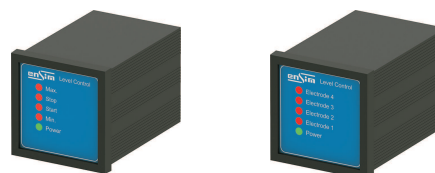


OPERATING MANUEL

Model : **SK-R**
LEVEL CONTROL DEVICE

enSim
SENSORS

Information in this manual is reviewed and completely reliable. Responsibility is not assumed due to any typing error. Products in this manual are available only for information purpose and they may be changed without notice.



Models :

SK-Pi (Conductivity Type Pump Control)

SK-Ps (Switch Type Pump Control)

SK-R (4 Independent Relays)



Important Notes:

Used Symbols :



: Caution



: Note



: Disposal










-  Please read this manual carefully before installation of the **level control device**. User is responsible for accidents and losses arising from failure to comply with the warnings in this manual.
-  In the event that **level control device** is broken, take measures in order to prevent accidents and losses which can occur in its system.
-  There is not any fuse and circuit breaker on the instrument; they should have been added to the system by the user.
-  This manual should be stored in an easily accessible place for subsequent use.
-  The manufacturer's liability cannot exceed the purchase price of the device according to the law.
-  Do not make any modification on the instrument and do not try to repair it. Reparation should be made by authorized service staff.
-  Do not operate the system before making assembly in compliance with the assembly chart related to the instrument.
-  Products which do not contain label and serial number are considered to be excluded from the warranty scope.
-  The instrument's useful life, determined and announced by the ministry, is 10 years.

Table of Contents :

1.	General Information.....	2
2.	Installation	3
3.	Failure Detection.....	8
4.	Disassembly of Instrument	8
5.	Service	8
6.	Recalibration.....	8
7.	Repair.....	8
8.	Disposal	8
9.	Terms of Warranty	8
10.	Terms of Return	8

1. General Information :

1.1. Material Acceptance

Check that there is no damage on the packages during the transportation immediately after the material acceptance. If packages are damaged, open the packages immediately and check whether products are affected or not, if there is any damage, send your complaint report to the transporter company and its photocopy to the address of our company.

11.2. Information about Areas of Use

It provides automatic driving of equipments that control the liquids in the tank (such as pump, hydrophore and solenoid valve).

It must be used in the permitted usage environment and application areas!

It is not used in corrosive environments, explosive and combustible environments.

Compatibility with the medium to be measured should also be considered.

In case of improper use, modification and damage, no liability is accepted and these cases are not covered by the warranty.

Ambient Conditions:

Relative Humidity: 7-70 %RH

Ambient temperature: 70 °C (It is not used under -10 °C)

1.3. Working Principle

SK-P Level control device is used together with level sensors. When magnetic field of magnet within the buoy moving along tube according to liquid level comes up to the reed sensor, it opens or closes the electric circuit. Such changes and alarm or level information of reed sensors can be evaluated with SK-P control device.

Automatic control has been provided by sending signal to solenoid valve bobbin or contactor of engine through relay output. Furthermore, it is possible to receive signal or warning with light through a relay for the purpose of alarm.

This circuit can be controlled through an additional button manually

1.4. Technical Specifications and Pictures:

Technical Specifications:

Supply	220 VAC (50 Hz)
Power consumption	Max 2.8 VAC
Input	Contact or electrod information from levelconditions
Output	4 pc. 5 Amp. Independent Relay SK-R 2 pc. 5 Amp. Start-Stop Relay + SK-Pi SK-Ps - 2 pc. 5 Amp. Min. Max. Relay Date memory for outputs. Protected against power cut or arrive, continues to work from stapped point.
Working Temp.	0 - 50 °C
Storage Temp.	(-)20 °C ... (+)70 °C
Dimension	72 x 72 mm

Sensor models that can be used:

SK-R

ELC , ECAS , ELSy , ELY
ELS , ELM , ELP , ELB , ECAM
ELF , ELZ
ELG-K1 , ELG-K2 , ELG-K3

SK-Pi

ELC

SK-Ps

ECAS , ELSy , ELY
ELS , ELM , ELP , ELB , ECAM
ELF , ELZ
ELG-K1 , ELG-K2 , ELG-K3

1.5. Target Group

This operating manual has been prepared for qualified technical personnel.

