

Differential Pressure Transmitter

2051 series Datasheet



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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; ±0.1%FS;0.5%FS
Stability	±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

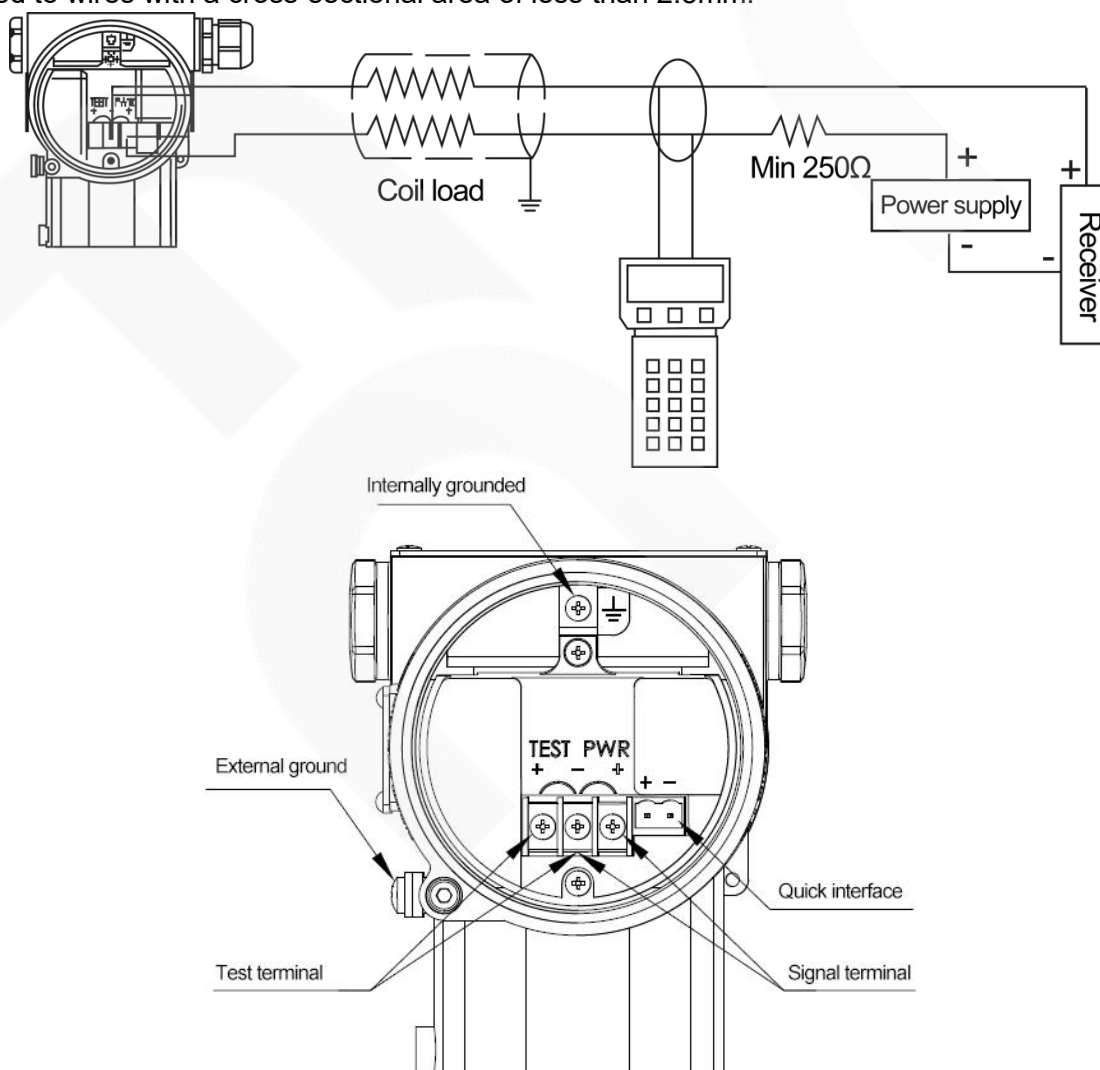
Differential Pressure Transmitter



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: $\pm(0.0075 \times TD)$ %				

