



Datasheet

Monocrystalline silicon  
double flange-mounted  
pressure transmitter  
AI-PTDP



## Datasheet

### Monocrystalline silicon double flange-mounted pressure transmitter AI-PTDP

The circuit design of the transmitter adopts using a modular design with a microprocessor as the core and advanced digital isolation technology, the instrument. The meter has extremely high anti-interference and stability. At the same time, it monitors the transmitter through a built-in temperature sensor. Compensation improves measurement accuracy, reduces temperature drift, and has good long-term stability and reliability. It has the characteristics of high reliability and strong self-diagnosis ability. Structurally, it is very convenient for users to communicate via HART Calibrate, set up and configure the transmitter using the operator.

#### Applications

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

#### Features

- Advanced technology and packaging technology, with leading technology ultra-high performance
- One-way over voltage can reach up to 25MPa
- Microprocessor and advanced digital isolation technology design, making the instrument highly anti-interference and stable
- Powerful 24-bit ADC achieves high accuracy
- The latest one-key clear function, making it safer and faster.



**Monocrystalline silicon double  
flange-mounted pressure  
transmitter**

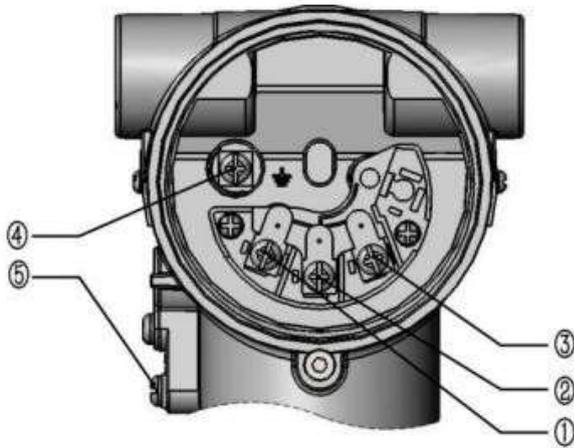
## Principle

The Single-Crystal Silicon Double Flange Liquid Level Transmitter is a precision instrument that measures liquid level based on the principle of differential pressure. It employs a single-crystal silicon sensor to convert the static pressure difference caused by the liquid level into an electrical signal. This signal, typically a 4-20 mA current, can then be used to indicate or control the liquid level in a tank or vessel. The double flange design allows for direct installation on the tank, with each flange connected to a different pressure point, thereby enabling accurate measurement of the liquid level within.

Parameters	
Measuring medium	Gas, steam, liquid
Accuracy	$\pm 0.1\%$ ; $\pm 0.075\%$ ; (Only for some ranges of the whole machine) (Including linearity, hysteresis and repeatability from zero point)
Stability	$\pm 0.1\%/3$ years
Static pressure effect	$\pm 0.05\%/10$ MPa
Power supply	(15~36) VDC
Power supply impact	$\pm 0.001\%$ /10V, negligible
Ambient temperature	(-40~85) $^{\circ}$ C
Measuring medium temperature	(-40~120) $^{\circ}$ C
Storage temperature	(-40~85) $^{\circ}$ C
Display	LCD
Display shows module temperature	(-20~70) $^{\circ}$ C

