

**R5800**

# **REED** **INSTRUMENTS**

## **Voltage Current Simulator**



## **Instruction Manual**

**REED Instruments**

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## Introduction

Thank you for purchasing your REED R5800 Voltage/Current Simulator. Please read the following instructions carefully before using your instrument. By following the steps outlined in this manual your meter will provide years of reliable service.

## Product Quality

This product has been manufactured to meet stated product specifications. If a certificate of calibration is required please contact the nearest authorized REED distributor or authorized Service Center. Please note an additional fee for this service will apply.

## Safety

To prevent the user and the instrument from electric shock and other hazards, it is necessary to follow the following regulations:

- Never attempt to repair or modify your instrument. Dismantling your product, other than for the purpose of replacing batteries, may cause damage that will not be covered under the manufacturer's warranty. Servicing should only be provided by an authorized service center.
- Do not operate the instrument in the presence of flammable or explosive gas or vapor. This is extremely dangerous.
- Never apply more than 30V between any two terminals, or between terminal and ground.
- For optimal accuracy, allow the instrument to warm up for 5 minutes before operating.

## Features

- Sources voltage and current
- Large, 5-digit LCD display
- Automatic calibration
- Low battery indicator and auto shut off

## Specifications

### Output Functions

Applicable range from 18 to 28°C, within one year of calibration.

Output	Range	Output Range	Resolution	Accuracy	Note
DCV	10V	0.000 to 11.000V	1mV	0.05% of set value $\pm 2\text{mV}$	Max output current: 2mA
DCA	20mA	0.000 to 22.000mA	0.001mA	0.05% of set value $\pm 4\mu\text{A}$	Max load: 1k $\Omega$ at 20mA note 1
Analog transducer	-20mA	0.000 to -22.000mA	0.001mA	0.05% of set value $\pm 4\mu\text{A}$	Max load: 1k $\Omega$ at 20mA
Loop power	24V	-	-	$\pm 10\%$	Max output current up to 25mA

**Note 1:** When the battery voltage exceeds 6.8V, the max load is 1K $\Omega$  at 20mA. When its voltage lies between 5.8V and 6.8V, the max load is 700 $\Omega$  at 20mA.

**Note 2:** Temperature coefficient:  $\pm 0.005\%$  of the range per °C for the temperature ranges 5 to 18°C and 28 to 40°C.

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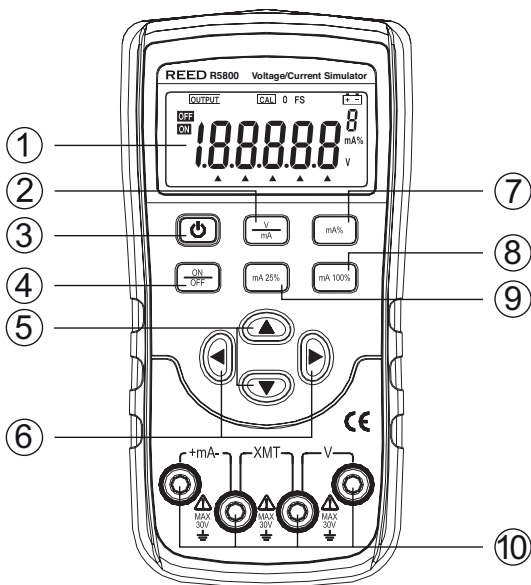
## General Specifications

Display:	5-Digit LCD
Kick Stand:	Yes
Battery Life:	Approximately 20 hours
Power Supply:	2 AA Batteries
Auto Shut Off:	Yes (after 15 minutes/off)
Low Battery Indicator:	Yes
Replaceable Test Leads:	Yes
Product Certifications:	CE
Operating Temperature:	32 to 122°F (0 to 50°C)
Operating Humidity Range:	0 to 85%
Storage Temperature:	14 to 122°F (-10 to 50°C)
Dimensions:	7.1 x 3.5 x 1.9" (180 x 90 x 47mm)
Weight:	8.2oz (500g)

## Included

- Test Leads
- Alligator Clips
- Protective Holster
- Batteries

# Instrument Description

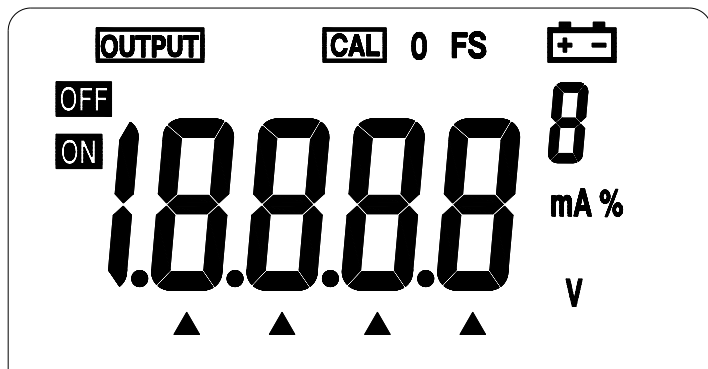




- |                                     |   |
|-------------------------------------|---|
| 1. LCD Screen                       | 7. Unit mA/% Select Button                  |
| 2. Unit V/mA Select Button          | 8. Zero/FS Points Select Button             |
| 3. Power Button                     | 9. 25% Single Step Setting/Auto Ramp Button |
| 4. Output ON/OFF Button             | 10. Output Terminals                        |
| 5. ▲▼ Output Value Setting Button   |   |
| 6. ◀▶ Output Digit Selection Button |   |

