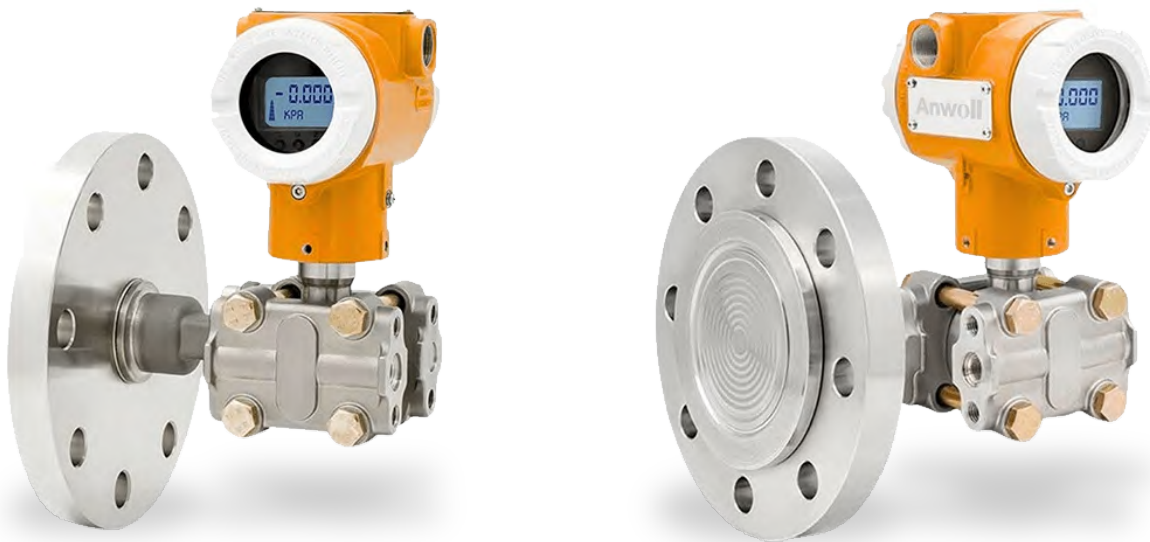


FLANGE-MOUNT PRESSURE TRANSMITTER MODEL MST23



MST23 flange-mounted transmitter is composed of MST22 Differential Pressure Transmitter and a welded liquid level flange. Between the flange and the sensor, silicon oil and other filling fluids are used to transmit pressure, to prevent the measured medium from passing through the impulse pipe then impact the measurement. The impact of the measured medium pass through the impulse pipe includes: crystallization, solidification, vaporization (boiling), condensation, fractionation (severe change) and etc. The Transmitter is used to measure the liquid level, flow and pressure of liquid, gas or steam, and then convert it into 4~20mA signal output. The working principle of the MST22 Flange-mounted Transmitter is the same as MST22 Differential Pressure Transmitter except that the pressure transmission path on

positive pressure side is slightly different, that is the pressure acting on the high-pressure side first passes through the diaphragm of the liquid level flange and the filling liquid, and then pass through the transmitter body, and finally reach the highpressure side of the measuring sensor .

Features

- High product life and long-term stability
- Double Wheatstone bridge design, "double beam" resistance temperature characteristics complement each other, improve the anti-interference ability of the chip
- LCD with backlit digital watch head can display pressure, percentage and current and 0 to 100% analog indication

Technical parameter

specifications

The range is adjusted based on the standard zero point. The diaphragm is stainless steel 316L, and the filling liquid is silicone oil.

1)Reference Accuracy of Range Adjustment

Includes linearity from zero, hysteresis and repeatability

Linear output accuracy	TD≤10	±0.075%	Nominal range: 40KPa, 250KPa 1MPa, 3MPa
	10 < TD≤100	±0.0075TD%	

Note: TD = Turn down

$|URV| \geq |LRV|$, TD=URL/|URV|

$|URV| \leq |LRV|$, TD=URL/|LRV|

2)Power impact

When the power supply voltage changes within 12 ~ 36V DC, the change of zero point and range does not exceed ±0.005% of the upper limit of the range/V, which can be ignored.