## Wiring

### 1 Terminal Block

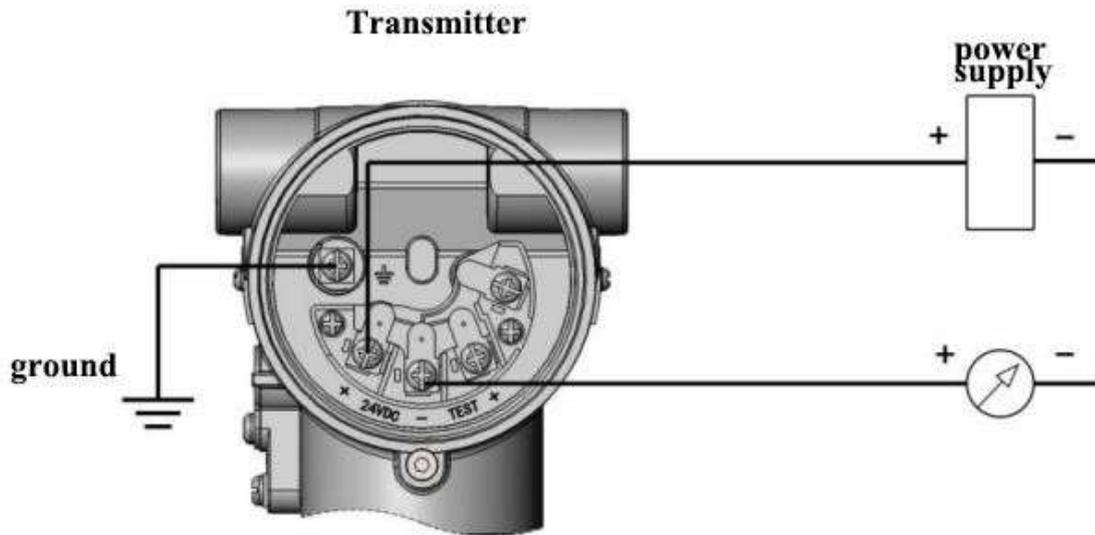


- ① Transmitter power supply positive
- ② Transmitter power supply negative (4~20)mA test terminal negative
- ③ (4~20)mA test terminal positive
- ④ Internal ground screw
- ⑤ External ground screw

**Transmitter terminals**

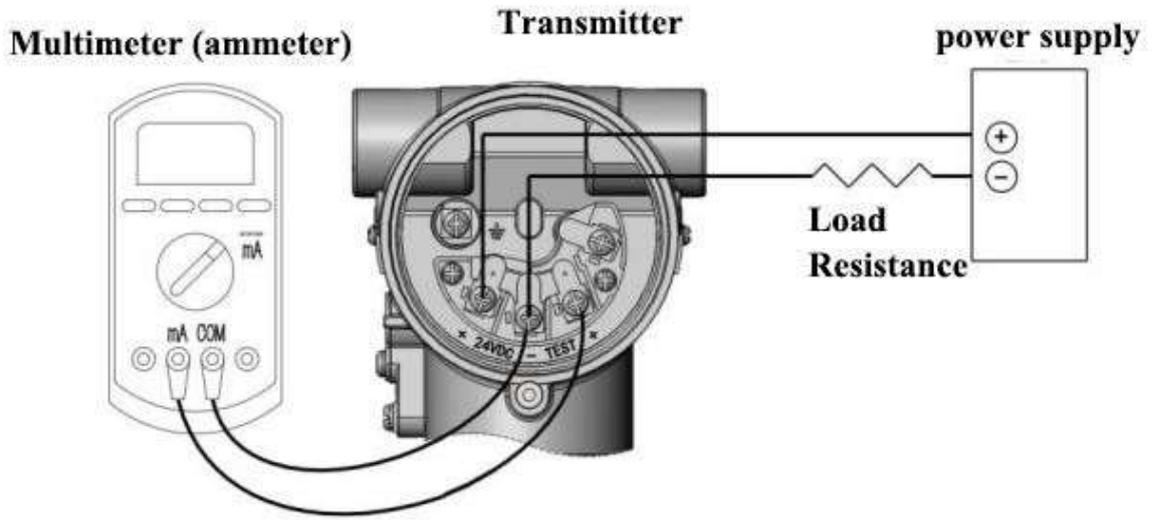
**Note:** Do not connect the power supply signal line to the test terminal, otherwise the test terminal will be destroyed diode inside. If the diode is unfortunately damaged, short-circuiting the test terminals will allow the transmitter to continue working. It's just that this machine cannot be connected to an external test meter. Signal wires do not need to be shielded, but twisted wires are more effective good. Do not route signal wires together with other power wires or close to strong electrical equipment.

