OPERATING MANUEL

Model : ECAS

CAPASITIVE LEVEL SWITCH

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 :

ECAS 101 , ECAS 102 , ECAS 103 , ECAS 107
ECAS 202 , ECAS 203 , ECAS 204 , ECAS 205 , ECAS 20S
ECAS 301 , ECAS 304 , ECAS 305 , ECAS 30D , ECAS 30S
ECAS 408A , ECAS 408B , ECAS 408T , ECAS 408Tp , ECAS 408Tm

CE EAC

Important Notes:

Used Symbols :

: Caution : Note : Disposal

- Please read this manual carefully before installation of the **capasitive level switch**. User is responsible for accidents and losses arising from failure to comply with the warnings in this manual.
- In the event that **capasitive level switch** 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.

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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.

1.2. Information about Areas of Use

ECAS level switch is a capacitive level sensor for level measurement of conductive liquid, nonconductive liquid, granulated materials with solid particles, adhesive and acid / base liquids. When a material comes between electrode rod and tank wall, a capacitance change occurs and when this change exceed adjustment threshold, contact output is delivered.
Designed for difficult process conditions. Models with cooling apparatus can be manufactured for high temperature and pressure conditions.
Calibrations of triggering point and relay operation range can be performed by the user under workplace conditions.
It can be connected horizontally or vertically.

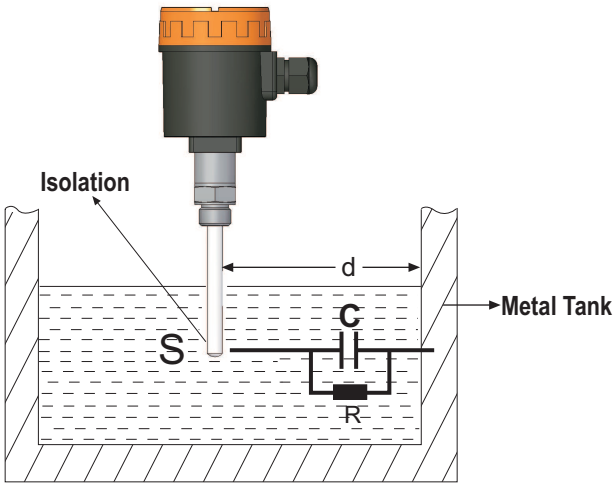
Application Areas

Liquid tanks, food machines, cooling liquid tanks, shipping, glycol tanks, brine, waste water tanks.
Oil tanks, CO2 liquid tanks, high temperature tanks, low-conductive liquids.
Grain silo, cement silo, sand feed, dough, milk powder, organic and plastic granule.
Sticky hot and high viscosity liquid, acid and chemical liquids.

Ambient Conditions: Relative Humidity: 0-98 %RH Ambient temperature: 60C (It is not used under -20 C)

Capacitance definition, assuming two parallel conductive plates are used;

1.3. Working Principle



$$C = \frac{\varepsilon_o.\varepsilon_r.S}{d}$$

C: capacity , Farad
S: Surface Area , m²
d: Distance , m

Advantages :

Optionally high temperature-resistant design.

Easy assembly and sensitivity adjustment.

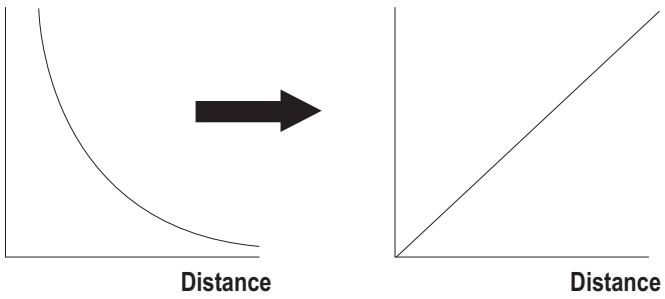
No need to clean.

Not affected by foam, liquid splash and probe coating.

Can be mounted upside down (reverse)

However, there are scarcely any sensor type which this definition can be pratically utilized. Above Formula can no longer is reliable especially when residual areas increase due to large distance (d) (which is usually the case). Thus, measuring impedance for distance measurements gives more accurate results than capacitance measurement.

Capacity **Impedance**



Excitation applied between 10 KHz…250 KHz based on length for all our models. ($\omega = 2 \times p \times f$) Linearity error that may be caused by conductivity component (R) effect is prevented by electronic circuit design and mechanical design. Reduced to a level lower than 1ppm, acceptable as zero.

Impedance definition $Z = R + jL\omega + (jC\omega)^{-1}$ R is defined as real component and represent ambient conductivity.

jLw second component is defined as inductive reactance. This component is present even if we perform capacitive measurement. However we neglect this. Since we evaluate results based on electrostatic properties of the environment, no error will occur. Resulting impedance definition is $Z= R + (jC\omega)^{-1}$.

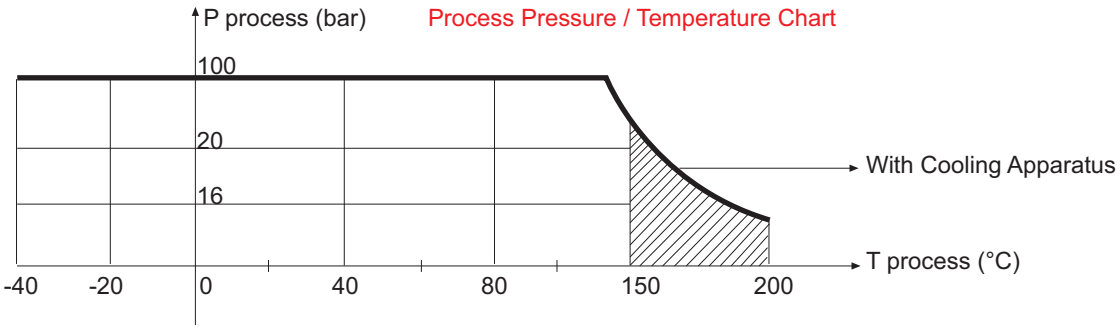
Measurement is made by charge transfer in our capacitive sensors. Total impedance is defined as Z = V / I.
I (current) I = Q/t
Q (Coulomb)
T (sec)

