



Datasheet

Monocrystalline silicon
double-flange pressure
transmitter
AI-PTDPD



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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 double-flange pressure transmitter

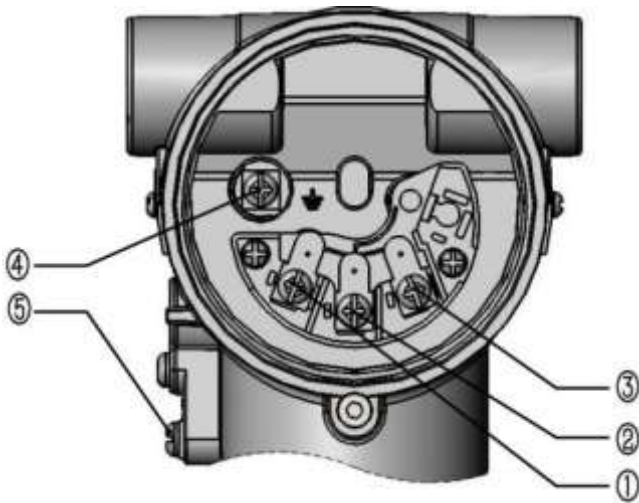
Principle

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%/URL/10°C
Static Pressure Influence	±0.05%/10MPa
Power Supply	15VDC - 32VDC
Power Supply Influence	±0.01% / 10V, negligible
Ambient Temperature	-40°C - 85°C (General); -40°C - 60°C (Explosion-proof)
Measured Medium Temperature	-40°C - 120°C
Storage Temperature	-40°C - 85°C
Display	LCD
Display Module Temperature of the Monitor	-20°C - 70°C

