



Recorder



Flow



Pressure



Temp



Analyzer



Level

Datasheet

Monocrystalline silicon

flange-mounted pressure

transmitter

SUP-2051LT-D

Supmea[®]

Committed to process automation solutions

E-mail: info@supmea.com

www.supmea.com

Datasheet**Monocrystalline silicon flange-mounted pressure transmitter
SUP-2051LT-D**

In terms of circuit design, the transmitter adopts a modular design with a microprocessor at its core, complemented by advanced digital isolation technology. This design endows the instrument with extremely high anti-interference and stability. Meanwhile, through an internal temperature sensor, the transmitter is compensated, which improves the measurement accuracy, reduces temperature drift, and gives it the characteristics of good long-term stability, high reliability, and strong self-diagnostic capabilities.

Applications

- Food and Beverage Processing
- Aerospace
- Energy transmission and utilisation
- Petrochemical industry
- Automobile manufacturing
- Water treatment industry
- Building automation system

**Features**

- Advanced monocrystalline silicon pressure and differential pressure sensor technology and packaging processes, and a super high-performance pressure and differential pressure transmitter developed with painstaking efforts and leading-edge technology.
- The one-way overpressure can reach up to 25 MPa.
- The design with a microprocessor at the core and supplemented by advanced digital isolation technology enables the instrument to have extremely high anti-interference and stability.
- The latest one-click zeroing function does not affect the electrical protection level, making it safer and more efficient.

**Monocrystalline silicon
flange-mounted pressure
transmitter**

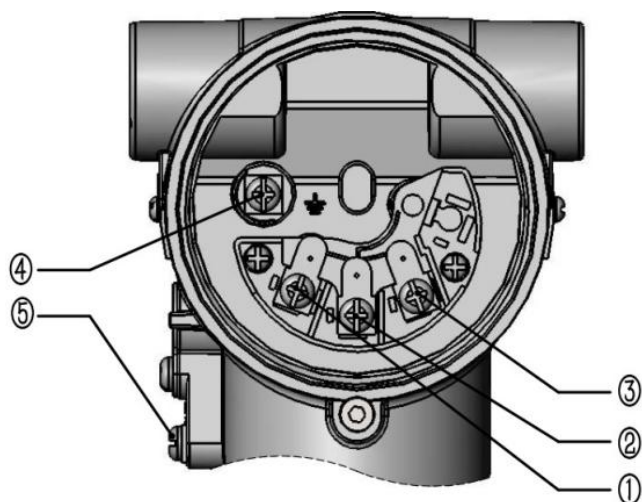
Principle

The working principle of a single crystal silicon differential pressure transmitter is relatively straightforward. It mainly makes use of the piezoresistive effect of single crystal silicon. Inside the transmitter, there is a sensitive diaphragm made of single crystal silicon. When there is a differential pressure applied across the diaphragm, it causes deformation. This deformation leads to a change in the stress within the single crystal silicon, and according to the piezoresistive principle, the resistance of the silicon changes correspondingly. The resistance change is then converted into an electrical signal through a Wheatstone bridge circuit. After that, the signal goes through further conditioning and amplification to be output as a standard electrical signal, like 4 - 20 mA or 0 - 5 V, which can be used to precisely measure and monitor the differential pressure.

Parameters	
Measured Medium	Gas, Steam, Liquid
Measuring Range	-100kPa...0~0.1kPa...4MPa
Accuracy	±0.075%, ±0.1% (including linearity, hysteresis and repeatability starting from zero point)
Stability	±0.1% / 3 years
Ambient Temperature Influence	≤±0.04%/10℃
Static Pressure Influence	±0.05%/10MPa
Power Supply	15VDC - 32VDC
Power Supply Influence	±0.01% / 10V, negligible
Ambient Temperature	-40℃ - 85℃ (General); -40℃ - 60℃ (Explosion-proof)
Measured Medium Temperature	-40℃ - 120℃
Storage Temperature	-40℃ - 85℃
Display	LCD
Display Module Temperature of the Monitor	-20℃ - 70℃