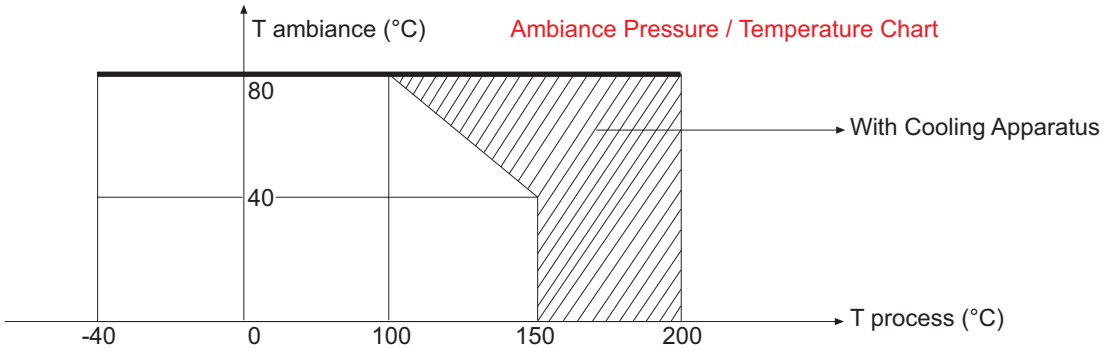
Capacitive reactance we desire to measure is $(jC\omega)^{-1}$. Meaning that charge and impedance have the same phase.
To summarize, charge transferred to medium is directly proportional with capacitive reactance.
For sensors manufactured as coaxial;

a: Central electrode radius
b: Outer screen radius
L: length

$C= \frac{2.\pi.\varepsilon_o.\varepsilon_r}{\ln (b/a)} .L$ Impedance is calculated by this definition

Excitation applied between 10KHz…250KHz based on length for all our models. (ω=2xpxf)
Linearity error that may be caused by conductivity component (R) effect is prevented by electronic circuit design and mechanical design. Reduced to a level lower than 1ppm, acceptable as zero.



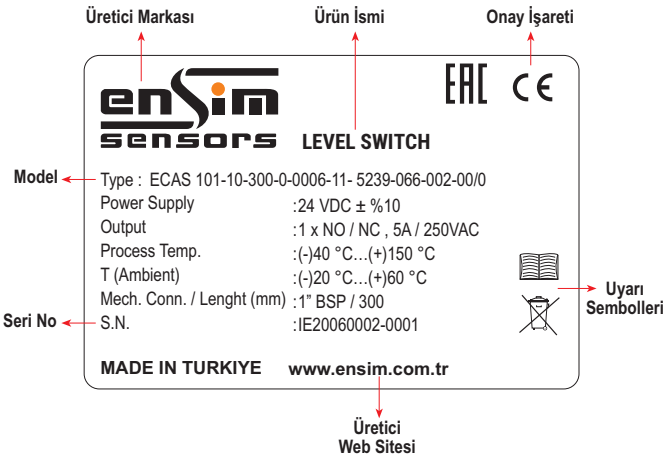


1.4. Technical Specifications and Material Knowledge

Measurable Metarial	Conductive liquids, refrigerants Non-conductive liquids Solids particulate materials Adhesive and acid/basic liquids
Supply	24 VDC
Signal Output	1 NA / NK x5 A / 250 VAC Relay
Min.Di-Electric Constant	1,6 ε_r
Connection Material	304 St.St. Opt. 316 St.St.
Isolation Material	PTFE, PFA Opt. Peek, Ceramic
Housing Material	PBT (Std.) Ops. Aluminum Injection, Stainless Steel
Working Pressure	(-) 1 bar...100 bar (Depending on the model.)
Working Temperature	(-)40/(+)150°C (Depending on the model) 200°C with cooling apparatus 230°C with PEEK isolation 400°C with ceramic isolation
Ambient Temperature	(-) 20 °C...(+) 60 °C
Display	With LED-Power and Contact LED
Isolation	Max. 500 V
Power Consumption	Max. 1 W
Electrical Connection	Terminal
Protection Class(EN60529)	PBT - IP 66 , Alüminyum , Pas. Çelik IP 65
Test	EMC, Low Voltage
Max. Tensile Force	Max. 40 Nm
Weight	285 g. for ECAS 101

1.5. Label Information :

Product Label :



Protection Case:

Material : 304 Stainless Steel
Welded manufacturing
Opens - Closes Hinged
To Protect Against external conditions.



1.6. Target Group

This operating manual has been prepared for qualified technical personnel.

1.7. Security Notes

Please consider below notes for avoiding hazardous cases around operator and it's 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 meet.
Equipment should only be used in stated specifications.
Equipment must only be mounted while there is no pressure.

1.8. 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:
***Capasitive Level Switch**
*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 use the **Capacitive Level Switch** with a greater pressure than recommended pressure.
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 pesure should not be exceeded.

2.2. General Installation Stages

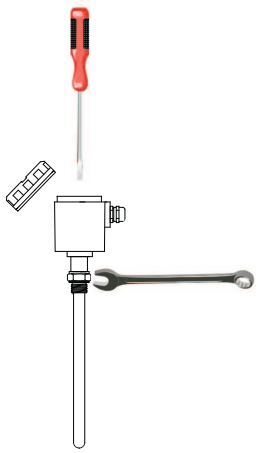
*Remove **Capacitive Level Switch** from the box carefully
*Check whether gasket is appropriate for fluid or not. If is not appropriate, contact with the producer.
*Then, apply below mentioned explanations according to structure of the design.

