OPERATING MANUEL

Model : DX-ECAP

CAPASITIVE LEVEL TRANSMITTER

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 :

DX-ECAP 101/ 102 / 103 / 107
DX-ECAP 202 / 203 / 204 / 205 / 20S
DX-ECAP 304 / 305
DX-ECAP 408A / 408B

CE 2284 Ex

Important Notes:

Used Symbols :

: Caution : Note : Disposal

- Please read this manual carefully before installation of the **capasitive level transmitter**. User is responsible for accidents and losses arising from failure to comply with the warnings in this manual.
- In the event that **capasitive level transmitter** 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** 8
3. **Failure Detection** 19
4. **Disassembly of Instrument** 19
5. **Service** 19
6. **Recalibration** 19
7. **Repair** 19
8. **Disposal** 15
9. **Terms of Warranty** 15
10. **Terms of Return** 15

1. General Information :

1.1. Material Acceptance

DX-ECAP Capacitive level switch is a capacitive level sensor for level measurement of conductive liquid, nonconductive liquid, granulated materials with solid particles, adhesive and acid/basic 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. Refrigerated models 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.

1.2. Information about Areas of Use

Liquid tanks, food machines, cooling liquid tanks, shipping, glycol tanks, brine, waste water tanks.

Oil tanks, CO2 liquid tanks, high temperature tanks, non-conductive liquids.

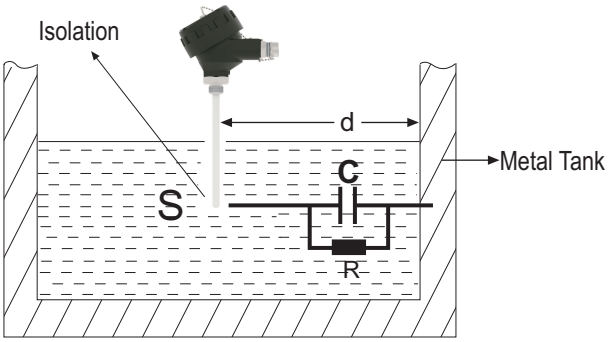
Grain stores, cement, sand feed, flour, milk powder, organic and plastic granule.

Sticky hot and high viscosity liquid, acid and chemical liquids.

Ambient Conditions: **Relative Humidity:** 5-98 %RH **Ambient temperature:** 60C (It is not used under -20 C)

1.3. Working Principle

Capacitance definition, assuming two parallel conductive plates are used;



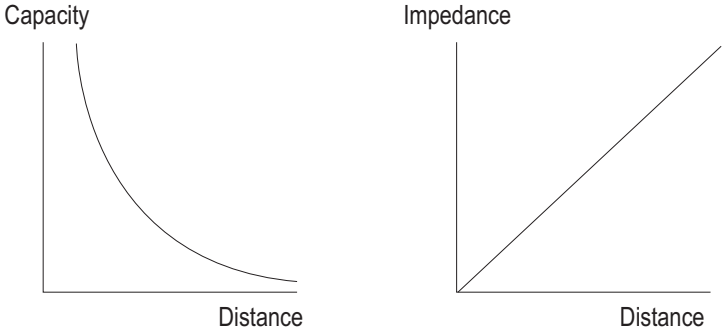
C(Farad)
S,d (mt)

$C = \frac{\varepsilon_o . \varepsilon_r . S}{d}$ can be described by this formula

Advantages :

* There are no moving parts.
* High pressure and temperature resistant design.
* Modular structure with easy assembly.
* Not affected by foam, liquid splashes.
* Not affected by vibration, has robust mechanical structure.
* Zero span adjustment is easy.
* Measurement along whole sensor.
* Operability with reverse assembly.

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



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)

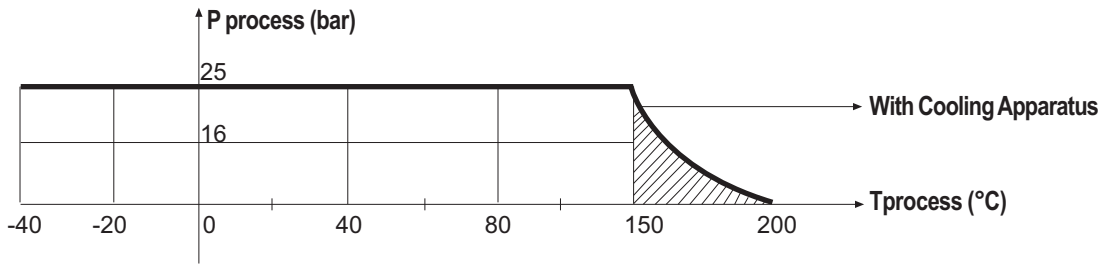
Capacitive reactance we desire to measure is $(jC\omega)^{-1}$. Meaning that charge and impedance have the same phase.
To summarize, charge transferred to medium is directly proportional with capacitive reactance.
For sensors manufactured as coaxial;

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

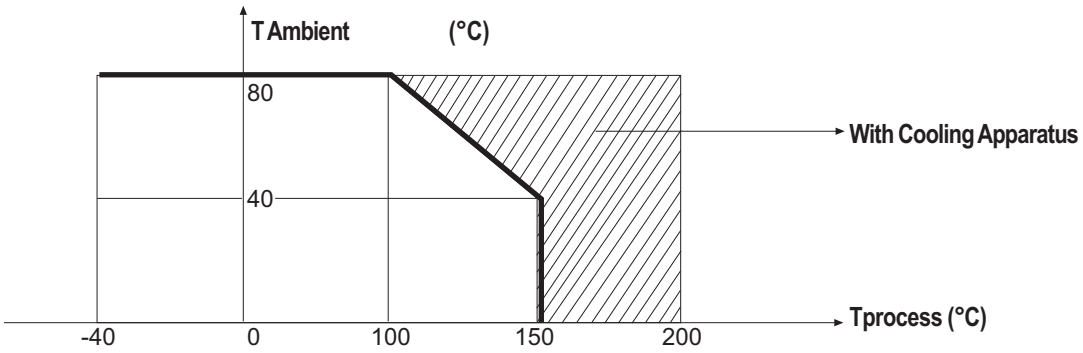
$C= \frac{2.\pi.\varepsilon_o.\varepsilon_r}{\ln (b/a)} .L$ Impedance is calculated by this definition

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.

Process Pressure / Temperature Chart



Environment Pressure / Temperature Chart



1.4. Technical Specifications and Material Knowledge

Technical Specifications:

Measurable Metarial	Conductive liquids Low conductive liquids Solids particulate materials Adhesive and acid/basic liquids
Supply	9-36 VDC
Signal Output	4-20mA two wire Std. 0-20 mA - 4-20 mA, 0-10 V Three wire Opt.
Accuracy	± % 0,5 , ± % 0,8 , ± % 1
Linearity	% 0,5
Capacity Range	1pF...3nF
Min. Di-Electric Constant	1,6 ε_r
Connection Metarial	304 St.St. Opt. 316 St.St.
Isolation Material	PFA Std. Opt. PEEK, PTFE , Rubber, FKM
Housing Material	Aluminum Injection Molding - AlSi12Fe (Std) Black (RAL.9005)
Working Pressure	(-)1 bar...(+) 25 bar (Depending on the model)
Working Temperature	(-) 40 °C / (+) 150 °C (Depending on the model) 200 °C with cooling apparatus (-) 196 °C For Cryogenic Tank (-) 50 °C...(+) 80 °C For NBR FKM (-) 30 °C...(+) 200 °C
Ambient Temperature	(-)20 / (+) 60 °C
Display	With LED-Power and Contact LED
Isolation	Max. 500 V
Power Consumption	Max. 50 mW
Electrical Connection	Terminal
Protection Class(EN60529)	IP 66 / 68
Test	EMC, Low Voltage
Max.Tensile Force	Max. 40 NM
Weight	295 g. for DX-ECAP 101 250 mm

