

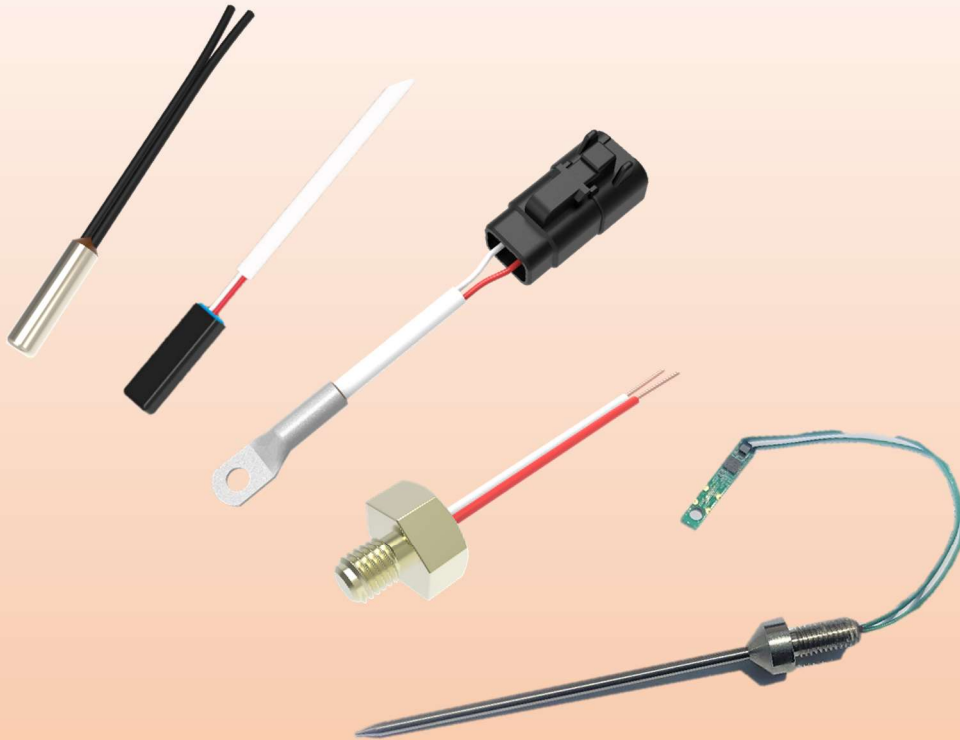


## TWC-P SERIES resistance thermometers



measuring  
•  
monitoring  
•  
analysing

TWC-P



### APPLICATIONS

- E-CAR MOTOR
- E-CAR CHARGING SOCKET & PISTOLE
- INDUSTRIAL MOTOR, TRANSFORMER
- INDUSTRIAL ENGINEERING
- HEATING EQUIPMENT

### BENEFITS

- TEMP RANGE:  $-40 \sim 200^{\circ}\text{C}$
- CHIP: PT100/PT1000
- HIGH PRECISION & RELIABILITY
- FAST RESPONSE TIME
- GOOD SEALING, IP68
- DIVERSITY, CUSTOMIZED

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## TWC-P SERIES resistance thermometers according to IEC 751

### Description

TWC PT series resistance thermometers can have different types of resistor chips packaged according to customer requirements, mainly PT100 and PT1000 resistors. PT series resistance thermometers is a kind of sensor packaging platinum resistors. The chip is mainly a platinum resistor in a ceramic body, both sides of which are soldered lead wires. The platinum packaged in PT chip has good linear characteristics when temperature changes. As the temperature increases, the resistance increases accordingly. With this characteristic, it can be widely used in lots of application. High precision temperature measurement can be achieved in the range of -196~800 degrees. PT series resistance thermometers comprise of a protect housing, PT sensor chip and connecting wire or cable. Plastic protect housing can have excellent high voltage performance. Stainless steel protect housing has more faster response time. With so small size of housing package, it can be easy mounting at almost any applications, even with very limited space. Meanwhile, small size of the sensors can achieve high measuring accuracy.

