



Recorder



Flow



Pressure



Temp



Analyzer



Level

Datasheet

Differential Pressure Transmitter

SUP-2051

Supmea[®]

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Datasheet**Differential Pressure Transmitter
SUP-2051**

Differential pressure transmitter SUP-2051 is suitable to measure liquid, gas, or steam flow as well as liquid level, density and pressure. SUP-2051 outputs a 4~20 ma DC signal corresponding to the measured differential pressure. Its highly accurate and stable sensor can also measure the static pressure which can be shown on the integral indicator or remotely monitored via HART communications. Other key features include quick response, remote set-up using communications, self-diagnostics and optional status output for pressure high/low alarm.

Applications

- Industrial control
- Chemical field
- Electricity
- Metallurgy
- Petroleum industry
- Forging industry
- Water affairs
- Brewing

Features

- Full range coverage: 0 ~ 1KPa ~ 3MPa
- High precision mono c-Si technology: 0.075%
- Super static pressure detection performance
- The central sensing unit adopts high-precision silicon technology
- Patented double overload protection diaphragm design, one-way overpressure up to 40MPa
- The upper and lower limits of the range can be adjusted arbitrarily, with wider adaptability
- Optional multi-parameter output application
- EMC complies with the latest national standards

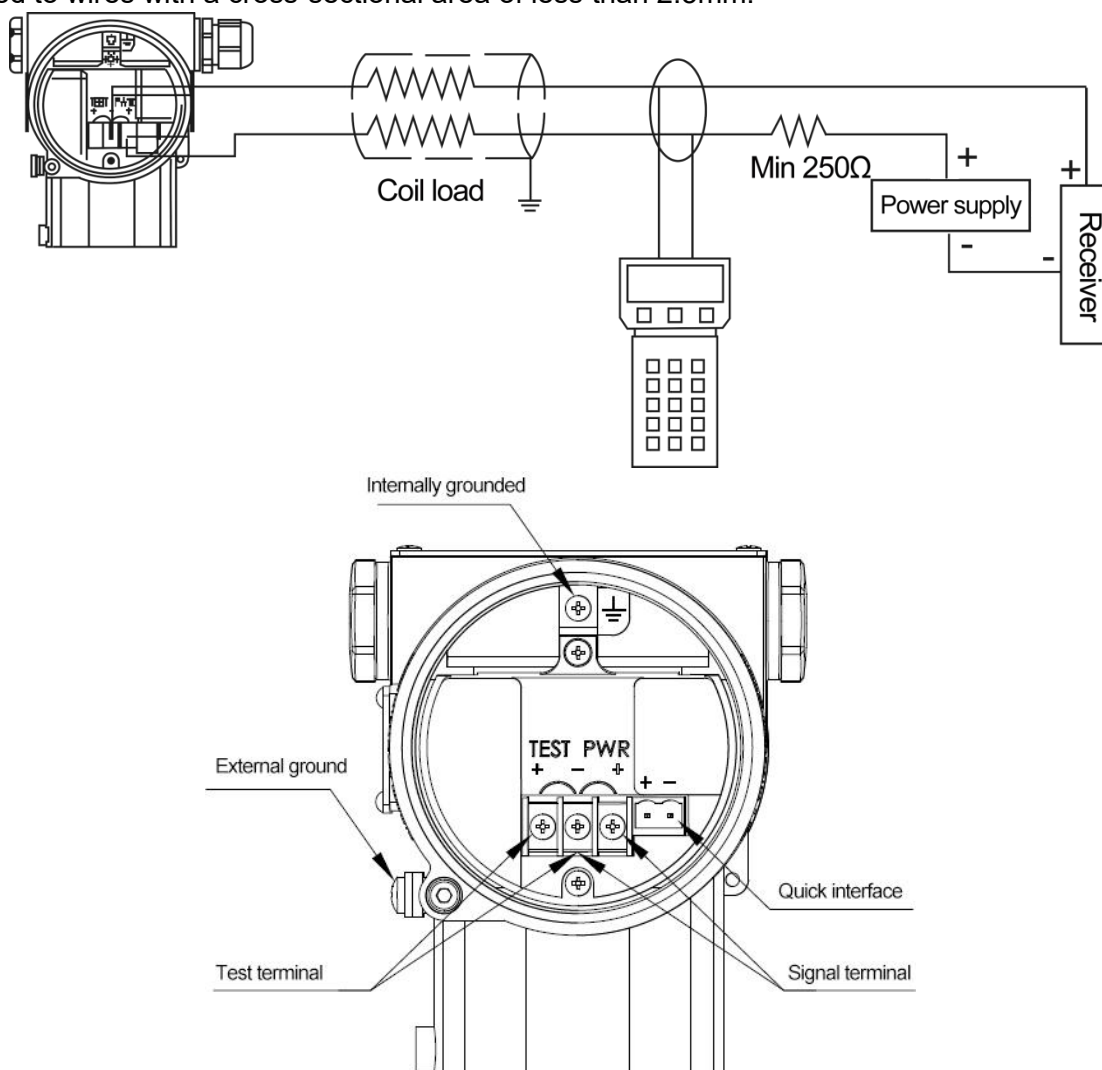
**SUP-2051**

Parameters	
Product	Differential Pressure transmitter
Model	SUP-2051
Measure range	-100kPa...0~0.1kPa...3MPa
Indication resolution	0.075%FS; $\pm 0.1\%$ FS
Stability	$\pm 0.1\%$ FS/3 years
Power supply output	Two wire 4~20 mA output (12V~42V, Standard 24V) 4~20 mA+HART(15~42V, Standard 24V)
Ingress protection	IP67
Sensor Body	316L stainless steel
Pressure Limits	3.5kPa abs. to maximum working pressure
Ambient Temperature	-40 to 85°C/-20 to 65°C with LCD display or fluorine rubber sealing
Medium Temperature	-40~100°C
Storage temperature	-50~85°C/ -40 to 85°C with LCD display or fluorine rubber sealing
Cover Flange	316 stainless steel
Nuts and Bolts	304 stainless steel
Process Connector	316 stainless steel
Name plate and tag	304 stainless steel
Long term stability	$\pm 0.1\%$ FS/3 years
Load Resistance	$R = (U - 12) / 21\text{mA}$; U: Supply voltage

Nominal range	Lower range limit	Upper range limit	Ambient temp error	Rated work pressure
0-100Pa~1kPa	-1kPa	1kPa	$\pm(0.45\times TD+0.25)$ %FS	0.2MPa（Standard）
				7MPa（Optional）
0-200Pa~6kPa	-6kPa	6kPa	$\pm(0.30\times TD+0.20)$ %FS	16MPa/25MPa/40MPa
0-400Pa~40kPa	-40kPa	40kPa	$\pm(0.20\times TD+0.10)$ %FS	
0-2.5kPa~250kPa	-250kPa	250kPa		
0-30kPa~3MPa	-500kPa	3MPa		
Note：TD=maximum range/adjustment range, if TD>10, the accuracy is: $\pm(0.0075\times TD)\%$				

