



Model CT3151-DP

Monocrystalline Silicon
Smart Differential Pressure Transmitter
For General Industrial Applications

General Specifications

Pressure Sensor Range & URL

Range Code	(kPa)	Nominal pressure (mbar)	(inH ₂ O)	(mmH ₂ O)	Working pressure (MPa)
S1	0.1...1	1...10	0.4...4	10...100	1.5
S2	0.5...6	5...60	2...24	50...600	2.0
S3	0.5...10	5...100	2...40	50...1000	2.0
S4	1...20	10...200	4...80	100...2000	3.5
S5	1...40	10...400	4...160	100...4000	3.5
S6	1...100	10...1000	4...400	100...10000	7.0
S7	2...200	20...2000	8...800	200...20000	7.0
S8	5...500	50...5000	20...2000	500...50000	7.0

Electrical Specifications

Output signal :	DC4~20mA with digital signal based on HART Protocol
Load resistance :	0~600Ω (DC 24V)
Power Supply	General service DC10.5~45V Intrinsic safety explosion-proof DC10.5~26V
Communication :	max 2km (0.75~1.25mm Control Instrument Cable exceeds 1 km :twisted pair cable)
Load resistance :	250~600 DC 24V, include cable resistance
Load capacity :	0.55mF
Load inductance :	3.3mH
Spacing above power line	15cm (please avoid parallel wiring)
Saturation current:	upper limit 20.8mA, lower limit 3.8mA
Alarm current :	upper limit 22.8mA, lower limit 3.6mA (Mode can be set)
Adjustment function:	The zero & full span point can be adjusted in situ through three-button from the top of the housing or be adjusted remotely through configuration software.

Performance Specifications

Environmental temp. :	-40...+85°C (when filling fluorine oil : -10...+60°C)
Storage temperature :	-40...+90°C
Weatherability :	DIN40040GPC
EMC applicable standard :	EN1326-1:2006
Accuracy :	Range ratio=1:1...15 :1, =±0.065% Range ratio>15 :1, =±(0.0015×TD+0.065)%
Effect of environment temperature(28°C):	For range S1.S2.S3.S4.S5, ±(0.08%range+0.035%upper limit of range) For range S6.S7.S8, ±(0.08%range+0.055%upper limit of range)
Effect of static pressure :	±(0.065%range)/10MPa
Effect of overpressure :	±(0.065%range)/10MPa
Stability :	±0.05%upper limit of range/year
Effect of Power supply :	±0.005%/1V
Effect of Mounting position :	The changes of mounting position in the direction parallel to the diaphragm will not cause zero- drift effects. If the changes between the mounting position and the diaphragm is more than 90°, which can be corrected through zeroing corrected within the range of 0.4kPa.
Response time :	90mS
Damp :	The time constant can be adjusted from 0 to 99.9 seconds

Physical Specifications

Isolated diaphragm :	SUS316LSS, Hastelloy C-276, Tantalum
Installed plywood :	SUS316SS
Housing of transmitter :	low copper aluminum die casting + polyurethane coating
Ingress protection:	IP67
Filling oil :	silicone oil & fluorocarbon oil (Optional)
Process connectionport :	Rc1/4 or 1/4 -18NPT
Installation :	U-bolt mounted on 50mm (2-inch) pipe, or on the wall (depend on the model specification)
Weight :	about 3.5~3.1kg (Noumenon)

3151 series smart differential pressure transmitter uses monocrystalline silicon sensor chip. So it achieves the world's leading overpressure performance and also ensures excellent signal stability. Built-in manometry capsule and signal processing module, that can achieve the perfect combination of static pressure and temperature compensation, which provides high measurement accuracy and stability under a wide range of static pressure and temperature. 3151 smart differential pressure transmitter can measure differential pressure and convert it into 4~20mA output signal. This transmitter can be operated through three buttons locally or through universal communicator or configuration software remotely. Without affecting the output signal of DC4~20mA, it can display at the same time.

