

### LFT710 Differential Pressure Transmitter



LFT710 Differential Pressure Transmitter uses single crystal silicon sensor chip which adopts German advanced MEMS technology. It has built-in temperature compensation element and extremely high measurement accuracy and long-term stability over a wide range of static pressure and temperature variations. It can measure level, density, pressure of liquid, gas and steam. It is widely used in industrial process control, automated manufacturing, aerospace automotive and marine petroleum and petrochemical, electronic power, medical and health and many other fields.

LFT710 can accurately measure differential pressure and convert it into 4-20 mA DC output signal and can be operated locally through three buttons, and remotely operated by a general-purpose communicator, configuration software, and mobile phone APP, to perform display and configuration adjustment without affecting the 4-20 mA DC output signal.

### STANDARD SPECIFICATIONS

Standard zero point as the Reference Calibration Range, stainless steel 316L diaphragm, silicone oil as filling liquid.

### PERFORMANCE SPECIFICATIONS

The overall performance includes, but not limited to, the combined error of Reference Accuracy, Static Pressure Effect, Ambient Temperature Effect and other effects.

- Typical accuracy:  $\pm 0.075\%$  of the upper limit of the range
- Annual stability:  $\pm 0.2\%$  of the upper limit of the range

#### 1)Reference accuracy of range adjustment

Includes linearity from zero, hysteresis and repeatability			
Linear Output Accuracy	TD $\leq$ 10	$\pm 0.075\%$	Standard range: 6KPa, 40KPa, 250KPa, 1MPa, 3MPa
	10<TD $\leq$ 100	$\pm 0.0075TD\%$	
Note: TD = Turn down  URV  $\geq$  LRV . TD=URL/ URV   URV  $\leq$  LRV . TD=URL/ LRV			

#### 2)Static Pressure Impact

Zero impact	$\pm 0.15TD\%$ Upper range limit/10MPa
Full scale effect	$\pm 0.2TD\%$ Upper range limit/10MPa

#### 3)Ambient Temperature Influence of range below 6KPa

Range	Temperature	Accuracy
Below 6 KPa	Normal Temp range	0.075%
	-20-70°C Temp range	0.15%

#### 4)Voltage Impact

When the power supply voltage varies within 12~36V DC, the variation of zero point and range is not exceed  $\pm 0.005\%$  of the upper limit range /V, which can be ignored.

## FUNCTIONAL SPECIFICATIONS

#### 1)Range and Scope

Range/ URL/LRL	KPa	TD
B	Range	0.2 ~ 6
	URL/LRL	-6 ~ 6
C	Range	0.4 ~ 40
	URL/LRL	-40 ~ 40
D	Range	2.5 ~ 250
	URL/LRL	-250 ~ 250
E	Range	20 ~ 1000
	URL/LRL	-500 ~ 1000
F	Range	30 ~ 3000
	URL/LRL	-500 ~ 3000

#### 2)Range Limits

Range can be adjusted by turn down adjustment within URL and LRL. Such as for URL/LRL -40 ~ 40 kPa, TD=10, range can be 0 ~ 4kPa or -4 ~ 4kPa. Turn down should be as low as possible to ensure accuracy. In general, turn down is within 10, too big will affect accuracy.

#### 3)Zero Point Setting

Zero and span can be adjusted to any value within the measurement range in the table, as long as calibration range is not less than minimum range.

#### 4)Installation Position Influence

Installation position influence does not exceed 150 Pa, and can be corrected by the reset operation.

#### 5)Output

SIGNAL	TYPE	ELECTRICAL PERFORMANCE
4~20mA	Linear	Two Wire
4~20mA+HART	Linear	Two Wire
RS485	Linear	Four Wire

#### 6)Alarm current

Low report mode (Minimum): 3.8 mA.

High report mode (maximum): 20.8 mA.

No report mode (hold): keep the effective current value before the fault. Standard setting of alarm current: high alarm mode.

#### 7)Response time

- Total damping constant time is equal to the sum of the damping time constants of the electronic circuit components and the sensing diaphragm.
- Damping time of electronic circuit components: adjustable with in 0- 60S.
- Sensing diaphragm damping time  $\leq 0.2S$ .
- Power-on startup time after power-off  $\leq 5S$ .
- Data recovery to normal usage time  $\leq 2S$ .