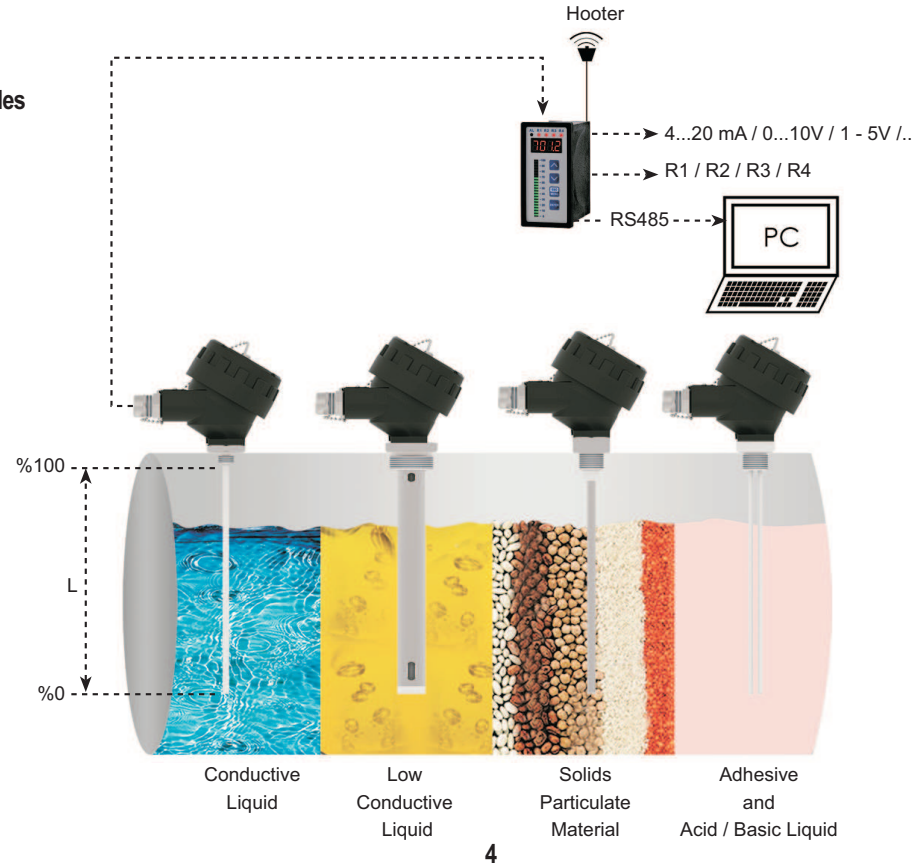
Certification

Ex II 1/2G Ex db ia IIC T6...T2 Ga/Gb For Gas

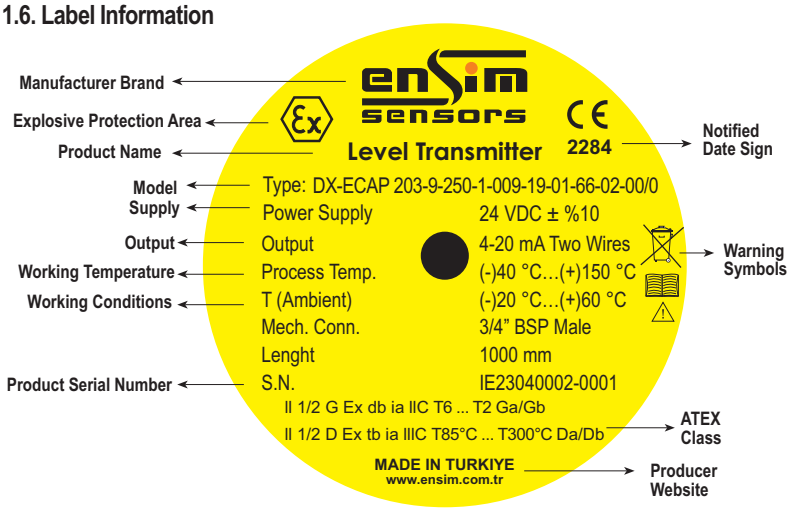
II 1/2D Ex tb ia IIIC T85°C...T300°C Da/Db For Dust

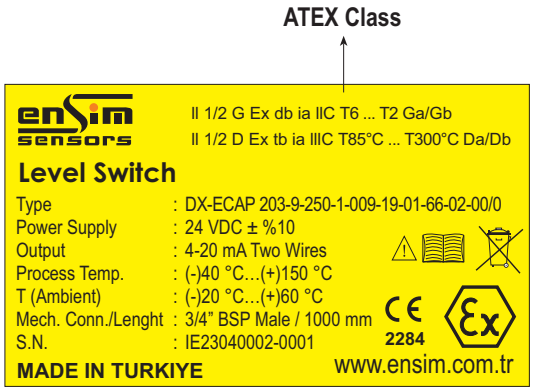
* Have a look at the temperature class chart.

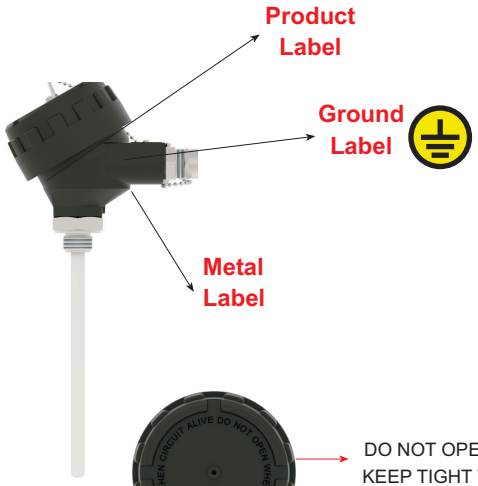
1.5.Application Examples

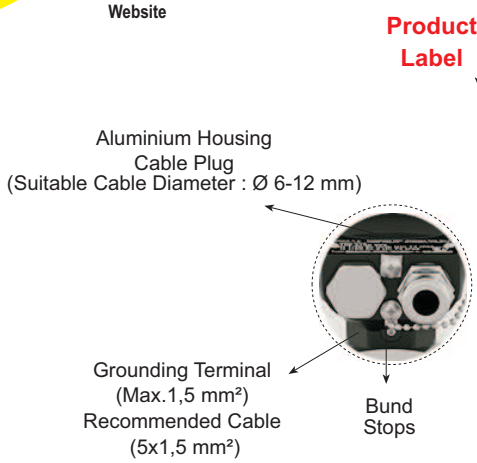


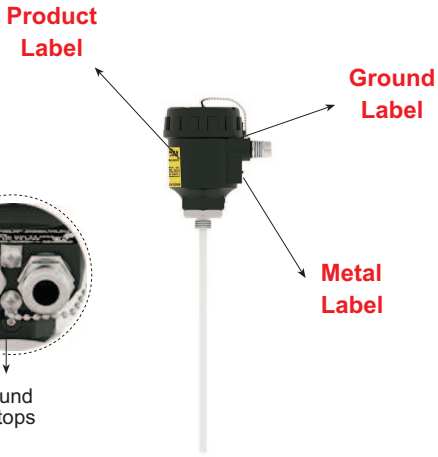
1.6. Label Information

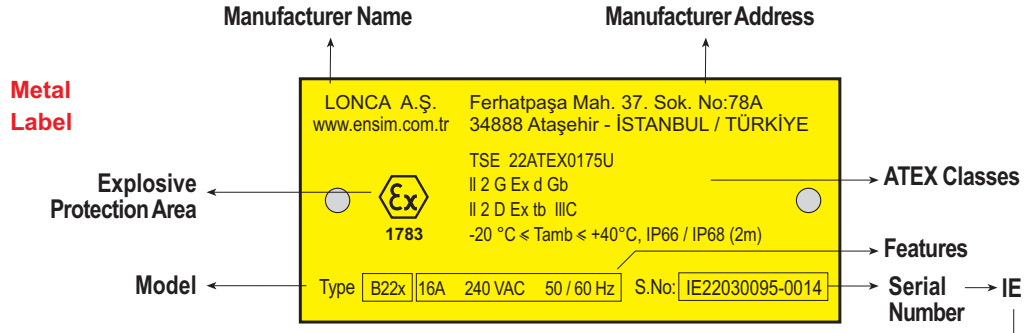




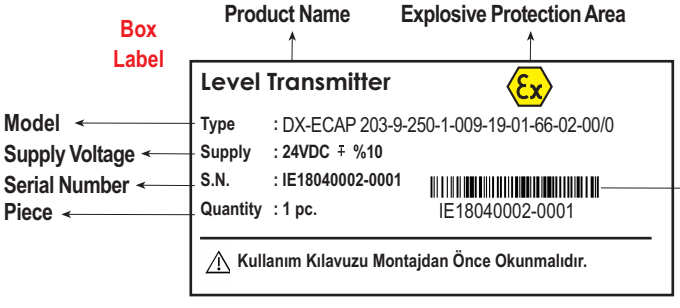








Note : If the ATEX certificate metal label is damaged, you can contact the manufacturer with the serial number.



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:

***Capasitive Level Transmitter**

*This operating manual



Std. Package

1.8. Target Group

This operating manual has been prepared for qualified technical personnel.

1.9. 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.

1.10. Certifications and Approvals	CE	:	It shows that, product meets required conditions of EU with CE stamp and stipulate that product passed quality assessment stages
	ATEX (2014 / 34 / AB)	:	TS EN IEC 60079 - 0 : 2018 TS EN 60079 - 1 : 2014 TS EN 60079 - 11 : 2012 TS EN 60079 - 31 : 2014 TS EN 60079 - 26 : 2015
	LVD (2014 / 35 / AB)	:	TS EN 60204 -1 : 2018
	EMC (2014 / 108 / AT)	:	TS EN 61326 - 1 : 2021 TS 3033 EN 60529 : 2014

Not : Üretici LONCA A.Ş. bu dökümanda belirtilen bütün özellikler ve yapılan testleri, DX-ECAP modeli olarak imal edilen tüm ürünlerde uygulamıştır.