2.3. Special Notes

*Please ensure that there is no mechanical stress on the shaft following installation. Such case will cause slipping in thecharacteristic curve.
***Capacitive Level Switch** must be placed upright or horizontal.
*Allocate valve certainly in the process connection while instrument is used.
*Allocate blowdown valve under bottom flange for blowdown.
*If instrument is mounted outside and if there is any danger of lightning or
excessive pressure, take preventive measures by taking necessary measures.
*In the operating conditions, **Capacitive Level Switch** may be hot according
to situation of fluid, in this case, do not touch the indicator, otherwise your skin is damaged.
*The grounding product must be done properly. (can be done outside or in housing)

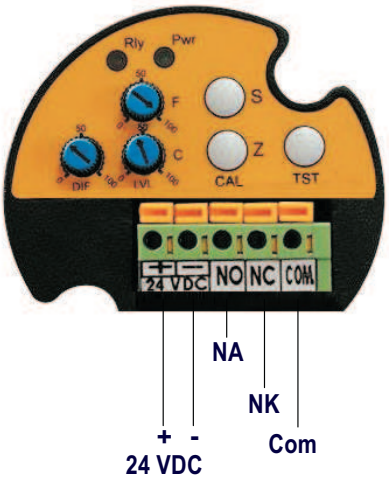
2.4. Installation For Mechanical Connections

*Use appropriate O-Ring or gasket for tightness.
*Ensure that its surface is clean and smooth.
*Assemble the instrument manually.
*Connect the contacts as shown in the figure.
(For stainless steel models max. 30Nm)



2.5. Electrical Installation

Make the electrical connection of the instrument according to details on its label, table and cable figures in this manual



Indication and Calibtarion :

* **RlyLED:** "Relay active" during normal operation; means operation continues during calibration. Flashes continuously in normal operation mode –if relay is active– and blinks in calibration mode. It is red colored.

* **PwrLED:** Means there is no sensor failure during normal operation, and means "desired measurement values are saved in memory" during calibration. Operates by flashing. If light is continuous, it indicates failure. It is gren colored.

* **CAL - S Button:** Used to acquire "High Level-span-"value during calibration.

* **CAL - Z Button:** Used to acquire "Low Level-zero-"value during calibration.

* **TST Button:** During normal operation, functions as "Relay Test"; during calibration, performs "saving to nonvolatile memory" of Zero-Span, the values previously acquired by S and Z button, function.

* **LVL - C Pot:** Adjusts relay triggering point between Zero-Span values.

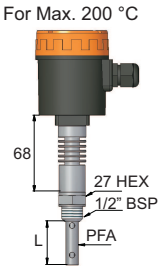
* **LVL - F Pot:** Performs as "fine tuning" for triggering point. Adjustment field is equal to +/- 5% of the point adjusted by "C Pot" (total 10%).

* **DIF Pot:** Adjusts "Release" level of the relay activated by "C/F Pot". Highest adjustable value is equal to half (50%) of the operation region specified by "Z and S". Meaning that, when DIF Pot is at 100% and relay is pulled, the level to release it shall be reduced as half of the total scale.

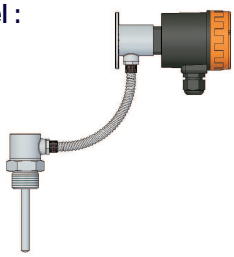
Electronic Unit with Cable:

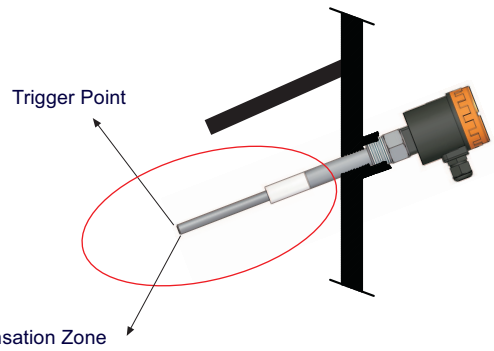
Electronic unit and sensor component can be separated by a cable that protected against exterior conditions for easy calibration on site. Thanks to the properties of cable, easy assembly for user is possible without affecting capacitive measurement.

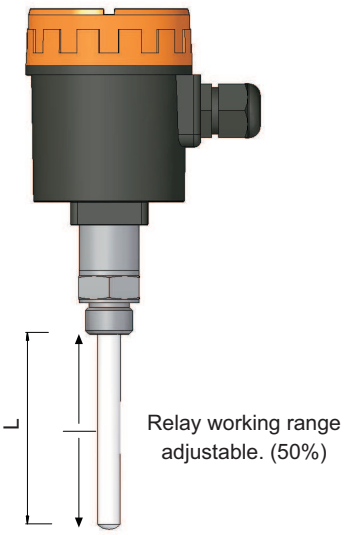
Cooling :



Sample Model :







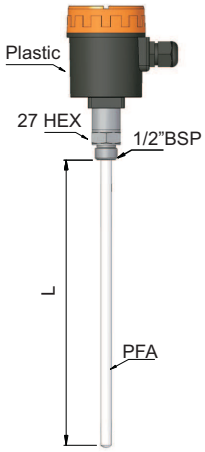
2.6. Mechanical Dimensions

CONDUCTIVE LIQUIDS

Sample Models

ECAS 101

Fully Insulated Probe
Conductive Tank



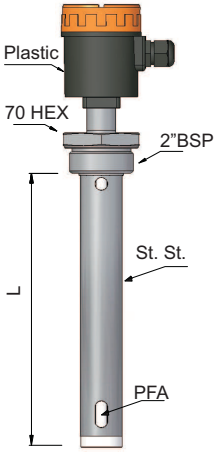
L= 250 mm. (Std) Max. 4 m.

(-) 1 bar...(+) 100 bar

(-) 40 °C...(+) 150 °C

ECAS 102

Fully Insulated Coaxial Probe
Insulated Tank



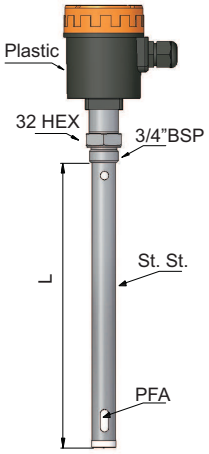
L= 250 mm. (Std) Max. 4 m.

