

## GENERAL FEATURES

- High Accuracy of 0.02% for measure and source. 6 digits for generated value and 5digits for measured value
- **Measure:**  
DC voltage, resistance, thermocouple temperature detector, resistance temperature detector
- **Source:**  
DC voltage, resistance, thermocouple temperature detector, resistance temperature detector
- Measured Resistance and resistance temperature with 2-wire, 3-wire or 4-wire
- Reference junction compensation automatically for thermocouple temperature measure and source. Temperature unit °C, °F
- Can use temperature detector with high accuracy of  $\pm 0.2^{\circ}\text{C}$
- The temperature and equivalent voltage or resistance or operating temperature can be displayed simultaneously on the large LCD
- The keys for the generation functions and the measurement functions are separate from each other, and carefully designed the key layout, the each pairs of UP/DOWN keys are corresponding the each digit of the LCD
- It can be calibrated without open the cover of the calibrator
- The backlight and the power supply can be shut off automatically

## TECHNICAL SPECIFICATIONS FOR MEASURE

These specifications assume:

- A 1-year calibration cycle
- An operating temperature of 18°C to 28°C (64.4°C~82.4°C)
- Relative humidity of 35% to 70% (non\_condensing)

Accuracy is expressed as  $\pm$  (percentage of reading + percentage of range).

Function	Reference	Range	Resolution	Accuracy	Remark
DCV	50mV	-5.000~55.000mV	1 $\mu$ V	0.02+0.02	Input Resistance: 100M $\Omega$
	500mV	-50.00~550.00mV	10 $\mu$ V	0.02+0.01	
OHM	Test Current Approximately 1mA	0.00 $\Omega$ ~550.00 $\Omega$	0.01 $\Omega$	0.05+0.02	Open Circuit Voltage: About 2.5V; Accuracy, 2-Wire, 3-Wire, 4-wire: Does not include lead resistance;
	Test Current Approximately 0.1 mA	0.0000 K $\Omega$ ~5.000K $\Omega$	0.1 $\Omega$	0.05+0.02	
TC	R	0°C~1767°C	1°C	0~500°C: 1.8°C	By using ITS-90 temperature scale; The accuracy does not include the error or internal temperature compensation caused by a sensor; The range of the internal temperature compensation sensor is from 0°C to 40°C
	S	0°C~1767°C		500~1767°C: 1.5°C	
	K	-100.0°~1372.0°C	0.1°C	-100~0.0°C : 1.2°C	
	E	-50.0°C~850.0°C		0~1372.0°C : 0.8°C	
	J	-60.0°C~1120.0°C	-50~0.0°C : 0.9°C	0~850.0°C : 1.5°C	
	T	-100.0°C~400.0°C	-60~0°C : 1.0°C	0~1120°C : 0.7°C	
	N	-200.0°~1300.0°C	-100~0°C : 1.0°C	0~400°C : 0.7°C	
			-200~0°C : 1.5°C	0~1300°C : 0.9°C	



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## GENERAL SPECIFICATIONS

Function	Reference	Range	Resolution	Accuracy	Remark
TC	B	600°C~1820°C	1°C	600~800°C : 2.2°C 800~1000°C : 1.8°C 1000~1820°C : 1.4°C	
	L	-60°C~900°C	0.1°C	-60~0°C : 0.7°C 0~1300°C : 0.5°C	
	U	-100°C~600°C	0.1°C	-100~0°C : 0.7°C 0~600°C : 0.5°C	
RTD	PT100-385	-200.0°C~800.0°C	0.1°C	-200°C~0°C : 0.5°C 0°C~400°C : 0.7°C 400°C~800°C : 0.8°C	By using Pt100-385 Does not include lead resistance
	PT200-385	-200.0°~630°C		-200~100°C : 0.22°C	
	PT500-385	-200.0°~630°C		-100~300°C : 0.3°C	
	PT1000-385	-200°C~630°C		300~630°C : 0.4°C	
	Cu10	-100°C~260°C		-100°C~260°C : 2°C	
	Cu50	-50°C~150°C		-50~0 : 0.5°C 0~150 : 0.7°C	
CONTINUITY	500Ω Approximately 1mA Test Current	≤ 50Ω sound	0.01Ω	0.02%+0.2	

