Anwoll
CONTROLS

SINGLE FLANGE DIFFERENTIAL PRESSURE TRANSMITTER MODEL MST23

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1)Orange style 2)Blue style

The MST23 single flange differential pressure transmitter is composed of an MST22 differential pressure transmitter and a welded liquid level flange. The pressure is transmitted between the flange and the sensor using silicone oil or other filling liquid to avoid the influence of the measured medium on the measurement through the impulse tube, including crystallization, solidification, vaporization (boiling), condensation, fractionation (severe changes), etc. Used to measure the liquid level, flow rate, and pressure of liquid gases or vapors, and then convert them into 4-20 mA DC signal output.

Features

- Adopts MEMS monocrystalline silicon high precision pressure sensor
- Provide standard HART bus communication mode perfect self-diagnosis and remote communicationSignal function
- High brightness LCD display with backlight, reversible in-place displaycurtain
- Local zero clearing function, local zero, full point setting adjustment function
- Convenient local current loop check function
- Various specifications of process connection can be selected according to requirements

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HOUSTON TX 77041-5561

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	±0.2%	Nominal range: 40KPa, 250KPa 1MPa, 3MPa
	10 < TD≤100	±0.02TD%	

Note: TD = Turn down

|URV|≥|LRV|, TD=URL/|URV|

|URV|≤|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
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

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

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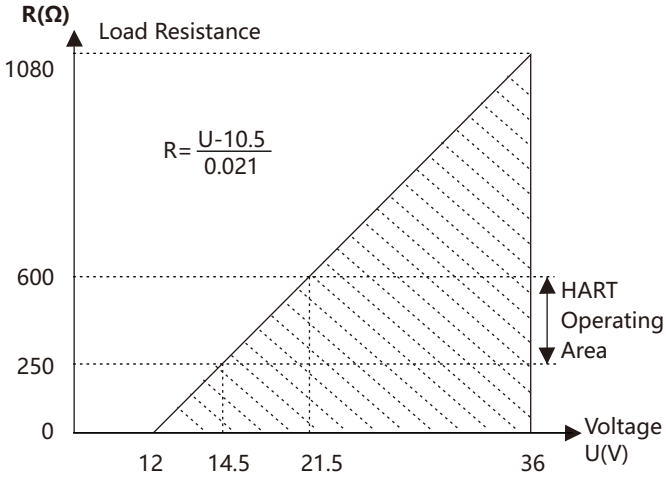
Installation

1)Power supply and load conditions

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



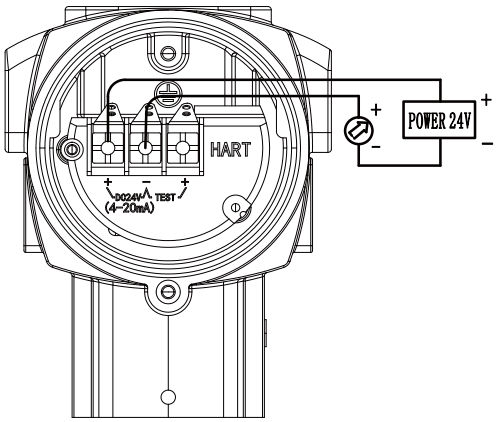
2)Electronic connection

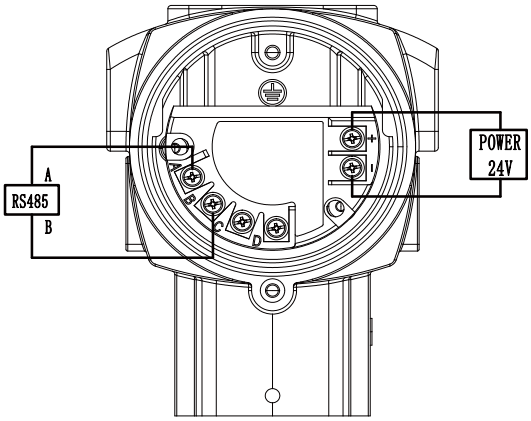
Type	Directions
Electrical connection	Junction box is Aluminum alloy with two outlets M20 *1.5 Female. Main body is blue. Shell cover is white.
Outlet protection	One end is equipped with M20*1.5 waterproof connector, the other end is equipped with plug PVC material,applicable wire diameter 6-8 mm protection grade IP65.
	Explosion-proof configuration, one end is equipped with NPT1/2 female thread , the other end is equipped with plug, stainlesss 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	Stainless steel 316L,Hastelloy, Tantalum, FEP, PFA, PTFE coated film
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





