Model: 24-2026-009

OPERATING MANUEL

Model : ELC

LEVEL SWITCH - Conductivity Type

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 :

ELC 21d , ELC 31d
ELC 21m , ELC 31m , ELC 41m , ELC 51m
ELC 21 , ELC 31 , ELC 41
ELC 21p , ELC 31p , ELC 41p , ELC 51p

CE

Important Notes:

Used Symbols :

: Caution : Note : Disposal

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

11.2. Information about Areas of Use

ELC conductivity type level switches are used for checking liquid level of tanks and boilers. As it does not have any movable part, it can be used in the critical ambient and in the liquids with solid particle, low density and high viscosity.

Ambient Conditions: **Relative Humidity:** 5-95 %RH **Ambient temperature:** 50C (It is not used under -5 C)

1.3. Working Principle

When liquid leved comes to the level of isolated electrode, current passage starts or stops between electrode and liquid. Strengthened this AC current may be assesed with a relay cirruit.

Areas of Application :

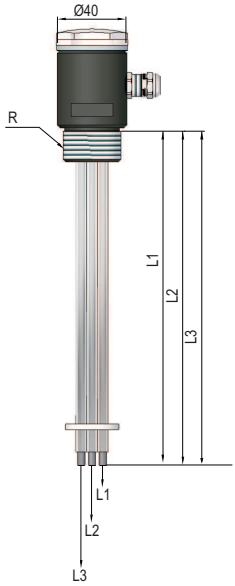
It is an economic and safe solution for air pressure tank applications, water level control of steam boilers and conductive tanks.

1.4. Technical Specifications and Pictures:

Technical Specifications:

Electrode Material	304 Stainless Steel Opt. 316 Stainless Steel
Isolation of Electrode	Special Tubing
Connection Material	Delrin
Housing	Delrin
Max. Working Temp.	60 °C
Max. Working Pressure	6 bar
Number of Electrode	Max. 3
Voltage Probe	Max. 6 VAC
Mechanical Connection (R)	1" BSP (Std)
Electrical Connection	PG 7



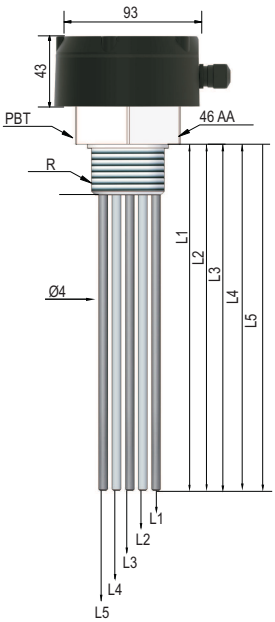


ELC 21d , ELC 31d

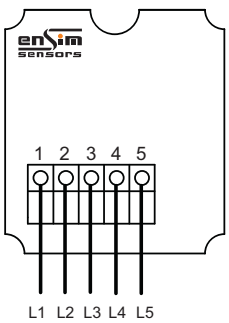
Technical Specifications:

Electrode Material	304 Stainless Steel Opt. 316 Stainless Steel
Isolation of Electrode	PBT Opt. PVDF
Connection Material	PBT Opt. PVDF
Housing	Plastic
Max. Working Temp.	100 °C Ops.120 °C
Max. Working Pressure	10 bar
Number of Electrode	Max. 5
Voltage Probe	Max. 6 VAC
Mechanical Connection (R)	1" BSP (Std)
Electrical Connection	PG 7 - Terminal





ELC 21m , ELC 31m
ELC 41m , ELC 51m

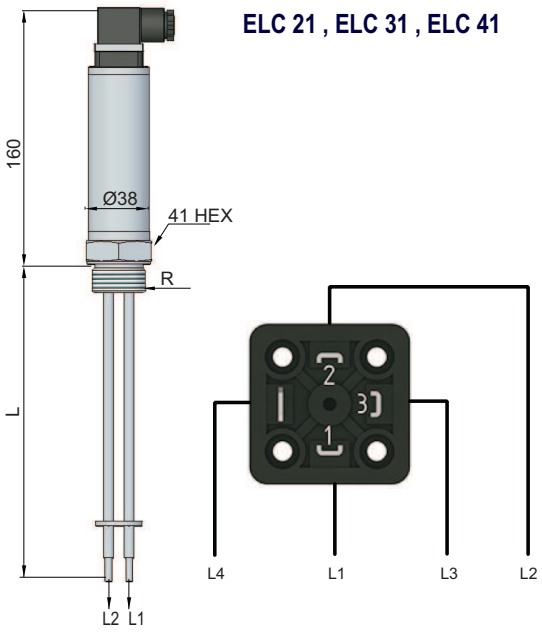


All dimensions are given in mm.

