

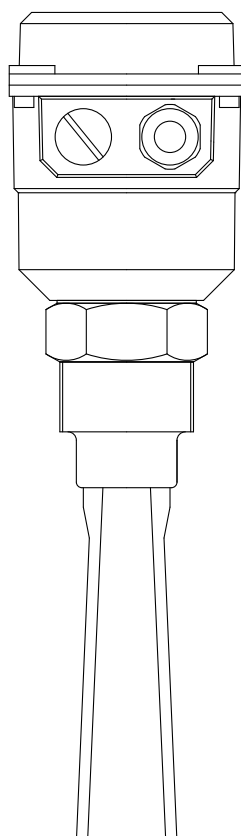


ILV

VIBRATING LEVEL INDICATOR

2

ASSEMBLY AND MAIN INSTRUCTIONS FOR USE AND MAINTENANCE



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ORIGINAL INSTRUCTIONS IN ENGLISH

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1.1 Scope of the Manual

This Manual has been prepared by the Manufacturer to provide the operating technical information for installation, operation and maintenance of the device concerned.

The Manual, which is an integral part of the device concerned, must be preserved throughout the life of the device in a known easily accessible place, available for consultation whenever required.

If the Manual is lost, damaged or becomes illegible, contact the Manufacturer for a copy specifying the serial number of the device.

If the device concerned changes ownership, the Manual has to be handed over to the new owner as part of the device supply.

The Manual is meant for specialist technical personnel appointed and authorized by the Manufacturer, owner and installer to act on the device concerned for which specific technical skills in the sector concerned are necessary (electrical, mechanical, etc.).

The illustrations may differ from the actual structure of the device concerned but do not interfere with the explanation of the operations.

In case of doubt, contact the Manufacturer for explanations.

The Manufacturer reserves the right to make changes to the Manual without the obligation to provide prior communication. The Manufacturer reserves the right to make changes to the Manual without the obligation to provide prior communication.

The technical information included in this Instruction Manual is the property of the Manufacturer and therefore has to be considered as confidential.

It is forbidden to use the Manual for purposes other than those strictly linked to the operation and maintenance of the device.

This information is provided by the Manufacturer in the original language (English) and can be translated into other languages to satisfy legislative and/or commercial requirements.

1.2 Symbols

To highlight certain parts of the text, for purposes of safety, or to indicate important information, certain symbols are used, the meaning of which is described below.

It is important to comply with and scrupulously follow the information highlighted by the symbols.



Danger - Warning

Indicates situations of serious danger which, if ignored, can be risky for the health and safety of persons.



Caution

Indicates that appropriate behaviour must be adopted to avoid posing risk for the health and safety of persons and avoid causing economic damage.



Important

Indicates particularly important technical information which must not be ignored.

List of safety and information symbols

Symbol representation	Symbol description
	Danger sign: indicates danger of electric shock caused by the presence of powered components inside the junction box or control panel.
	Obligation: read this Manual before carrying out any action on the device concerned.
	Forbidden: indicates that it is forbidden to lubricate or adjust moving parts.
	Forbidden: indicates it is forbidden to introduce hands into the equipment.

1.3 Glossary and terminology

Operator: person appropriately trained and authorized by the Production Manager for setting up the device concerned and carrying out routine maintenance.

Installer: organization with specialized technicians and appropriate equipment for carrying out risk-free installation and extraordinary maintenance.

Specialist technician: person responsible for and authorized by the Manufacturer, owner or installer to act on the device; must have specific technical skills depending on the sector concerned (electrical, mechanical etc.). The specialist technician, in addition to being familiar with the working of the device concerned, must be familiar with the working of the plant or equipment on which the device concerned is installed.

Routine maintenance: includes all the actions necessary to keep the device in good working conditions, to ensure greater operating durability and to keep the safety requisites constant.

Extraordinary maintenance: all the actions meant to keep the device in perfect working order.

Setting in safety conditions: all the precautions the authorized personnel must adopt before acting on the device concerned.

The precautions are listed below.

- Ensure that the device concerned is disconnected from all the mains and use suitable devices to prevent the possibility of the power sources being activated accidentally.
- Ensure that all the moving parts of the device have come to a complete stop.
- Ensure the temperature of the device concerned is such that it does not burn.
- Provide appropriate lighting in the area around the operations.
- Wait for the material to be handled inside the device or machine concerned to settle down completely.

1.4 Manufacturer's data and identification of device



Important

Do not change the data on the identification plate.

Keep the ID plates clean, intact and legible as regards the data they contain.

If the ID plate is damaged or is no longer legible (even just one informative element on it) contact the Manufacturer for a new ID plate and replace it.

The ID plates shown identify the device concerned and its main components.
The plates show the reference necessary for operating safety.



 TOREX® SpA I-41030 S.Prospiero (MO) www.torex.it		 WAM		 GROUP		 CE	
SN 1010001111 1.1.2012 ②				ILV ③			
Supply : 230 VAC 50-60 Hz ④				Enclosure		IP66 thread R 1½"	
Outputs: 4-20 mA ⑤				Conduit entry		M25x1.5; M20x1.5 ⑦	
L: 30m (100 ft) ⑥				T(amb)		-20°C ...+60°C	
				T(process)		-40°C ...+80°C	
				P(process)		-2...+2 bar	
See instruction manual for proper operation							

Identification plate of the ILV indicator

- 1) Manufacturer's name and address
- 2) Serial No.
- 3) Device type
- 4) Range limits
- 5) Output signal range
- 6) Cable or tape length
- 7) Application limits

1.5 Request for assistance

For all technical assistance, contact the Manufacturer's service network.

For all requests, provide the device identification data, the type of problem encountered and all other information which could be useful for identifying the problem.

1.6 Warranty

The conditions for validity and applicability of the warranty are specified in the sales contract.

1.7 Exclusion of responsibility

The device is delivered according to the specifications indicated by the Buyer in the order and the conditions valid at the time of purchase.

The Manufacturer shall not accept responsibility for safety of persons or objects and operation failure of the device if the loading/unloading operations from trucks, transport, positioning at the site, use, repairs, maintenance etc. have not been carried out in compliance with the warnings described in this Manual, and in accordance with the national legislation in force.

Likewise, the Manufacturer shall not accept any responsibility if the device concerned is used:

- improperly;
- by unauthorized persons and/or persons not sufficiently trained for installation, operation and maintenance;
- with modifications made to the original configuration without the Manufacturer's permission;
- with spare parts that are not original or are not specific for the model;
- without maintenance;
- non-pursuant to the regulatory standards and national or local legislation on the matter of occupational safety;
- non-pursuant to the regulatory standards and national or local legislation on the matter of occupational safety.

2.1 General safety prescriptions

Read the Instruction Manual carefully and strictly follow the instructions it includes, especially those regarding safety.

Most accidents at the workplace are caused by negligence, failure to follow the most elementary safety regulations and incorrect or improper use of tools and equipment.

Accidents can be prevented and avoided by taking due care, using suitable equipment and adopting adequate preventive measures.

Apply and comply with the standards in force regarding workplace hygiene and safety.

The personnel trained for and authorized for the operations has to have the psychological/physical requisites, experience in the sector concerned and the necessary technical skills for carrying out the operations assigned to them.

All workers involved in any kind of operation must be prepared, trained and informed as regards the risks and the behaviour to be adopted.

Pay attention to the meaning of the notices applied on the device, keep these legible and respect the information indicated.

Use instruments, equipment and tools that have been approved and are intrinsically safe, and cannot alter the safety level of the operations or damage the device during installation, use and maintenance.

Modifications to the device components should not be made for any reason whatsoever, without the Manufacturer's permission.

2.2 Safety prescriptions for installation

Before starting with installation, a "Safety Plan" must be implemented to safeguard the personnel directly involved and those who carry out operations in the surrounding area.

All the laws must be strictly applied, especially those concerning workplace safety.

Before proceeding with installation operations, mark off the work area to prevent access by unauthorized persons.

The electrical connections must be made in compliance with the standards and laws in force.

The person in charge of making the electrical connections has to ensure that the required standards and laws are respected before testing.

2.3 Safety prescriptions for use and operation

Do not tamper with the device concerned by using any kind of device to obtain performances different from those designed.