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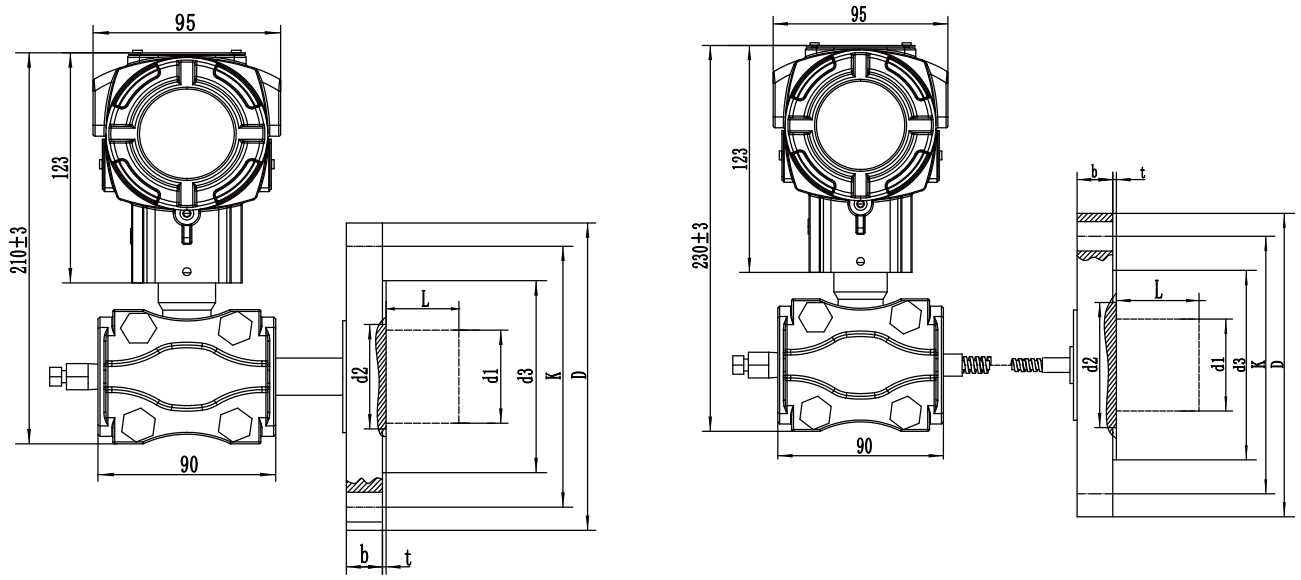
Dimensiones in mm



Ordering information

Example part number:MST23-CSD1NNRD50P1S004NN

M	S	T	2	3	-	C	S	D	1	N	N	R	D	5	0	P	1	S	0	0	4	N	N	E
①						②	③	④	⑤	⑥	⑦	⑧	⑨			⑩		⑪		⑫		⑬	⑭	⑮

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Name
MST23

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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)

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Diaphragm material	
S	316L
H	Hastelloy C(This option is not available for the insertion tube)
T	Tantalum(This option is not available for the insertion tube)

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Filling liquid	
D	Normal temperature silicone oil(-30...180°C)
E	Low temperature silicone oil(-40...80°C)
F	High temperature silicone oi(-10...350°C)

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Electrical connection	
1	M20*1.5 female thread, PVC
2	M20*1.5 female thread, stainless steel
4	1/2NPT female thread, stainless steel

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Output	
N	4...20mA
J	4...20mA+HART
F	RS485

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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

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Flange Type	
R	Flange Type
E	Insert barrel type (only DN80, 2 inches and above)

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Flange Size	
D50	DN50 (2Inch)
D80	DN80 (3Inch)
D100	DN100 (4Inch)
DXX	Other

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Nominal Pressure Rating		
DIN		ANSI
P1	PN10	Class150(lb)
P2	PN16	Class300(lb)
P3	PN25	Class300(lb)
P4	PN40	
PX	Other	

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Insertion barrel extension length	
S0	0(without insert barrel)
S2	50mm
S4	100mm
S6	150mm
S8	200mm
SX	special requirements

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Capillary length	
□□	The capillary length ranges from 1 to 10m,Represented by □□ (e.g. 4m, 04)

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Explosion-proof treatment	
N	Normal type
D	Explosion proof ExdIICT6 (PVC threads are not applicable)

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Display	
M5	With display
N	No display

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Additional requirements	
N	Material of connector 316L
K	Degreasing and cleaning treatment
L	Hanging number plate
H	Lightning protection (transient voltage resistance)
E	English nameplate