EST4300-LT Smart Flange mounting Liquid Level Transmitter

Product Introduction

EST4300-LT measures the level of liquids based on the principle of static pressure, which outputs analog or digital signal and is used for the liquid measurement in industrial process control and metering. With level mounting flanges, the transmitter can be mounted directly to the tank to be measured, and provide accurate measurement of the pressure, differential pressure and liquid level of various tanks.

Differential pressure transmitter can be used for level measurement in most cases; however, a flange mounting liquid level transmitter is needed for any of the following situations.

- Where the process liquids are prone to solidifying or crystallizing
- Where the process liquids are too thick or contains suspended solid and can easily block the impulse piping
- Where the process liquids are hot or corrosive, and cannot be measured directly
- Where the process liquids are food or other materials that cannot be contaminated.

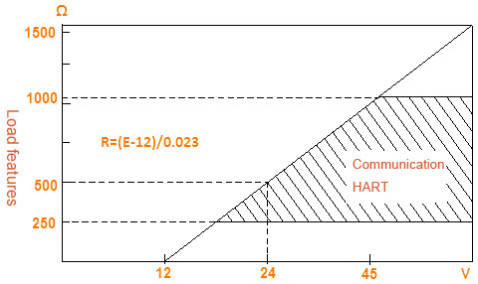
Applications

- Electricity
- Water Conservancy
- Metallurgy
- Environmental Protection
- Petrifaction
- Pharmacy
- Paper-making
- Furnace

Technologies

Service	Liquid, gas, and vapor service	Measuring Range	
Output Signal	Two-wire 4～20mA dc output, superimposed on HART digital signal	4	0-4.0～40kPa(0-400～4000mmH2O)
		5	0-20～200kPa(0-2000～20000mmH2O)
Power Supply	External Power Supply 24V dc; Power supply range 12V~45V	6	0-70～700kPa(0-0.7～7kgf/cm2)
Installation Locations:	Explosion-Proof ExdIICT5; Intrinsic Safe ExiaII CT5	7	0-210～2100kPa(0-2.1～21kgf/cm2)

Zero shift	Automatic shifts are enabled through the keys or communication interface of the field communicator (After positive/negative shift, neither the URL nor the LRL may exceed the limits of the span no matter what the output is.)
Temp. Limits	Electronics Temperature Operating Limits: -40～85℃ Sensing Element Operating Limits: -40～104℃; Memory Temperature: -40～85℃ Digital Display: -20～65℃ (normal operating); -40～85℃ (Non-Destructive)
Static Pressure and Overpressure Limits	150Lb Flange, 41.37kPa (absolute pressure)~1.89Mpa (37℃, silicone filling) Eligible flange rating, the transmitter remains nondestructive with 0~13 MPa pressure applied to the sensor. For high static pressure model, up to 31 MPa static pressure or unidirectional pressure

Load Limitations		
	Damping	Time constant: 0.2～32.0s
	Volumetric Displacement	Less than 0.16 cm3
	Relative Humidity	0～100%
	Booting Time	3s, No warm up

Performance

Under the condition of non-transference, 316 SST isolating diaphragm and others

Rangeability	40：1
Precision	For span between1:1 and 10:1, accuracy=±0.15% of Calibrated Span For span between10:1 and 40:1, accuracy=±0.075(1+0.1 URL/Span)% of Span
Stability	Maximum Span ±0.15%12months(exclude other ambient effects)
Temperature Effect	Zero Temperature Error per 55℃= ±0.375 of maximum span; Total Temperature Error per 55℃ (Zero and Span) = ±0.75 of URL. Note temperature effect error is doubled at range 3; the error for analog model is doubled
Overpressure Effect	Applying static pressure 140kgf / cm2, the error is systematic, which is ±0.25% of the maximum range and can be eliminated by zero trim based on actual static pressure.
Power Supply	Less than ±0.005% of calibrated span per volt.
Vibration effect	For vibration of 200Hz in any axis, the error caused is ±0.05%/g of the maximum span
Load Effect	No load effects in the working area when the voltage transferred to transmitter is higher than 12V.
Mounting position effects	Zero shifts up to 0.25kPa when the diaphragm is in vertical plane; With the diaphragm in horizontal plane, zero shifts up to0.98kPa plus extension length on extended units. All the errors can be calibrated out. No span effect.
Electromagnetic Radiation	Conform to IEC801 standards

Constructions

Wetted Part Materials	Isolating Diaphragm	316 SST, Alloy C, Monel and Tantalum	
	Drain/Vent Valves	316 SST, Alloy C and Monel	
	Flange and Connectors	316 SST, Alloy C and Monel	
	O-rings:	Fluororubber, NBR	
Non-Wetted Parts	Fill Fluid	Silicone, inert fill	
	Bolt	Zinc Plated CS	
	Electrical housing	Low copper aluminum	
	Mounting flange	Cadmium plated CS(or316 SST)	
Impulse Piping Connections	High side	3″or 4″150lb flange or 300lb flange;	
	Low side	• Flange connecting bolt: 1 / 4—18NPT • Tap connecting bolt: 1 / 2—14NPT	
Electrical Connections	1 / 2—14NPT threaded end conduit	Weight	8.9～22.9 kg

