OPERATING MANUEL

Model : ELB

SIDE MOUNTING 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 :

ELB 10 , ELB 10a , ELB 10e
ELB 10x , ELB 10h
ELB 11 , ELB 12
ELB 21 , ELB 22
ELB 31 , ELB 41
ELB 51 , ELB 61 , ELB 71

CE EAC

Important Notes:

Used Symbols :

: Caution : Note : Disposal

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

1.2. Information about Areas of Use

ELB side mounting level switches are used for measuring and checking level of tank. It is preferred in food, ship machine, boiler and storage tank applications with its advantages such as resistance to high temperature, long life contact structure, which is operable in each, vertical or horizontal connection.

Areas of Application :

Food, ship, machine, boiler and storage tanks...

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

1.3. Operating Principle

Microswitch changes direction with the movement, occurring after magnet in float arm, moving by changing liquid level, affects magnet inside body, magnetically optained contact information is assessed by transferring into applications such as pump, solenoid valve etc.

Advantages :

* Max. 400 bar working pressure
* Max. 400 °C working temperature
* The apparatus diversity

1.4. Technical Specifications :

Technical Specifications :

MODEL	ELB 10e	ELB 10 / ELB 10a Economical
Mounting Type	Horizontal	Horizontal
Flange Material	304 St. St.	316 St. St.
Float Material	304 St. St.	316 St. St.
Min. Density	0.75 g/cm³ Std.	0.7 g/cm³ Std.
Case Material	Aluminum Injection	Aluminum Injection
Flange Dimension	92 mm x 92 mm	92 mm x 92 mm
Max. Pressure/Temp.	16 bar / **150 °C**	16 bar / **150 °C**
Ambient Temperature	(-) 20 °C / (+) 80 °C	(-) 20 °C / (+) 80 °C
Protection Class	IP 65	IP 65
Weight	1.6 kg....2.5 kg	1.8 kg....2.5 kg
Float Test Pressure	25 bar	25 bar

MODEL	ELB 11 Ekonomik	ELB 12 Uzun Kollu
Mounting Type	Horizontal	
Flange Material	316 Stainless Steel	
Float Material	316 Stainless Steel	
Min. Density	0.7 g/cm³ Standard	
Case Material	Aluminum Injection, Painted	
Flange Dimension	92 mm x 92 mm	
Max. Pressure/Temp.	25 bar / **250 °C**	
Ambient Temperature	(-) 20 °C / (+) 80 °C	
Protection Class	IP 65	
Weight	1.8 kg....2.5 kg	
Float Test Pressure	40 bar	

Technical Specifications :

MODEL	ELB 10x Complete Stainless Steel	ELB 10h High Pressure
Mounting Type	Horizontal	Horizontal
Flange Material	316 Stainless Steel	316 Stainless Steel
Float Material	316 Stainless Steel	316 Stainless Steel
Min. Density	0.7 g / cm³ Standard	0.85 g / cm³ Standard
Case Material	304 Stainless Steel	Aluminum Injection
Flange Dimension	92 mm x 92 mm	Flange PN 100
Max. Pressure/Temp.	25 bar / **250°C**	100 bar / **150°C**
Ambient Temperature	(-) 20 °C / (+) 80 °C	(-) 20 °C / (+) 80 °C
Protection Class	IP 65	IP 65
Weight	3.5 kg	3,1 kg
Float Test Pressure	40 bar	160 bar

MODEL	ELB 21 L Type Rod	ELB 22 L Type Rod	ELB 31 Adjustable	ELB 61	ELB 71 For hot oil
Mounting Type	Horizontal			Horizontal	Horizontal
Flange Material	316 Stainless Steel			316 Stainless Steel	316 Stainless Steel
Float Material	316 Stainless Steel			316 Stainless Steel	316 Stainless Steel
Min. Density	0.7 g/ cm³			0.75 g / cm³	0.75 g/cm³
Case Material	Aluminum Injection, Painted			Aluminum Injection	Aluminum Injection, Painted
Flange Dimension	92 mm x 92 mm			92 x 92 mm	92 mm x 92 mm
Max. Pressure/Temp.	25 bar / **250 °C**			16 bar / **150°C**	16 bar / **400 °C**
Ambient Temperature	(-) 20 °C / (+) 80 °C			-20 / +80 °C	(-) 20 °C / (+) 80 °C
Protection Class	IP 65			IP 65	IP 65
Weight	1.8 kg....2.5 kg			2.5 kg	1.8 kg....2.5 kg
Float Test Pressure	40 bar			25 bar	40 bar

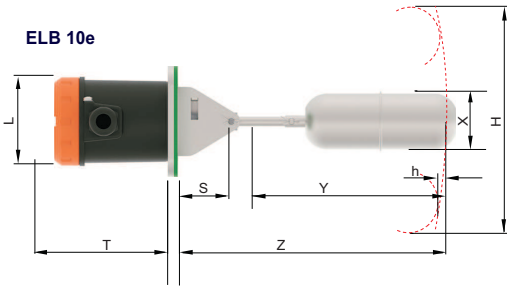
MODEL	ELB 41 Economical Mini
Mounting Type	Horizontal
Record and Nut Material	Brass
Float Material	304 Stainless Steel
Min. Density	0.80 g / cm³
Case Material	Steel Sheet, Painted
Connection	1" Male Thread
Max. Pressure/Temp.	7 bar / 160 °C
Ambient Temperature	(-) 20 °C / (+) 80 °C
Protection Class	IP 40
Weight	1.2 kg
Float Test Pressure	16 bar