Applications

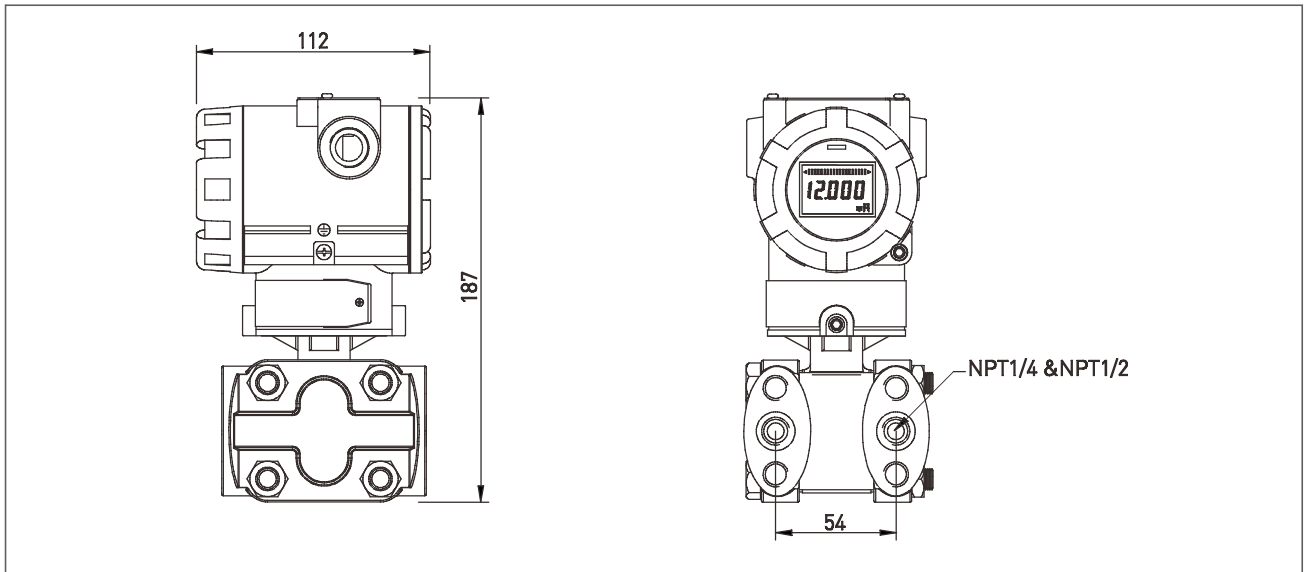
- Be suitable to measure liquid, gas or steam flow as well as liquid level, density and pressure.
- Process control systems
- Chemical industry
- Energy industry
- Machine building

Features

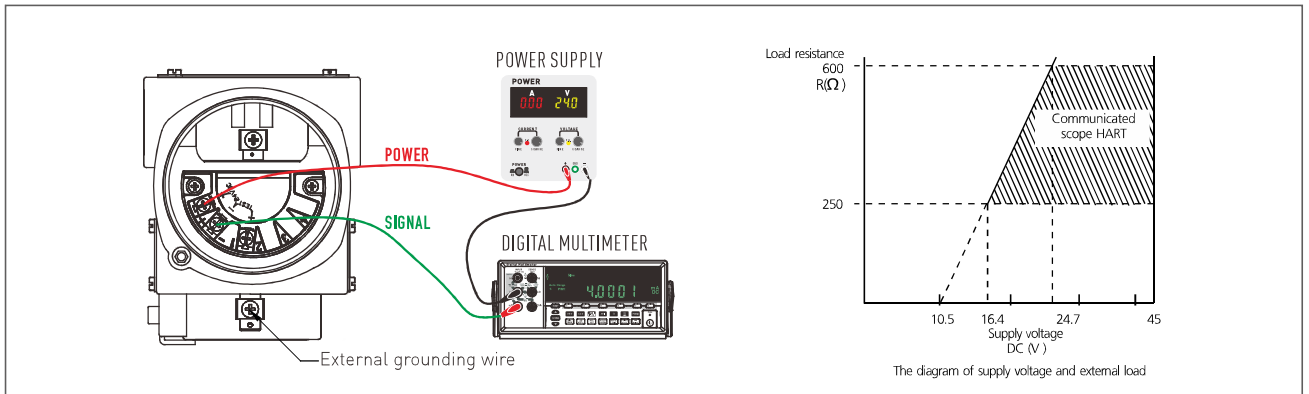
- The highest accuracy be ±0.065%
- Overload pressure up to 7MPa
- Packaged temperature sensor or static pressure sensor inside
- The static error up to <±0.06%/10MPa
- Excellent overvoltage performance
overpressure of 1kPa nominal range chip: 1.5MPa
overpressure of 6kPa nominal range chip: 2.5MPa
- Flexible range of compression
Range ratio up to: 100:1
- Excellent operability & convenient use
Five-digit LCD with backlight
View of units (Pa, kPa, MPa, bar, mbar, %, psi, mmH₂O)
Quickly adjusted through built-in three buttons