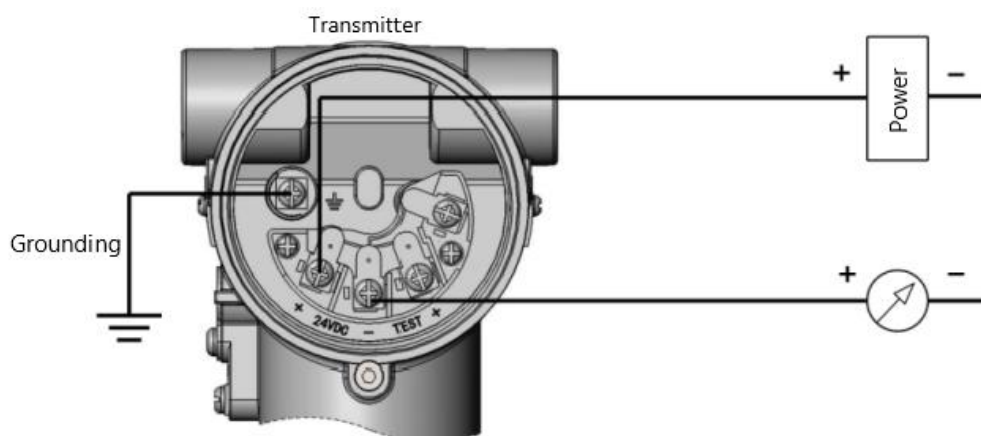
Wiring

Wiring terminals

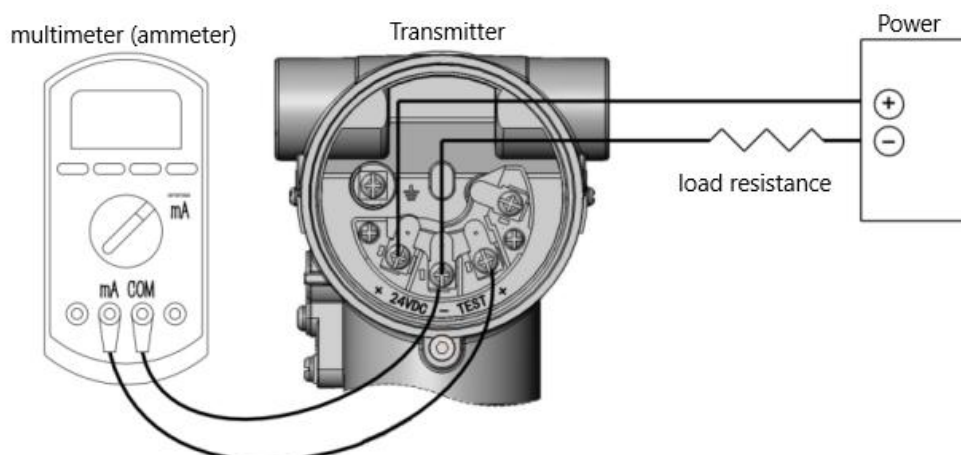


- ① Transmitter power supply positive
- ② Transmitter power supply negative
- ((4 ~ 20)mA test terminal negative)
- ③ ((4 ~ 20)mA test terminal positive)
- ④ Internal grounding screw
- ⑤ External grounding screw

