Datasheet

Pressure transmitter

AI-PT30

Arka Instruments LLP

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AI-PT30 Series pressure transmitter is kind of device based on pressure layer, which inside expert integrate circuit can transform sensor milli-volt signal to standard far distance transmission current signal, and it can be directly joined with computer joint clip, control instrument ,aptitude instrument or PLC etc. conveniently. The series' product is applied extensively in the professions, such as the industry process control, petroleum, chemical engineering and metallurgy etc. Carry the distance delivers and can adopt electric current exportation method.

Applications

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- Dyeing industry
- Air tightenss test
- HVAC
- Water supply
- Agricultural irrigation
- Food industry
- Mud measurement
- Vacuum equipment
- Medical equipment

AI-PT30

Features

- Compact structure and easy installation
- Advanced Diaphragm/Oil Filled Isolation Technology
- High stability, high reliability
- Anti-vibration, anti-radio frequency interference.
- 316L stainless steel isolation diaphragm structure.
- High precision, all stainless steel structure.
- Micro amplifier, voltage, current, RS485 signal output.
- Wide range with multiple pressure measurement
- Vibration and shock resistance.

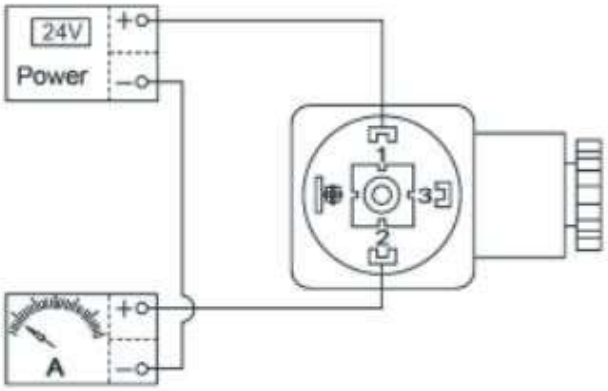
Principle

Pressure Transmitter are devices that convert the mechanical force of applied pressure into electrical energy. This electrical energy becomes a signal output that is linear and proportional to the applied pressure. And a transmitter sends signals in milliamps (mA). At present, various types of pressure sensors, such as diffused silicon, capacitive, silicon sapphire, ceramic thick film, metal strain electric type are widely used in various industries. AI-PT30 is diffused silicon type pressure transmitter.

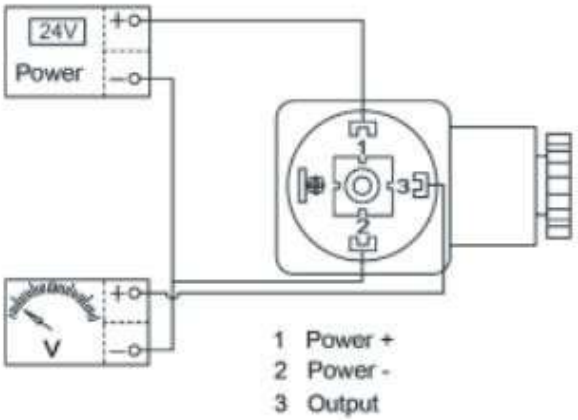
Parameters	
Power Supply	P0: (4~20)mA output:(10~32)V; (0~10)V output:(12~32)V; RS485 output:(8~32)V;
Output	(4~20)mA;(1~5)V; (0~10)V;(0~5)V;RS485
Accuracy	0.2%、0.25%、0.5%
Measurement range	-0.1…0…60Mpa
Pressure type	gauge pressure, adiabatic pressure and sealed pressure
Compensation temperature	-10℃～70℃
Working temperature	-20℃~85℃
Medium temperature	-20℃~85℃
Storage temperature	-40℃~85℃
Zero-point temperature drift	±0.3%FS/10℃
Sensitivity temperature drift	±0.3%FS/10℃
Overload pressure	(0.035~10)MPa (150%FS) (10~60)MPa (125%FS)
Long-term stability	±0.2%FS/year
Response time	RS485 output≤100ms（up to 90％FS） Current and Voltage output≤10ms（up to 90％FS）
Insulation	20MΩ/250VDC
Ingress protection	IP65
Load Resistance	(U-9V)/0.02A

Wiring

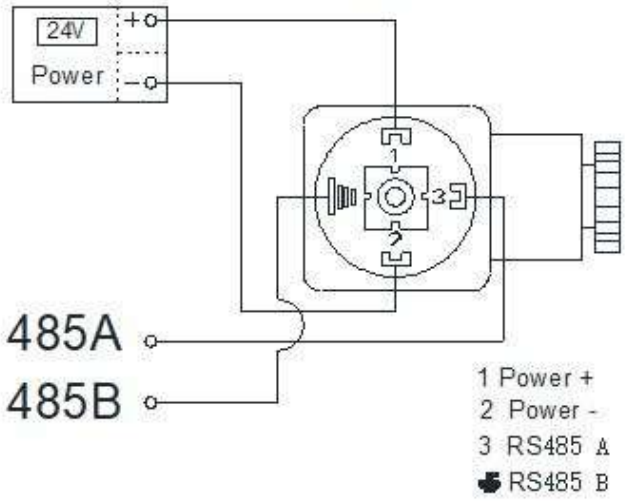
Wiring of DIN connector type as follows:



Current output



Voltage output

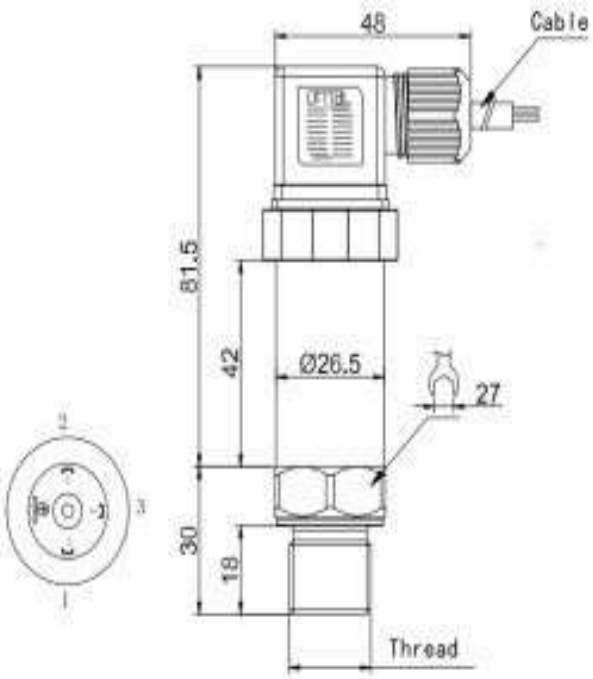


RS485 output

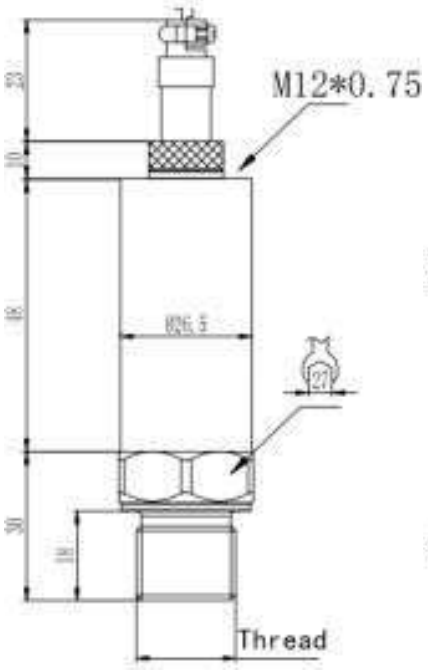
Wiring of cable connector type as follows:

Current:	Red Wire: 24V +
	Green Wire: Current Output
Voltage:	Red Wire: 24V +
	Green Wire: 24V -
	Yellow Wire: Voltage Output
RS485：	Red Wire：24V +
	White Wire：24V -
	Green Wire：RS485+
	Yellow Wire：RS485-

