

## Features

A source & measurement tool.

This Calibrator can be used for measurement or output (source).

- 5 Digits Display
- Source & Measure DCV, Resistance (Ohms), T/C (Various Types) & RTD (Various types – 2W / 3W / 4W)
- Auto Power off
- On/off Detection
- Torch Function
- With backlight



## Specifications :

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	1.5°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		10~1767°C	1.2°C	
	K	-200.0°C~1372.0°C	0.1°C	-200.0~-100.0°C	0.6°C	
	E	-200.0°C~1000.0°C		-100.0~400.0°C	0.5°C	
				400.0~1200.0°C	0.7°C	
J	-200.0°C~1200.0°C	-100.0~-800.0°C	0.5°C			
		800.0~1200.0°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	Use Pt (385) temperature scale The excitation current is $\pm 0.1$ ~ $\pm 5$ mA Maximum output voltage 2V When the excitation current is $\pm 0.1$ ~ $0.5$ mA, additional error of 0.1 $\Omega$ 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
	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	

**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  $\geq 0.01\mu\text{H}$  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°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						
	T	-100.0°C~400.0°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