

ILV-600

Vibrating level indicator
for solids

Operating Instructions

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- ▶ **Read these Safety instructions before using the device for the first time and follow the Operating instructions.**

Safety instructions

1. The installation, initial operation and maintenance should only be carried out by a qualified expert with electrical know-how.
2. Comply with the local and statutory rules and/or the VDE0100.
3. Before electrical connection, check the specifications on the data plate and the technical data of this manual.
4. A fuse must be connected in series to the supply voltage, according to the Standard and Normative documents.
5. Protect the signal contacts of the limit switch against voltage peaks when inductive or capacitive loads are connected.
6. The device may be put into operation only if the electrical connection is correct. To secure the type of protection, the sealing cap and the gasket must be placed correctly and the screw nut of the cable gland has to be fixed and fastened to the cable entry.
7. The earth connection of the device has to be installed in such a way that mechanical damage will be excluded.
8. The probe must not be hit by the filling stream. To avoid this, deflect the filling stream or install a deflection screen or a protection roof. It is also recommended to install a protection roof when the controllers are used as empty-indicator or medium-indicator in silos where vaults could be formed or where high loads above it could exist.
8. For a proper function, the device should be installed with a 20 ° to 30 ° slope from the horizontal onto the silo wall to facilitate the flow of the material and to prevent the material from remaining over the probe.
9. The most sensitive part of the controller is the probe, do not hit or deform the probe it, the device can become useless.
10. Switch off the power supply, before disconnecting the device.

Operating instructions

1. Specification

1.1 Intended use

The vibrating level indicator ILV-600 is to be used to control the maximum or minimum level of bulk solids in silos or vessels.

It is recommended for dusty and powdery, granulated and grainy bulk goods like dust, flour, grain, sand, plastic, etc. with a minimum bulk density from 0.05 t/m³ and a maximum grain size of 20 mm.

It is not recommended for sticky solids or products that have the tendency to settle over the probe.

1.2 Function

The probe must be exposed to the material. The probe of these controllers is activated to its resonant frequency by a piezoelectric system. When the product covers the probe, the vibration is dampened and the control unit reverses the signal. When the product disappears from the fork, it returns to the normal vibrating state and the signal turns to the initial position.

1.3 Technical data

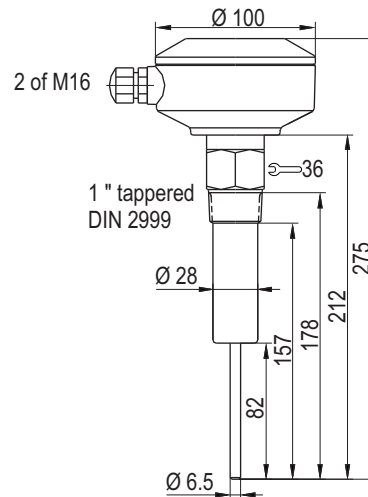
Manufacturer	Talleres Filsa, S.A.U.
Address	Bernat Metge, 33 08100 Mollet del Vallès (Barcelona)
Name	Vibrating level indicator
Type	ILV-600 ref: 2190-0-100
Supply voltage	20 ... 250 V AC/DC
Power consumption	3 VA
Density of product	From 0.05 t/m ³
Maximum pressure	+10 bar
Cable entry	2 of M16x1.5
Relay output	1 NO + 1 NC 5 A / 250 V AC 5 A / 30 V DC
Function status	Under voltage: yellow LED Relay enabled: red LED
Resonance frequency	460 Hz
Response time	
Detecting level	1 s
Starting vibrating	2 ... 5 s
Product temperature (Under request up to +150 °C)	-20 °C ... +80 °C
Ambient temperature	-20 °C ... +60 °C
Protection	
Housing	IP66 according DIN EN60529
Probe	IP67 according DIN EN60529
Weight	1.10 kg
Max. load upon the probe	80 N

1.4 Materials

Housing	Aluminium
Probe	Stainless Steel 1.4301

1.5 Dimensions

Approximate measures are given in mm.