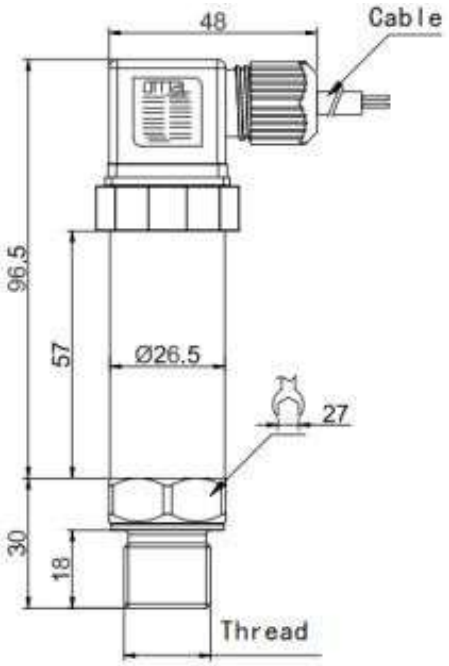
Dimensions



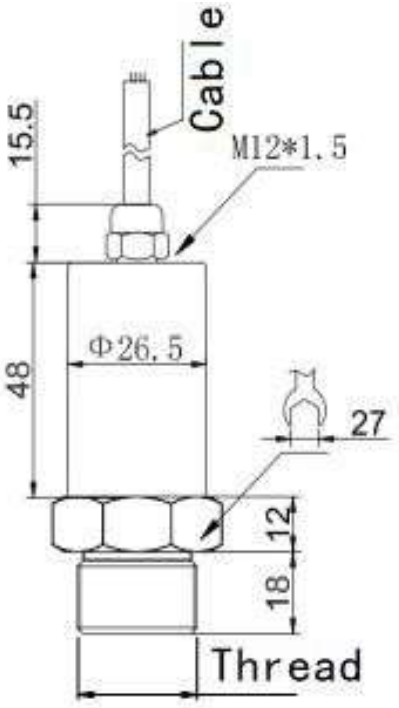
DIN connector type



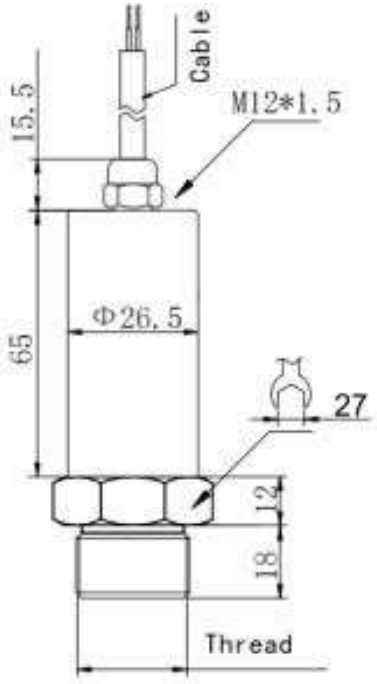
M12 connector type



DIN connector type (RS485 output)



Cable connector type (Current voltage output)



Cable connector type (RS485 output)

Installation

(1) Pressure transmitter should be installed as far as possible in the place where temperature fluctuation is small, while avoiding vibration and shock.

(2) The pressure transmitter can be directly installed at the measuring point. Connection threads: M20*1.5 or 1/2-NPT. Flange Interfaces of various specifications for special purposes.

(3) Transmitter is suitable for measuring the pressure of various general corrosive liquids and gas. Transmitters manufactured according to explosion-proof requirements can be used in different explosive environments according to the explosion-proof grade of products, and their related equipment should also have explosion-proof function. For strong corrosive medium (such as acid, alkali) and corrosion resistant structure, the orders should be placed according to special requirements.

(4) Do not route the signal line through the conduit or the open cable with the power line, or near high-power equipment.

(5) If the pressure pipes are used in the transmitter, attention should be paid to that the strong corrosive or superheated media should not contact the transmitter, so as to prevent the sediment from precipitating in the pressure pipes, and the pressure pipes should be as short as possible. When measuring steam or other high temperature medium, the working temperature of the transmitter should not exceed the limit. When used for steam measurement, the pressure pipes should be filled with water to prevent the transmitter from contacting directly with the steam.

Ordering Code

AI-PT30 -G-1A-K-A1-L2-A-WA-02-PA										Description
AI-PT30	-	-	-	-	-	-	-	-	-	
Pressure Type	G									Gauge Pressure
	A									Absolute Pressure
	X									Other
Measurement Range		1A								-100-0kPa
		1B								-100-100kPa
		1C								-100-1000kPa
		1L								0-10kPa
		1M								0-20kPa
		1N								0-30kPa
		1Q								0-50kPa
		1S								0-100kPa
		2A								0-0.6MPa
		2B								0-1MPa
		2C								0-1.6MPa
		2D								0-2.5MPa
		2E								0-4MPa
		2H								0-10MPa
		2K								0-20MPa
		2L								0-25MPa
		2M								0-30MPa
		2N								0-40MPa
		2P								0-60MPa
		XX								Other
Accuracy			K							0.5 Class
			G							0.25 Class
			F							0.2 Class
Output and Power Supply				A1						Two-Wire 4-20mA
				A2						1-5V，24VDC
				A3						0-10V，24VDC
				A4						0-5V ， 24VDC
				A5						RS485 ， 24VDC
				A6						0.5-4.5V，5VDC
				XX						Other
Thread Type					L2					M20×1.5
					G2					G1/2
					G1					G1/4
					NA					NPT1/4
					NC					NPT1/2
					L1					M14×1.5
					XX					Other
Diaphragm and Thread Type Material						A				316LSS，304SS
						B				316LSS，316LSS

	X		other
Electrical interface, housing material and ingress protection		WA	Hersman connector, 304SS, IP65
		WB	Hersman connector, 316LSS, IP65
		WG	Aviation Plug, 304SS, IP65
		WH	Aviation Plug, 316LSS, IP65
		WN	Direct leads, 304SS, IP65
		WP	Direct leads, 316LSS, IP65
		WT	Direct leads, 304SS, IP68
		WU	Direct leads, 316LSS, IP68
		XX	other
Cable length		02	2m
		05	5m
		10	10m
		00	0m
		XX	other
Accessories			PA Carbon Steel Thread Base
			PB 304SS Thread Base
			PD 304SS Condensation Bend

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