1.6. Security Notes



Please consider below notes for avoiding hazardous cases around operator and its environment.

Only users that authorized in work safety and whom also have read the manual should setup this equipment.

Work safety, accident avoid regulations and national/local setup standards must be met.

Equipment should only be used in stated specifications.

Equipment must only be mounted while there is no pressure.

1.7. Package and package contents

Please check whether you have taken delivery of below listed content completely or not and check its conformity with criterions in your order:

- * Level control device
- * Panel apparatuses
- * This operating manual

2. Installation :

2.1. General Notes :

The device installation is in 2014 / 34 / EU criteria to ensure the safety of atmosphere and people from explosions, must only be done by staff who knows the safeguards.

Do not apply force to the instrument during the installation!

Do not forget that instrument is precise, carry it carefully and prevent not to be damaged.

It should be guaranteed that there are not any magnetic particles.

The Max. working pressure should not be exceeded.

2.2. General Installation Stages

*Remove **Level control device** from the box carefully

*Check whether gasket is appropriate for fluid or not. If is not appropriate, contact with the producer.

*Then, apply below mentioned explanations according to structure of the design.

2.3. Special Notes

*Please make sure that it fits the board exactly after installation. Such a situation can cause sealing problems.

*It should be placed in a fully upright position to the panel. Check that the tabs are fully inserted into the slot.

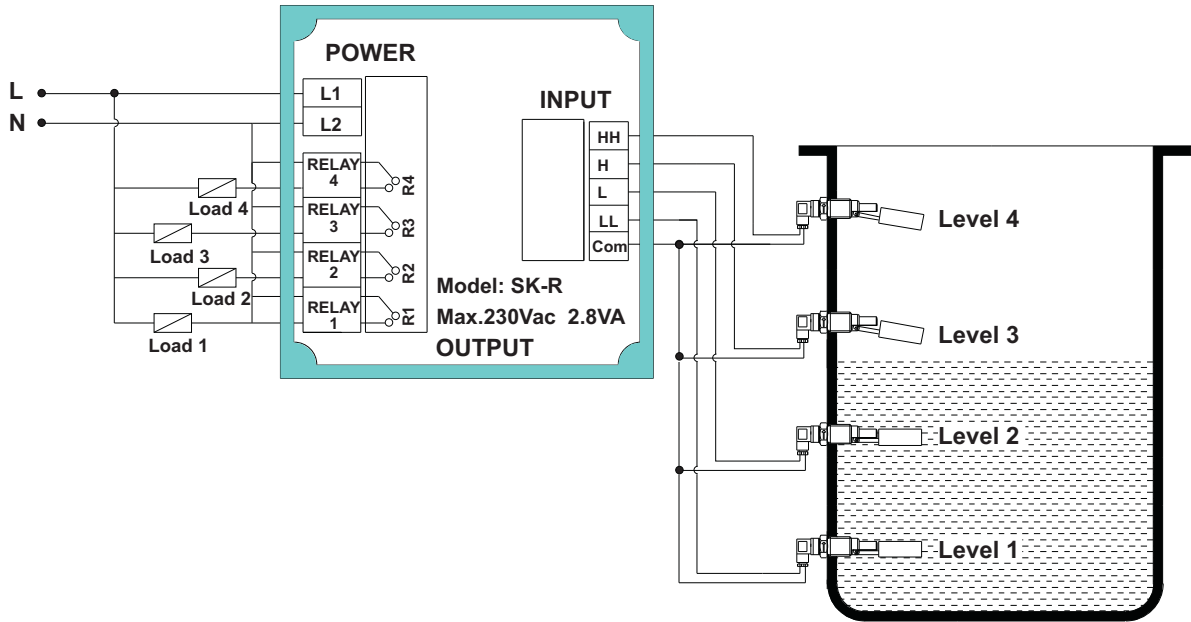
*It will be sufficient to tighten the screws so that the device does not shake. Otherwise, you may damage the device or the board.

