

ILV-120, ILV-130 and ILV-150

Vibrating level indicator
for solids

Operating Instructions

Index	Page
Safety instructions	02
Operating instructions	
1. Specification	03
1.1 Intended use	
1.2 Function	
1.3 Technical data	
1.4 Materials	
1.5 Dimensions	
2. Installation	04
2.1 Preparing for use	
2.2 Mechanical connection	
2.3 Electrical connection	
3. Use	05
3.1 Commissioning	
3.2 Normal operation	
3.3 Inexpert handling	
4. Maintenance, servicing and spare parts	05
4.1 Maintenance	
4.2 Servicing	
4.3 Spare parts	
5. Storage	05
6. Disposal	05



- ▶ **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, 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 are 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 0.01 t/m³ and a maximum grain size of 40 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-120 ref: 2190-0-200 ILV-120 Sens. ref: 2190-S-200 ILV-130 ref: 2190-0-300 ILV-130 Sens. ref: 2190-S-300 ILV-150 ref: 2190-0-500 ILV-150 Sens. ref: 2190-S-500
Supply voltage	20 ... 250 V AC/DC
Power consumption	3 VA
Density of the product	
Standard models	From 0.02 t/m ³
Sensitive models	From 0.01 t/m ³
Maximum pressure	+10 bar
Cable entry	2 of M20x1.5
Relay output	2x (1 NO + 1 NC) 8 A / 250 V AC, 1.5 A / 48 V AC 8 A / 24 V DC
Function status	Relay enabled: red LED
Resonance frequency	285 Hz
Response time	
Detecting level	1 s
Starting vibrating	2 ... 5 s
Product temperature	
ILV-120 and ILV-130	-40 °C ... +80 °C
(Under request up to +150 °C)	
ILV-150	-40 °C ... +70 °C
Ambient temperature	-40 °C ... +60 °C

Protection

Housing IP66 according DIN EN60529

Probe IP67 according DIN EN60529

Weight

1.70 kg depending on the model

Max. load upon the probe

Horizontal 150 N

Vertical 1.000 N

Max. cable load ILV-150 200 kg

1.4 Materials

Housing Aluminium

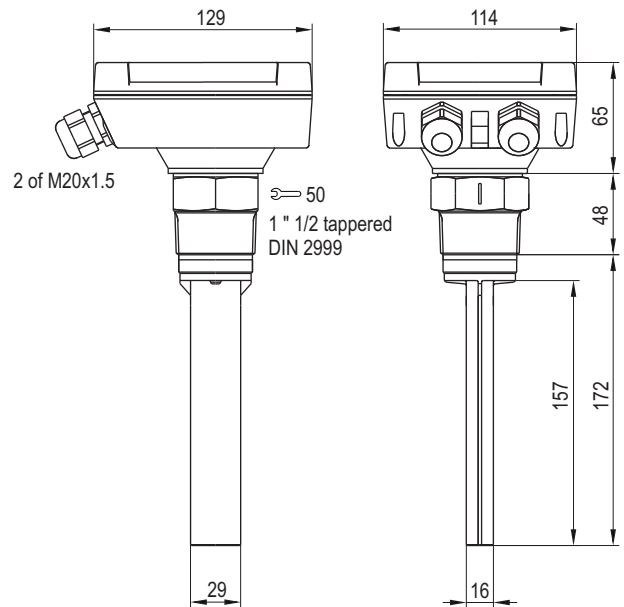
Probe Stainless Steel 1.4301

Cable Double insulation Polyuretane and shielded cable

1.5 Dimensions

Approximate measures are given in mm.

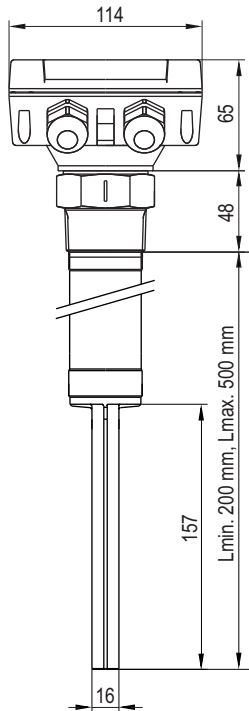
ILV-120



ILV12035-001

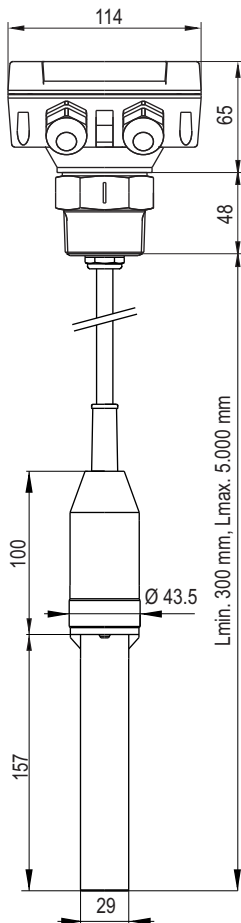


ILV-130



ILV12035-002

ILV-150

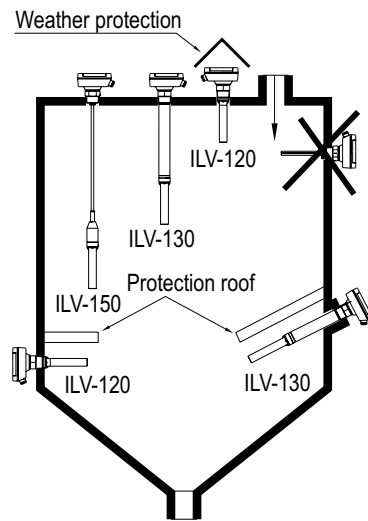


ILV12035-003

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.



ILV12035-004

- 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.

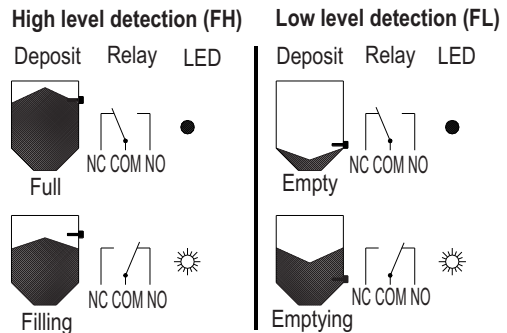
2.2 Mechanical connection

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



ILV12035-005

Detection adjustment

With the bridge selector inside the housing, it can be selected the function of the device depending on the position of the selector. To select the type of detection, change the position of the bridge selector with:

FH - High level. For high level detection, the relay is disengaged when the probe is covered of product. Red LED flashing.

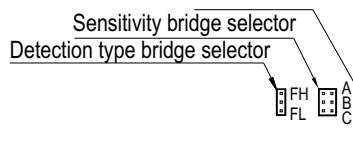
FL - Low level. For low level detection, the relay is disengaged when the probe is uncovered of product. Red LED flashing.

The Red LED is switched off if there is no supply.

Sensitivity adjustment

The vibrating controller ILV-120 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.



ILV12035-006

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. If the housing is not in the right position:
 - 1- Remove the housing cap.
 - 2- Loosen the position screw half a turn, located at the centre..
 - 3- Turn the case to the right or the left (never a complete turn) until the cable glands are facing downwards.
 - 4- Tighten the position screw and refit the cap.

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 contacts, as well.

4.3 Spare parts

- Use original spare parts.
- The spare part for these controllers are the probe, the housing and 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.

FILSA constantly strives to improve its products and reserves the right to modify designs, materials and data without prior notice.

Keep this manual for further questions!