OPERATING MANUEL

Model : ELP

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 :

ELP 11, ELP 26
ELP 31, ELP 32, ELP 32s, ELP 33, ELP 34
ELP 31L, ELP 32L, ELP 33L, ELP 34L,ELP 32sL
ELP 81p , ELP 81
ELP 02a / 02b / 03a / 03b
ELP 04a / 04b / 08a / 08b

CE

Important Notes:

Used Symbols :

: Caution : Note : Disposal

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

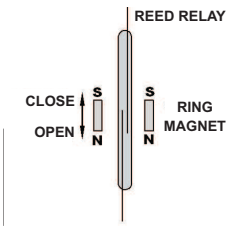
1.2. Information about Areas of Use

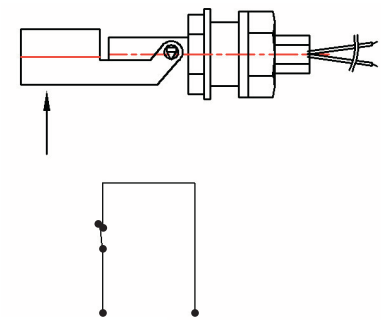
It should be used in allowed using medium and application areas! It is not used in the corrosive mediums, ambient with explosive and flammable material. Conformity with medium to be measured should be also taken into consideration. Responsibility is not assumed in case of inappropriate use, modification and injure, and such cases are not covered by warranty.

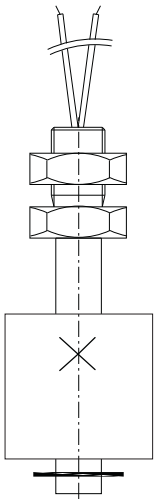
Ambient Conditions: Relative Humidity: 5-95 %RH Ambient temperature: 70C (It is not used under -5 C)

1.3. Operating Princible

ELP level switches are used for checkin level of tank. It is preferred by machine manufacturers, especially in terms of its ease ofg use and economy. The ELP level switched can be mounted in litte places because of their mini design. The switches are made by stainless steel material and so can be used in various liquids.
When magnetic field of magnet in the float is aligned withreed sensor in the tube , it opens or closes the electric circuit.When float moves away , sensor reverts back (upon demand , drawn contact may be made).
Level informationcan be assessed with a relay circuit.







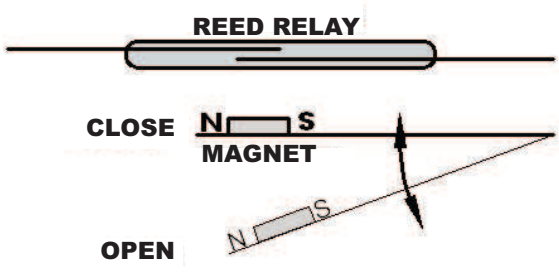
Advantages :

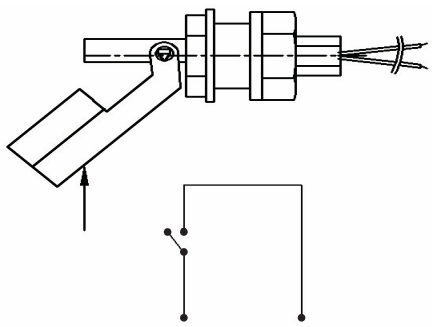
* Economic.
* Practical and easy installation.
* Fast delivery.
* Plastic material.



E-GSM Alarm Device - Double Entry

Battery or and supply
2 pcs. Lithium batteries, 12V adaptor (Incluced)
Excluding phone card.





LEVEL CONTROL DEVICE

SK-P2

Power Supply	220 VAC, 2.8 VA
Output	2 pcs. 5 A / 250 VAC Relay (Start/Stop)
Working Temperature	(-) 20 °C / (+) 70 °C
Dimensions	72 mm x 72 mm
Input	Contact Information , coming from ELP
Isolation	Input and output are isolated



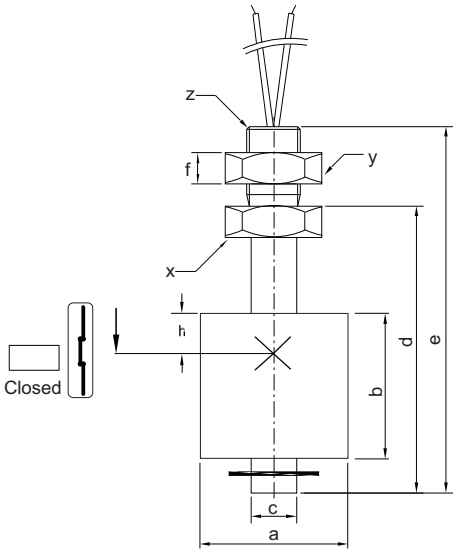
SK-P2
72 mm x 72 mm

1.4. Technical Specifications :

Technical Specifications :	ELP 02a / 02b ELP 03a / 03b ELP 04a / 04b ELP 08a / 08b	ELP 11
Float Material	PP	PP
Wetted Parts Material	PP	PP
Pipe Material	PP	PP
Working Temperature	(-) 40 °C / (+) 80 °C	(-) 20 °C / (+) 80 °C
Max. Pressure (bar)	Atm.	Atm.
Min. Density (g/cm^3)	0.70 (g/cm³)	0.70 (g/cm³)
Electrical Connection	Cable	Cable
Number of Float	1 Std.	1 Std.
Number of Contact	SPST - NO	SPST-NO
Contact Current	0,7 A	1 A
Max. Contact Power	10 W / VA	10 W / VA
Max.Switching Voltage	180 VDC / 130 VAC	180 VDC / 130 VAC