Technical Specifications:

Electrode Material	304 Stainless Steel Opt. 316 Stainless Steel
Isolation of Electrode	PTFE
Connection Material	304 Stainless Steel Opt. 316 Stainless Steel
Case	304 Stainless Steel Opt. 316 Stainless Steel
Max. Working Temp.	Max. 200 °C
Max. Working Pressure	25 Bar
Number of Electrode	Max. 4
Voltage Probe	Max.6 VAC
Mechanical Connection (R)	1" BSP (Std)
Electrical Connection	DIN 43650A (ISO4400)



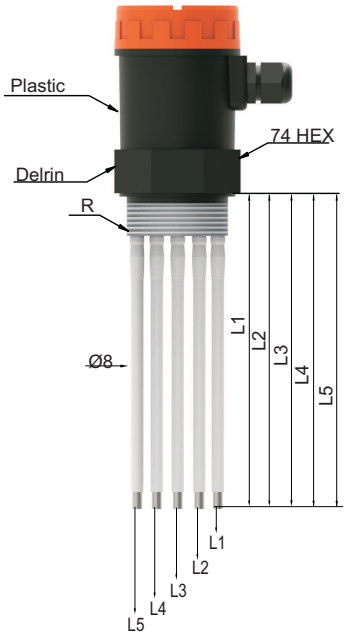


ELC 21 , ELC 31 , ELC 41

Technical Specifications:

Electrode Material	304 Stainless Steel Opt. 316 Stainless Steel
Isolation of Electrode	Delrin Opt. PTFE
Connection Material	Delrin Opt. PTFE
Case	PBT
Max. Working Temp.	80 °C Opt.120 °C
Max. Working Pressure	25 bar
Number of Electrode	Max.5
Voltage Probe	Max. 6 VAC
Mechanical Connection (R)	2" BSP (Std)
Electrical Connection	PG 13,5





ELC 21p , ELC 31p
ELC 41p , ELC 51p

LEVEL CONTROL RELAY



SK-P3

4 pcs. 5 A

Independent Relay

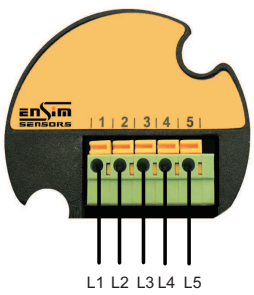


SK-P4

1 pc. 5 A Start - Stop Relay

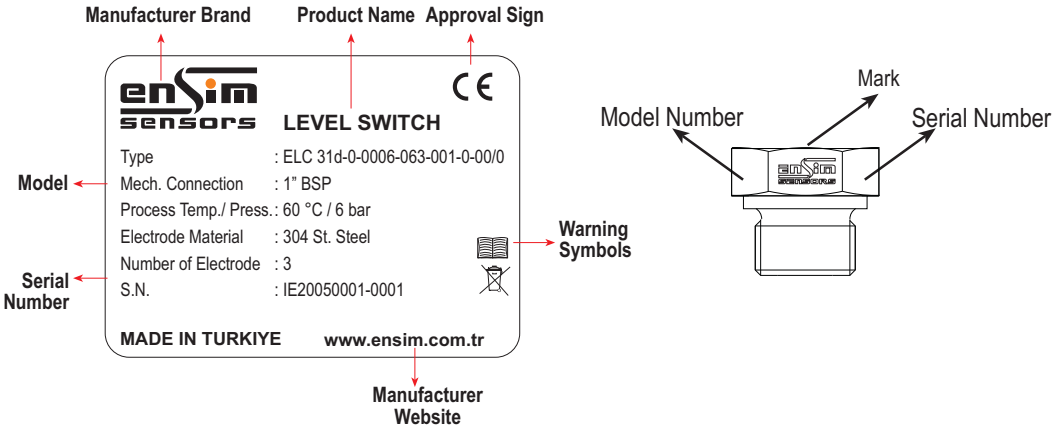
+

2 pcs. 5 A Min. - Max. Relay



All dimensions are given in mm.