MODEL	ELB 51 Pneumatic Proportional Output
Mounting Type	Vertical
Flange Material	316 Stainless Steel
Float Material	316 Stainless Steel
Min. Density	0.7 g / cm³
Case Material	Aluminum Injection, Painted
Flange Dimension	92 mm x 92 mm
Max. Pressure/Temp.	25 bar / **250 °C**
Ambient Temperature	(-) 20 °C / (+) 80 °C
Protection Class	IP 65
Weight	1.75 kg
Float Test Pressure	40 bar

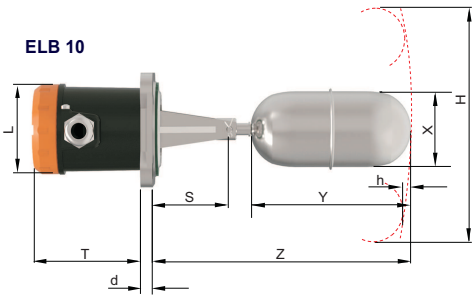
Dimensions :

MODEL	ELB 10	ELB 10e
Z	205	234
T	91	95
S	57.5	47,5
L	75	75
Y	140	125
X	64	50
H	127	150
h	4	6
d	10	5

ELB 10e

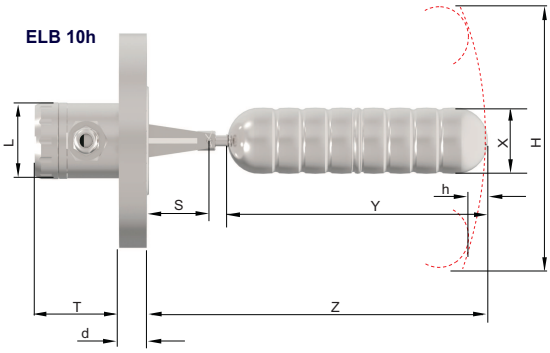


ELB 10



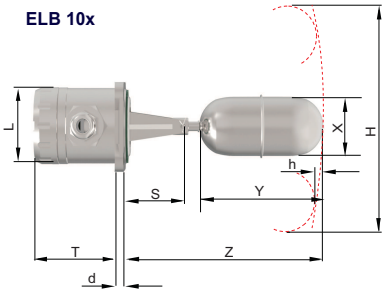
MODEL	ELB 10h
Z	322
T	91
S	57.5
L	75
Y	242
X	64
H	180
h	4
d	26

ELB 10h



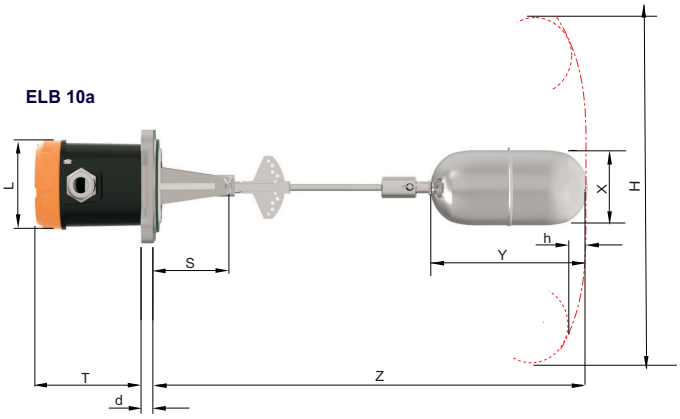
MODEL	ELB 10x
Z	205
T	91
S	57.5
L	75
Y	140
X	64
H	127
h	4
d	10

ELB 10x



MODEL	ELB 10a (I and II Between the holes)
Z	355
T	91
S	57.5
L	75
Y	140
X	64
H	424
h	73
d	10

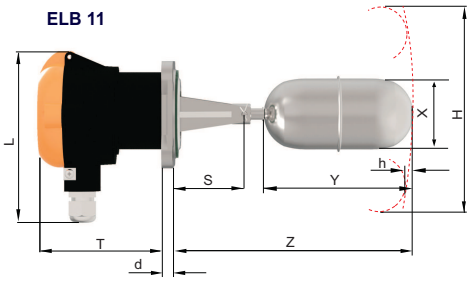
ELB 10a



All dimensions are stated as mm.