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## Display Description



<b>OUTPUT</b>	Indicates that the instrument is in an output state
<b>CAL</b>	Indicates that the instrument is in a calibration state
<b>0 FS</b>	Indicates that the instrument is in a calibration state, denoting that the zero point or the full scale point is now in calibration
	Indicates that the battery power is low and needs to be replaced
	Indicates that the output digits need to be set
V. mA. %	Indicates the current output value (unit of measure)
<b>ON OFF</b>	Indicates that the output signal is on or off

# Operating Instructions

## *Power ON/OFF*

Press the **POWER** button to turn the instrument on. To turn the instrument off, press and hold the **POWER** button.

## *Automatic Power-Off*

As a default the instrument will automatically turn off after 15 minutes of inactivity. Follow the steps below to Enable/Disable the Auto-Power Off function.

1. Turn the meter off.
2. Press the **ON/OFF** button (to display the full screen).
3. Quickly press the **mA%** button when the instrument is in the maintenance state as indicated by "1.8.8.888".
4. "AP-XX" will appear on the display.
5. Press the ▼ button to toggle between "AP-ON" & "AP-OFF". "AP-OFF" indicates that the automatic power-off function is disabled, while "AP-ON" indicates the automatic power-off function is enabled.
6. Press the **mA 100%** button to save the required setting.
7. Press and hold the **ON/OFF** button to exit the maintenance state and turn the instrument off.

## *Output Function*

The output terminal of the instrument can produce DC voltages set by the user or simulating resistance.

Do not apply any voltage to the output terminal during the operation. If any improper voltage is applied to the output terminal, it will cause damage to the internal circuits.

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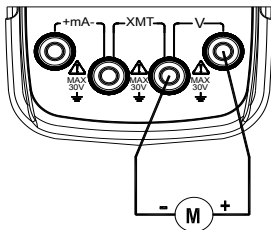


## Output Operation Procedure

Function Operation	Range Operation	Display	Set Range
DCA 10mA	20mA%	0.000V	0.000 to 11.000V -00.000 to 22.000mA

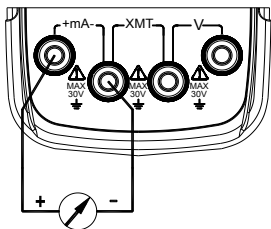
### DC Voltage Output

1. Insert one end of the test leads into the V output jack and connect the other end to the input of the meter, as shown in the diagram.
2. Press the **V/mA** button to select V function and V will appear on the display.
3. Press the **◀▶** buttons to select the output digits.
4. Press the **▲▼** buttons to change the numerical value of the set digits. Hold the button and the value will keep varying.
5. Press the **ON/OFF** button to turn the output signal on and off as indicated by ON or OFF on the LCD display.



### DC Current Output

1. Insert one end of the test leads into the +mA output jack and connect the other end to the input of the meter, as shown in the diagram.
2. Press the **V/mA** button to select mA function and mA will appear on the display.
3. Press the **mA/%** button to select mA or % function to display the mA or % unit, in which 0% is 4mA and 100% is 20mA.
4. Press the **◀▶** buttons to select the output digits.
5. Press the **▲▼** buttons to change the numerical value of the set digits. Hold the button and the value will keep varying.
6. Press the **ON/OFF** button to turn the output signal on and off as indicated by ON or OFF on the LCD display.



*continued...*

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## **25% Step Current Output**

1. Connect the test leads to the meter as stated in the Current Output procedures.
2. Press the **V/mA** button to select mA function and mA will appear on the display.
3. Press the **mA 25%** button and  $\Gamma^{\perp}$  will appear on the display.
4. Press the **mA/%** button to select the set output mA or % and mA or mA% will appear on the display.
5. Press the **▲▼** button to change the output value in 25% increments, in which 0% indicates 4mA and 100% indicates 20mA.
6. Press the **ON/OFF** button to turn the output signal on and off as indicated by ON or OFF on the LCD display.
7. Press the **mA 25%** button to exit the 25% current output setup.

