

PT180 Series

Capillary-Exposed Type

Ideal for narrow space application



Certification :

ISO9001-2015



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1. Introduction

PT180 Melt pressure sensor apply special cavity type exposed structure design, with high precision and high response speed.

2. Application

PT180 series is designed for measurement and control of melt pressure in special positions of small space such as chemical fiber equipment, rubber and plastic machinery and mold cavity.

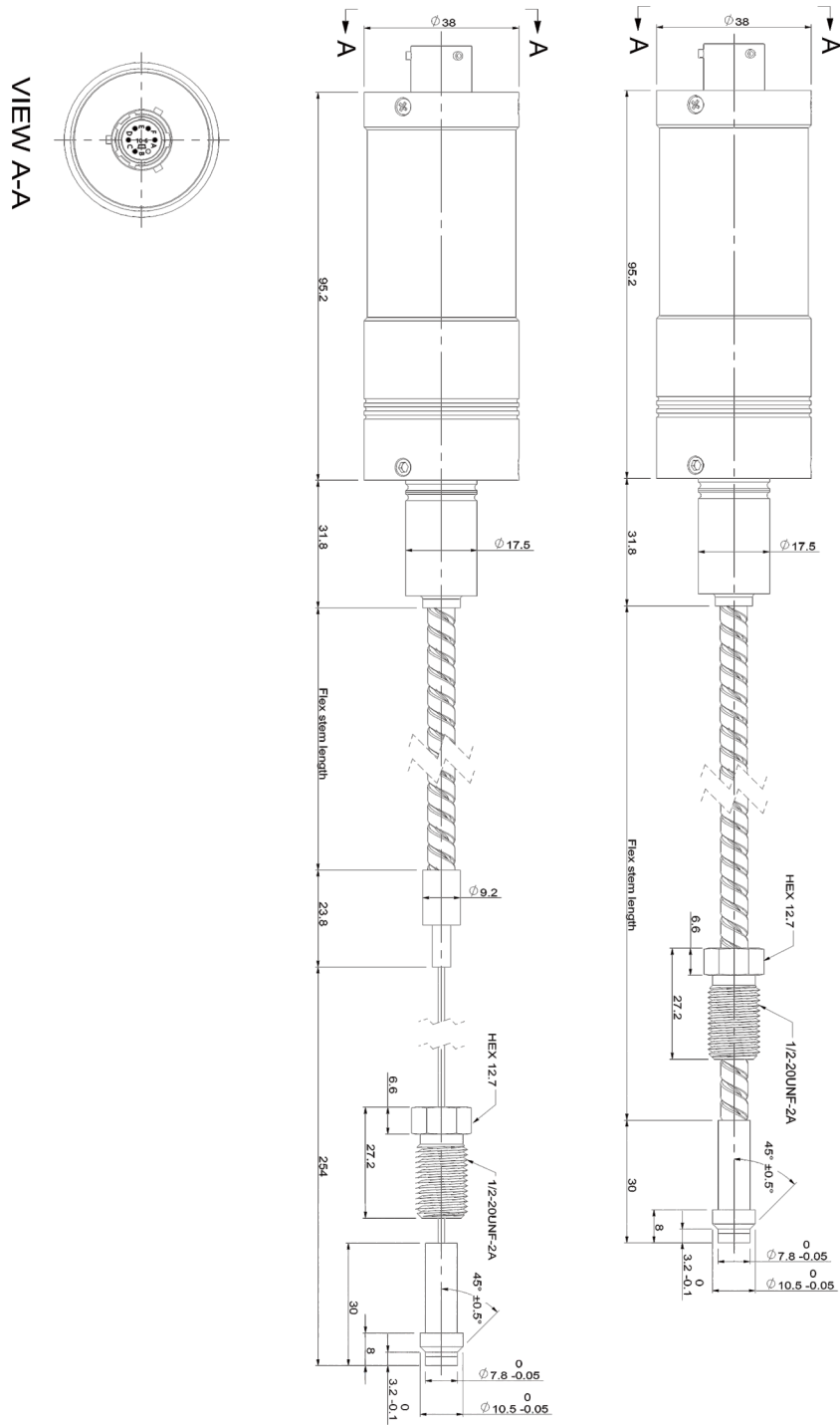
3. Product Features

Precision is better than $\pm 0.5\%FS$	80% internal calibration
Exposed structure	Good stability and repeatability

