

## OVERVIEW

LFT710 Differential Pressure Transmitter adopts monocrystalline silicon sensor chip made in Germany with advanced MEMS technology, with built-in temperature compensation element. It provides high accuracy and long-term stability over wide range of static pressure and temperature variations, can be used to measure the pressure of liquids, gases or steams in many fields, such as industrial process control, automation manufacturing, aerospace, automotive and marine, petroleum and electronics. LFT710 can accurately measure differential pressure and convert it into 4~20mA output. It can be operated by three buttons on the Transmitter, or through Hand Manipulator or Configuration Software.



## STANDARD SPECIFICATIONS

Pressure range is calibrated based on the standard zero point, stainless steel 316L diaphragm, filled liquid is silicone oil.

## PERFORMANCE REQUIREMENT

Overall performance includes but not limited to reference accuracy, static pressure influence, ambient temperature influence, and other influence.

Typical accuracy:  $\pm 0.075\%$  of Upper Range Value (URV)

Annual stability:  $\pm 0.2\%$  of Upper Range Value (URV)

### 1) Pressure calibration reference accuracy

Including linearity, hysteresis and repeatability from zero point			
Linear output accuracy	TD≤10	±0.075%	Standard range: 6kPa, 40kPa, 250kPa, 1MPa, 3MPa
	10 < TD≤100	±0.0075TD%	
TD is range turn down ratio. when $ URV  \geq  LRV $ , TD=URL/ URV  when $ URV  \leq  LRV $ , TD=URL/ LRV			

## FUNCTIONAL SPECIFICATION

### 1) Range

Gauge pressure

Range/Upper and lower range limits(URL&LRL)		kPa	Range ratio TD
B	Range	0.2~6	1~30
	URL&LRL	-6~6	
C	Range	0.4~40	1~100
	URL&LRL	-40~40	
D	Range	2.5~250	1~100
	URL&LRL	-100~250	
E	Range	20~1000	1~100
	URL&LRL	-500~1000	
F	Range	30~3000	1~100
	URL&LRL	-500~3000	

### 2) Range selection

Within the upper range limit (URL) and lower range limit(LRL), you can adjust the TD value within the allowable range to select the range. For example, if URL and LRL -40~40kPa, then adjust the TD value to 10 and select the output of 0~4kPa or -4~4kPa. To ensure accuracy, the TD value should be as small as possible, generally within 10.

### 3) Zero point setting

Zero and Span can be adjusted to any value within the measuring range in the table, as long as calibrated span  $\geq$  minimum span.

### 4) Impact of the installation position

Installation at any position, if offset pressure not more than 150Pa, can be corrected by zero clearing.

### 2) Power supply influence

Zero Influence	±0.15*TD% URV per 10MPa
Full scale influence	±0.2* TD% URV per 10MPa

### 3) Ambient temperature influence on partial gauge pressure range

For 6kPa or lower range, the accuracy under room temperature is 0.075%, but if within full range of -20~70°C, the accuracy is 0.15%.

### 4) Power supply influence

When the power supply voltage varies within 12~36 VDC, if zero point and span variation not exceed  $\pm 0.005\% * URV$  per voltage, the influence can be ignored.

### 5) Output

Signal	Type	Output method
4~20mA	linear	two-wire
4~20mA+HART	linear	two-wire
RS485	linear	four-wire

### 6) Alarm current

Low alarm mode (minimum): 3.8 mA

High alarm mode (maximum): 20.8 mA

No alarm mode (hold): maintain the effective current value before the fault

Alarm current standard setting: high alarm mode

### 7) Response time

Total damping constant time: equal to the sum of the damping time constants of the electronic circuit components and the sensor diaphragm box;

Damping time of electronic circuit components: adjustable from 0-60 seconds;

Sensor diaphragm box damping time:  $\leq 0.2\text{s}$ ;

Power-on start-up time after power failure:  $\leq 5\text{s}$ ;

Data recovery time to normal use:  $\leq 2\text{s}$ ;

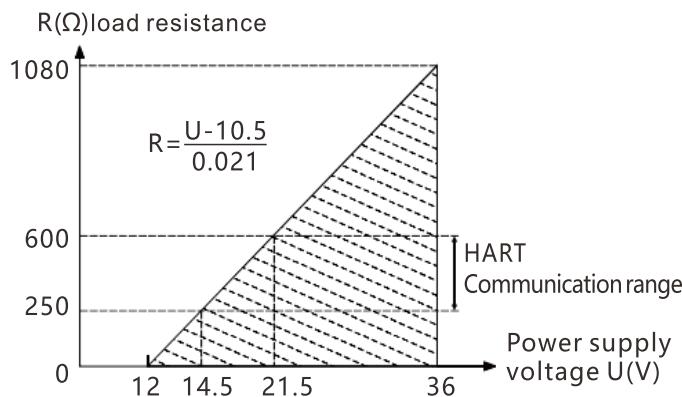
### 8) Environmental temperature

Item	Operation Conditions
Operating ambient temperature	-20~70°C with display
Storage temperature	-40~85°C
Operating ambient humidity	5~100%RH@40°C
Protection level	IP65
Hazardous occasions	ExdIICT6

## INSTALL

### Power supply and load conditions

Output	Power Supply Requirement
Current	14.5~36VDC, load resistance during communication 250~600Ω
RS485	12~36VDC