## OTHER FEATURE

- Rate: 2 Readings per Second for DC Voltage, DC current, Resistance.
- DCV  
Normal Mode Rejection Ratio (NMRR)  
≥ 60dB (at 50Hz or 60Hz)  
Common Mode Rejection Ratio (CMRR)  
≥ 120dB (at 50Hz or 60Hz)
- Temperature Coefficient: 0.1 times the applicable accuracy specification per degree C for 5°C to 18° and 28° to 50°
- The range of the internal temperature compensation sensor is from 0? to 40?, compensation error ≤ ±0.5°C
- Maximum voltage between VΩHz terminal and COM terminal: 60 Vp-p

## TECHNICAL SPECIFICATIONS FOR SOURCE

These specifications assume:

- A 1-year calibration cycle
- An operating temperature of 18°C to 28°C (64.4°F~82.4°F)
- Relative humidity of 35% to 70% (non-condensing)

## GENERAL SPECIFICATION

- Operating temperature and humidity,  
≤ 80% at 0°C to 50°C (non- condensing)  
≤ 70% at 40°C to 50°C
- Storage temperature and humidity ≤ 90%  
at -25°C to 60°C (non-condensing)
- Display and backlight, A dual, Liquid Crystal Display,  
White LED for backlight
- Power Supply: 4×1.5AA-size alkaline batteries  
4×1.2AA-size Ni-Hi batteries,  
AC adapter can charge Ni-Hi battery (Optional)  
Automatic Power-off: It's allowed set the  
Automatic Power-off time From 0 to 60 minutes.
- Size: 205×95×42(mm)
- Weight: about 500g
- Accessories: A couple of test leads for measure  
A couple of test leads for source fuse

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Accuracy is expressed as  $\pm$  (percentage of reading + percentage of range).