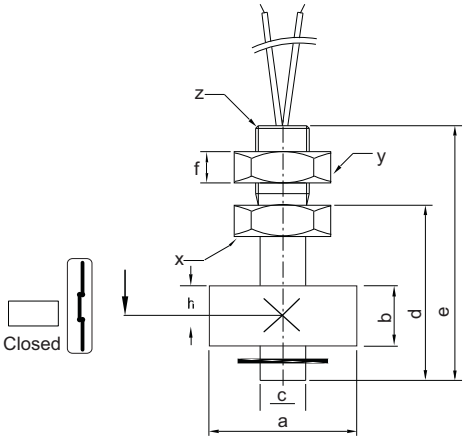
MODEL Dimension	ELP 02a ELP 02b Cylindric	ELP 03a ELP 03b Cylindric	ELP 04a ELP 04b Cylindric	ELP 08a ELP 08b Cylindric	ELP 11 Cylindric
a	Ø 18	Ø 19 / Ø 24	Ø 2 4	Ø 24	20
b	6	16	16	22	26
c	7	7	7	8,4	8.5
d	20	31	41	85	44
e	30	43	54	104	55
f	7	7	7	8	6
x	12AA	13AA	13AA	16AA	17AA
y	13AA	13AA	13AA	16AA	17AA
z	M8 x 1,55 mm²	M8 x 1,25 mm²	M10 x 1,25 mm²	M10 x 1,25 mm²	1/8" BSP

ELP 03a / 03b / 04a / 04b / 08a / 08b

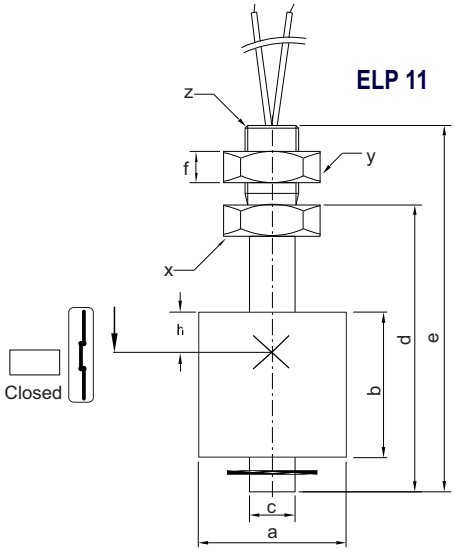


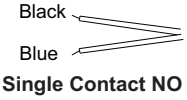


ELP 02a / 02b



ELP 11



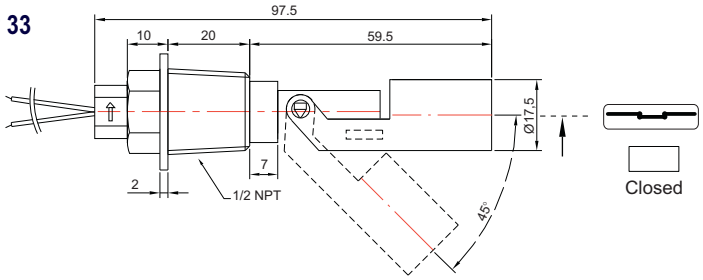


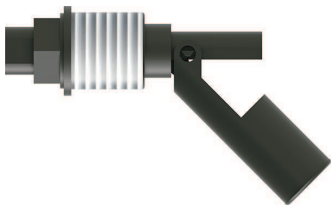
Single Contact NO

All dimensions are given in mm.

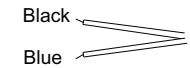
Technical Specifications :

ELP 31 , ELP 33



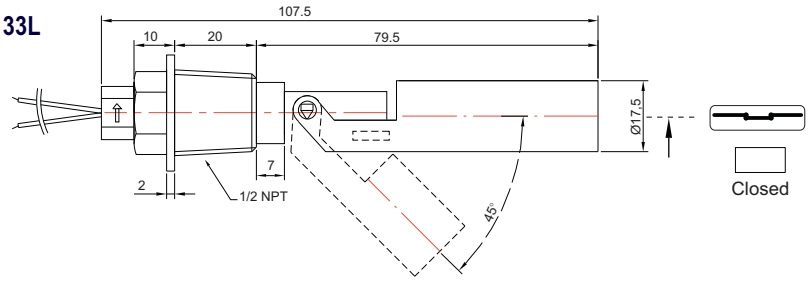


	ELP 31	ELP 33
Float Material	PP	PVDF
Wetted Parts Materi	PP	PVDF
Float Type	P10	P10
Working Temperature	(-) 20 °C / (+) 80 °C	(-) 30 °C / (+) 120 °C
Mechanical Connection	1/2" NPT	1/2" NPT
Max. Pressure	4 bar	2 bar
Min. Density	0.85 (g/cm³)	0.90 (g/cm³)
Electrical Connection	Cable	Cable
Number of Float	1 Std.	1 Std.
Number of Contact	1 x SPST - NO	1 x SPST - NO
Contact Current	1 A	1 A
Max. Contact Power	10 W / VA	10 W / VA
Max.Switching Voltage	200 VDC / 140 VAC	200 VDC / 140 VAC

