

## II. Basic function and performance of the product (technical index)

**Analog output function** [Used within one year after calibration, 23 °C± 5 °C, 20-70% RH, accuracy=± (% set value+% reading)]

Output function	Range	Output range	Resolution	Accuracy	Remarks	
DC voltage DCV	100mV	-10.000mV~110.00mV	0.01mV	0.05%+0.03mV	Maximum output current: 0.5mA	
	1V	-0.1000V~1.1000V	0.0001V	0.05%+0.3mV	Maximum output current 2mA	
Ohm OHM	400Ω	0~400.0Ω	0.1Ω	0.05%+0.2Ω	The excitation current is ±0.1~±5mA Maximum output voltage 2V When the excitation current is ±0.1~0.5mA, additional error of 0.1Ω is added The accuracy does not include lead resistance	
	4KΩ	0~4.000KΩ	1Ω	0.05%+2Ω		
Thermocouple TC	R	0°C~1767°C	1°C	0~100°C 10~1767°C	1.5°C 1.2°C	Use ITS-90 temperature scale The accuracy does not include the error of cold junction compensation The accuracy does not include sensor inaccuracy The accuracy does not include the influence of thermoelectric potential R: Platinum Rhodium 13- Platinum S: Platinum Rhodium 10- Platinum K: Nickel chromium - nickel silicon E: Nickel chromium - copper nickel (constantan) J: Iron - copper nickel (constantan) T: Copper - nickel (constantan) N: Nickel chromium silicon nickel silicon B: Platinum Rhodium 30 - Platinum A: Tungsten rhenium 5- Tungsten rhenium 20 C: Tungsten rhenium 5- Tungsten rhenium 26 D: Tungsten rhenium 3- Tungsten rhenium 25
	S	0°C~1767°C		0~100°C 100~1767°C	1.5°C 1.2°C	
	K	-200.0°C~1372.0°C	0.1°C	-200.0~-100.0°C -100.0~400.0°C 400.0~1200.0°C 1200.0~1372.0°C	0.6°C 0.5°C 0.7°C 0.9°C	
	E	-200.0°C~1000.0°C		-200.0~-100.0°C -100.0~600.0°C 600.0~1000.0°C	0.6°C 0.5°C 0.4°C	
	J	-200.0°C~1200.0°C		-200.0~-100.0°C -100.0~800.0°C 800.0~1200.0°C	0.6°C 0.5°C 0.7°C	

	T	-250.0°C~400.0°C		-250.0~400.0°C	0.6°C	
	N	-200.0°C~1300.0°C		-200.0~-100.0°C -100.0~900.0°C 900.0~1300.0°C	1.0°C 0.7°C 0.8°C	
	B	600°C~1820°C	1°C	600~800°C 800~1820°C	1.5°C 1.1°C	
	A	0°C~2500°C	1°C	0~1600°C 1600~2000°C 2000~2500°C	2.0°C 2.2°C 2.4°C	
	C	0°C~2310°C	1°C	0~1600°C 1600~2000°C 2000~2310°C	2.0°C 2.2°C 2.4°C	
	D	0°C~2310°C	1°C	0~100°C 100~270°C 270~1200°C 270~2310°C	2.6°C 2.4°C 2.2°C 2.4°C	
Thermal resistance RTD	Pt100 385	-200.0°C~800.0°C	0.1°C	-200.0~0.0°C 0.0~400.0°C 400.0~800.0°C	0.3°C 0.5°C 0.8°C	<p>Use Pt (385) temperature scale The excitation current is <math>\pm 0.1 \sim \pm 5\text{mA}</math> Maximum output voltage 2V When the excitation current is <math>\pm 0.1 \sim 0.5\text{mA}</math>, additional error of <math>0.1\Omega</math> is added The accuracy does not include lead resistance The accuracy does not include the influence of thermoelectric potential Support pulse transmitters and PLCs with pulse times as short as 10ms</p>
	Pt200 385	-200.0°C~630.0°C		-200.0~100.0°C 100.0~300.0°C 300.0~630.0°C	0.8°C 0.9°C 1.0°C	
	Pt500 385	-200.0°C~630.0°C		-200.0~100.0°C 100.0~300.0°C 300.0~630.0°C	0.4°C 0.5°C 0.7°C	
	Pt1000 385	-200.0°C~630.0°C		-200.0~100.0°C 100.0~300.0°C 300.0~630.0°C	0.2°C 0.5°C 0.7°C	

	Cu50	-50.0°C~150.0°C		0.6°C	
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**Other characteristics:**

- Uncertainty includes standard uncertainty, hysteresis, nonlinearity, repeatability, and typical long-term stability over the period mentioned (K = 2).
  - Maximum applied voltage at input end: about 30Vpk; Maximum applied current at input end: about 25mA
  - Load characteristics: capacitive load  $\geq 0.01\mu\text{F}$  (DCV/OHM/TC/RTD/FREQ); Inductive load  $\geq 0.01\mu\text{F}$  100uH (DCA)
- Output load affects DCmV (0.001% full scale + 1nV)/mA; DCV (0.001% full scale + 1nV)/mA
- The temperature range of internal temperature compensated sensor RJC is -10 to 50°C. The temperature measurement accuracy at 18 to 28°C is  $\pm 0.5^\circ\text{C}$ , and the temperature measurement accuracy at other temperature is  $\pm 1^\circ\text{C}$ . Cold end compensation time is 10S/ times.
  - Temperature coefficient:  $0.1 \times \text{basic accuracy}/^\circ\text{C}$  (temperature range  $< 18^\circ\text{C}$  or  $> 28^\circ\text{C}$ )