1.5.Label Information



1.6. Target Group

This operating manual has been prepared for qualified technical personnel.

1.7. Güvenlik Notları

Aşağıdaki notlar operatör ve çevresinde oluşabilecek tehlikelerden kaçınmak için dikkate alınmalıdır.

Bu cihazın kurulumu, kullanımı ve bakımı yalnızca kullanım kılavuzunu okumuş ve iş güvenliği konusunda bilgili kişilerce yapılmalıdır!
İş güvenliği, kaza önleme yönetmelikleri ve ulusal kurulum standartlarına uyulmalıdır.
Ürün yalnızca belirtilen spesifikasyonlar dahilinde kullanılmalıdır!
Cihazı yalnızca basınç olmadığında monte edebilirsiniz!

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:

*** Level Switch**
* This operating manual

2. Installation :

2.1. General Notes

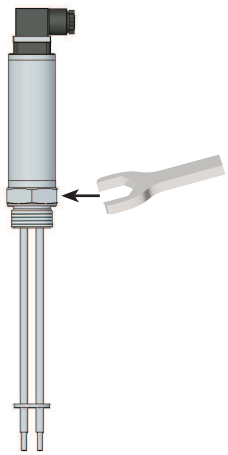
Installation of the instrument should be made only by authorized personnel.
Do not apply force to the instrument during the installation!
Do not use the level indicator with a greater pressure than recommended pressure.
Do not forget that instrument is precise, carry it carefully and prevent to be damaged.
It should be guaranteed that there are not any magnetic particles.

2.2. General Installation Stages

*Remove **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.
***Level switch** must be placed upright or horizontal.
*In the operating conditions, **Level switch** may be hot according to situation of fluid, in this case, do not touch the indicator, otherwise your skin is damaged.



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 G1/2" max. 20 Nm , For G2" max. 20 Nm)

2.5. Electrical Installation

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

2.6. Order Form

Order Form : Please consider sample models when coding!..

1 MODEL ELC

2 Electrode.....21d
3 Electrode.....31d
2 Electrode.....21m
3 Electrode.....31m
4 Electrode.....41m
5 Electrode.....51m

Metal, 2 Electrode..... 21
Metal, 3 Electrode..... 31
Metal, 4 Electrode.....41
Plastic, 2 Electrode.....21p
Plastic, 3 Electrode.....31p
Plastic, 4 Electrode.....41p
Plastic, 5 Electrode.....51p

2 CERTIFICATE

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

3 CONNECTION

1/4" BSP.....0002
3/8" BSP.....0003
1/2" BSP 0004

1" BSP.....0006
2" BSP 0012
Special.....x

4 CONNECTION MATERIAL

304 Stainless Steel 001
316 Stainless Steel 002
PVC.....061

Delrin.....063
PVDF.....064
PBT.....065
PTFE.....066
Special.....x

5 ELECTROD MATERIAL

304 Stainless Steel 001
316 Stainless Steel 002

Titanum.....051
Special.....x

6 HOUSING

None.....0
Plastic Delrin , B41p.....191
Plastic , B10p Flat (ELC21p).....051

Plastic B037p.....193
PC Grey P65.....252
Aluminium Muhafaza B22x.....750
Special.....x

7 ELECTRICAL CONNECTION

With Clemens.....00
Polyamide Big Socketed P02.....50
PVC Cable (Max. 60 °C).....80

PVC Cable (Max. 105 °C).....81
Silicon Cable (Max. 200 °C).....82
PTFE Cable (Max. 230 °C).....99
Special.....x

8 STEM LENGHT (mm) L

mm.....

9 OPTIONAL

None...../ 0

Level Control Device...../ SK-P3
Level Control Device...../ SK-P4
Special...../ x

SAMPLE

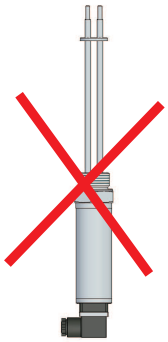
ELC 21-0-0006-001-001-0-00-500/0

ELC 21 - Metal , PBT 2 Electrod - 1" 304 St. St. Connection - Electrod 304 St. St. -With Clemens , L=500 mm

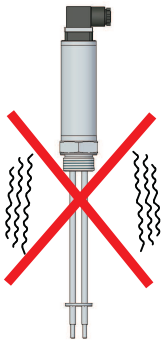
2.7.