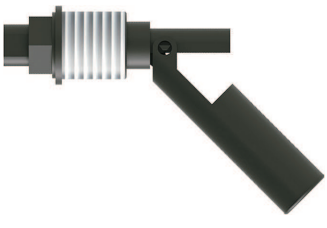


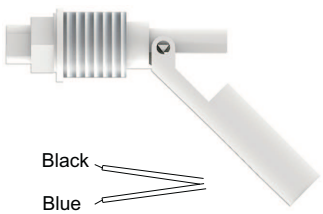
Single Contact NO

ELP 31L , ELP 33L



	ELP 31L	ELP 33L
Float Material	PP	PVDF
Wetted Parts Materi	PP	PVDF
Float Type	P10	P10
Working Temperature	(-) 20 °C / (+) 80 °C	(-) 30 °C / (+) 120 °C
Mechanical Connection	1/2" NPT	1/2" NPT
Max. Pressure	4 bar	2 bar
Min. Density	0.75 (g/cm³)	0.80 (g/cm³)
Electrical Connection	Cable	Cable
Number of Float	1 Std.	1 Std.
Number of Contact	1 x SPST - NO	1 x SPST - NO
Contact Current	1 A	1 A
Max. Contact Power	10 W / VA	10 W / VA
Max.Switching Voltage	200 VDC / 140 VAC	200 VDC / 140 VAC





Single Contact NO

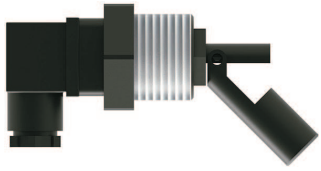
All dimensions are given in mm.

Technical Specifications :

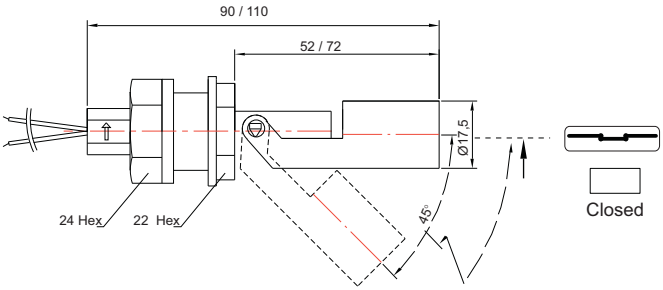
	ELP 32	ELP 32L	ELP 34	ELP 34L	ELP 32s	ELP 32sL
Float Material	PP / PBT		PVDF		PP	
Wetted Parts Materi	PP / PBT		PVDF		PP	
Float Type	P10		P10		P10	
Working Temperature	(-) 20 °C / (+) 80 °C		(-) 30 °C / (+) 120 °C		(-) 20 °C / (+) 80 °C	
Mechanical Connection	M16		M16		1" BSP	
Max. Pressure	4 bar		4		4 bar	
Min. Density	0.85 (g/cm³)	0.75 (g/cm³)	0.75 (g/cm³)	0.65 (g/cm³)	0.85 (g/cm³)	0.75 (g/cm³)
Electrical Connection	Cable		Cable		DIN43650C Socket, P03	
Number of Float	1 Std.		1 Std.		1 Std.	
Number of Contact	SPST - NO		1 x SPST - NO		SPST - NO	
Contact Current	0,7 A		1 A		1 A	
Max. Contact Power	10 W / VA		10 W / VA		10 W / VA	
Max.Switching Voltage	180 VDC / 130 VAC		200 VDC / 140 VAC		180 VDC / 130 VAC	