**Input measurement function** [Used within one year after calibration,  $23^\circ\text{C} \pm 5^\circ\text{C}$ , 20-70% RH, accuracy = +/- (% set point + reading %)]

Measurement function	Range	Measurement range	Resolution	Accuracy	Remarks
DC voltage DCV	100mV	-110.00mV~110.00mV	0.01mV	0.05%+0.03mV	Input resistance: approximately 1M $\Omega$
	1V	-1.1000V~1.1000V	0.0001V	0.05%+0.3mV	
	35V	-35.000V~35.000V	0.001V	0.02%+2mV	
Resistance OHM	500 $\Omega$	0~550.00 $\Omega$	0.01 $\Omega$	0.05%+0.2 $\Omega$	2W/3W/4W measurement 50 $\Omega$ approximately 1mA excitation 5K $\Omega$ approximately 0.1mA excitation

	5KΩ	0~5.5000KΩ	0.0001KΩ	0.05%+2Ω		Open circuit voltage: approximately 2.5V The accuracy does not include lead resistance
Thermocouple TC	R	0°C~1767°C	1°C	0~500°C 500~1767°C	2.5°C 2°C	Use ITS-90 temperature scale The accuracy does not include the error of cold junction compensation The accuracy does not include sensor inaccuracy The accuracy does not include the influence of thermoelectric potential R: Platinum Rhodium 13- Platinum S: Platinum Rhodium 10- Platinum K: Nickel chromium - nickel silicon E: Nickel chromium - copper nickel (constantan) J: Iron - copper nickel (constantan) T: Copper - nickel (constantan) N: Nickel chromium silicon nickel silicon B: Platinum Rhodium 30 - Platinum A: Tungsten rhenium 5- Tungsten rhenium 20 C: Tungsten rhenium 5- Tungsten rhenium 26 D: Tungsten rhenium 3- Tungsten rhenium 25
	S	0°C~1767°C				
	K	-100.0°~1372.0°C	0.1°C	-100.0~0.0°C 0.0~1372.0°C	1.2°C 0.8°C	
	E	-50.0°C~1000.0°C		-50.0°C~0.0°C 0.0~1000.0°C	0.9°C 1.5°C	
	J	-60.0°C~1200.0°C		-60.0~0.0°C 0.0~1200.0°C	1.0°C 0.7°C	
	T	-100.0°C~400.0°C	1°C	-100.0~0.0°C 0.0~400.0°C	1.0°C 0.7°C	
	N	-200.0°~1300.0°C		-200.0~0.0°C 0.0~1300.0°C	1.5°C 0.9°C	
	B	600°C~1820°C	1°C	600~800°C 800~1000°C 1000~1820°C	2.2°C 1.8°C 1.4°C	
	A	0°C~2500°C	1°C	0~1600°C 1600~2000°C 2000~2500°C	2.0°C 2.2°C 2.4°C	

	C	0°C~2310°C	1°C	0~1600°C 1600~2000°C 2000~2310°C	2.0°C 2.2°C 2.4°C	
	D	0°C~2310°C	1°C	0~100°C 100~270°C 270~1200°C 270~2310°C	2.6°C 2.4°C 2.2°C 2.4°C	
Thermal resistance RTD (4W)	Pt100 385	-200.0°C~800.0°C	0.1°C	-200.0~0.0°C 0.0~400.0°C 400.0~800.0°C	0.5°C 0.7°C 0.8°C	Use Pt (385) temperature scale 2W/3W/4W measurement 50 Ω approximately 1mA excitation 5KΩ approximately 0.1mA excitation Open circuit voltage: approximately 2.5V The accuracy does not include the error caused by the mismatch of the 2 W/3 W measurement lead resistance The accuracy does not include sensor inaccuracy The accuracy does not include the influence of thermoelectric potential
	Pt200 385	-200.0°C~630.0°C		-200.0~100.0°C 100.0~300.0°C 300.0~630.0°C	0.8°C 0.9°C 1.0°C	
	Pt500 385	-200.0°C~630.0°C		-200.0~100.0°C 100.0~300.0°C 300.0~630.0°C	0.4°C 0.5°C 0.7°C	
	Pt1000 385	-200.0°C~630.0°C		-200.0~100.0°C 100.0~300.0°C 300.0~630.0°C	0.3°C 0.5°C 0.7°C	
	Cu50	-50.0°C~150.0°C		-50.0~150.0°C	0.7°C	
On/off detection	500Ω	≤50Ω sounding	0.01Ω			Approximately 1mA excitation

**Other characteristics:**

- Uncertainty includes standard uncertainty, hysteresis, nonlinearity, repeatability, and typical long-term stability over the period mentioned (K = 2).
- Display refresh rate: 2 times / second.
- Maximum applied voltage at input end: 60 Vpk; Maximum applied current at input end: 50mA.  
Current input protection: 100mA/250V Fast FUSE
- Input common-mode rejection: 50Hz /60 Hz > 120 db; Input serial-mode rejection: 50Hz /60 Hz > 60 db