



## LBV301

High-quality vibration limit switch for bulk materials – maintenance-free, ATEX-approved and suitable for use with foodstuffs.

**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, Temperature range with temperature adapter, detection of solids in water, Temperature adapter (depending on type)
<b>Process pressure</b>	-1 bar ... 16 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 vibrating level switches in the LBV301 product family can be relied upon to signal full, empty, or demand states in bulk materials. The monoprobe design prevents bulk materials from jamming. The rugged stainless steel sensor design is piezo-electrically energized. When the probe is covered with bulk materials, the change in vibration amplitude is reliably detected and converted into a switching signal. As the monoprobe is easy to clean, the sensors are even suitable for use in the food industry. While the LBV311 compact device is used for horizontal mounting, the LBV321 cable-extended switch and the LBV331 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 variety of process connections for hygienic applications and several electronic variants, the LBV301 can be used for nearly all applications, even in explosive atmospheres.

## At a glance

- Compact sensor from 1" thread
- Monoprobe design prevents bulk materials from sticking or jamming
- Polished monoprobe for food applications
- Commissioning without filling and medium calibration
- Process temperature up to 250 °C
- ATEX certifications (1D/2D/1G/2G) available
- Tube extension variant (LBV331) up to 6 m and cable extension model (LBV321) up to 80 m available for vertical mounting

## Your benefits

- Easy commissioning, no upstream calibration necessary
- Maintenance-free system
- Sensors can be tested while installed
- Flexible, reliable system suitable for many types of applications
- Vertical mounting, even in difficult installation and ambient conditions

## Fields of application

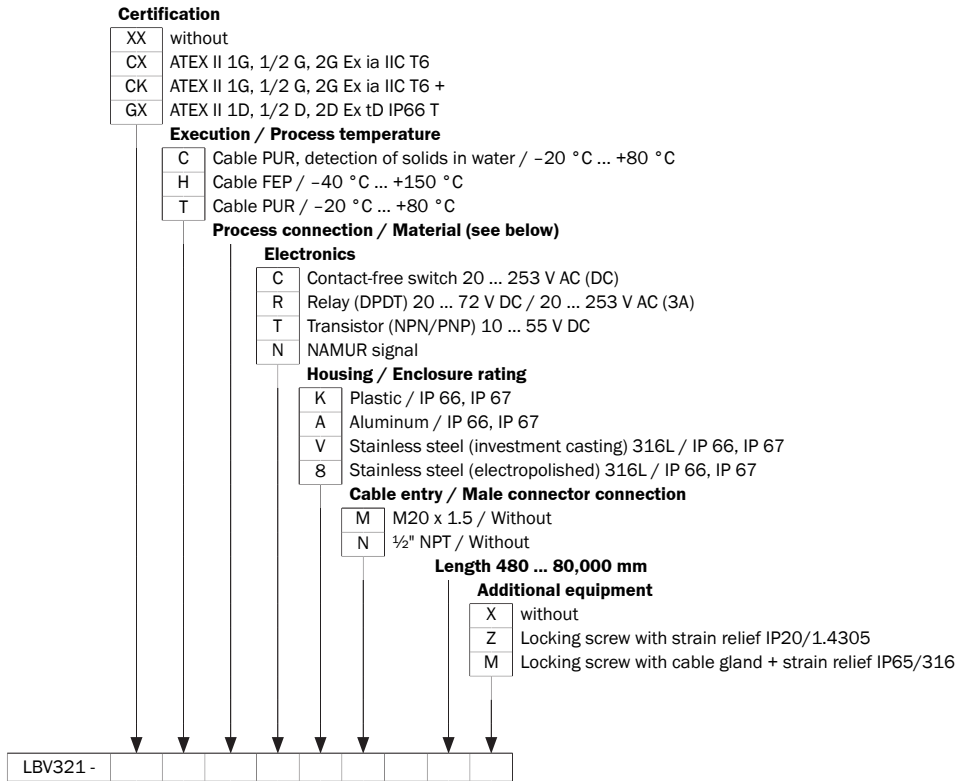
- Level measurement of pellets or wood chips in the wood industry
- Detection of basic substances in the food industry, such as milk powder
- Min./max. or demand signal in silos
- Explosive dust mixtures
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HU	Flange DN65 10K RF, JIS / 316L
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CU	Flange DN100 10K RF, JIS / 316L
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LBV321 type code



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 ¾" 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

LBV331 type code

<b>Certification</b>	
XX	without



## 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)