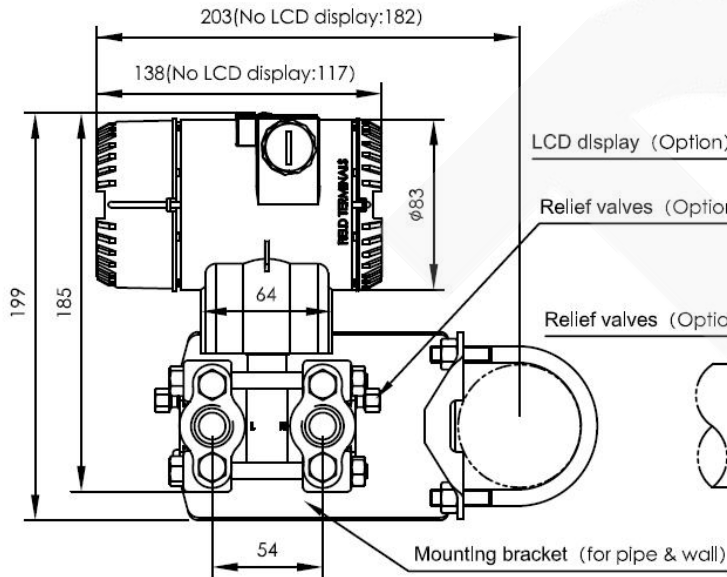
Wiring

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.

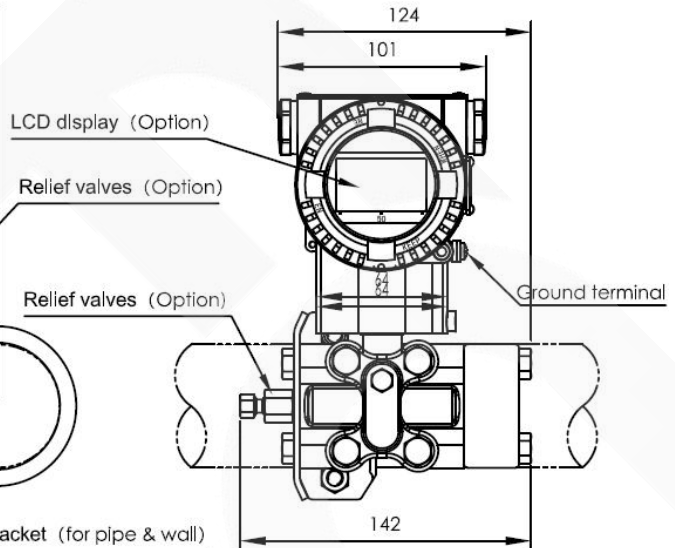


Dimension

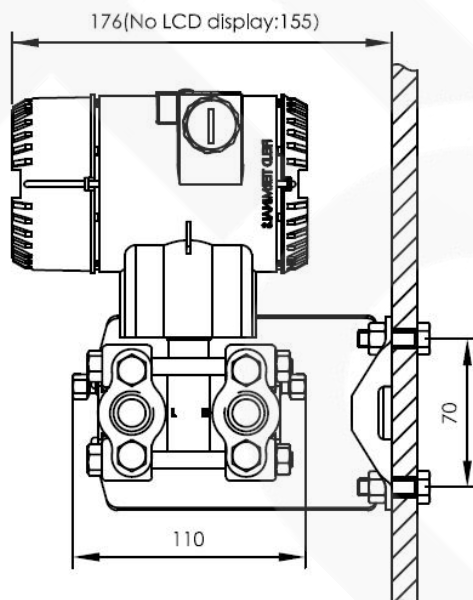
**1 Horizontal Impulse Piping Type
(side face)**



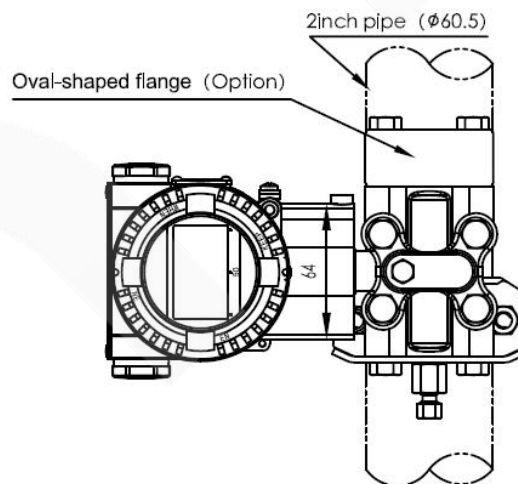
**2 Horizontal Impulse Piping Type
(front side)**



