



Recorder



Flow



Pressure



Temp



Analyzer



Level

Datasheet

Monocrystalline silicon

pressure transmitter

SUP-P3000

Supmea[®]

Committed to process automation solutions

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Datasheet**Monocrystalline silicon pressure transmitter
SUP-P3000**

Smart pressure transmitter is a new high-precision smart transmitter with high-precision silicon pressure sensor which achieves the field device communication by microprocessor. Smart pressure transmitter includes gauge pressure, differential pressure, absolute pressure, high static pressure, differential pressure, and other varieties.

Applications

- Petroleum
- Chemical
- Electric power
- Metallurgy
- Brewing and other industrial fields

Features

- High Precision
- Good Stability
- Wide Measuring Range
- Fast Response Time
- Compact and Durable Design

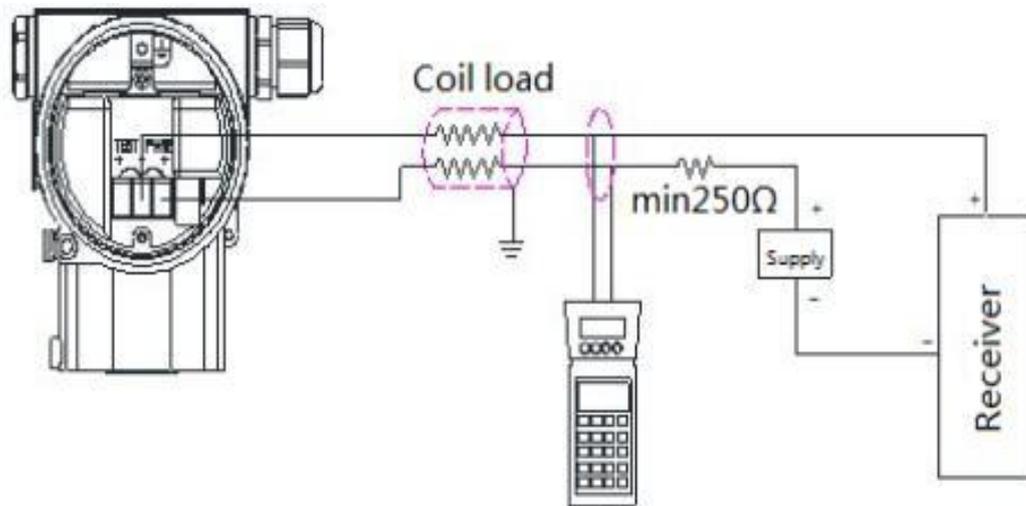
**Monocrystalline silicon pressure
transmitter**

Principle

The working principle of a monocrystalline silicon pressure transmitter: It exploits the piezoresistive effect of monocrystalline silicon. External pressure on its sensing element alters the silicon's resistance. With a pressure-sensitive diaphragm, pressure-induced deformation affects the attached strain-gauge. Via a Wheatstone bridge, the resistance change converts to voltage change. The voltage is then amplified and conditioned internally, finally outputting a standard signal (e.g., 4 - 20mA or 0 - 5V) for pressure monitoring and control in relevant processes, transmissible to control or display systems.

