SH-M series Differential and Pressure Transmitters

Monocrystalline silicon sensor
High accuracy 0.075% or 0.1%
For General Industrial Applications

General Information

SH-M series smart differential pressure and pressure transmitters usesmonocrystalline silicon sensor chip, that made of advanced MEMS technology. So it achieves the world's leading overpressureperformance and also ensures excellent signal stability. Built-in manometry capsule and signal processing module,thatcan achieve the perfect combination of static pressure andtemperature compensation, which provides high measurementaccuracy and stability under a wide range of static pressure andtemperature.

SH smart differential pressure transmitter can measure DP and convert it into 4~20mA output signal.This transmitter can be operated through three buttons locallyor through universal communicator or configuration softwareremotely. Without affecting the output signal of DC4 ~ 20mA, it can display at the same time.

Applications

Be suitable to measure liquid, gas or steam flow as wellas liquid level, density and pressure.
Process control systems
Chemical industry
Energy industry
Machine building

Features

- The highest accuracy be ±0.075% or ±0.1%
- Packaged temperature sensor or static pressure sensor inside
- The static error up to <±0.1 %/1 Mpa
- Excellent overvoltage performance
- Overpressure of 1kPa nominal range chip: 1.5 Mpa
- Overpressure of 6kPa nominal range chip: 2.5 Mpa
- Flexible range of compression
- Range ratio up to: 100:1
- Excellent operability & convenient use
- Five-digit with backlight
- View of units (Pa, kPa, Mpa, bar, mbar,%, psi, mmH_2O)
- Quickly adjusted through built-in three buttons

Pressure Sensor Range & URL

Range	Type	Min	Max	Lower Limit	Overpressure*
0-1KPa	Low DP	0.1KPa	1KPa	-1KPa	200KPa
	High static pressure	0.1KPa	1KPa	-1KPa	6MPa
0-6KPa	DP	1KPa	6KPa	-6KPa	16MPa
	High static pressure	1KPa	6KPa	-6KPa	25MPa
	Gauge pressure	1KPa	6KPa	-6KPa	16MPa
0-40KPa	DP	4KPa	40KPa	-40KPa	16MPa
	High static pressure	4KPa	40KPa	-40KPa	25MPa
	Gauge pressure	4KPa	40KPa	-40KPa	16MPa
	Absolute Pressure	4KPa	40KPa	0	40MPa
0-250KPa	DP	25KPa	250KPa	-100KPa	16MPa
	High static pressure	40KPa	250KPa	-100KPa	25MPa
	Gauge pressure	25KPa	250KPa	-100KPa	16MPa
	Absolute Pressure	40KPa	250KPa	0	40MPa
0-3MPa	DP	0.15MPa	3MPa	-0.1MPa	16MPa
	High static pressure	0.15MPa	3MPa	-0.1MPa	25MPa
	Gauge pressure	0.15MPa	3MPa	-0.1MPa	16MPa
	Absolute Pressure	0.15MPa	3MPa	0	40MPa
0-10MPa	DP	0.8MPa	10MPa	-0.1MPa	16MPa
	High static pressure	0.8MPa	10MPa	-0.1MPa	25MPa
	Gauge pressure	0.8MPa	10MPa	-0.1MPa	20MPa
0-40MPa	Gauge pressure	2MPa	40MPa	-0.1MPa	45MPa

- When it is for differential or high static differential, overpressure means static pressure limit

Electrical Specifications

Output signal:	DC HART 4~20mA with digital signal based on Protocol
Load resistance:	0~600Ω (DC 24V)
Power Supply	10-32V, HART needs≥18.5V
Load capacity:	0.55mF
Load inductance:	3.3mH
Spacing above power line:	15cm(please avoid parallel wiring)
Saturation current:	upper limit 20.8mA,lower limit 3.8mA
Alarm current:	upper limit 22.8mA,lower limit 3.6mA(Mode can be set)
Adjustment function:	The zero & full span point can be adjusted through three-button from the top ofthe housing or be adjusted remotely through configuration software.

Performance Specifications

Environmental temp.:	-40...+85°C (when filling fluorine oil: -10...+60°C)
Storage temperature:	-40...+90°C
Weatherability:	DIN4004 GPC
EMC applicable standard:	EN1326-1:2006
Accuracy:	±0.075% or ±0.1%
Effect of environment Temperature	≤ ±0.1% F.S/10 °C
Effect of static pressure:	≤±0.1%/Range/1 MPa
Effect of overpressure:	≤±0.1%/Range/1 MPa
Stability:	±0.2%/ URL /year
Effect of Power supply:	±0.005%/URL/1V
Effect of Mountingposition:	The changes of mounting position in the direction parallel to the diaphragm will not cause zero- drift effects. If the changes between the mounting position and the diaphragm is more than 90°, which can be corrected through zeroing corrected within the range of 0.4KPa.
Response time:	0.25s
Damp:	The time constant can be adjusted from 0 to 99.9 seconds