(-) 1 bar...(+) 100 bar

(-) 40 °C...(+) 150 °C

ECAS 103

Fully Insulated Coaxial Probe
Insulated Tank



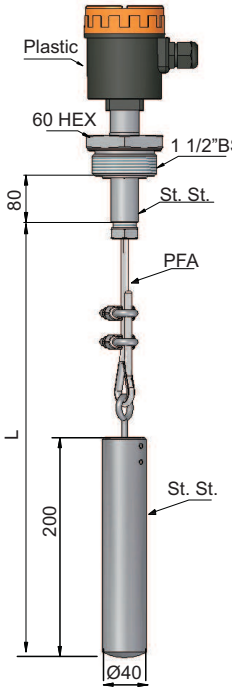
L= 250 mm. (Std) Max. 1 m.

(-) 1 bar...(+) 100 bar

(-) 40 °C...(+) 150 °C

ECAS 107

Fully Insulated Rope
Conductive Tank



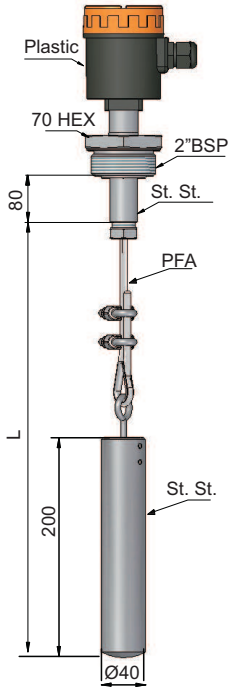
L= 1 m. (Std) Max. 16 m.

(-) 1 bar...(+) 60 bar

(-) 40 °C...(+) 150 °C

ECAS 107

Fully Insulated Rope
Conductive Tank



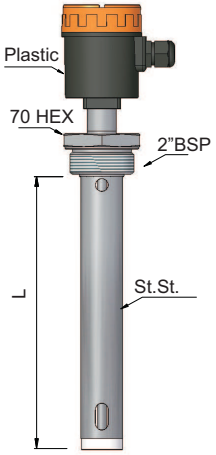
L= 1 m. (Std) Max. 32 m.

(-) 1 bar...(+) 60 bar

(-) 40 °C...(+) 150 °C

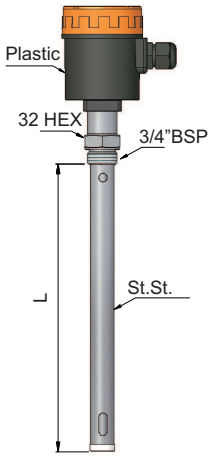
LOW CONDUCTIVE LIQUIDS

ECAS 202
Partly Insulated Coaxial Probe
Conductive / Insulating Tank



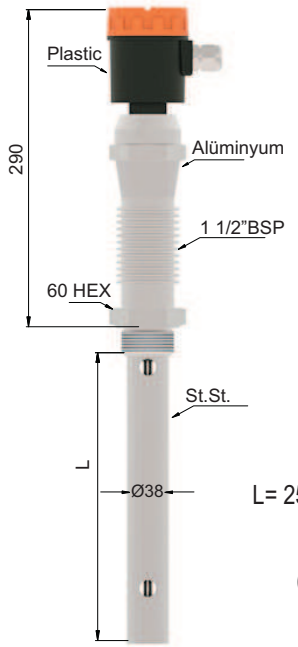
L= 250 mm. (Std) Max. 4 m.
(-) 1 bar...(+) 100 bar
(-) 40 °C...(+) 150 °C

ECAS 203
Partly Insulated Coaxial Probe
Conductive / Insulating Tank



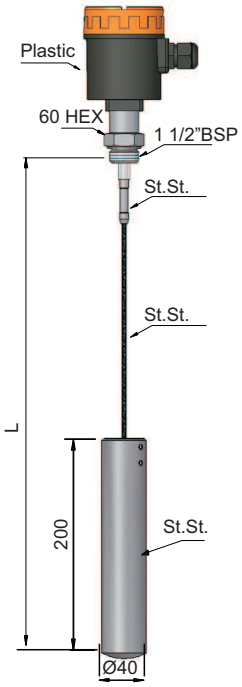
L= 250 mm. (Std) Max 1 m.
(-) 1 bar...(+) 100 bar
(-) 40 °C...(+) 150 °C

ECAS 20S
Partly Insulated Coaxial Probe
Conductive / Insulating Tank



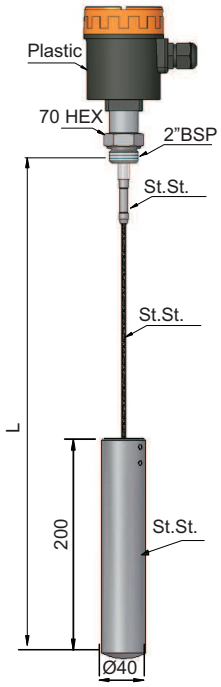
L= 250 mm. (Std) Max. 4 m.
(-) 1 bar...(+) 25 bar
(-) 40 °C...(+) 400 °C

ECAS 204
Partly Insulated Rope
Conductive Tank



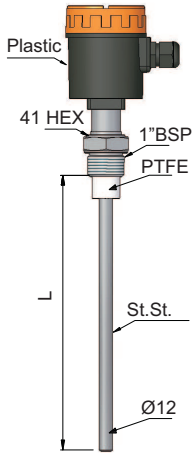
L= 1 m. (Std) Max. 16 m.
(-) 1 bar...(+) 60 bar
(-) 40 °C...(+) 150 °C

ECAS 204
Partly Insulated Rope
Conductive Tank



L= 1 m. (Std) Max. 32 m.
(-) 1 bar...(+) 60 bar
(-) 40 °C...(+) 150 °C

ECAS 205
Partly Insulated Probe
Conductive Tank



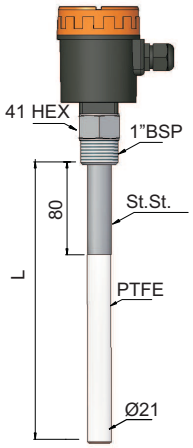
L= 250 mm. (Std) Max. 6 m.
(-) 1 bar...(+) 60 bar
(-) 40 °C...(+) 150 °C

S O L I D P A R T I C U L A T E M A T E R I A L S

ECAS 301

Compled Insulated Probe
Conductive Tank

Antistatic For Materials



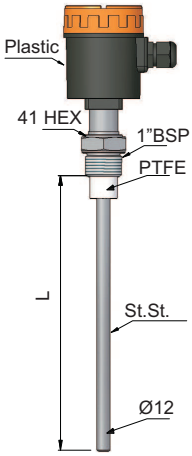
L= 250 mm. (Std) Max. 1 m.