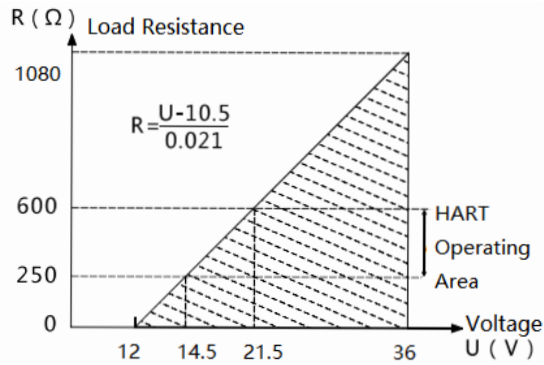
#### 8)Ambient temperature

ITEM	CONDITIONS
Operating temperature	-20~70°C with display
Storage temperature	-40~85°C
Medium temperature	Silicone oil sensor:-40~120°C
Humidity range	5-100%RH@40°C
Protection class	IP65
Dangerous situation	ExdIICT6

## INSTALLATION

### 1) Voltage and Load Conditions

ITEM	CONDITIONS
Standard/ Isolated Explosion Proof	14.5~36VDC communication load: 250~600Ω
RS485	12-36VDC



### 2) Electrical connection

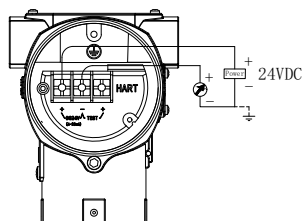
ITEM	SPECIFICATION
Electrical connection	Junction box is Aluminum alloy with two outlets M20 *1.5 Female. Main body is light blue. Shell cover is white.
Outlet protection	One is M20*1.5 waterproof connector, the other is plug, made of PVC. It is suit for φ 6-8 mm with IP65.
	Explosion-proof configuration One is NPT1/2 female, the other is plug, made of stainless steel. It is suit for φ 6-8 mm with IP65.
	Explosion-proof configuration One is M20*1.5 waterproof connector, the other is plug, made of stainless steel. It is suit for φ 6-8 mm with IP65.

## PHYSICAL SPECIFICATIONS

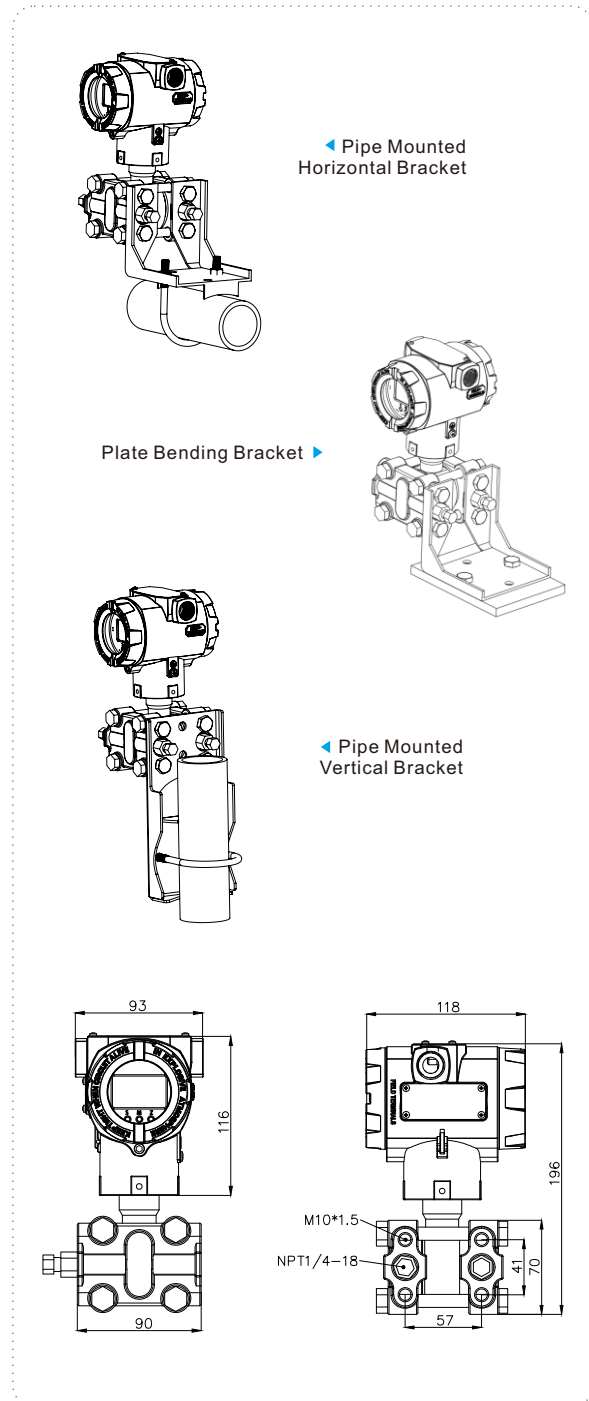
Diaphragm shell	Stainless steel 316L
Diaphragm	316L, Hastelloy, Tantalum
Process flange	Stainless steel 304, Stainless steel 316L
Nuts and Bolts	Stainless steel (A4), Color zinc
Sealing ring	NBR, FKM, EPDM
Transmitter shell	Aluminum alloy
Shell seal ring	NBR
Name plate	Stainless steel 304

