SAFTTY
ELECTRONIC TECHNOLOGY
安的電子

Resistance Thermometers Based on Pt100/Pt1000 Sensors

BASIC INFORMATION

The Pt100/Pt1000 sensor is used for precise temperature monitoring applications, where errors in measurement have to be excluded. The linear relationship of the resistor to temperature, simplifies its use in many electronic applications. The precision of the Pt100/Pt1000 allows its universal use for temperature monitoring, control and switching in windings, bearings, machines, motors, transformers and many other industrial applications.

GENERAL FUNCTION

The Pt100/Pt1000 sensor is a temperature dependent component.
The resistance of the Pt100/Pt1000 sensor rises linearly with the temperature.

ADVANTAGES

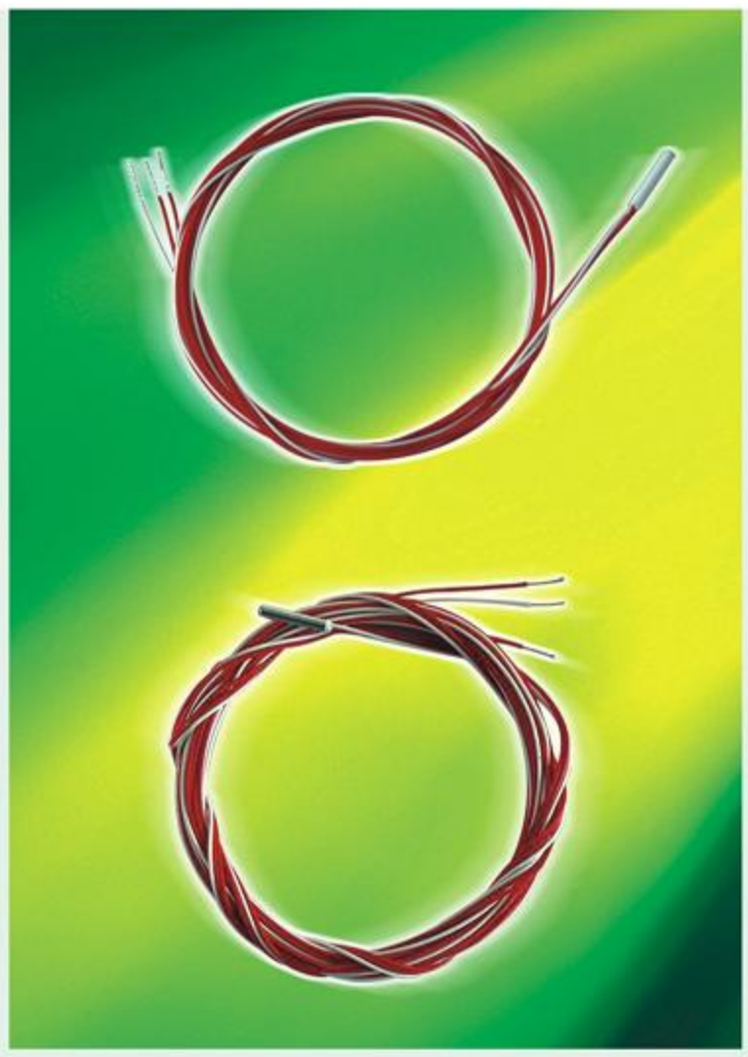
◎Very precise measuring: measuring temperature ±0.5℃
◎Precise linear temperature–resistance characteristic
◎Low weight
◎Short response time

TECHNICAL DATA

◎Nominal resistance: 100Ω at 0℃ (Pt100) ,1000Ω at 0℃ (Pt1000)
◎Basic thermistor values: for platinum measuring resistors as in chart
◎Measuring range: –40℃ to 200℃, other ranges on request
◎Measuring current: max.1mA(no self–heating!)
◎Circuit: 2–wire 3–wire or customized

INSTALLATION GUIDE

Embed the sensor to motor winding, compressing and banding together with the coil,then varnish it.Wire leads is elicited along the shell and fixed in the wiring inside the junction box. Use special Temperature controller for Pt100, Pt1000.



TOLERANCE

Temperature		–100	0	100	200	250	300
Resistance		60.25	100	138.51	175.86	194.10	212.05
Level A	℃	±0.35	±0.15	±0.35	±0.55	±0.695	±0.75
	Ω	±0.14	±0.06	±0.14	±0.20	±0.23	±0.27
Level B	℃	±0.8	±0.3	±0.8	±1.3	±1.58	±1.8
	Ω	±0.32	±0.12	±0.30	±0.48	±0.55	±0.64

CODE SYSTEM

WZP—□—□—□—□—□

- Lead wire length
- Z: two lead wire
- D: three lead wire
- T: ceramic package
- B: metal case package
- Diameter x Length (Sensor)
- Platinum thermal resisitance sensor(Pt100/Pt1000)

PT100 REFERENCE TABLE

Temperature	0	10	20	30	40	50	60	70	80	90	100
Resistance	100.0	103.90	107.79	111.67	115.54	119.40	123.24	127.08	130.90	134.71	138.51
Temperature	110	120	130	140	150	160	170	180	190	200	
Resistance	142.29	146.07	149.83	153.58	157.33	161.05	164.77	168.48	172.16	175.86	

Note: The resistance of Pt1000 is 10 times as Pt100

TECHNICAL DATA OF PLATINUM SENSOR

Model	Temperature range	Graduation Number	Tolerance	Probe material	Size	Resistance at 0℃(Ω)	Thermal response time τ 0.5s
WZP–3×16–T	–40~200℃	Pt100	Level A Level B	Ceramic	ϕ3×16	100±0.06 100±0.12	<1
WZP–3×16–B	–40~200℃	Pt100	Level B	metal case	ϕ3×16	100±0.12	<2
WZP–4×32–T	–40~200℃	Pt100	Level A Level B	Ceramic	ϕ4×32	100±0.06 100±0.12	<2
WZP–4×32–B	–40~200℃	Pt100	Level B	metal case	ϕ4×32	100±0.12	<3

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