

Differential Pressure Transmitter

2051 series Datasheet



Datasheet

Differential Pressure Transmitter 2051

Differential pressure transmitter 2051 is suitable to measure liquid, gas, or steam flow as well as liquid level, density and pressure. 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



2051

Differential Pressure Transmitter



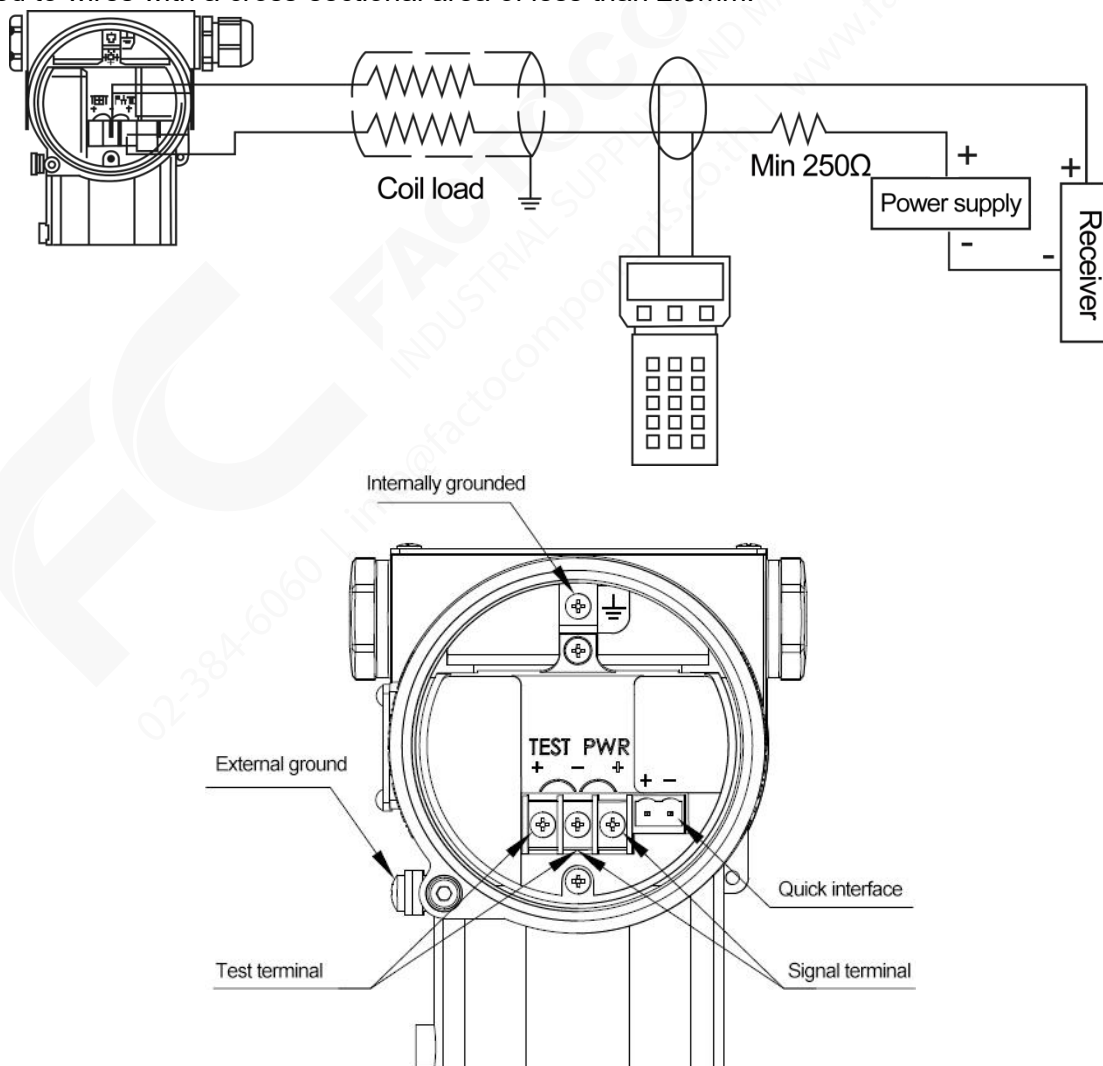
Parameters	
Product	Differential Pressure transmitter
Model	2051
Measure range	-100kPa...0~0.1kPa...3MPa
Indication resolution	0.075%FS; $\pm 0.1\%$ FS; 0.5%FS
Stability	$\pm 0.1\%$ FS/3 years
Power supply output	Two wire 4~20 mA output (12V~42V, Standard 24V) 4~20 mA+HART(12~42V, Standard 24V)
Up time	< 15s
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
Working Pressure Limits (Silicone oil)	Maximum working pressure: 16MPa, 25MPa, 40MPa
Isolating Diaphragm	316L stainless steel / Hastelloy; C/Gold plated on 316L/FEP; plated on 316L/Tantalum
Cover Flange	316 stainless steel
Nuts and Bolts	304 stainless steel
Process Connector	316 stainless steel
Fill fluid	Silicone oil/Fluorinated oil
Process Connector Gasket	Perbunan (NBR) / Viton (FKM) / Teflon (PTFE)
Amplifier Housing	Aluminum with epoxy resin coat
Housing Gasket	Perbunan (NBR)
Name plate and tag	304 stainless steel
Product shell	Aluminum alloy, the appearance of epoxy coating
Load Resistance	$R = (U - 12) / 21 \text{mA}$; U: Supply voltage