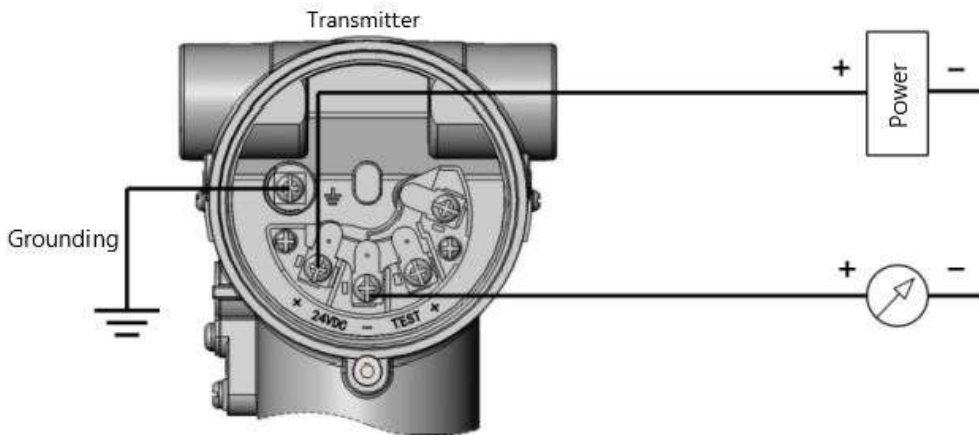
Wiring

Wiring terminals

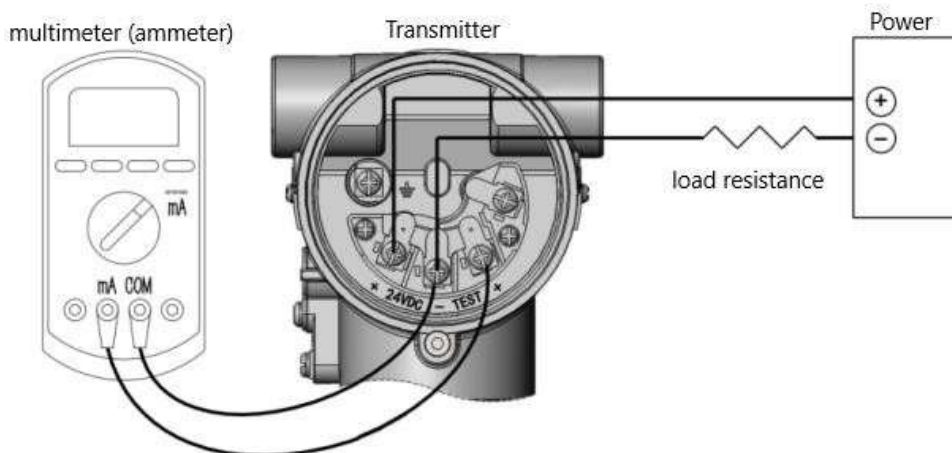


- ① Transmitter power supply positive
- ② Transmitter power supply negative ((4 ~ 20)mA test terminal negative)
- ③ (4 ~ 20)mA test terminal positive)
- ④ Internal grounding screw
- ⑤ External grounding screw

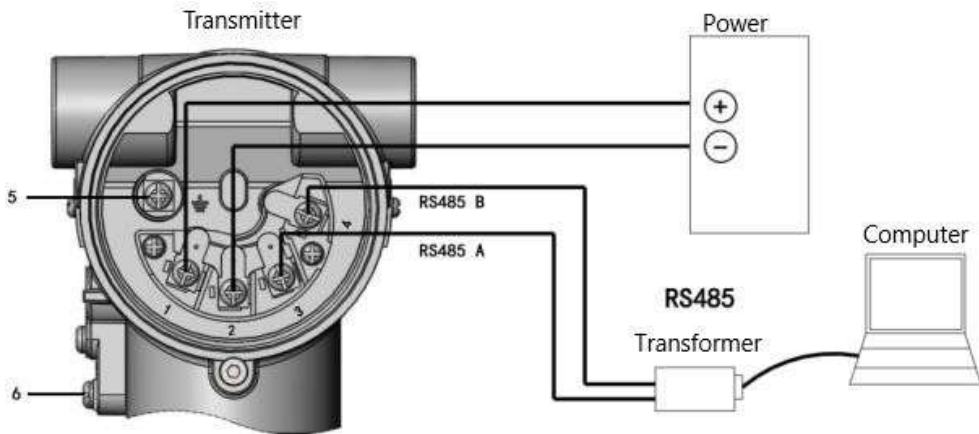
Power cord connection



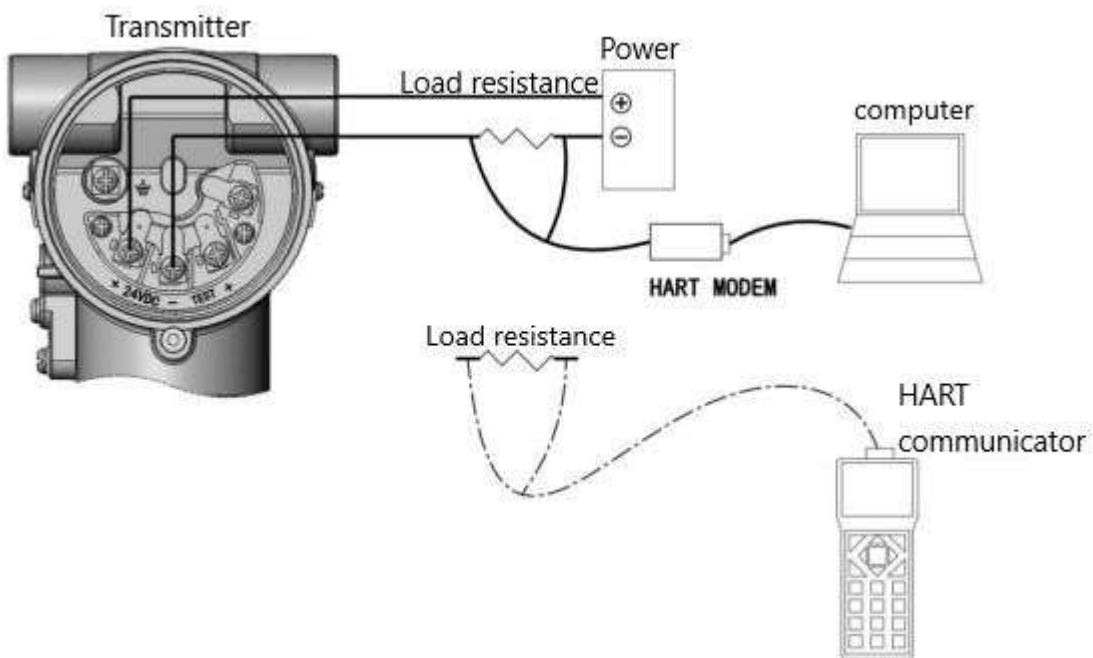
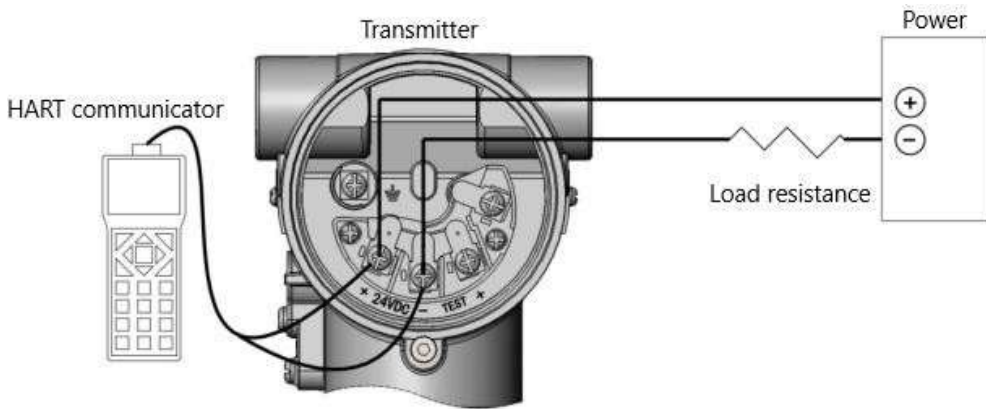
Current Test Meter Connections