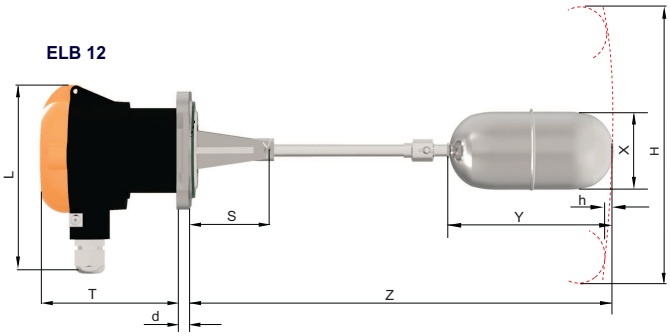
MODEL	ELB 11
Z	225
T	110
S	57.5
L	142
Y	140
X	64
H	127
h	5
d	10

ELB 11



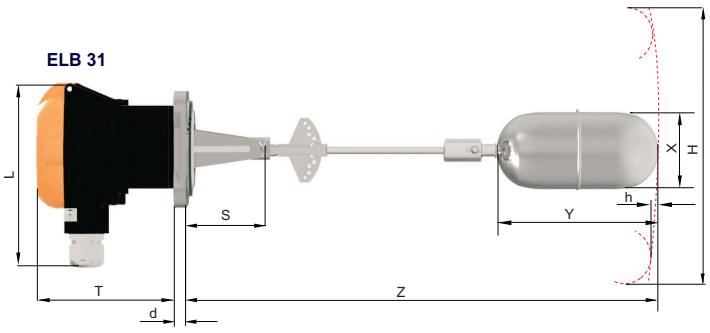
MODEL	ELB 12		
Z	500	750	1000
T	110	110	110
S	57.5	57.5	57.5
L	142	142	142
Y	140	140	140
X	64	64	64
H	260	380	501
h	12	19.5	27
d	10	10	10

ELB 12



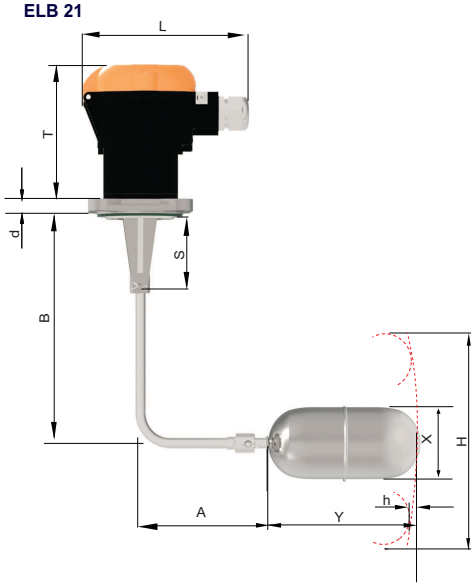
MODEL	ELB 31 (I and II Between the holes)		
Z	355	455	555
T	110 (91)	110 (91)	110 (91)
S	57.5	57.5	57.5
L	142	142	142
Y	140	140	140
X	64	64	64
H	424	562	702
h	73	101	129
d	10	10	10

ELB 31



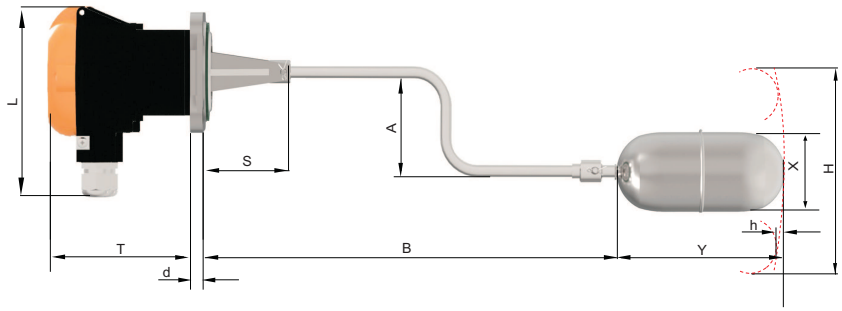
All dimensions are stated as mm.

ELB 21



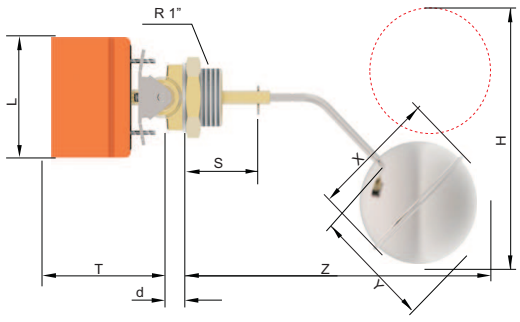
MODEL	ELB 21	ELB 22
A	Min.50	Min.50
B	Min.120	Min.120
A+B	Max.1000	Max.1000
T	110	110
S	57.5	57.5
L	142	142
Y	140	140
X	64	64
H	127	127
h	4	4
d	10	10

ELB 22



MODEL	ELB 41
Z	Max. 210
T	78
S	48
L	105
Y	70
X	78
H	Max.175
h	30
d	10

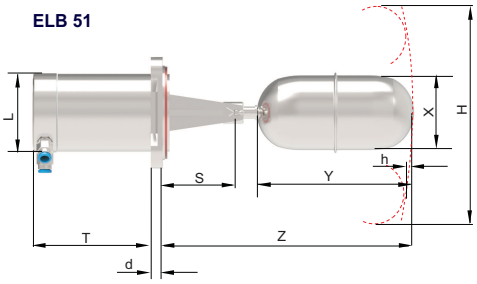
ELB 41



All dimensions are stated as mm.