**3 Horizontal Impulse
Wall mounting Type**



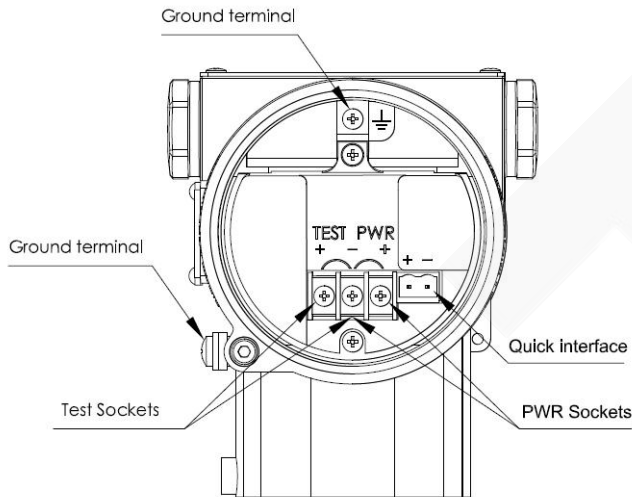
**4 Vertical Impulse
Piping Type**



Differential Pressure Transmitter

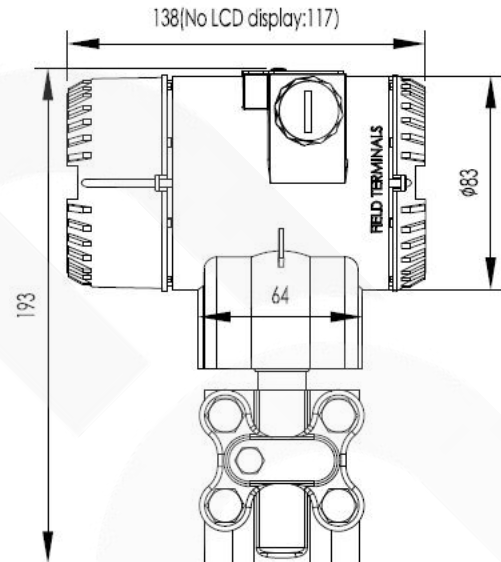


5 Terminal Configuration

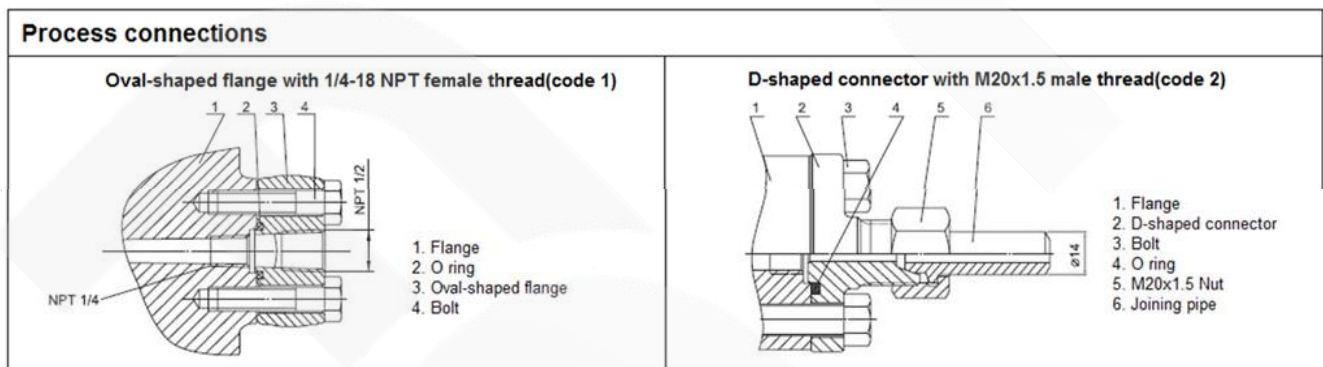


Note: Quick interface functionally equivalent to the signal terminal

6 Vertical mounting flange (Code V)



7 Process connections Description



Differential Pressure Transmitter



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

Differential Pressure Transmitter



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