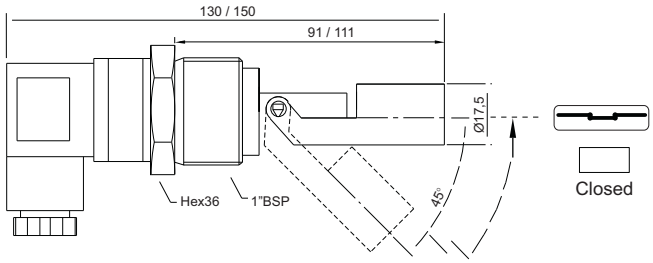


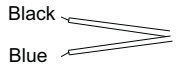
ELP 32 , ELP 34



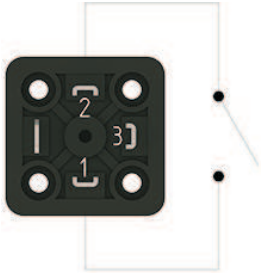
ELP 32s







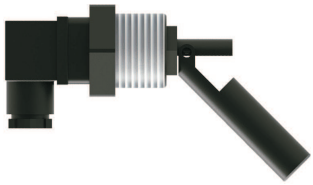
Single Contact NO



ELP 32L , ELP 34L



ELP 32sL

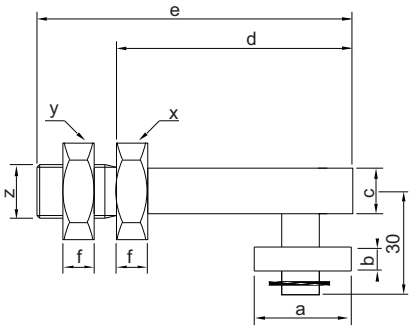


All dimensions are given in mm.

Technical Specifications :

	ELP 26
Float Material	PP
Wetted Parts Materi	PP
Float Type	P10
Working Temperature	(-) 20 °C / (+) 80 °C
Mechanical Connection	Atm
Max. Pressure (bar)	4 bar
Min. Density	0.70 (g/cm³)
Electrical Connection	Cable
Number of Float	1 Std.
Number of Contact	1 x SPST - N0
***Contact Current**	0.7 A
***Max. Contact Power**	10 W / VA
***Max. Switching Voltage**	180 VDC / 130 VAC

ELP 26





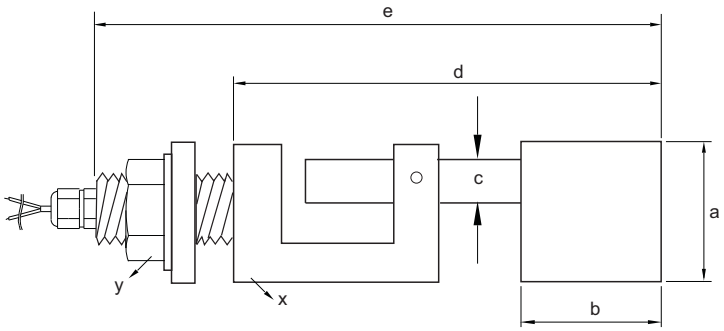
MODEL Dimension	ELP 26 Cylindric
a	Ø 25
b	10
c	8
d	40
e	55
f	6
x	16AA
y	15AA
z	M10 x 1,55 mm²

	ELP 81	ELP 82
Float Material	Delrin	PTFE
Wetted Parts Materi	Delrin	PTFE
Float Type	Delrin	PTFE
Working Temperature	(-) 20 °C / (+) 80 °C	(-) 20 °C / (+) 120 °C
Mechanical Connection	1/2" BSP	
Max. Pressure	10 bar	
Min. Density	0.70 (g/cm³)	
Electrical Connection	3x1 mm² PVC	
Number of Float	1	
Number of Contact	1 x SPST - NO / NC	
***Contact Current**	3 A	
***Max. Contact Power**	50 W / VA	
***Max.Switching Voltage**	500 VDC / 350 VAC	

MODEL Dimension	ELP 81 Cylindric
a	Ø 44
b	50
c	14
d	152
e	200
f	34
x	Ø 44
y	34AA
z	R 1/2"



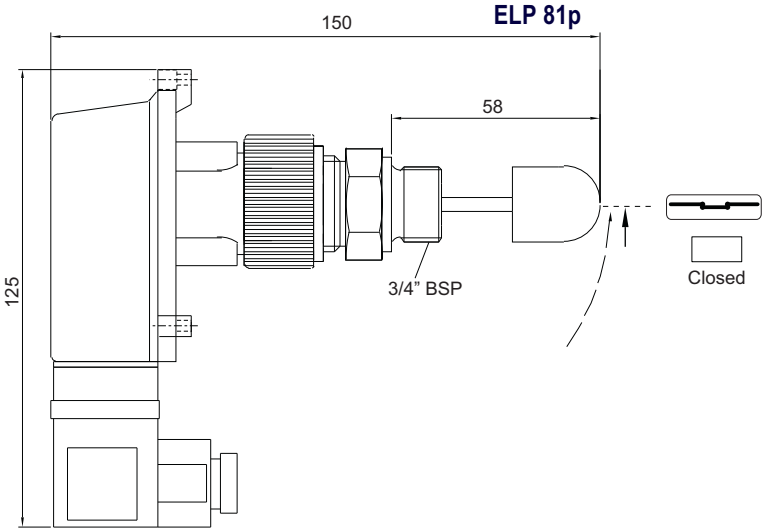
ELP 81 / ELP 82

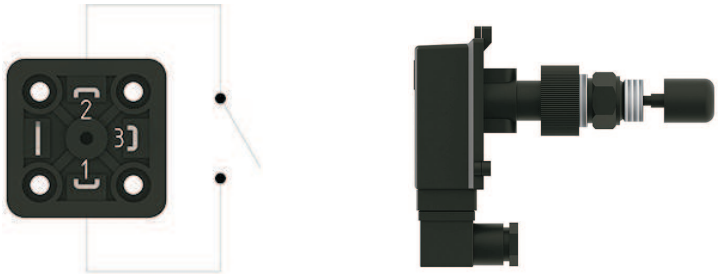


All dimensions are given in mm.