MODEL	ELB 51
Z	205
T	100
L	65
Y	140
X	n64
H	127
h	4
d	10

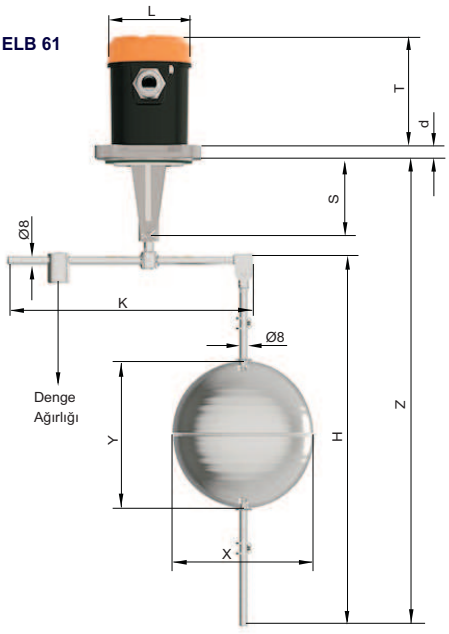
ELB 51





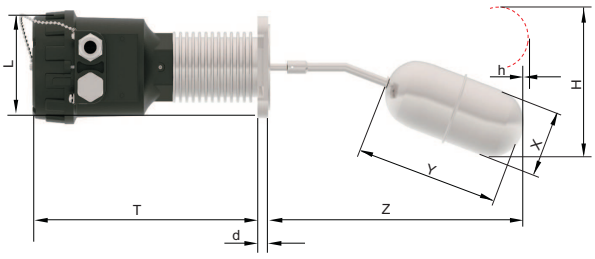
MODEL	ELB 61
Z	Max.1080
T	91
S	57.5
L	75
K	214
Y	122
X	125
H	Max.1000
d	10

ELB 61



MODEL	ELB 71
Z	205
T	212
L	155
Y	140
X	64
H	77
h	4
d	10

ELB 71



All dimensions are stated as mm.

1.5. Target Group
This operating manual has been prepared for qualified technical stuff.

1.6. Security Notes

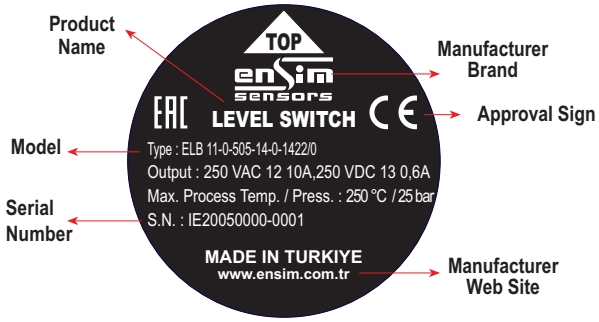
Following notes should be taken into consideration in order to avoid dangers which can occur on the operator and around the ambient:
Installation, operation and maintenance of this instrument should be made only by people who have read the operating manual and who has knowledgeable about work safety!
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
*This operating manual