### Application

Because of good linear characteristics between temperature and resistance, it is used in every field more and more common, such as industrial field, automotive of E-Mobility, Medical and lab.

It can be embedded in the copper coils for any size of motors to monitor the temperature of motor working.

Also, it can be potted or over molded in charging sockets and pistols for E-mobility.



### PT SERIES resistance thermometers

With stainless steel housing

	<b>Potting housing made of 1.4301 (SS304),            Temperature range: -40~200°C, HV test: 3.0kVAC. Insulation Test: &gt;100MΩ@100VDC            Single wire connection, Potting Process with IP 68 Grade.</b>						
	Mode NO.	HOUSING	Sensor type	Wiring	Cable & Wire Spec	Wiring or cable length	Connection
	TWC-N3	D=Ø4.0mm L=12mm	..A..= 1xPT100 class B ..B..= 1xPT1000 class B ..C..= 1xPT100 class A ..D..= 1xPT1000 class A ..X..= Special option	..2..= 2-wire ..3..= 3-wire ..4..= 4-wire	..A..= Single wire, Teflon insulation ..E..= Cable, 2 cores, Teflon jacket non-shield ..X..= Special option	..00500.. =500mm  ..xxxxx.. =Special length	..A..=Falf Stripping, 6mm ..B..=Full Stripping TIN coating, 6mm ..X..= According to specifications with specifying terminals or connectors.
TWC-N4	D=Ø 5.0mm L=14mm	..A..= 1xPT100 class B ..B..= 1xPT1000 class B ..C..= 1xPT100 class A ..D..= 1xPT1000 class A ..X..= Special option	..2..= 2-wire ..3..= 3-wire ..4..= 4-wire	..A..= Single wire, Teflon insulation ..E..= Cable, 2 cores, Teflon jacket non-shield ..X..= Special option	..00500.. =500mm  ..xxxxx.. =Special length	..A..=Falf Stripping, 6mm ..B..=Full Stripping TIN coating, 6mm ..X..= According to specifications with specifying terminals or connectors.	
	<b>Multi-core cable connection            Round-forming to fix cable onto stainless steel housing 1.4301 (SS304),            Connector is options (TE, JST..)</b>						
	Mode NO.	HOUSING Diameter	Sensor type	Wiring	Cable & Wire Spec	Wiring or cable length	Connection
	TWC-P5	D= Ø 5mm L=50	..A..= 1xPT100 class B ..B..= 1xPT1000 class B ..C..= 1xPT100 class A ..D..= 1xPT1000 class A ..X..= Special option	..2..= 2-wire ..3..= 3-wire ..4..= 4-wire	..E..= Cable, 2 cores, Teflon jacket non-shield ..X..= Special option	..00500.. =500mm  ..xxxxx.. =Special length	..A..=Falf Stripping, 6mm ..B..=Full Stripping TIN coating, 6mm ..X..= According to specifications with specifying terminals or connectors.
	TWC-P6	D= Ø 6mm L=50	..A..= 1xPT100 class B ..B..= 1xPT1000 class B ..C..= 1xPT100 class A ..D..= 1xPT1000 class A ..X..= Special option	..2..= 2-wire ..3..= 3-wire ..4..= 4-wire	..E..= Cable, 2 cores, Teflon jacket non-shield ..X..= Special option	..00500.. =500mm  ..xxxxx.. =Special length	..A..=Falf Stripping, 6mm ..B..=Full Stripping TIN coating, 6mm ..X..= According to specifications with specifying terminals or connectors.
TWC-PX	Customized by special request						

