China RoHS</b>                     | ✓ |

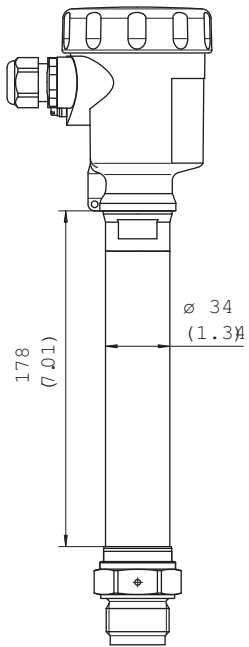
|                  |   |
|------------------|---|
| FDA certificate  | ✓ |
| ATEX certificate | ✓ |

Dimensional drawing LBV310 threaded version G 1½ A (DIN ISO 228/1)



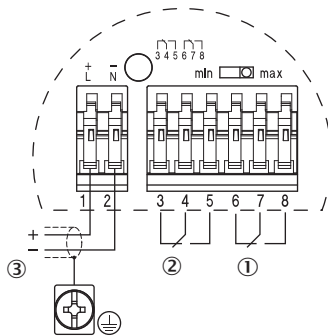
Dimensions in mm (inch)

Dimensional drawing Temperature adapter



Dimensions in mm (inch)

Connection diagram Double relay connection diagram



- ① Relay output
- ② Relay output
- ③ Power supply

### Instruction for installation Flow orientation of the tuning fork



- ① Marking with screwed version
- ② Direction of flow

### Instruction for installation Horizontal mounting



- ① Protective sheet
- ② Concave protective sheet for abrasive solids

### Recommended accessories

Other models and accessories → [www.sick.com/LBV3xx](http://www.sick.com/LBV3xx)

|                  | Brief description   | Type               | part no. |
|------------------|---|--------------------|----------|
| Mounting systems |   |                    |          |
|                  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Locking screw connection, process pressure -1 bar to 16 bar, process connection G 2 A, inner thread G 1 1/2 A</li> <li>• <b>Material:</b> Stainless steel</li> <li>• <b>Details:</b> Stainless steel 316L</li> </ul> | BEF-MU-316G20-ALBV | 5322462  |

|   | Brief description  | Type                | part no. |
|---|--|---------------------|----------|
| Power supply units and power supply cables  |  |                     |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Double relay (DPDT): 20 V DC ... 72 V DC / 20 ... 250 V AC</li> </ul> | ECD-RE-LB-VREL-0001 | 6038666  |

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)