Differential Pressure Transmitter

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

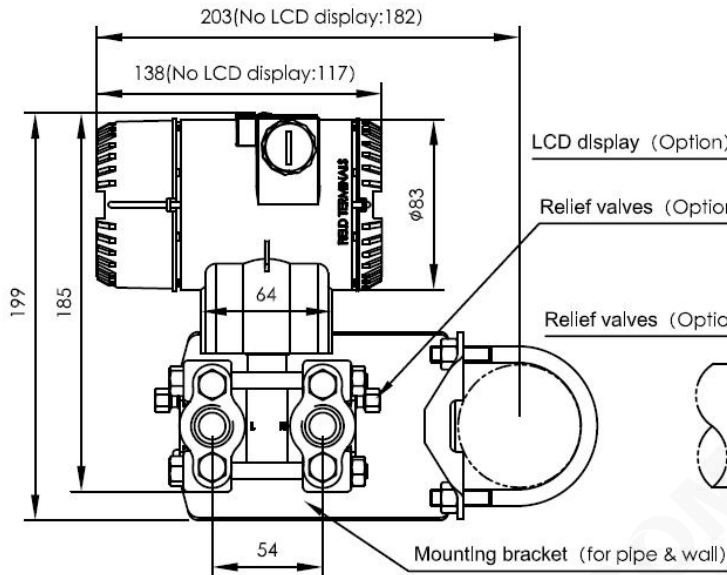
Since the transmitter does not have a power switch, the system must be equipped with an overcurrent protection or power cut-off device. Check that the operating voltage is the same as specified on the nameplate. The output signal of the power box shares a pair of phase wires. Electrical connections can 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.



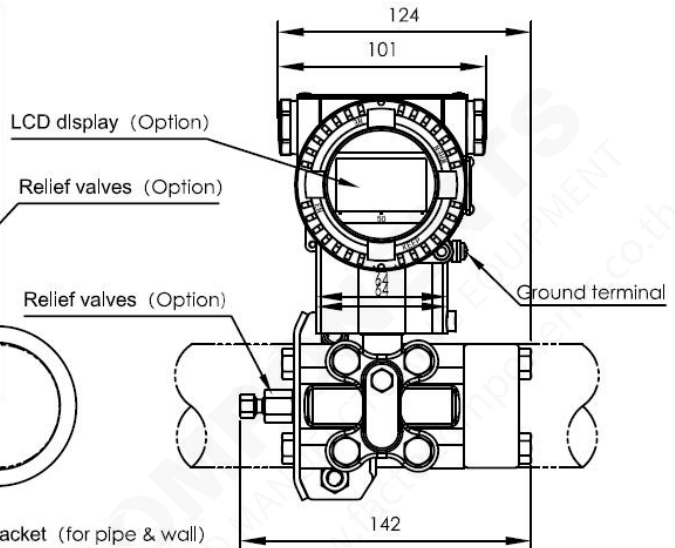
Differential Pressure Transmitter

Dimension

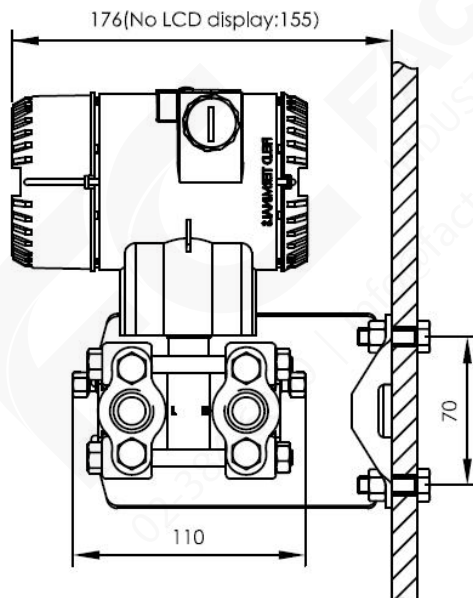
**1 Horizontal Impulse Piping Type
(side face)**



