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AI-TS Piezoresistive pressure transmitter small-sized Manual





Product overview

The AI-TS piezoresistive pressure transmitter, a compact model, is a small-sized, highly stable pressure transmitter developed and manufactured by our company. It utilizes a highly stable and reliable piezoresistive pressure sensor and high-performance dedicated transmitter circuitry, resulting in stable and reliable overall performance. It offers multiple pressure ranges and signal output methods, along with a variety of connectors and pressure interfaces to choose from.

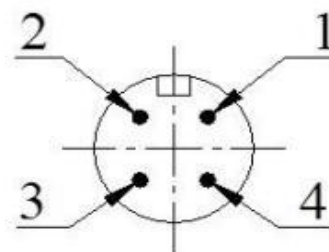
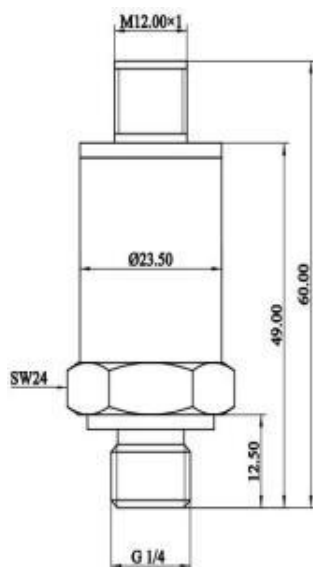
Features

- ✓ All stainless steel design, compact size, lightweight, and easy to install.
- ✓ The sensor is a diffused silicon pressure sensor with a 316L stainless steel diaphragm.
- ✓ After undergoing temperature compensation and aging screening, its performance is stable and reliable.
- ✓ The circuit features multiple layers of protection and high reliability, meeting EMC requirements.
- ✓ High precision, high stability.

Application areas

- ✓ Petroleum, chemical, and power industries
- ✓ Urban water supply, hydrological exploration, geology
- ✓ Industries such as fluid pressure detection and control

External structure: (unit: mm)



Electrical connection M12*1

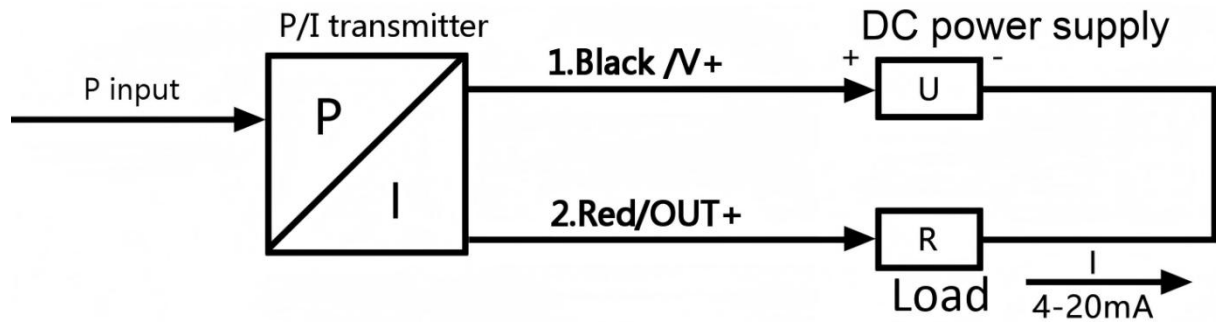


Technical parameters:

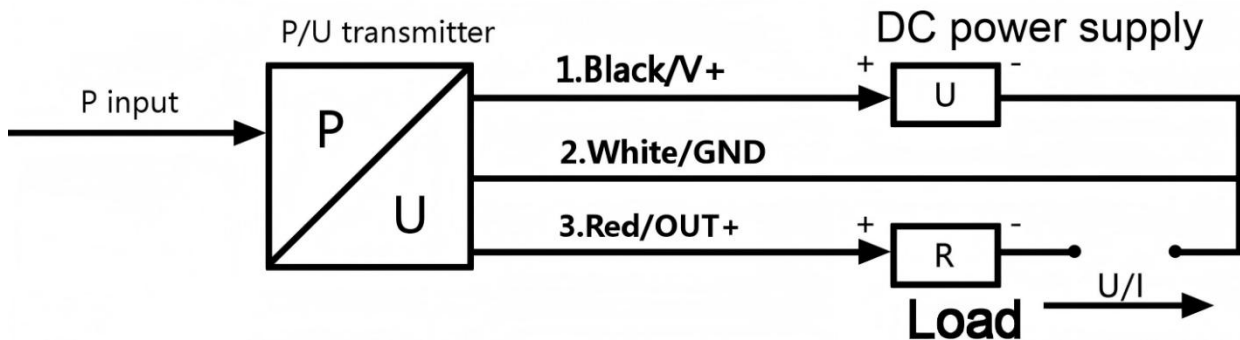
Pressure parameters		
Range	0MPa~10MPa~40MPa	
Overload	2 times full scale	
Type of pressure	Gauge pressure, absolute pressure, sealed gauge pressure	
Electrical parameters		
Output type	Current type	Voltage type
Power supply	6.5~32V DC	5V DC / 24V
Output signal	4mA ~ 20mA DC (two-wire system)	0.5V~4.5V / 0~10V DC (three-wire system)
Load resistor	$\leq (U-9) / 0.02$	$\geq 10k$
Insulation resistance	100M Ω , 100V DC	
Structural parameters		
Enclosure	Stainless steel	
Protection level	IP65	
Environmental conditions		
Media suitability	Various media that do not corrode stainless steel	
Compensation temperature	-10°C~80°C	
Operating temperature	-30°C~+80°C	
Storage temperature	-40°C~125°C	
Performance indicators		
Accuracy	$\pm 0.5\%FS$ (Maximum)	$\pm 0.25\%FS$ (Minimum)
Zero-point temperature coefficient	0.03%FS/°C($\leq 100kPa$); 0.02%FS/°C($> 100kPa$)	
Full-scale temperature coefficient	0.03%FS/°C($\leq 100kPa$); 0.02%FS/°C($> 100kPa$)	
Long-term stability	$\pm 0.3\%FS/year$ (maximum)	

