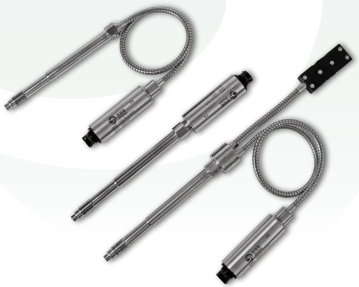
Version 2.0

Ziasiot

Operation Instructions

PTOG High temperature Melt Pressure Sensor (Transmitter)

PTOG1/PTOG2/PTOG3/PTOG4 series



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01 Product introduction

The melt temperature sensor (transmitter) is an instrument to measure the melt pressure in the high temperature area (referred to as the sensor and transmitter). The digital-analog integrated circuit design, please follow the following instructions for storage and operation to ensure the maximum service life of the product.

The products comply with the national JJG860-2015 "Pressure sensor (static) verification Regulations" and JJG882-2019 "Pressure transmitter Verification Regulations".

02 Product Model and Specifications

Product Model: PTOG1 (straight rod type), PTOG2 (hose type), PTOG3 (temperature and pressure double measurement type), PTOG4 (cavity type)

2.1 High temperature melt pressure sensor

Definition: Output signal 3.33m V/V or other m V/V products

Measuring range: (0-10) MPa, (0-20) MPa, (0-35) MPa, (0-50) MPa, (0-70) MPa, (0-100) MPa, (0-140) MPa, (0-200) MPa

2.2 High temperature melt pressure transmitter

Definition: The output signal is (4-20) mA, 0-10Vdc, 0-5Vdc

Measuring range: (0-3.5) MPa, (0-5) MPa, (0-7) MPa, (0-10) MPa, (0-20) MPa, (0-35) MPa, (0-50) MPa, (0-70) MPa, (0-100) MPa, (0-140) MPa, (0-200) MPa

Performance Parameter	High temperature melt pressure sensor	High temperature melt pressure transmitter		
Output Signal	3.33mV/V	(4-20) m A two-wire system	Three-wire system (0-10)Vdc, Three-wire system (0-5)Vdc	
Supply Voltage	(6-12)Vdc(10Vdc voltage recommended)	(10-36) Vdc	(12-36) Vdc	
Load resistance (Ω)		< (Supply voltage -10)/0.02	＞10k	
Calibration signal: 80%F.S				
Basic Error (%)	±0.5% (level 0.5), ±0.25% (level 0.25) (expressed as a percentage of full scale output value)			
Repeatability shall not be greater than the absolute value of the basic error, and the return difference shall not be greater than the absolute value of the basic error.				

03 Transportation and Storage

3.1 The product is normally packaged individually and when stored, please carefully repackage the packaging it originally came with.

3.2 At the front thread of the rigid rod, the induction diaphragm is protected by a protective cap, which should be tightened at any time during storage and only opened when using the installation. It is strictly prohibited to press the diaphragm with sharp materials.

3.3 Long-term storage needs to meet the following conditions:

① Ambient temperature: -20~85℃, relative humidity: 0%~100%R.H

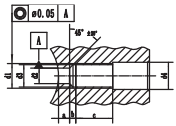
② Not exposed to rain or affected by water seepage/leakage.

③ Vibration and shock kept to a minimum.

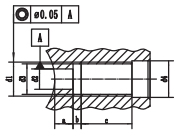
04 Product Installation Hole

Before installing the product, make sure that the mounting holes are machined to the correct size and that the holes are free of burrs.

PTOG1/PTOG2/PTOG3 Open hole size

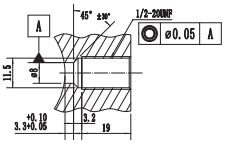


d1	d2	d3	d4	a	b	c
1/2-20UNF	Φ8	Φ11.5	Φ14	5.7	3.2	19
M18×1.5	Φ10	Φ16.5	Φ20	6	4	25
M10×1	Φ6.2	Φ9.1	Φ14	6.7	3.2	19
M14×1.5	Φ8	Φ12.5	Φ15	5.7	3.2	19
G1/4	Φ8	Φ11.7	Φ14	5.7	3.2	19
M12×1.5	Φ8	Φ10.5	Φ14	5.7	3.2	19

