

MONOCRYSTALLINE SILICON DIFFERENTIAL PRESSURE TRANSMITTER MODEL MST22



1)MST22 Main view 2)MST22 decomposition diagram 3)4)Side view of MST22

MST22 differential pressure transmitter uses single crystal silicon sensor chip which adopts German advanced MEMS technology. It has built-in temperature compensation element and extremely high measurement accuracy and long-term stability over a wide range of static pressure and temperature variations. It can measure level, density, pressure of liquid, gas and steam. It is widely used in industrial process control, automated manufacturing, aerospace automotive and marine petroleum and petrochemical, electronic power, medical and health and many other fields. MST22 can accurately measure differential pressure and convert it into 4-20 mA DC output signal and can be operated locally

through three buttons, and remotely operated by a general-purpose communicator, configuration software, and mobile phone APP, to perform display and configuration adjustment without affecting the 4-20 mA DC output signal.

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

Standard specifications

Standard zero point as the Reference Calibration Range, stainlesssteel 316L diaphragm, silicone oil as filing liquid.

Performance specifications

The overall performance includes, but not limited to, the combined error of Reference Accuracy, Static Pressure Effect, Ambient Temperature Effect and other effects.

- Typical accuracy: $\pm 0.075\%$ of the upper limit of the range
- Annual stability: $\pm 0.2\%$ of the upper limit of the range

1)Reference accuracy of range adjustment

Includes linearity from zero, hysteresis and repeatability

Linear Output	TD \leq 10	$\pm 0.075\%$	Nominal range 6KPa, 40KPa,250KPa,1MPa, 3MPa,10MPa
Accuracy	10 < TD \leq 100	$\pm 0.0075TD\%$	

Note: TD = Turn down

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

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

2)Static pressure impact

Zero impact	$\pm 0.15TD\%$ Upper range limit/10MPa
Full scale effect	$\pm 0.2TD\%$ Upper range limit/10MPa

3)Ambient temperature influence of range below 6KPa

Range	Temperature	Accracy
Below 6 KPa	Normal Temp range	0.075%
	-20...70°C Temp range	0.15%

4)Voltage impact

When the power supply voltage varies within 12~36V DC, the variation of zero point and range is not exceed $\pm 0.005\%$ of the upper limit 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)Zero point setting

Zero and span can be adjusted to any value within the measurement range in the table, as long as calibration range is not less than minimum range.

3)Range and scope

Range/URL/LRL	KPa	Turndown ratio
B	Range	0.2...6
	URL/LRL	-6...6
C	Range	0.4...40
	URL/LRL	-40...40
D	Range	2.5...250
	URL/LRL	-100...250
E	Range	10...1000
	URL/LRL	-100...1000
F	Range	30...3000
	URL/LRL	-100...3000

5)Output

Signal	Type	Output
4...20mA	Linear	Two-wire
4...20mA+HART	Linear	Two-wire
RS485	Linear	Four-wire

6)Alarm current

Low report mode(Minimum): 3.8 mA.

High report mode (maximum): 20.8 mA.

No report mode (hold) : keep the effective current value before the fault

Standard setting of alarm current: high alarm mode.

7)Response time

- The total damping constant time; equal to the sum of the damping time of electronic circuit components and the sensor case.
- Electronic circuit component damping time: 0-60S range adjustable.
- Sensing case damping time: $\leq 0.2S$.
- Power-on start-up time after power failure: $\leq 5S$
- Data recovery to normal use time: $\leq 2S$.

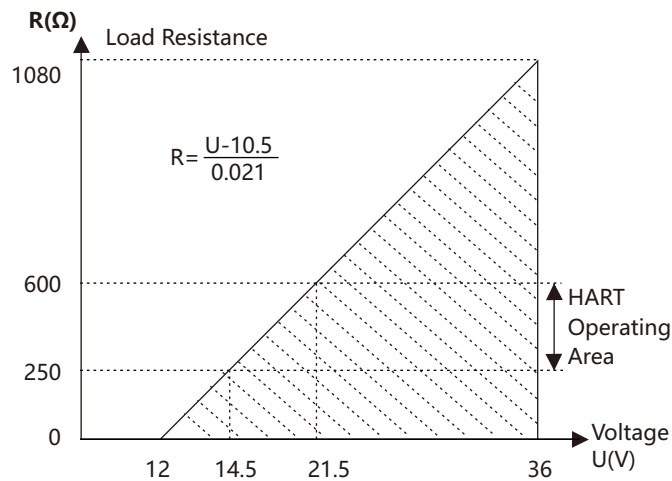
8) Ambient temperature

Item	Operating conditions
Working temperature	-20...+70°C[-4...+158°F] with display
Storage temperature	-40...+85°C[-40...+185°F]
Measuring medium	Silicon oil filled sensor:
temperature range	-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/	14.5-36VDC communication
Isolated Explosion Proof	load:250-600Ω
RS485	12...36VDC



2) Electronic connection

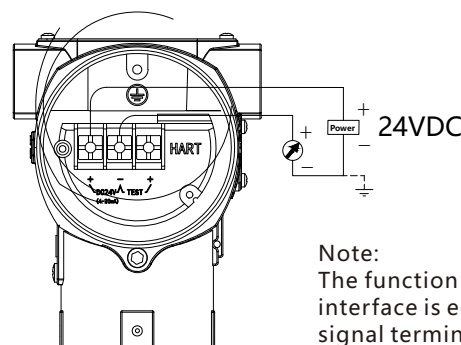
Type	Directions
Electrical connection	Junction box is Aluminum alloy with two outlets M20 *1.5 Female. Main body is light blue. Shell cover is white.
Outlet protection	One end is equipped with M20*1.5 waterproof connector, the other end is equipped with plug PVC material, applicable wire diameter 6-8 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.

Physical specifications

Sensor case	Stainless steel 316L
Diaphragm	Stainless steel 316L, Hastelloy, Tantalum
Process connection	Stainless steel 304, stainless steel 316L
Thread specification	M20*1.5, G1/2, NPTF1/2, others
Transmitter shell	Aluminum alloy material, surface sprayed with epoxy resin
Shell seal	NBR
Name plate	Stainless steel 304

Weight: 3.3 kg (Without mounting brackets and process connection)

Electrical connection



Note:
The function of the shortcut interface is equivalent to the signal terminal.