1.11. Safety İnstructions (ATEX)

 **Safety instructions should be read and applied to the end.**

-The following notes must be taken into attention to protect the operator and the enviroment from possible hazards.
-The device setup and maintenance of this device must be done by knowledgeable persons who has read the instructions and is familiar with the safety at work.
-İt should be checked by the users that the products are fitted suitable to the zone maps.
-Work safety,must be observe by accident prevention regulations and national installation standards.
-The product should be used within the specification presented guideline.
-You can only mount the device when there is no presure.
-These safety instructions are protected in terms of 1 / 2 D and 1 / 1 G category for **DX-ECAP** coded series and is compatible with IEP23ATEX1211X and CE certificate.
-The Label should be used in appropriate environments.
-Because the enviroment is max. 60 C you should choose a suitable cable for use.
-Do not over tighten the cable gland in order not to affect the IP protection class.
-Make sure the cable entry and plug is tightened right.
-Ground connection must be done properly and checked without energizing.
-Before starting use make sure the lid is fully closed and the set screw is tightened.
-**DX-ECAP** models are metal protected.İt is Compatible with different supply voltages specified in the catalog.
- The metal enclosure must be in the 2D or 2G zone. **The pipe and float** section must be located in the 1D and 1G zone.
-Max. working temperature,max. Surface temperature can change depending on the model, Please read the document carefully before using.
-During the mounting it should be checked that there is no mechanical stress or deformation in the tank wall.When this happens, the sensor should not be energized without the necessary correction measures.
-Check that the presure in the tank hasnt exceed the presure shown in the catalog.
-The mounting sensor must be mount properly in the tank filling system.In case it is not suitable, the sensor must be protected and the in-tank apparatus must be protected.

- Flange surface smoothness must be maintained in flanged connection.

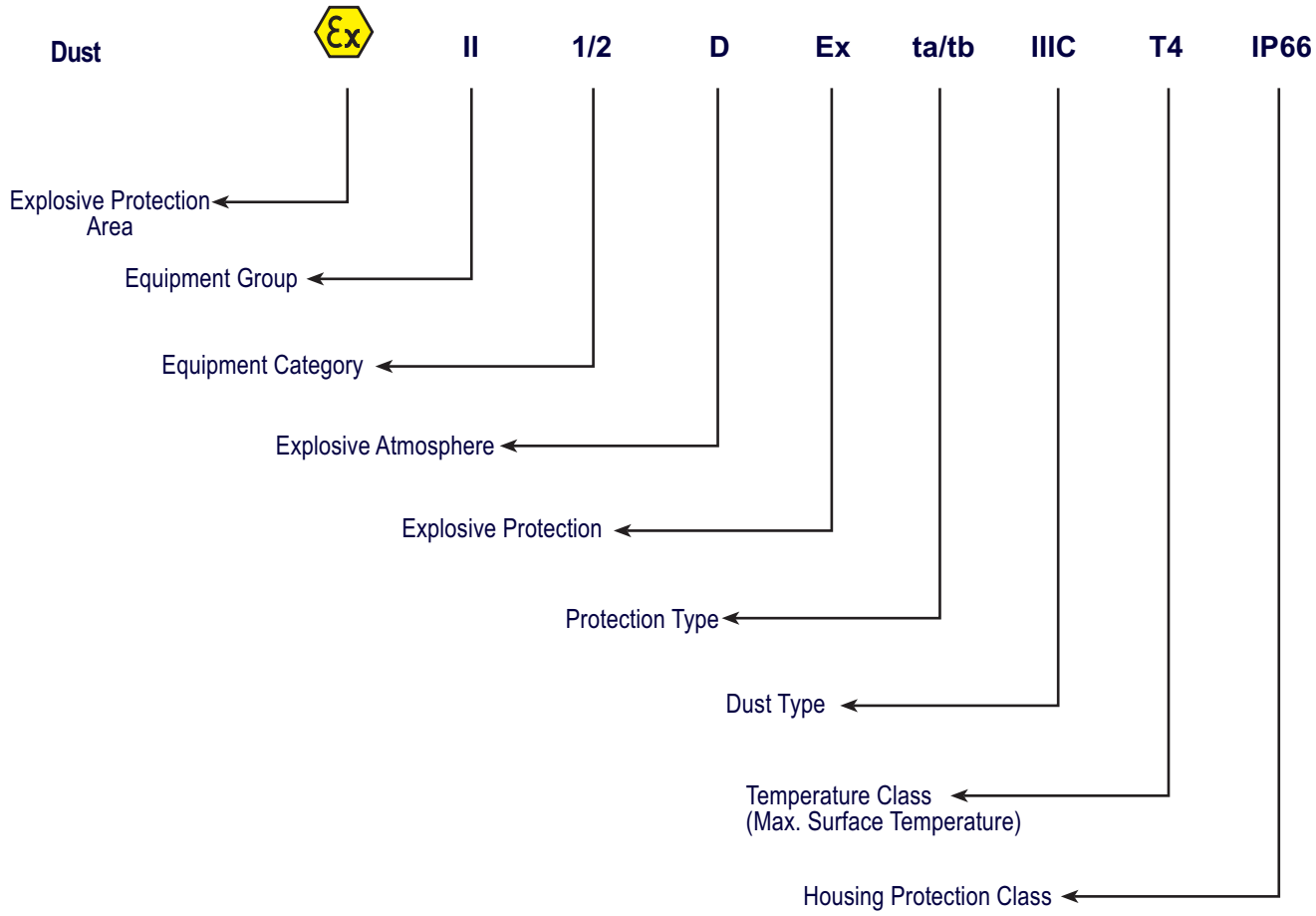
- Flange seating surface should not be scratched, and suitable liquid gasket should be used instead of sealing with gasket in counter flange mounting.

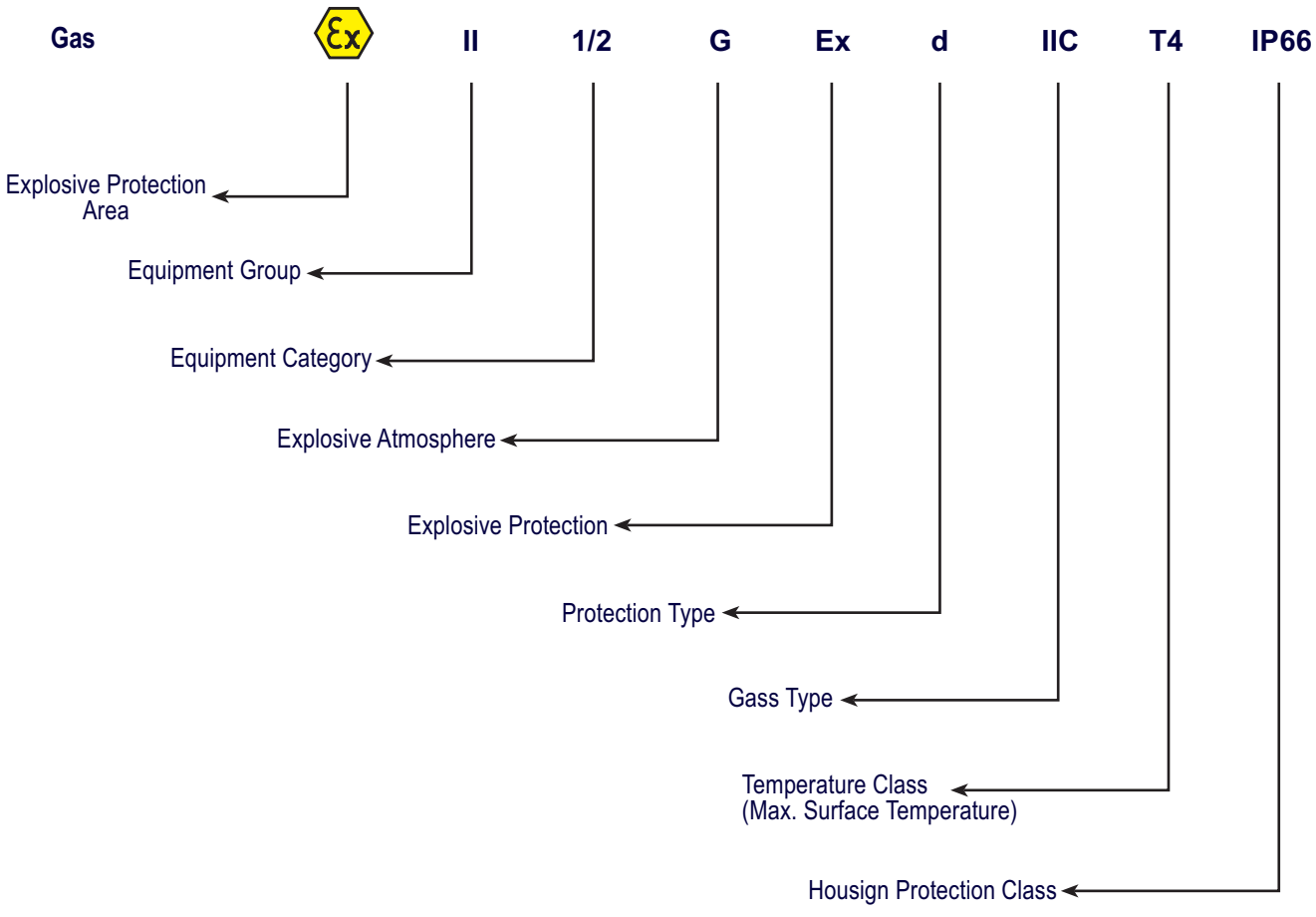
- Flanged connections are welded with the sensor part.