**PT SERIES resistance thermometers**

With Plastic housing



	<p><b>Potting housing made of PPS GF30,</b>  <b>Temperature range: -40~200°C, HV test: 4.0kVAC. Insulation Test: &gt;100MΩ@100VDC</b>  <b>Single wire connection, Potting Process with IP 68 Grade.</b></p>						
	Mode NO.	HOUSING Diameter	Sensor type	Wiring	Cable & Wire Spec	Wiring or cable length	Connection
	TWC-N1	D=Ø3.4mm L=14mm	..A.= 1xPT100 class B ..B.= 1xPT1000 class B ..C.= 1xPT100 class A ..D.= 1xPT1000 class A ..X.= Special option	..2..= 2-wire ..3..= 3-wire ..4..= 4-wire	..A.= Single wire, Teflon insulation ..E.= Cable, 2 cores, Teflon jacket non-shield ..X.= Special option	..00500.. =500mm  ..xxxxx.. =Special length	..A..=Falf Stripping, 6mm ..B..=Full Stripping TIN coating, 6mm ..X..= According to specifications with specifying terminals or connectors.
	TWC-N2	D=Ø 5.0mm L=14mm					
	TWC-N7	D= 6.4x3.4 L=14mm					
TWC09	Customized by special request						

**PT SERIES resistance thermometers**

With O-Terminal housing

	<p><b>Potting housing made of brass with TIN coating,</b>  <b>Temperature range: -40~200°C, HV test: 3.0kVAC. Insulation Test: &gt;100MΩ@100VDC</b>  <b>Single or shield cable connection.</b></p>						
	Mode NO.	HOUSING Diameter	Sensor type	Wiring	Cable & Wire Spec	Wiring or cable length	Connection
	TWC-P8	D=Ø5.3mm	..A.= 1xPT100 class B ..B.= 1xPT1000 class B ..C.= 1xPT100 class A ..D.= 1xPT1000 class A ..X.= Special option	..2..= 2-wire ..3..= 3-wire ..4..= 4-wire	..A.= Single wire, Teflon insulation ..E.= Cable, 2 cores, Teflon jacket non-shield ..X.= Special option	..00500.. =500mm  ..xxxxx.. =Special length	..A..=Falf Stripping, 6mm ..B..=Full Stripping TIN coating, 6mm ..X..= According to specifications with specifying terminals or connectors.
	TWC-P9	D=Ø6.3mm					
	TWC-PX	Customized by special request					

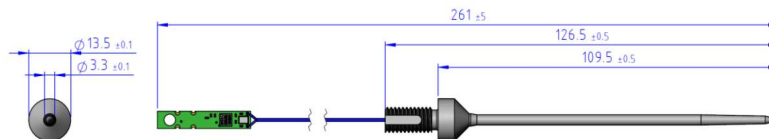


**PT SERIES resistance thermometers**

With digital signal output.

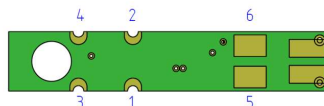
	<b>Potting housing made of 1.4301 (SS304)</b> <b>Temperature range: -40~200°C. Digital output with I<sup>2</sup>C interface</b> <b>Calibration with accuracy: ±0.1°C. Laser welding housing with IP 67 Grade.</b>					
	Mode NO.	HOUSING Diameter	Sensor type	Wiring	Cable & Wire Spec	Wiring or cable length
TWC-PX	D=Ø3.3mm L=109.5mm	PT1000B B=Class B	M8 =M8x1.25	AFT250-26 = AFT250 26AWG	..100.. =100mm  ..xxxx.. =Special length	1- Supplier V:2.2~3.6V 2- Ground 3- I2C data 4- I2C clock: 100Hz

**Dimension for this mode overall**



**Electrical Connection**

Number	Name	Description	Type
1, 5	V <sub>DD</sub>	Supply Voltage	Supply
2, 6	GND	Ground	Supply
3	SDA	I <sup>2</sup> C Data	IO
4	SCL	I <sup>2</sup> C Clock	I



**Calibration**

The calibration is performed by comparison with reference standard measuring equipment. Each sensor is calibrated/tested at three temperature set points: -10°C, 30°C and 70°C. Besides production data dedicated to each sensor, general data concerning production lot information, calibration data, etc. is stored in the PCBA IC for traceability. After calibration, accuracy can achieve ±0.1°C between -10°C ~70°C.

**PT SERIES resistance thermometers**

Other customized sensors are also can be available to design to meet customer request.