Functional specifications

1)Range limits

Within the range of the upper and lower limits, the TD value can be adjusted within the allowable range to select the range. For example, the upper and lower limits are -40~40kpa.

At this time, choose to adjust the TD value to 10, and choose to output 0~4Kpa, or -4~4kpa. In order to ensure the accuracy, the TD value should be as small as possible, generally within 10, too large will affect the accuracy

2)Range and upper&lower limits

Range/URL/LRL		KPa	Turndown ratio
C	Range	1...40	1...40
	URL/LRL	-40...40	
D	Range	2.5...250	1...100
	URL/LRL	-250...250	
E	Range	10...1000	1...100
	URL/LRL	-500...1000	
F	Range	30...3000	1...100
	URL/LRL	-500...3000	

3)Zero point setting

Zero point and range can be adjusted to any value within the measuring range in the table, as long as: calibration range ≥ minimum range.

4)Installation position influence

It can be installed at any position through the liquid level flange. The best state is to keep the process flange in a vertical state. The offset caused by the position deviation can be corrected by clearing the operation.

5)Output

Signal	Type	Output
4...20mA	Linear	Two-wire
4...20mA+HART	Linear	Two-wire

6)Alarm current

- Low alarm model (Min):3.8mA.
- High alarm mode(Max):20.8mA.
- Alarm current standard setting: high alarm mode.
- Non-alarm mode (maintain): maintain the current practical value before the fault.

7)Response time

- The total damping constant time equal to the sum of the damping time constant of the electronic circuit components and the sensing bellows.
- Electronic circuit component damping time: 0-60S range adjustable.
- Sensing bellows damping time: ≤0.2S.
- Power-on start-up time after power failure: ≤5S.
- Data recovery to normal usage time: ≤2S.

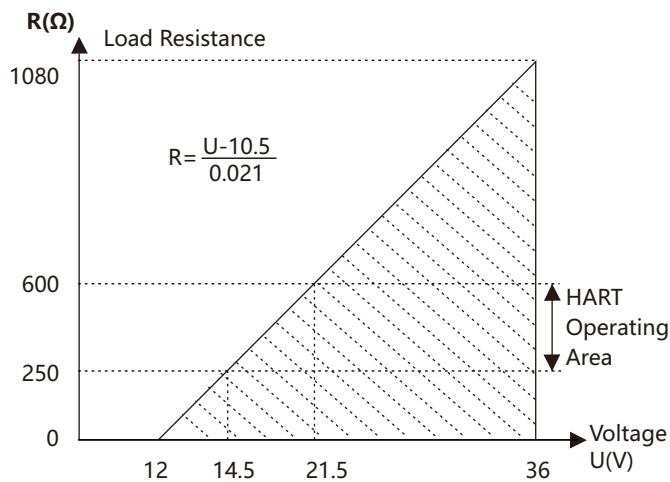
8)Ambient temperature

Item	Operating conditions
Working temperature	-20...+70°C[-4...+158°F] with display
Storage temperature	-40...+85°C[-40...+185°F]
Measuring medium temperature range	Silicon oil filled sensor: -40...+120°C[-40...+248°F]
Working humidity	5...100%RH@40°C
Production grade	IP65
Dangerous place	ExdIICT6

Installation

1) Power supply and load conditions

Item	Operating conditions
Standard/ Flameproof	14.5...36VDC communication load:250...600Ω
RS485	12...36VDC

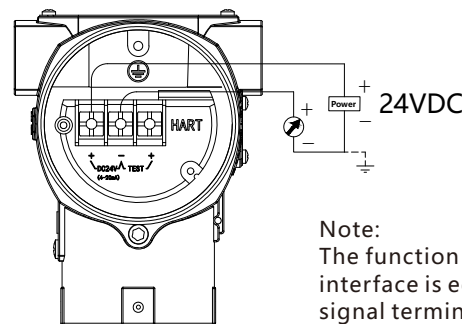


Physical specifications

Sensor case	Stainless steel 316L
Diaphragm	Stainless steel 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	NBR
Name plate	Stainless steel 304

