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Piezoresistive pressure transmitter

AI-TE general type Manual





Product Overview

The AI-TE universal piezoresistive pressure transmitter is a piezoresistive pressure transmitter developed and manufactured by our company. It can adjust the zero-point and full-scale output. It uses a piezoresistive pressure sensor with high stability and reliability, as well as a high-performance transmitter-specific circuit, resulting in stable and reliable overall performance.

The products have been widely used in fluid pressure detection and control in industries such as petroleum, chemical, power, hydrology, and geology.

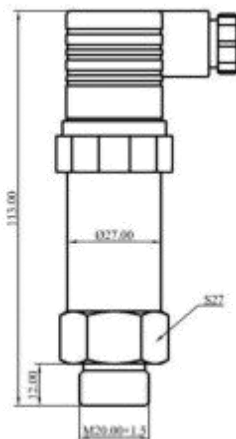
Features

- ✓ Reliable performance, safe and easy to use
- ✓ It has short circuit protection and reverse polarity protection.
- ✓ It can measure gauge pressure, absolute pressure, and sealing reference pressure.
- ✓ Design requirements of ExiaIICT6 conforming to national standard GB3836.4

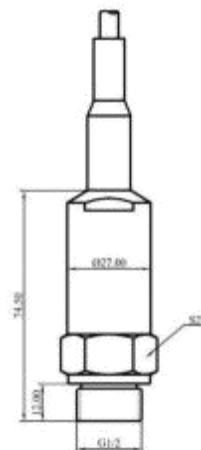
Application areas

- ✓ Petroleum, chemical, and power industries
- ✓ Urban water supply and hydrological exploration
- ✓ Equipment accessories, hydraulics and other industries

External structure: (unit: mm)



Hirschmann type



Cable type

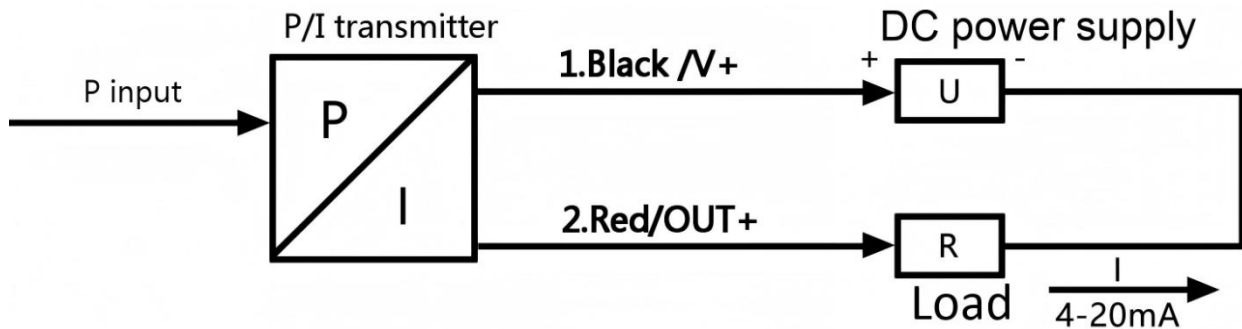


Technical parameters:

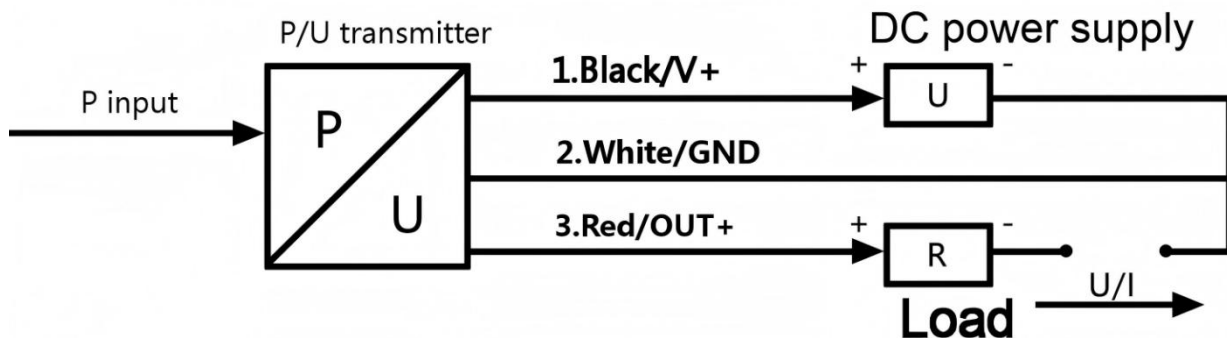
Pressure parameters		
Range	-0.1MPa… 0MPa~0.01 MPa… 100MPa	
Overload	2 times full-scale pressure or 110 MPa (whichever is lower)	
Type of stress	Gauge pressure, absolute pressure, sealed gauge pressure	
Electrical parameters		
Output type	Current type	Voltage type
Power supply	9~30V DC	12~30V DC
Output signal	4mA ~ 20mA DC (two-wire system)	0/1V~5/10V DC (three-wire system)
Load resistor	≤ (U-9) /0.02	≥10k
Insulation resistance	100MΩ, 100V DC	
Structural parameters		
Enclosure	Stainless steel	
Sensor	316L stainless steel	
Sealing ring	Fluororubber	
Cable	∅ 7.5mm polyethylene special cable	
Protection level	IP65 (plug-in type)	IP68 (cable type)
Environmental conditions		
Media suitability	Various fluids that do not corrode 316L stainless steel and fluororubber	
Compensation temperature	-10℃ to +80℃	
Operating temperature	-30℃~+80℃	
Storage temperature	-40℃~125℃	
Performance indicators		
Accuracy	±0.25% FS (typical)	±0.5%FS (maximum)
Zero-point temperature coefficient	0.03%FS/℃ (≤100kPa); 0.02%FS/℃ (> 100kPa)	
Full-scale temperature coefficient	0.03%FS/℃ (≤100kPa); 0.02%FS/℃ (> 100kPa)	
Long-term stability	±0.3%FS/year (maximum)	