-The sensor is designed to withstand the chemical effects of the materials.Check the suitability of different materials.

-The Sensors are in suitable storage conditions and protected from dust and damp.
-Device repairs should only be done at the manufacturer Lonca Inc.
-Protect the device from friction and cleaning should be done without water.
-In case of improper circuit conditions, the main energy must be completely disconnected and safety measures should be taken without replacing the temperature circuit breaker with its backup.Changes should be made in a safe area.

1.12. ATEX Marking Sample Description





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 Transmitter** 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 Transmitter** 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.

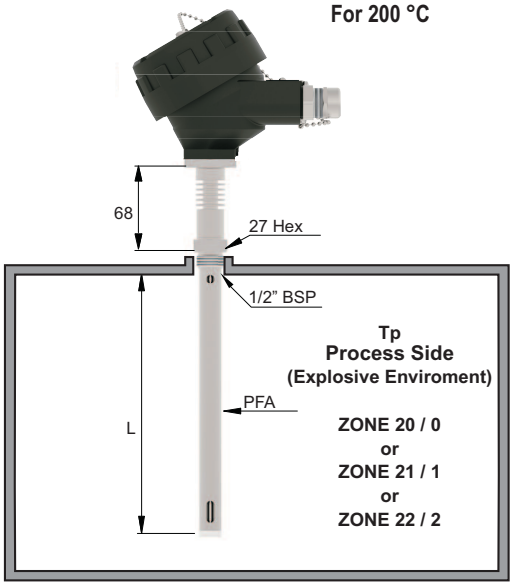
***Capacitive Level Transmitter** must be placed upright or horizontal.
*Allocate valve certainly in the process connection while instrument is used.
*Allocate blowdown valve under bottom flange for blowdown.
*If instrument is mounted outside and if there is any danger of lightning or excessive pressure, take preventive measures by taking necessary measures.

*In the operating conditions, **Capacitive Level Transmitter** 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 G1" max. 20 Nm, G 1 1/4", for G" 1 1/2" max. 30Nm)

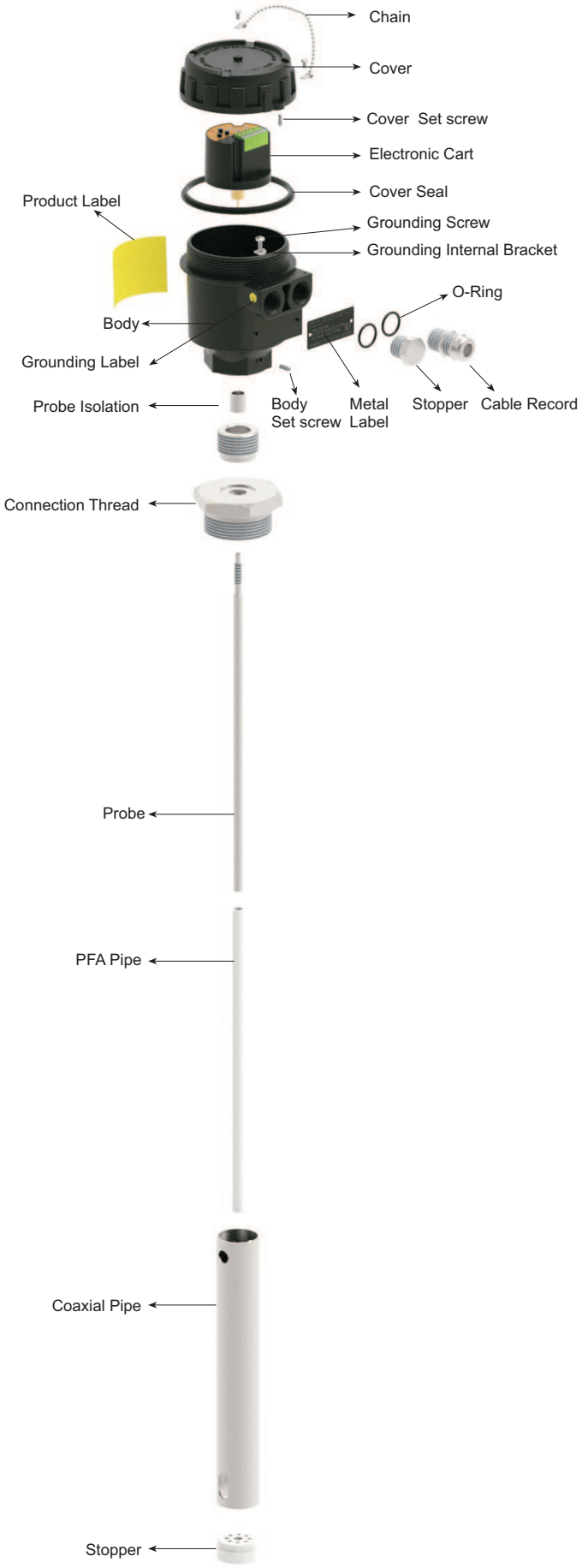
2.5. Parts

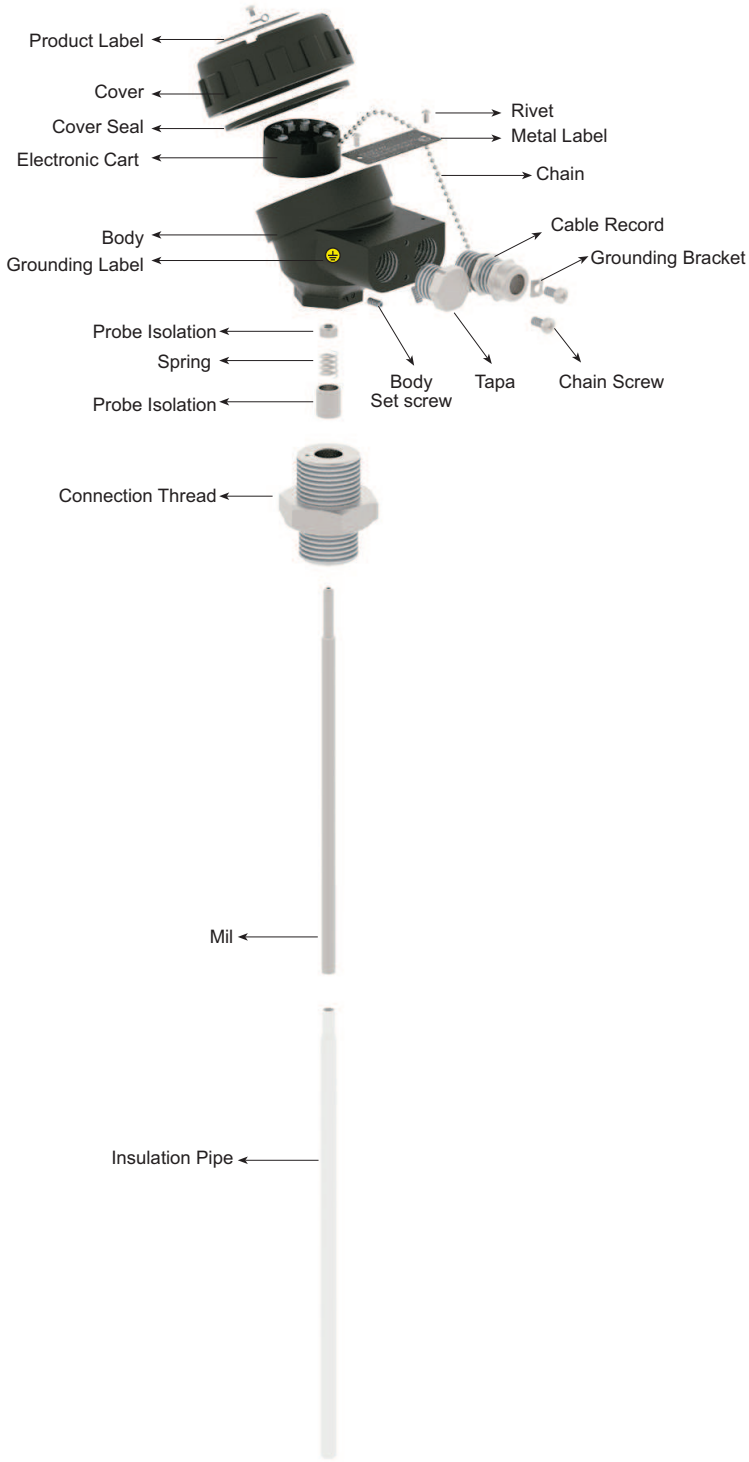


Protection Case:

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




Chain
Cover
Cover Set screw
Electronic Cart
Cover Seal
Product Label
Grounding Screw
Grounding Internal Bracket
O-Ring
Body
Grounding Label
Probe Isolation
Body Set screw
Metal Label
Stopper
Cable Record
Connection Thread
Probe
PFA Pipe
Coaxial Pipe
Stopper


Product Label
Cover
Cover Seal
Electronic Cart
Rivet
Metal Label
Chain
Body
Grounding Label
Cable Record
Grounding Bracket
Probe Isolation
Spring
Probe Isolation
Body Set screw
Tapa
Chain Screw
Connection Thread
Mil
Insulation Pipe

2.9. Maximum Surface Temperature

Temperature Class Table

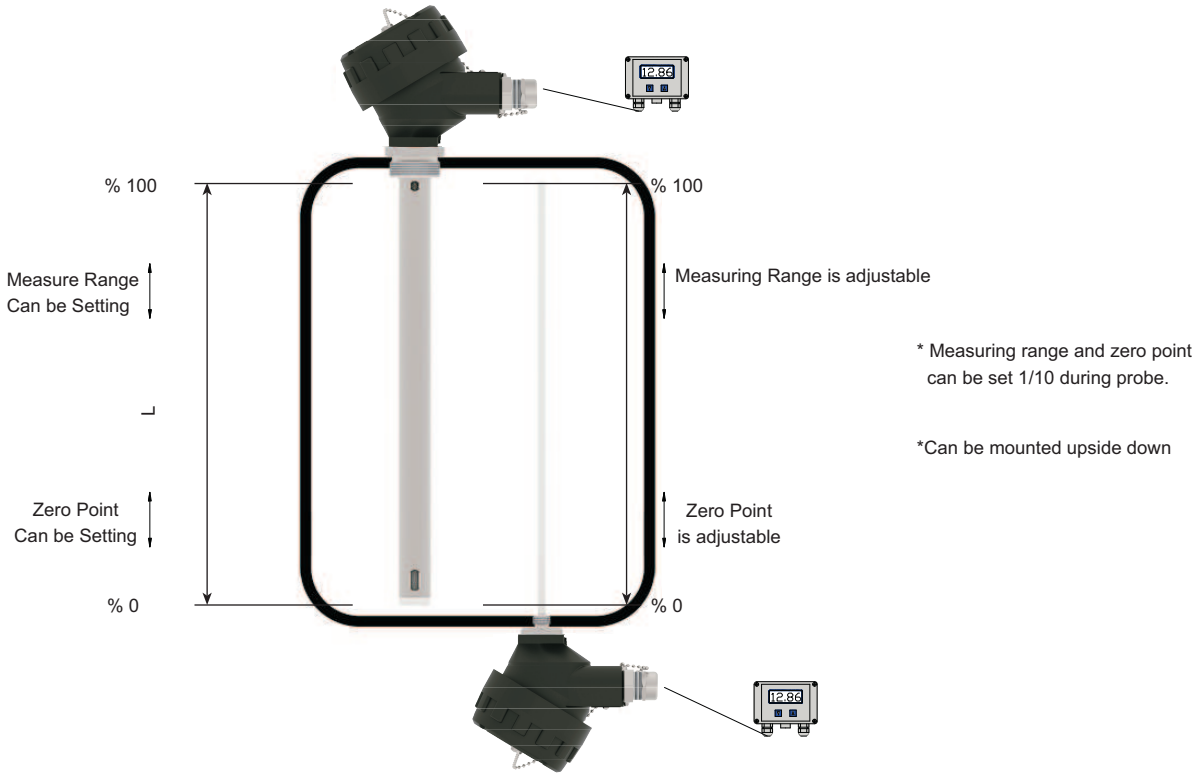
(-) 20° C ≤ Ta Ambient ≤ (+) 30° C...(+) 60°C	Working Temperature: (-) 20°C ... (+) 80°C / 90°C / 125°C / 190°C / 250°C	Group II
MODEL	DX-ECAP101 - DX-ECAP102 - DX-ECAP103 - DX-ECAP107 DX-ECAP202 - DX-ECAP203 - DX-ECAP204 - DX-ECAP205 - DX-ECAP20S DX-ECAP304 - DX-ECAP305 DX-ECAP408A - DX-ECAP408B	
Without opening the cover standby time	30 min. (-)40...(+)150°C	40 min. (-)40...(+)200°C

Ta AMBIENT TEMPERATURE	Tp PROCESS TEMPERATURE	TEMPERATURE CLASS
60°C	< 80°C	T6
60°C	< 90°C	T5
60°C	< 125°C	T4
60°C	< 190°C	T3
60°C	< 250°C	T2

(-) 20° C ≤ Ta Ambient ≤ (+) 30° C...(+) 60°C	Working Temperature: (-) 20°C ... (+) 60°C	Group III
MODEL	DX-ECAP101 - DX-ECAP102 - DX-ECAP103 - DX-ECAP107 DX-ECAP202 - DX-ECAP203 - DX-ECAP204 - DX-ECAP205 - DX-ECAP20S DX-ECAP304 - DX-ECAP305 DX-ECAP408A - DX-ECAP408B	
Without opening the cover standby time	10 min. (-)40...(+)60°C	

Ta AMBIENT TEMPERATURE	Tp PROCESS TEMPERATURE	TEMPERATURE CLASS
60°C	< 60°C	T6

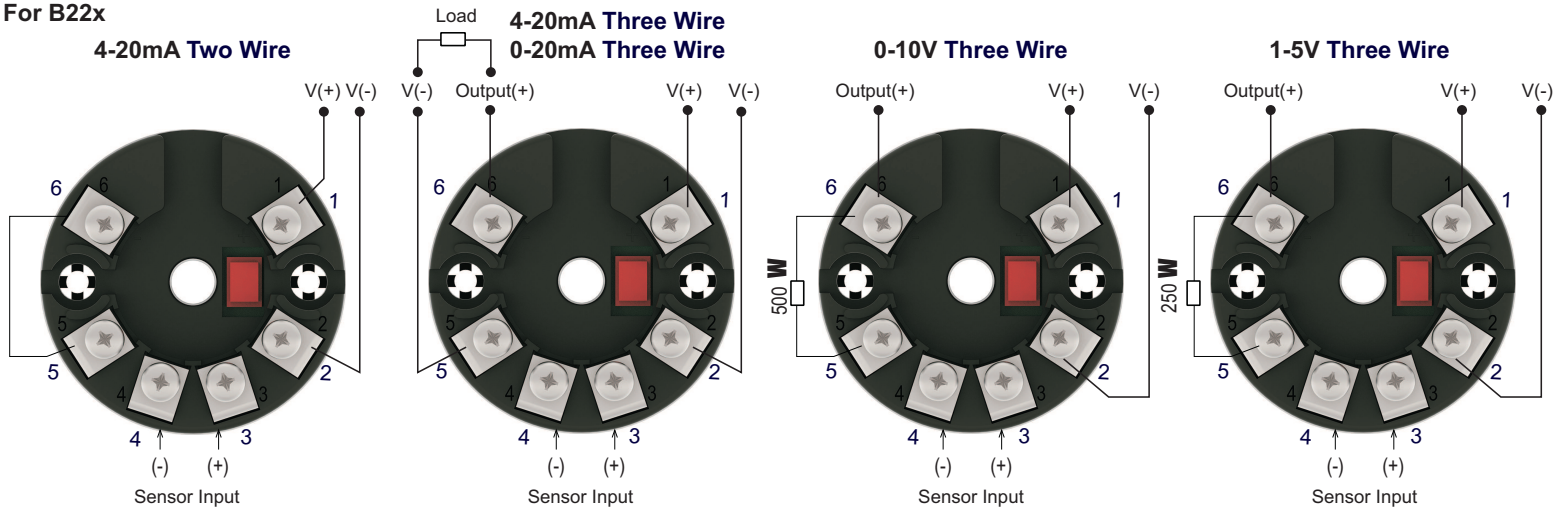
Note : It has been produced according to IPC A 600 class 2 conditions and tested with 100 % E-test. Moreover, HASL (non-lead) surface test has been applied.



