OPERATING MANUEL

Model : ELG

MAGNETIC BY-PASS LEVEL GAUGE

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.

ELG ELGs ELGp ELGh ELGk ELGy ELGu ELG-T3 ELG-T8



Models :

ELG , ELGs , ELGp , ELGh
ELGk , ELGy , ELGu

CE EAC

Important Notes:

Used Symbols :

: Caution : Note : Disposal

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

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

ELG magnetic By-Pass Level indicators are assembled onto the exterior or top surfaces of tanks, boilers and reservoirs. It enables to see the level easily and with great accuracy. It is more economical than measuring systems with other mechanical methods, it provides advantages for the user with easy assembly and maintenance and various assembly manners.
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)

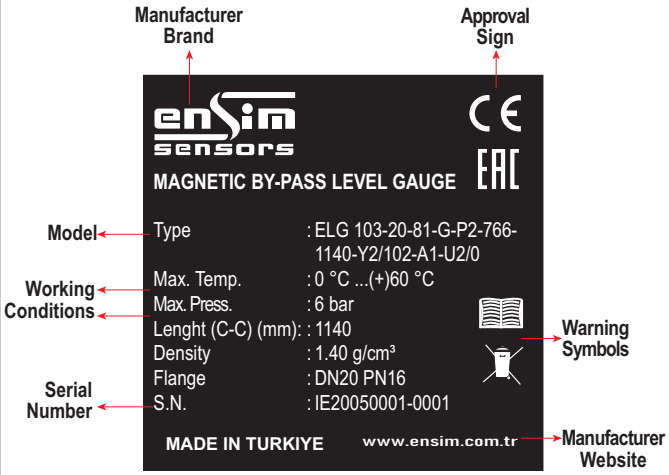
1.3 . Operating Principle

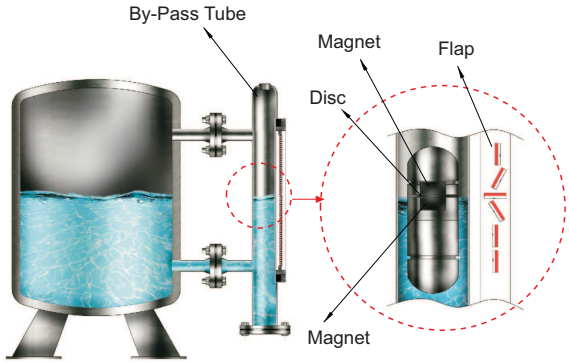
Liquid levels within main body of tank and level indicator are the same in accordance with principle of computational fluid.
Float valve, which is available within the body and designed by considering buoyancy of liquids, affects flaps assembled onto exterior surface of main body and provides them to turn. Liquid level is traceable easily from outside by means of flaps' two faces in different colors. Each indicator is delivered to the customer after they are subjected to pressure, tightness and final control tests following the production.

1.4. Technical Specifications

Working Pressure	6 bar, 16 bar, 25 bar, 40 bar, 100 bar
Working Temperature	0...(+) 60 °C, (-)40...(+) 180 °C, (-)40...(+) 360 °C, Ops. 400 °C
Working Intensity	Min.0,50 gr/cm³ ... Max.2,00 g/cm³
Between Two Flange (CC)mm	Min.200 mm....Max.6000 mm (One Piece) Max. 12 m. It can be manufactured in parts.
Body	Ø 38 x 1,5 mm PN 16 Ø 60,3 x1,5 mm PN 16 / 25 Ø 60,3 x2 mm PN 40 Ø 63,5 x3 mm PN 100 Custom size can be made. Ø 70x2 mm PN 25 Heating Jacket
Bottom Upper Pipe Flange	Ø115 (Std) , Ø140, Ø150, Ø165 mm PN 16 / 25 , 150/300 LBS Ø115 (Std) , Ø140, Ø150, Ø165 mm PN 40,1600 LBS Ø140, Ø170 (Std) , Ø195 PN 100, 900/1500 LBS
Process Connection	Threaded..1/2"BSP (Std.) , 3/4"BSP , 1"BSP Flanged, EN 1092-1...DN 20...DN 100 PN 16 / 25 / 40 / 100 bar ANSI B16.5...3/4"...4" 150/300/600/900/1500 LBS JIS (RTJ)...3/4"...4" 150/300/600/900/1500 LBS
Side Pipe	3/4"BSP (Std.)
Evacuation Record	1/2"BSP (Std.) , 3/4"BSP , 1"BSP
Bolt / Nut / Washer	M12 , M16 Opt. Measurement can be made.
Material Body	304 St.St. (Std.) Opt. 316 St.St. , Titanium , PVC
Side Pipe	304 St.St. (Std.) Opt. 316 St.St. , Titanium , PVC
Connection	304 St.St. (Std.) Opt. 316 St.St. , Titanium , PVC
Float	304 St.St. (Std.) Opt. 316 St.St. , Titanium , PVC
Evacuation Record	304 St.St. (Std.) Opt. 316 St.St. , Titanium , PVC
Bolt-+Nut+Washer	304 St.St. (Std.) Opt. 316 St.St. , Titanium , PVC
Flap	Plastic (Max.180 °C) , Ceramic (Max. 350 °C) Glass(180°C)
Flap Housing	304 St.St. (Std.)
Flap Protection	Pleksiglass , Glass
Scale	304 St.St.
Gasket	Klingrid, PTFE, Graphite, Silicon,Viton
Optional	Magnetic Contact Analog Output Scale Drain Valve Liquid Level Relay Local Digital Display Heating Jacket, Special Design

1.5. Label Information







1.6. Target Group

This operating manual has been prepared for qualified technical personnel.

1.7. 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!

1.8. 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 indicator

*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.

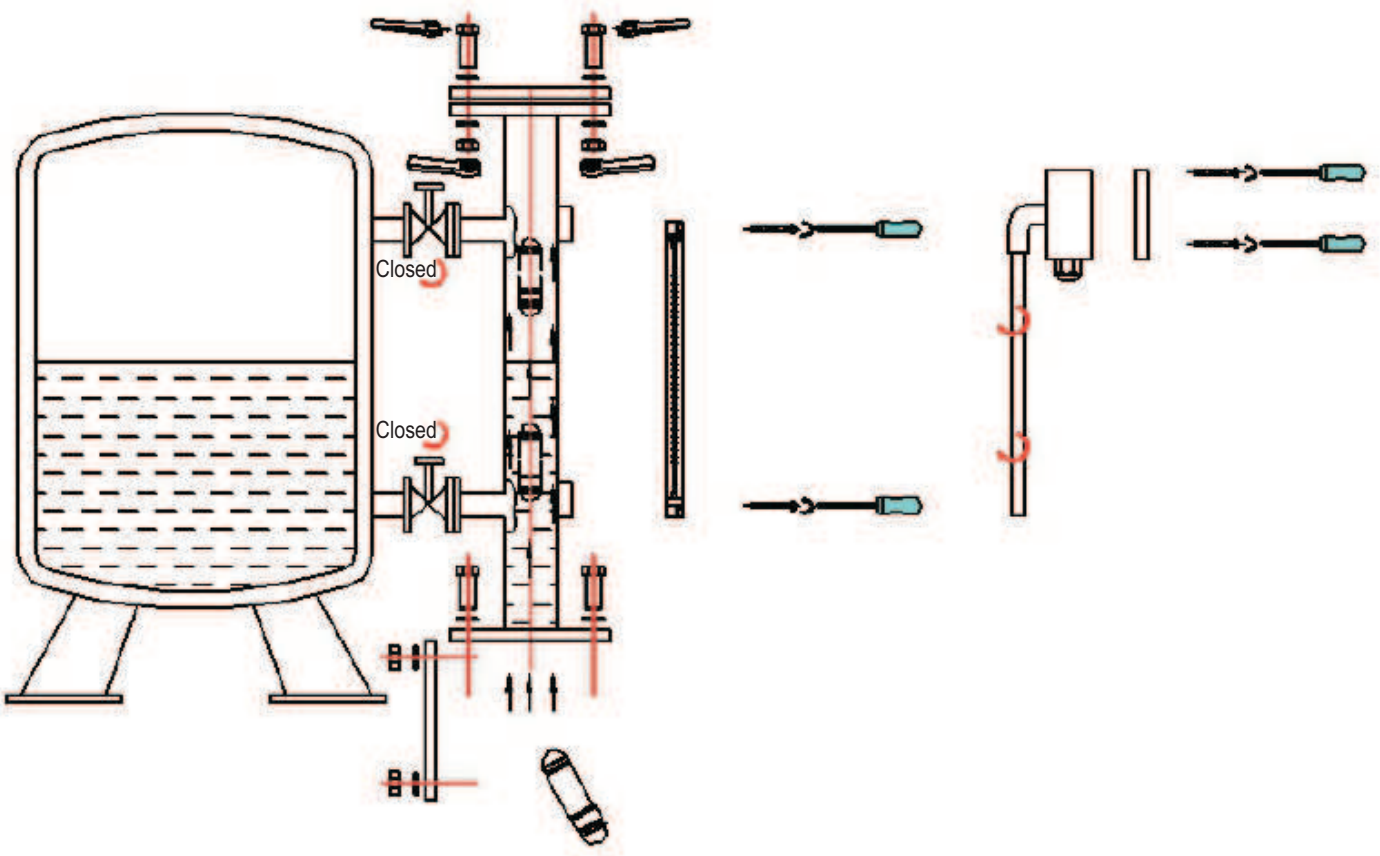
It should be guaranteed that there are not any magnetic particles.

2.2. General Installation Stages

* Remove level indicator 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.

