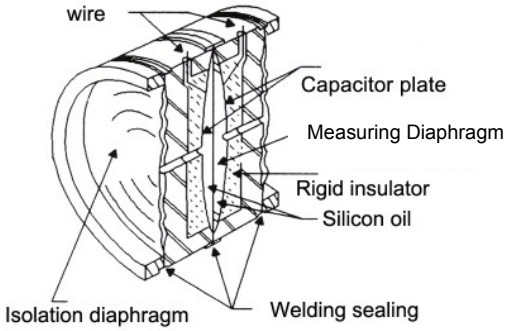
► UST Product Introduction

1.Overview

The UST series miniaturization capacitive intelligent transmitter is assembled and tested strictly, including high and low temperature intelligent compensation, which makes it a easy-installation and easy-use instrument. Various types are available, including measurements for differential pressure, quality of flow, gage pressure, absolute pressure, vacuum degree, liquid level, and specific gravity.



2.Feature

- Capacitive sensors
- Adopt high-tech machinery processing Microelectronics
- The sensor outputs capacitance signal, direct docking interface with digital systems
- High-accuracty，Better than±0.1%（Analogue signal）Linear output：±0.075%（Digital intelligent signal）
- High turndown ratio： 100：1
- High stability&reliability Good unidirectional
- Overvoltage capability
- Improved self-diagnosis
- Remote settings Multi-parameter LCD display

Load Characteristic

3. Working Principle

When it works, the isolation diaphragm and pouring liquid in high and low pressure side transmits process pressure to the center pouring liquid, then the center liquid transmits the pressure to center diaphragm in δ room transmitter. The center diaphragm is a tight elastic element, whose displacement is changed with differential pressure. The maximum () displacement of the center diaphragm is 0.10mm. The shear displacement is in direct proportion to pressure. The capacitive polar plates on two sides detects the location of center diaphragm. The capacitive difference between center diaphragm and polar plates is converted into corresponding current, voltage or number HART signal output (fig. 1)

4.Function Parameters

●Applicable Object: Liquid, gas, steam
●Output Signal: 4~20 MADC
●Power Source: 12~45VDC, 24VDC on average(See fig. 1 load characteristic)
●Load Characteristic: Depend power resource. The load capacity in certain power supply and voltage refers to fig. 1 Load impedance RL and supply voltage VS relation: RL≤50 (Vs-12)
●Indicating Gauge: Multiple parameters and multiple ways LCD indicate header
●EX-proof: a. Exd Type ExdIICT6
b. intrinsic safety Type ExidIICT4
●Range and Zero: Outer continually adjustable
●Positive and Negative Suppression: When zero passes positive and negative suppression, Upper limit and lower limit of measuring range cannot exceed 100% of measurement upper limit. The maximum positive suppression is 500% that of minimum adjustment range; the maximum negative suppression range is 600% that of minimum adjustment range.
●Temperature Range: Working temperature range of amplifier:-29~+93 (LT type: -25~+70)
●Filling High Temperature Oil to Flange Transmitter: +15~+315℃
● Common Silicon Oil: -40~+149℃
● Humidity: relative humidity 0~100%
● Volume Absorb Quantity: <0.16cm3
●Damping(Step Response):Continually adjustable between 0.2s and 1.67s when pour oil.