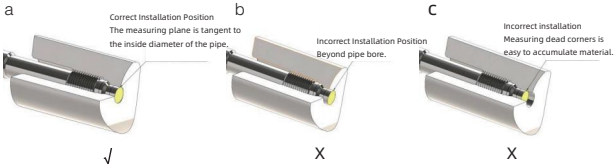


d1	d2	d3	d4	a	b	c
G3/8	Φ10	Φ15	Φ18	9	4	25
G3/4	Φ18.1	Φ24.5	Φ28	12	5	35
M22×1.5	Φ16	Φ20.5	Φ24	10	5	40
M20×1.5	Φ14	Φ18.5	Φ22	5.7	3	35

PTOG4 Open hole size



Correct Installation Mode



05 Product Installation

5.1 Before installing the product, please check whether the technical parameters on the nameplate are correct or not, mainly including mounting threads, pressure range, output signal, power supply requirements.The main parameters include mounting thread, pressure range, output signal and power supply requirements.

5.2 Ensure that the mounting holes are drilled to the correct dimensions. If the product is installed in a previously used mounting hole, professional cleaning tools should be used to ensure that the mounting hole is completely clean and free of any plastic residue.

5.3 Remove the protective cap from the front of the product.

5.4. Apply high-temperature anti-seize grease to the threaded surfaces of the product to prevent thread seizure. If you need to install a gasket when sealing the flat surface, please put the high temperature anti-seize grease on the surface. If you need to install a sealing gasket for flat sealing, please apply high-temperature anti-seize grease on the sealing gasket and stick the gasket on the product.

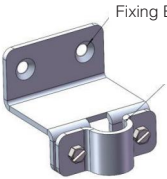
5.5 Place the product smoothly into the mounting hole, first manually, and then use a wrench to tighten it on the hexagon. If the product is to be mounted in a previously used mounting hole, it is recommended that the product be mounted under conditions of heating to the melting point of the plastic.
The recommended maximum mounting torque is 40 Nm.

06 Product disassembly

6.1 Disassembly must be done under heated conditions (plastic melting point). When disassembling the sensor, make sure that the diaphragm is not contact pressure. The force for dismounting the sensor must be applied only to the shaft (hexagon) and not to the sensor head. Do not apply any force to the sensor head. If the mounting holes need to be blocked, seal them with a plug of the same mechanical size.
6.2 After disassembling the product, the diaphragm, sealing surfaces and threads must be quickly wiped clean with a soft cloth.

07 Product disassembly

Use our professional mounting bracket to fix the product, the fixing position should avoid vibration and installation in a strong magnetic environment, and should not be exposed to rain or water seepage/leakage, the temperature should not exceed 85℃.



Please strictly follow the operation instructions to install and disassemble the product, caused by misoperation damage, we does not assume the quality responsibility.

08 Wiring and Cabling

8.1, the cable should be used with a shielded cable, heat-resistant temperature of not less than 105 ℃, each core line connecting terminal should be heat-shrinkable The shielded cable should be connected with the plug-in metal, and special care should be taken when welding the cable, otherwise it may lead to signal transmission error or damage the product. Otherwise, it may cause signal transmission error or damage the product. Please refer to "Electrical Connection" for wiring definition.

8.2. If you use our welded cables, you only need to connect them according to the definition of "Electrical Connection".

8.3 Signal cable should be wired separately through the wiring channel, strong and weak power should be wired separately, please avoid high temperature when wiring.The recommended ambient temperature is below 85℃.

8.4. It is strictly prohibited to plug the cable into the electrical connection of the high-temperature melt pressure sensing/high-temperature melt pressure transmitter, The cable should not be pulled out of the wiring.

8.5 After the cable is connected, connect it to the terminal block of the signal receiving end according to our electrical connection definition. If there is any extra If there is any extra wire core, please wrap each wire core individually with insulating tape.

09 Product Calibration

After the product is installed and connected to the measuring instrument and powered on, and in the absence of any pressure, the system temperature has reached the operating temperature 30min to 60min, the product is calibrated. Calibration method:

- High temperature melt pressure sensor (mV/V signal output): Please clear and calibrate the instrument on the display instrument, refer to the zeroing method and calibration method of the display instrument.
- High temperature melt pressure transmitter:

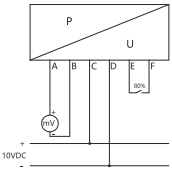
There are two zeroing methods for this series: external magnetic zeroing and remote short-circuit zeroing, and one zeroing method can be used at will.The maximum adjustment ratio is 30% of the full-scale output signal.