(-) 1 bar...(+) 25 bar

(-) 40 °C...(+) 150 °C

ECAS 305

Partly Insulated Probe
Conductive Tank



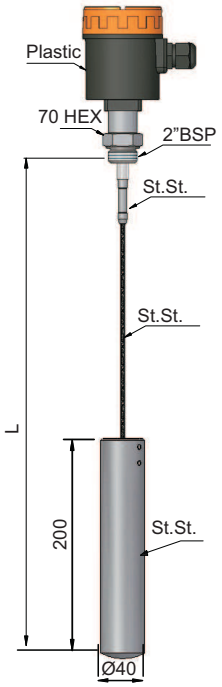
L= 250 mm. (Std) Max. 6 m.

(-) 1 bar...(+) 25 bar

(-) 40 °C...(+) 150 °C

ECAS 304

Partly Insulated Rope
Conductive Tank



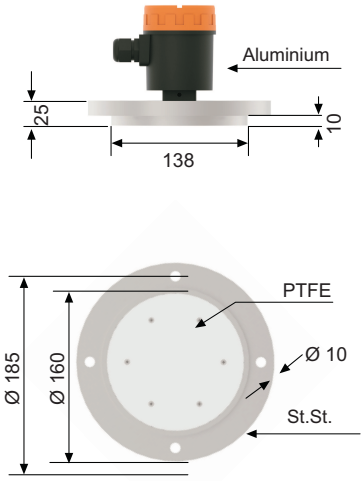
L= 1000 mm. (Std) Max. 32 m.

(-) 1 bar...(+) 25 bar

(-) 40 °C...(+) 150 °C

ECAS 30D

Horizontal Diaphragm
Conductive Tank



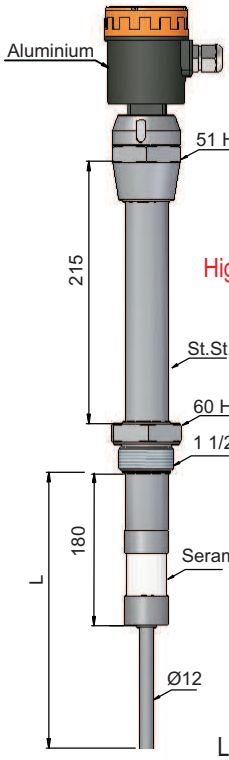
L=10 mm.(Std)

(-) 1 bar...(+) 25 bar

(-) 40 °C...(+) 150 °C

ECAS 30S

Seramic Insulated Probe
Insulating Tank



High Temperature Version

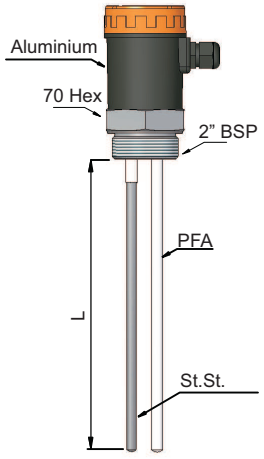
L= 300 mm. (Std) Max. 4 m.

(-) 1 bar...(+) 25 bar

(-) 40 °C...(+) 400 °C

ECAS 408A

Double Probe (Single Fully Insulated)
Conductive / Insulating Tank



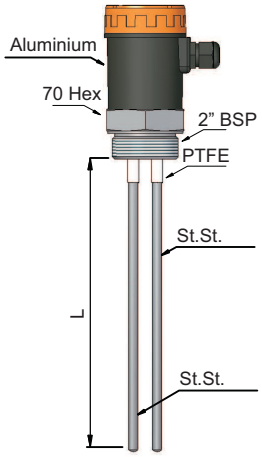
L= 250 mm. (Std) Max. 4 m.

(-) 1 bar...(+) 100 bar

(-) 40 °C...(+) 150 °C

ECAS 408B

Double Partly Insulated Probe
Conductive / Insulating Tank



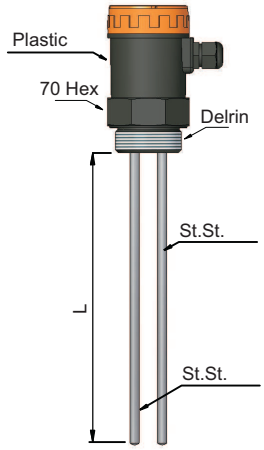
L= 250 mm. (Std) Max. 6 m.

(-) 1 bar...(+) 60 bar

(-) 40 °C...(+) 150 °C

ECAS 408B

Double Partly Insulated Probe
Conductive / Insulating Tank



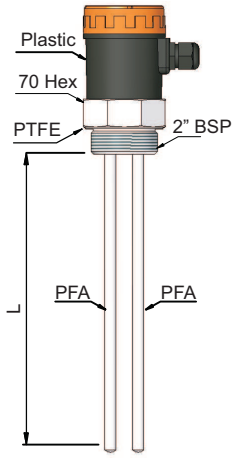
L= 250 mm. (Std) Max. 6 m.

(-) 1 bar...(+) 25 bar

(-) 20 °C...(+) 80 °C

ECAS 408T

Double Partly Insulated Probe
Conductive / Insulating Tank



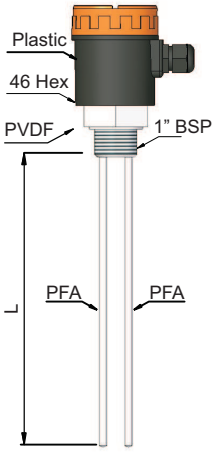
L= 250 mm. (Std) Max. 1 m.