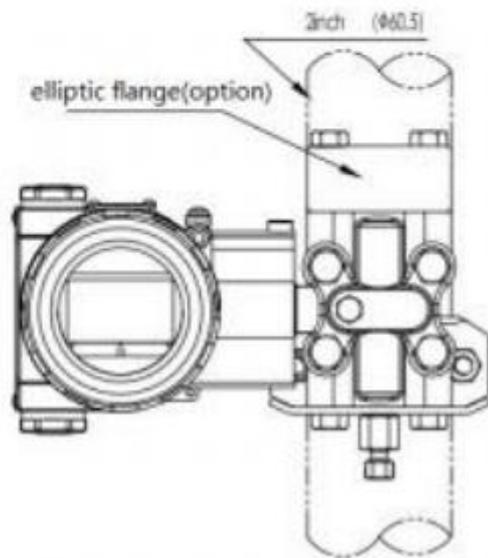
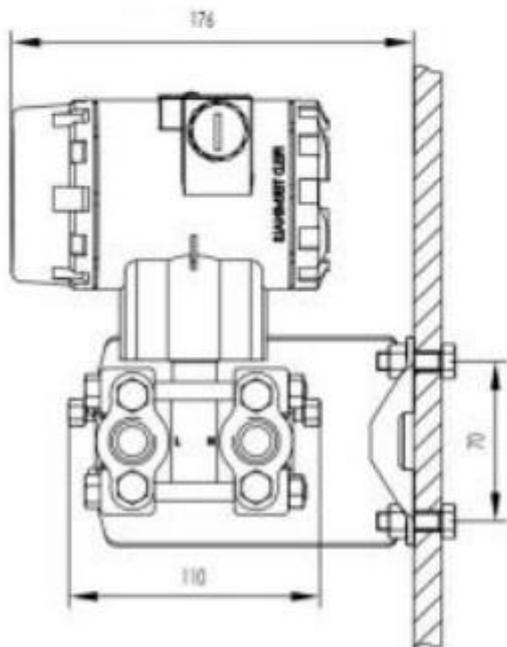
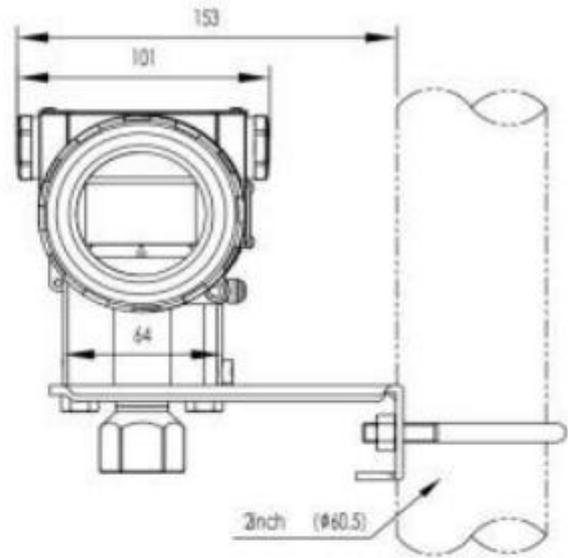
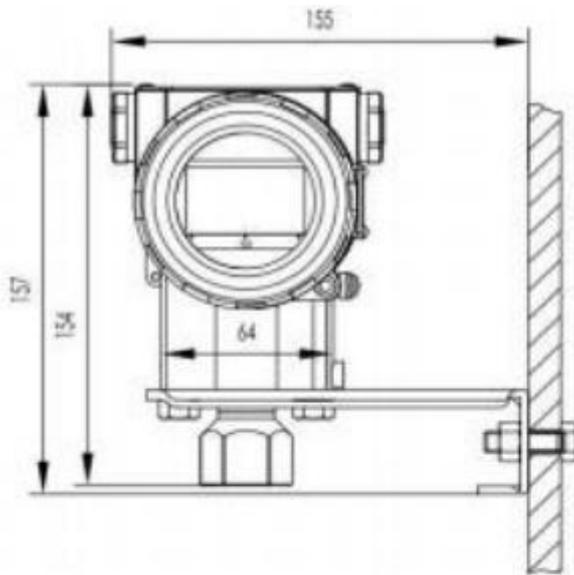
Parameters	
Measurement Range	0~0.6kPa...60MPa (gauge pressure) 0~10kPa...3MPa (absolute pressure)
Pressure Type	Gauge Pressure, Absolute Pressure
Power Supply Output	(4~20)mA two-wire system (12V~42V, generally 24V) (4~20)mA + HART protocol (15V~42V, generally 24V)
Accuracy	±0.075%FS; ±0.1%FS
Ambient Temperature	(-40~85)°C (with LCD display and fluorine rubber sealing ring -20-65°C)
Medium Temperature	(-40~100)°C
Storage Temperature	(-50~85)°C; (-40~85)°C when with LCD display
Protection Level	IP67
Long-term Stability	±0.1%FS/3 years
Load Resistance	$R=(U - 12)/21\text{mA}$; U is the supply voltage