*In the operating conditions, **Level control device** may be hot according to situation of fluid, in this case, do not touch the indicator, otherwise your skin is damaged.

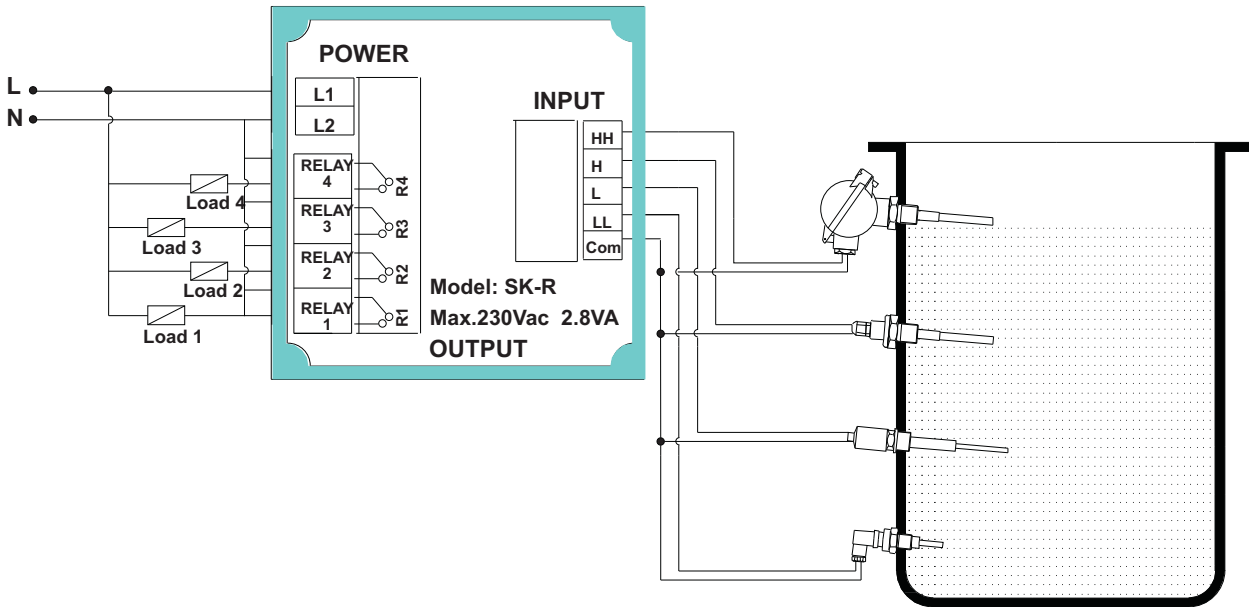
2.4. Electrical Installation

Please pay attention to the following points for the smooth operation of your level control relay.