### 2 Power cord connection



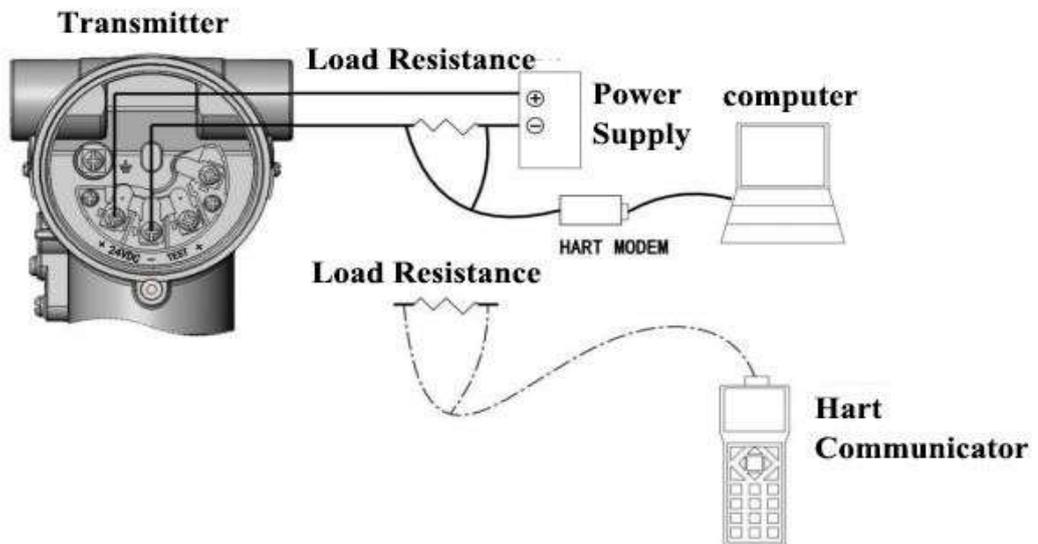
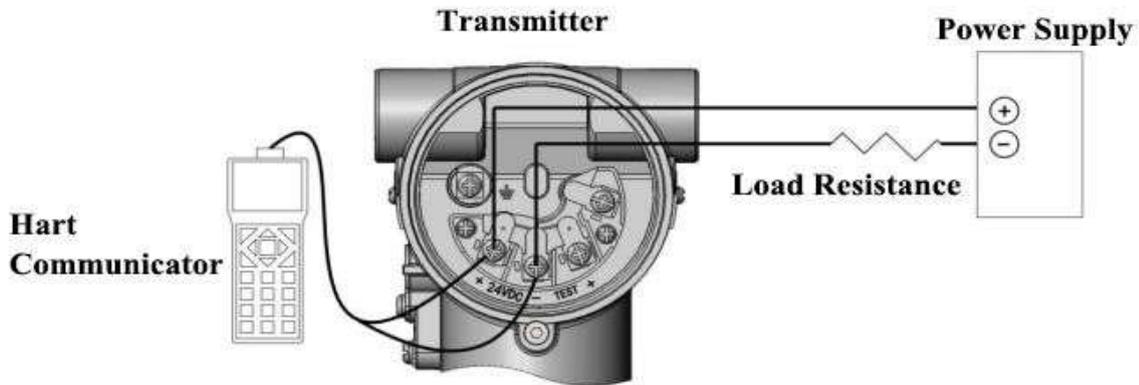
**Transmitter power connection diagram**