Differential Pressure Transmitter

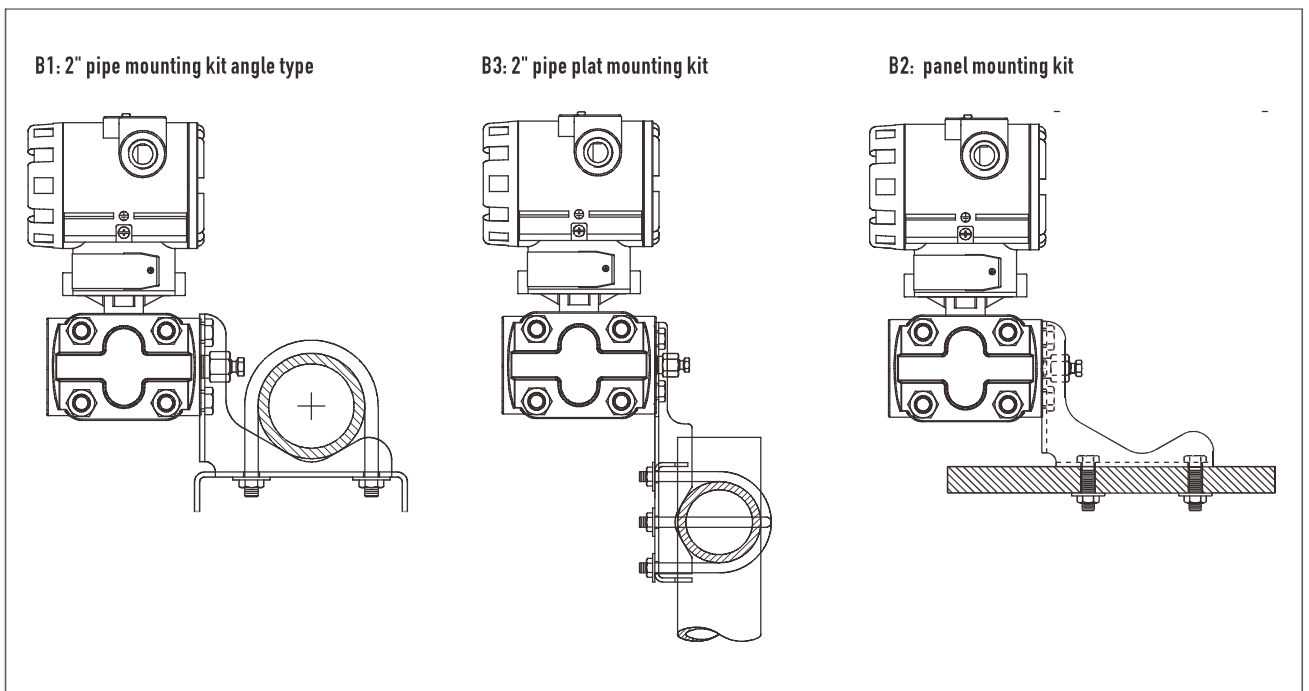
Dimensions (in mm)



Electrical Connection Diagram



Installation With Mounting Bracket



Differential Pressure Transmitter

Ordering Information

Model	Type			
CT-3151-DP	Differential Pressure Transmitter			
Code	Pressure range / overpressure			
S1	0.1...1 kPa	overpressure=1.5MPa		
S2	0.5...6 kPa	overpressure=2.0MPa		
S3	0.5...10 kPa	overpressure=2.0MPa		
S4	1...20 kPa	overpressure=3.5MPa		
S5	1...40 kPa	overpressure=3.5MPa		
S6	1...100 kPa	overpressure=7.0MPa		
S7	2...200 kPa	overpressure=7.0MPa		
S8	5...500 kPa	overpressure=7.0MPa		
Code	Output signal			
A	4...20mA+HART protocol			
Code	Accuracy			
01	0.065%FS			
02	0.1%FS			
05	0.2%FS			
Code	Materials			
	flange	exhaust/outlet valve	membrane	filled liquid
22	304SS	304SS	316LSS	silicone oil
23	316SS	316SS	316LSS	silicone oil
24	316SS	316SS	Hastelloy-C	silicone oil
25	316SS	316SS	Tantalum	silicone oil
33	Hastelloy-C	Hastelloy-C	316LSS gold plating	silicone oil
35	304SS	304SS	316LSS	fluorocarbon oil
44	316SS	316SS	316LSS	fluorocarbon oil
Code	Mounting kit			
B1	2" pipe mounting kit angle type			
B2	panel mounting kit			
B3	2" pipe flat mounting kit			
Code	Process connection			
D42	1/4-18NPT(female)			
D43	1/2-14NPT(female)			
Code	Electrical connection			
E1	M20x1.5			
E2	1/2-14NPT			
Code	Meters			
M0	no meter			
M1	LCD display			
Code	Sealing materials			
01	Fluororubber			
02	NBR			
03	Other requirement			
Code	Explosion-proof			
N	No			
IA	Intrinsic safety and dust explosion-proof approval			
D	Flame-proof and dust explosion-proof approval			

Examples of Ordering Code: CT3151-DP-S3-A-02-22-B1-D42-E1-M1-01-1A