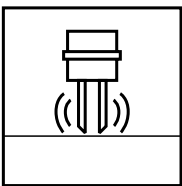


Vibrating Limit Switch LVL



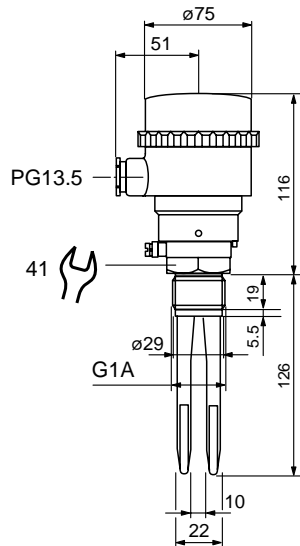
LVL-E5



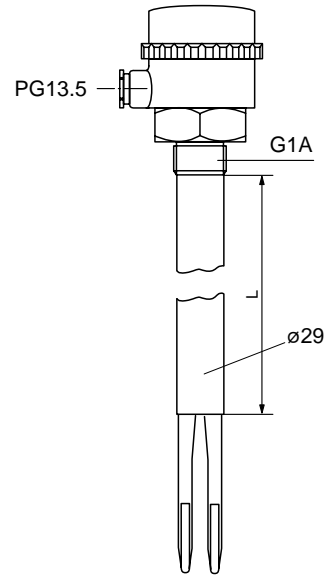
Features

- Universally applicable for liquids and solid granulates.
- Compact version and extended version
- Orientation independent
- Self monitoring
- No on-site adjustment necessary
- Self-diagnosis of the evaluation unit including the vibrating system
- Switchable (N.O./N.C.)
- Two switching states selectable

Dimensions



Compact version LVL3



Extended version LVL4



Please specify the length (L) if you order an extended version.

Function principle

The vibration fork is actuated cyclically by electromagnetic pulses. It is vibrating with its resonance frequency in air. Contacting liquids and solid materials have a different influence on this frequency. The smart evaluation of this change with a micro-processor is creating the output signal and allows a complete self-monitoring and self-diagnosis of the evaluation unit including the vibrating system.

Electrical connection

Function switch I ... IV Signification

- | | | |
|-------------------------|------------------|-----------------------------|
| I 0 : Quiescent current | N.C. contact | } Switching output function |
| 1 : Load current | N.O. contact | |
| II 0 : Service | Self-diagnosis | } |
| 1 : Function | Working position | |
| III 0 : Bulk material | Filling material | } |
| 1 : Liquids | to be detected | |
| IV 0 : Operating mode B | | |
| 1 : Operating mode A | | |

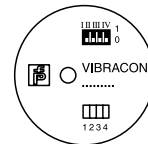
Circuit delay

Mode	Covering	Releasing
B	approx. 3 s	approx. 1.0 s
A	approx. 1 s	approx. 0.2 s

LED displays 1 ... 4

1. Function (green)
2. Fault (red)

- DC 24 V applied
- Operating mode III at 0, but liquid detected and vice versa
- Corrosion or other modifications at vibration system
- Electrical malfunctions



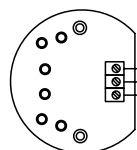
Switching state

3. "Reference" (yellow)
4. "Actual" (yellow)

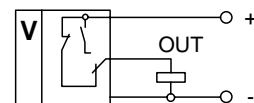
- Processor function OK
- Switch output

In case of detected filling material, the LEDs 3 and 4 are normally on.

In case of faults (red LED), the processor activates the switch output according to the selected operating mode SI (quiescent/load) and therefore always indicates "Filling material dedected".



OUT
+ Output
- DC 24 V



Technical data

Supply

Operating voltage	DC 18 V ... 30 V
Operating current	< 50 mA
Protection class	III

Output

Switching function	3-wire technology (pnp)
Current	make switch/break switch switchable
Short-circuit current	< 500 mA, short circuit-proof/overload
	< 1.5 A

Switching delay

when covering/operational mode A	approx. 1 s
when uncovering/operational mode A	approx. 0.2 s
when covering/operational mode B	approx. 5 s
when uncovering/operational mode B	approx. 1 s

Indicators

Function	LED green
Fault	LED red
Switching state ref.	LED yellow
Switching state actual	LED yellow, dark in case of a short circuit

Ambient conditions

Ambient temperature	-20 °C ... +70 °C
---------------------	-------------------

Process conditions

Temperature	-40 °C ... +150 °C
Pressure	≤ 25 bar
Density ρ	≥ 0.6 g/cm ³
Viscosity	max. 10 000 mPa s

Protection class acc. to IEC 60529	IP65
---	------

Key to model numbers/ordering code

Vibracon LVL-E5

Measuring range

- 3 Compact version
- 4 Extended version, rod length 200 mm ... 3000 mm

Surface of fork

- O polished stainless steel (1.4581)

Process connection

- G 3 G1A thread
- N 3 1" NPT thread

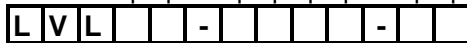
Material/surface process connection

- O polished stainless steel (1.4581)

Material housing

- / Plastic (PBT), PG13.5 thread

- E 5 3-wire pnp



Vibrating Limit Switch LVL-E5

Conventional versions

Compact version LVL3

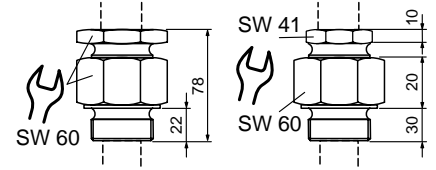
- LVL30-G30-E5
- LVL30-N30-E5

Extended version LVL4

- LVL40-G30-E5
- LVL40-N30-E5

Accessories

- LVL-Z41, sliding bushing stainless steel 1.4571 (Viton O-ring, for unpressurised operation)
- LVL-Z61, welding bushing for vessels G1, Viton sealing



Sliding bushing G1½A
LVL2-Z41, stainless steel

Sliding bushing G1½A
LVL2-Z49, PVC

Note

- This device may be used with any sequential circuit, if this circuit complies with the connection values of the device.