



LBV310-LKAGDRANX

LBV300

VIBRATING LEVEL SWITCH

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|------------------|----------|
| LBV310-LKAGDRANX | 6051421 |

Other models and accessories → www.sick.com/LBV300

Detailed technical data

Features

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

Performance

| | |
|-----------------------------------|---|
| Accuracy of sensor element | ± 10 mm |
| Reproducibility | ≤ 5 mm |
| Response time | 500 ms when covered / 1,000 ms when uncovered |
| MTBF | 4,61*10 ⁶ h |

Electronics

| | |
|-------------------------------|---|
| Power consumption | 5 mA ... 30 mA |
| Initialization time | < 2 s |
| VDE protection class 1 | ✓ |
| Connection type | ½" NPT |
| Output signal | Double relay (DPDT) |
| Supply voltage | Double relay (DPDT): 20 V DC ... 72 V DC / 20 V AC ... 253 V AC |
| Hysteresis | 10 mm |
| Output current | > 10 µA; < 3A AC, 1A DC |
| Inductive load | 750 VA 54 W |
| Capacitive load | 750 VA 54 W |
| Contact load | Min. 50 mW / max. 750 VA, 54 W |
| Enclosure rating | IP66 / IP67 |

Mechanics

| | |
|---------------------------|------------------------|
| Process connection | G 1½ A PN 25 |
| Housing material | Aluminum |
| Sensor material | Stainless steel 1.4404 |

Ambient data

| | |
|--------------------------------------|-------------------|
| Ambient operating temperature | -40 °C ... +80 °C |
| Ambient temperature, storage | -40 °C ... +80 °C |

Classifications

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

Type code

LBV310 type code

Certification

| | |
|----|--|
| XX | without |
| CX | ATEX II 1G, ½ G, 2G Ex ia IIC T6 |
| CK | ATEX II 1G, ½G, 2G Ex ia IIC T6+ATEX II 1/2 D IP6X T |
| LX | ATEX II 1G, ½ G, 2G Ex d IIC T6 |
| LK | ATEX II ½ G, 2G Ex d IIC T6+ATEX II 1/2 D, 2D IP6X |
| GX | ATEX II ½ D IP6X T |

Execution / Process temperature

| | |
|---|---|
| A | Standard / -50 °C ... +150 °C |
| B | With spacer / -50 °C ... +250 °C |
| C | Detection of solids in water / -50 °C ... +150 °C |

Process connection / Material

| | |
|------------------|---|
| GD | Thread G 1 ½ A, PN 25 / 316L |
| ND | Thread 1 ½" NPT, PN 25 / 316L |
| EF | Flange DN 50, PN 40, form C, DIN 2501 / 316L |
| No er- ror | Flange DN 80, PN 40, form C, DIN 2501 / 316L |
| ZF | Flange DN 100, PN 6, form C, DIN 2501 / 316L |
| MF | Flange DN 100, PN 16, form C, DIN 2501 / 316L |
| OF | Flange DN 100, PN 40, form C, DIN 2501 / 316L |
| QF | Flange DN 150, PN 16, form C, DIN 2501 / 316L |

| | |
|----|---|
| 2F | Flange DN 200, PN 10, form C, DIN 2501 / 316L |
| EB | Flange DN 50, PN 40, EN 1092-1 Form B1 / 316L |
| HA | Flange 2", 150 lb RF, ANSI B16.5 / 316L |
| HE | Flange 2", 150 lb FF, ANSI B16.5 / 316L |
| IA | Flange 2", 300 lb RF, ANSI B16.5 / 316L |
| OA | Flange 3", 150 lb RF, ANSI B16.5 / 316L |
| OE | Flange 3", 150 lb FF, ANSI B16.5 / 316L |
| PA | Flange 3", 300 lb RF, ANSI B16.5 / 316L |
| JA | Flange 3 ½", 150 lb RF, ANSI B16.5 / 316L |
| SA | Flange 4", 150 lb RF, ANSI B16.5 / 316L |
| UA | Flange 4", 300 lb RF, ANSI B16.5 / 316L |
| AU | Flange DN 50, 10K RF, JIS / 316L |
| BU | Flange DN 80, 10K RF, JIS / 316L |
| CU | Flange DN 100, 10K RF, JIS / 316L |