Weight: ①DN50/2:7~10Kg; ②DN80/3:8~11Kg; ③DN100/4:9~12Kg

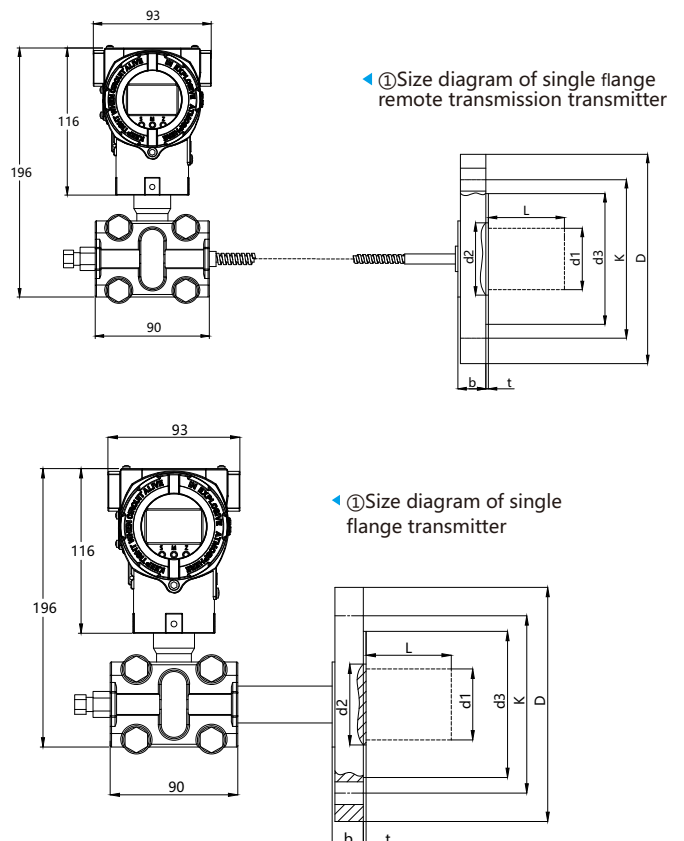
Electrical connection







2) Electronic connection

Type	Directions
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 end is equipped with M20*1.5 waterproof connector, the other end is equipped with plug PVC material, applicable wire diameter 6-8 mm protection grade IP65.
	Explosion-proof configuration, one end is equipped with NPT1/2 female thread, the other end is equipped with plug, stainless steel material applicable wire diameter 6-8 mm, protection grade IP65.
	Explosion-proof configuration, one end is equipped with M20*1.5 female thread, the other end is equipped with plug, stainless steel material, applicable wire diameter 6-8 mm, protection grade IP65.

Dimensiones in mm(in)



Diaphragm seal selection guide

				
Seal type	Flat (ring connection surface connection)	Flange Remote Seals (ring connection surface connection)	Extended flange connection	Threaded Remote Seals
Common types of applications and services	General application	General application, Smaller process connection	Insulation process	Threaded connections for high temperature applications
Process connection size	2inchDN50 3inchDN80 4inchDN100	1inchDN25 1½inchDN40 2inchDN50 3inchDN80 4inchDN100	3inchDN80 4inchDN100	NPT1/2
Flange pressure rating or maximum ultimate working pressure	Grade150 Grade300 Grade600 PN40 PN64(63) PN100 No Flange(The maximum ultimate working pressure is 2000PSI)	Grade150 Grade300 Grade600 PN16 PN40 PN64 PN100	Grade150 Grade300 Grade600 PN10/16 Pn40 Pn64 Pn100	2500PSI
Diaphragm and wetted parts material	316 stainless steel Hastelloy C Tantalum 304 stainless steel	316 stainless steel Hastelloy C Tantalum 304 stainless steel	316 stainless steel 304 stainless steel 316 stainless steel	316 stainless steel Hastelloy C Tantalum
Lower set material	316 stainless steel Hastelloy C carbon steel 304 stainless steel	316 stainless steel Hastelloy C carbon steel 304 stainless steel	Not applicable	316 stainless steel Hastelloy C carbon steel 304 stainless steel
Options	Diaphragm PTFE Diaphragm coated with Teflon	Diaphragm PTFE Diaphragm coated with Teflon	Diaphragm PTFE Diaphragm coated with Teflon	Diaphragm PTFE Diaphragm coated with Teflon