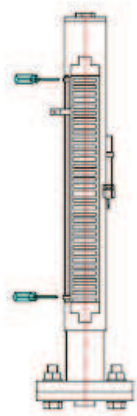


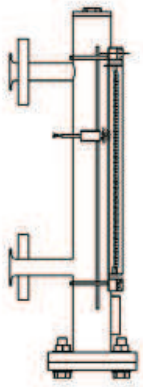
2.3 . Special Notes

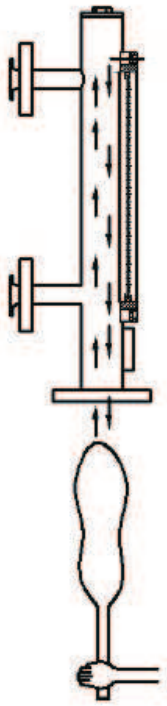
*Please ensure that there is no mechanical stress on the shaft following installation. Such case will cause slipping in the characteristic curve.
*Level indicator should be placed in completely vertical position on the line.
*Allocate valve certainly in the process connection while instrument is used.
*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 indicator 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

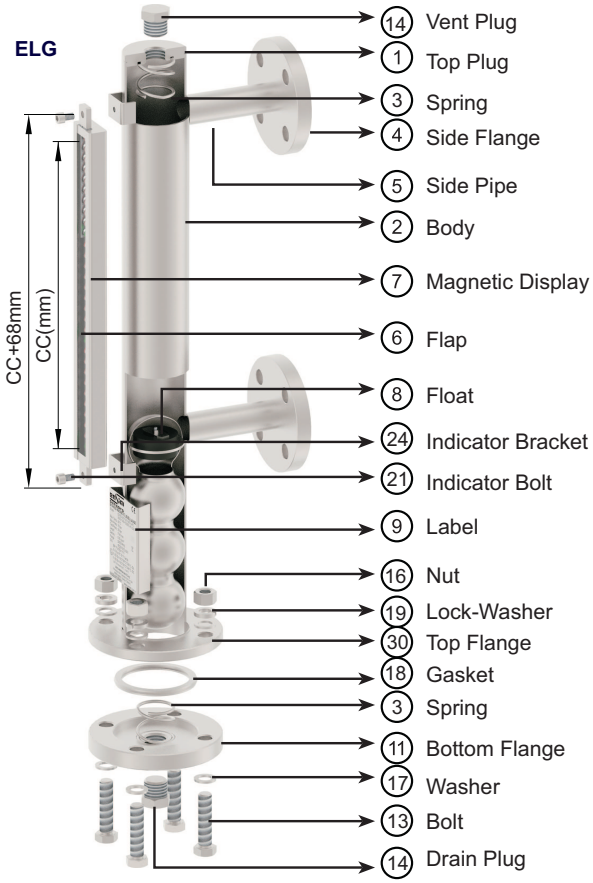
*Use appropriate O-Ring or gasket for tightness
*Ensure that its surface is clean and smooth.
*Assemble the instrument manually.
*Attach float valve in such a manner that arrow will come up.
*Tighten the bolts as shown in the key figure. (Max. 20 Nm)
*Connect the contacts as shown in the figure.