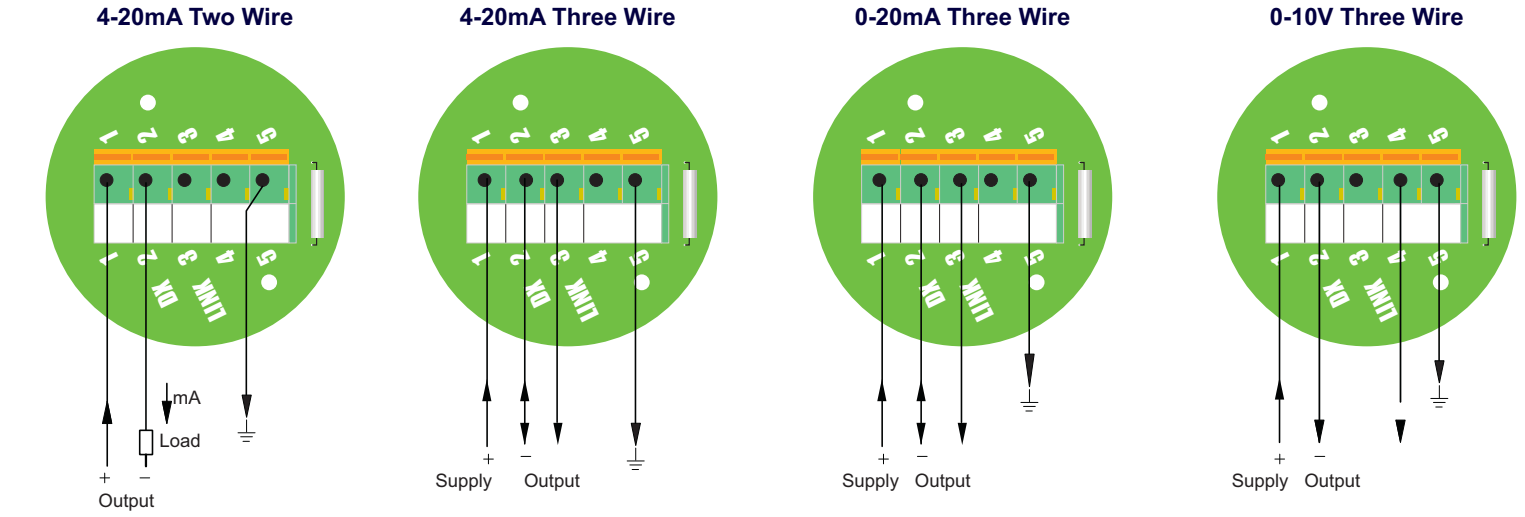
2.6. Electrical Installation

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

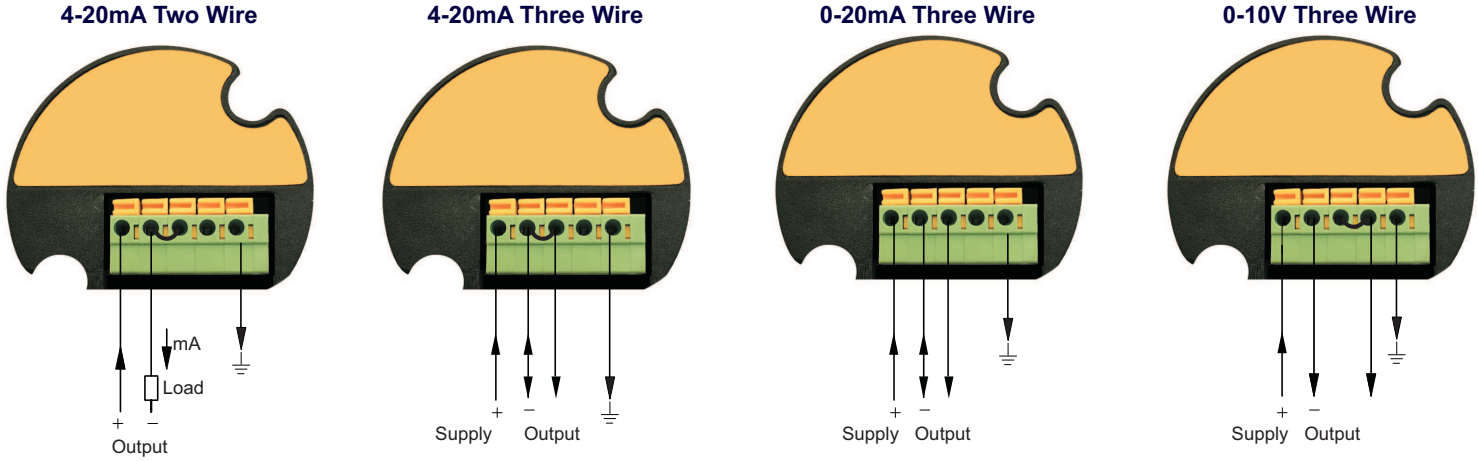
For B22x



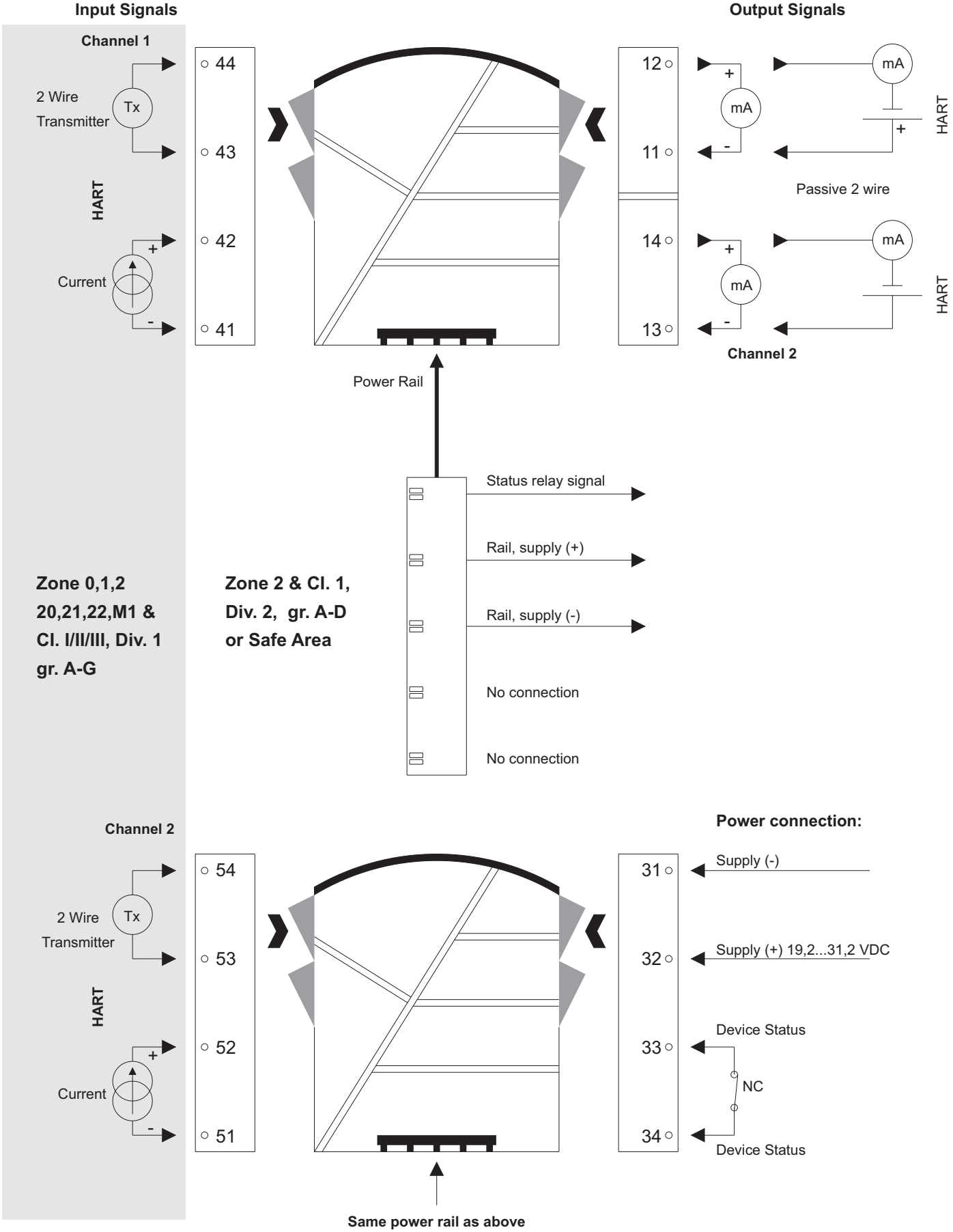
For B22x



For B21x

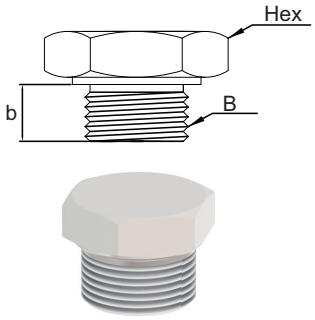


Note : It has been produced according to IPC A 600 class 2 conditions and tested with 100 % E-test. Moreover, HASL (non-lead) surface test has been applied.