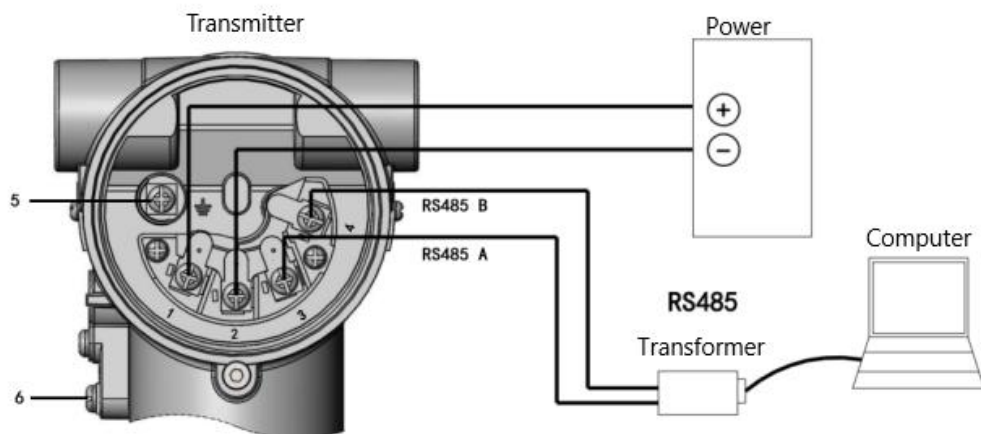
Power cord connection



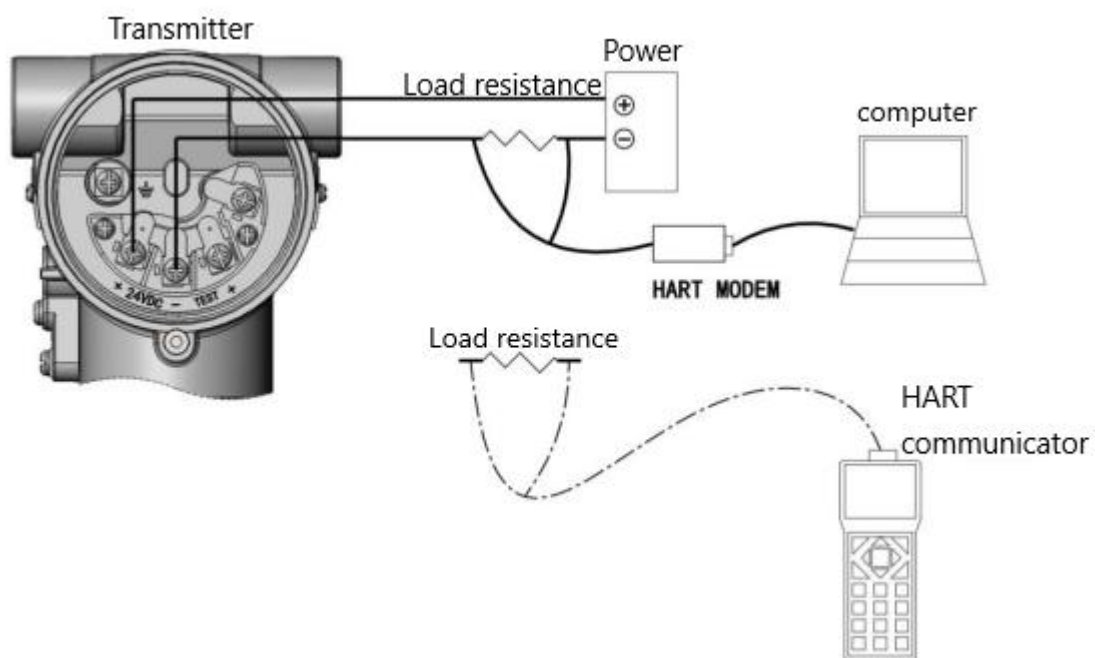
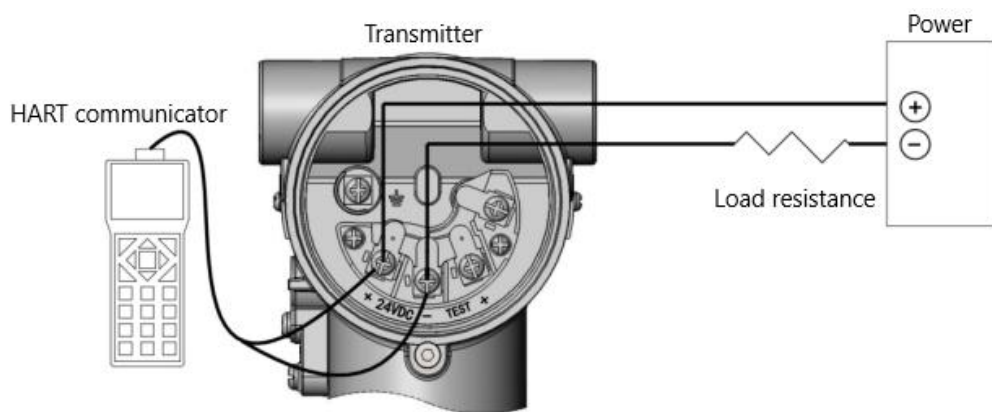
Current Test Meter Connections