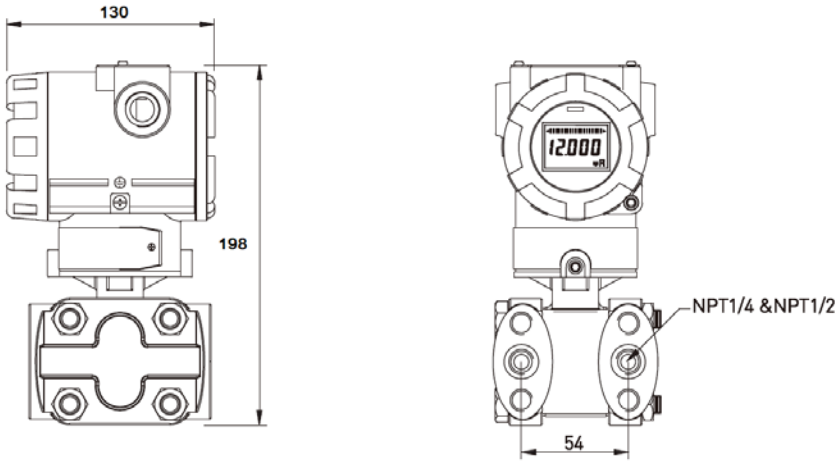
Physical Specifications

Isolated diaphragm:	SUS316LSS,Hastelloy C-276,Tantalum
Installed plywood:	SUS316SS
Housing of transmitter:	low copper aluminum die casting + polyurethane coating
Ingress protection:	IP67
Filling oil:	silicone oil & fluorocarbon oil (Optional)
Process connection port:	Rc1/4 or 1/4 -18NPT
Installation:	U-bolt mounted on 50mm (2-inch) pipe, or on the wall(depend on the model specification)
Weight:	about 3 5~3.1kg(Noumenon)

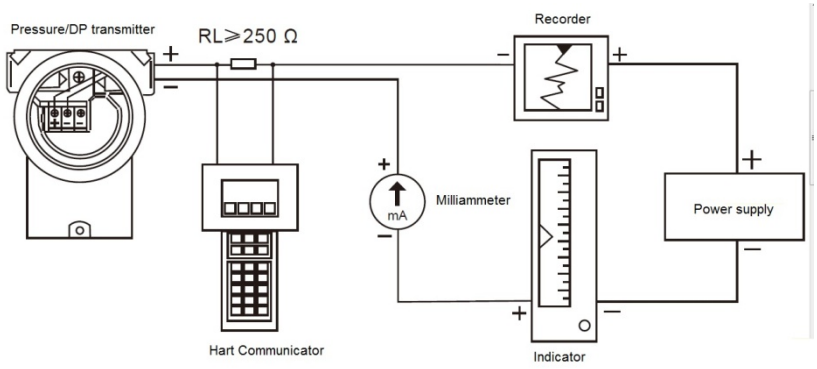
Model Selection

Code						
SH	SH Series Pressure transmitter/DP transmitters,					
Code	Types	DR	DP	GP	HP	AP
DR	Low differential pressure	*			*	
DP	Differential Pressure		*			
GP	Gauge Pressure			*		
HP	High Static Pressure				*	
AP	Absolute Pressure					*
Code	Measuring Range	DR	DP	GP	HP	AP
2F	(0-1)Kpa	*			*	
3E	(0-6)Kpa		*	*	*	
4E	(0-40)Kpa		*	*	*	*
5E	(0-250)Kpa		*	*	*	*
7E	(0-3)Mpa		*	*	*	*
8E	(0-10)Mpa		*	*	*	
0E	0-6~40)Mpa			*		
Code	Accuracy					
1	0.1 %					
2	0.2 %					
4	0.075%					
Code	Explosion Proof					
P	Normal Type without Explosion proof					
d	Explosion proof Exd II BT4					
i	Intrinsically safe explosion-proof Exia IIC T6					
Code	Display					
M5	Digital Display					
Code	Output					
E	(4-20mA)					
S	(4-20mA) & Hart					
M	Modbus RS485					
Code	Material					
	Flange/Connector	Drain/Vent Valve	Isolation Diaphragm	Filled Liquid		
22	316 sst	316 sst	316L	Silicon oil		
23	316 sst	316 sst	Hastelloy C	Silicon oil		
24	316 sst	316 sst	Monel	Silicon oil		
25	316 sst	316 sst	Tantalum	Silicon oil		
Code	Process Connector					
C0	1/4"NPT (F)					
C1	1/2"NPT(M)					
C2	M20×1.5(M)					
C3	1/2"NPT(F)					
C4	G1/2 (M)					
Code	Mounting Bracket					
B1	Bent Bracket for pipe mounting (2" pipe)					
B2	Bent Bracket for plate mounting					
B3	Flat bracket for pipe mounting (2" pipe)					
Code	Sealing Material					
01	Fluororubber					
02	EPDM					
03	Others					
Code	Sensor Type					
M	Monocrystalline silicon sensor chip					

Dimensions (in mm)

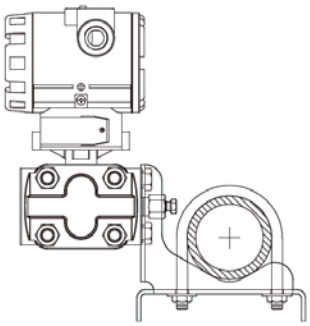


Electrical Connection Diagram

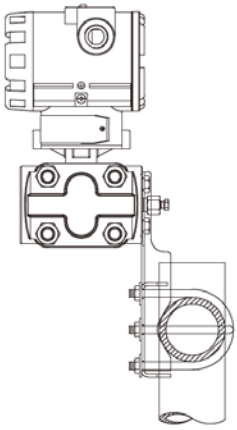


Installation with Mounting Bracket

B1: 2" pipe mounting kit angle type



B3: 2" pipe plat mounting kit



B2: panel mounting kit