Input Signals
Output Signals
Channel 1
2 Wire
Transmitter
Tx
HART
Current
+
-
44
43
42
41
12
11
14
13
mA
HART
Passive 2 wire
Channel 2
Power Rail
Status relay signal
Rail, supply (+)
Rail, supply (-)
No connection
No connection
Zone 0,1,2
20,21,22,M1 &
Cl. I/II/III, Div. 1
gr. A-G
Zone 2 & Cl. 1,
Div. 2, gr. A-D
or Safe Area
Channel 2
Power connection:
54
53
52
51
31
32
33
34
Supply (-)
Supply (+) 19,2...31,2 VDC
Device Status
NC
Device Status
Same power rail as above

2.7. Mechanic Connections :

Thread

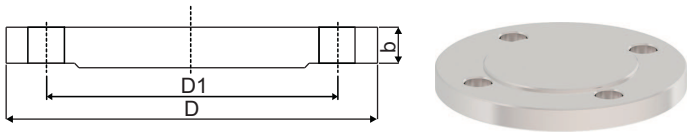


(ISO228-1)

Order Code	Dimension B	Hex [mm]	Stem Lenght b [mm]
0001	1/8" BSP	17	12
0002	1/4" BSP	17	12
0003	3/8" BSP	24	20
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

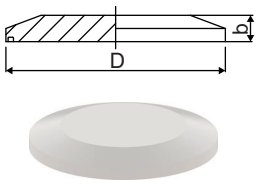
Order Code	(ISO1092-1) PN 16	D (mm)	D1 (mm)	b (mm)
0502	DN 25	165	85	16
0503	DN 32	140	100	16
0505	DN 50	165	125	18
0507	DN 80	200	160	20
0508	DN 100	220	180	20



Order Code	(ISO1092-1) PN 40	D (mm)	D1 (mm)	b (mm)
0702	DN 25	115	85	18
0703	DN 32	140	100	20
0705	DN 50	165	125	20
0707	DN 80	200	160	20
0708	DN 100	235	190	24

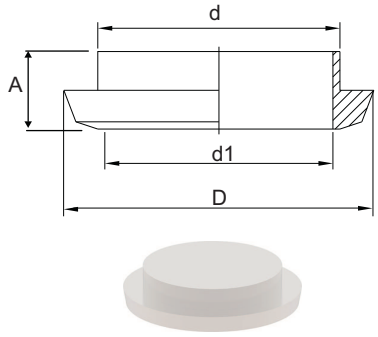
Order Code	(ANSI B16.5) 150 LBS	D (mm)	D1 (mm)	b (mm)
1005	DN 50	152,4	121	19
1006	DN 65	177,8	139,7	22,2
1007	DN 80	190,5	152,4	23,8
1008	DN 100	228,6	157,2	23,8

Clamp



Order Code	(ISO2852) Dimension	Diameter D (mm)	b (mm)
1501	DN 32	50,5	15
1502	DN 50	64	17
1503	DN 65	91	17

Dairy



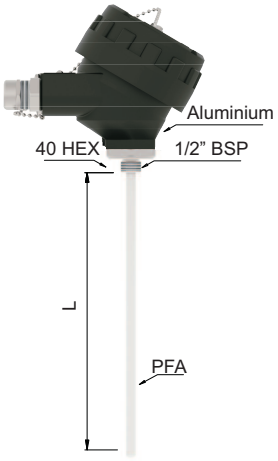
Order Code	Dimension	Dimension	D (mm)	d1 (mm)	A (mm)
1600	DN 40	DN 40	56	48	13
1601	DN 50	DN 50	68	61	14
1602	DN 100	DN 100	121	114	20

Sample Models:

CONDUCTIVE LIQUIDS

DX-ECAP 101

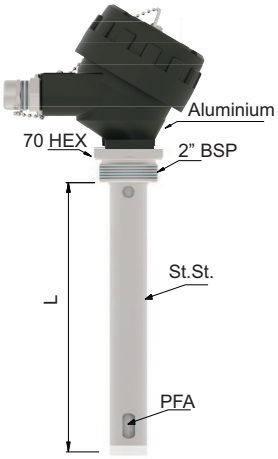
Fully Insulated Probe
Conductive Tank



Max. 4 m.
(-) 1...(+) 25 bar
(-)40 °C...(+) 150 °C

DX-ECAP 102

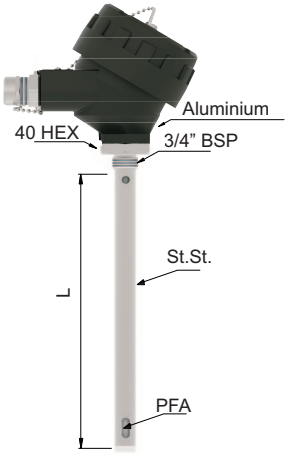
Fully Insulated Coaxial Probe
Insulated Tank



Max. 4 m.
(-) 1...(+) 25 bar
(-)40 °C...(+) 150 °C

DX-ECAP 103

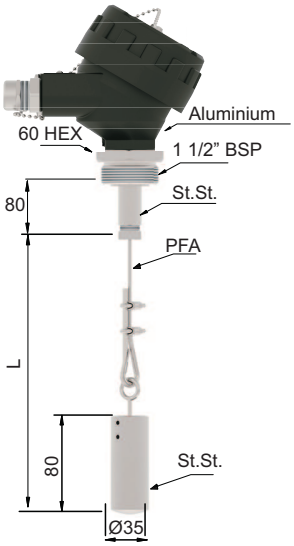
Fully Insulated Coaxial Probe
Insulated Tank



Max. 1 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

DX-ECAP 107

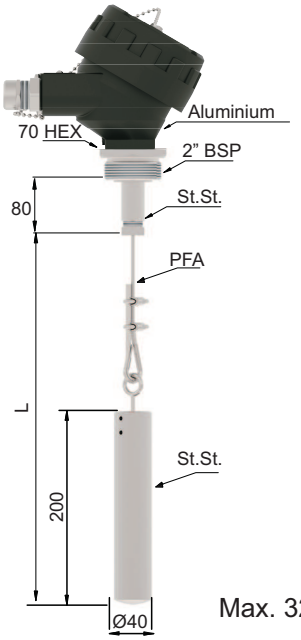
Fully Insulated Rope
Conductive Tank



L=1m.(Std) Max. 16 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

DX-ECAP 107

Fully Insulated Rope
Conductive Tank



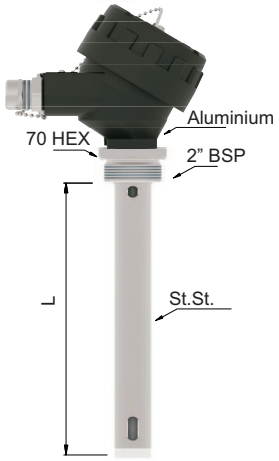
Max. 32 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

Sample Models:

LOW CONDUCTIVE LIQUIDS

DX-ECAP 202

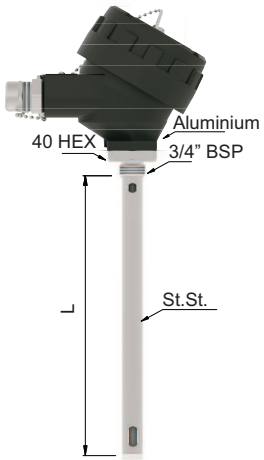
Partly Insulated Coaxial Probe
Conductive / Insulating Tank



Max. 4 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

DX-ECAP 203

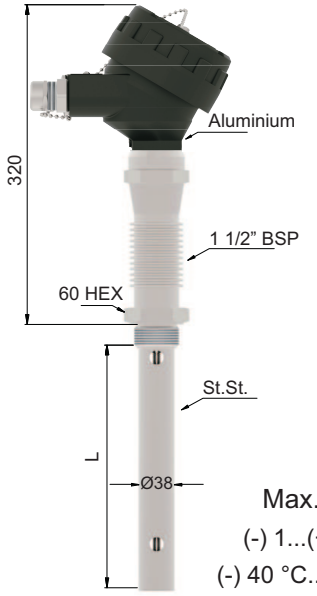
Partly Insulated Coaxial Probe
Conductive / Insulating Tank



Max. 1 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

DX-ECAP 20S

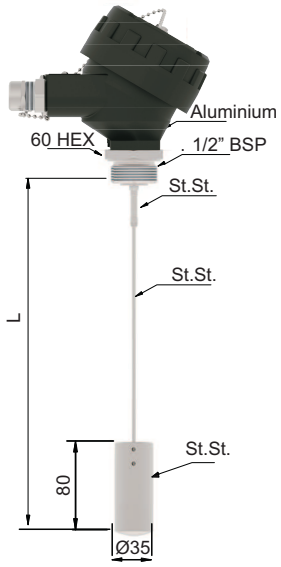
Partly Insulated Coaxial Probe
Conductive / Insulating Tank