Function	Reference	Range	Resolution	Accuracy	Remark
DC Voltage	100mV	-10.000mV~110.000mV	1 $\mu$ V	0.02+0.01	Maximum output current: 0.5 mA
	1000mV	-100.00mV~1100.00mV	10 $\mu$ V	0.02+0.01	Maximum output current: 2 mA
Resistance	400 $\Omega$	0.00 $\Omega$ ~400.00 $\Omega$	0.01 $\Omega$	0.02+0.025	Excitation current: $\pm$ 0.5 - 3 mA; if $\pm$ 0.1-0.5, add 0.1 $\Omega$ ; Does not include lead resistance
	4K $\Omega$	0.0000k $\Omega$ ~4.0000k $\Omega$	0.1 $\Omega$	0.05+0.025	Excitation current: $\pm$ 0.5 - 0.33 mA; Does not include lead resistance
TC	R	0 $^{\circ}$ C~1767 $^{\circ}$ C	1 $^{\circ}$ C	0~100 $^{\circ}$ C : 1.5 $^{\circ}$ C 100~1767 $^{\circ}$ C : 1.2 $^{\circ}$ C	By using ITS-90 temperature scale; The accuracy does not include the error or internal temperature compensation caused by a sensor;
	S	0 $^{\circ}$ C~1767 $^{\circ}$ C		0~100 $^{\circ}$ C : 1.5 $^{\circ}$ C 100~1767 $^{\circ}$ C : 1.2 $^{\circ}$ C	
	K	-200.0 $^{\circ}$ C~1372.0 $^{\circ}$ C	0.1 $^{\circ}$ C	-200~100 $^{\circ}$ C : 0.6 $^{\circ}$ C -100~400 $^{\circ}$ C : 0.5 $^{\circ}$ C 400~1200 $^{\circ}$ C : 0.7 $^{\circ}$ C 1200~1372 $^{\circ}$ C : 0.9 $^{\circ}$ C	
	E	-200.0 $^{\circ}$ C~1000.0 $^{\circ}$ C		-200~100 $^{\circ}$ C : 0.6 $^{\circ}$ C -100~600 $^{\circ}$ C : 0.5 $^{\circ}$ C 600~1000 $^{\circ}$ C : 0.4 $^{\circ}$ C	
	J	-200.0 $^{\circ}$ C~1200.0 $^{\circ}$ C		-200~-100 $^{\circ}$ C : 0.6 $^{\circ}$ C -100~800 $^{\circ}$ C : 0.5 $^{\circ}$ C 800~1200 $^{\circ}$ C : 0.7 $^{\circ}$ C	
	T	-250.0 $^{\circ}$ C~400.0 $^{\circ}$ C		-2500~400 $^{\circ}$ C : 0.6 $^{\circ}$ C	
	N	-200.0 $^{\circ}$ C~1300.0 $^{\circ}$ C	-200~100 $^{\circ}$ C : 1.0 $^{\circ}$ C -100~900 $^{\circ}$ C : 0.7 $^{\circ}$ C 900~1300 $^{\circ}$ C : 0.8 $^{\circ}$ C		
	B	600 $^{\circ}$ C~1820 $^{\circ}$ C	1 $^{\circ}$ C	600~800 $^{\circ}$ C : 1.5 $^{\circ}$ C 800~1820 $^{\circ}$ C : 1.1 $^{\circ}$ C	
	L	-200.0 $^{\circ}$ C~900.0 $^{\circ}$ C		-200~0 $^{\circ}$ C : 0.7 $^{\circ}$ C 0~900 $^{\circ}$ C : 0.5 $^{\circ}$ C	
	U	-200.0 $^{\circ}$ C~600.0 $^{\circ}$ C		-200~0 $^{\circ}$ C : 0.7 $^{\circ}$ C 0~600 $^{\circ}$ C : 0.5 $^{\circ}$ C	
RTD	Pt100 385	-200.0 $^{\circ}$ C~800.0 $^{\circ}$ C	0.1 $^{\circ}$ C	-200~0 $^{\circ}$ C : 0.3 $^{\circ}$ C 0.0~400 $^{\circ}$ C : 0.5 $^{\circ}$ C 400~850 $^{\circ}$ C : 0.8 $^{\circ}$ C	By using Pt100-385 Excitation current: $\pm$ 0.1mA fo PT100, Cu10, Cu50; Excitation current: $\pm$ 0.1mA for PT200, PT500, PT1000; Does not include lead resistance.
	Pt200 385	-200.0 $^{\circ}$ C~630.0 $^{\circ}$ C		-200~100 $^{\circ}$ C : 0.8 $^{\circ}$ C 100~300 $^{\circ}$ C : 0.9 $^{\circ}$ C 300~630 $^{\circ}$ C : 1.0 $^{\circ}$ C	
	Pt500 385	-200.0 $^{\circ}$ C~630.0 $^{\circ}$ C		-200~100 $^{\circ}$ C : 0.4 $^{\circ}$ C 1000~300 $^{\circ}$ C : 0.5 $^{\circ}$ C 300~630 $^{\circ}$ C : 0.7 $^{\circ}$ C	
	Pt1000 385	-200.0 $^{\circ}$ C~630.0 $^{\circ}$ C		-200~100 $^{\circ}$ C : 0.2 $^{\circ}$ C 100~300 $^{\circ}$ C : 0.5 $^{\circ}$ C 300~630 $^{\circ}$ C : 0.7 $^{\circ}$ C	
	Cu10	-100.0 $^{\circ}$ C~250.0 $^{\circ}$ C		-10~250 $^{\circ}$ C : 1.8 $^{\circ}$ C	
	Cu50	-50.0 $^{\circ}$ C~150.0 $^{\circ}$ C		-50~150 $^{\circ}$ C : 0.6 $^{\circ}$ C	

- Temperature Coefficient: 0.1 times the applicable accuracy specification per degree C for 5 $^{\circ}$ C to 18 $^{\circ}$ C and 28 $^{\circ}$ C to 50 $^{\circ}$ C
- The range of the internal temperature compensation sensor is from 0 $^{\circ}$ C to 40 $^{\circ}$ C, compensation error  $\leq \pm$  0.5 $^{\circ}$
- Maximum voltage between any output terminal and earth: 30V DC

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