



RK TECHNOLOGIES

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RK-MFC-500

Multifunction Calibrator | 6.5-Digit Precision

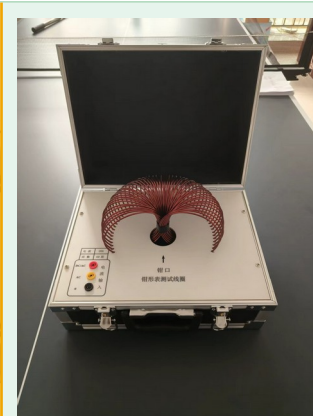
High Precision AC/DC Voltage & Current Standard Source

◆ NEW MODEL ◆

Upgraded
Performance



RK-MFC-500 Multifunction Calibrator



Clamp Meter Test Coil
(Included Accessory)

1. OVERVIEW

The RK-MFC-500 multi-function calibrator is an intelligent AC and DC standard voltage and current source. The AC output is displayed as true RMS value. Three windows simultaneously show the output value, percentage and range value. The amplitude adjustment can be done by keys or analog (encoder) separately, or simultaneously. It features digital display, direct reading of error, wide range, fine division, high precision, good stability and easy operation. Suitable for verification, calibration and repair of digital multimeters, voltmeters and ammeters with less than 4.5 digits, as well as AC/DC voltmeters and ammeters below 0.2 grade.

2. MAIN FUNCTIONS

★ **6.5-Digit LED Digital Display** — output values shown in actual value & percentage forms.

[KEY FEATURE]

- ◆ 2.2 Output value adjustable by keys — supports percentage-of-range & digit-adjustment modes.
- ◆ 2.3 Analog adjustment via encoder — ideal for testing pointer-type instruments.
- ◆ 2.4 Combined percentage / digit adjustment mode with analog encoder.
- ◆ 2.5 AC and DC voltage output range: 0 to 1050 V.
- ◆ 2.6 AC and DC current output range: 0 to 24 A.
- ◆ 2.7 Five AC frequencies: mains sync, 50 Hz, 60 Hz (59.7 Hz), 400 Hz, 1 kHz (crystal-stable).
- ◆ 2.8 Automatic protection against output overload with manual reset.
- ◆ 2.9 50 Hz AC output selectable for mains synchronization — reduces beat frequency effect.



- ★ 2.10 Clamp meter measurement: measures 0–1000 A clamp current meters (error < 0.3%) with standard coil.

3. OUTPUT RANGE & ACCURACY

Output Item	Output Range	Rated Output	Max Output	Accuracy
ACV / DCV	0 – 250 mV	20 mA	100 mA	Basic Error
	0 – 1 V / 2.5 V	50 mA	100 mA	DCV: $\pm(0.02\% \text{ rdg} + 0.01\% \text{ Fs})$
	0 – 5 V / 10 V / 25 V	100 mA	200 mA	DCI: $\pm(0.03\% \text{ rdg} + 0.01\% \text{ Fs})$
	0 – 50 V / 100 V / 250 V	50 mA	100 mA	ACV: $\pm(0.03\% \text{ rdg} + 0.01\% \text{ Fs})$
	0 – 500 V / 1000 V	DC 20mA / AC 40mA	DC 40mA / AC 60mA	ACI: $\pm(0.05\% \text{ rdg} + 0.01\% \text{ Fs})$
ACI / DCI	0 – 100 μ A / 500 μ A / 2 mA	—	DC: 3V	400 Hz additional error: $\pm 0.1\%$
	5 mA / 20 mA / 50 mA	—	AC: 12V	1 kHz additional error: $\pm 0.15\%$
	200 mA – 500 mA	—	—	Voltage additional error: $\pm 0.02 \text{ mV}$
	0 – 2 A / 5 A	—	DC: 2.5V / AC: 6V	—
	0 – 20 A	—	1.5 V	—
Median Resistance	10 Ω – 2 M Ω	0.25 W	—	$\pm 0.1\% + 20 \text{ m}\Omega$
	5 M Ω – 20 M Ω	0.25 W	—	$\pm 0.4\% + 20 \text{ m}\Omega$

Note: If working temp exceeds 23°C \pm 2°C, for every 10°C change, additional error < basic error of that range. For 20A/1kHz: error $\pm(0.15\% \text{ reading} + 0.1\% \text{ range})$.

4. TECHNICAL PERFORMANCE

Parameter	Specification
Stability	AC < 0.01% of full scale / 5 min DC < 0.005% of full scale / 5 min
AC Distortion	< 0.5%
DC Ripple Coefficient	< 0.05% (output DC voltage > 1V)
Output Frequency & Accuracy	Sync mains, 50 Hz, 60 Hz, 400 Hz, 1 kHz Accuracy < 0.5% + 0.1 Hz
Power Supply	AC 220V \pm 10%, 50 Hz \pm 1 Hz
Working Temperature	5°C – 35°C, Relative Humidity < 80%
Working Time	Continuous
Dimensions (H \times W \times D)	155 \times 490 \times 460 mm
Weight	Approximately 15 kg



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Parameter	Specification
Optional Interface	RS-232 or USB (PC connectivity)

5. CLAMP METER TEST COIL — INSTRUCTION MANUAL



Standard Test Coil (Included)

Coil Specifications

Applicable Frequencies: DC, AC (50 Hz, 60 Hz, 400 Hz)

Parameters: 20A / 50 Turns (equivalent 1000A) | Clamp opening size ≥ 24 mm

Precision: $\pm 0.2\%$

Instructions for Use

- Connect red & black terminals of constant current source to DC/AC hole and * hole (common terminal) on coil panel. For pointer-type AC clamp meter, connect to AC and * holes.
- After clamping the coil of the meter under test, place it horizontally with the coil center at the center of the clamp.
- Press "Clamp Meter" button on constant current source — displayed data is the measured value. If button is not pressed, multiply reading by 50.
- If constant current source power is insufficient and clamp meter cannot reach full scale value, the error is not affected.
- When test coil is at maximum working state, power-on time should NOT exceed 3 minutes.**

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