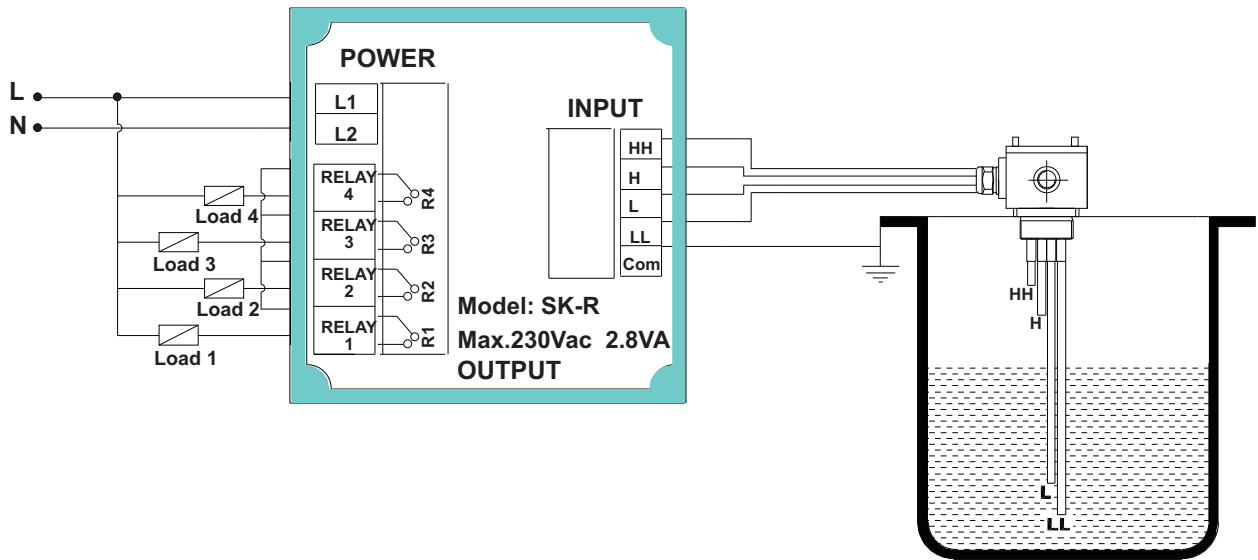
To receive relay output from level switches (SK-R)



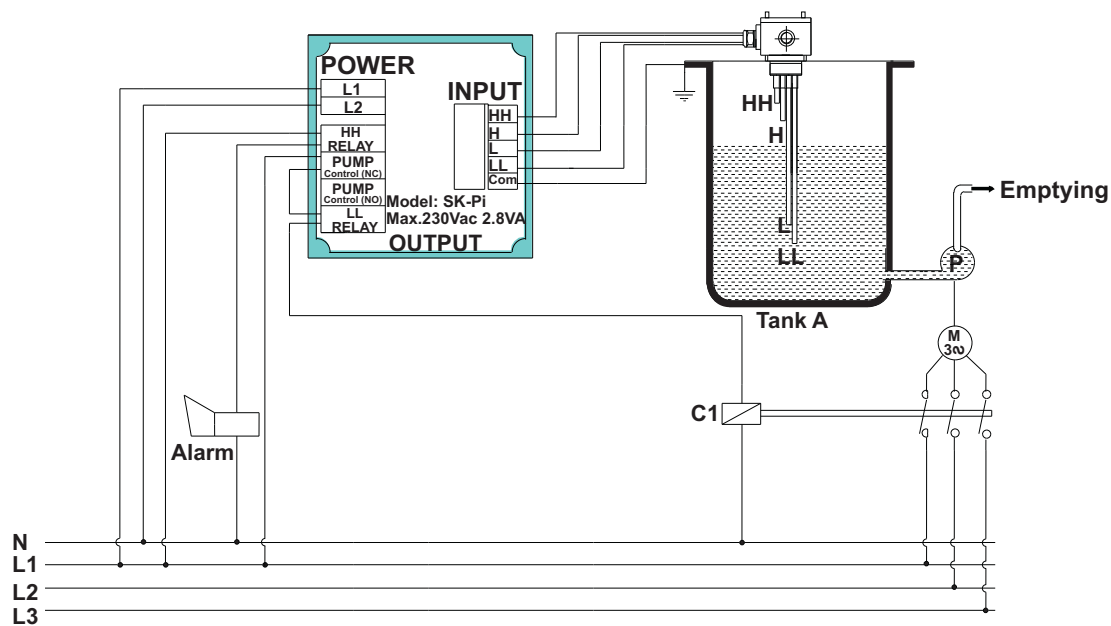
To receive relay output from conductivity probes (SK-R)