Technical Specifications :

	ELP 81p
Float Material	PP
Wetted Parts Material	PP
Pipe Material	PP
Float Type	P81
Working Temperature	(-) 20 °C / (+) 80 °C
Mechanical Connection	3/4" BSP
Max. Pressure (Bar)	10 bar
Min. Density (g/cm^3)	0.75 (g/cm^3)
Electrical Connection	DIN43650C Socket
Number of Float	1 Std.
Number of Contact	1 x SPST x NO
***Contact Current**	1 A
***Max. Contact Power**	10 W / VA
***Max.Switching Voltage**	200 VDC / 140 VAC





Single Contact NO

1.5. Target Group

This operating manual has been prepared for qualified technical personnel.

1.6. Security Notes

Following notes should be taken into consideration in order to avoid dangers which can occur on the operator and around the ambient:

Installation, operation and maintenance of this instrument should be made only by people who have read the operating manual and who are knowledgeable about work safety!

It should be complied with work safety, accident prevention regulations and national installation standards.

Product should be used only within the scope of stated specifications!

You can assemble the instrument only when pressure is not available!

1.7. Content of Package

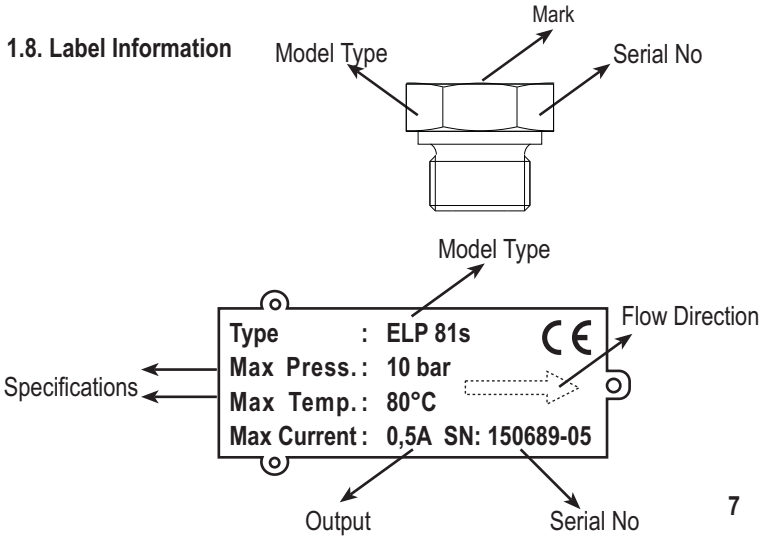
Please check whether you have taken delivery of below listed content completely or not and check its conformity with criterions in your order:

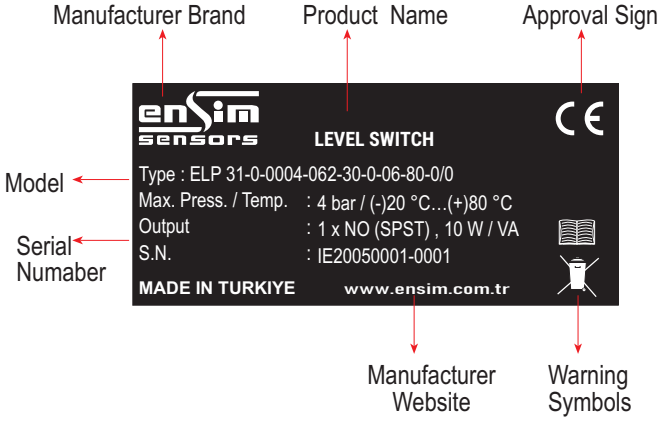
*Level switch

* Allen key (for 81p ELP)

*This operating manual

1.8. Label Information





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 switch 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

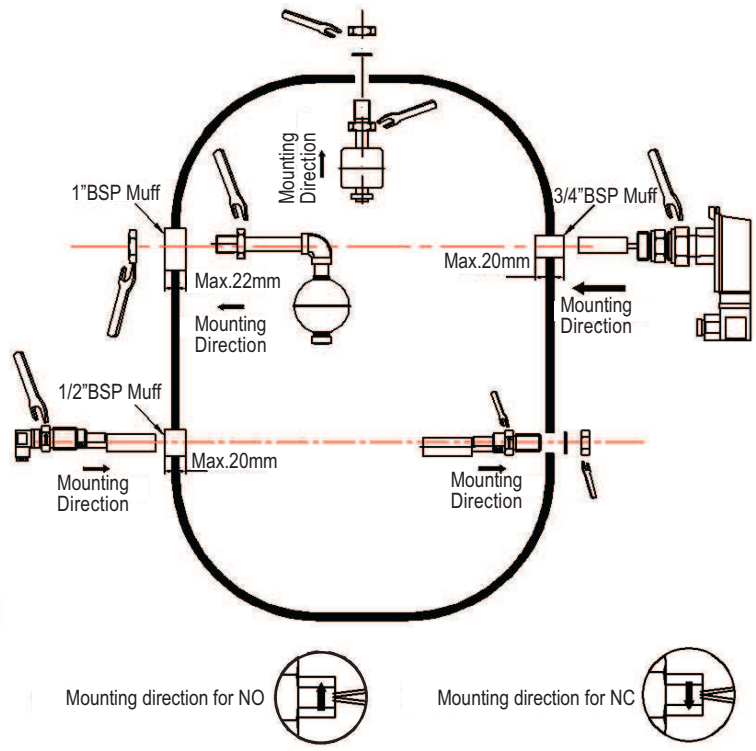
*Remove level switch from the box carefully
*Check whether gasket is appropriate for fluid or not. If is not appropriate, contact with the producer.
*Then, apply below mentioned explanations according to structure of the design.