Max. 4 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 400 °C

DX-ECAP 204

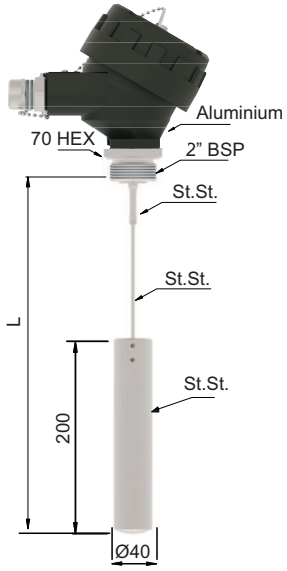
Partly Insulated Rope
Conductive Tank



Max. 16 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

DX-ECAP 204

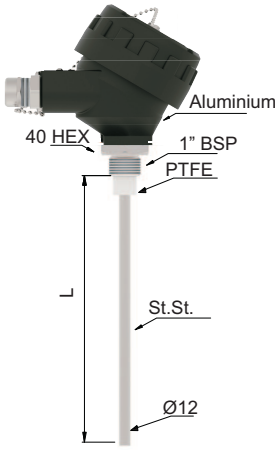
Partly Insulated Rope
Conductive Tank



Max. 32 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

DX-ECAP 205

Partly Insulated Probe
Conductive Tank



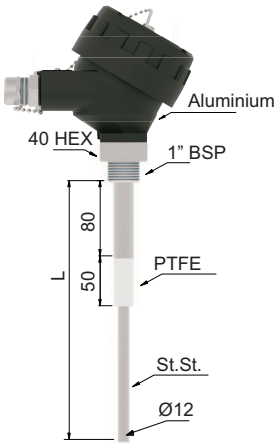
Max. 6 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

Sample Models:

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

DX-ECAP 305

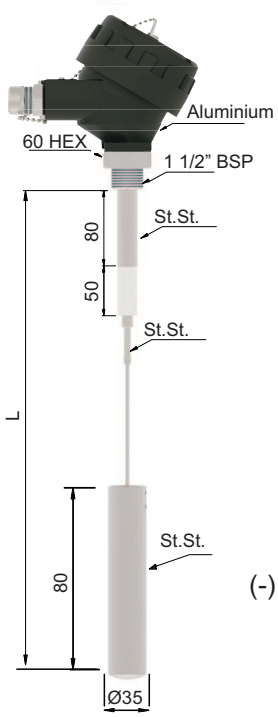
Partly Insulated Probe
Conductive Tank



Max. 6 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

DX-ECAP 304

Partly Insulated Rope
Conductive Tank

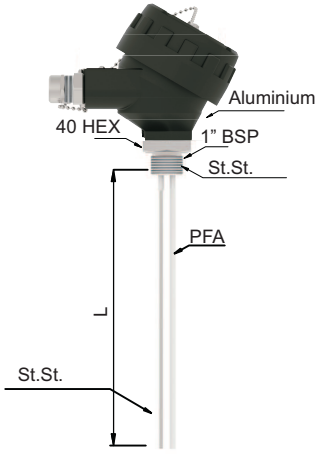


Max. 16 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

A D H E S I V E A N D A C I D / B A S I C L I Q U I D S

DX-ECAP 408A

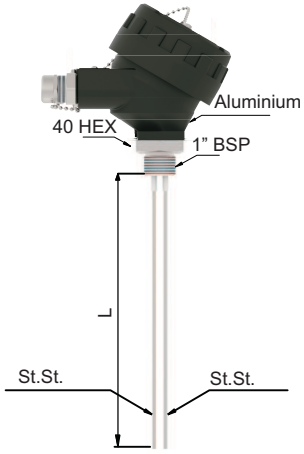
Double Probe (Single Fully Insulated)
Conductive / Insulating Tank



Max. 4 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

DX-ECAP 408B

Double Probe (Partly Insulated)
Conductive / Insulating Tank



Max. 6 m.
(-) 1...(+) 25 bar
(-) 40 °C...(+) 150 °C

2.11. Order Form

Order Form: Please consider sample models when coding!.. (Lined spaces defines the standard code)

1 MODEL DX-ECAP

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

2 CERTIFICATE

No.....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 - Partly Insulated (Max 32 m).....4
Single Probe - Partly Insulated (Max 6 m) 5
Rope - Fully Insulated (0 ... 32 m) 7
Double Probe - Single Fully Insulated (Max 4 m) 8A
Double Probe - Partly Insulated (Max 6 m) 8B
Ceramic Partly Insulated Probe (Max 4 m) ..... S
Special x

4 PROBE DIAMETER (Ø)

.....mm
Special x

5 STEM LENGHT

.....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

7 CONNECTION

Thread (ISO 228-1)	Clamp (ISO 2852)	ISO Flange(1092-1)	ISO Flange (1092-1)	ASA Flanged (B16.5)
1/2" BSP.....0004	DN 25 - PN 16 ... 0502	DN 25 - PN 16...0502	DN 25 - PN 40...0702	DN 50 - 150lb ... 1005
3/4" BSP 0005	DN 32 - PN 16 ... 0503	DN 32 - PN 16...0503	DN 32 - PN 40...0703	DN 65 - 150lb ... 1006
1" BSP.....0006	DN 50 - PN 16 ... 0504	DN 50 - PN 16...0505	DN 50 - PN 40...0705	DN 80 - 150lb ... 1007
1 1/2" BSP.....0010		DN 80 - PN 16...0507	DN 80 - PN 40...0707	DN 100 - 150lb ... 1008
2" BSP.....0012		DN 100 - PN 16...0508	DN 100 - PN 40...0708	
1/2" NPT.....0203				
3/4" NPT.....0204				

8 OUTPUT

4-20 mA Two Wire.....19
4-20 mA Three Wire 20
1-5 V Three Wire 43
0-10 V Three Wire 21
0-20 mA Three Wire.....22
Special x

9 HOUSING

Aluminium Housing, B22x IP66 / 68.....750
Aluminium Housing, B21x IP66 / 68.....704
Special.....x

10 INSULATION MATERIAL

PBT.....065
PTFE.....066
PFA.....067
PEEK.....068
Polyamide.....069
Rubber.....081
FKM.....084
Special.....x

11 CONNECTION MATERIAL

316 Stainless Steel.....002
Brass.....041
Special.....x

12 ELECTRICAL CONNECTION

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

13 OPTIONAL

No...../ 0
By - Pass Tube..... / T
Shetter (For the outside of the tank) 304 St. St..../ K2
Wall Apparatus...../ W
Zener Baryer 9106B-BIB Single Channel..../B1B
Zener Barier 9106B-B2B Double Channel../B2B
Special...../ x

SAMPLE

DX-ECAP 101 -10 - 300 - 0 - 0004 - 21 - 750 - 066 - 002 - 00 / 0
For Cond. Liquid, L= 300 mm, 1" BSP, 0-10V, Aluminium Housing B22x , Ø 10 Probe

2.12.

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.



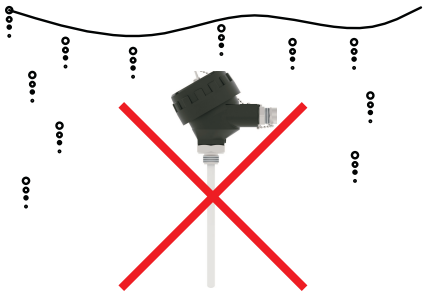
Please do not dip cables
potting into liquids,otherwise
instulation problem may cause.



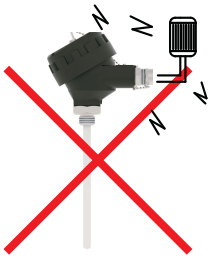
Do not fasten switch reversely ,
otherwise its characteristics
might be changed.



Vibration might be caused instability.



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



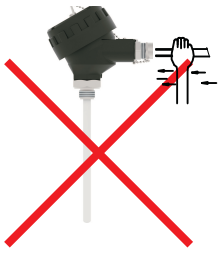
Excess current , to be drawn as
a result of direct connection to motor,
may burn relay of switch



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.
Non-Calibration	* The applied process may not be suitable for the probe. * Grounding connection either poor or disconnected. * There might be low power supply. * Grounding might be done correctly. * PTFE coat around the probe might be damaged.	* Appropriate probe material and product selections should be made * Checking the grounding connections * The supply voltage must be checked. * Please check grounding wire * Protection of the exterior cover of probes.
Increase of the output current	* Variety of applied process * PTFE coat around the probe might be damaged. * Grounding might be done correctly.	* Appropriate probe material and product selections should be made. * Protection of the exterior cover of probes. * Please check grounding wire

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 year 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: 78A 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.