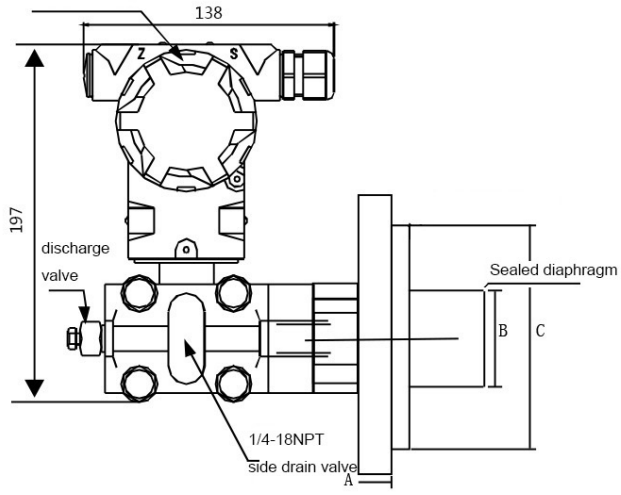
Weight

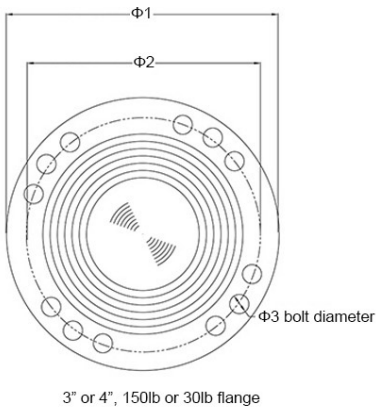
Unit kg	Coplanar flange	2”Extension Length	4”Extension Length	6”Extension Length
3” 150lb	8.9	9.8	10.3	10.7
4” 150lb	11.6	12.9	13.9	14.8
3” 300lb	11.1	12.1	12.5	12.9
4” 300lb	15.7	17	18	22.9

Flange Size and Bolting Specification

Flange size							Bolt hole		
Ordering Code	Dimension	Specification	Diameter	A	B	C	Numbers	Diameter	Distribution diameter
A	3”	150lb	190	22	66	127	4	20	152.5
B	4”	150lb	230	22	89	157	8	20	190.5
C	3”	300lb	210	27	66	127	8	22	168.5
D	4”	300lb	255	30	89	157	8	22	200

Dimensional Drawings





3” or 4”, 150lb or 30lb flange

Ordering Procedure

EST4300-LT	Smart Flange mounting Liquid Level Transmitter

Code	Rang
4	0-4.0～40kPa(0-400～4000mmH2O)
5	0-20～200kPa(0-2000～20000mmH2O)
6	0-70～700kPa(0-0.7～7kgf/cm2)
7	0-210～2100kPa(0-2.1～21kgf/cm2)

Code	Output Type
E	Linear Output 4-20mAdc
S	Linear Output 4-20mAdc+HART signal
F	Fieldbus Signal

Code	Low Side Construction Materials			
	Flange Adapter	Drain/Vent Valves	Isolating Diaphragm	Fill Fluid
12	CS	CS	316 SST	Silicone
14	CS	CS	Monel	
22	316 SST	316 SST	316 SST	
23	316 SST	316 SST	Hastelloy Alloy C	
24	316 SST	316 SST	Monel	
25	316 SST	316 SST	Tantalum	
33	Hastelloy Alloy C	Hastelloy Alloy C	Hastelloy Alloy C	
35	Hastelloy Alloy C	Hastelloy Alloy C	Tantalum	
44	Monel	Monel	Monel	

Code	Flange Specifications
DN11	DN50/PN1.6/2.5
DN21	DN80/PN1.6/2.5
DN31	DN100/PN1.6/2.5
AN21	ANSI2”150LB
AN31	ANSI3”150LB
AN41	ANSI4”150LB
DN12	DN50/PN4.0
DN22	DN80/PN4.0
DN32	DN100/PN4.0
AN22	ANSI2”300LB
AN32	ANSI3”300LB
AN42	ANSI4”300LB

Cod	High side diaphragm
A	316SST
B	Alloy C
C	Monel
D	Tantalum
E	Titanium
F	Specials

Code	Extension length (High Side)
A	0mm
B	50mm
C	150mm
D	200mm

Code	High side fill fluid
D	Straight silicone oil (-40℃～104℃)
F	Modified silicone oil (-40℃～304℃)
S	Inert fill (-40℃～204℃)

Code	Options
M1	0～100% Linear Meter
M4	LCD Digital Meter
D1	Side-mounted Drain/Vent Valve (Top)
D2	Side-mounted Drain/Vent Valve (Bottom)
Da	Explosion-proof
Fa	Intrinsic safety

EST4300LT	4	S	24	DN22	C	C	D	Fa	0～30KPa