Electronics

| | |
|---|--|
| C | Contact-free switch 20 ... 253 V AC (DC) |
| R | Relay (DPDT) 20 ... 72 V DC / 20 ... 253 V AC (3A) |
| T | Transistor (NPN/PNP) 10 ... 55V DC |
| N | NAMUR signal |

Housing / Enclosure rating

| | |
|---|--|
| K | Plastic / IP 66, IP 67 |
| A | Aluminum / IP 66, IP 67 |
| V | Stainless steel (investment casting) 316L / IP 66, IP 67 |
| 8 | Stainless steel (electropolished) 316L / IP 66, IP 67 |

Cable entry / Male connector connection

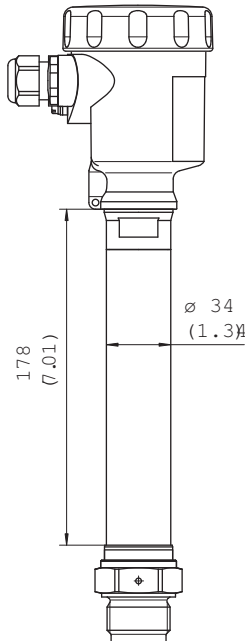
| | |
|---|---------------------|
| M | M20 x 1.5 / Without |
| N | ½" NPT / Without |

| | | | | | | | | | | |
|----------|--|--|--|--|--|--|--|--|--|---|
| LBV310 - | | | | | | | | | | X |
|----------|--|--|--|--|--|--|--|--|--|---|

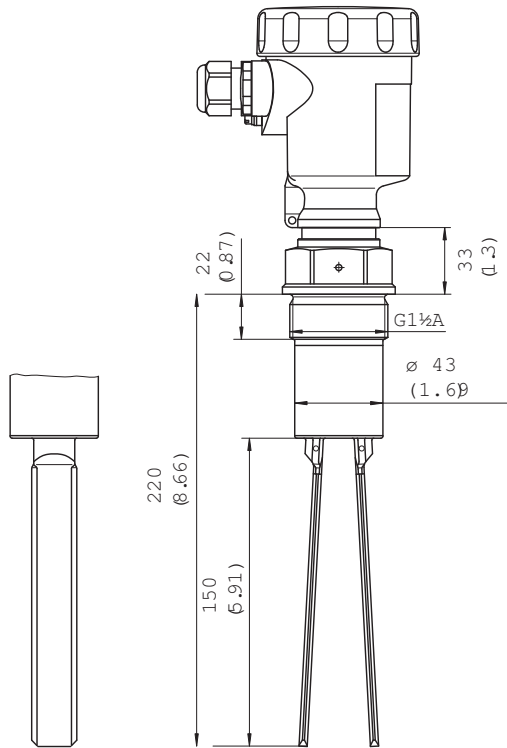
Not all variants of the type code can be combined!

[Dimensional drawing](#) (Dimensions in mm (inch))

Temperature adapter

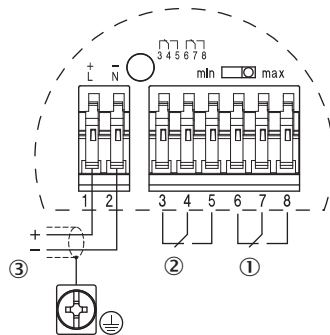


LBV310 threaded version G 1½ A (DIN ISO 228/1)



Connection diagram

Double relay connection diagram



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

Instruction for installation

Horizontal mounting



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


Flow orientation of the tuning fork



- ① Marking with screwed version
- ② Direction of flow

Recommended accessories

Other models and accessories → www.sick.com/LBV300

| | Brief description | Type | Part no. |
|---|--|---------------------|----------|
| Electronic modules | | | |
|  | Double relay (DPDT): 20 V DC ... 72 V DC / 20 ... 250 V AC | ECD-RE-LB-VREL-0001 | 6038666 |
| Mounting brackets and plates | | | |
| | BEF-MU-316G20-ALBV | BEF-MU-316G20-ALBV | 5322462 |

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