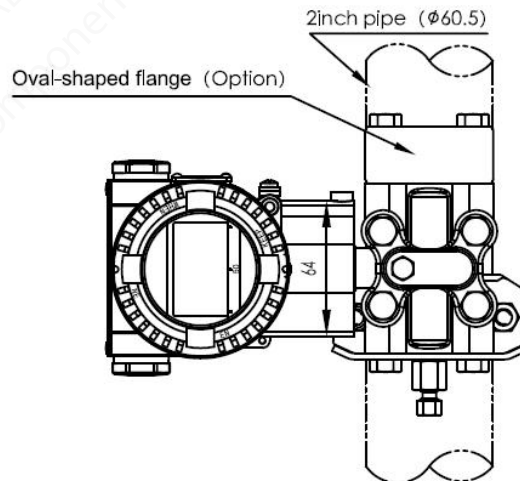
**2 Horizontal Impulse Piping Type
(front side)**



**3 Horizontal Impulse
Wall mounting Type**

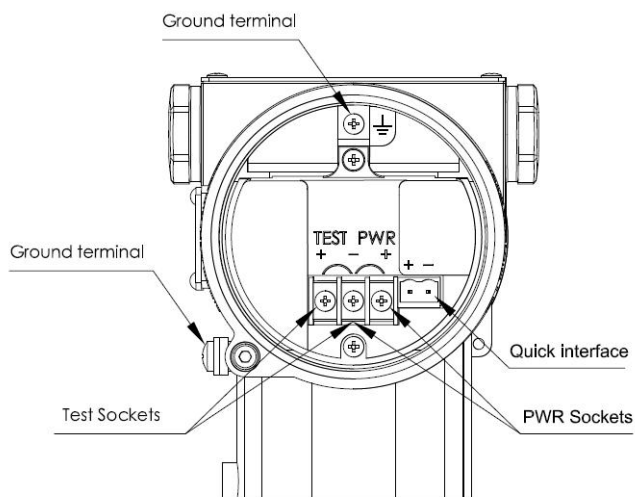


**4 Vertical Impulse
Piping Type**



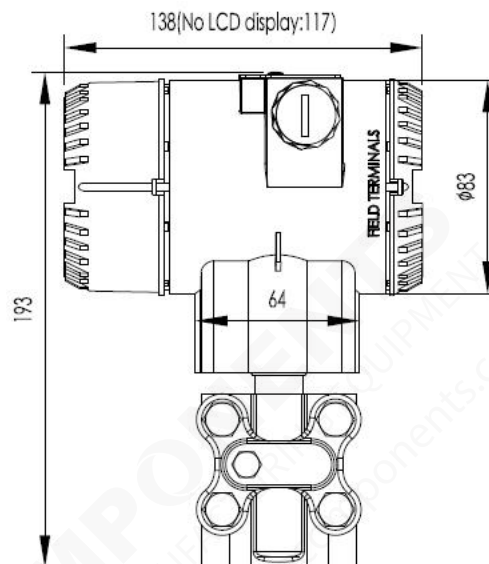
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5 Terminal Configuration

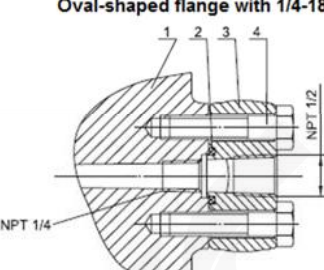
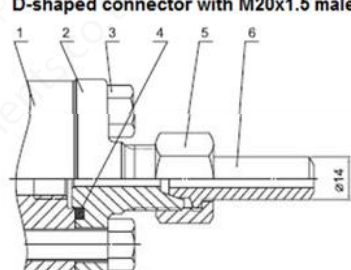


Note: Quick interface functionally equivalent to the signal terminal

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	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

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Ordering code

2051-D-RT1-J1-DT0-O1-D1-I8-EI6-V1-DM1-FT1-GQ1-IP1-HM3-TM1														Description
2051	-	-	-	-	-	-	-	-	-	-	-	-	-	Differential Pressure transmitter
Type	D													Differential Pressure
Range	RT1													0-100Pa...1kPa
	RT2													0-200Pa...6kPa
	RT3													0-400Pa...40kPa
	RT4													0-2.5kPa...250kPa
	RT5													0-30kPa...3MPa
Accuracy	J1													0.075%FS
	J2													0.1%FS
	J5													0.50%FS
Display			DT0											No display
			DT3											LCD
			DT4											OLED
Transmit output				O1										4~20mA
Communication					D1									HART
Installation						I8								NPT1/4 internal thread
						I9								NPT1/2 internal thread
						I10								M20*1.5 Outer thread
Electrical Interface							EI6							M20*1.5
Power supply								V1						12~42V
Membrane material								DM1						316 stainless steel
								DM2						HC
								DM3						TI (range>40kPa)
								DM4						316 stainless steel coating FEP film (range>40kPa)
								DM5						316 stainless steel gold -plated film
Type of filling solution									FT1					Silicon oil
Sealing circle material										GQ1				Nitrile rubber seal
											GQ2			Fluorine rubber sealing ring
											GQ3			PTFE sealing ring
Ingress protection												IP1		IP65

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shell material	HM3	Aluminum shell
Thread material	TM1	304 stainless steel thread

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