4. Technical Data

Pressure Range	0~35bar;0~2000bar		0~100bar;0~2000bar
Accuracy	±0.5%;±0.25%;		
Over load Pressure	1.5FSO		
Bridge Resistance	350ΩWheatstone bridge		
Power	9-36Vdc	18-36Vdc	6-12Vdc(10V is standard)
Output Signal	4 ~ 20mA	0 ~ 10Vdc 0 ~ 5 Vdc	3.33mV/V
Load Resistance (Ω)	< (U-9) /0.02	> 10K	——
Calibration	80%FSO		
Process Connection	1/2-20UNF		
Insulation Resistance (50Vdc)	1000MΩ		
Diaphragm Material	17-4PH、inconel718、C276		
Diaphragm max temp	400C°		
Film Material	TiAlN		
E-connection	6-pin connector(Standard),8-pin connector		
Electrical Environment temp	-20C° ~ 85C°		
Protection degree	IP65		
Installation torque	< 30Nm		
Filling Material	Mercury filling		

5. Dimensions

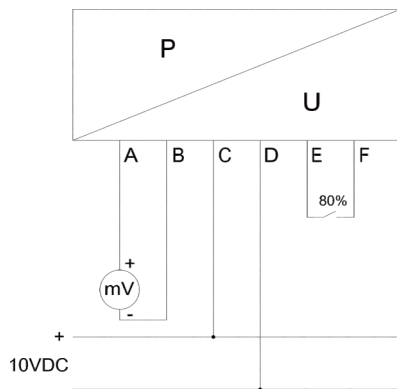


6. Electrical connection & Debugging

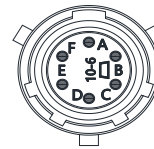
After the pressure sensor has been installed on the pipeline, the electrical connection must be carried out in accordance with the connection mode shown in the wiring diagram below.

The PT180 pressure sensor is equipped with an integrated amplifier circuit. The calibration process must be that the pipeline is heated and the pressure is zero. The zero point is adjusted by activating the automatic rezero function. Autozero function is via shorting two pins together like following diagram, mV signal does not have this function, can be rezero through the back-end instrument. Then 80% of the output signal is detected (see wiring diagram), and the pressure sensor will provide a standard 80% measured value signal.

3.33mV/V (4-wire)

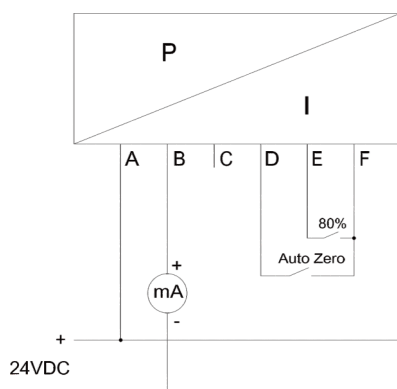


6-pin connector / PT02A-10-6P.

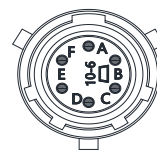


PIN	Function	Wire Color
A	Signal +	Red
B	Signal -	Black
C	Power +	White
D	Power -	Green
E	80% +	Blue
F	80% -	Orange

(4...20mA) 2-wire transmitter

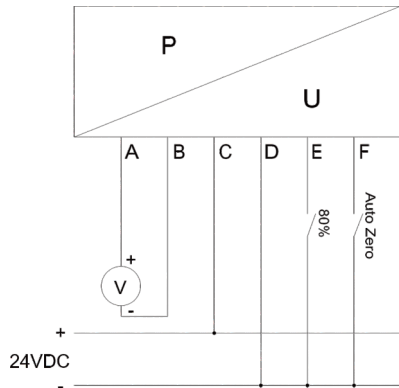


6-pin connector / PT02A-10-6P.