2.3. Special Notes

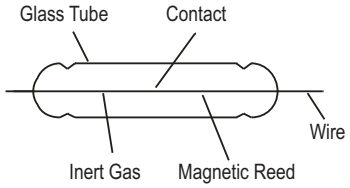
*Please ensure that there is no mechanical stress on the shaft following installation.
Such case will cause slipping in thecharacteristic curve.
*Level switch should be placed in completely vertical or horizantal position on the line.
*Allocate valve certainly in the process connection while instrument 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, level switch may be hot according to situation of fluid, in this case, do not touch the switch, otherwise your skin is damaged.

2.4. Installation For Mechanical Connections

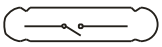
*Use appropriate O-Ring or gasket for tightness.
*Ensure that its surface is clean and smooth.
*Assemble the instrument manually.
*Connect the contacts as shown in the figure. (G1/8" and M8, M10" for max. 15 Nm , G1/2" for or G3/4" max. 10 Nm , G1" for max. 15 Nm)



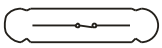
2.5. Reed Relay and Protection Circuit



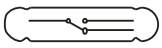
SPST-NO
Single Pole-Single Throw
Normally Open



SPST-NC
Single Pole-Single Throw
Normally Closed

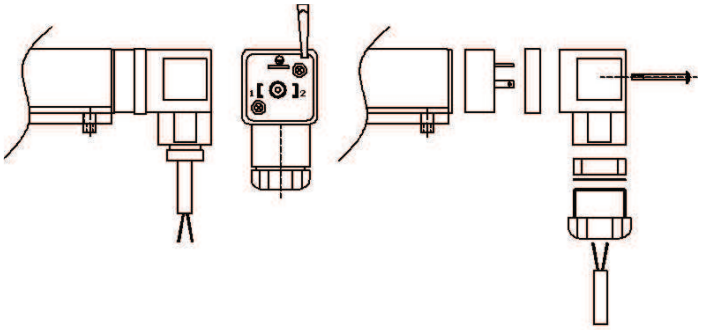


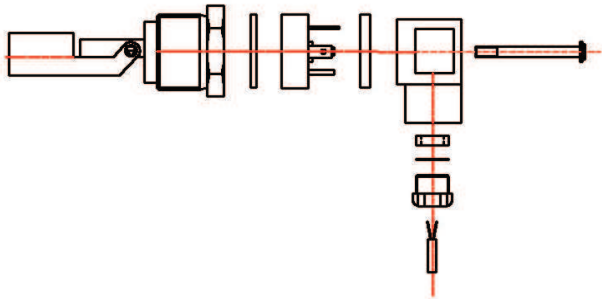
SPDT-NO/NC
Single Pole-Double Throw
Open / Closed Contact



2.6. Electrical Installation

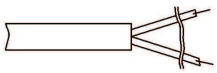
Make the electrical connection of the instrument according to details on its label, table and cable figures in this manual.



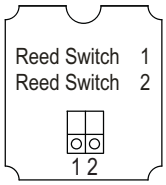


With Cable

Blue 1
Black 2
Single Contact NO

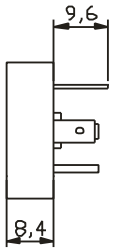


With Clemens

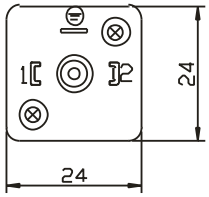


Single Contact NO

Normaly Closed Blue 1
Common Black 3
Normaly Open Brown 2
Single Contact NO/NC



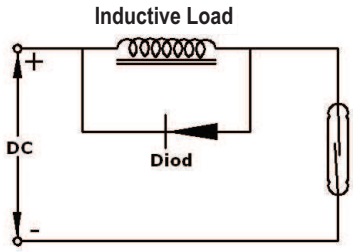
With Socket

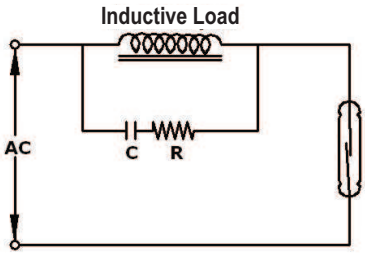


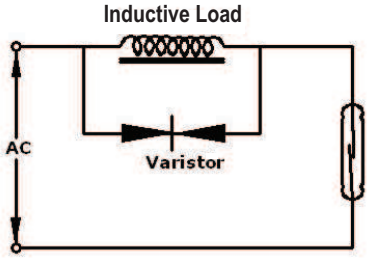
Reed Switch 1
Reed Switch 2
Single Contact NO

