

# REED

## Model R8801

Voltage/Current Calibrator

## Instruction Manual



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# Safety

- Do not use the meter if any parts are damaged or if the back cover is open.
- Never apply over 30V between any two terminals or a terminal and grounding terminal.
- Get this instrument professionally calibrated every year to ensure accuracy. Contact [info@reedinstruments.com](mailto:info@reedinstruments.com) for information.

# Features

- Source Voltage and Current
- Ramp Voltage and Current
- Loop Power
- Auto Power Off
- USB Interface

# Specifications

LCD Size:	40 x 63mm
Temperature Coefficient:	$\pm 0.005\%$ x measuring range / °C (0 to 18°C, 28 to 50°C)
Power Supply:	1 x 9V Battery
Dimensions & Weight:	193 x 96 x 47mm / 0.45kg
Includes:	Test Leads, USB Cable, Software, Carrying Case, and Batteries

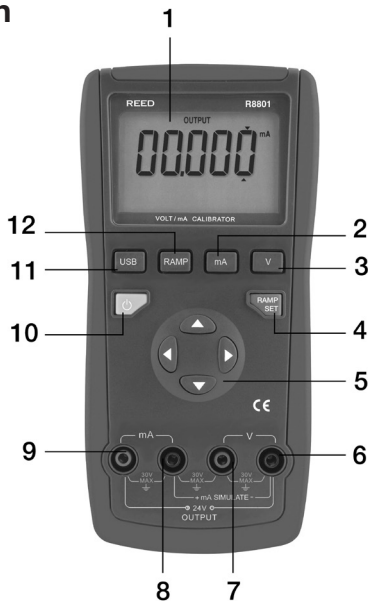
Output	Measuring Range	Output Range	Resolution	Accuracy
DC V	20V	0 to 20V	0.001V	$\pm(0.03\%$ rdg. $+ 2$ dgts)
DC A	22mA	0 to 22mA	0.001mA	
Analog Converter	22mA			
Loop Power	24V			$\pm 10\%$

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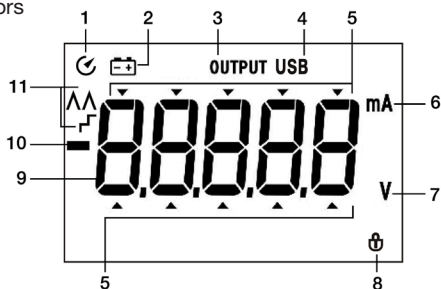
## Instrument Description

1. LCD Screen
2. mA Button
3. Voltage Button
4. RAMP SET Button
5. Directional Pad
6. Negative V Terminal
7. Positive V Terminal
8. Negative mA Terminal
9. Positive mA Terminal
10. Power Button
11. USB Button
12. RAMP Button



## Display Description

1. Auto Power Off
2. Low Battery
3. Output Indicator
4. USB Connection
5. Digit Select Indicators
6. mA Icon
7. Voltage Icon
8. Button Lock
9. Reading
10. Negative Reading
11. Ramp Status Icon



# Operating Instructions

## *DC Voltage Source*

Use the DC Voltage Source function for high accuracy voltage output.

1. Turn the meter on by pressing and holding the Power button.
2. Press the Voltage button. The Voltage Icon will appear on the LCD.
3. Press the left or right directional buttons to adjust the position of the Digit Select Indicators. Press the up and down buttons to adjust the output value.
4. Insert a Red Test Lead into the Positive V Terminal and a Black Test Lead into the Negative V Terminal. Connect the test leads to the loading device.

## *Loop Voltage Source*

Use the Loop Voltage Source function for low accuracy voltage output. The output is a fixed 24 Volts. Under any measurement, insert a Red Test Lead into the Positive mA Terminal and a Black Test Lead into the Negative V Terminal. The maximum load current will be 22mA.

## *DC Current Source*

1. Turn the meter on by pressing and holding the Power button.
2. Press the mA button. The mA Icon will appear on the LCD.
3. Press the left or right directional buttons to adjust the position of the Digit Select Indicators. Press the up and down buttons to adjust the output value.
4. Insert a Red Test Lead into the Positive mA Terminal and a Black Test Lead into the Negative mA Terminal. Connect the test leads to the loading device.

## Analog Converter


1. Turn the meter on by pressing and holding the Power button.
2. Press the mA button. The mA Icon will appear on the LCD.
3. Press the left or right directional buttons to adjust the position of the Digit Select Indicators. Press the up and down buttons to adjust the output value.
4. Insert a Test Lead into the Negative mA Terminal and a Test Lead into the Negative V Terminal. Connect the test leads to the loading device. The nominal input voltage is 12 to 28V.

## Ramp Function


Use the Ramp function to change the output voltage or current in regular increasing or decreasing values.

1. Turn the meter on by pressing and holding the Power button.
2. Press the RAMP SET button. The Ramp Status Icons will appear on the LCD.
3. Press the Voltage button to select Voltage Ramp Set Mode, indicated by a “V” on the display. Press the mA button to select Current Ramp Set Mode, indicated by a “mA” on the display.
4. Press the left directional button to select a cyclical pattern, which will be indicated by “LO” on the LCD. Press the right directional button to deselect the cyclical pattern.
5. Press the up and down buttons to select the ramp range.
6. Press the RAMP button to select the ramp pattern. The corresponding icon will appear on the LCD:


**Slow**

(1 sec/value): 

**Quick**

(0.5 sec/value): 

**Step**

(5 sec/value): 

7. Insert a Red and Black Test lead into the corresponding terminals based on the output (Voltage: V Terminals, Current: mA Terminals).
8. Press the up button to start the Ramp Function. Press the down button to pause the Ramp Function. While Paused, press the up and down buttons to increase and decrease the output.

The chart below indicates the Ramp settings you can choose on the meter. If the meter is plugged into a computer via USB it can support functions for any range and stepping value.

### ***Voltage Ramp Rule***

<b>Range</b>	<b>Ramp Mode</b>	<b>Step Value</b>	<b>Interval (sec.)</b>
0 to 5V	Slow	0.125V	1
	Quick	0.125V	0.5
	Stepping	1.000V	5
0 to 10V	Slow	0.250V	1
	Quick	0.250V	0.5
	Stepping	2.000V	5
0 to 20V	Slow	0.250V	1
	Quick	0.250V	0.5
	Stepping	2.500V	5

### ***Current Ramp Rule***

<b>Range</b>	<b>Ramp Mode</b>	<b>Step Value</b>	<b>Interval (sec.)</b>
4 to 20mA	Slow	0.250mA	1
	Quick	0.250mA	0.5
	Stepping	2.000mA	5
0 to 20mA	Slow	0.250mA	1
	Quick	0.250mA	0.5
	Stepping	2.000mA	5
0 to 10mA	Slow	0.200mA	1
	Quick	0.200mA	0.5
	Stepping	1.000mA	5

### ***Auto Power Off***

The meter will automatically turn off after 5 minutes of inactivity. Press the Power and Voltage button at the same time to turn off the Auto Power Off function.

## Software

1. While the meter is on, connect the USB cable to the port on the meter and a computer.
2. Insert and install the included software on the computer.
3. When connected to a computer the buttons on the meter will lock, indicated on the LCD screen.

## Battery Replacement

To view the current battery voltage press the Power and Voltage buttons. The voltage of the battery will appear on the LCD. If the voltage is below 5.6V the low battery icon will appear indicating you will need to change the batteries.

1. Turn off the meter and unplug any test leads.
2. Unscrew and remove the back cover.
3. Replace the battery and put the back cover back on. Be sure it is secured properly before turning the meter back on.