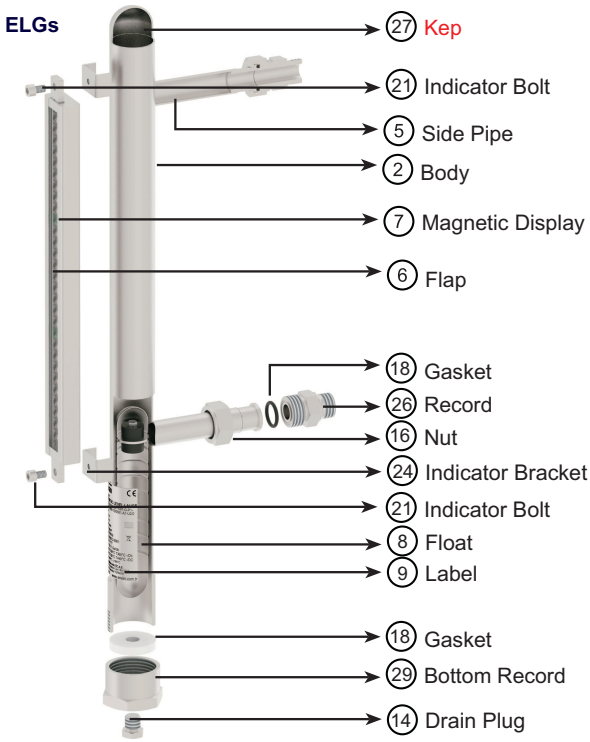




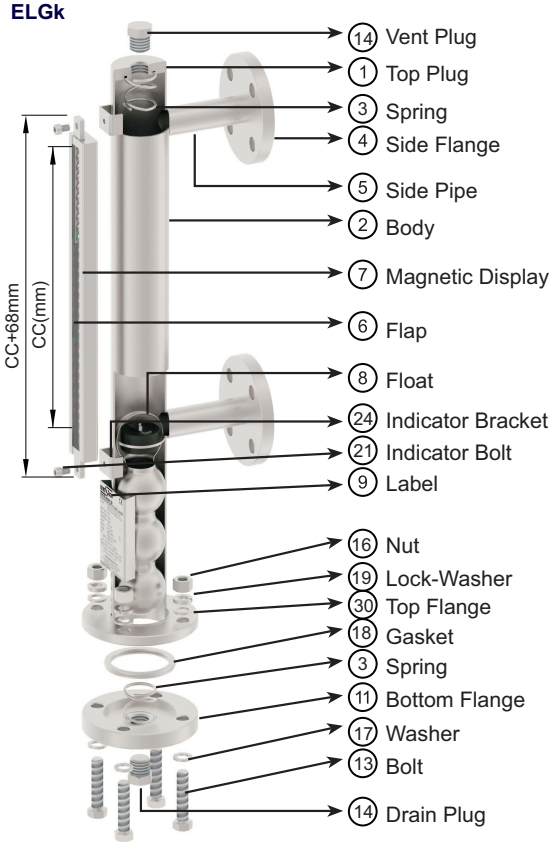


2.5. Models:

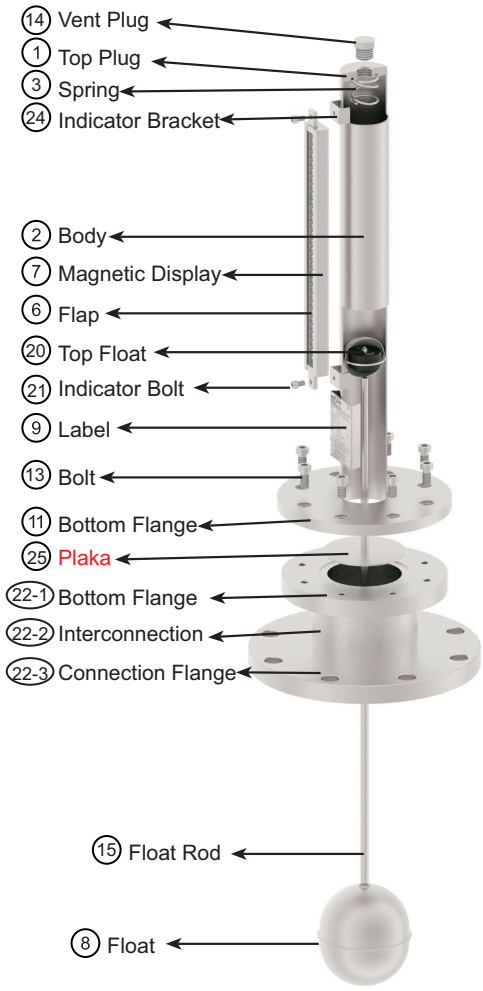




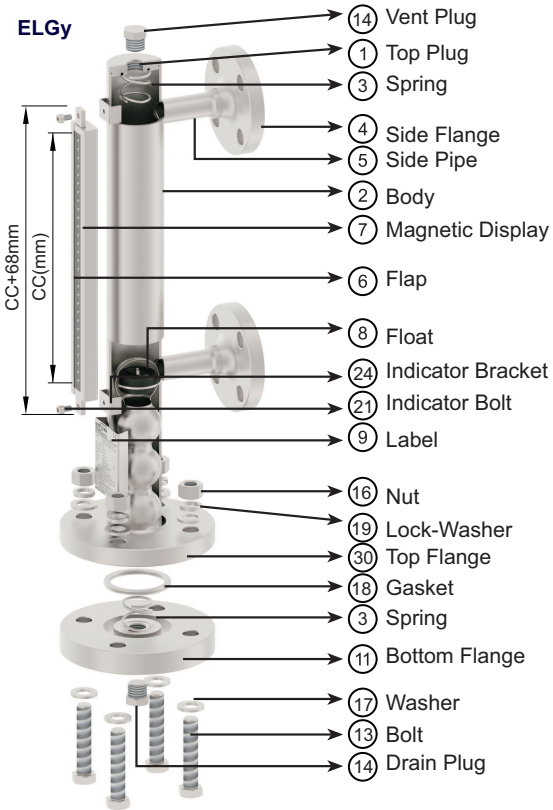
ELGk



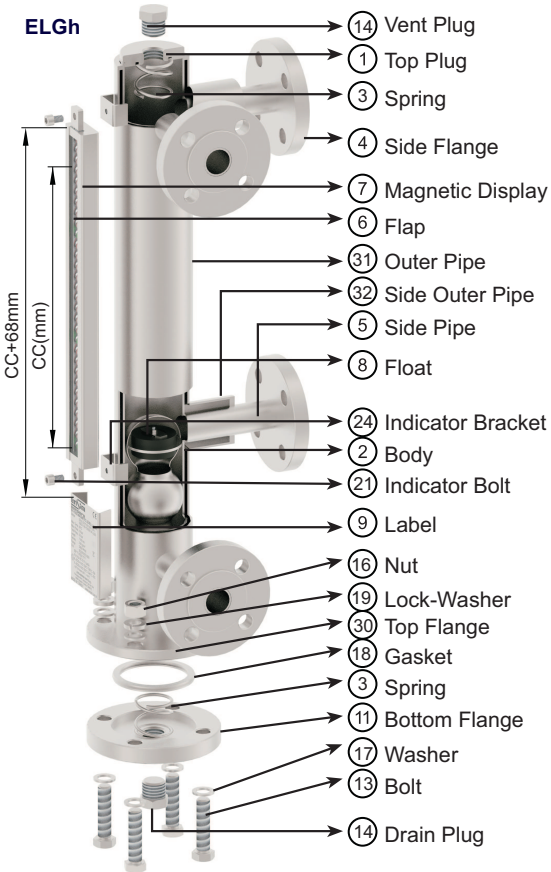
ELGu



ELGy

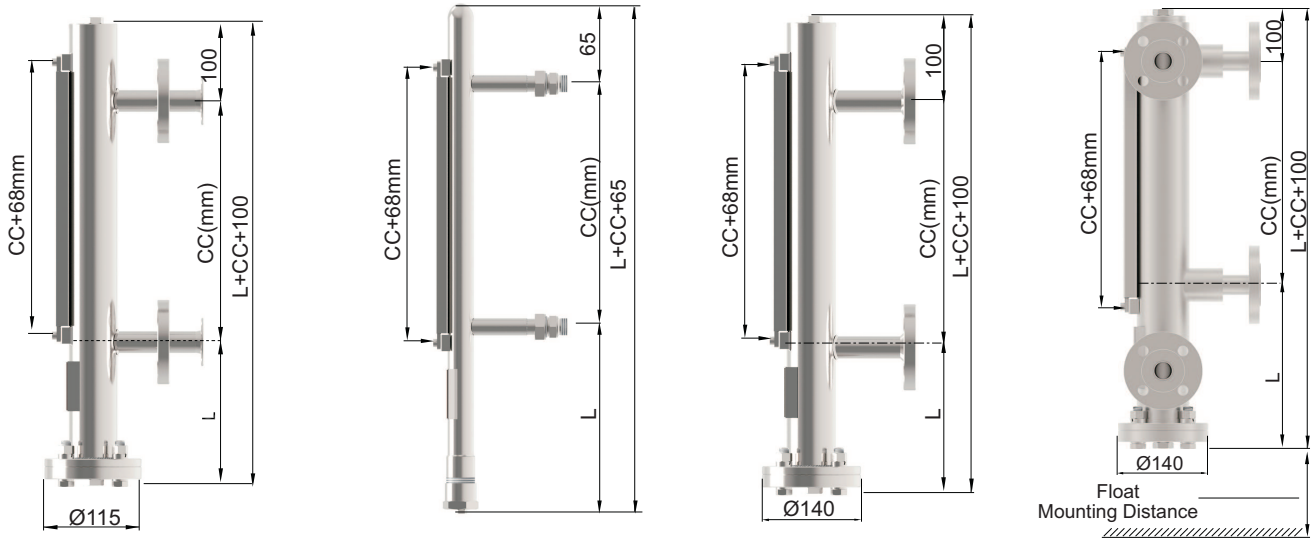


ELGh

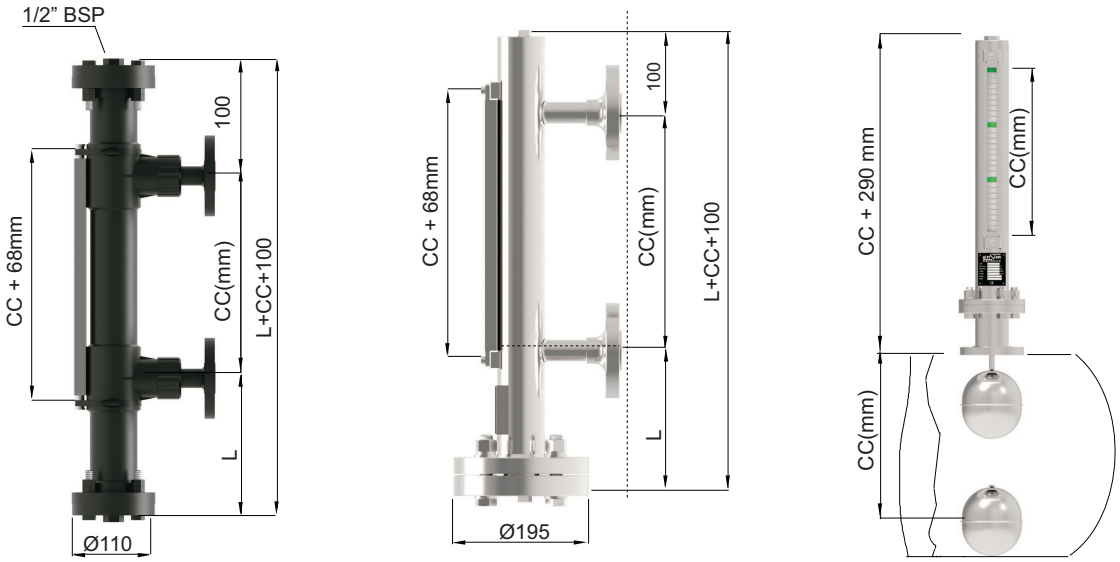


SAMPLE MODELS :

	ELG	ELGs	ELGk	ELGh
Body	Ø 60.3 x 1.5 mm , 304 Stainless Steel	Ø 38 x 1.5 mm , 304 Stainless Steel	Ø 60.3 x 2 mm , 304 Stainless Steel	
Display	Standard display ELG-G	Standard display ELG-G	Standard display ELG-G	
Bottom Flange	DN 32, PN 16 , 304 Stainless Steel	Thread 16 , 304 Stainless Steel	DN 32, PN 40 - , 304 Stainless Steel	
Process Connection	DN 20, PN 16 , Coated Carbon Steelı	3/4"BSP Male or female Stainless Steel	DN20, PN40 (Std.)	
Pressure	Max.16 bar , Opt. 25 bar	Max.16 bar	Max.40 bar	
Temperature	Max. 180 °C , Opt. 360 °C , 400 °C	Max.180 °C , Opt. 360 °C	Max.180 °C , Opt. 360 °C	
Float Type	M51 , 1.10 g/cm³ Selectable from Table.	M11A, 1.00 g/cm³ Selectable from Table.	M51 , 1.10 g/cm³ Selectable from Table.	

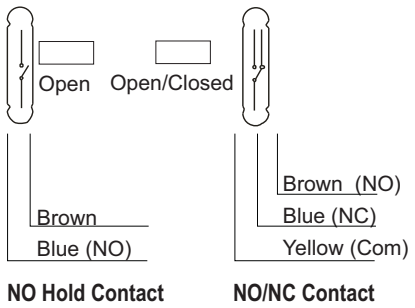


	ELGp	ELGy	ELGu
Body	Ø 63 x 3 mm , PVC, Opt.PVDF	Ø 60.3 x 2.6 or 65 x 3.5 mm 304 St. St.	Ø 60.3 x 2 mm , 304 St. St.
Display	Standard display ELG-G	Standard display ELG-G	Standard display ELG-G
Bottom Flange	DN 32, PN 6 PVC, Opt.PVDF	DN 50, PN 100 (Std.) , 304 St. St.	DN 32 , PN 16 St. St.
Process Connection	1/2 " BSP Thread, PVC Flange Opt.PVDF	DN 25, PN 100 St. St.	DN 25, PN 16 St. St.
Pressure	Max. 6 bar	Max.100 bar	Max.16 bar
Temperature	PVC Max.60°C , PVDF Max.120°C	Max. 180 °C , Opt. 360 °C	Max.180 °C , Opt. 360 °C
Float Type	P11A Selectable from Table.	M53H Selectable from Table.	M0A Selectable from Table.

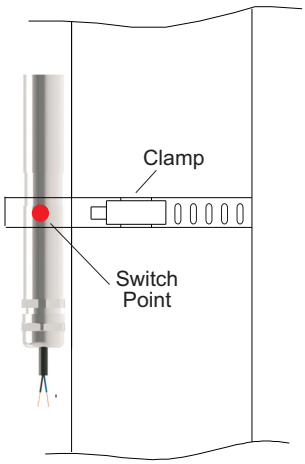


MAGNETIC CONTACT

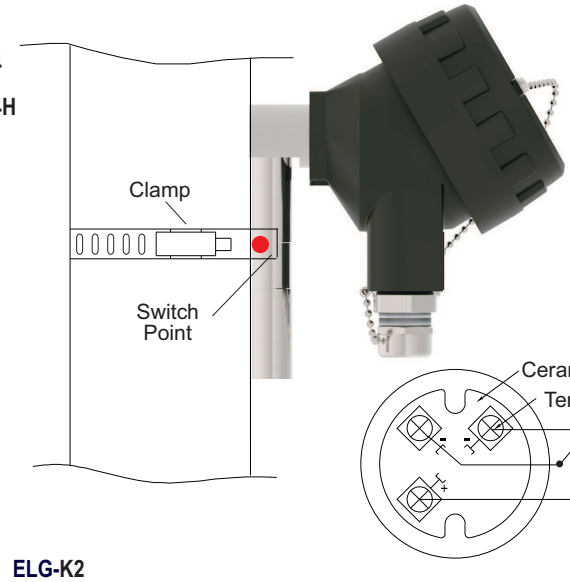
	ELG-K1H	ELG-K1	ELG-K2	ELG-K3H	ELG-K3	ELG-K4	ELG-K4H
Contact Element	Reed Sensors SPST-NO Hold Type	Reed Sensors SPDT-NO/NC	Reed Sensors SPST-NO	Reed Sensors SPST-NO Hold Type	Reed Sensors SPDT-NO/NC	Reed Sensors SPDT-NO/NC	Reed Sensors SPST-NO Hold Type
***Contact Current**	1,5 A	1 A	0,7 A	1,5 A	1 A	1 A	1,5 A
***Max. Contact Power**	20 W / VA	20 W / VA	10 W / VA	20 W / VA	20 W / VA	20 W / VA	20 W / VA
***Max.Switching Voltage**	200 VDC 250 VAC	150 VDC 140 VAC	150 VDC 120 VAC	200 VDC 250 VAC	150 VDC 140 VAC	150 VDC 140 VAC	200 VDC 250 VAC
Case Material	Stainless Steel		Plastic			Aluminium	
Protection Class	IP 68 , PG9 Socket		IP 68			IP 66	
Cable Lenght	1 m. Silicon Cable		1 m. Cable			-	
Clamp Material	304 Stainless Steel		304 Stainless Steel			304 Stainless Steel	
Operation Temperature	(-) 20 °C...(+) 180 °C Attached to the body with clamp.		(-) 20 °C...(+) 180 °C It is attached to the body with a stainless rod.			(-) 40°C...(+)180 °C Attached to the body with clamp Opt. EX-Version.	

