



LBV321-XTGCRAMX01500

LBV301

VIBRATING LEVEL SWITCH

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|-----------------------|----------|
| LBV321-XXTGCRAMX01500 | 6074853 |

Other models and accessories → www.sick.com/LBV301

Detailed technical data

Features

| | |
|------------------------------|--------------------------|
| Medium | Bulk solids |
| Measurement | Switch |
| Probe length | 1,500 mm |
| Process pressure | -1 bar ... 6 bar |
| Process temperature | -20 °C ... +80 °C |
| Fill material density | ≥ 0.02 g/cm ³ |
| Tensile strength | ≤ 3,000 N |

Performance

| | |
|-----------------------------------|---|
| Accuracy of sensor element | ± 10 mm |
| Reproducibility | ≤ 5 mm |
| Response time | 500 ms when covered / 1,000 ms when uncovered |
| MTBF | 4,17*10 ⁶ h |

Electronics

| | |
|-------------------------------|---|
| Power consumption | 5 mA ... 30 mA |
| Initialization time | < 2 s |
| VDE protection class 1 | ✓ |
| Connection type | M20 x 1.5 |
| 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 |
| Enclosure rating | IP66 / IP67 |

Mechanics

| | |
|---------------------------|--------------------------------------|
| Process connection | G 1 A |
| Housing material | Aluminum |
| Sensor material | Stainless steel 316L, 318S, PUR, FEB |

Ambient data

| | |
|--------------------------------------|-------------------|
| Ambient operating temperature | -40 °C ... +70 °C |
| Ambient temperature, storage | -40 °C ... +80 °C |

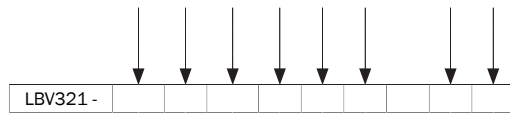
Classifications

| | |
|-----------------------|----------|
| 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

LBV321 type code

| | |
|--|---|
| Certification | |
| XX | without |
| CX | ATEX II 1G, 1/2 G, 2G Ex ia IIC T6 |
| CK | ATEX II 1G, 1/2 G, 2G Ex ia IIC T6 + |
| GX | ATEX II 1D, 1/2 D, 2D Ex tD IP66 T |
| Execution / Process temperature | |
| C | Cable PUR, detection of solids in water / -20 °C ... +80 °C |
| H | Cable FEP / -40 °C ... +150 °C |
| T | Cable PUR / -20 °C ... +80 °C |
| Process connection / Material (see below) | |
| 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 ... 55 V 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 |
| Length 480 ... 80,000 mm | |
| Additional equipment | |
| X | without |
| Z | Locking screw with strain relief IP20/1.4305 |
| M | Locking screw with cable gland + strain relief IP65/316 |



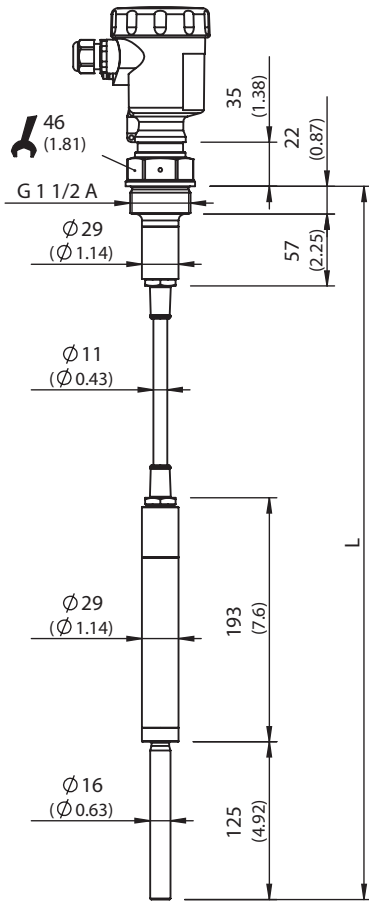
Not all variants of the type code can be combined!