(-) 1 bar...(+) 60 bar

(-) 40 °C...(+) 150 °C

ECAS 408Tm

Double Partly Insulated Probe
Conductive / Insulating Tank



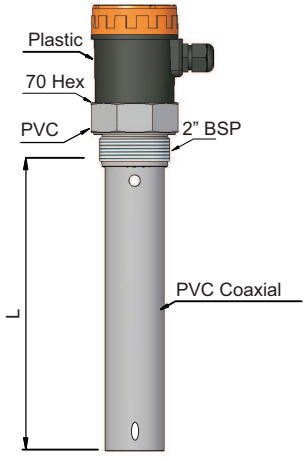
L= 250 mm. (Std) Max. 1 m.

(-) 1 bar...(+) 60 bar

(-) 40 °C...(+) 150 °C

ECAS 408Tp

Double Partly Insulated
PVC Coaxial Probe
Conductive / Insulating Tank

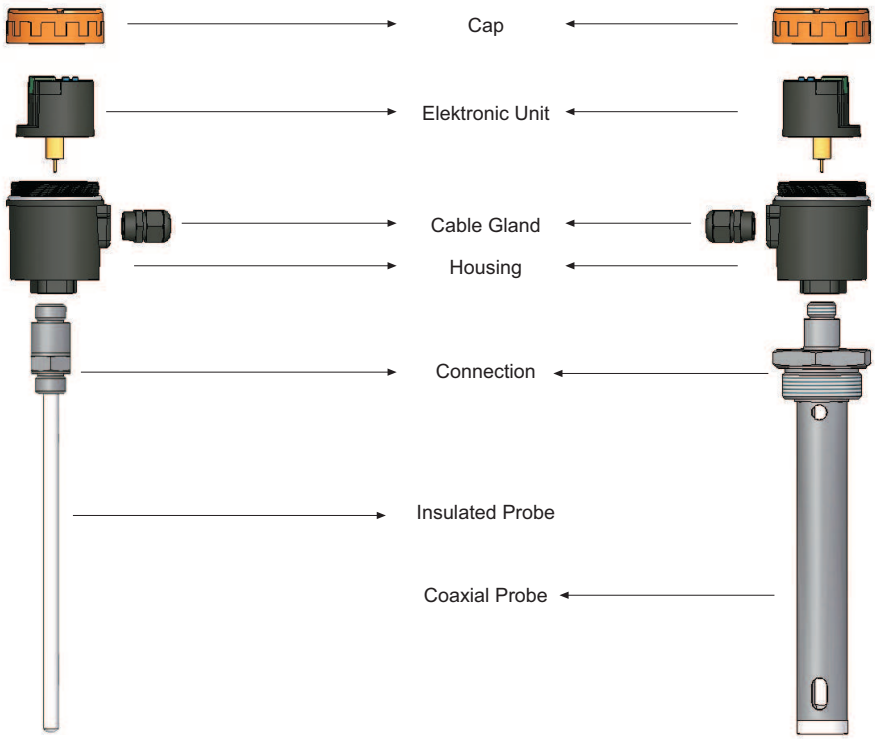


L= 250 mm. (Std) Max. 1 m.