Each unauthorized modification can endanger the health of persons and damage the machine itself.

The operators must wear only protective clothing and personal protection devices suitable to the operations to be carried out required by the safety and work accidents prevention standards.

Before operation make sure all safety devices are installed and working properly.

During operations, prevent access to the work area by unauthorized persons.

Remove all obstacles or sources of danger from the work area.

2.4 Safety prescriptions for maintenance and replacement of components



Danger - Warning

Before carrying out any operation on the device concerned, ensure it is switched off and disconnected from all mains and use suitable devices to prevent the possibility of the power sources being activated accidentally.

Maintain the device concerned in the conditions of utmost efficiency compliant with the maintenance plan provided by the Manufacturer.

Good maintenance apart from preserving the functional features and essential safety features over time, will also allow extending the working life of the device concerned and achieving the best possible performance.

Strictly follow the procedures indicated in the Manual, especially those concerning safety.

Ensure that all the safety devices are active and working properly.

Mark off the work area in such a manner as to prevent the access of unauthorized persons.

Replace the worn and damaged components exclusively with original spare parts, whose safety, reliability and interchangeability have been undoubtedly established.

Apart from invalidation of the warranty, the Manufacturer declines all responsibility for damage to objects and harm to persons deriving from the use of non-original spare parts or due to modifications made during repairs without express written authorization.

Do not dump polluting material (oil, grease, paint, plastic etc.) in the environment, but carry out waste separation disposal depending on the chemical composition of the various products in compliance with the legislation in force.

On completion of maintenance or replacement operations, before resuming production, check that no foreign bodies (rags, tools etc.) have been left inside the device concerned.

3.1 General description of device

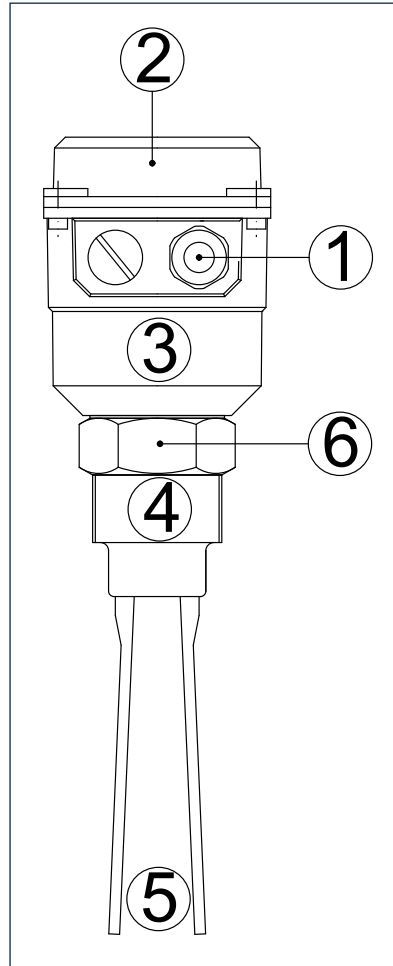
Maximum or minimum level indicator with vibrating forks.

The device is used for monitoring the level inside any type of container or silo. It is meant for dust or granular material with poor tendency to form encrustation or deposits. The food industry is also a wide sector of application. The ATEX IIIC Da/Db version of the device is available for use in the presence of explosive dust.

Possible applications:

- Industry for building constructions materials for lime, foundry sand, etc;
- Food industry for milk powder, flour, salt, etc;
- Plastic materials industry of for plastic granules, etc;
- Timber industry;
- Chemical industry;
- Mechanical constructions, etc.

3.2 Main components



Item	DESCRIPTION	Q.ty
1	M20x1.5 Cable gland	1
2	Cover	1
3	ILV Head	1
4	Connection thread	1
5	Vibrating forks	2
6	Nut	1

- 1. Cable gland:** it is used for the passage of electric power supply and signals cables from the level indicator.
- 2. Cover:** protects the electrical connections from dust and water
- 3. Head:** contains the wiring and electronic controller board.
- 4. Connection thread:** it is used for connecting the indicator on the silo or container
- 5. Vibrating forks:** detect the presence of material.
- 6. Nut:** used for the fastening of the level indicator on the silo or container.

3.3 Operating principle

The ILV oscillating probe is usually screwed to the side wall of the container, near the filling level which is to be recorded and checked. This probe can also be installed on the upper wall of the container; in this case, an extension has to be used so as to reach the required level.

The probe can be about 4 m long using an extension tube (ILVB), or 20 m using an extension cable (ILVC).

When stimulated piezoelectrically the oscillating probe vibrates at its mechanical resonance frequency. If the probe is covered by bulk materials, the damping created is recorded electronically, thereby generating an output signal. The oscillation of the device constitutes, to some extent, acting as a sort of self-cleaning mechanism.

3.4 Noise level

The ILV level indicator emits no noise.

3.5 Environmental operating limits

OPERATION CONDITIONS

Type	ILVA - ILVB	ILVC
Ambient Temperature	-40°C ... +60°C	-25°C ... +60°C
Operation temperature	-40°C ... +150°C	-25°C ... +80°C
Operating pressure	-1 ... +16 bar	-1 ... +6 bar
Moisture	0-100%	
Altitude	max 2000 m	

3.0 TECHNICAL INFORMATION

Type	ILVA - ILVB		ILVC	
Ambient Temperature	-40 °C ...+60 °C		-25 °C...+60 °C	
Operation temperature	-40 °C...+150 °C		-25 °C...+80 °C	
Powder density	Max.	Min.	Max.	Min.
	30 g/l	150 g/l	20 g/l	75 g/l
Features of bulk material	Poor tendency to form deposits			
	Particle size max. 8 mm		Particle size max. 8 mm	
Max. lateral load	500 NM		600 NM	
Max. torque	250 NM		-	
Max. traction force	-		2 kN	
Operating pressure	-1 .. +16 bar		-1 .. +6 bar	

Protection measures in case of high loads: install a protective angular element on the probe top.

MECHANICAL FEATURES

Type	ILVA - ILVB	ILVC
Casing	Body made of RAL5010 gentian blue die-cast aluminium	
Housing	IP66 in accordance with standard EN 60529	
Screw-in item		
Material	Stainless Steel 304 - 316	
Key opening	50 mm	
Thread/Flange	1 ½" GAS	
	1 ½" NPT	
	DN100 PN6	
Vibrating forks		
Material	Stainless Steel 304 - 316	
Total weight	1.7 Kg	4 Kg
Wt. of extensions	2.5 Kg/m	0.5 Kg/m

ELECTRICAL FEATURES

Type	Relay output	PNP Output
Supply voltage	19...230V 50/60Hz +10% / 19...40VDC +10%	18...50VDC +10%
Maximum oscillation	7Vss DC	7Vss
Power absorption	Max. 22VA/ 2W	Max. 0.5A (ILVA/ILVB) Max. 1.5W (ILVC)
Cable gland	M20x1.5	
Signal output	AC Max 250V,8A non inductive DC Max. 30V, 5A non inductive (ILVA-ILVB)	Permanent charge max. 0.4 A protected against short-circuit and overload. Voltage for protection against polarity inversion. Output voltage equal to the input voltage, voltage drop <2.5V.
	AC max. 253V, 4A, 500VA Phi =1 DC Max. 253V, 4A 60W (ILVC)	
Signal delay	Uncovered probe → covered for approx. 1sec.	
	Covered probe → uncovered for approx 1..2 sec.	
Safety operation (FSL, FSH)	Can be switched for minimum/maximum safety	
Sensitivity	Adjustable on two levels	
Measuring frequency	About 200 Hz (ILVA-ILVB) About 125 Hz (ILVC)	
Insulation	Power supply on output signal and output signal on output signal: : 2225Vrms	-
Protection class	I	III

3.6 Safety and information signs

Danger - Warning

Follow the signs on the plates.

Ensure the plates are legible; otherwise clean them and replace the damaged ones, applying them in their original position.

3.7 Residual risks

Perform the connections of the ILV level indicator in accordance with the indications contained in the paragraph "Electrical connections". The ILV indicator is supplied with no the power cables. When the device is started up, the operator must connect the cables in the correct manner, by performing the operations in complete safety, as envisaged by the regulations concerning the use of electricity.