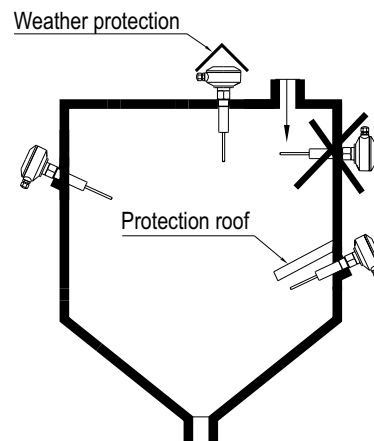


ILV600-001

2. Installation

2.1 Preparing for use

- Read the Safety instructions and the Operating instructions before using the controller.
- The probe must not be hit by the filling stream. To avoid this, deflect the filling stream or install a deflection screen or a protection roof. It is also recommended to install a protection roof when the controllers are used as empty-indicator or medium-indicator in silos where vaults could be formed or where high loads above it could exist.
- For a proper function, the device should be installed with a 20 ° to 30 ° slope from the horizontal onto the silo wall to to facilitate the flow of the material and to prevent the material from remaining over the probe.



ILV600-002

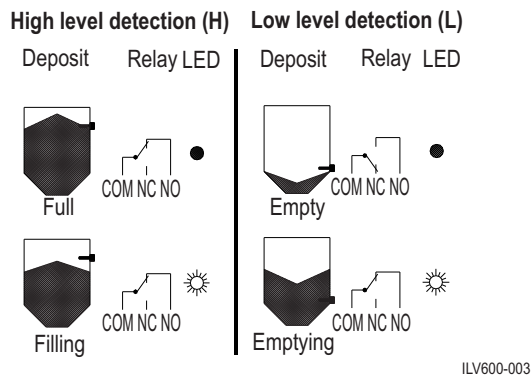
2.2 Mechanical connection

The device can be mounted horizontally or vertically depending on the model.

The normal installation is by screwing the device onto the deposit wall, with a mounting flange or with an appropriate support to fix it.

2.3 Electrical connection

Connection diagram



With the bridge selector inside the housing, it can be selected the function of the device depending on the position of the selector.

Detection adjustment

To select the type of detection, change the position of the bridge selector with:

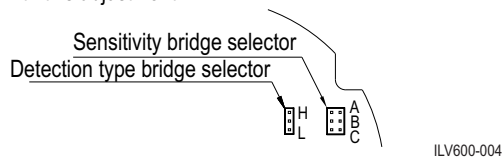
H - High level. For high level detection, the relay is disengaged when the probe is covered of product.

L - Low level. For low level detection, the relay is disengaged when the probe is uncovered of product.

Sensitivity adjustment

The vibrating controller ILV-600 has a regulation system that allows the adjustment of the sensitivity. The device is adjusted at the medium sensitivity to detect the majority of materials. To change the sensitivity, change the position of the bridge selector:

- A - light and low density materials, density of product up to 50 t/m³.
- B - standard adjustment, for the majority of the materials
- C - heavy materials with high density. Light materials can not be detected with this adjustment.



Cable gland

- Fasten the cable gland after making the electrical connection.
- Fix and fasten the screw nut of the cable gland to make sure of the water-tightness.
- The cable glands must be always be facing downwards to prevent the ingress of humidity into the housing.

3. Use

3.1 Commissioning

- Put the controller into operation only if the installation and the electrical connection have been done correctly.

3.2 Normal operation

- Use the controller in its intended application only.
- Comply with the specifications on the data plate and the technical data of this manual.
- If the controller is damaged, disconnect it immediately.
- It is forbidden to make changes to the device. This violates the Normative.

3.3 Inexpert handling

- Ignoring the Safety instructions and the Operating instructions.
- Not intended use.
- Making changes or handling the controller.
- Violation against applicable Law and Standards.
- Using of non original parts.

4. Maintenance, servicing and spare parts

4.1 Maintenance

- If used correctly, no specific maintenance is required.

4.2 Servicing

- Check and review the state of the housing, the probe and the correct commutation of the electrical contact, as well.

4.3 Spare parts

- Use original spare parts.
- The only possible spare part for these controllers is the printed circuit board.

5. Storage

- Store the controller in a dry and dust-free environment.

6. Disposal

- Switch off the power supply, before disconnecting the device.
- The controller can be recycled.
- The disposal applies to the valid environmental Guidelines according to the location of the carrier and the local manufacturing conditions.