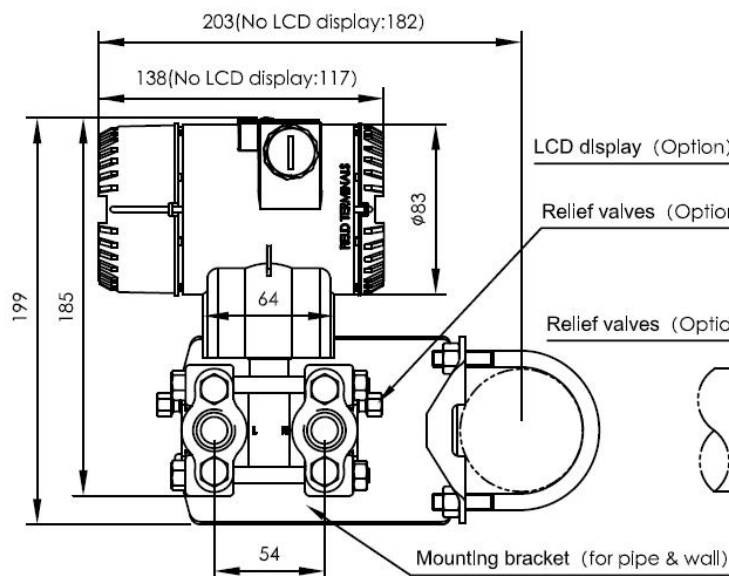
Wiring

Since the transmitter does not have a power switch, the system must be equipped with an overcurrent protection or power cut-off device. Check that the operating voltage is the same as specified on the nameplate. The output signal of the power box shares a pair of phase wires. Electrical connections can be made with terminal blocks via NPT1/2 or M20x1.5 cable entries. The wire connection terminal can be connected to wires with a cross-sectional area of less than 2.5mm.

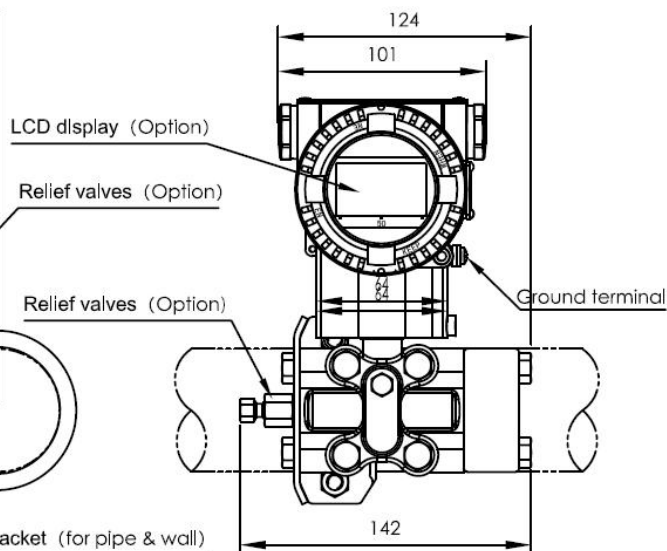


Dimension

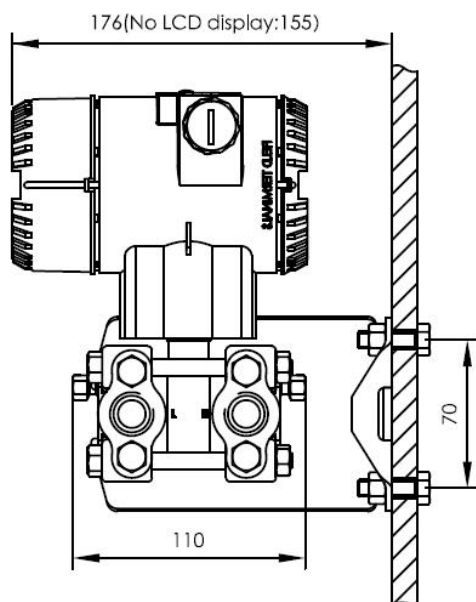
**1 Horizontal Impulse Piping Type
(side face)**



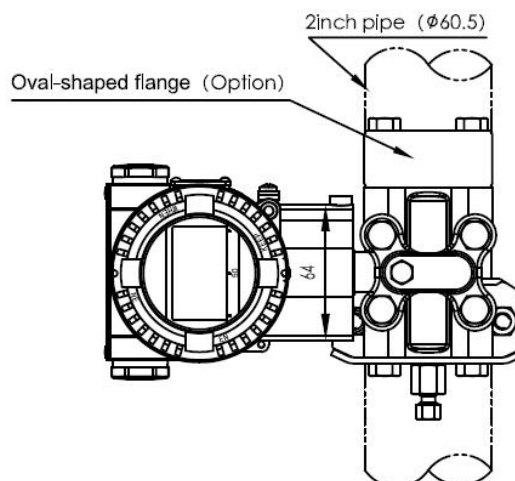
**2 Horizontal Impulse Piping Type
(front side)**