The pin definitions for plug-in type and the wire color definitions for cable type are as follows:

The electrical connection method for a two-wire 4-20mA ADC output is shown in the following figure:



The electrical connection method for a three-wire 0.5V~4.5V/0~5V DC output is shown in the following diagram :



Pin	Two-line system	Three-line system	Cable color	Two-line system	Three-line system
1	Positive power supply: +V	Positive power supply: +V	Black	Positive power supply: +V	Positive power supply: +V
2	Signal: + OUT	Public side: GND	Red	Signal: + OUT	Positive output: + OUT
3	Null	Signal: + OUT	White	Null	Public side: GND

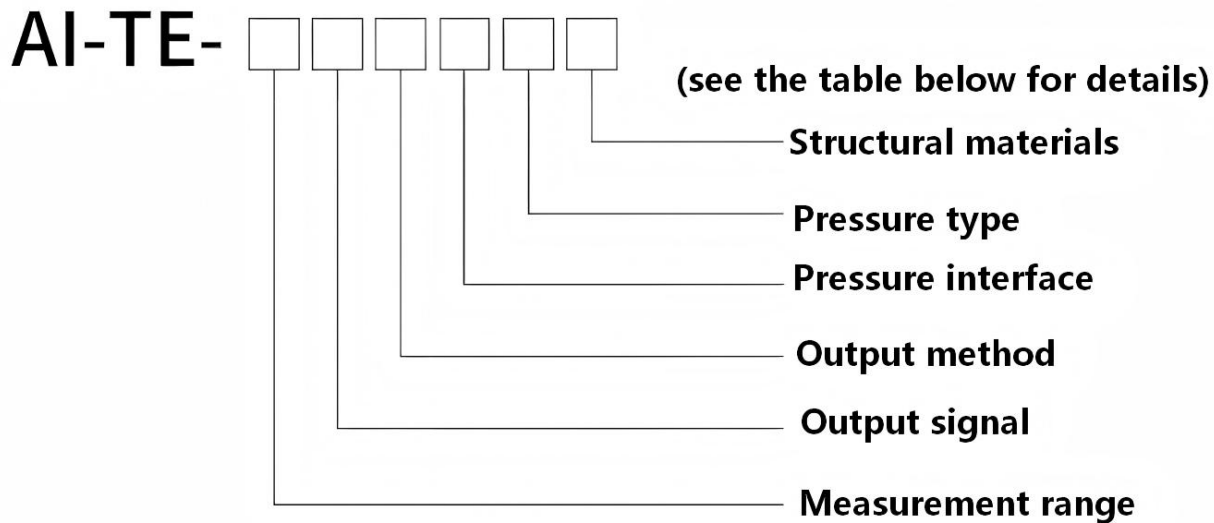


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Selection Guide



Item number	Range ability	Output signal	Output mode	Pressure interface	Pressure datum	Structural material
AI-TE	[0~100]kPa	E	B1	C5	G	22

Illustrate:

Item number: AI-TE-[0 ~ 100]kPa-E-B1C5G-22

Product model: AI-TE general-purpose series of piezoresistive pressure transmitters; **Range ability:** [0~100]kPa;

Output signal: 4-20mA; **Output mode:** Hersman connection output;

Pressure interface: M20×1.5 external thread pressure interface; **Pressure datum:** Gauge pressure type;

Structural material : Isolation diaphragm : Stainless steel 316L , interface : Stainless steel, shell: Stainless steel;

Range ability	Measurement range : -0.1MPa ~ 0MPa~0.01 MPa ~ 100MPa [0~X] kPa or MPa X: Actual measurement range	
Output signal	E	4mA ~ 20mA DC
	F	1V ~ 5V DC
	J	0V ~ 5V DC
	V	0V ~ 10V DC



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Output mode	B1	Hersman connection output
	B2	The cable is connected to the output
Pressure interface	PC3	G1/2 The external thread pressure interface is of flush membrane type
	PC5	M20×1.5 The external thread pressure interface is of flush membrane type
	C3	G1/2 External thread pressure interface
	C5	M20×1.5 External thread pressure interface
Pressure datum	G	Chief property and specification
	A	Absolute pressure type
	S	Seal gauge pressure
Structural material	22	Isolation diaphragm: Stainless steel 316L Interface: Stainless steel Shell: Stainless steel
	24	Isolation diaphragm: Stainless steel 316L Interface: Stainless steel 316L Shell: Stainless steel 316L

Selection Tips:

1. Please try to fully understand the medium conditions, pressure range, and other operating status of the pressure detection point. Avoid unnecessary losses caused by improper use of the product.

2: Although the product is designed with various protective measures, for extreme applications, such as applications with strong lightning strikes, it is necessary to ensure that the power supply is reliably grounded and to install lightning protection devices to minimize the probability of product failure.

3. For products with special applications, our company can provide special design and manufacturing services. Customers are welcome to inquire and discuss.



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