Weight: 3.3 kg(Without mounting brackets and process connection)

## ELECTRICAL CONNECTION DIAGRAM



### 1) Dimension(mm)



**Note:** The shortcut interface is functionally equivalent to the signal terminal.

Model and Specification Code Table

1) Selection table

Model and Specification Code Table											Provide fast delivery	
Model LFT710-DP												
1	Range	B	0-200Pa~6KPa(0-20~600mmH2O)/(0-2~60mbar)								※	
		C	0-400Pa~40KPa(0-40~4000mmH2O)/(0-4~400mbar)								※	
		D	0-2.5KPa~250KPa(0-0.25~25mH2O)/(0-25~2500mbar)								※	
		E	0-10KPa~1MPa(0-1~100mH2O)/(0-0.1~10bar)								※	
		F	0-30KPa~3MPa(0-3~300mH2O)/(0-0.3~30bar)								※	
2	Diaphragm material	S	316L								※	
		H	Hastelloy C									
		T	Tantalum									
3	Filling fluid	D	Silicone oil								※	
4	Electrical connection	1	M20*1.5 Female, PVC								※	
		2	M20*1.5 Female, Stainless steel								※	
		3	1/2 NPT Female, PVC									
		4	1/2 NPT Female, Stainless steel									
5	Output	N	4~20mA								※	
		J	4~20mA+HART								※	
		F	RS485								※	
6	Process connector	N	Without(NPT 1/4 female thread on chamber flange)								※	
		A	Back welded connector and M20*1.5 male								※	
		B	Oval Flange connector: NPT1/2 Female								△	
		C	T type: M20*1.5 male and back welded connector								△	
7	Sealing ring	N	NBR								※	
		D	FKM								※	
		I	EPDM								※	
8	Mounting bracket	B1	Plate Bending Bracket(Carbon Steel)								※	
		B2	Tube Bending Bracket(Carbon Steel)								△	
		B3	Tube Flat Bracket(Carbon Steel)								△	
		B5	Plate Bending Bracket(Stainless steel)								△	
		B6	Tube Bending Bracket(Stainless steel)								△	
		B7	Tube Flat Bracket(Stainless steel)								△	
		N	Without								※	
9	Explosion-proof treatment	N	General								※	
		D	ExdIICT6									
10	Display	M5	With								※	
		N	Without								※	
11	Additional conditions	P	M20*1.5 male with welded connector									
		N	Connection parts is made of SS304,and SS316L is optional.									
		K	Degreasing cleaning treatment									
		L	Hanging number plate									
		H	Lightning protection (withstand transient voltage)									
		E	English Nameplate									
		V3	Three valve block									
V5	Five valve block											
LFT710-DP		C	S	D	1	J	A	D	B1	D	M5	
※ means shorter lead time. Without ※ means longer lead time. △ means need to customize.												