Electrical connection

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



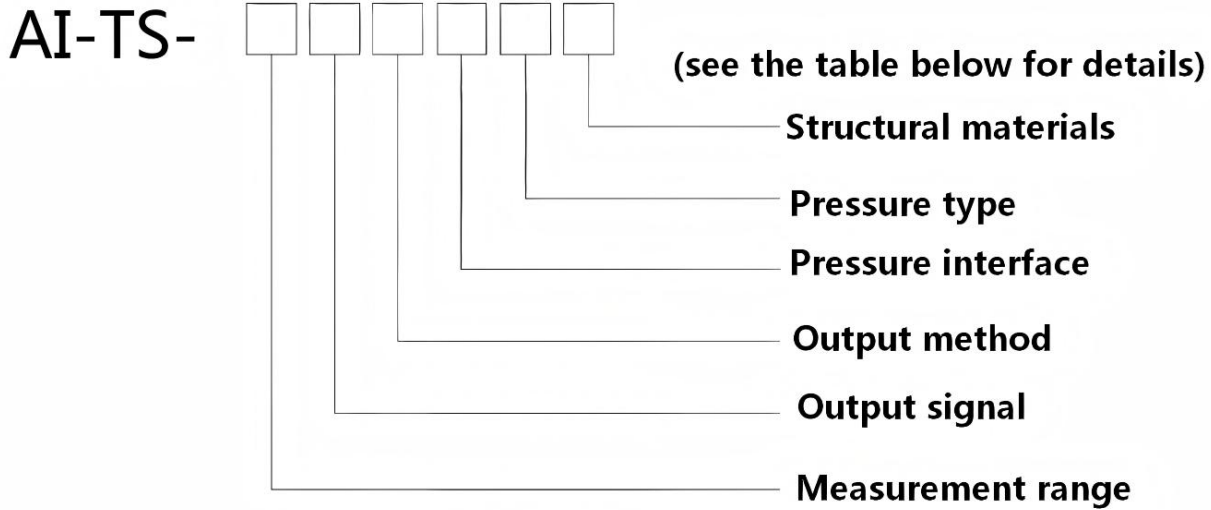
The electrical connection method for a three-wire 0.5V~4.5V/0~5V DC output is shown in the following diagram :



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	Public side: GND
3	Null	Signal: + OUT	White	Null	Positive output: + OUT
4	Grounding	Grounding	Yellow	Grounding	Grounding



Selection Guide



Item number	Range ability	Output signal	Output mode	Pressure interface	Pressure datum	Structural material
AI-TS	[0~40]MPa	E	B2	C2	G	22

Illustrate:

Item number: AI-TS- [0~40] MPa – E – B2 C 2G – 22

Product model: AI-TS Pressure transmitter small volume series; **Range ability:** [0~40]MPa;

Output signal: 4-20mA; **Output mode:** Connector output;

Pressure interface: G1/4 Internal/external threads; **Pressure datum:** Gauge type;

Structural material:

Interface: Stainless steel 316L, shell: Stainless steel;

Range ability	Measurement range: 0MPa~10MPa~40MPa [0~X] bar X: Actual measurement range	
Output signal	E	4mA ~ 20mA DC
	J	0V ~ 5V DC
	K	0.5V ~ 4.5V DC
Output mode	B2	Connector output
	B4	The cable is connected to the output



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Pressure interface	C1	M20*1.5 Internal/External threads
	C2	G1/4 Internal/External threads
	C3	G1/2 Internal/External threads
Pressure datum	G	Gauge Type
Structural material	22	Interface: Stainless steel 316L Shell: Stainless steel
	24	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, the power supply should be reliably grounded and a large-scale lightning protection device should be installed to minimize the probability of product failure.

3: If there are any special requirements regarding electrical interfaces, on-site installation methods, etc., please communicate with the sales engineer in advance to select the appropriate model.

4: 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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