

# DOUBLE FLANGE DIFFERENTIAL PRESSURE TRANSMITTER MODEL MST24



1)Orange style 2)Blue style

MST24 double flange differential pressure transmitter is composed of the MST22 differential pressure transmitter and a small welded remote flange with a capillary tube. 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. Which will 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...20 mA signal output. The working principle of MST24 double flange differential pressure transmitter is the same as MST22 differential pressure transmitter

except that the pressure transmission path on the positive pressure side is slightly different, that is the pressure acting on the highpressure side firstly passes through the diaphragm and the filing liquid of the remote flange, and then pass to the transmitter body via capillary tube, and finally reach the high pressure side of measurement sensor.

# **Features**

- Adopts MEMS monocrystalline silicon highprecision pressure sensor
- Fast response and high stability
- Convenient local current loop check function
- Various specifications of process connection can be selected according to requirements
- Provide standard HART bus communication mode perfect self-diagnosis and remote communicationSignal function

## **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, hysteresis and repeatability from zero.

Linear Output	TD≤10	±0.2%	Nominal range:			
Accuracy	10 < TD≤100	±0.02TD%	1MPa, 3MPa			
Note: TD = Turn down						
URV ≥ LRV , TD=URL/ URV						
lurvi≤ilrvi, t	D=URL/ILRVI					

#### 2)Power impact

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

# **Functional specifications**

## 1)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

#### 2)Range and scope

Range/URL/LRL		КРа	Turndown ratio		
(	Range	140	1 40		
C	URL/LRL	-4040	140		
	Range	2.5250			
D	URL/LRL	-250250	1100		
_	Range	101000			
E	URL/LRL	-5001000	1100		
	Range	303000			
F	URL/LRL	-5003000	1100		

#### 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  $\geq$  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	Туре	Output
420mA	Linear	Two-wire
420mA+HART	Linear	Two-wire
RS485	Linear	Four-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 circuitcomponents 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

Operating conditions
-20+70°C[-4+158°F] with display
-40+85°C[-40+185°F]
Silicon oil filled sensor:
-40+120°C[-40+248°F]
5100%RH@40°C
IP65
ExdIICT6

# Installation

#### 1)Power supply and load conditions

Item	Operating conditions
Standard/	14.536VDC
Flameproof	communication load:250600Ω
RS485	1236VDC

#### ANWOLL USA 5634 GRAND FLORAL BLVD HOUSTON TX 77041-5561



# 2)Electronic Connection

Туре	Directions
Electrical	Junction box is Aluminum alloy with two
connection	outlets M20 *1.5 Female. Main body is
	blue. Shell cover is white.
	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
Outlet	other end is equipped with plug, stainlesss
protection	teel 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, stainlesss
	teel material, applicable wire diameter
	6-8 mm, protection grade IP65.

# **Physical specifications**

Sensor case	Stainless steel 316L
Diaphragm	316L, Hastelloy, Tantalum, PTFE Coating
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

# **Electrical connection**



# Dimensiones in mm(in)





## **Ordering information**

## Example part number:MST24-CSD1NNND50P2S20404NN

Model MST24 double flange differential pressure transmitter features a measurement range of 0.40 kPa, with a diaphragm made of 316L stainless steel and a filling liquid of room temperature silicone oil. It has an electrical connection with an M20 x 1.5 internal thread and PVC material, providing an output signal of 4...20 mA. The transmitter complies with the flange standard HG-T20592-2009 (Steel Pipe Flange PN Series), referencing European DIN system standards. It is designed as a flanged type with a flange size of DN50 and a nominal pressure rating of PN16. The insertion tube extends 50 mm, with high-pressure and low-pressure capillary lengths of 4 m each. The device is treated for ordinary explosion protection and does not include a display, featuring an English nameplate.

M S T 2 4 - C S 0 2 3	D 1 N 4 5 6	<b>N</b> ](7)	<b>N</b> 	D 5	<b>0</b>	P 2	<b>S</b> 2	0	] 4	0 4 	] <b>N</b>   19	<b>N</b> 19	E 
① Model MST24 ②		<ul> <li>9</li> <li>Flar</li> <li>D50</li> <li>D80</li> <li>D100</li> <li>DXX</li> </ul>	nge Size DN50 DN80 DN10 Other	(2Inch) (3Inch) 0 (4Inch)				14) Ex N D	plosion Normal Explosic (PVC t	-proof trea type on proof E hreads are	tment kdIICT6 not app	licable)	-
Measuring range           C         0-1kPa~40kPa(0-100~4000mmH20)/(0-10~400mbar)           D         0-2.5kPa~250kPa(0-0.25~25mH20)/(0-25~2500mbar)           E         0-10kPa~1MPa(0-1~100mH20)/(0-0.1~10bar)           F         0-30kPa~3MPa(0-3~300mH20)/(0-0.3~30bar)			minal Pr DIN PN10	essure R	ating ANSI ss150(Ib)			15 Dis M5 N	play With No d	display isplay			
Oiaphragm material     S 316L     H Hastellov C (not available for insertion tube option)			PN16 PN25 PN40 Other	Clas Clas	s300(Ib)			16 A N K L	dditiona 316L Degr Hang	l requirem Material f easing and jing numb	ents or Conn I cleanin er plate	ectors og treatr	nent
T     Tantalum (not available for insertion tube option)       ④			rtion ba 0(witho	rrel exte	nsion ler t barrel))	igth		H E	Light (tran Engli	ning prote sient volta sh namep	ection ge resis ate	tance)	

	Filling liquid			
	D	Normal temperature silicone oil(-30180°C)		
I	Е	Low temperature silicone oil(-4080°C)		

F High temperature silicone oi(-10...350°C)

#### 5

Electrical connection		
1	M20*1.5 female thread, PVC	
2	M20*1.5 female thread, stainless steel	
1	1/2NPT fomale thread stainless steel	

#### 6

Output			
Ν	420mA		
J	420mA+HART		
F	RS485		

#### 1

Fla	nge Standard
Ν	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

#### 8

Flange Type	
Ν	Flanged type
J	Insertion tube type (available only for DN80,
	2 inches and above)

#### 12

S2

**S**4

**S6** 

**S**8

SY

50mm

100mm

150mm

200mm

special requirements

High-pressure capillary tube length
Capillary tube length from 1 to 10 m,
represented as (e.g., 4 m, 04)

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Low-pressure capillary tube length	
Capillary tube length from 1 to 10 m,	
represented as (e.g., 4 m, 04)	

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