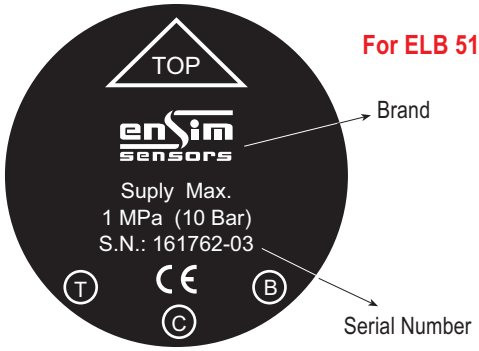
1.8. Label Information

ELB 10 , ELB 10a , ELB 10x, ELB 10h
ELB 11 , ELB 12
ELB 21 , ELB 22
ELB 31 , ELB 41
ELB 51 , ELB 61 , ELB 71

For All Models

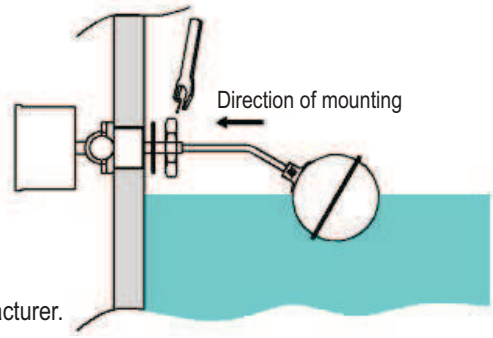


For ELB 51



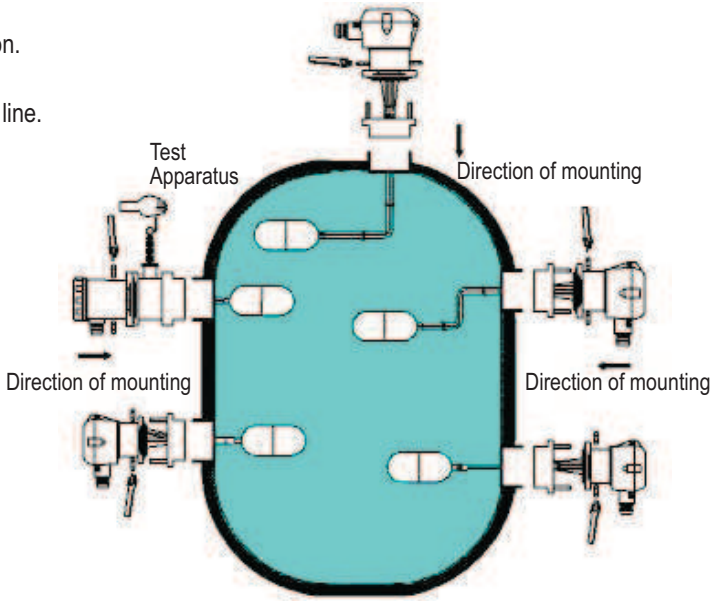
2. Installation

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

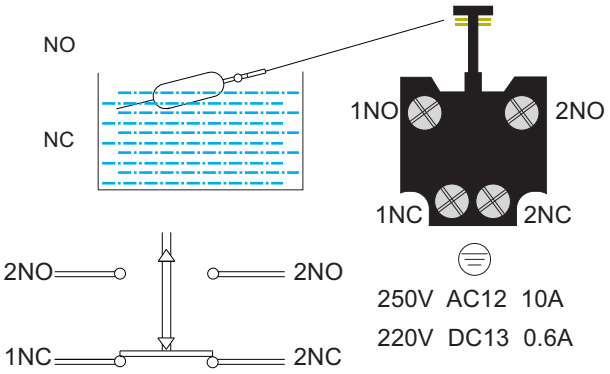
2.3. Special Notes
*Please ensure that there is no mechanical stress on the shaft following installation.
Such case will cause slipping in thecharacteristic curve.
*Level switch should be placed in completely vertical or horizantal position on the line.
*Allocate valve certainly in the process connection 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 can be hermed.



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.
(Max.10 Nm for 1/8"BSP and 1/4"BSP, Max.15 Nm for 1/2"BSP, Max.20N Nm for 1"BSP)

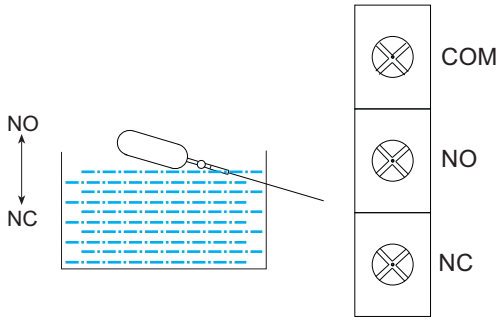
2.5. Electrical and Pneumatic Connection:

For ELB 11 / 12 / 21 / 22 / 31



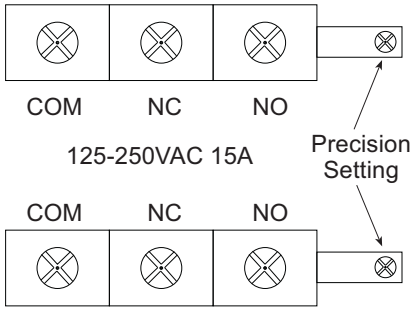
250V AC12 10A
220V DC13 0.6A

For ELB 10e /10 / 10a / 10h / 10x / 61

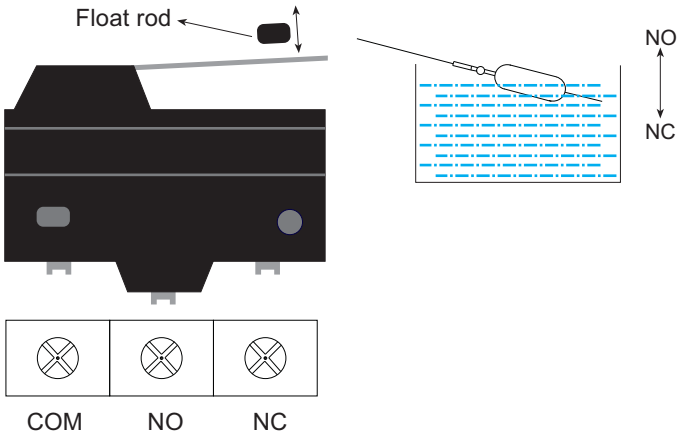


125/250 VAC 15A ,110VAC 15A

For ELB 41

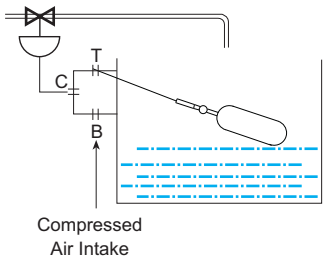


For ELB 71



125-250VAC 15A

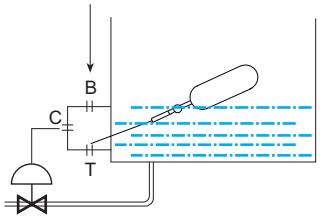
For ELB 51



Filling



Compressed Air Intake



Emptying



Air Input (bar)	Control Output (bar)	
	Min.	Max.
2	0,25	1,5
4	0,6	3,1
6	1,1	4,8
8	1,8	6,5
10	2,5	8,3