The earthing connection is in charge of the installer.

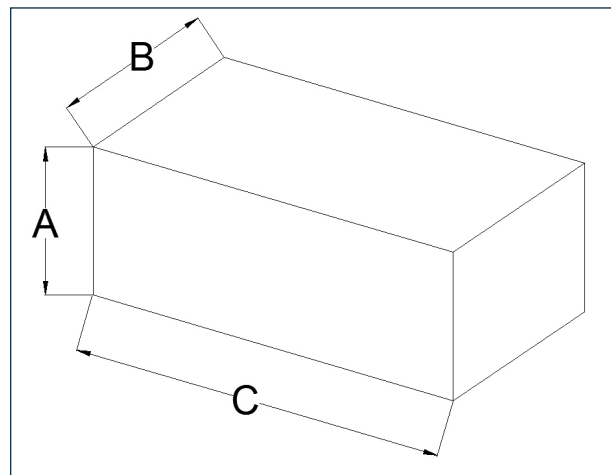
4.1 Type of packaging

The level indicators ILV are packaged separately in cardboard boxes.
Depending on the quantity ordered, the boxes can be secured on pallets covered with film or shrink-wrap.

4.2 Unpacking

The unpacking operations require the removal of the protection film (if present).
The indicators in the boxes are not fixed in any manner.

4.3 Dimensions and weights



A	130
B	200
C	400

dimensions in mm

The dimensions in the table above refer to the standard level indicator ILVA.
The packages may vary depending on the configurations, extensions and/or high temperature versions.
The weights of the vibrating level indicators can differ depending on the configuration type.

**4.0 INFORMATION REGARDING HANDLING
AND TRANSPORT**

Type	Indicator weight	Weight in Kg/m of the extension
ILVA	1.7 Kg	-
ILVB	2.3 Kg	1.9 Kg/m
ILVC	4.0 Kg	0.5 Kg/m

E.g. Calculation of weight with 2.5 m long extension.

Considering the weight of the standard indicator equal to 2.3 kg, and multiply the 2.5 m extension by the weight in meters of the extension.

$2.3 \text{ kg} + (2.5 \text{ m} \times 1.9 \text{ kg/m}) = 7.05 \text{ kg}$ total weight of ILV extension 2.5 m

**Important**

The data on the rating plate do not include the weight of the complete package (pallets or other) if present.

4.4 Disposal

The packaging material has to be disposed off or recycled in compliance with the standards in force. The operation is in charge of the installer.

4.5 Reception of goods

On receiving the goods, check if type and quantity match the data on the acknowledgement of order.

Possible damage has to be immediately communicated in writing in the space provided to this purpose in the waybill.

The carrier is obliged to accept the complaint and leave the Customer a copy of the waybill.

If the supply is "free destination" a copy of the waybill and of the complaint shall be sent to the Manufacturer or to the forwarder.

If the damages are not claimed immediately on receipt of the goods, your request for compensation may not be accepted.

4.6 Lifting and unloading methods



Danger - Warning

Carry out the lifting and handling operations according to the information indicated on the device and in the Manufacturer's Operation Manual.

The person authorized for unloading operations has to make sure all the necessary measures are adopted to ensure his or her safety and the safety of other persons directly involved.

Use means and accessories (ropes, hooks, shackles etc.) suitable for the load to be lifted.

Pay attention in the lifting phase to balance the load to avoid uncontrolled movements which could cause work injuries to persons.

Do not stack the packages as they are not sized for that purpose.

Before lifting and handling the load, read the relevant information indicated in the "Information regarding safety" Chapter.

5.1 Safety prescriptions for installation

Prior to installation

Avoid as far as possible moist and salty environments. Place the device on a wooden pallet, protected from harsh weather conditions.

Prolonged inactivity of the device after assembly

Prior to carrying out any operation, set the device in conditions of safety. Before starting the device, check the electrical connections, and all parts whose operation could be affected as a consequence of the prolonged device inactivity.

Possible reuse after prolonged inactivity

Do not store the device for long periods in moist and salty environments.

Place the device on a wooden pallet, protected from harsh weather conditions.

Prior to carrying out any operation, set the device in conditions of safety. Before starting the device, check the electrical connections, and all parts whose operation could be affected as a consequence of the prolonged device inactivity.

Before starting up the device, clean it thoroughly according to the instructions contained in the diagram concerning the safety of the device.

If the device is to be used in different conditions, and with materials other than the previous application, ensure the PERMITTED USE indications are complied with.



Danger - Warning

The replacement operations must be carried out by a specialist authorized technician with specific skills.

Provide appropriate safety measures and use suitable equipment to prevent risk of work accident to persons involved in the operations and to those nearby.

Before starting installation, define a safety plan compliant to the legislation in force regarding workplace safety.

The specialist technician, authorized by the installer or owner, must assess whether the area has been prepared correctly and whether the necessary installation equipment is available.

Define on the basis of the device configuration the assembly method.

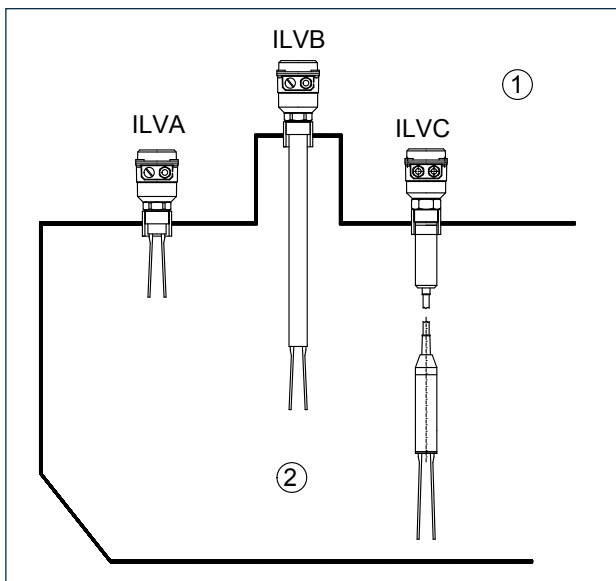
5.2 Assembling instructions



Danger - Warning

Before carrying out the operation, read the general safety requirements and the shipping and handling safety recommendations.

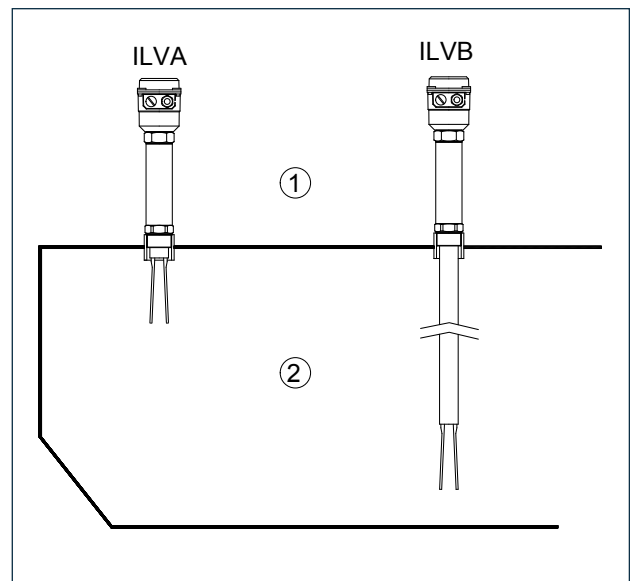
STANDARD VERSION



- ① Ambient Temperature
② Operation temperature

Type	1 - Ambient Temperature	2 - Operation temperature
ILVA	40 °C	150 °C
ILVB	40 °C	150 °C
ILVC	40 °C	80 °C

HIGH TEMPERATURE VERSION



- ① Ambient Temperature
② Operation temperature

Type	1 - Ambient Temperature	2 - Operation temperature
ILVA	60 °C	150 °C
ILVB	60 °C	150 °C

According to the previous tables, the operation temperature for ILVA - ILVB indicators are 150°C, unlike ILVC, which only withstands 80 °C.

