

# REMOTE FLANGE DIFFERENTIAL PRESSURE TRANSMITTER MODEL MST24



MST24 remote flange 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 Flange 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

- 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
- Capillary length can be customized

## 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	±0.075%	Nominal range: 40KPa, 250KPa 1MPa, 3MPa
Accuracy	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

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		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	

#### 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.

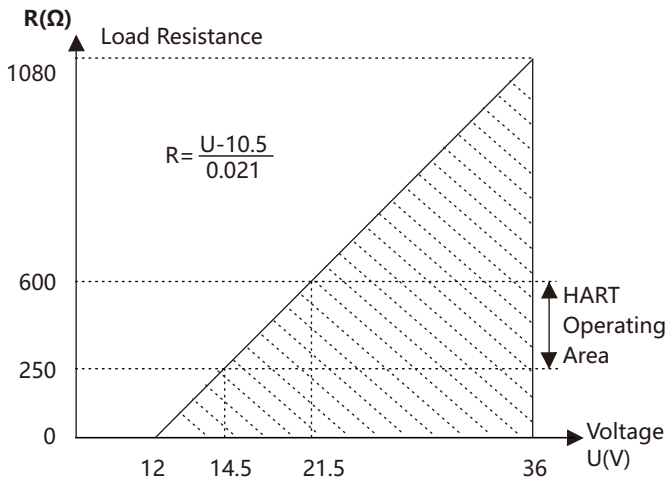
#### 8)Ambient temperature

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

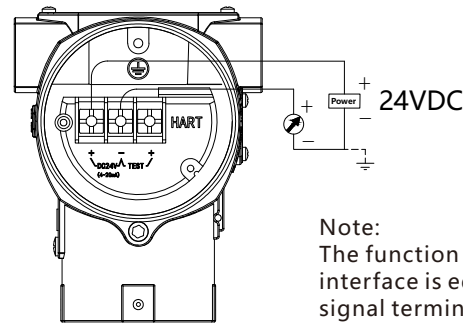
### Installation

#### 1)Power supply and load conditions

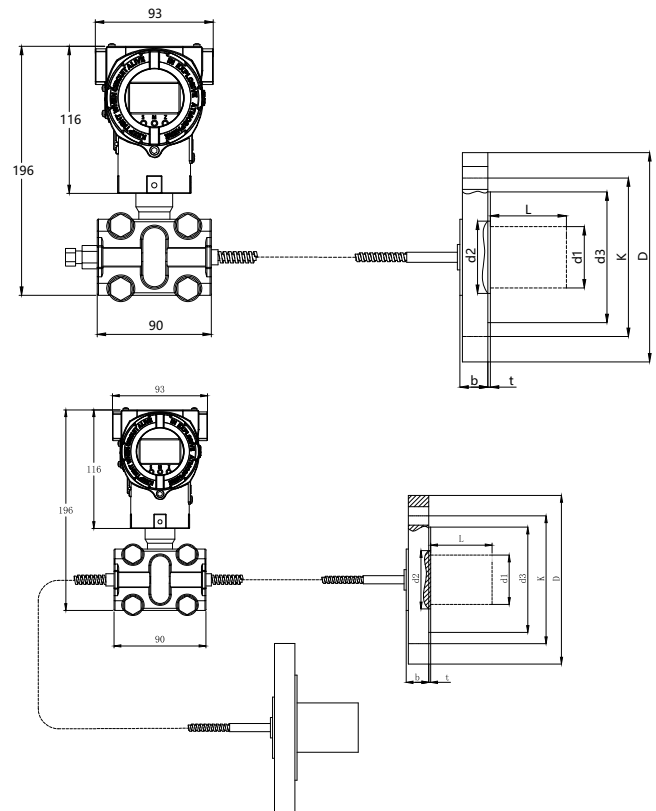
Item	Operating conditions
Standard/Flameproof	14.5...36VDC communication load:250...600Ω
RS485	12...36VDC



## Electrical connection



## Dimensiones in mm(in)



## 2)Electronic Connection

Type	Directions
Electrical connection	Junction box is Aluminum alloy with two outlets M20 *1.5 Female. Main body is orange. 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.
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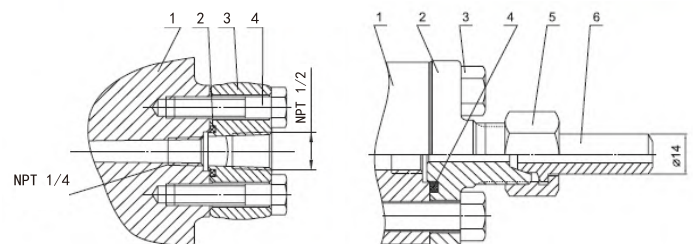
## Physical specifications

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:** Single Flange : DN50/2": 7~10Kg; DN80/3": 8~11Kg; DN100/4": 12~18Kg  
Double Flange: DN50/2": 10~16.5Kg; DN80/3": 12~18Kg; DN100/4": 14~21Kg

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## Process Connection Description







### 1/2-NPT stainless steel oval flange (code 1)

1. Pressure chamber flange
2. O-shaped seal diagram
3. NPT1/2 oval with flange
4. bolt

### M20×1.5 stainless steel T-shaped joint (code 2)

1. Pressure chamber flange
2. M20x 1.5 T-shape
3. Male thread connector
4. O-ring, sealing ring
5. Nut M20x15
6. Impulse tube

**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	2 inch DN50 3 inch DN80 4 inch DN100	1 inch DN25 1 1/2 inch DN40 2 inch DN50 3 inch DN80 4 inch DN100	3 inch DN80 4 inch DN100	NPT 1/2
Flange pressure rating or maximum ultimate working pressure	Grade 150 Grade 300 Grade 600 PN40 PN64 (63) PN100 No Flange (The maximum ultimate working pressure is 2000 PSI)	Grade 150 Grade 300 Grade 600 PN16 PN40 PN64 PN100	Grade 150 Grade 300 Grade 600 PN10/16 Pn40 Pn64 Pn100	2500 PSI
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