Wiring



Electrical connection diagram

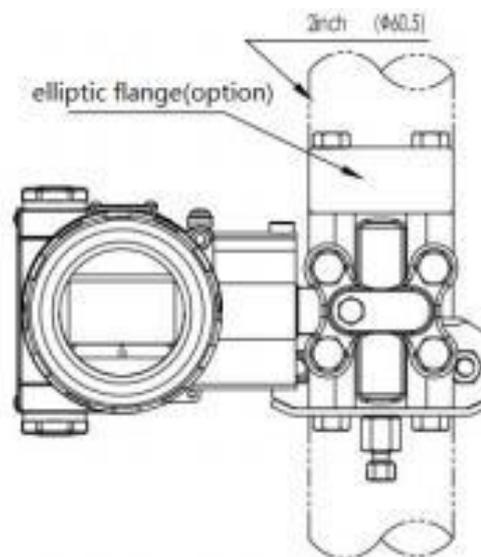
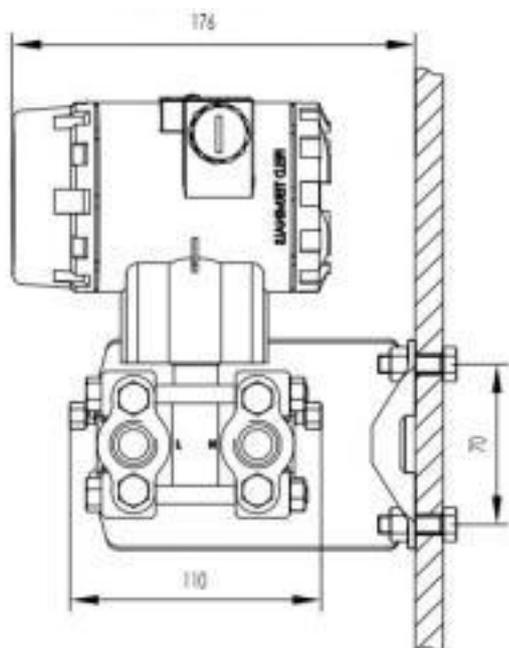
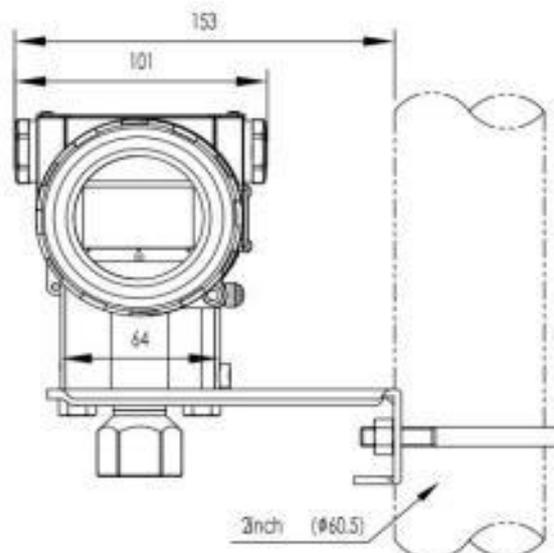
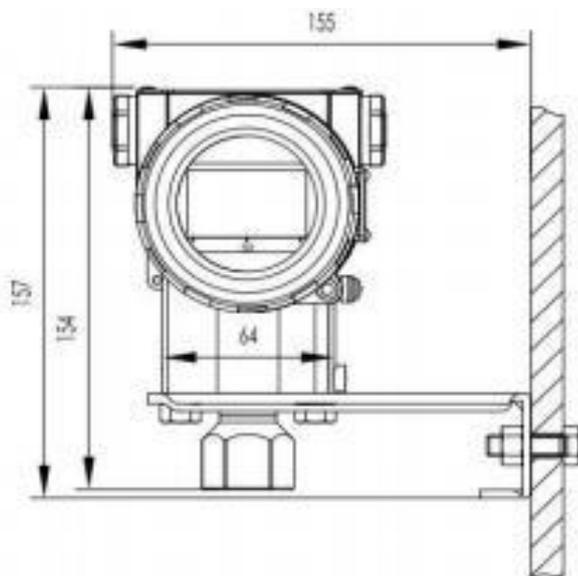
Dimension



Installation

■ Installation

Installed as shown below:



Ordering code

SUP-P3000 -G-1K-D-0-A1-ND-B-A-00-PS										Description	
SUP-P3000	-	-	-	-	-	-	-	-	-	-	
Pressure Type	G										Gauge pressure
	A										Absolute pressure
Measuring range		1K									0-5kPa
		1P									0-40kPa
		1V									0-400kPa
		2B									0-1MPa
		2E									0-4MPa
		2H									0-10MPa
		2K									0-20MPa
		2N									0-40MPa
		XX									Other
	Accuracy										
											0.1 class
Display Type											None
											Available
Output and power supply										A1	Two-wire 4-20mA
										A7	Two-wire 4-20mA+Hart
										A5	RS485, 24VDC
Thread Type										ND	NPT1/2 Internal thread
										NC	NPT1/2 External thread
										L2	M20×1.5 External thread
										G2	G1/2 External thread
										NA	NPT1/4 External thread
										NB	NPT1/4 Internal thread
										X	other
Diaphragm and Thread Type Material										B	316LSS, 316LSS
										M	Hastelloy C, 316LSS
										G	316LSSgilt, 316LSS
										P	tantalum, 316LSS
										X	other
Electrical Interface, Housing Material, and Ingress Protection										W3	M20 x 1.5 cable plug, aluminium alloy, IP67
										XX	other
										A	Silicon oil
Explosion-proof options										F	Fluorinated Oil
										X	Other
										00	None
										E1	NEPSI Ex ia II C T4 Ga
										E2	NEPSI Ex d II C T4-T6 Gb
										E3	NEPSI Ex tD A21 IP67

Accessories

PS

T80°C/T95°C/T130°C
Carbon steel galvanised pipe
mounted flat bracket + M8*10 bolts

PT

304SS pipe mounted flat bracket +
M8*10 bolts

PM

M20×1.5Explosion-proof connectors

PA

Threaded base carbon steelCS

PB

Threaded base304SS

PD

Condensation Bend304SS