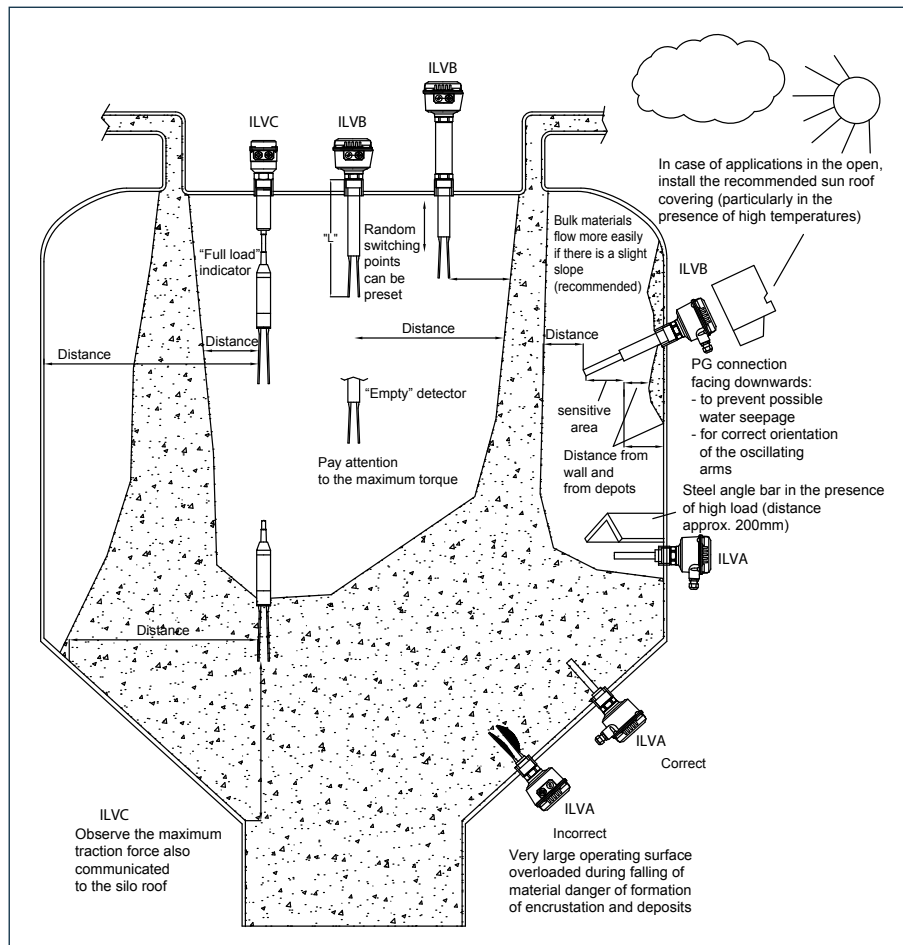
In high temperature versions, the indicator head is removed from the silo or container to better protect the electrical components present inside.

5.0 INSTALLATION AND FIXING

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INSTALLATION RECOMMENDATIONS

Type	1 - Ambient Temperature	2 - Operation temperature	3 - Connection thread Temperature
ILVA	40 °C	150 °C	80 °C
ILVB	40 °C	150 °C	80 °C
ILVC	40 °C	80 °C	85 °C



Switching point:

heavy bulk material → cover by a few mm

light bulk material → cover by a few mm

Installation of the device by screwing:

Use a 50 mm double fixed wrench.

In case of high lateral load: check the possibility of lateral installation, instead of installation on the top, with an extension device (ILVB).

**Important**

Do not rotate the body while screwing it. Do not bend, shorten or lengthen the vibrating forks to avoid breakage of the device.

Extensions length:**ILVB**

The table below lists the maximum length "L" on the basis of the deviation angle "D" as compared to vertical installation.

MAX Deviation	MAX L length
5°	4000 mm
45°	1200 mm
>45°	600 mm

ILVC

Minimum possible extension 750 mm.

Maximum possible extension 20.000 mm.

5.3 Instructions for ATEX IIIC Da/Db zone

If the device is installed in a ATEX IIIC Da/Db zone, implying hazard due to the presence of explosive dusts, follow the related standards and regulations.

SAFETY INSTRUCTIONS

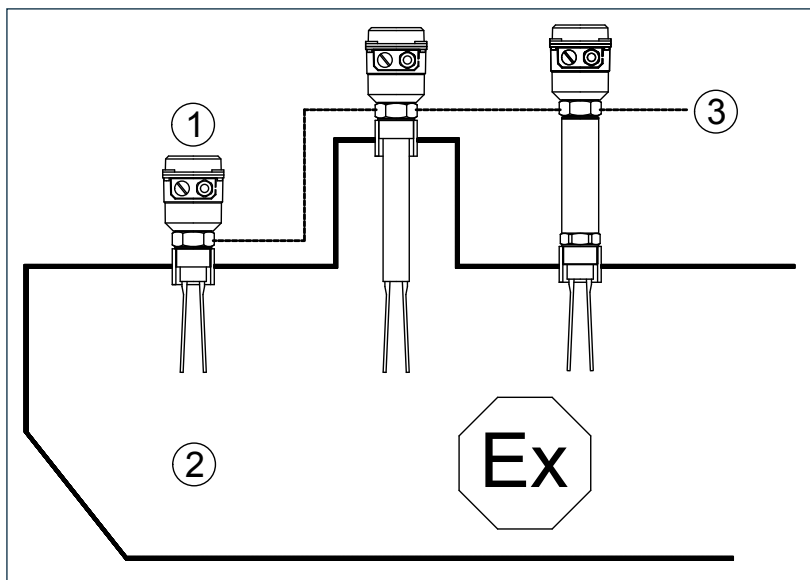
On connecting the terminals of the device, follow the local standards and regulations.

On connecting the terminals in Zone 21 implying hazard due to the presence of explosive dusts, follow the regulatory standards in force for installation and connection of the cables.

- Provide protection for the relay contacts and output transistor against voltage peaks with inductive voltages.
- Check the supply voltage applied on the basis of the specifications shown on the electronic module before starting up the device.
- Make sure the exposed surface of the cables does not exceed 8 mm in length (hazard of contact with powered parts).
- Make sure the cable gland tightens the cable safely, fixing it properly (water seepage hazard).
- Position a power switch near the device.
- The electrical safety of the device cannot be ensure in case of improper or non-compliant use.

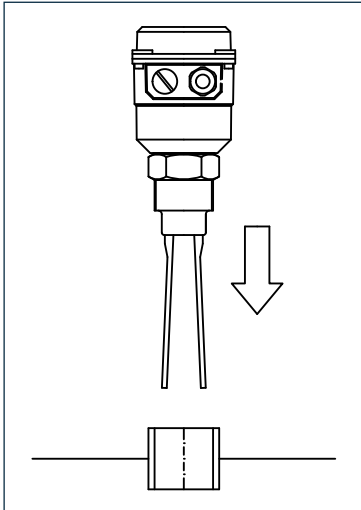
In case of fault, the power supply must be cut off automatically by means of a safety switch F1 in order to protect the user from indirect contact with hazardous electric voltages.

TEMPERATURE VALUES IN ATEX IIIC Da/Db ZONES

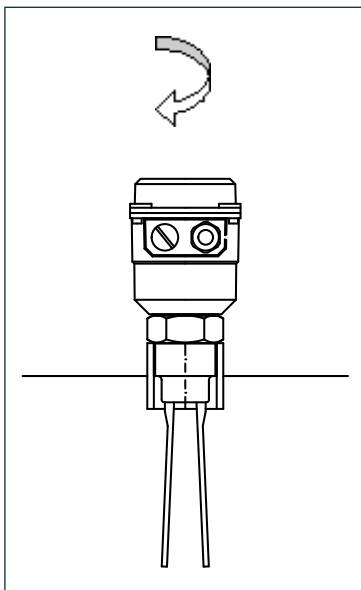


- ① Ambient Temperature
- ② Operation temperature
- ③ Connection thread temperature

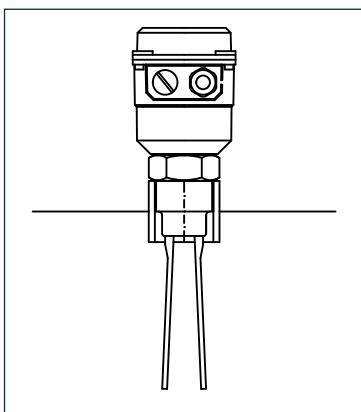
5.4 Mechanical connections



Position the level indicator near the threaded bushing; bringing it near the threading.