Inductive Load

When reed switch is used for loads such as electromagnetic relay ,contactor or solenoid, reed switch may be exposed to very high voltage depending on value of inductive load. This causes either failure of switch or shortening its service life. Therefore, it is recommended to be used as follows depending on used voltage, for the purpose of protection of switch.

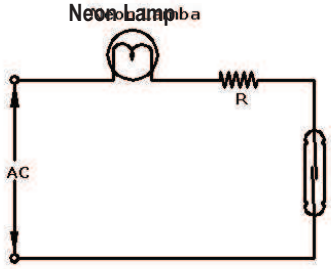


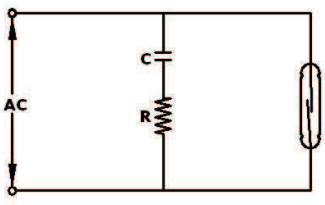




Capacitive Load

When reed switch is used with capacitive load, it may cause that high current passes over reed switch, depending on value of capacity during Charge –'96 Discharge of capacity. So this may cause failure of switch. It is recommended to be used as follows depending on used voltage, for the purpose of protection of switch.





Order Form : Please consider sample models when coding !

1 MODEL ELP

Vertical Type, Ø 18 mm , L= 20 mm, Open at Bottom.....02a
Vertical Type, Ø 18 mm , L= 20 mm, Closed at Bottom..02b
Vertical Type, Ø 19 mm , L= 31 mm, Open at Bottom.....03a
Vertical Type, Ø 19 mm , L= 31 mm, Closed at Bottom..03b
Vertical Type, Ø 24 mm , L= 41 mm, Open at Bottom.....04a
Vertical Type, Ø 24 mm , L= 41 mm, Closed at Bottom...04b
Vertical Type, Ø 24 mm , L= 85 mm, Open at Bottom.....08a
Vertical Type, Ø 24 mm , L= 85 mm, Closed at Bottom..08b
Vertical Type, Ø 20 mm , L= 44 mm, NO.....11

Horizontal Type, L= 80 mm, 1/2" NPT , PP.....31
Horizontal Type, L= 80 mm, 1/2" NPT , PVDF.....33
Horizontal Type, L= 52 mm, M16 , PP.....32
Horizontal Type, L= 52 mm, 1" BSP, PP.....32s
Horizontal Type, L= 40 mm, M10 , PP.....26
Horizontal Type, L= 152 mm, 1/2" BSP , Delrin.....81
Horizontal Type, L= 152 mm, 1/2" BSP , PVDF.....82
Horizontal Type, L= 58 mm, 3/4" BSP , PP.....81p
Horizontal Type, L= 100 mm, 1/2" NPT , PP.....31L
Horizontal Type, L= 72 mm, M16 , PP.....32L
Horizontal Type, L= 72 mm, 1" BSP, PP.....32sL
Horizontal Type, L= 100 mm, 1/2" NPT , PVDF.....33L
Horizontal Type, L= 100 mm, M16 , PP.....34L

2 CERTIFICATE

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

3 CONNECTION

1/8" BSP.....0001
1/2" BSP.....0004
3/4" BSP.....0005
1" BSP.....0006
1/2" NPT.....0203

M8 x 1.25 mm².....0300
M8 x 1.55 mm².....0301
M10 x 1.25 mm².....0302
M16 x 1,5 mm².....0306

Special.....x

4 MATERIAL

PP.....062
Delrin.....063
PVDF.....064
Special.....x

5 CABLE LENGTH (cm)

30 cm (Std.).....001
Special.....x

6 CONTACT

NO Reed Relay.....06
NC Reed Relay.....07
NO / NC Reed Relay.....08
Special.....x

7 ELECTRICAL CONNECTION

PVC Cable (Max. 60 °C).....80
PVC Cable (Max. 105 °C).....81
Silicon Cable (Max.105 °C).....82
Polyamide Big Socket 01.....50
Special.....x

8 HOUSING

None.....0
Plastic , B05p.....002
Aluminium , B22x.....750
Special.....x

9 OPTIONAL

None...../ 0
E-GSM Device...../ E-GSM
Level Control Device...../ SK-P2
Level Relay , 24 VDC - 5 A...../ ESR 24
Level Relay , 220 VAC - 8 A...../ ESR 220
Special...../ x

SAMPLE

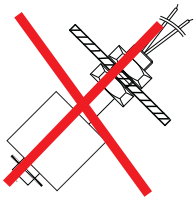
ELP 31-0-0004-062-001-06-0-80/0

Plastic Level Switch ELP 31, 30 cm With Cable , NO Contact , PP

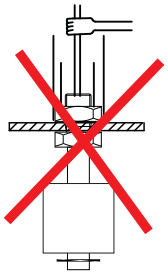
2.7.