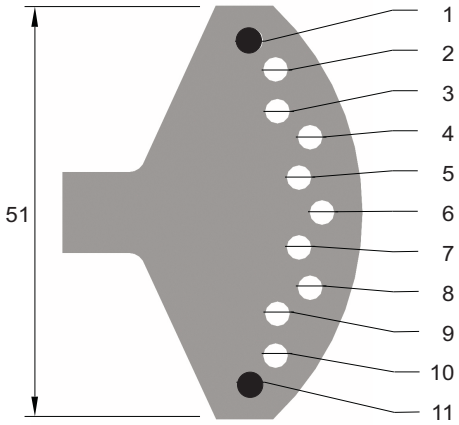
***Flow Rate 3.5 -6.0 Nl/dk**

B : Air Input
T : Empatying Output
C : Control Output

2.6. Apparatus

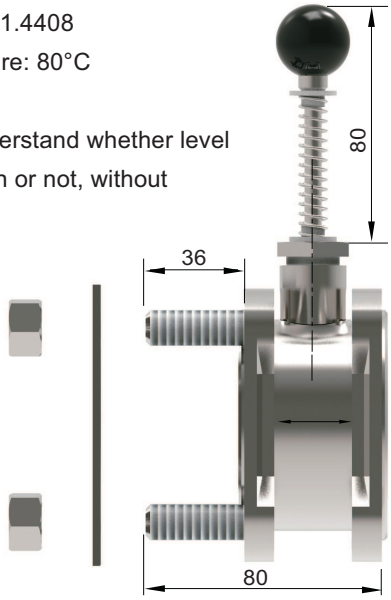
Adjusting Apparatus

Material: Stainless Steel 1.4571
11 Holes



Test Apparatus

Material: Stainless Steel1.4408
Max.Working Temperature: 80°C
Bolt: M12x1.5, 4 pcs.
It is used in order to understand whether level switch makes its function or not, without discharging tank.

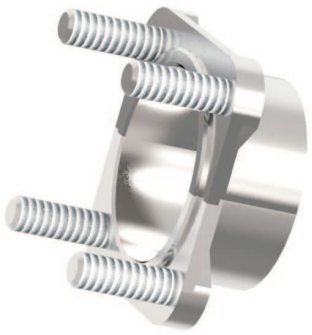


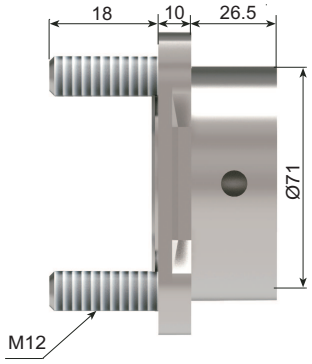
Flange

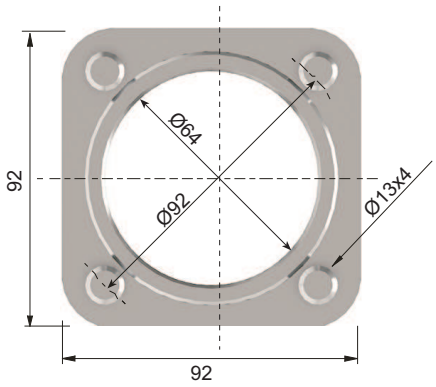
Material: Stainless Steel 1.4571
Measurement: 92 x 92 mm Square Type
Holes Diameter: Ø13 mm 4 Holes
Opt: DN150, Special flange up to PN100

Counter Flange

Material: Stainless Steel 1.4408
Bolt: M12 x 1.5 mm 4 pcs.

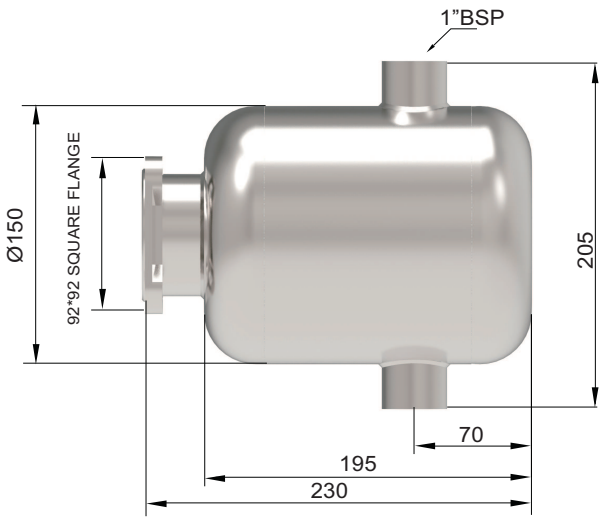






External Tank

Material: Stainless Steel 1.4571
Connection: 92x92 mm. Square Flange
Process Connection:1"BSP Opt. Flange
Weight: 2.6 kg
It can be used as feeding device.
With bolt, nut and wasters.



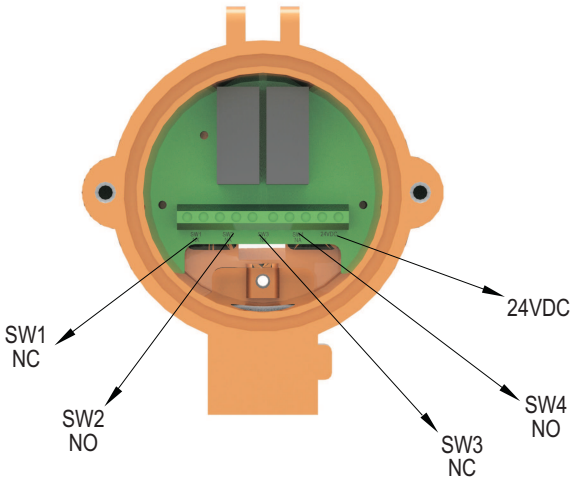
Contact Apparatus

ELB level switch was four free contacts via en electronic card place in body. The contact can be produced NC or NO according to customer needs.