Ordering information

Single flange

Example part number: MST23-CSD1J316NN

M S T 2 3 - **C S D 1 J 3 1 6 N N**

①	Name MST23	⑥	Flange Standard N HG-T20592-2009(Steel pipe flange PN series) (Quoting European DIN system standard) J HG-T20615-2009(Steel pipe flange Class series) (refer to American ANSI system standard) F Other Flange Standards	⑨	Nominal Pressure Rating 0 0(without insert barrel) 2 50mm 4 100mm 6 150mm 8 200mm Y special requirements
②	Measuring range C 0-1KPa~40KPa(0-100~4000mmH2O)/(0-10~400mbar) 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)	⑦	Flange Size 3 Dn50 2inch 4 DN80 3inch 5 DN100 3inch 6 OTHER	⑧	Nominal Pressure Rating 1 PN2.5,PN6 2 PN10,PN16 Class150(1b) 3 PN25,PN40 Class300(1b) Y Other
③	Diaphragm material S 316L H Hastelloy C T Tantalum	④	Filling liquid D Normal temperature silicone oil(-40...205°C) C High temperature silicone oil(0...315°C)	⑩	Explosion-proof treatment N Normal type D Secondary Explosive ExdIICT6
⑤	Electrical connection 1 M20*1.5 female thread, PVC 2 M20*1.5 female thread, stainless steel 3 1/2NPT female thread, PVC 4 1/2NPT female thread, stainless steel	⑪	Additional requirements P The material of the chamber flange is 304, 316L is optional N Bolts and nuts are made of colored zinc, stainless steel is optional K Degreasing and cleaning treatment L Hanging number plate H Lightning protection (transient voltage resistance) E English nameplate	⑫	Display M5 With display N No display

Double flange

Example part number: MST23-CSD1JP11N2NN

M S T 2 3 - **C S D 1 J P 1 1 N 2 N N**

①	Name MST23	⑦	Flange Type P Flat type (only DN50, 2 inches and above) R Flange Type E Insert barrel type (only DN80, 2 inches and above)	⑩	High pressure H end low pressure L end capillary length N The length of the capillary is from 1 to 10m, represented by (Example: 4m, 04) D The length of the capillary is from 1 to10m, represented by (Example: 4m, 04)
②	Measuring range C 0-4KPa~40KPa(0-400~4000mmH2O)/(0-40~400mbar) D 0-5KPa~250KPa(0-0.5~25mH2O)/(0-50~2500mbar) E 0-100KPa~1MPa(0-10~100mH2O)/(0-1~10bar)	⑧	Flange Size 1 Dn25 1Inch 2 DN40 1½Inch 3 DN50 2Inch 4 DN80 3Inch 5 DN100 4Inch 6 OTHER	⑨	Nominal Pressure Rating 1 PN2.5,PN6 2 PN10,PN16 Class150(1b) 3 PN25,PN40 Class300(1b) Y Other
③	Diaphragm material S 316L H Hastelloy C T Tantalum Y special requirements	④	Filling liquid D Normal temperature silicone oil(-40...205°C) C High temperature silicone oil(0...315°C)	⑪	Insertion barrel extension length 0 0(without insert barrel)) 2 50mm 4 100mm 6 150mm 8 200mm Y special requirements
⑤	Electrical connection 1 M20*1.5 female thread, PVC 2 M20*1.5 female thread, stainless steel 3 1/2NPT female thread, PVC 4 1/2NPT female thread, stainless steel	⑫	Explosion-proof treatment N Ordinary type D Exproof ExdIICT6	⑬	Display M5 With display N No display
⑥	Flange Standard N HG-T20592-2009(Steel pipe flange PN series) (Quoting European DIN system standard) J HG-T20615-2009(Steel pipe flange Class series) (refer to American ANSI system standard) F Other Flange Standards	⑭	Additional requirements B Mounting brackets P The material of the chamber flange is 304, 316L is optional N Bolts and nuts are made of colored zinc, stainless steel is optional K Degreasing and cleaning treatment L Hanging number plate H Lightning protection (transient voltage resistance) E English nameplate		