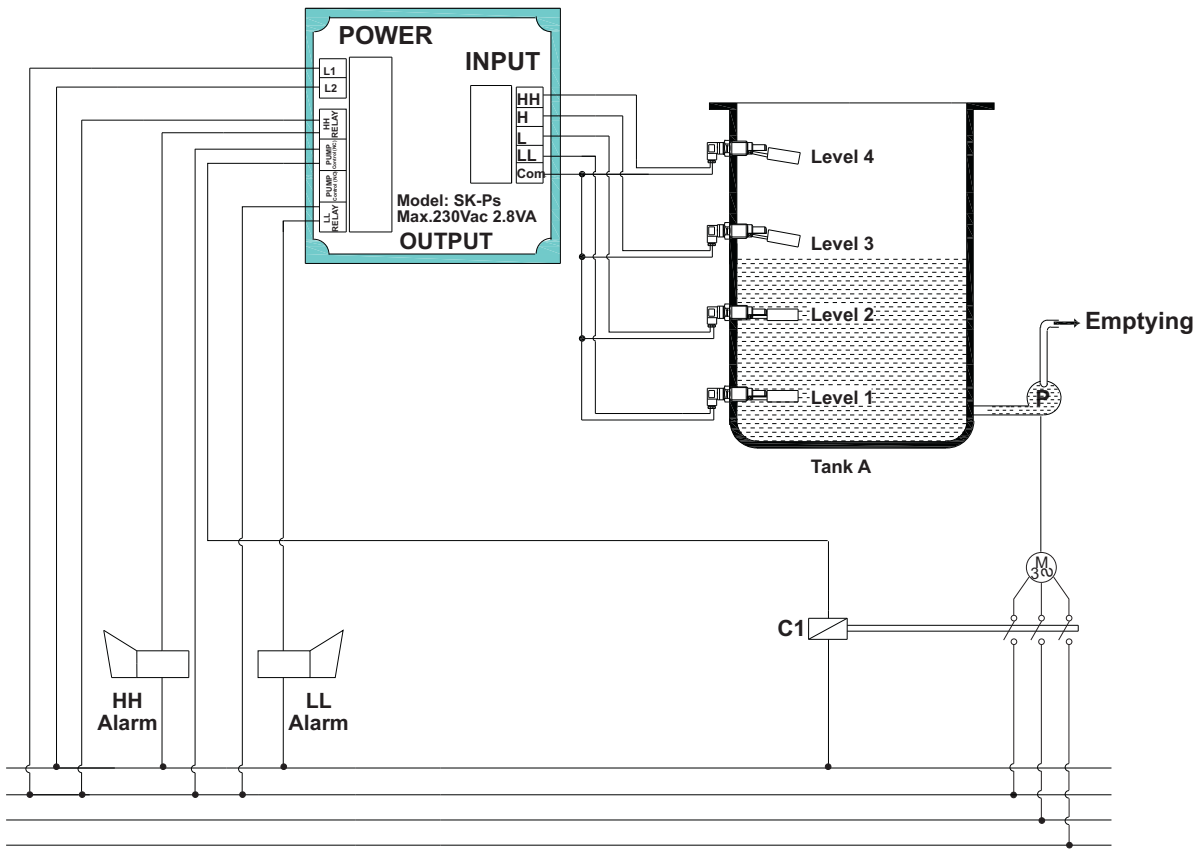
To receive relay output from conductivity probes (SK-R)