Power Supply : 24 VDC

Output : 2 x NO + 2 x NC Relay

Working Temperature: Max. 100 C

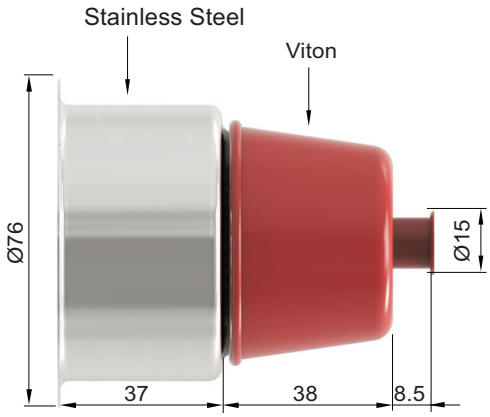


Protective Bellows Apparatus

Metal Part: Stainless Steel 1.4571

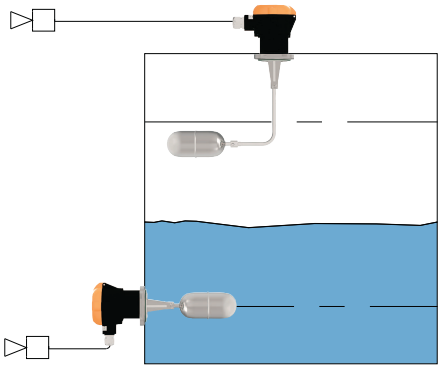
Rubber Part: Viton 200°C

The apparatus are used in order to enable operation of level switch in the tanks.

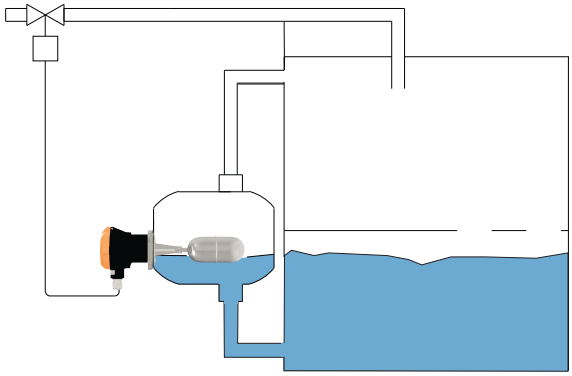


Application Samples:

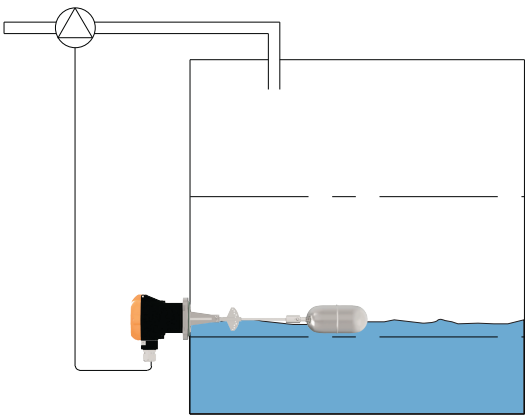
Min. or Max. Control



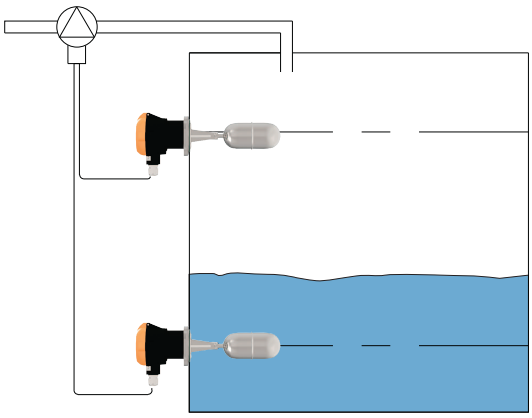
With External Apparatus



Valve and Pump Control



Pump Control



2.7. Order Form :

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

1 MODEL ELB

Economic.....10e
Economic.....10
Economic , Adjustable Rod.....10a
Stainless Steel Housing.....10x
High Pressure.....10h

Standard.....11
Standard, Long Rod.....12
L Type Rod, Horizontal.....21
L Type Rod, Vertical.....22
Adjustable Rod.....31
Economic , Mini.....41
Pneumatic Proportional Output.....51
Vertical Model.....61
For Hot Oil..(Coming Soon).....71

2 CERTIFICATE

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

3 HOUSING

Aluminium Housing, B10dx straight 503
Aluminium Housing , B11x 505
Aluminium Housing , B10x straight.....504
Aluminium Housing , B20x 603
Stainless Steel Housing , B102x.....801
Aluminium Housing , B41x.....850
Special.....x