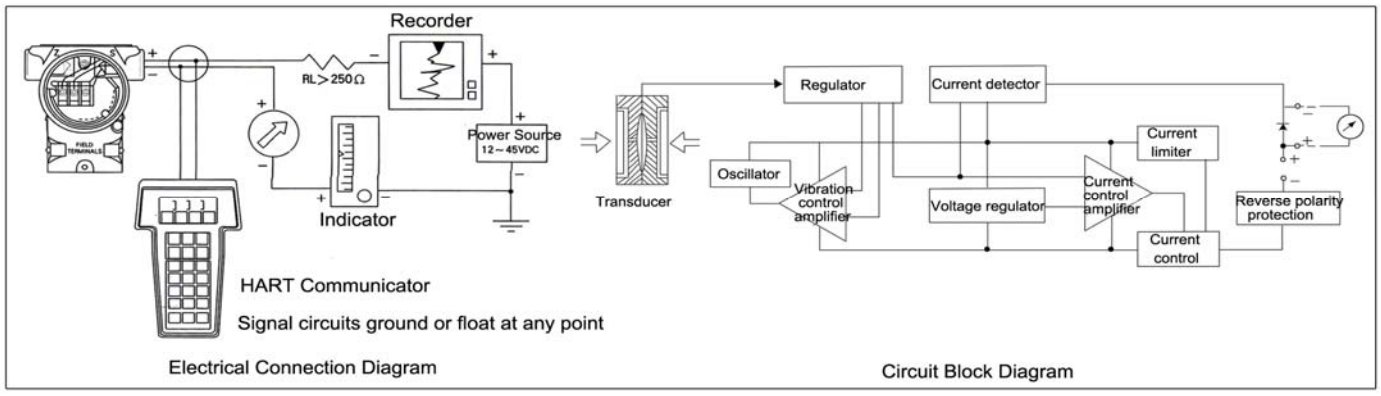
5.Technical Parameters

●Accuracy: ±0.1%, ±0.075%
●Dead zone: No (≤0.1%)
●Stability: Less than the absolute value of basic error of maximum range within 6 months.
●Vibration Effect: With 200HZ vibration frequency and error that of ±0.05%/g upper limit of measuring range in arbitrary axis
● Power Source Effect: <0.005%/v output range
● Load Effect: No load effect under stable power source

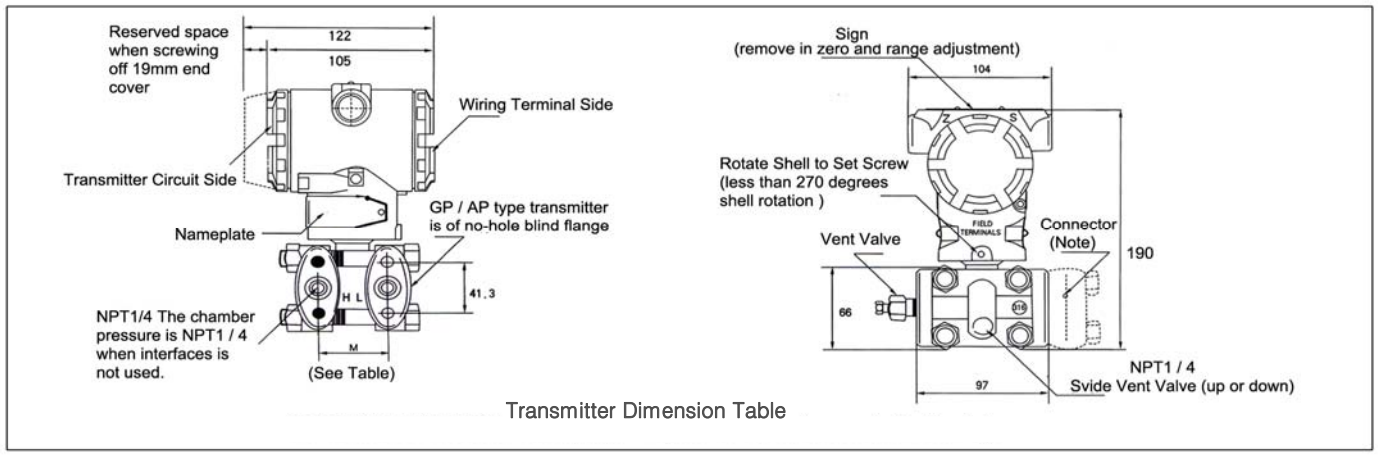
6.Other Parameters

●Isolation Diaphragm: 316L stainless steel, Hastalloy C, Monel or Tantalum
●Venting/Drain Valve: 316 stainless steel，HastalloyC, Monel
●Flange and Interface: 316 stainless steel，HastalloyC, Monel
●Contact Medium "O"- ring: chemigum, fluorous rubber
●Filing liquid: Silicon oil or Inert oil
●Bolt: 316 stainless steel
●Electronic shell material: Low copper aluminum alloy(IP 67)
●Impulse Wire:Flange1/4NPT,center distance 54mm, interface 1/2 NPT or M20 ×1.5 male screw ball cone seal, center distance with interface 50.8, 54,57.2mm (NPT spinal Canal thread accords with GB/T127 16-91)
●Signal Wire Connecting Hole:G1/2",M20×1.5
●Weight:3.9(standard