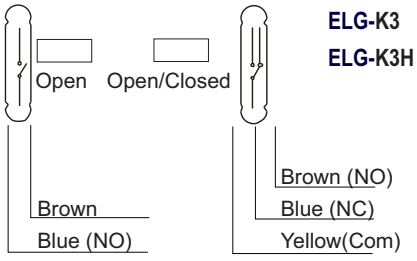


ELG-K1
ELG-K1H



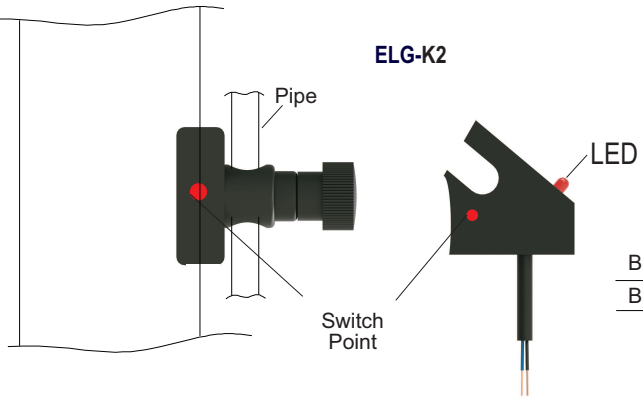
ELG-K4
ELG-K4H

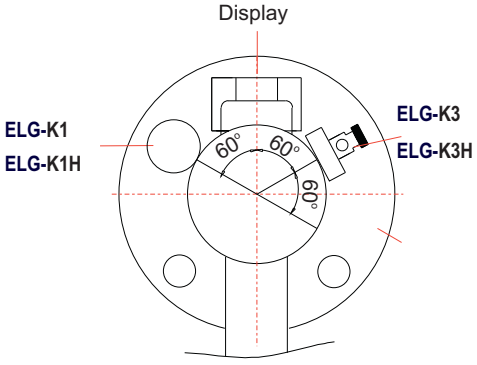


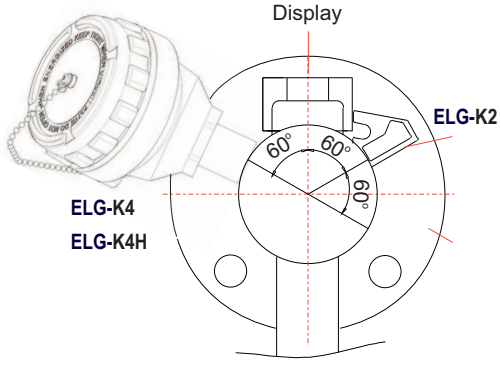


ELG-K3
ELG-K3H

ELG-K2



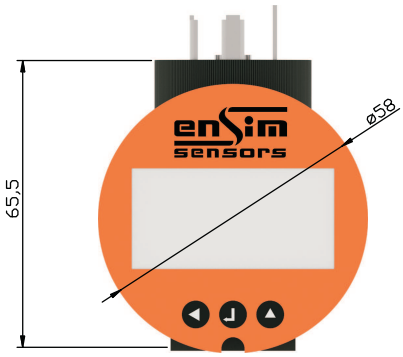




LOCAL DIGITAL DISPLAY

EDS 01

Output	4-20 mA Two Wire
Power Supply	24 VDC , (Supplied by current loop)
Output	Two independent PNP
Switching Performance	Max. 120 mA , Short circuit protection
Switching Frequency	Max. 10 Hz.
Delay Time	0-255 ms
Switching Cycle	> 100 x 10^6
Repeatability	⩽ ± 0,1 % Full Scale
Electrical Protection	IP 65 , Reverse polarity protection
Display	Double 5 digit / 8 digit 7 segment / 16 segment LCD
Scale Range	(-) 19999 ... (+) 99999
Accuracy	% 0,1 ± 1 digit
Material of Housing	PA 6.6 , Polycarbonate Opt. Aluminum Double Cell Housing
Mechanical Stabilite	Vibration: 59 RMS (20-200 Hz) Anti- Shock : 100 g / 11 ms
Working and Ambient Temperature	(-) 25 °C ... (+) 80 °C
Ambient Humidity	% 20 RH... 80 RH

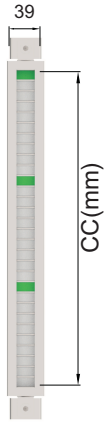


2.6. Level Gauge and Accessories

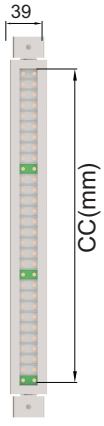
DISPLAY

	ELG - G	ELG - HT	ELG - F
Case	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel
Flaps	Plastic	Ceramic	Aluminium
Colour	Red / White	Red / White	Red
Max. Temperature	(-) 20 °C...(+) 180 °C	Optional (-)20 °C...(+) 350 °C	(-) 20 °C...(+) 180 °C
Min. Lenght	50 mm Remote monitoring is provided easily by using a different color in each 100mm.	50 mm also using a different color for every 100 mmIt provided remote monitoring easy.	Min.200 mm
Flap Protection	Plexiglass	Glass	Glass

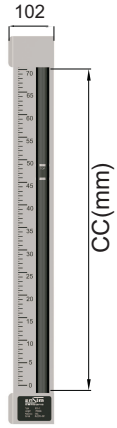
ELG - G



ELG - H

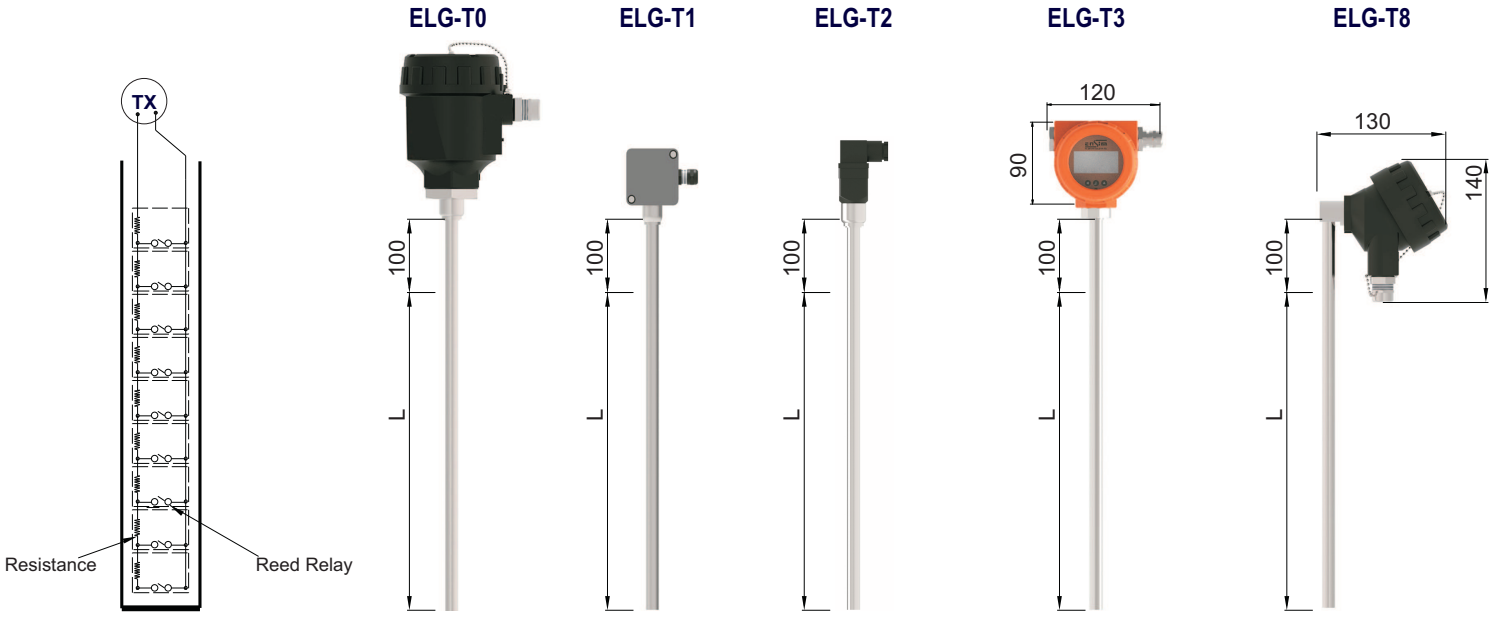


ELG - F



TRANSMITTER

	ELG-T8 / ELG-T0	ELG-T1	ELG-T2	ELG-T3
Tube Material	304 Stainless Steel		304 Stainless Steel	304 Stainless Steel
MeasureDistance	15 mm , 10 mm or 5 mm		15 mm , 10 mm or 5 mm	15 mm , 10 mm or 5 mm
Power Supply	10...36 VDC		10...36 VDC	10...36 VDC
Operation Temp.	(-) 20 °C...(+) 150 °C		(-) 10 °C...(+) 150 °C	(-) 40 °C...(+) 150 °C
Output	2 wire 4-20 mA, 3 wire 4-20 mA, 0-20 mA, 20-4 mA, 20-0 mA, 0-10 V, 10-0 V, 1-5 V, 5-1 V, 0-5 V, 5-0 V		2 wire 4-20 mA, 3 wire 4-20 mA, 0-20 mA, 20-4 mA, 20-0 mA, 0-10 V, 10-0 V, 1-5 V, 5-1 V, 0-5 V, 5-0 V	2 wire 4-20 mA
Contact	---		---	2 x PNP - NA
Electrical Connect.	Terminal	PG7 Socket	DIN 43650C Socket	Terminal
Optional	Ex Version		Local Digital Display, EDS 01	-Ex Version
Mechanical Connec.	Attached to the body with clamp.			