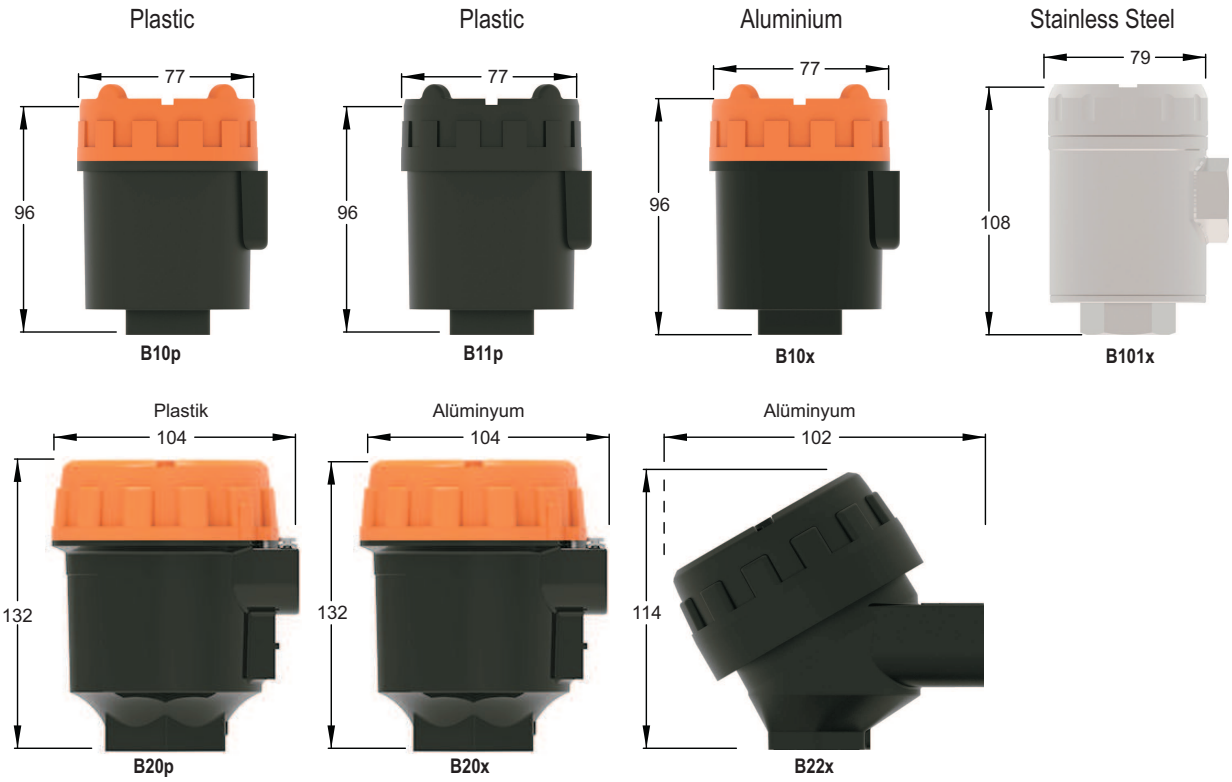
(-) 1 bar...(+) 6 bar

(-) 40 °C...(+) 60 °C

2.7. Parts



Housing

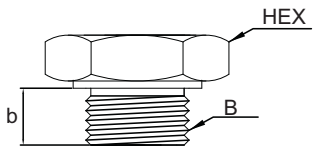


ORDER CODE	TYPE	MATERIALS	PROTECTION CLASS	TEMPERATURE (ºC)	DIMENSION a x b x c (mm)
050	B10p	Plastic (PBT)	IP 65	(-) 40...(+) 150	96 x 77
053	B11p	Plastic (PVDF)	IP 65	(-) 40...(+) 120	96 x 77
103	B20p	Plastic (PBT)	IP 65	(-) 40...(+) 150	132 x 104
503	B10x	Aluminium	IP 65	(-) 40...(+) 150	96 x 77
603	B20x	Aluminium	IP 66	(-) 40...(+) 200	132 x 104
750	B22x	Aluminium	IP 66	(-) 40...(+) 200	114 x 112
851	B101x	Stainless Steel	IP 65	(-) 40...(+) 150	108 x 79

2.8. Housing

Mechanical Connection :

Thread

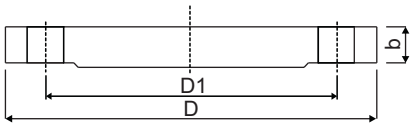




(ISO228-1)

Order Code	Dimension B	Hex (mm)	Thread Lenght b (mm)
0004	1/2" BSP	27	14
0005	3/4" BSP	32	14
0006	1" BSP	41	23
0008	1 1/4" BSP	51	23
0009	1 1/2" BSP	60	23
0012	2" BSP	70	23

Flanged





Order Code (ISO1092-1)

PN 16	D (mm)	D1 (mm)	b (mm)
DN 25	165	85	16
DN 32	140	100	16
DN 50	165	125	18
DN 80	200	160	20
DN 100	220	180	20

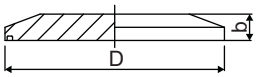
Order Code (ISO1092-1)

PN 40	D (mm)	D1 (mm)	b (mm)
DN 25	115	85	18
DN 32	140	100	20
DN 50	165	125	20
DN 80	200	160	20
DN 100	235	190	24

Order Code (ANSI B16.5)

150 LBS	D (mm)	D1 (mm)	b (mm)
DN 50	152,4	121	19
DN 65	177,8	139,7	22,2
DN 80	190,5	152,4	23,8
DN 100	228,6	157,2	23,8

Clamp

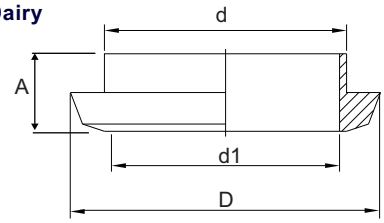




Order Code (ISO2852)

Measurement	D (mm)	b (mm)
DN 32	50,5	15
DN 50	64	17
DN 65	91	17

Dairy





Order Code

Measurement	Measurement	D (mm)	d1 (mm)	A (mm)
DN 40	DN 40	56	48	13
DN 50	DN 50	68	61	14
DN 100	DN 100	121	114	20

2.10. Order Form :

Order Form : Please consider sample models when coding.

1 MODEL ECAS

Conductive Liquids.....1
Non-Conductive Liquids 2
Solids Particulate Materials.....3
Adhesive and Acid / Basic Materials.....4

2 CERTIFICATE

None.....0
(EN10204-3-1)Material Certification.....1

3 PROBE TYPE (MAX. LENGHT)

Single Probe - Insulated (Max. 4 m.) 1
Single Probe - Coaxial (Max. 4 m.) Ø 38 2
Single Probe - Thin Coaxial (Max. 1 m.), Ø 21 3
Rope - Non-Insolated (Max. 32 m.) 4
Single Probe - Non-Insolated (Max. 6 m.) 5
Single Probe - High Temperature (Max. 4 m.) 6
Rope - Insulated (0 ... 32 m.)..... 7
Double Probe - Single Insulated (Max. 4 m.) 8A
Double Probe - Non-Isolated (Max. 6 m.) 8B
Double Probe - Double Insulated (Max. 4 m.) 8T
Double Probe - Double Insulated, PVC Coaxial (Max. 4 m.) .. 8Tp
Double Probe Thin - Double Insulated (Max. 1 m.) 8Tm
Ceramic Insulated Probe (Max. 4 m.) .....S
Diaphragm Probe..... ..... D
Special..... x

4 PROBE DIAMETER (mm) Ø

Ø 10 mm (Std.).....10
Ø 8 mm 08
Ø 12 mm 12

5 STEM LENGHT (mm) L

.....mm

6 PROCESS TEMPERATURE

150 °C (Standard).....0
200 °C with Cooling Apparatus 1
(-) 196 °C For Cyrogenic Tank 2
230 °C with Peek Insulated 3
400 °C with Seramic Insulated 4

7 CONNECTION

Thread (ISO 228-1)

1/2" BSP.....0004
3/4" BSP 0005
1" BSP.....0006
1 1/2" BSP.....0010
2" BSP.....0012
1/2" NPT.....0203
3/4" NPT.....0204

Clamp (ISO 2852)

DN 32 - PN 16...1501
DN 50 - PN 16...1502
DN 65 - PN 16...1503

ISO Flange(1092-1)

DN 25 - PN 16...0502
DN 32 - PN 16...0503
DN 50 - PN 16...0505
DN 80 - PN 16...0507
DN 100 - PN 16...0508

ISO Flange (1092-1)

DN 25 - PN 40...0702
DN 32 - PN 40...0703
DN 50 - PN 40...0705
DN 80 - PN 40...0707
DN 100 - PN 40...0708

ASA Flanged (B16.5)