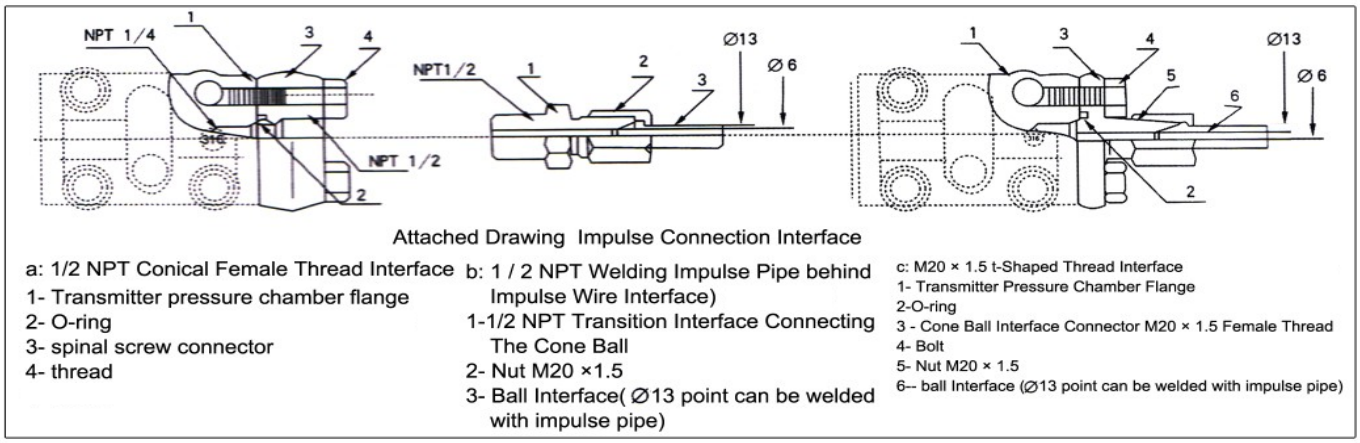
7.Electrical Connection Diagram and Circuit Block Diagram (fig. 1)



