

MONOCRYSTALLINE SILICON PRESSURE TRANSMITTER MODEL MST21



1)MST21 Main view 2)MST21 decomposition diagram 3)Side view of MST21 4) MST21 Flat Bottom mounting bracket

The MST21 monocrystalline silicon pressure transmitter is used to measure the liquid level density and pressure of liquid, gas or steam, then convert it to 4...20mA DC output signal. The transmitter can be operated locally with three buttons, or remotely operated by a universal hand operator, configuration software, and mobile phone APP. It can perform display and configuration adjustments without affecting the output signal of 4~20mA DC.

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 is not limited to [reference accuracy], [environmental temperature impact] and comprehensive error of other impact.

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

Note: TD = Turn down
|URV| \geq |LRV|, TD=URL/|URV|
|URV| \leq |LRV|, TD=URL/|LRV|

2)Influence of ambient temperature

The accuracy of the range below 6Kpa is 0.075% in the normal temperature range, and the accuracy of the full temperature range of -20...70°C is 0.15%.

3)Power influence

When the power supply voltage changes within 12...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 selection

Within the range of the upper and lower limits, the turn down ratio can be adjusted to select the range. For example, the upper and lower limit sare -40~40kpa. At this time, choose to adjust the turndown ratio to 10, and choose to output 0~4Kpa, or -4~4kpa. In order to ensure the accuracy, the turn down ratio should be as small as possible, generally within 10, too large will affect the accuracy.

2)Zero setting

Zero point and range can be adjusted to any value within the measurement range in the table, the calibration range must \geq the minimum range.

3)Impact of installation position

Install at any position, the maximum does not exceed 400Pa can be corrected by clearing.

4)Range and scope

Gauge pressure

	Range/URL/LRL	Kpa	Turndown ratio
B	Range	0.2...6	1...30
	URL/LRL	-6...6	
C	Range	0.4...40	1...100
	URL/LRL	-40...40	
D	Range	2.5...250	1...100
	URL/LRL	-100...250	
E	Range	10...1000	1...100
	URL/LRL	-100...1000	
F	Range	30...3000	1...100
	URL/LRL	-100...3000	
G	Range	100...10000	1...100
	URL/LRL	-100...10000	

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 mode(minimum): 3.8mA.
- High alarm mode(maximum):20.8mA
- No alarm mode(Hold): Maintain the high-alarm mode of effective current value before failure .
- Alarm current standard setting : 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: $\leq 2S$.

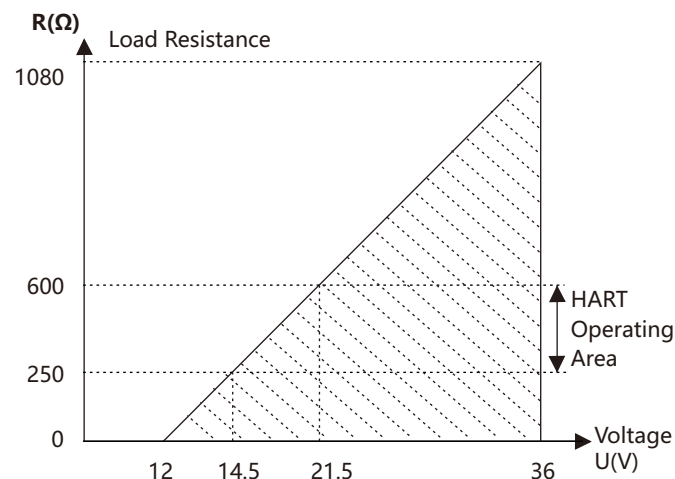
8) Ambient temperature

Item	Operating conditions
Working temperature	-20...+70°C[-4...+158°F] with display
Storage temperature	-40...+85°C[-40...+185°F]
Measuring medium 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. The load resistance during communication is 250Ω
RS485	12...36VDC