Process connection / Material

| | | | |
|----------|--|----|--|
| XP | Without / 316L, Ra < 0.8 µm | 3F | Flange DN 125, PN 6, form C, DIN 2501 / 316L |
| GC | Thread G 1, DIN 3852-A, PN 6 / 316L | QF | Flange DN 150, PN 16, form C, DIN 2501 / 316L |
| GR | Thread G 1, DIN 3852-A, PN 6 / 316L, Ra < 0.8 µm | 2F | Flange DN 200, PN 10, form C, DIN 2501 / 316L |
| GD | Thread G 1 ½, DIN 3852-A, PN 16 / 316L | EB | Flange DN 50, PN 40, EN 1092-1, form B1 / 316L |
| GT | Thread G 1 ½, DIN 3852-A, PN 16 / 316L, Ra < 0.8 µm | DA | Flange 1 ½", 150 lb RF, ANSI B16.5 / 316L |
| NC | Thread 1" NPT, ASME B1.20.1, PN 6 / 316L | EA | Flange 1 ½", 300 lb RF, ANSI B16.5 / 316L |
| NR | Thread 1" NPT, ASME B1.20.1, PN 6 / 316L, Ra < 0.8 µm | HA | Flange 2", 150 lb RF, ANSI B16.5 / 316L |
| NH | Thread 1 ¼" NPT, ASME B1.20.1, PN 6 / 316L | IA | Flange 2", 300 lb RF, ANSI B16.5 / 316L |
| NI | Thread 1 ¼" NPT, ASME B1.20.1, PN 6 / 316L, Ra < 0.8 µm | OA | Flange 3", 150 lb RF, ANSI B16.5 / 316L |
| ND | Thread 1 ½" NPT, ASME B1.20.1, PN 16 / 316L | OE | Flange 3", 150 lb FF, ANSI B16.5 / 316L |
| NT | Thread 1 ½" NPT, ASME B1.20.1, PN 16 / 316L, Ra < 0.8 µm | PA | Flange 3", 300 lb RF, ANSI B16.5 / 316L |
| BF | Flange DN 32, PN 40, form C, DIN 2501 / 316L | PE | Flange 3", 300 lb FF, ANSI B16.5 / 316L |
| DF | Flange DN 40, PN 40, form C, DIN 2501 / 316L | JA | Flange 3 ½", 150 lb RF, ANSI B16.5 / 316L |
| EF | Flange DN 50, PN 40, form C, DIN 2501 / 316L | SA | Flange 4", 150 lb RF, ANSI B16.5 / 316L |
| 4F | Flange DN 65, PN 16, form C, DIN 2501 / 316L | UA | Flange 4", 300 lb RF, ANSI B16.5 / 316L |
| No error | Flange DN 80, PN 40, form C, DIN 2501 / 316L | AU | Flange DN 50, 10K RF, JIS / 316L |
| ZF | Flange DN 100, PN 6, form C, DIN 2501 / 316L | HU | Flange DN 65, 10K RF, JIS / 316L |
| MF | Flange DN 100, PN 16, form C, DIN 2501 / 316L | BU | Flange DN 80, 10K RF, JIS / 316L |
| OF | Flange DN 100, PN 40, form C, DIN 2501 / 316L | CU | Flange DN 100, 10K RF, JIS / 316L |

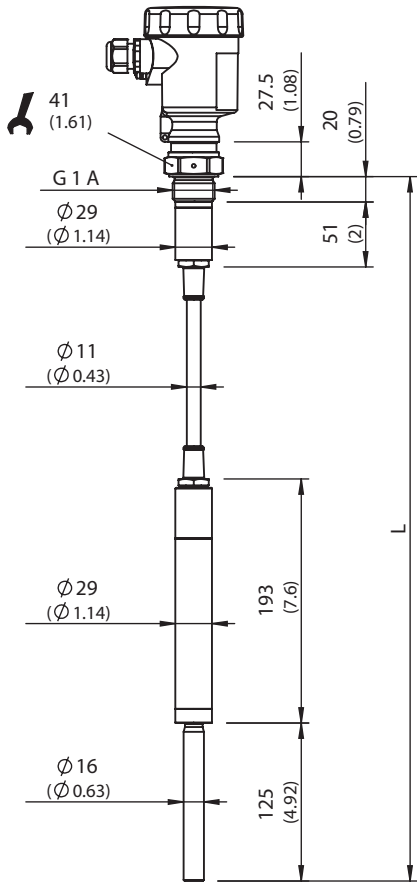
Dimensional drawing (Dimensions in mm (inch))

LBV321 threaded version G 1 1/2 A



All dimensions in mm (inch)

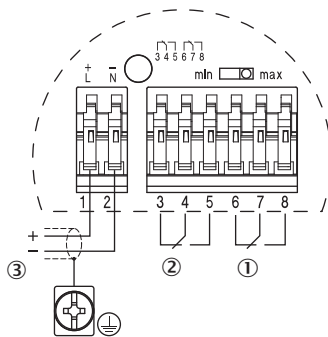
LBV321 threaded version G 1 A



All dimensions in mm (inch)

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

Characteristic curve

Ambient temperature - process temperature



- ① Process temperature in °C (°F)
- ② Ambient temperature in °C (°F)
- ③ Temperature range with temperature adapter

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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.

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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.”

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