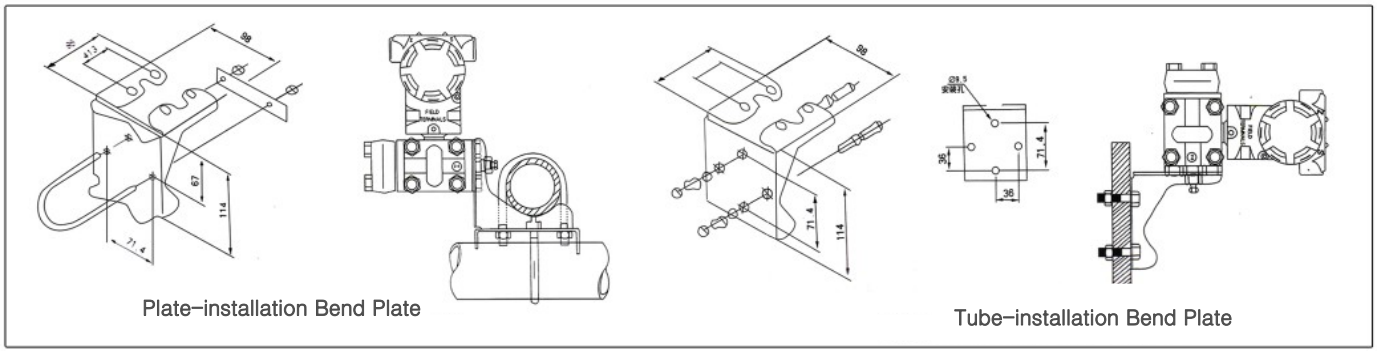
8.Size

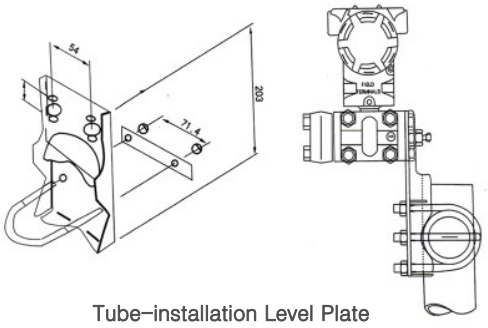


Measuring Range	2,3,4	5	6	7	8	9
M(mm)	54	55.2	55.2	55.6	57.2	59



9.Installation Connection





Tube-installation Level Plate

10.Order Information Table

► Capacitive Intelligent Transmitter Selection Table

UST		
Type	P---------- DP---------- AP----------	Gauge press___ Differential pressure Absolute pressure
Range		See range code
Connection		See connection code
Diaphragm Material	S---------- C---------- T---------- M---------- O----------	SS316L (Standard) Hastalloy C Tantalum Monel Other, Specify
Diaphragm Extension	0---------- 2---------- 4---------- 6----------	None 2” (50mm) 4” (100mm) 6” (150mm)
Flange ＆ Body Material	S---------- C---------- M----------	SS316 (Standard) Hastalloy C Monel
Display Header	N---------- D----------	None Display Multiple parameters and ways digital LCD display
Accuracy	5---------- 3---------- 0----------	±0.5% ±0.1% ±0.075%
Output	N---------- 5----------	4-20mA 4-20mA、HART
Fill Fluid	N---------- S----------	Silicone (Max Temperature 149℃) HT Silicone (Max Temperature 315℃)
Installation Manner and Vent/ Drain Valve	A---------- B---------- C---------- D---------- N---------- 1---------- 2---------- 3----------	Tube-installation bend support Plat-installation bend support Tube-installation level support＊ L-support No support Up the lateral vent/drain valve Down the lateral vent/drain valve Rear vent/drain valve
Additional	M---------- -NS1---------- -Q---------- -O----------	M20×1.5 thread electronic interfacewith waterproof Ex-proof security certification: Exd Ⅱ CT6 Intrinsic safety Certificate: Exi Ⅱ CT4 Other conventions are available (Upon Request)

＊ : Factory standard basic configuration.

► Range Code

Pressure (P)	2----------	0-0.125~1.5KPa (0-12.5~150mmH²O)
	3----------	0-1.3~7.5KPa (0-127~762mmH²O)
	4----------	0-6.2~37.4KPa (0-635~3810mmH²O)
	5----------	0-31.1~186.8KPa (0-3175~19050mmH²O)
	6----------	0-117~690KPa (0-1.2~7Kgf/cm²)
	7----------	0-0.345~2.068MPa (0-3.5~21Kgf/cm²)
	8----------	0-1.170~6.890MPa (0-12~70Kgf/cm²)
	9----------	0-3.480~20.680MPa (0-35~210Kgf/cm²)
	0----------	0-6.890~41.370MPa (0-70~420Kgf/cm²)
Absoluate pressure (AP)	4----------	0-6.2~37.4KPa (0-635~3810mmH²O)
	5----------	0-31.1~186.8KPa (0-3175~19050mmH²O)
	6----------	0-117~690KPa (0-1.2~7Kgf/cm²)
	7----------	0-0.345~2.068MPa (0-12~70Kgf/cm²)
	8----------	0-1.170~6.890MPa (0-12~70Kgf/cm²)
Differential pressure (DP)	2----------	0-0.125~1.5KPa (0-12.5~150mmH²O)
	3----------	0-0.2~6.0KPa (0-20~611mmH²O)
	4----------	0-0.4~40KPa (0-40~4000mmH²O)
	5----------	0-2.5~250KPa (0-254~25492mmH²O)
	6----------	0-0.01~1MPa (0-0.1~10Kgf/cm²)
	7----------	0-0.03~3MPa (0-0.3~30Kgf/cm²)
	8----------	0-0.10~10MPa (0-1.0~100Kgf/cm²)

Special range= T

► Connection Code

1	⇨ 1/2” NPT (Factory standard basic configuration)
2	⇨ 1/2” BSP
3	⇨ 1” NPT
4	⇨ 1” BSP
5	⇨ 2” × JIS 10K
6	⇨ 2” × JIS 20K
7	⇨ 2” × ANSI 150#
8	⇨ 2” × ANSI 300#
9	⇨ 3” × JIS 10K
10	⇨ 3” × JIS 20K
11	⇨ 3” × ANSI 150#
12	⇨ 3” × ANSI 300#
13	⇨ 4” × JIS 10K
14	⇨ 4” × JIS 20K
15	⇨ 4” × ANSI 150#
16	⇨ 4” × ANSI 300#
Special Connection = T	