### 3 Current test instrument connection

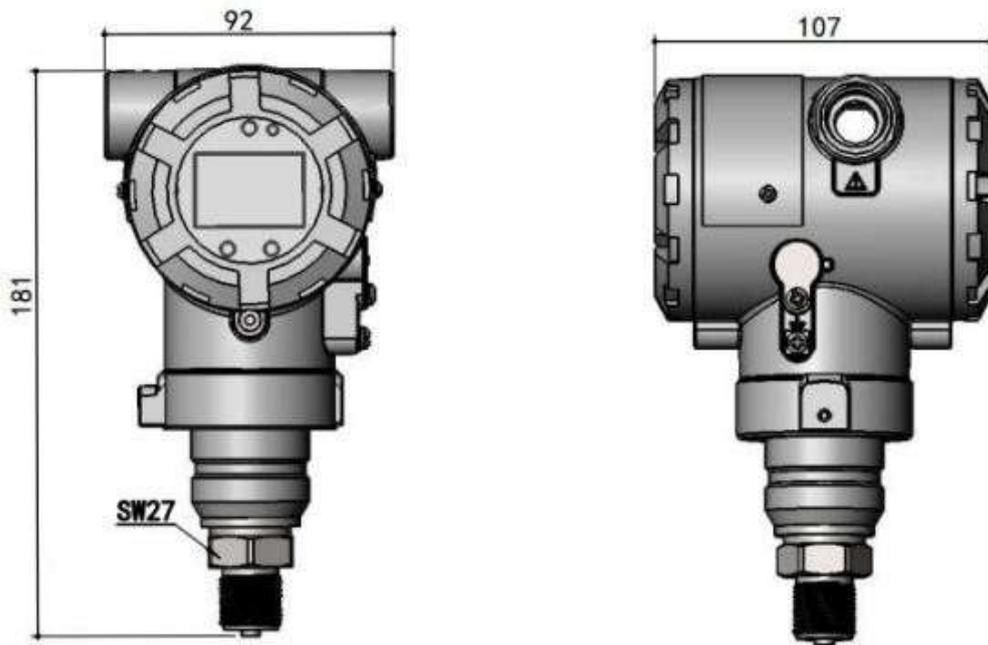


Current test instrument connection

### 4 Hart communication connection

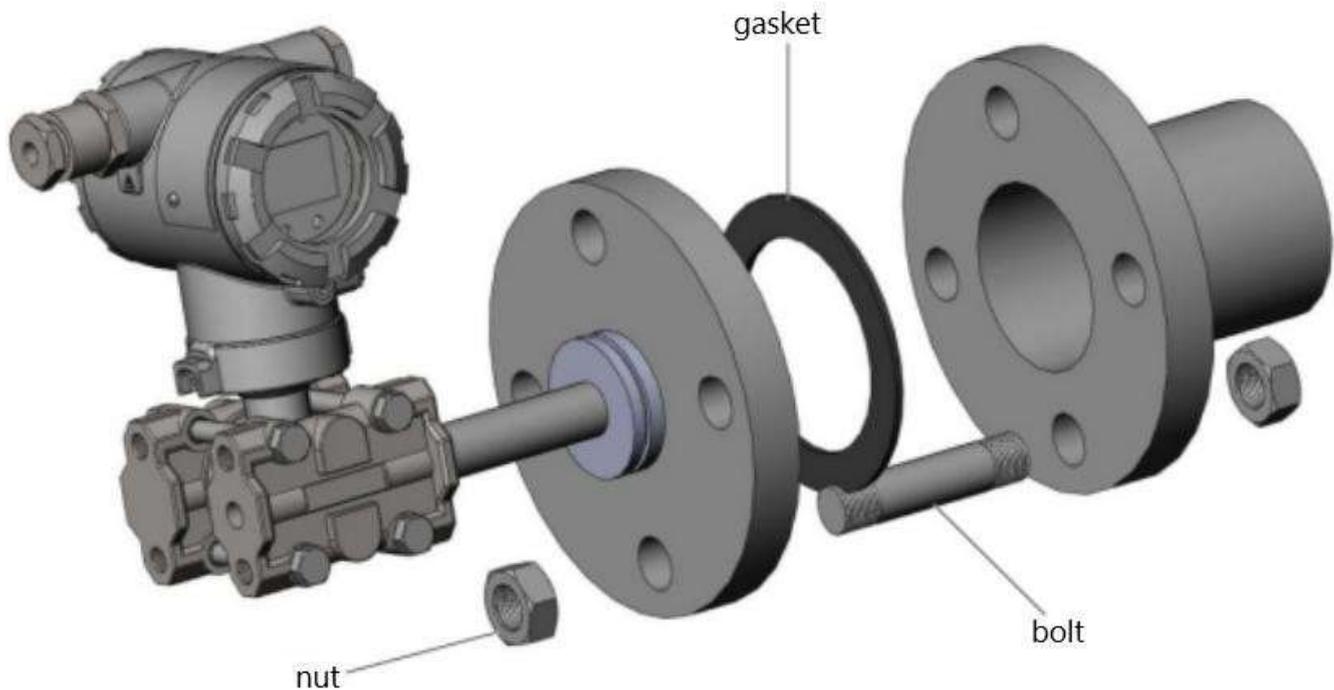


## Dimensions



## Installation

### Flange Level Transmitter Installation



## Ordering Code

AI-PTDP -3E-F-H2-50-00-M1-0-A1-W1-M3-A-02-PF											Description	
AI-PTDP	-	-	-	-	-	-	-	-	-	-	-	-
Measurement Range	3E											10kPa
	3G											30kPa
	3J											50kPa
	3L											100kPa
	3											250kPa
	M											1MPa
	3P											3MPa
	3R XX											
Accuracy		F										0.2 Class
		E										0.1 Class
		D										0.075 Class
Flange Specification			H									HG/T20592 PN10/40
			2									
			H									HG/T20592 PN63
			4									
			K1									ANSI Class 150
			K2									
Flange Size				50								DN50(2")
				80								DN80(3")
				1								DN100(4")
				C								Other
				X								
Diaphragm projection length					00							0mm
					50							50mm
					1							100mm
					H							150mm
					2							Other
Flange Material and processing												304SS
												316SS
												304SS, Negative Pressure Processing

	FN				316SS, Negative Pressure Processing
Display Type	0 1				None Available
Output and Power supply		A 1 A 7 A 5			Two-Wire 4-20mA Two-Wire 4-20mA+H ART RS485, 24VDC
Electrical Interface, Housing Material, and Ingress Protection			W 1 XX		M20×1.5 Cable Gland, Aluminum Alloy, IP67 Other 316LSS
Diaphragm Material				M3 M G T2 XX	Hastelloy C Tantalum Other Silicone Oil
Filling Liquid				A B F Q	High-Temperature Silicone Oil Fluorinated Oil Vegetable Oil
Capillary Length					2m 1m 3m 5m 10m Other
Accessories					Galvanized Carbon Steel Pipe-Mounted Flat Bracket + UNF7/16 Bolt 304SS Pipe Mounted Flat Bracket + UNF7/16 Bolt



### Arka Instruments LLP

Add: Hyderabad Office: H.no: 08-041/1,  
Plot no 132, N C L Enclave, Kompally,  
Hyderabad, Telangana, India - 500067  
Land Line: +91 40359 00418  
Mobile: +91 81438 12346  
Email: admin@arkainstruments.com  
Website: www.arkainstruments.com