MAGNETOSTRICTIVE TRANSMITTER

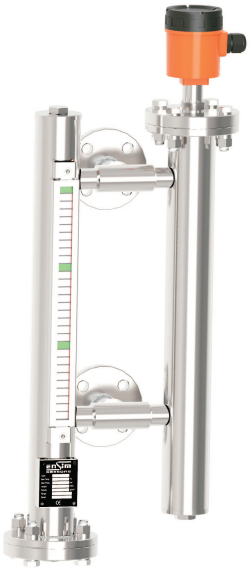
	ELG-T9
Housing	Aluminium
Resolution	16 bit DAC output ± 0.02% of full measurement (Min. 100 µm)
Repeatability	± 0.005% of full measurement
Besleme	24 VDC ± 10%
Operation Temperature	(-) 20 °C ... (+) 150 °C
Output	2 wire 4-20 mA
Electrical connection	M12 - 5 Pin Socket
Optional	Ex Version

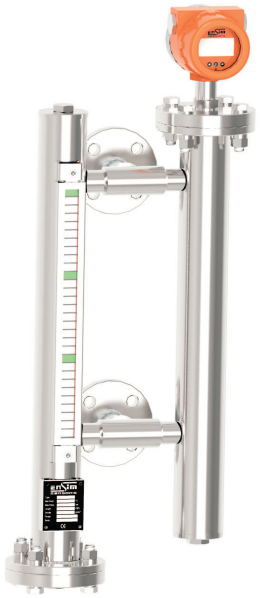


CAPACITIVE TRANSMITTER

	ELG-T4	ELG-T5	ELG-T6	ELG-T7
Tube	AISI 304 Stainless Steel		AISI 304 Stainless Steel	
Measure Distance	± % 0,5 For conductive liquids	± % 0,8 For Low Conductive	± % 0,5 For conductive liquids	± % 0,8 For Low Conductive
Power Supply	10...36 VDC		10...36 VDC	
Operation Temperature	(-) 40 °C...(+) 150 °C		(-) 40 °C...(+) 150 °C	
Output	2 wire 4-20 mA, 3 wire 4-20 mA, 0-20 mA, 3 wire 0-10 V		2 wire 4-20 mA, -	
Contact	-		(With Display) 2 x PNP - NA	
Electrical Connect.	Terminal		Terminal	
Measurement Method	Capacitive		Capacitive	

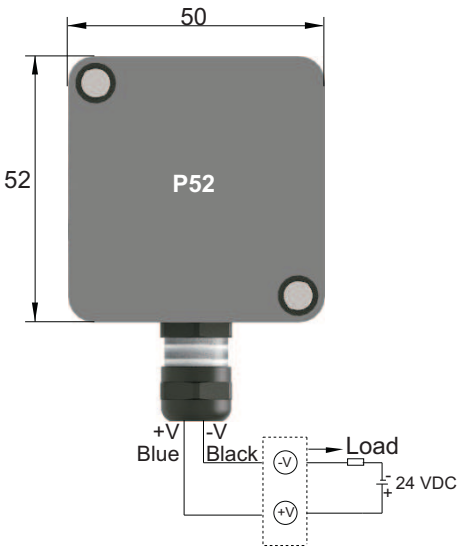
Note: When Capacitive Transmitter is considered, double body model should be selected.



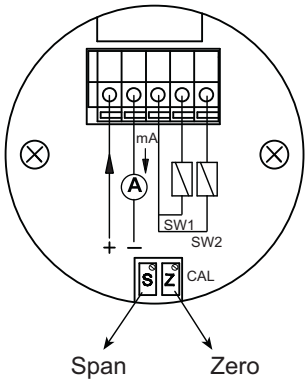


Electrical connection:

For ELG-T1



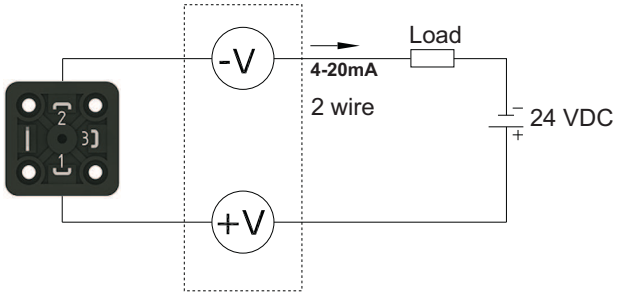
For T3 , T6 , T7

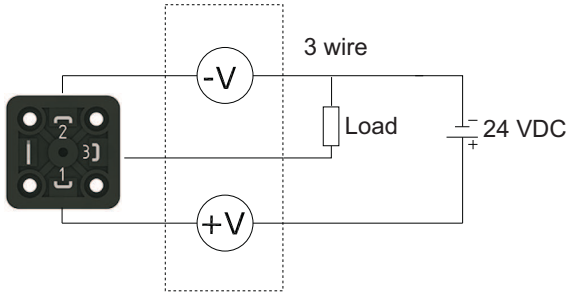


4-20mA Two Wire + 2 PNP NO

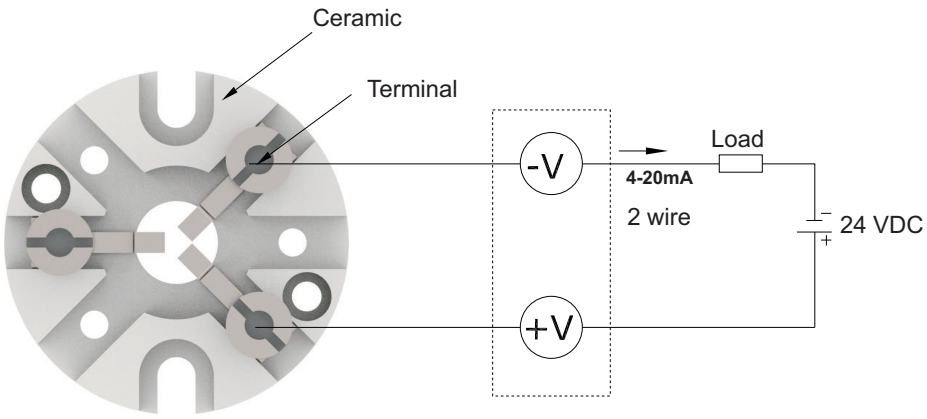
ELECTRICAL CONNECTION

For ELG-T2

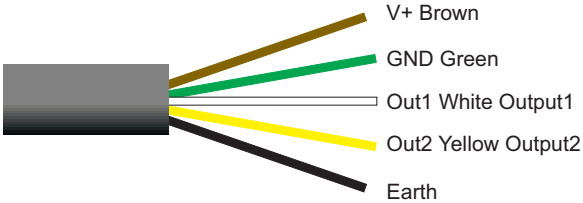


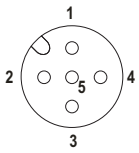


For ELG-T8

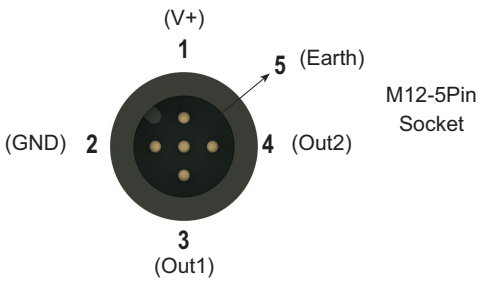


For ELG-T9



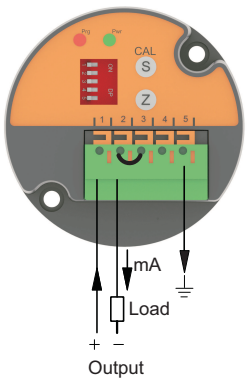




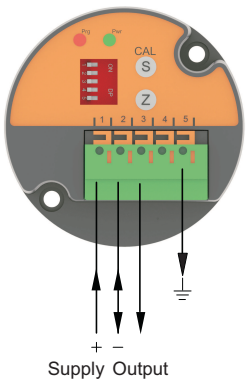


For ELG-T4 , ELG-T5 , ELG-T6 and ELG-T7

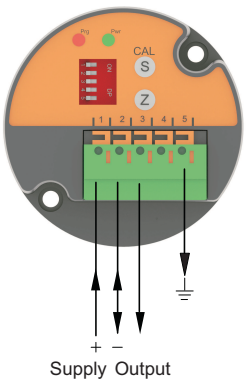
4-20mA Two Wire



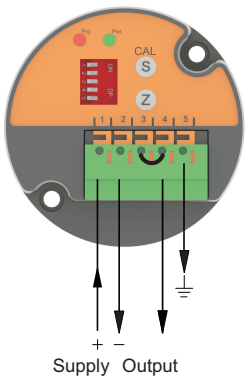
4-20mA Three Wire



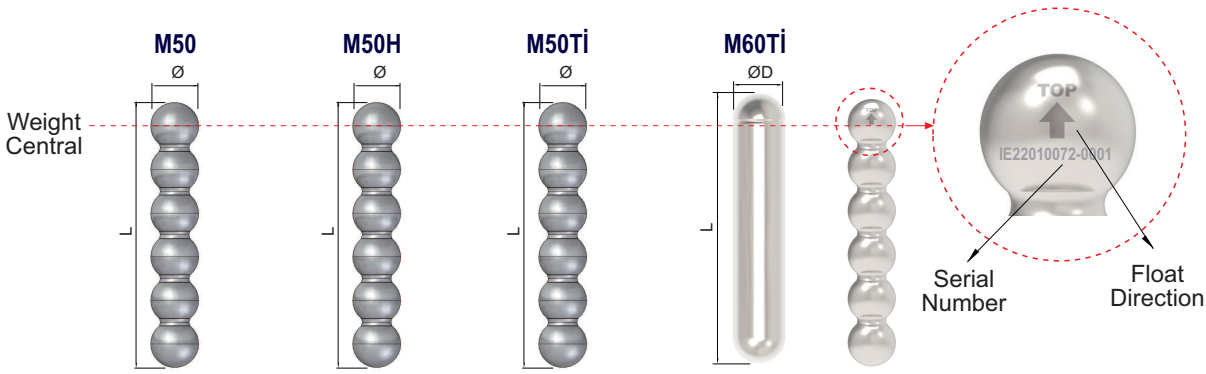
0-20mA Three Wire



0-10V Three Wire



FLOAT



Order Code	Model	Density	Dim. (Ø*L) (mm)	Test Pressure	Working Pressure	Temperature	Number of Ball	Material
0500	M50	1.20 g/cm³	Ø 52*150	60 bar	40 bar	200 °C	3	AISI 316 St.St.
0501	M51	1.00 g/cm³	Ø 52*200	60 bar	40 bar	200 °C	4	AISI 316 St.St.
0502	M52	0.90 g/cm³	Ø 52*250	60 bar	40 bar	200 °C	5	AISI 316 St.St.
0503	M53	0.80 g/cm³	Ø 52*300	60 bar	40 bar	200 °C	6	AISI 316 St.St.
0504	M54	0.75 g/cm³	Ø 52*350	60 bar	40 bar	200 °C	7	AISI 316 St.St.
0505	M55	0.60 g/cm³	Ø 52*400	60 bar	40 bar	200 °C	8	AISI 316 St.St.
0530	M50H	1.35 g/cm³	Ø 52*150	100 bar	60 bar	200 °C	3	AISI 316 St.St.
0531	M51H	1.10 g/cm³	Ø 52*200	100 bar	60 bar	200 °C	4	AISI 316 St.St.
0532	M52H	1.00 g/cm³	Ø 52*250	100 bar	60 bar	200 °C	5	AISI 316 St.St.
0533	M53H	0.95 g/cm³	Ø 52*300	100 bar	60 bar	200 °C	6	AISI 316 St.St.
0534	M54H	0.90 g/cm³	Ø 52*350	100 bar	60 bar	200 °C	7	AISI 316 St.St.
0535	M55H	0.85 g/cm³	Ø 52*400	100 bar	60 bar	200 °C	8	AISI 316 St.St.
0560	M51H-100bar	1.20 g/cm³	Ø 52*250	150 bar	100 bar	200 °C	5	AISI 316 St.St.
0561	M52H-100bar	1.10 g/cm³	Ø 52*300	150 bar	100 bar	200 °C	6	AISI 316 St.St.
0562	M53H-100bar	1.00 g/cm³	Ø 52*350	150 bar	100 bar	200 °C	7	AISI 316 St.St.
0563	M54H-100bar	0.95 g/cm³	Ø 52*400	150 bar	100 bar	200 °C	8	AISI 316 St.St.
0564	M55H-100bar	0.92 g/cm³	Ø 52*450	150 bar	100 bar	200 °C	9	AISI 316 St.St.
0600	M50Ti	1.10 g/cm³	52*150	150 bar	100 bar	200 °C	3	Titanium (Grade2)
0601	M51Ti	1.00 g/cm³	Ø 52*200	150 bar	100 bar	200 °C	4	Titanium (Grade2)
0602	M52Ti	0.80 g/cm³	Ø 52*250	150 bar	100 bar	200 °C	5	Titanium (Grade2)
0603	M53Ti	0.75 g/cm³	Ø 52*300	150 bar	100 bar	200 °C	6	Titanium (Grade2)
0604	M54Ti	0.65 g/cm³	Ø 52*350	150 bar	100 bar	200 °C	7	Titanium (Grade2)
0605	M55Ti	0.60 g/cm³	Ø 52*400	150 bar	100 bar	200 °C	8	Titanium (Grade2)
0606	M56Ti	0.55 g/cm³	Ø 52*450	150 bar	100 bar	200 °C	9	Titanium (Grade2)
0650	M60Ti	0.80 g/cm³	Ø 50*150	40 bar	25 bar	200 °C	1	Titanium (Grade2)
0651	M61Ti	0.70 g/cm³	Ø 50*200	40 bar	25 bar	200 °C	1	Titanium (Grade2)
0652	M62Ti	0.60 g/cm³	Ø 50*250	40 bar	25 bar	200 °C	1	Titanium (Grade2)
0653	M63Ti	0.50 g/cm³	Ø 50*300	40 bar	25 bar	200 °C	1	Titanium (Grade2)

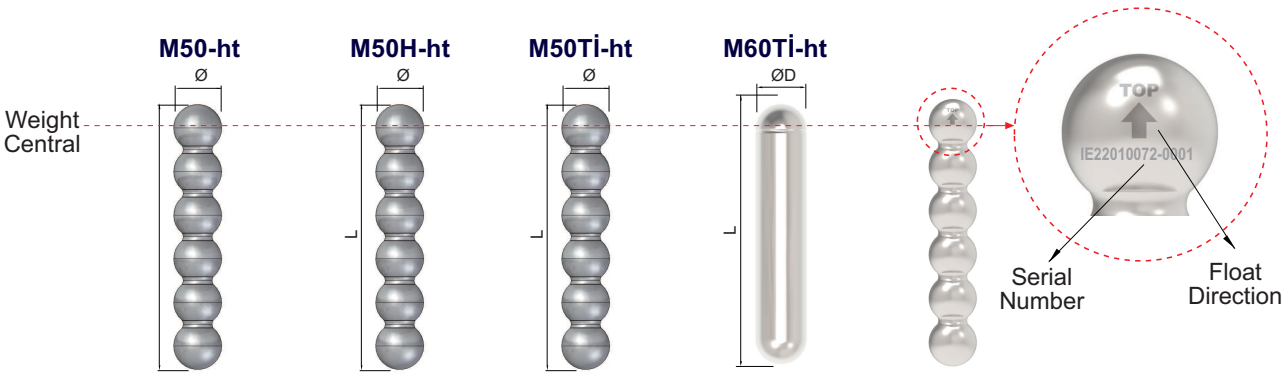
Note 1: Test safety coefficient of all floats is x1.5

For example ; Test pressure of M51H: 60 bar * 1.5 = 100

Note 2 : According to process needs custom-made float can be manufactured by changing sheet thickness.

All dimensions are given in mm.

FLOAT



Order Code	Model	Density	Dim. (Ø*L) (mm)	Test Pressure	Working Pressure	Temperature	Number of Ball	Material
1000	M50-ht	1.40 g/cm³	Ø 52*150	60 bar	40 bar	350 °C	3	AISI 316 St.St.
1001	M51-ht	1.15 g/cm³	Ø 52*200	60 bar	40 bar	350 °C	4	AISI 316 St.St.
1002	M52-ht	1.00 g/cm³	Ø 52*250	60 bar	40 bar	350 °C	5	AISI 316 St.St.
1003	M53-ht	0.90 g/cm³	Ø 52*300	60 bar	40 bar	350 °C	6	AISI 316 St.St.
1004	M54-ht	0.80 g/cm³	Ø 52*350	60 bar	40 bar	350 °C	7	AISI 316 St.St.
1005	M55-ht	0.70 g/cm³	Ø 52*400	60 bar	40 bar	350 °C	8	AISI 316 St.St.
1006	M50H-ht	1.35 g/cm³	Ø 52*150	100 bar	60 bar	350 °C	3	AISI 316 St.St.
1007	M51H-ht	1.10 g/cm³	Ø 52*200	100 bar	60 bar	350 °C	4	AISI 316 St.St.
1008	M52H-ht	1.00 g/cm³	Ø 52*250	100 bar	60 bar	350 °C	5	AISI 316 St.St.
1009	M53H-ht	0.95 g/cm³	Ø 52*300	100 bar	60 bar	350 °C	6	AISI 316 St.St.
1010	M54H-ht	0.90 g/cm³	Ø 52*350	100 bar	60 bar	350 °C	7	AISI 316 St.St.
1011	M55H-ht	0.85 g/cm³	Ø 52*400	100 bar	60 bar	350 °C	8	AISI 316 St.St.
1012	M51H-100bar-ht	1.20 g/cm³	Ø 52*250	150 bar	100 bar	350 °C	5	AISI 316 St.St.
1013	M52H-100bar-ht	1.10 g/cm³	Ø 52*300	150 bar	100 bar	350 °C	6	AISI 316 St.St.
1014	M53H-100bar-ht	1.00 g/cm³	Ø 52*350	150 bar	100 bar	350 °C	7	AISI 316 St.St.
1015	M54H-100bar-ht	0.95 g/cm³	Ø 52*400	150 bar	100 bar	350 °C	8	AISI 316 St.St.
1016	M55H-100bar-ht	0.92 g/cm³	Ø 52*450	150 bar	100 bar	350 °C	9	AISI 316 St.St.
1017	M50Ti-ht	1.15 g/cm³	Ø 52*150	150 bar	100 bar	350 °C	3	Titanium (Grade2)
1018	M51Ti-ht	1.10 g/cm³	Ø 52*200	150 bar	100 bar	350 °C	4	Titanium (Grade2)
1019	M52Ti-ht	0.85 g/cm³	Ø 52*250	150 bar	100 bar	350 °C	5	Titanium (Grade2)
1020	M53Ti-ht	0.80 g/cm³	Ø 52*300	150 bar	100 bar	350 °C	6	Titanium (Grade2)
1021	M54Ti-ht	0.70 g/cm³	Ø 52*350	150 bar	100 bar	350 °C	7	Titanium (Grade2)
1022	M55Ti-ht	0.65 g/cm³	Ø 52*400	150 bar	100 bar	350 °C	8	Titanium (Grade2)
1023	M56Ti-ht	0.60 g/cm³	Ø 52*450	150 bar	100 bar	350 °C	9	Titanium (Grade2)
1024	M60Ti-ht	0.85 g/cm³	Ø 50*150	40 bar	25 bar	350 °C	1	Titanium (Grade2)
1025	M61Ti-ht	0.75 g/cm³	Ø 50*200	40 bar	25 bar	350 °C	1	Titanium (Grade2)
1026	M62Ti-ht	0.65 g/cm³	Ø 50*250	40 bar	25 bar	350 °C	1	Titanium (Grade2)
1027	M63Ti-ht	0.55 g/cm³	Ø 50*300	40 bar	25 bar	350 °C	1	Titanium (Grade2)

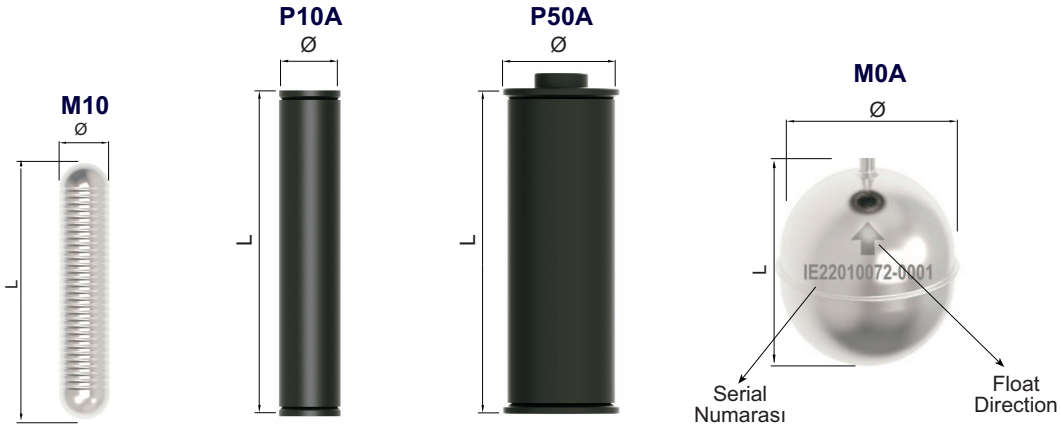
Note 1: Test safety coefficient of all floats is x1.5

For example ; Test pressure of M51H: 60 bar * 1.5 = 100

Note 2 : According to process needs custom-made float can be manufactured by changing sheet thickness.