Screw the level indicator by rotating its head clockwise to fit flush with the nut provided on the thread top.



Make sure the lever indicator is fixed firmly to the threaded bushing present on the silo or the container.

NOTE: In case of applications with high pressures inside the silos or container, it is recommended to apply a layer of Teflon on the level indicator thread.

5.5 Electrical connections

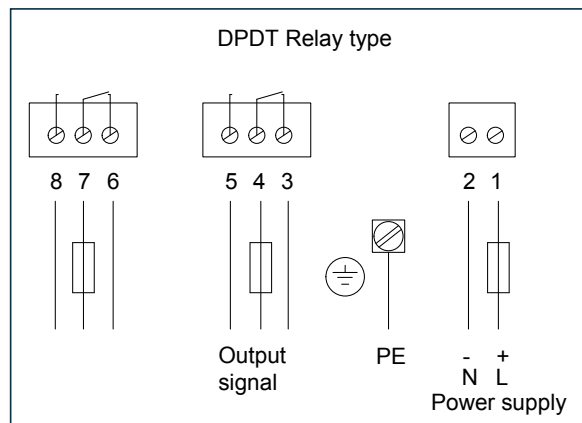
Before carrying out any intervention on the machine make sure it has been set in safety conditions.

Pay attention to the following indications:

- The connection of the ILV indicator to the mains must be carried out by specialized personnel.
- In case of improper use or wrong installation, electrical safety cannot be ensured.
- Prior to carrying out the connection, make sure the voltage (given on the device ID plate inside the cover) matches the mains.
- The electrical connection must be made according to the local provisions.
- Provide near the device a switch meant to cut off the power supply.
- The device must be earthed, especially if installed in applications with pneumatic conveyors and non-metallic containers.
- All electric wires connected to your device must have at least a 250 VAC insulation and withstand a temperature of at least 90 °C.

ILVA

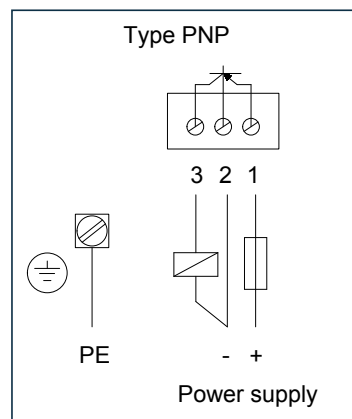
ILVB



Supply	19...230V 50-60 Hz +10% 22VA
	19...40V DC +10% 2W
	Power supply fuse max.10A
Output signals	DPDT floating relay
	AC max.250V, 8A, non inductive
	DC max.30V, 5A, non inductive
	Output fuse max.10A

ILVA

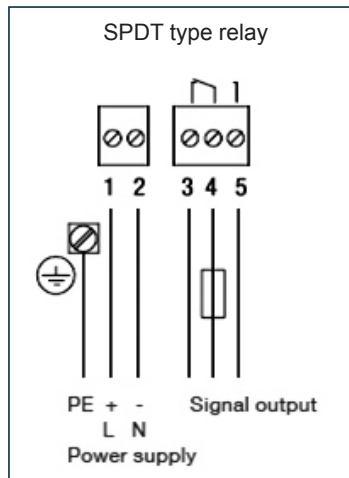
ILVB



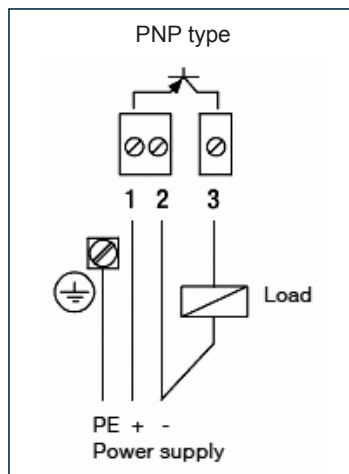
Supply	19...50V DC +10% 0.5 A
	Fuse: max.4A
Output signals	Max.4A
	Output fuse max.10A
	Output signals for: PLC, relays, meter or lamp

5.0 INSTALLATION AND FIXING

TOR.056.--.M.EN Issue: A1

ILVC


Supply	19...230V 50-60 Hz +10% 8VA
	19...55V DC +10% 1.5W
Output signals	SPDT floating relay
	AC max.253V, 4A, 500VA at cos Phi=1
	DC max.253V, 4A, 60W
	Output fuse max.10A

ILVC


Supply	18...50V DC +10% 1.5W
	Fuse: max.4A
Output signals	Max. 0,4A
	Output fuse max.10A
	Output signals for: PLC, relays, meter or lamp

