



## LBV300

Tuning forks – tough and flexible in bulkSolids

LEVEL SENSORS

**SICK**  
Sensor Intelligence.



### Technical data overview

<b>Measurement principle</b>	Vibrating level switch
<b>Detection principle</b>	Contact
<b>Medium</b>	Bulk solids
<b>Measurement</b>	Switch
<b>Process temperature</b>	-50 °C ... +250 °C, detection of solids in water, Temperature range with temperature adapter (depending on type)
<b>Process pressure</b>	-1 bar ... 25 bar (depending on type)
<b>Output signal</b>	Non-contact switch Double relay (DPDT) 1 x PNP/NPN NAMUR signal (depending on type)
<b>Accuracy of sensor element</b>	± 10 mm

### Product description

The rugged, reliable, and highly accurate vibrating level switches in the LBV300 product family signal full, empty, or demand states in bulk materials. The tuning fork reacts to changes in density, and thus operates independently of silo shape or the tank material used. The rugged stainless steel tuning fork is piezo-electrically energized and vibrates at its resonance frequency when it is covered by bulk materials. This change is detected and converted into a switching signal. While the LBV310 compact device is used for horizontal mounting and to signal full states, the LBV320 cable-extended switch and the LBV330 tube-extended switch are used for vertical mounting in silos and bridge sensing ranges of up to 80 m and 6 m respectively. With a wide variety of thread and flange connections, and several electronic variants, the LBV330 offers a solution for almost all applications, even in potentially explosive atmospheres.

### At a glance

- Tough device design
- Several housing materials and electrical outputs available
- Immune to deposit formation
- Commissioning without filling
- Process temperature up to 250 °C
- Very high repeatability
- ATEX versions (1D/2D/1G/2G) available
- Tube-extended version (LBV330) up to 6 m and rope extensions version (LBV320) up to 80 m available for vertical mounting

### Your benefits

- Easy installation and commissioning, no calibration necessary
- Easy operation and integration, saves time
- Maintenance-free sensor, reduces downtime
- Testing in place possible – no mounting required, which reduces installation time
- Flexible and tough system for a multitude of applications
- Solutions for vertically mounted switches in difficult installation conditions and surroundings
-



### Type code

#### Certification

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

XX	Without / 316L
GD	Thread G 1 ½ A, PN 16 / 316L
ND	Thread 1 ½" NPT, PN 16 / 316L
EF	Flange DN 50, PN 40, form C, DIN 2501 / 316L
No error	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 DN150, 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 ... 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 up to max. 80,000 mm

LBV320 -									X
----------	--	--	--	--	--	--	--	--	---

Not all variants of the type code can be combined!



## 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)