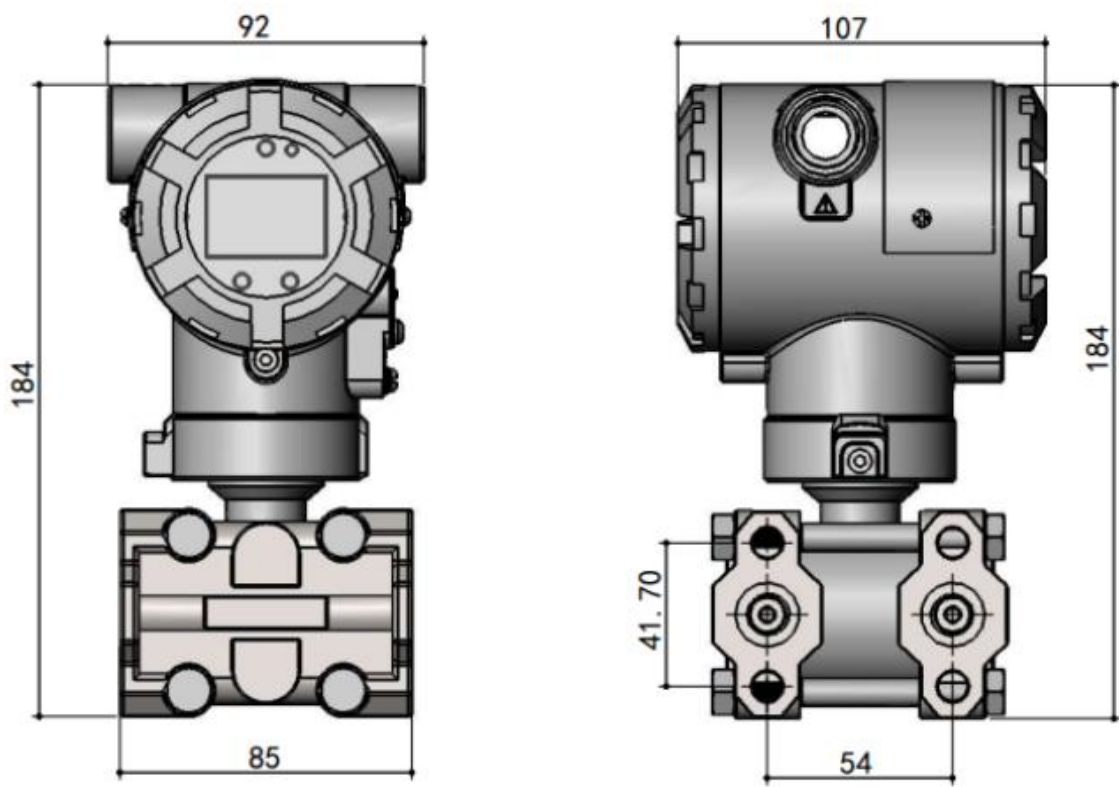
Four-wire RS485 communication connection