WARNING !!!

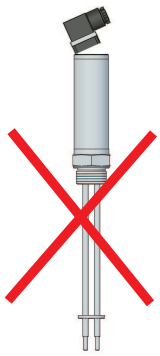
Please pay attention to following matters in order to operate your flow switch properly.



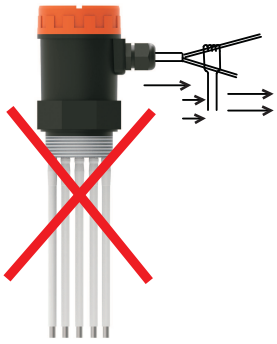
Do not connect the switch in reverse. Their characteristics may vary.



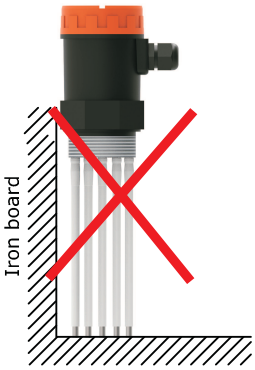
Vibration might be caused instability.



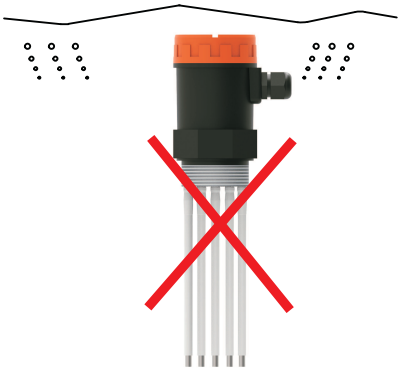
When opening the upper part of the housing not to break the connection plastic please note.



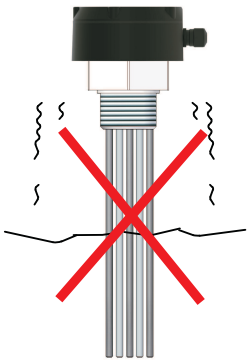
Do not pull the cable strongly, otherwise the characteristics might be changed.



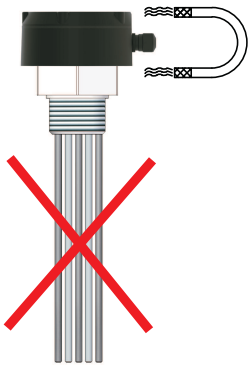
Please keep away from magnetic materials like iron board ; otherwise the characteristics might be affected



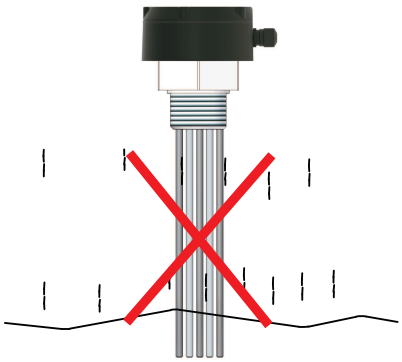
In case vapour splash cable potting points,insulation problem may cause.



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



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



Fluids that can damage the material keep away.

3. Failure Delection

Breakdown	Probable cause	Failure detection \ Correction
Fluid is leaking	-Pressure was applied above its value. -Product was subjected to sudden pressure.	-Inform authorized service. -Choose a model suitable for pressure.
High Resistance Output	-Probes have short-circuited - The wires used in process is not suitable - Dirt has stacked on probes due to maintenance neglect	- The nut on probe thread have overly screwed inside of housing - Proper connection cable should be used. - According to liquid, periodic maintenance should be sustained.
Probe Does Not Produce Resistance Output	- Liquid might not be contacted. - Plugs of the probe might be too relaxed. - There migh be a break in process wire. - Probe might be dissolved due to chemical substance.	- Liquid contact should be checked. - Plugs should be checked. - Process wire should be checked. - Contact with the manufacturer.

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 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:

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.