All dimensions are given in mm.

FLOAT

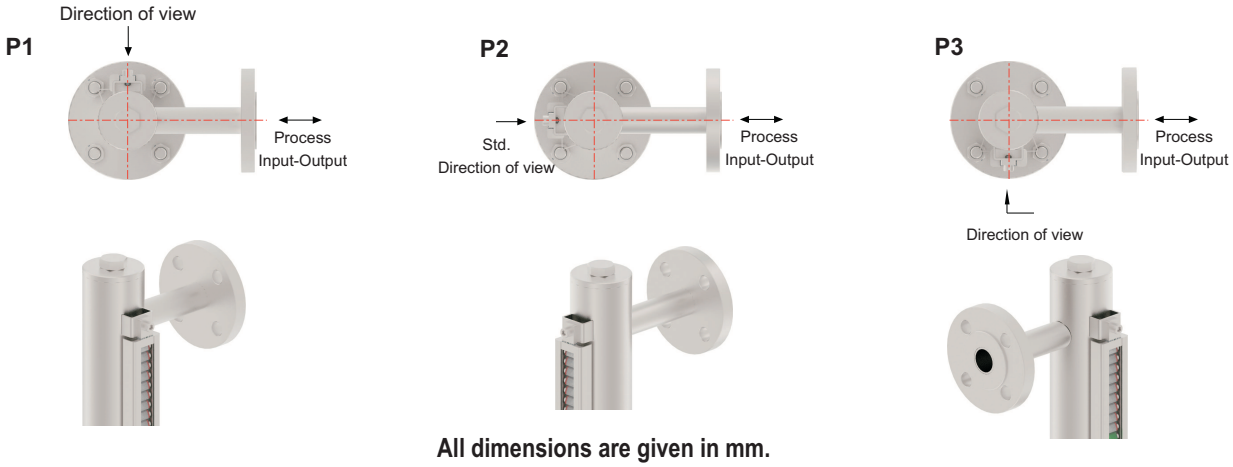


Order Code	Model	Density	Dim. (Ø*L) (mm)	Test Pressure	Working Pressure	Temperature	Number of Ball	Material
0680	M10	1.20 g/cm³	Ø 32*150	25 bar	16 bar	200 °C	1	AISI 316 St.St.
0681	M11	1.00 g/cm³	Ø 32*200	25 bar	16 bar	200 °C	1	AISI 316 St.St.
0682	M12	0.90 g/cm³	Ø 32*250	25 bar	16 bar	200 °C	1	AISI 316 St.St.
0683	M13	0.80 g/cm³	Ø 32*300	25 bar	16 bar	200 °C	1	AISI 316 St.St.

Order Code	Model	Density	Dim. (Ø*L) (mm)	Test Pressure	Working Pressure	Temperature	Number of Ball	Material
0758	P10A	1.70 g/cm³	Ø 32*170	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0759	P11A	1.40 g/cm³	Ø 32*170	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0760	P12A	1.10 g/cm³	Ø 32*170	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0761	P13A	0.90 g/cm³	Ø 32*170	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0762	P14A	0.80 g/cm³	Ø 32*200	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0764	P50A	1.80 g/cm³	Ø 50*150	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0765	P51A	1.50 g/cm³	Ø 50*150	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0766	P52A	1.20 g/cm³	Ø 50*150	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0767	P53A	1.10 g/cm³	Ø 50*150	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0768	P54A	0.90 g/cm³	Ø 50*220	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0769	P55A	0.80 g/cm³	Ø 50*220	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0770	P56A	0.70 g/cm³	Ø 50*250	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC
0771	P57A	0.60 g/cm³	Ø 50*300	5 bar	3 bar	(-) 20...(+) 60 °C	1	PVC

Order Code	Model	Density	Dim. (Ø*L) (mm)	Test Pressure	Working Pressure	Temperature	Number of Ball	Material
0670	M0A	0.98 g/cm³	Ø 112*148	25 bar	16 bar	200 °C	1	AISI 316 St.St.

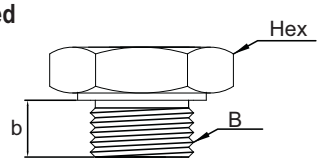
Indicator Place :



All dimensions are given in mm.

MECHANICAL CONNECTIONS

Threaded





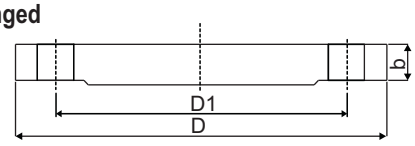
ISO228-1

Order Code	Size
0005	3/4" BSP
0006	1" BSP
0008	1 1/2" BSP
0009	2" BSP
0204	3/4" NPT
0205	1" NPT
0207	1 1/2" NPT
0208	2" NPT

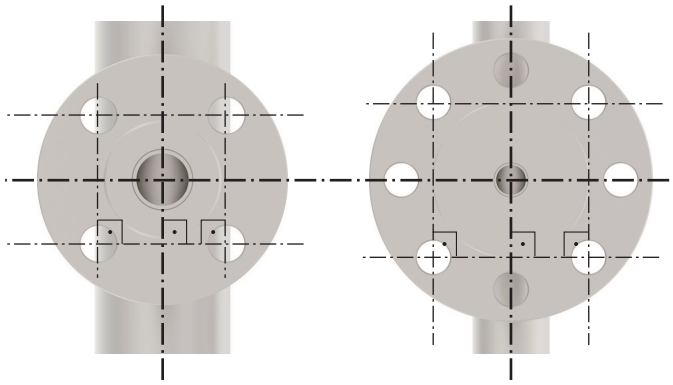
ANSI B 16.5

Order Code	Size	Pressure Class
1001	3/4"	150 Lb
1002	1"	
1004	1 1/2"	Opt.
1005	2"	300 LB
1006	2 1/2"	600 LB
1007	3"	900 LB
1008	4"	
1010	6"	
1011	8"	

Flanged







4 Holes 8 Holes

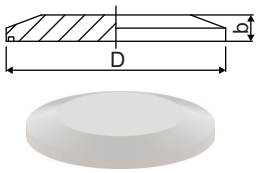
ISO1092-1

Order Code	Size	Pressure Class
0501	DN 20	PN 16
0502	DN 25	
0503	DN 32	
0504	DN 40	Opt.
0505	DN 50	PN 25
0506	DN 65	PN 40
0507	DN 80	PN 100
0508	DN 100	
0510	DN 150	
0510	DN 200	

JIS B 2220

Order Code	Size	Pressure Class
2501	3/4"	5K
2502	1"	
2504	1 1/2"	10K
2505	2"	16K
2506	2 1/2"	
2507	3"	30K
2508	4"	40K
2510	6"	
2511	8"	63K

Clamp



ISO2852

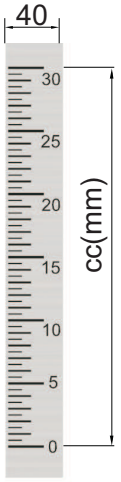
Order Code	Size
1501	DN 32
1502	DN 50
1503	DN 65

LEVEL CONTROL DEVICE

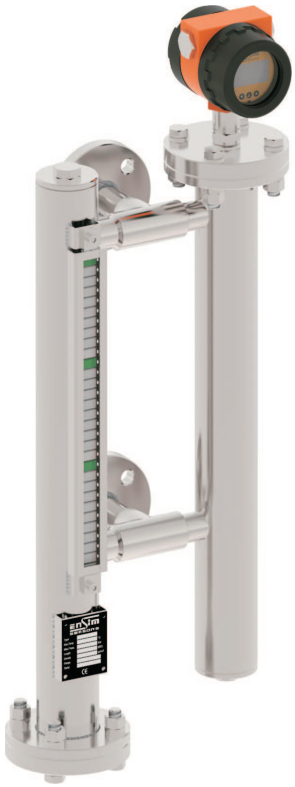
Power Supply	220 VAC , 2.8 VA
Output	2 pcs. 5 A / 250 VAC (Start - Stop)
Working Temperature	(-) 20 °C / (+) 70 °C
Dimension	72 mm x 72 mm
Input	Contact information, coming from ELG Isolated input-output

SK-P1





ELG-SK



SCALE

ELG - SK

Material	304 Stainless Steel
Dimension (CC)	40 x 1.5 mm
Working Temperature	(-)20 °C...(+) 350 °C

2.9 . Connection Forms :

Top Body Connection:

U1



U3



U4



U5



U6



U2 (Std.)

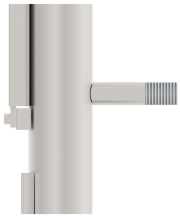


Process Connection :

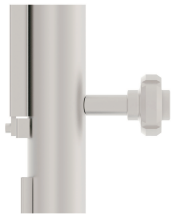
Y2



Y3



Y4



Y5



Y6



Bottom Body Connection:

A1 (Std.)