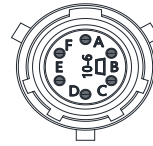


PIN	Function	Wire Color
A	Power +	Red
B	Power -	Black
C		White
D	Shorting D&F to rezero +	Green
E	80% +	Blue
F	Shorting D&F to rezero - /80% -	Orange

0...5V/10V (4-wire)



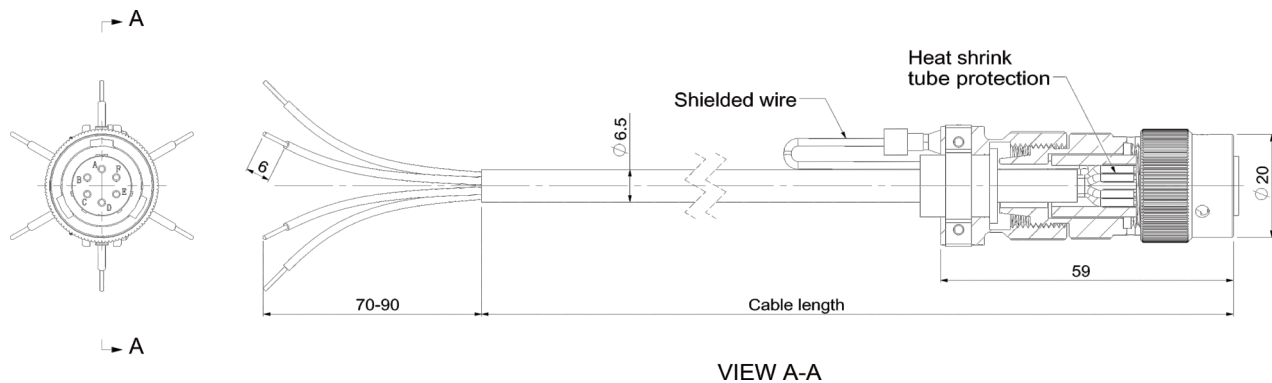
6-pin connector /PT02A-10-6P.



PIN	Function	Wire Color
A	Signal +	Red
B	Signal -	Black
C	Power +	White
D	Power - /80% - /Shorting D&F to rezero -	Green
E	80% +	Blue
F	Shorting D&F to rezero +	Orange

* B and D pins are connected internally

The cable shall be covered with shielding layer cable, each core wire is about 0.3 mm², temperature-resistance is not less than 105C°, each core wire connection column shall be insulated and protected by heat shrink tube isolation, shield wire shall be connected with plug-in metal, cable welding should be particularly careful, otherwise it may lead to signal transmission error or damage products, It is recommended to use Ziasiot welded special cable. For excess lines in the cable, each wire should be wrapped separately with insulating tape.



7. Ordering Guide

Serie No	PT	X	-	X	-	X	-	X	-	X	-	X	-	X
Product Type	Exposed Type	180												
Pressure Range	10MPa 100bar 1500psi	1.5M												
	20MPa 200bar 3000psi	3M												
	35MPa 350bar 5000psi	5M												
	50MPa 500bar 7500psi	7.5M												
	70MPa 700bar 10000psi	10M												
	100MPa 1000bar 15000psi	15M												
	200MPa 2000bar 30000psi	30M												
Process Connection	1/2-20UNF						1/2							
Capillary-Exposed Length	0" (0mm)						0							
	10" (254mm)						10							
Flexible stem Length	18" (460mm)								/18					
	24" (610mm)								/24					
	30" (760mm)								/30					
Output Signal	4 ~ 20mA									MA				
	0 ~ 10Vdc									10V				
	3.33mV/V									MV				
E-connection	6-pin aviation Connector(p/n PT02A-10-6P)										--			
	8-pin aviation Connector (p/n PT02A-10-8P)										8P			
Accuracy	0.50%											--		
	0.25%											2A		
Diaphragm	17-4PH(Standard)												--	
	inconel718 (Anti-abrasive)												I7	
	C276 (Anti-corrosive)												C2	