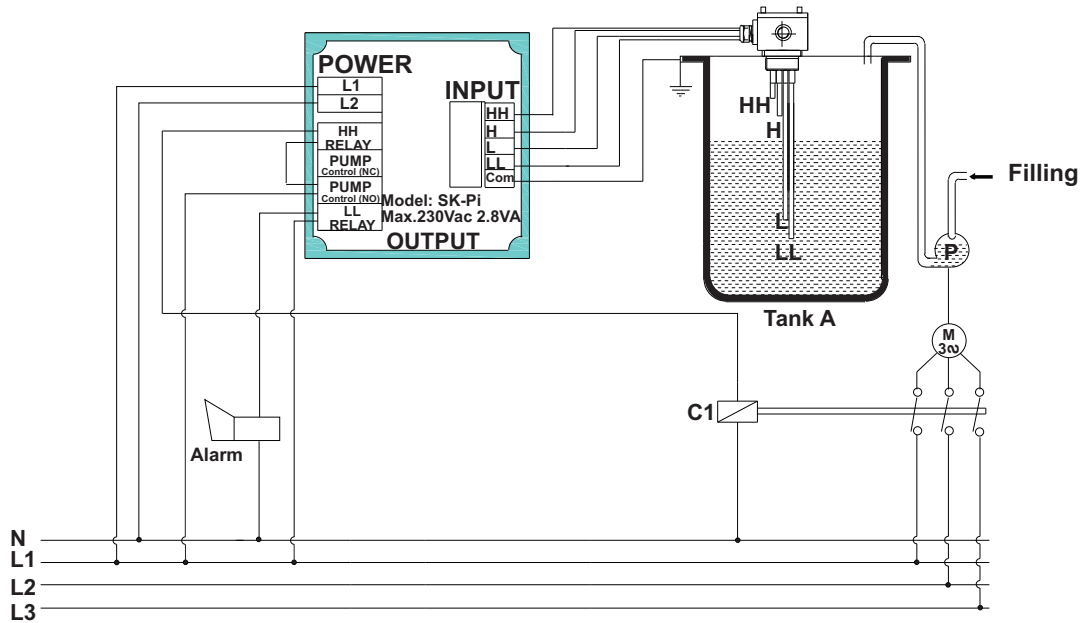
Emptying Circuit (SK-Pi)



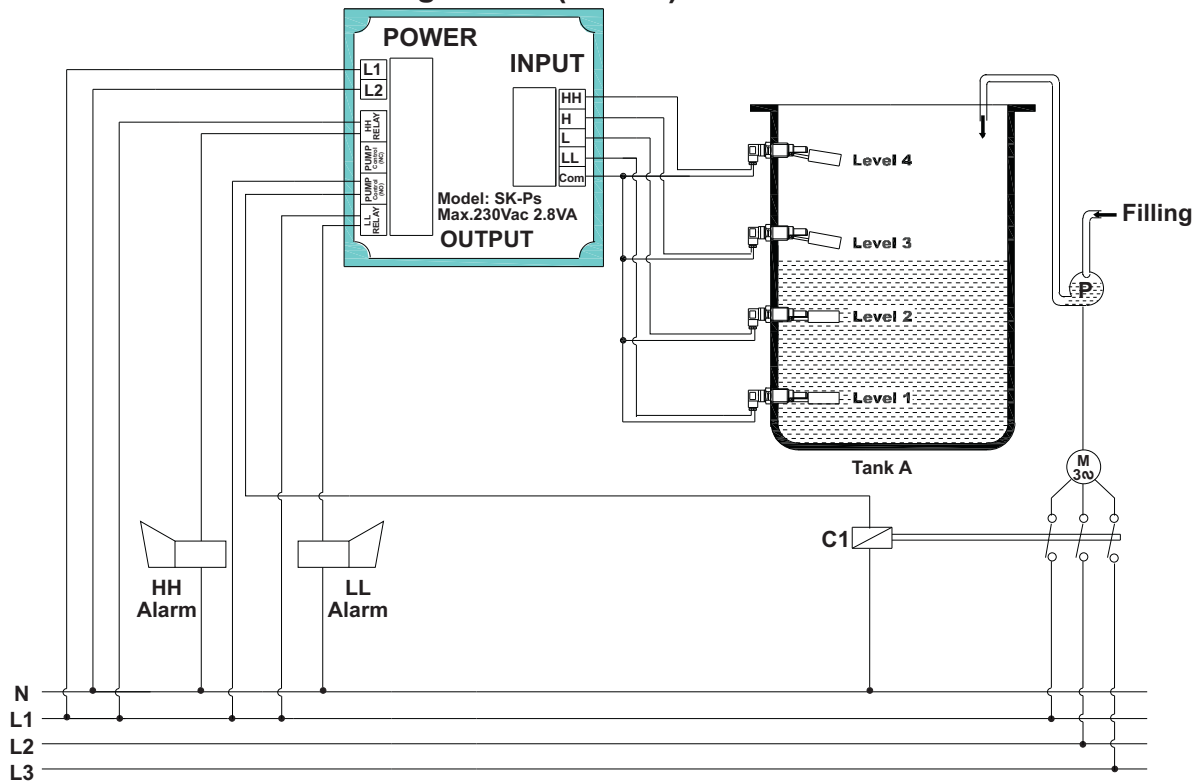
Emptying Circuit (SK-Ps)