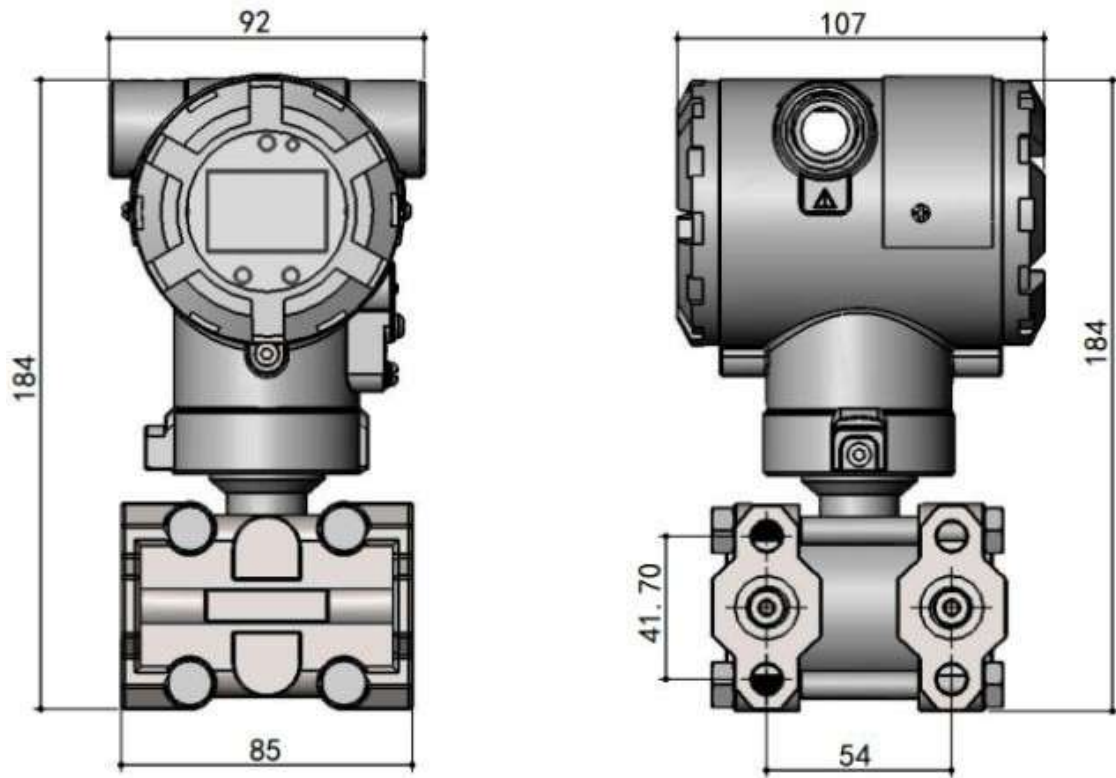
Four-wire RS485 communication connection



