West Lake Bay

PTC capacitive transmitter

Product overview

The PTC miniaturized capacitive pressure (differential pressure) transmitter is a new transmitter produced by our company introducing foreign advanced technology and equipment, the key raw materials, components and parts are imported, the whole machine is subject to strict assembly and test, and the product is characterized by advanced design principle, complete variety and specification and simple installation and use. It can be replaced directly with other traditional well-known similar products and has very strong universality and substituting capacity. To be suitable for continuous improvement and development of automation level in China, the series products are designed to be delicate and exquisite, and the intelligent function with HART field bus protocol is pushed out.

Operating principle

When the process pressure passes through the isolation diaphragm on both sides or one side, the filling fluid will be transferred to the central measuring diaphragm in chamber 8. The central diaphragm is a tensioned elastic element and produces the corresponding deformation displacement for the pressure difference between the two sides acting on it whose displacement is proportional to the differential pressure with maximum displacement being about 0.1mm. The differential capacitance on the capacitance plate is formed by the displacement transformation and the differential capacitance is converted into 4-20mADC signal output by the electronic circuit.

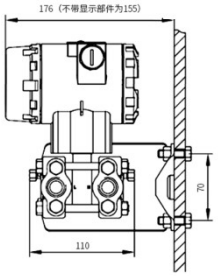
Product features

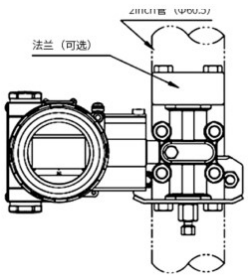
- High precision, good stability and adjustable damping;
- Good one-way overload protection characteristic;
- Anti-explosion structure and all-weather use;
- Intelligent HART field bus protocol;
- Two-wire system (four-wire system under the special situation);
- Solid-state components and plug-in printed substrate;
- Small, light, firm and anti-vibration;
- Range and null point continuously adjustable externally;
- Positive transfer: 500%; Negative transfer: 600%;
- No mechanical movable parts and less maintenance work;
- All series of unified structure and high interchangeability of parts;
- Corrosion-resistant material (such as 316L, TAN, HAS-C and MONEL can be chosen as the diaphragm material touching the medium.

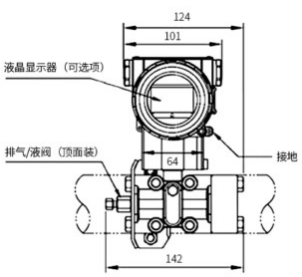
Technical parameters

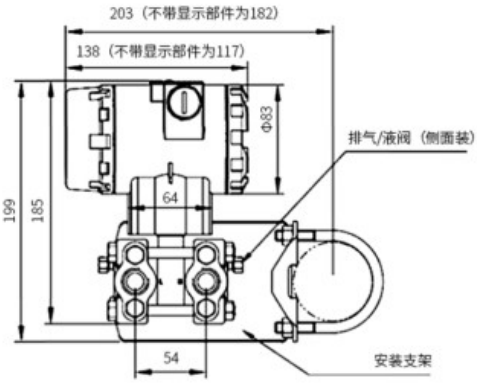
- Without migration, silicone oil filling under standard operating conditions, and 316 stainless steel isolation diaphragm;
- Accuracy: ±0.25%, ±0.5% and ±0.1% (intelligent type);
- Dead zone: None (≤0.1%);
- Stability: Not exceeding the absolute value of fundamental error of the maximum range within six months;
- Influence of vibration: When the vibration frequency is 200Hz in any arbitrary axial direction, the error is ±0.05% / g of upper limit of measurement scope;
- Power supply effect: Less than 0.005%V of the output range;

Load effect: If the power supply is stable, the load has no effect.









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不带显示部件为 182	The one without display block: 182
排气/液阀	Air (liquid) evacuation valve
安装支架	Mounting bracket
法兰（可选）	Flange (optional)
液晶显示器（可选项）	LCD (optional)
排气/液阀（顶面装）	Air (liquid) evacuation valve (installed on the top surface)
接地	Grounding

Product model selection

PTC	Capacitive transmitter					
	Product classification DR Slight differential pressure transmitter　DP Differential pressure transmitter HP High hydrostatic pressure differential pressure　AP Absolute pressure transmitter GP Pressure transmitter　LT Flange liquid level transmitter LD/LG Remote differential pressure/pressure transmitter					
		Measuring range 2 0-0.1~1.0kpa　3 0-0.6~6kpa　4 0-4~40kpa　5 0-20~200kpa 6 0-70~700kpa　7 0-200~2000kpa　8 0-700~7000kpa 9 0-2000~20000kpa　0 0-4000~40000kpa				
			Output E Non-intelligent type (4~20mA) S Intelligent type (Hart protocol+4~mA) J Intelligent square-root output (Hart protocol+4~mA)			
				Structure material 22 Flange joint/blow-down valve/isolation diaphragm/filling liquid: 316/316/316L/silicone oil 23 Flange joint/blow-down valve/isolation diaphragm/filling liquid: 316/316/hastelloy C/silicone oil 24 Flange joint/blow-down valve/isolation diaphragm/filling liquid: 316/316/monel/silicone oil 25 Flange joint/blow-down valve/isolation diaphragm/filling liquid: 316/316/tantalum/silicone oil 33 Flange joint/blow-down valve/isolation diaphragm/filling liquid: Hastelloy C/ hastelloy C/ hastelloy C/silicone oil 34 Flange joint/blow-down valve/isolation diaphragm/filling liquid: Hastelloy C/ hastelloy C/ hastelloy C/silicone oil 35 Flange joint/blow-down valve/isolation diaphragm/filling liquid: Hastelloy C/ hastelloy C/tantalum/silicone oil 44 Flange joint/blow-down valve/isolation diaphragm/filling liquid: Monel/monel/monel/silicone oil	
					Static pressure A 1Mpa　B 4Mpa　C 10Mpa　E 25Mpa　F 32Mpa	
						Additional function/optional M1 0-100% linear dial indicator M2 LED displayer meter M3 LED display list B1 Tube bending mounting plate B2 Plate bending mounting plate B3 Tube flat mounting plate E Flame-proof type DIIBT4 D Intrinsic safety type IAIICT6 C0 1/2-14NPT taper pipe female adapter C1 1/2-14NPT lead pressure joint back welding connecting tube 4 C2 T-square threaded connector M20X1.5
PTC-						

* Influence of ambient temperature on measurement accuracy:

The index accuracy of the transmitter is the accuracy achieved when the ambient temperature, static pressure and supply voltage are relatively stable. In the actual production process, the parameters (such as ambient temperature, static pressure and supply voltage) may change. Under such condition, the accuracy index will lower. Especially, the influence of ambient temperature change is larger. The effect of ambient conditions on measurement accuracy is expressed with full scale relative value. For example, when the ambient temperature is 28℃, the calculation formula of PTC-GP7S22BM2DC1 L measuring range is as follows: ±(0. 08% measuring range+ 0. 09%U RL) , M The calculation formula of the measuring range is as follows: ± (0.07% measuring range+ 0. 02% URL) , wherein: U RL is a very large measuring range, and the L and M measuring range is 10 kPa and 100 kPa, respectively. Influence quantity when the ambient temperature changes to 28℃ based on the measuring range of 1kPa, 1. 58kPa, 2kPa, 3kPa, 4kPa and 6 kPa upon calculation