A2



A3



A4



Order Form : Please consider sample models when coding

1. STEP

1 BODY TYPE

Single Body (Std).....1
Double Body (Transmitter must also be selected).....2
Special.....x

2 CERTIFICATE

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

3 MODEL ELG

Standard version ELG 1
Mini version ELGs 2
Plastic version ELGp 3
40 bar Pressure Version ELGk.....4
100 bar Pressure Version ELGy.....5
Top Mounting Version ELGu.....6
25 bar Pressure Jacket Version ELGh.....7

4 MATERIALS (WETTED AREAS)

304 Stainless Steel (Std.) 001
316 Stainless Steel 002
PVC.....020
PVDF.....064
Special.....x

5 SEAL MATERIAL

PTFE.....066
Rubber NBR.....081
Viton.....082
Silicon.....083
Graphite.....086
Klingrid (Std.).....087
Special.....x

6 DISPLAY

Plastic Flap Version (180 °C) (Std.) .....G
High Temperature Ceramic Flap Version (350 °C).....H
Glass With Float Version (180 °C).....F
Special.....x

7 SITUATION OF DISPLAY

Left Side Assembly Version.....P1
Middle Side Assembly Version (std.)..... P2
Right Side Assembly Version..... P3
Special.....x

8 FLOAT

Appropriate Float Model Shoold Be Stated.....?

9 AXIS DISTANCE (mm) CC

Identification Dimension Between Axes (mm) CC.....?

10a PROCESS CONNECTION / TYPE

Collared Connection.....Y1/
Flanged Connection Y2/
Threaded Connection..... Y3/
SMS Type Connection..... Y4/
Female Thread Connection.....Y5/
Thread Connection..... Y6/
Double Tube..... Y7/
Special.....x

10b PROCESS CONNECTION SIZE

Proper order code should beselected from table.....?
Special.....x

11 BOTTOM BODY CONNECTION TYPE

Flanged (Std). A1
Neck Flanged A2
With Vertical Flanged..... A3
With Top Flanged..... A4
Special.....x

12 TOP BODY CONNECTION / TYPE

Round Version..... U1/
Straight Type.....U2/
Flange from the body.....U3/
Flanged.....U4
With Vertical Flanged..... U5
Two Piece With Flange Connection..... U6
Special.....x

13 OPTIONAL

None...../ 0
Scale...../ SK
Heating Jacket (Connection Must Be Specified). ...../ C
Liquid Level Relay...../ R
Level Control Relay ...../ SK P1
Special.....x

Example

1.Adım **ELG** 101 - 001 - 087 - G - P1 - 0501 - 500 - Y1 / 0501 - A1 - U2 - /0

2. STEP

1 TRANSMITTER ELG-T

Aluminium Housing IP66 Big Type 0
Aluminium Housing version.....1
With Socket version.....2
With Display Version.....3
Aluminium Housing , IP66 B22x Small Type.....8
Capacitive - Conductive Liquid 4
Capacitive - Low Liquid 5
Display Capacitive - Conductive Liquid 6
Display Capacitive - Insulating Liquid 7
Magnetostriktif.....9
ATEX Transmitter .....TE

2 CERTIFICATE

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

3 LENGTH (mm) L

....mm

4 SENSITIVITY RANGE (mm)

15 mm.....15
10 mm.....10
5 mm.....05
Special.....x

5 OUTPUT

4-20mA Two Wires.....19
4-20mA Three Wires.....20
0-10V Three Wires.....21
0-20mA Three Wires.....22
3-180 Ohm.....23
10-180 Ohm.....24
240-33 Ohm.....25
Special.....x

6 OPTIONAL

None...../ 0
Local Digital Display..... / EDS 01
Special.....x

EXAMPLE

2.Step ELG-**T1** - 500 - 10 - 19 / 0
Transmitter , 4-20mA , 500mm , 10mm intermittent

3. STEP

1 CONTACT ELG-K

Stainless steel version.....1
Stainless steel hold version..... 1H
Aluminium housing version.....4
Aluminium housing hold version.....4H
Plastic version.....2
Plastic version..... 3
Plastic hold version.....3H
ATEX Certified (imported).....KE

2 CERTIFICATE

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

3 CONTACT STRUCTURE

NO Reed Relay.....06
NC Reed Relay.....07
NO / NC Reed Relay.....08
NO Hold Type Reed Relay.....09
Special.....x

4 CONTACT NUMBER

..... Piece

5 CABLE LENGTH (m) L

Standard 1 m. 01
Special.....x

6 OPTIONAL

None...../ 0
Special..... / x

Example

3.Step ELG-**K1H** - 09 - 2 - 0 / 0
Contact 2 Pcs. Hold Type, 1 m. With Cable

ONLY THE DISPLAY SHOULD BE USED WHEN REQUIRED.

1 DISPLAY ELG-

With plastic flap (Std.) 180 °C ..... G
350 °C with ceramic flap .....HT
180 °C with glass tube .....F

2 CERTIFICATE

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

3 SIZE (mm) L

....mm

4 BODY MATERIAL

304 Stainless Steel (Std.) .....001 Special.....x
316 Stainless Steel (Std.) 002

5 OPTIONAL

None...../ 0 Special.....x

Example

ELG-G - 0 - 500 - 001 / 0
Plastic With Flap Display , 500mm , 304 Stainless Steel

ONLY THE DISPLAY SHOULD BE USED WHEN REQUIRED.

1 SCALE ELG-

Standard Type .....SK

2 CERTIFICATE

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

3 LENGTH (mm) L

....mm

4 BODY MATERIAL

304 Stainless Steel (Std.) .....001 Special.....x
316 Stainless Steel (Std.) 002

5 OPTIONAL

None...../ 0 Special..... / x

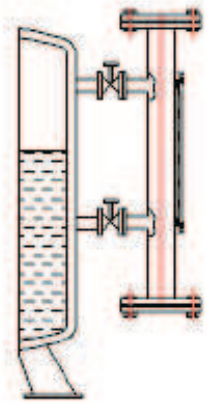
Example

ELG-SK - 0 - 500 - 001 / 0
Plastic With Flap Display , 500mm , 304 Stainless Steel

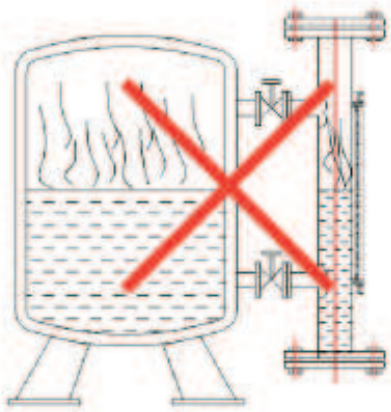
2,11.

WARNING !!!

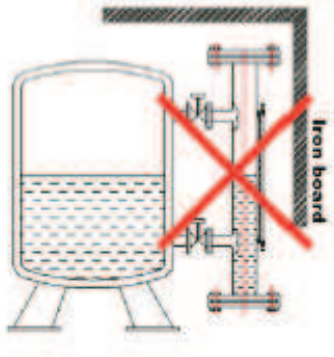
Please pay attention to following matters in order to operate your level indicator properly



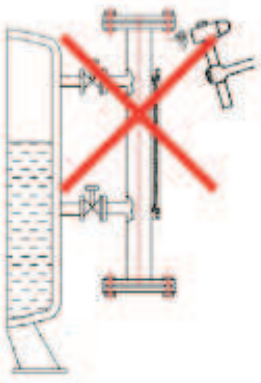
Always use valve when connecting to the tank.



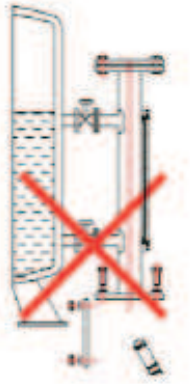
Do not use high temperatures than indicated in the legend.



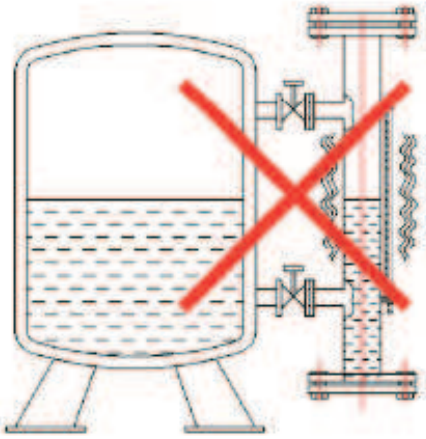
Keep away from magnetic materials such as iron plates; otherwise, its characteristics may be affected.



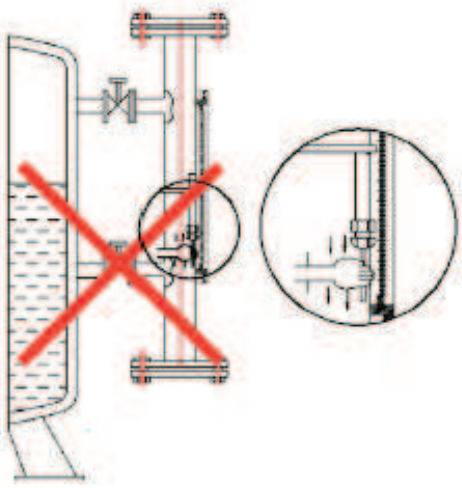
Indicator to operate under external influences.



Do not closing the valve while the fluid filled tank.



Vibration may cause instability.



Do not pull by holding from cable ; otherwise, its characteristics may change.

3. Failure Delection

Breakdown	Probable cause	Failure detection/correction
Fluid is leaking Flaps are mixed	-There is a hole on the body. -Gasket was not placed. -Flaps dislocated with impact.	-Check that it is worked under appropriate conditions and then contact with producer company. -Remove flaps and then align them into their rails again. -Inform authorized service.
Indicator glass was broken	-It was broken as a result of impact.	-Inform authorized service.
Unsteady operation in the contact	-Connection angle is not correct -Contact may have been burned. -Product was exposed to the magnetic field in the ambient. - Product was exposed to vibration.	- The factor which constitutes magnetic field should be removed or insulated. - Vibration which will affect the product should be prevented or it should be attached to any place without vibration.
Indicator flaps are not operating	- Float valve was placed reversely. - Product was exposed to high temperature - Float valve was not placed.	-Attach the float valve in the arrow direction. -Use in the appropriate operating temperature. -Inform authorized service.
Liquid is available but level is not shown	- Float valve did not climb up. - Density is not appropriate. - Body may be inclined.	-It jams due to contamination, clean periodically. -Check that float valve is correct. -Ensure that it is attached parallelly and vertically. -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. 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.