4 OUTPUT

250 VAC 12 10A, 250 VAC.....14
1 x NO / NC - 15A / 250 VAC.....15
Pnomatic (0,2 bar ... 1 bar).....28
Special.....x

5 ROD SIZE (mm) L

Std. 0
Special.....x

6 CONNECTION

1” BSP Male Thread 0006
Square Flanged 92x92mm.....1422
DN50 , PN16 Flanged.....0505
DN65 , PN16 Flanged.....0506
DN80 , PN16 Flanged.....0507
DN50 , ANSI 150 Flanged.....1005
DN65 , ANSI 150 Flanged.....1006
DN80 , ANSI 150 Flanged.....1007

7 OPTIONAL

None...../ 0
Counter Flange...../ F
For ELB10e Counter Flange ...../ Fm
Protective Bellows Apparatus...../ K
Test Apparatus...../ A
Relay Apparatus...../ R
External Tank...../ T
Special ...../ x

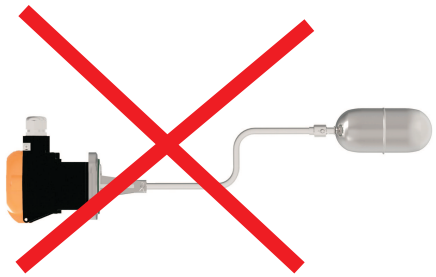
EXAMPLE

ELB 11-0-505-0-1422/0 Standard Model

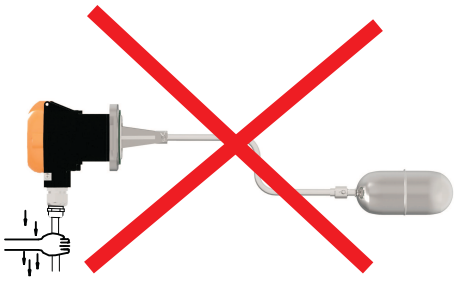
2.8.

UYARILAR !!!

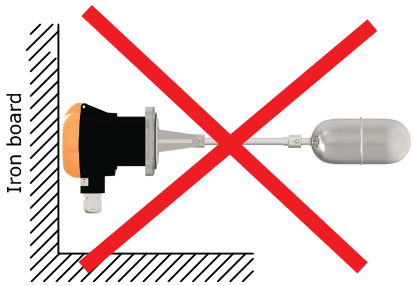
Please pay attention to following matters in order to operate your level switch properly.



Do not remove the float.



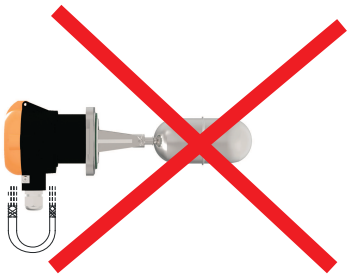
Do not pull the cable strongly, otherwise the characteristics might be changed.



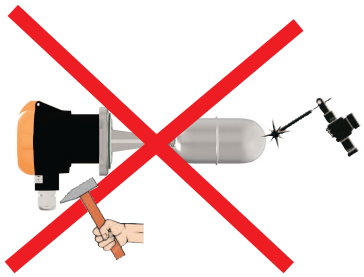
Please keep away from magnetic materials like iron board ; otherwise the characteristics might be affected.



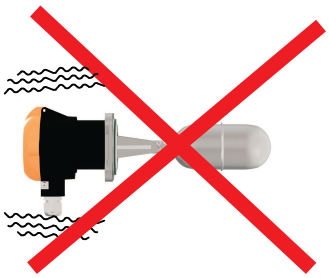
Please do not dip cables potting into liquids,otherwise instulation problem may cause.



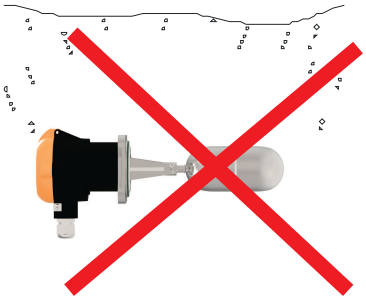
Please keep away from magnetic field ,otherwise it might be mis-operated.



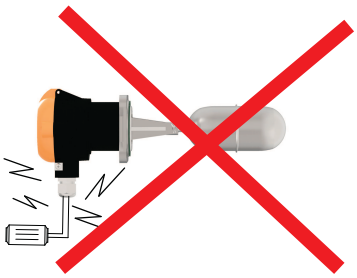
Please do not drop , otherwise the characteristics might be changed.



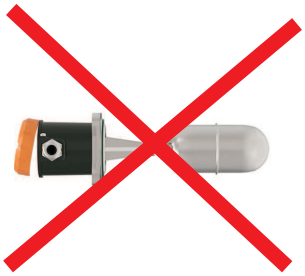
Vibration might be caused instability.



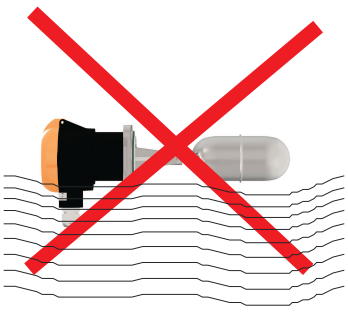
In case vapour splash cable potting points,insulation problem may cause.



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



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

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!

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. Recalibration

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

7. Repair –'96Manufacturer 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.