Filling Circuit (SK-Pi)



Filling Circuit (SK-Ps)



3. Failure Delection

Breakdown	Probable cause	Failure detection \ Correction
The device light does not turn on	-Instability in the supply circuit has thrown the fuse of the device.	-Please check it supply clemens.
The contact does not output	-Output is Non-contact. -Input is Non-contact. -Input fuse has been turned off.	-Please check it output clemens. -Please check it input clemens. -Please get contact with producer.
There is a smell coming from the device and it does not work	-Exposure to liquid contact or excessive humidity & Electronic material fail.	-Please get contact with producer.

If you find an error, try to eliminate it by using this table or send the instrument to our service address for repair.



The instrument should be repaired only by authorized service! Serial number shall be indicated to the authorized service center.

4. Disassembly of Instrument

Instrument should be disassembled while feeding and pressure is not available!

5. Service

The instrument does not require maintenance. If it is desired, residue accumulated inside should be blown according to kind of fluid and instrument can be cleaned with soft cleaning solutions. Measures should be taken during the disassembly.

6. Re-Calibration

During long period usage of level switch, there might be deviations on measurements. In those cases, recalibration is recommended. Re-calibration could be made by your technical staff or you could send to manufacturer company. According to IEC 60017, ex proof devices must be go through detailed inspection every 3 year from purchase date. Responsibility of inspections are belong to the user (IEC: International Electrotechnical Commission)

7. Repair – Manufacturer Address

If irreparable breakdowns occur, the instrument should be sent to us for repair purpose. Before this, the instrument should be cleaned carefully and packaged so as not to be broken. Furthermore, you should also add a detailed explanation which describes the breakdown while instrument is sent. If your instrument contacts with harmful substances, decontamination report should be also sent additionally. In the event that instrument does not have any decontamination report or our service department has doubts about instrument, repair process will not start until an acceptable report is sent.

If the instrument contacts with hazardous substances, necessary measures should be taken for decontamination!
Service -Manufacturer Company Name and Address:



LONCA MAK. SAN. TİC. A.Ş. Ferhatpaşa Mah. Gazipaşa Cad. No: 104A Ataşehir - İSTANBUL - TÜRKİYE
Phone:+90 216 50 50 555 Fax:+90 216 515 45 84 E-Mail: lonca@ensim.com.tr Web: www.ensim.com.tr

8. Disposal

The instrument should be disposed according to 2002/96/EC and 2003/108/EC European Directives (waste electrical and electronic instruments). Waste electrical and electronic equipment should not be mixed with domestic wastes!



If the instrument has contacted with harmful substances, special attention should be paid for its disposal!



9. Terms of Warranty

The instrument has warranty legally for 24 months after delivery date. Warranty demands are not accepted in case of inappropriate operation, damage on the instrument or any modification on the instrument.

10. Terms of Return

In the return of materials, user should send an open list related to damage or problem, malfunction of the material to be returned or its operation in the different modification, with the instrument. If it is required to return the material, used in the dangerous, corrosive or toxic fluid, in this case, used part should be cleaned very carefully. Security of personnel should be ensured. All products to be returned should be sent to our company address, which we have stated.