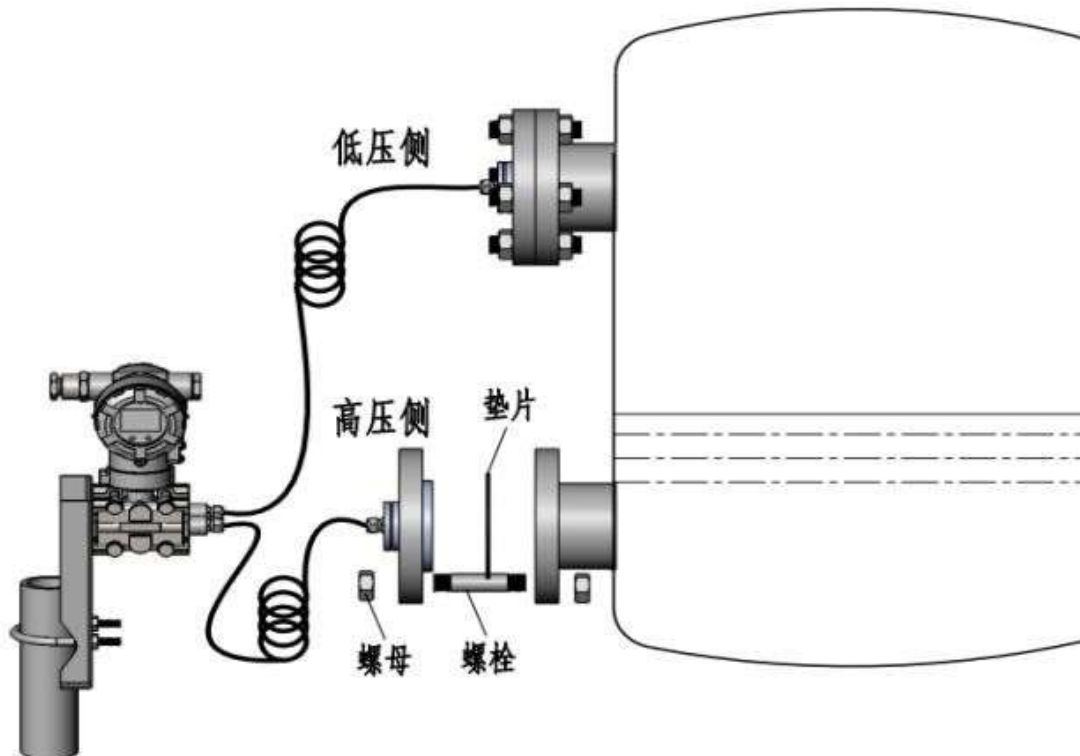
Hart communication connection



Dimensions



Installation



Ordering Code

AI-PTDPD-3F-F-H1-25-00-M1-A7-W1-M3-A-02-PY										Description	
AI-PTDPD-	-	-	-	-	-	-	-	-	-	-	
D											
Measuring range	3F										20kPa
	3H										40kPa
	3K										60kPa
	3L										100kPa
	3										250kPa
	M										1MPa
	3P										3MPa
	3R										Other
	XX										0.2 Class
Accuracy	F										
		H									HG/T20592 PN10/16
		1									
		H									HG/T20592 PN25/40
		3									
Flange Specification		H									HG/T20592 PN63
		4									
		H									HG/T20592 PN100
		5									
		K1									ANSI Class 150
		K2									ANSI Class 300
	X									Other	
	X										
Flange Size		25									DN25(1")
		50									DN50(2")
		80									DN80(3")
		1									DN100(4")
		C									
		X									Other
		X									
Diaphragm projection length		00									0mm
		50									50mm
		1									100mm
		H									
		2									150mm
		H									
		X									Other
	X										
Flange Material and processing		M									304SS
		1									
		M									316SS