5.6 Adjusting the indicator

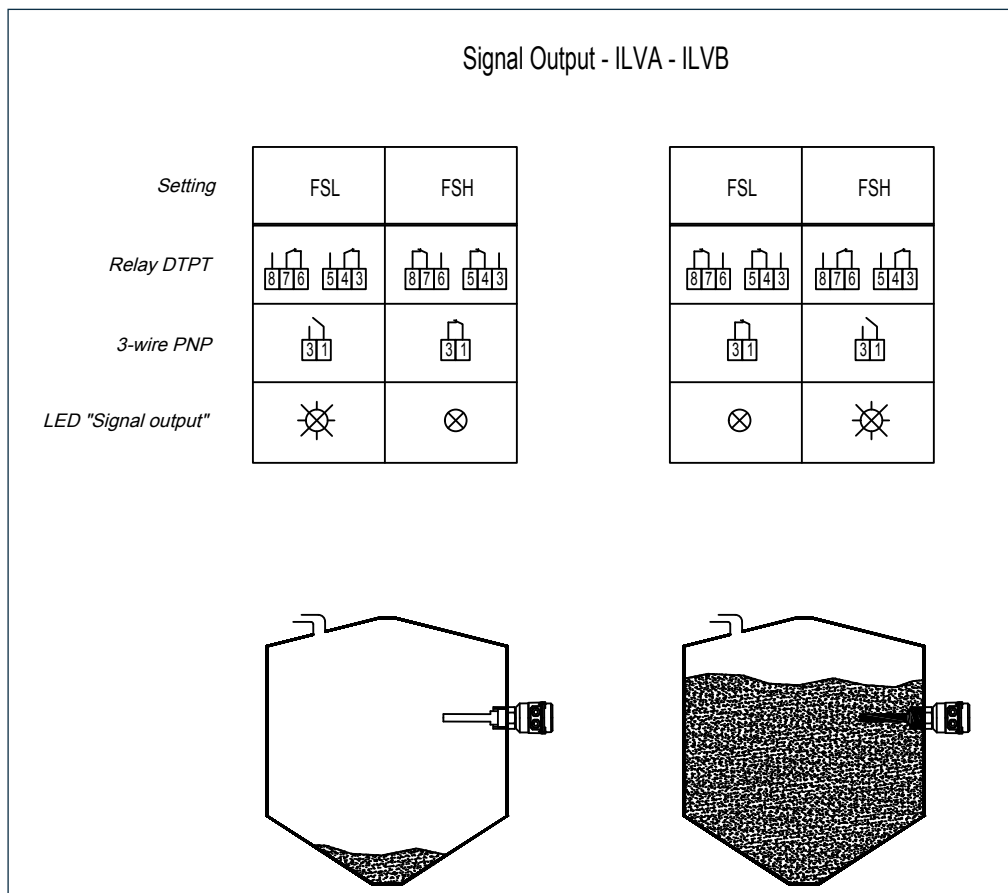
MINIMUM / MAXIMUM SAFETY LEVEL

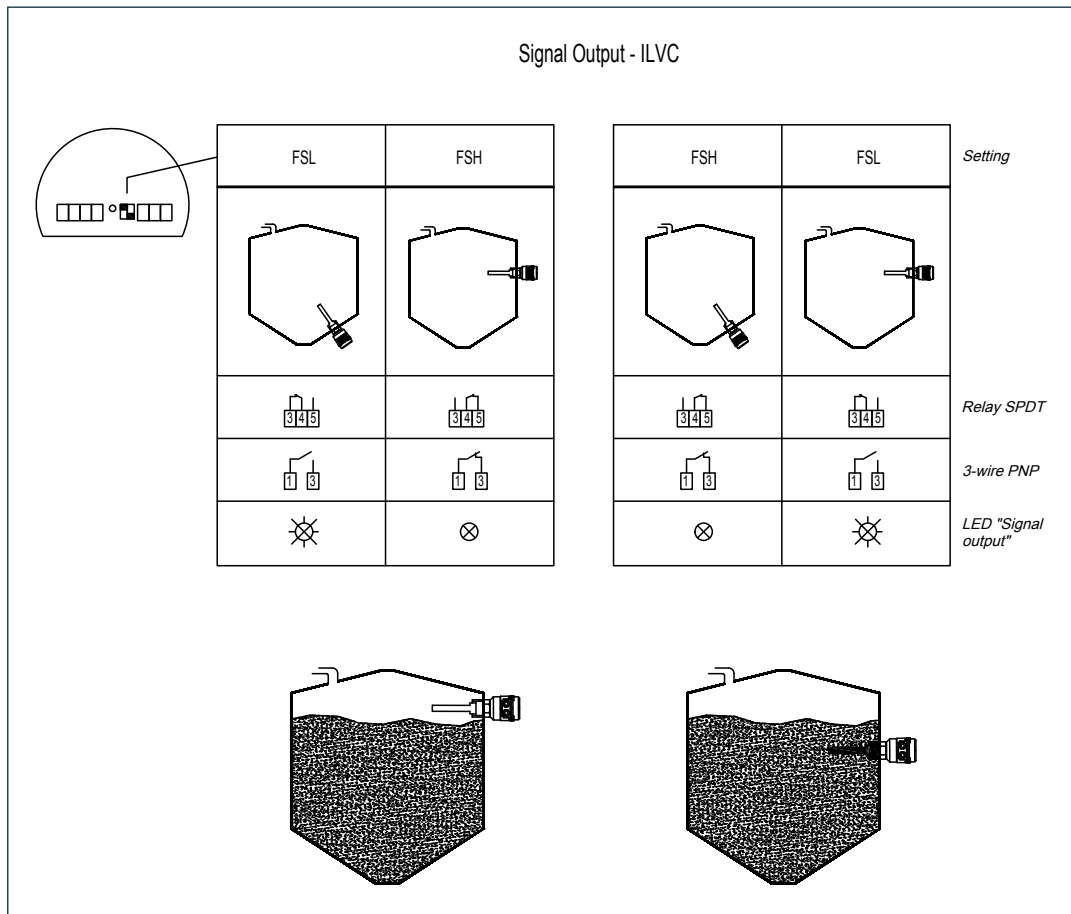
ELECTRONIC BOARD



If the probe is used to indicate the full load status, set the maximum safety level on FSH. Drop in current or line interruptions are interpreted as a “full” signal (overload protection).

If the probe is used to indicate the empty status, set the minimum safety level on FSL. Drop in current or line interruptions are interpreted as a “empty” signal (protection against empty running).

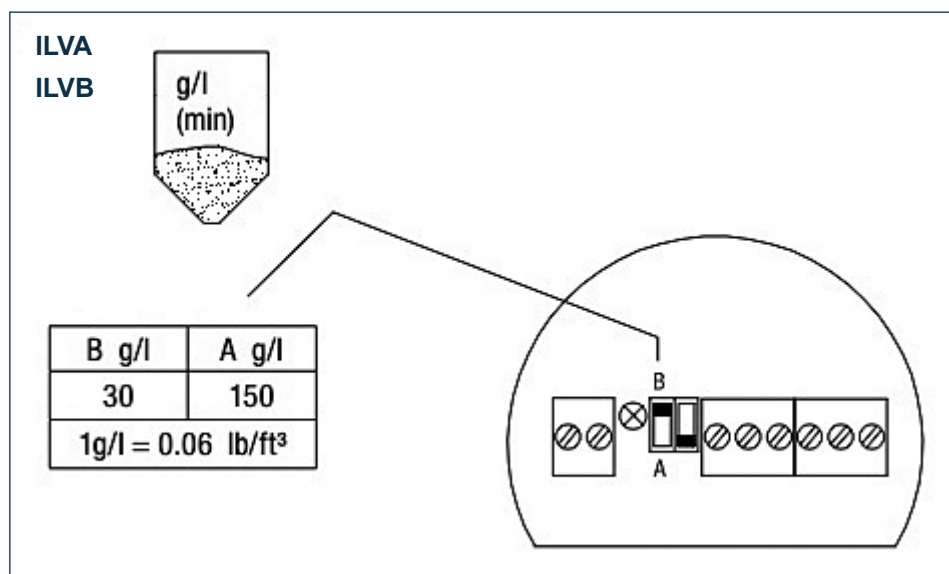




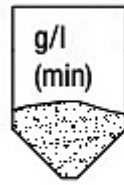
ADJUSTING THE SENSITIVITY

All probes are factory-set and normally no further adjustments are required. If the bulk material handled has a strong tendency to form encrustation or deposits, the adjustment switch must be set in position "A" in order to increase the sensitivity of the probe (factory-setting = position "B").

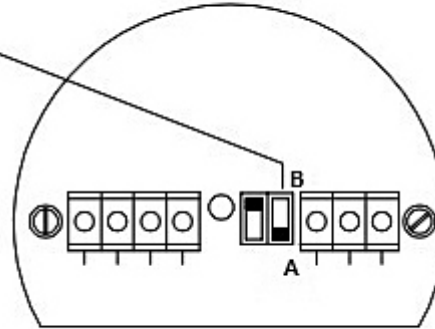
If the indicator is meant for special applications, please contact the supplier.



ILVC



B g/l	A g/l
20 / 5 ⁽¹⁾	75
1g/l = 0.06 lb/ft ³	



6.1 Production Start-up

Set the device in safety condition before start-up.

Before starting the device, check the electrical connections whose operation could be affected due to the prolonged device inactivity.

6.2 Machine shut-down at the end of the work cycle

Clean the inside of the device and protect it before storing it for long periods.

Avoid moist or salty environments, if possible.

Place the device on a wooden pallet.

6.3 Reuse after long shut-down



Importante

If the device is to be used in different conditions and with materials other than the previous application, ensure the “Permitted use” indications are complied with.

During inactivity avoid salty and moist environments.

Place the device on a wooden pallet.

Set the device in safety condition before operating it.

Before starting the device, check the electrical connections whose operation could be affected due to the prolonged device inactivity.

Before starting up the device, carry out a complete cleaning cycle in accordance with the indications in the powder safety chart.

If the device operates in different conditions, with materials different from the previous ones, check the compatibility of such use on the basis of the indications given in the section PERMITTED USE.

6.4 Storage of the device for extended period

For a correct storage of the device in case of for long shut-downs, the vibrating forks must be cleaned thoroughly and the condition of the electrical connections must be checked.

**Danger - Warning**

Before performing any maintenance operation, make sure the personnel involved are equipped with the necessary personal protection equipment.

Set the device in safety conditions.

The power must be cut off using the main switch equipped with a safety key that prevents any accidental start ups.

The key has to be kept by the person that operates on the device.

In case there have to be reached ILV indicators installed at a hight, use always a platform so as to avoid slipping, tripping or falling of the operators.

Generally, the device requires no maintenance. However, on the basis of the application type, it is recommended to check the following:

- mechanical damage to the vibrating forks;
- mechanical damage to the extension cable;
- general cleaning of the vibrating forks.

7.1 Cleaning the device

Prior to carrying out any operation, set the device in conditions of safety.

When removing the dust that may be present on the device , take care not to disperse it in the environment.

Do not keep the indicator inactive for long periods especially if it has not been disassembled and cleaned.

For a safe operation the user must use cleaning products suitable to the purpose, on the basis of the plant type; avoid toxic or flammable products.

In case the device is used with food products, it is mandatory to use non-toxic detergents, suitable to the type of application.

The cleaning frequency depends on the type of product being handled and on the plant type.

In case of toxic or dangerous products, the cleaning residues must be collected in closed tanks and disposed of in accordance with the instructions of the product safety chart.