WARNINGS !!!

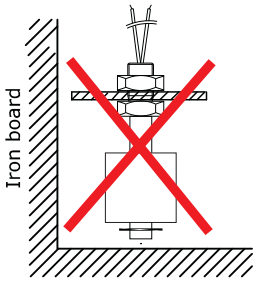
Please pay attention to following matters in order to operate your level switch properly.



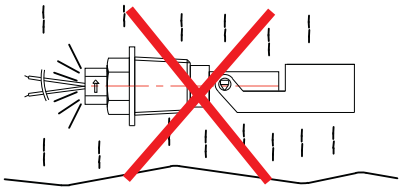
Please do not mount slant way, otherwise switch do not work correctly



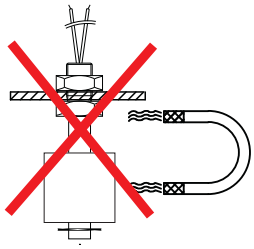
Do not pull the cable strongly, otherwise the characteristics might be changed.



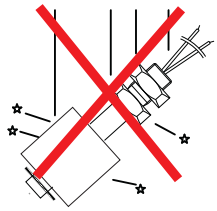
Please keep away from magnetic materials like iron board ; otherwise the characteristics might be affected.



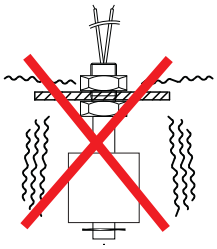
Please do not dip cables potting into liquids,otherwise instulation problem may cause.



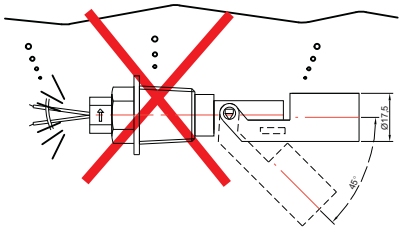
Please keep away from magnetic field ,otherwise it might be mis-operated.



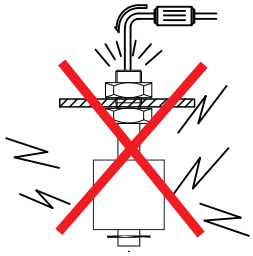
Please do not drop , otherwise the characteristics might be changed.



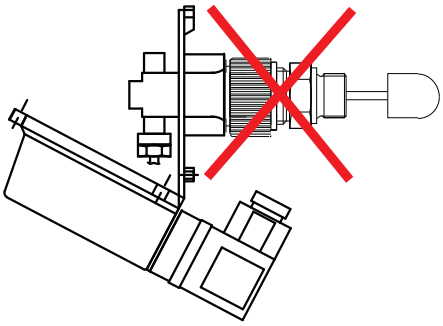
Vibration might be caused instability.



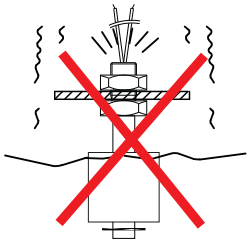
In case vapour splash cable potting points,insulation problem may cause.



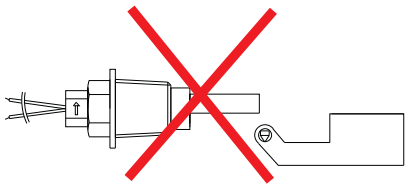
Excess current , to be drawn as a result of direct connection to motor , may burn relay of switch



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



Please avoid using with liquids which damage materials of parts , otherwise quality can not be maintained accurately.



Do not remove the float from connection part. Because its pin might be damaged.

3. Failure Delection

Breakdown	Probable cause	Failure detection\correction
Fluid is leaking	There is a hole on the body.	-Check that is worked under appropriate condition and then contact with producer company.
It does not contact or it contacts continuously	-Socket connection is not touched. -Product was exposed to the magnetic field in the ambient. -Connetion angle is not corrrect. -Contact may have been burned.	-Check for socket connections. -The factor which constitutes the magnetic field should be removed or insulated. -Correct assembly angle. -Inform authorized service.
Body was broken	-Tightening the screws more than adequate during the assembly. -Product falling or taking a blow from outside.	-Inform authorized service.
Unsteady operation in the contact	-Product was exposed to the magnetic field in the ambient. -Product was exposed to vibration. -Product was exposed to high temperature.	-The factor which constitutes the magnetic fieldshould be removed or insulated. -Vibration which will effect the product should be prevented or it should be attached to any place without vibration. -Use in the appropriate opearating temperature.
Thread is scraped	Thread is scraped	-Inform authorized service

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

Calibration is not required during long period useful life of a level switch.

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 Mahallesi Gazipaşa Caddesi No:104 A 34888 Ataşehir / İSTANBUL - TÜRKİYE
Tel:+90 216 505 05 55 Faks:+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.