1. Short-circuit clearing adjustment mode: refer to "electrical connection" to define the cable core of short-circuit clearing, short-circuit after 3 to 5 seconds to disconnect, you can clear. After zeroing, ensure that the insulation of the two wires shorting the zeroing is separated from each other to avoidshort-wiring when the wires are not insulated or when there is pressure, resulting in inaccurate pressure measurement.
2. If the shell has " ⏻ " this mark, you can use our special magnetic pen, the magnet is aligned with this mark and close to 3~5 seconds later in the removal,you can clear. If there is no magnet, it can also be operated by the short-circuit clearing method in the above "1".

10 Electrical Connection

Pressure output signal wiring definition:

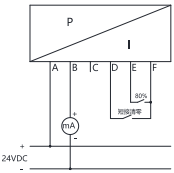
Electrical Wiring Configuration
4-wire sensor
0...20/33.33mV/V



Connector type:PT02A-10-6P.

Binding post	Definition	Cable color
A	Signal+	Red
B	Signal-	Black
C	Power+	White
D	Power-	Green
E	80%+	Blue
F	80%-	Orange

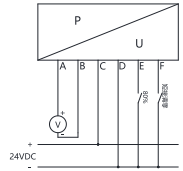
Electrical Wiring Configuration
2-Wire Transmitter (shorting to zero)
4...20mA



Connector type:PT02A-10-6P.

Binding post	Definition	Cable color
A	Signal+	Red
B	Signal-	Black
C		White
D	Short-circuit clear zero+	Green
E	80%+	Blue
F	Short-circuit clear zero-/80%-	Orange

Electrical cable configuration
4-wire transmitter (shorting to zero)
0...5V/10V

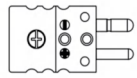


Connector type: PT02A-10-6P.

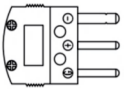
Binding post	Definition	Cable color
A	Signal+	Red
B	Signal-	Black
C	Power+	White
D	Power /80-/ Short-circuit clear zero-	Green
E	80%+	Blue
F	Short-circuit clear zero+	Orange

* Pins 3 and 4 are connected internally

Temperature signal output:

Thermocouple type		Thermocouple temperature signal		Cable color
K type thermocouple		+		Red
		-		Blue
E type thermocouple		+		Red
		-		Brown
J type thermocouple		+		Red
		-		Yellow

Temperature signal output:

		Three-wire PT100		Cable color
		+		Red
		G		Red
		-		White

M16-7PIN(Binder)

Terminal		Two wire thermocouple/ thermal resistor	Three-wire Pt100	Four-wire Pt100	Double branch and two wire system PT100	Double branch and three wire system PT100
		Signal definition				
1		+	+	+	+	+
2				+		
3		–	–	–	–	–
4			–	–		–

11 Fault Analysis

Common faults and troubleshooting methods:

Fault	Reason	Troubleshooting Methods
	1. The hole size problem: the size is small, the concentricity is not enough, and the hole has rough edges. 2. The temperature is more than 400℃.	1. Check the hole size. 2. Check whether the normal operating temperature exceeds 400℃ or whether the temperature exceeds 400℃ during the heating process.
	1. The installation hole caused by burrs. 2. Cold machine installation, solidification caused by materials. 3. External use of hard objects to press the diaphragm.	1. Clear the burrs in the hole. 2. Use special cleaning tools to clear the hard material in the hole and install with the heating machine. 3. Only use fingers to press.
	1. The hole size problem: the diaphragm has extended out of the inner wall of the cylinder. 2. Brush the diaphragm with a hard object.	1. Re-open the hole or add the gasket according to the size. 2. It is strictly prohibited to use hard objects to brush the diaphragm.
	Excessive mounting torque.	Install according to the recommended torque, and try to make the installation force 90° with the screw.

	Reason
Pressure did not change	1. Check whether the power supply and cable connections are correct.
	2. Check whether the diaphragm is intact.
	3. Check whether the output signal is consistent with the input signal of the receiving module.
	4. Check whether the sensor housing is at a temperature below 80 °C.
Pressure fluctuation	1. Need to use a shielded cable.
	2. The equipment should be reliably grounded.
	3. The shielded wire is connected to the electric control PE wire.
Pressure measurement is not accurate	1. Check whether the power supply and cable connections are correct.
	2. Check whether the diaphragm is intact.
	3. Check whether the output signal is consistent with the input signal of the receiving module.

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