Do not point pressurized water jets on the electrical components.

Clean thoroughly the indicator each time it is used for foodstuffs.

8.1 Safety recommendations for replacement



Danger - Warning

The replacement operations must be carried out by an authorized specialized technician with specific skills in the sector concerned (mechanical, electrical etc.).

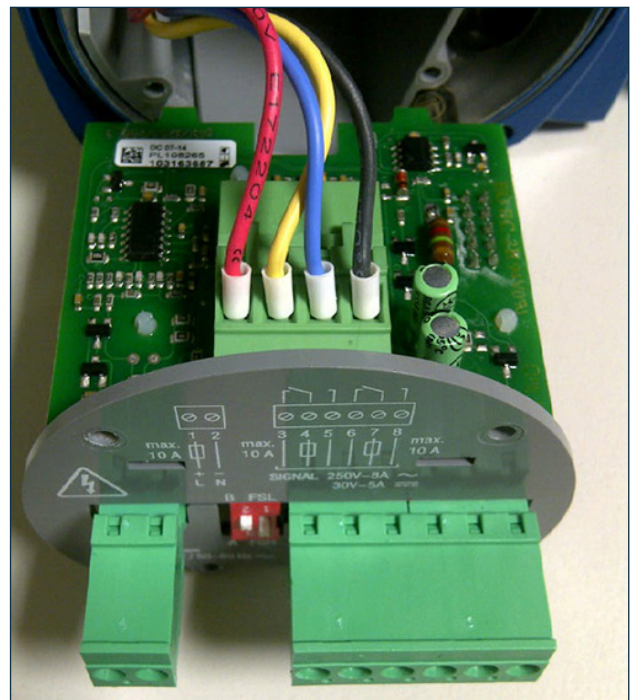
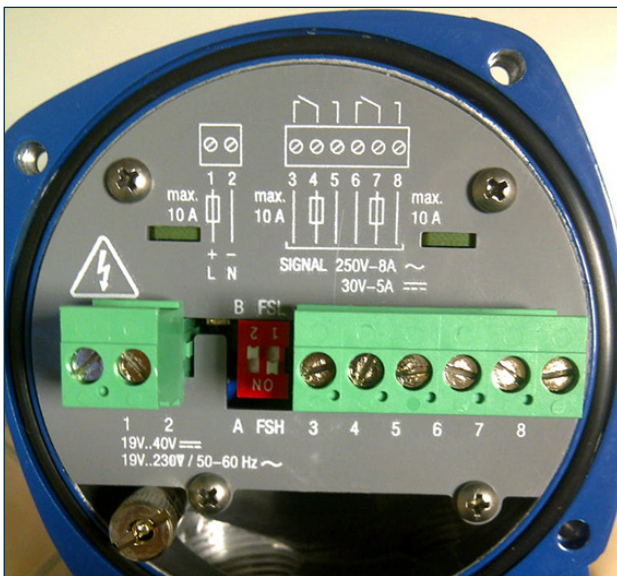
Provide appropriate safety measures and use suitable equipment to prevent risk of work accident to persons involved in the operations and to those nearby.

Activate all the safety devices envisaged and prevent access to controls which, if activated, could cause work injuries to the persons involved in the operations.

8.2 Replacing the electric module

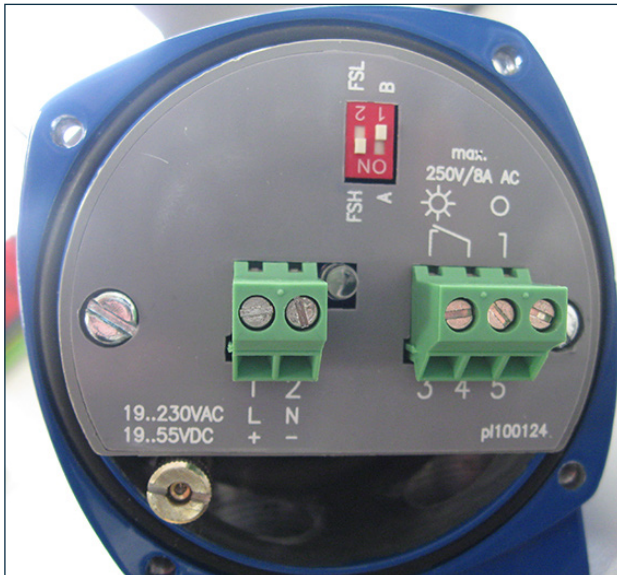
ILVA – ILVB

- 1) Open the lid and disconnect the supplies cables (1,2,3....8) of device;
- 2) Loosen the four screws that fasten the electronic module;
- 3) Remove the sensor cables (red, yellow, blue, black);
- 4) Extract the electronic module;
- 5) Insert the sensor cables (red, white, blue and black);
- 6) Fit the spare electronic card and tighten the four fastening screws;
- 7) Connect the cables to the related supplies (1,2,3....8) and close the lid.



8.0 REPLACEMENT OF PARTS
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ILVC

- 1) Open the lid and disconnect the supplies cables of device;
- 2) Loosen the two screws that fasten the electronic module;
- 3) Extract the electronic module;
- 4) Fit the spare electronic module and tighten the two fastening screws;
- 5) Connect the cables to the related supplies and close the lid.



8.3 Returning the device

When returning the device, use the original packaging if it has been preserved, otherwise place it in a container that protects as much as possible from impact during transport. However, make sure there is no material residue inside the device.

8.4 Dismantling and disposal

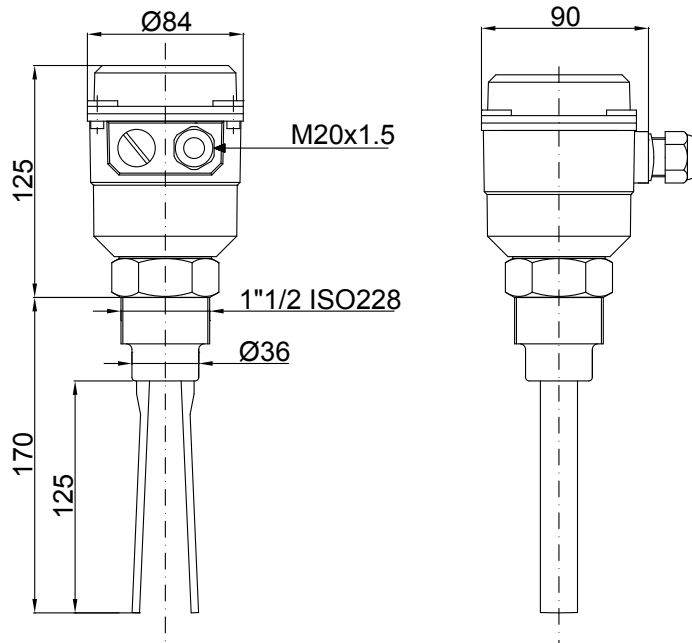
The dismantling of the device must be entrusted to personnel specialized in such activities, having the suitable skills.

Dismantle the components of the device; if necessary contact the Manufacturer for further information.

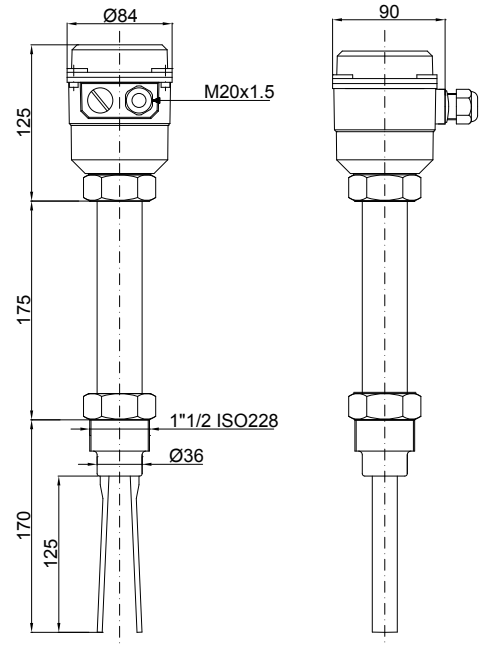
The components dismantled have to be separated on the basis of the materials they are made of, in compliance with the laws on “differential collection and disposal of wastes”.