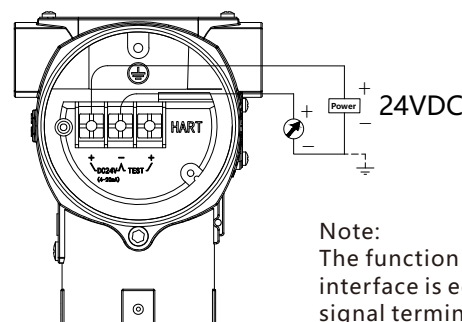
2) Electronic connection

Type	Directions
Electrical connection	Aluminum alloy junction box, two outlets with internal thread M20*1.5, the main body is light blue, and the 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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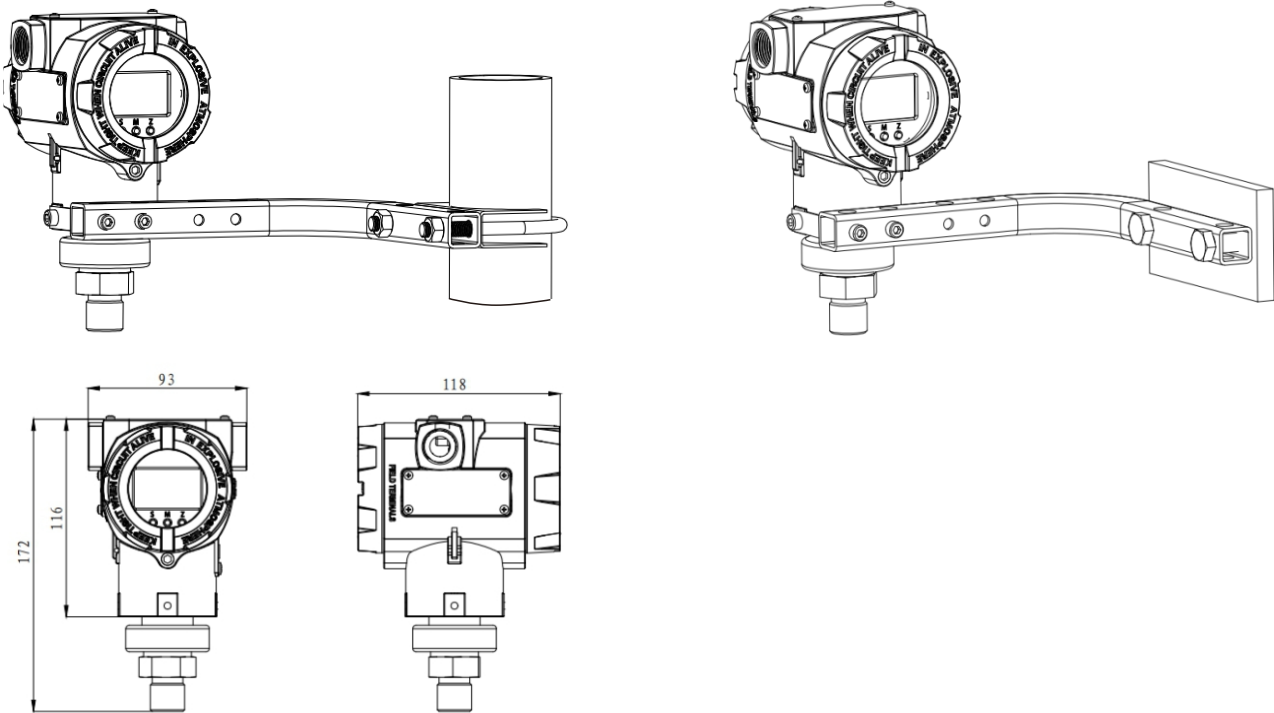
Physical specifications

Sensor case	Stainless steel 316L
Diaphragm	Stainless steel 316L, Hastelloy, Tantalum
Process 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

Electrical connection



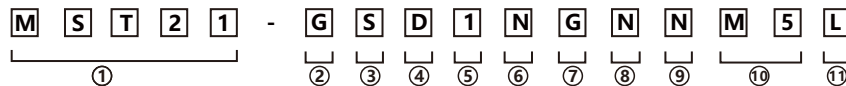
Dimensions in mm(in)



Ordering information

Example part number: MST21-GSD1NGN N M 5 L

Model MST21 pressure transmitter, Measuring range 0...1000KPa, Diaphragm material 316L, Filling liquid Silicone oil, Electrical connection M20*1.5 female thread, PVC, Output 4...20mA, Process connection G1/2 male thread, Mounting brackets No stand, Explosion-proof treatment Normal type, With display, Additional requirements Hanging number plate.



①

Model
MST21

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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

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Explosion-proof treatment	
N	Normal type
D	Secondary Explosive ExdIICT6

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Measuring range	
B	0-200Pa~6KPa(0-20~600mmH2O)/(0-2~60mbar)
C	0-400Pa~40KPa(0-40~4000mmH2O)/(0-4~400mbar)
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)
G	0-100KPa~10MPa(0-10~1000mH2O)/(0-1~100bar)

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

⑩

Display	
M5	With display
N	No display

③

Diaphragm material	
S	316L
H	Hastelloy C
T	Tantalum

⑦

Process connection	
M	M20*1.5 male thread
G	G1/2 male thread
N	NPT1/2 male thread
A	NPT1/2 male thread
Y	others

⑪

Additional requirements	
P	M20*1.5 female thread with pressure welding head
N	Connector material is 304, optional 316L
K	Degreasing and cleaning treatment
L	Hanging number plate
H	Lightning protection (transient voltage resistance)
E	English nameplate
V2	Two valve group

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Filling liquid	
D	Silicone oil

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Mounting brackets	
N	No stand
B4	Pipe bend bracket (carbon steel)
B5	Flat Bend Bracket (Carbon Steel)

* Please make separate remarks for special requirements.