Hart communication connection

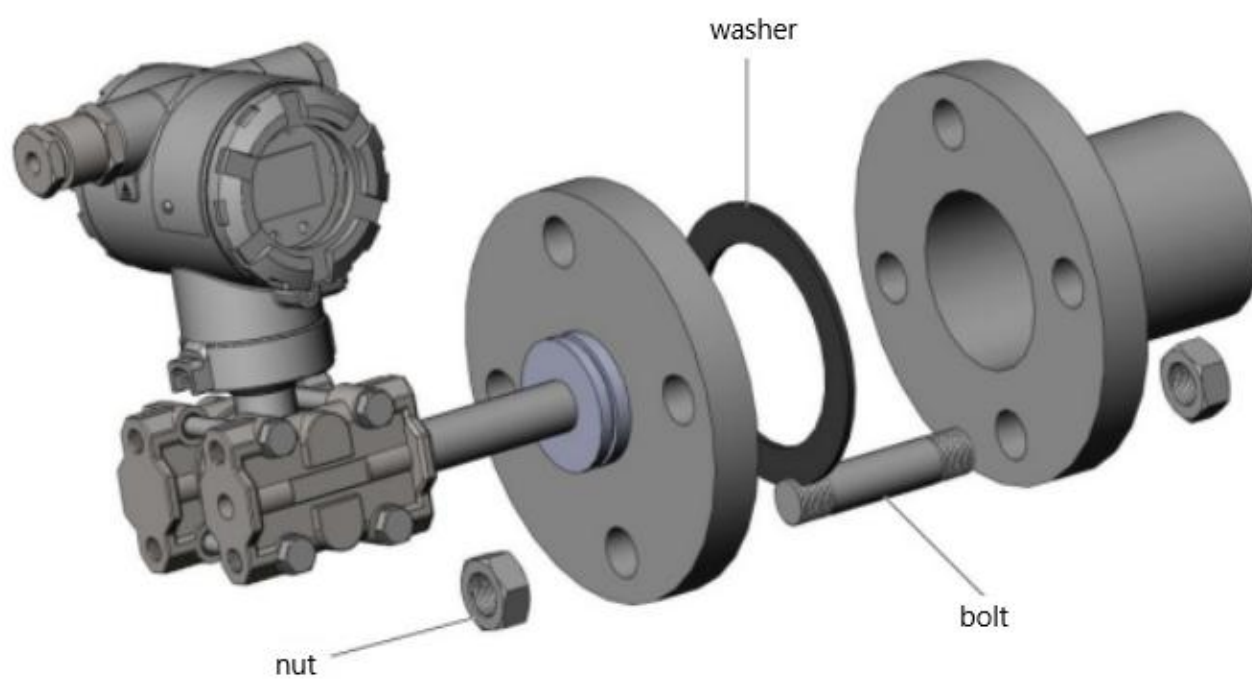


Dimension



Installation

■ Installation



Ordering code

SUP-2051LT-D -D-3F-F-H1-25-00-M1-1-A7-W1-M3-A-00-PX														Description
SUP-2051LT	-	-	-	--	-	--	-	-	-	-	-	-	-	Differential Pressure
-D	D													
Pressure Type	S													Pressure
Measuring range	3F													20kPa
	3													40kPa
	H													60kPa
	3L													100kPa
	3													250kPa
	M													1MPa
	3P													3MPa
	3R													10MPa
	3T													Other
	XX													0.2 Class
Accuracy				F										0.1 Class
				E										HG/T20592
Flange Specification				H										PN10/16
				1										HG/T20592
				H										PN25/40
				3										HG/T20592 PN63
				H										HG/T20592 PN100
				4										ANSI Class 150
				H										ANSI Class 300
				5										Other
				K										DN25(1")
				1										DN50(2")
Flange Size				K										DN65(2.5")
				2										DN80(3")
				X										DN100(4")
				X										
					2									
					5									
					5									
					0									
					6									
					5									

Diaphragm projection length	00	M	1	A	W	M	Other
	50						0mm
	1						50mm
	H						100mm
	2						150mm
	H						Other
	X						
Flange Material	X	M	3	A	W	M	304SS
							316LSS
							Available
Display Type							Two-Wire
Output and Power Supply							4-20mA+HART
							RS485, 24VDC
							M20×1.5 Cable Gland, Aluminum Alloy, IP65
Electrical Interface, Housing Material, and Ingress Protection							M20×1.5 Cable Gland,, Aluminum Alloy, IP67
							Other
							316LSS
							Hastelloy C
							Tantalum
							Monel
Diaphragm Material							Titanium
							316LSS coated FEP
							316LSS coated PFA
							316LSS gold-plated
							Other
							Silicone Oil
							High-temperature Silicone Oil
							Ultra-High-Temperature
							Silicone Oil
							Fluorinated oil
Filling Liquid							

Capillary Length	0		Other
	0		
	0		0m
	2		
	0		2m
	5		
	1		5m
	0		
Accessories	X		10m
	X		
			Galvanized Carbon Steel
	PX		Pipe-Mounted Flat Bracket+M10*12 bolts
			304SS pipe mounted flat bracket + M10*12 bolts
	PY		
	P		Galvanized Carbon Steel Pipe Mounted
	W		Bending bracket + M8*1.25 bolts