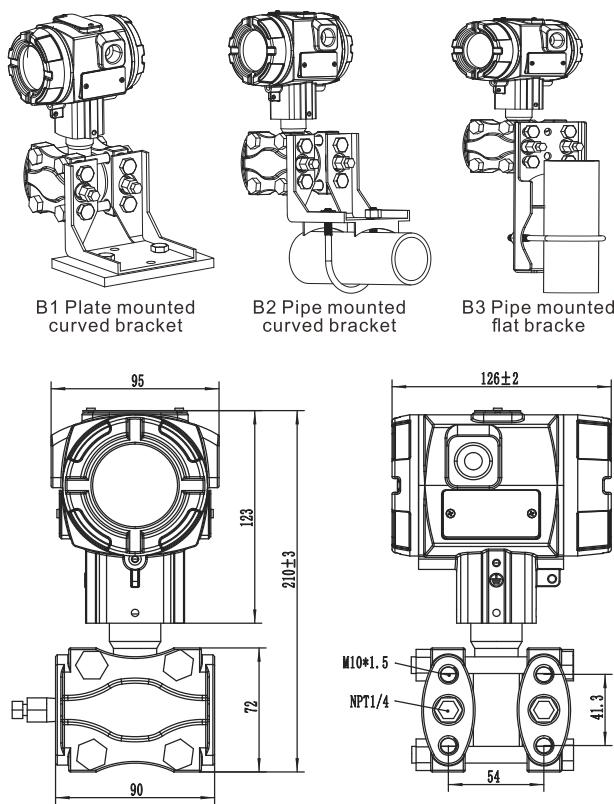
### Electrical connection

Item	Description
Electrical connection	Aluminum alloy junction box, 2 wire outlet ports with female thread M20*1.5, the main body is light blue, white cover
Wire outlet protection	One end with M20*1.5 waterproof connector, the other end with plug, PVC material, suitable for wire diameter 6-8mm, protection class IP65
Wire outlet protection	Explosion-proof configuration, one end with female NPT1/2 thread, the other end with a plug, stainless steel, for wire diameter 6-8mm, protection class IP65
Wire outlet protection	Explosion-proof configuration, one end with internal thread M20*1.5, the other end with plug, stainless steel, for wire diameter 6-8mm, protection class IP65

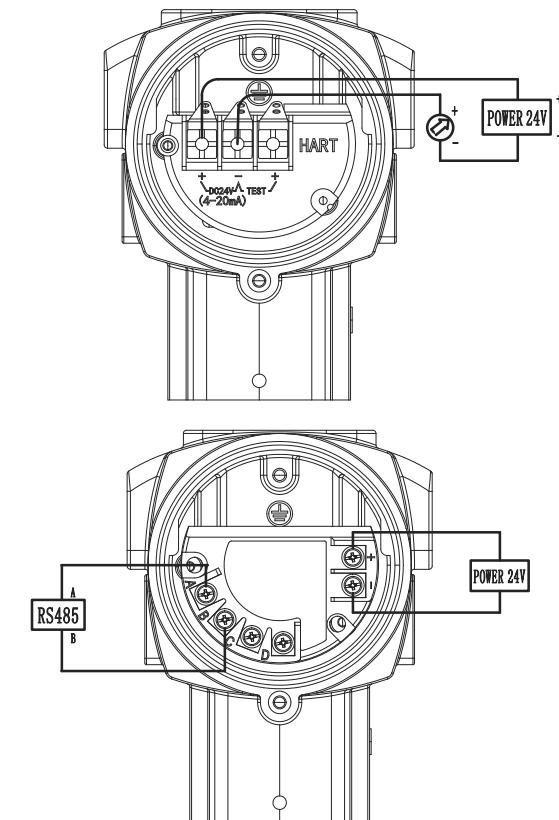
## PHYSICAL SPECIFICATIONS

Measuring diaphragm enclosure	Stainless steel 316L
Diaphragm	316L, Hastelloy, Tantalum
Process flange	Stainless steel 304, stainless steel 316L
Nuts and bolts	Stainless steel (A4), colored zinc
Sealing ring	NBR, FKM, EPDM
Transmitter housing	Aluminum alloy
Housing seal	Nitrile rubber (NBR)
Nameplate	Stainless steel 304

## DIMENSIONS (mm)



## ELECTRICAL CONNECTION



## ORDER REF NO.

Code and Description					
Differential Pressure Transmitter LFT710					
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 Liquid	D	Silicone oil		
4	Electrical Connection	1	M20*1.5 female thread, PVC		
		2	M20*1.5 female thread, stainless steel		
		4	1/2 NPT female thread, stainless steel		
5	Output	N	4~20mA		
		J	4~20mA+HART		
		F	RS485		
6	Process Connection	N	Without process connector (NPT1/4 female thread on chamber flange)		
		A	With pressure inlet connector: M20*1.5 male thread and rear welded pressure inlet pipe		
		B	With Oval connector: NPT1/2 female thread		
7	Seal material	N	NBR		
		D	FKM		
		I	EPDM		
8	Mounting Bracket	B1	Plate-mount curved bracket(Carbon Steel)		
		B2	Pipe-mount curved bracket(Carbon steel)		
		B3	Pipe-mount flat bracket(Carbon steel)		
		B5	Plate-mount curved bracket(Stainless Steel)		
		B6	Pipe-mount curved bracket(Stainless Steel)		
		B7	Pipe-mount flat bracket(Stainless Steel)		
		N	Without bracket		
9	Explosion-proof	N	without Explosion-proof		
		D	Explosion-proof ExdIICT6		
10	Display	M5	With display		
		N	No display		
11	Additional Requirement	N	Connector material is 316L		
		K	Degreasing and cleaning treatment		
		L	Hanging tag plate		
		H	Lightning protection (withstands transient voltage)		
		E	English nameplate		
		V3	Three-valve manifold		
		V5	Five-valve manifold		
LFT710		C	S	D	1 J A D B1 D M5