With reference to the WEEE Directives, electrical and electronic components, marked with a special symbol, have to be disposed off in authorized collection centres meant for the purpose.

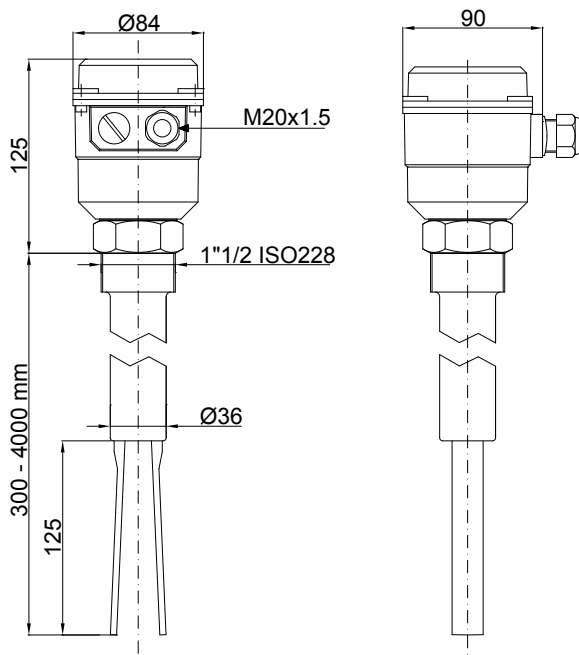
Unauthorized disposal of “Waste Electrical and Electronic Equipment” (WEEE) is punishable with fines governed by the laws concerning the matter.

10.1 Overall dimensions
ILVA


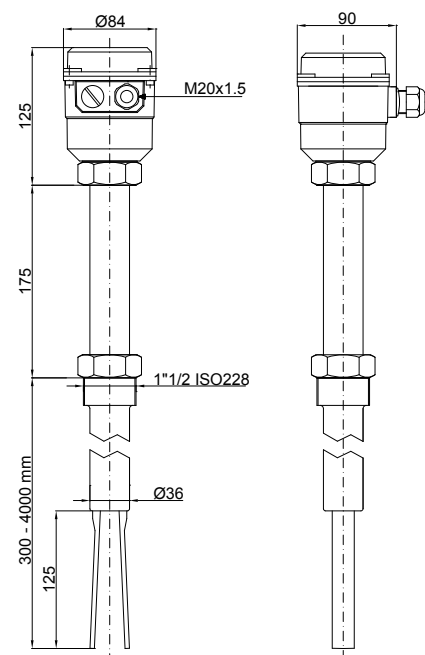
Ambient Temperature: **-40 °C ÷ +40 °C**
Operation temperature: **-40 °C ÷ +150 °C**

ILVA with extension


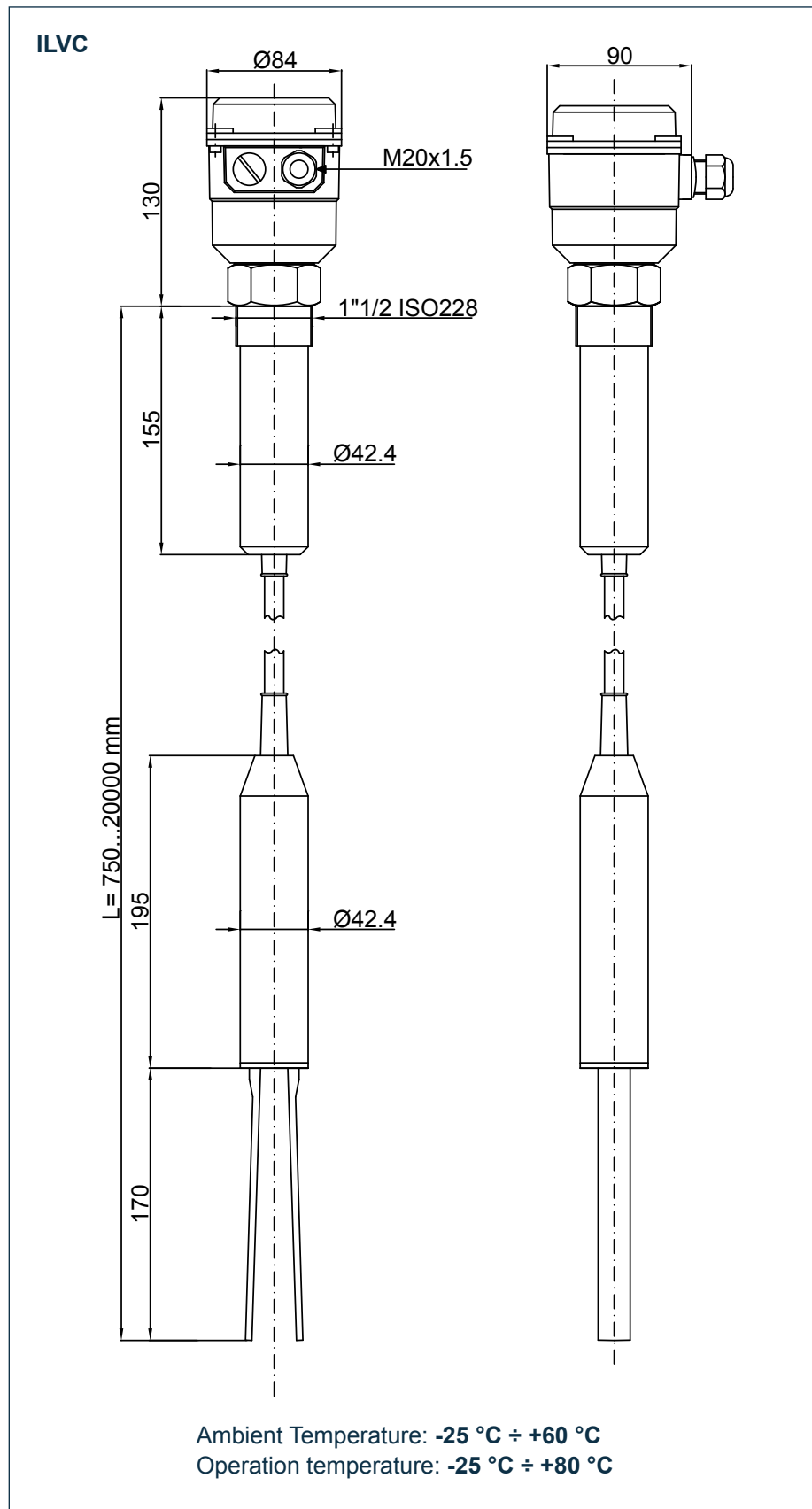
Ambient Temperature: **-40 °C ÷ +60 °C**
Operation temperature: **-40 °C ÷ +150 °C**

ILVB


Ambient Temperature: **-40 °C ÷ +40 °C**
Operation temperature: **-40 °C ÷ +150 °C**

ILVB with extension


Ambient Temperature: **-40 °C ÷ +60 °C**
Operation temperature: **-40 °C ÷ +150 °C**



A1 Declaration of Incorporation

The manufacturer:

TOREX S.p.A.

located in

Via Canaletto, 139/A - 41030 S.Prospiero Modena - Italy

under its own responsibility declares that:

the vibrating level indicator series ILV

complies with the requirements imposed by the following directives:

Directive 2014/30/EU of the European Parliament and the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility;

Applied standards for evaluation of the unit:

EN 61326-1:2013 (Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements)

Directive 2014/35/EU of the European Parliament and the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.

Applied standards for evaluation of the unit:

DIN EN 61010-1:2013 (Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements)

EN 60529:1997 (IEC 529) (Degrees of protection provided by enclosures - IP code)

Directive 2011/65/EU RoHS of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

The signing company is committed to provide, in response to a reasoned request by national authorities, relevant information on products covered by this declaration, without prejudice to the rights of intellectual property of the manufacturer. The information will be transmitted directly to the national authorities having requested.

Via Canaletto, 139/A - 41030 – S.Prospiero Modena - Italy, July 1st 2016

The person authorized to provide
the technical documentation:

Nino Ratti



The legal representative:

Nino Ratti



TOREX S.p.A. Via Canaletto, 139/A – 41030 – S.Prospiero Modena - Italy