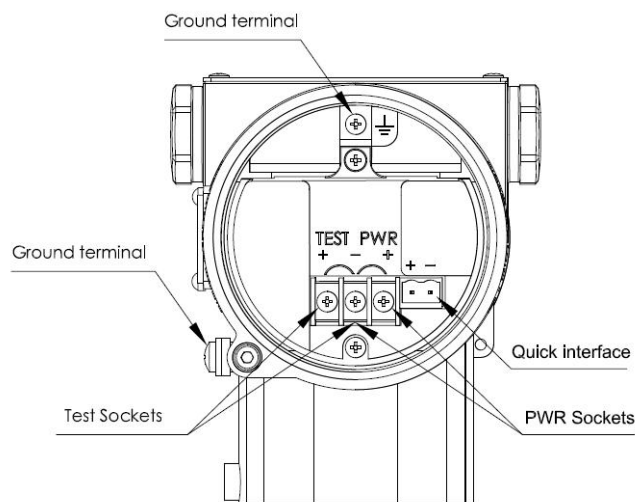
**3 Horizontal Impulse
Wall mounting Type**



**4 Vertical Impulse
Piping Type**

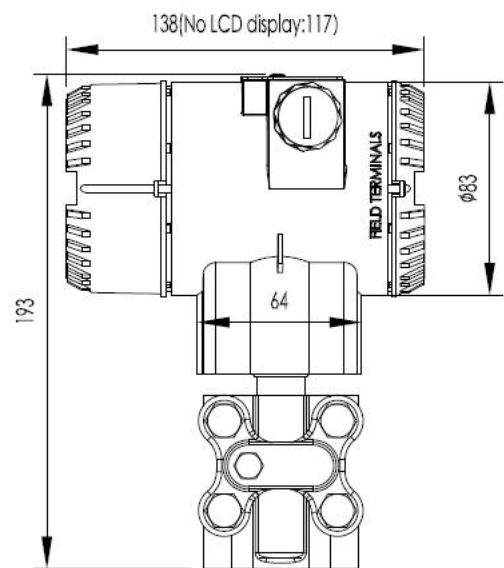


5 Terminal Configuration



Note: Quick interface functionally equivalent to the signal terminal

6 Vertical mounting flange (Code V)



7 Process connections Description

Process connections	
Oval-shaped flange with 1/4-18 NPT female thread(code 1) 1. Flange 2. O ring 3. Oval-shaped flange 4. Bolt NPT 1/2 NPT 1/4	D-shaped connector with M20x1.5 male thread(code 2) 1. Flange 2. D-shaped connector 3. Bolt 4. O ring 5. M20x1.5 Nut 6. Joining pipe $\phi 14$

Ordering code

SUP-2051										Description
Measuring range	3W									100Pa
	3A									500Pa
	3B									1kPa
	3D									5kPa
	3H									40kPa
	3M									250kPa
	3P									1MPa
	3R									3MPa
	XX									others
Accuracy	D									Level 0.075
	E									Level 0.1
	F									Level 0.2
	L									Level 1.0
Display type		0								none
		1								available
Output and power supply			A1							Two-wire 4-20mA
			A7							Two-wire 4-20mA + HART
			A5							RS485, 24VDC
Process connection			NJ							NPT1/4 internal thread +7/16-20UNF
			NN							NPT1/4 internal thread +7/16-20UNF rear relief valve
			XX							others
Diaphragm and process connection materials			A							316LSS, 304SS
			T							316LSS, 316SS
			L							Hastelloy C, 304SS
			N							Tantalum (Ta), 304SS
			F							316LSS gold-plated, 304SS
			H							316LSS coated with FEP, 304SS
			X							others
Electrical interfaces, housing material and protection level								W3		M20×1.5 cable gland, aluminum alloy, IP67
								XX		others

Filler fluid	A				silicone oil
	F				Fluorinated oil
	X				others
Sealing ring material		N3			Nitrile rubber
		N4			Fluororubber
		N6			Polytetrafluoroethylene (PTFE)
Explosion-proof options			00		none
			E1		Ex ia IIC T4...T6 Ga, Ex ia IIIC T80°C...T130°C Db
			E2		Ex db IIC T4...T6 Gb
			E3		Ex tb IIIC T80°C...T130°C Db
Accessories				PF	Carbon steel galvanized pipe mounting bracket + UNF7/16 bolts
				PE	304SS pipe mounting bracket + UNF7/16 bolts
				PM	M20×1.5 explosion-proof connector
				PK	304SS three-valve manifold