DN 50 - 150lb ... 1005
DN 65 - 150lb ... 1006
DN 80 - 150lb ... 1007
DN 100 - 150lb ... 1008

8 OUTPUT

Relay Output NA/NK (5A).....11
Special.....x

9 HOUSING

Plastic Housing , B10p 050
Plastic Housing , B11p 053
Plastic Housing , B20p 103
Aluminium Housing , B10x 503
Aluminium Housing , B20x 603
Aluminium Housing , B22x 750
Stainless Steel Housing , B101x.....800
Special.....x

10 INSULATION MATERIAL

PBT.....065
PTFE.....066
PFA.....067
PEEK.....068
Polyamide.....069
Seramic.....070
Rubber.....081
FKM.....084
Steel Shielded Cable (Max. 350 °C).....048
Special.....x

11 CONNECTION MATERIAL

304 Stainless Steel 001
316 Stainless Steel 002
Brass.....041
PVC.....061
Polypropylene.....062
Delrin.....063
PVDF.....064
PBT.....065
PTFE.....066
Special.....x

12 ELECTRICAL CONNECTION

With Terminal.....00
Special.....x

13 OPTIONAL

None...../ 0
With By - Pass Tube..... / T
Shetter (For the outside of the tank) 304 St. St.../ K6
Seperable Electronic Unit...../ S
Wall Apparatus...../ W
Long Isolation...../ L1
Special...../ x

SAMPLE

ECAS 101-10-300-0-0006-11-050-066-002-00/0

For conductive liquids , L= 300 mm, 1" BSP , Relay Output, Aluminium Housing , Ø 10 Probe

2.11.

WARNING !!!

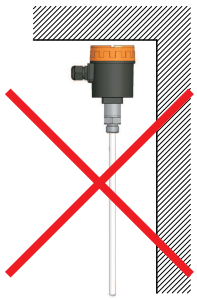
Please pay attention to following matters in order to operate your flow switch properly.



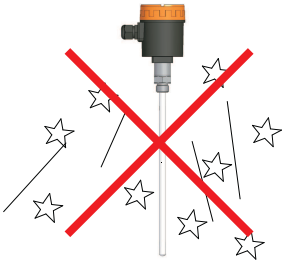
When connecting the switch to the tank
Connect with 20 degree angle.



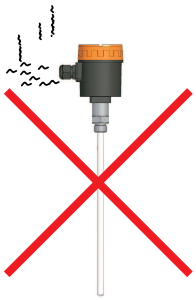
Switch from 30 cm each other
do not connect close



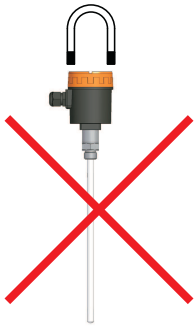
Please keep away from magnetic materials like iron board ; otherwise the characteristics might be affected



Please do not drop ,
otherwise the characteristics
might be changed.



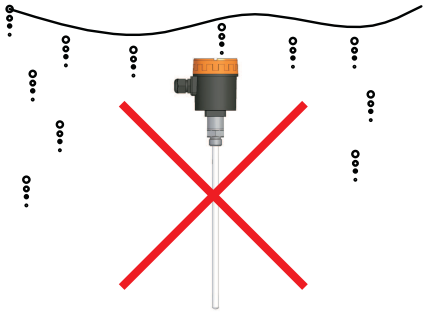
Please do not dip cables
potting into liquids,otherwise
instulation problem may cause.



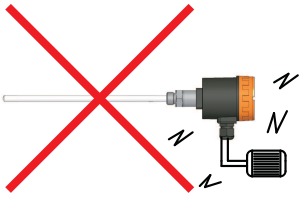
Do not fasten switch reversely ,
otherwise its characteristics
might be changed.



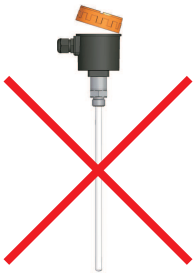
Vibration might be caused instability.



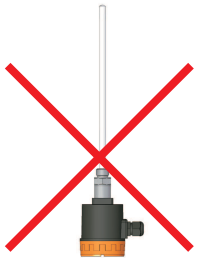
Do not fasten switch reversely ,
otherwise its characteristics
might be changed.



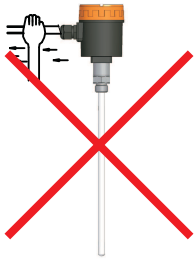
Excess current , to be drawn as
a result of direct connection to motor,
may burn relay of switch



Do not remove the plastic parts
of the bottom of the switch body ,
do not loosen.



Do not connect the switch in reverse.
Their characteristics may vary.



Do not pull the cable strongly,
otherwise the characteristics
might be changed.

3. Failure Delection

Your device must be repair only at an outhorized serviced.

Breakdown	Probable cause	Failure detection\correction
Power Led does not work.	* Supply voltage may not be work. * Power led might be faulty. * Electronic card might be faulty due to supply.	* The supply voltage must be checked. * Please apply to service. * Please apply to service.
Relay does not output	* The applied process may not be suitable for the probe * Grounding connection might be poor or disconnected * The low voltage might be supply. * Grounding might be done correctly.	* Proper probe structure and product detection must be perfomed. * The grounding connection check. * Supply must be checked. * Please check grounding line.
Relay provides continuous output.	* The applied process may not be suitable for the probe. * The Teflon coating on the product probe might be damaged. * Grounding might be done correctly.	* Proper probe structure and product detection must be perfomed. * Protection of external coatings of probes. * Please check grounding line.
Non-Calibration	* Trimpot might be deformed. * The applied process may not be suitable for the probe. * Grounding might be done correctly.	* Please apply to service. * Proper probe structure and product detection must be perfomed. * Please check grounding line.

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 capacitive level switch, there might be deviations on measurements. In those cases, recalibration is recomended. 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 yearS from purchase date.Respobsibility 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. 37 Sok. No:78/A 34888 Ataşehir - İSTANBUL / TÜRKİYE

Phone : +90 216 50 50 555 / 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.