8. Installation & Removal

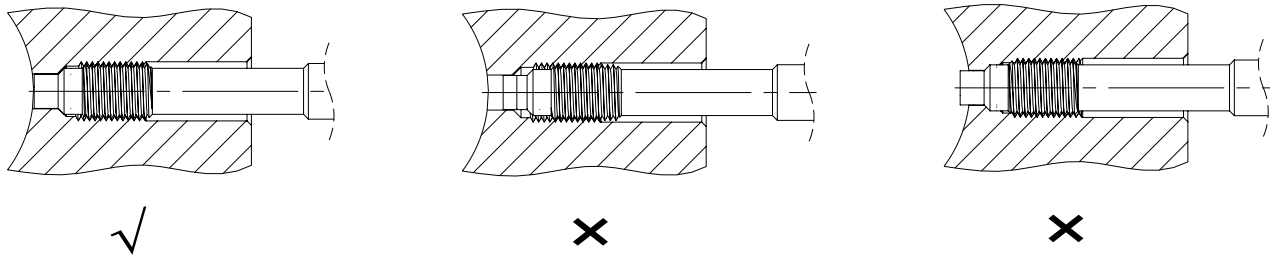
Installation

When installing the pressure sensor, the sensor hole should be within the size requirement marked in following drawing and the assembly accuracy can be checked by testing bolts. Before installing the sensor, first clean the impurities in the hole and between the threads, then the thread of the sensor is coated with heat-resistant slurry, the screw teeth can be avoided.

The installation force is very important, the installation torque of the sensor can only act on the shaft (hexagon), do not apply any force to the head of the sensor. The housing should be kept away from high temperature areas.

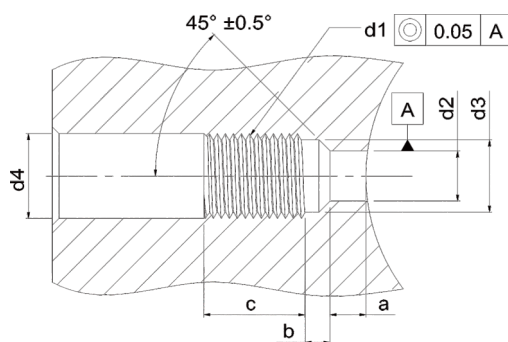
1/2-20 UNF /M14×1.5= Maximum starting torque: 40Nm

M18 x 1.5 = Maximum starting torque: 50 Nm



Removal

The removal of the pressure sensor must be done under heating conditions (plastic melting point). When removing the sensor, note that the diaphragm has no contact pressure. The force to unload the sensor must be applied only on the shaft (hexagon) and no force is applied to the head of the sensor



d1	M14X1.5	1/2-20UNF-2A
d2	∅ 7.9 ^{+0.1}	∅ 7.9 ^{+0.1}
d3	∅ 11.7 ^{+0.1}	∅ 10.7 ^{+0.1}
d4	∅ 15	∅ 14
a	3.5 ^{-0.1}	3.5 ^{-0.1}
b	3.2 ^{-0.2}	3.2 ^{-0.2}
c	19	19
d	< 28	< 28

9. Sensors cleaning

In order to clean the diaphragm, the sealing surface and thread of the transmitter must have the same temperature as the melting point of the plastic. The diaphragm and sealing surface can be cleaned with soft cloth, and the thread and rigid rod can be cleaned with steel brush or copper brush. (Do not touch diaphragm surface with steel brush)

10. Transport and storage

PT180 pressure sensor is usually packed separately. At the front thread of the rigid rod, the induction diaphragm is protected by a protective cap. This protective cap should be tightened at any time during storage, and only opened during installation.

Note: Mounting brackets, extension cables, connectors, cleaning kits, drill kits, dummy plug etc accessories, please contact with us.