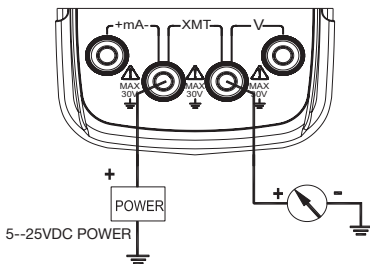
## **Current Output Set for Zero Point & Full Scale**

1. Connect the test leads to the meter as stated in the Current Output procedures.
2. Press the **V/mA** button to select the mA function and mA will appear on the display
3. Press the **mA 100%** button.  $\Gamma^{\perp}$ , 0 and FS will appear on the display.
4. Press the **mA/%** button to select the set output mA or % and mA or mA% will appear on the LCD display.
5. Press the **▲▼** buttons to change the output values at 100%, in which 0% indicates 4mA and 100% indicates 20mA.
6. Press the **ON/OFF** button turn the output signal on and off as indicated by ON or OFF on the display.
7. Press the **mA 100%** button to exit the full scale current output set up.

*continued...*

## Simulating Transmitter Output (XMT)

1. Insert one end of the test lead to the 'XMT' output jack of the calibrator and connect the other end with the input terminal of the user's instrument as shown in the following diagram:




2. The button-operation is the same as that as indicated in the *Current Output* section.

### Note:

- Power supply range: 5 to 25V DC.
- During an output operation, use a external 24V DC power supply in order to prolong battery life.

## Battery Replacement

When the  appears on the LCD, the batteries need to be replaced. Follow the instructions below to properly replace the batteries.

1. Turn the power off the meter and remove any test leads that may be attached to the meter.
2. Lift the tilt stand on the back of the unit to access the battery compartment door, which can be removed using a Phillips head screwdriver.
3. Replace the 2 x "AA" batteries in the lid of the battery compartment.

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4. Reinstall the compartment lid by ensuring that battery terminals touch the unit's contact points and snap into place.
5. Tighten the screw to secure the battery compartment door.

**Ensure battery door is closed and secure in place before using the meter. To ensure proper operation, wait 5 seconds before turning meter on after changing batteries.**

## Fuse Replacement

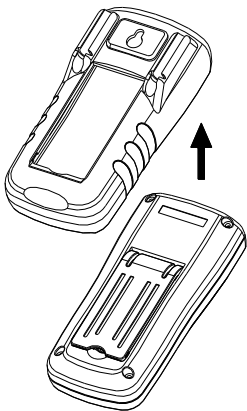


Figure 1

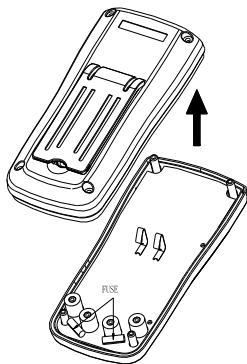


Figure 2

1. Remove the test leads from the meter and turn the meter OFF.
2. Take off the protective boot (Figure 1), remove the four screws by using a standard-blade screwdriver, and then remove the cover (Figure 2).
3. Replace the blown fuse(s).
4. Reinstall the cover.
5. Reinstall the meter's protective boot.

## Accessories and Replacement Parts

- **FC-300** Fused Test Lead Set
- **R1000** Safety Test Lead Set, Double Insulated
- **CA-05A** Soft Carrying Case
- **C-820** Soft Carrying Case

Don't see your part listed here? For a complete list of all accessories and replacement parts visit your product page on [www.reedinstruments.com](http://www.reedinstruments.com).

## Product Care

To keep your instrument in good working order we recommend the following:

- Store your product in a clean, dry place.
- Change the battery as needed.
- If your instrument isn't being used for a period of one month or longer please remove the battery.
- Clean your product and accessories with biodegradable cleaner. Do not spray the cleaner directly on the instrument. Use on external parts only.

## Product Warranty

REED Instruments guarantees this instrument to be free of defects in material or workmanship for a period of one (1) year from date of shipment. During the warranty period, REED Instruments will repair or replace, at no charge, products or parts of a product that proves to be defective because of improper material or workmanship, under normal use and maintenance. REED Instruments total liability is limited to repair or replacement of the product. REED Instruments shall not be liable for damages to goods, property, or persons due to improper use or through attempts to utilize the instrument under conditions which exceed the designed capabilities. In order to begin the warranty service process, please contact us by phone at 1-877-849-2127 or by email at [info@reedinstruments.com](mailto:info@reedinstruments.com) to discuss the claim and determine the appropriate steps to process the warranty.

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## Product Disposal and Recycling



Please follow local laws and regulations when disposing or recycling your instrument. Your product contains electronic components and must be disposed of separately from standard waste products.

## Product Support

If you have any questions on your product, please contact your authorized REED distributor or REED Instruments Customer Service by phone at 1-877-849-2127 or by email at [info@reedinstruments.com](mailto:info@reedinstruments.com).

Please visit [www.REEDINSTRUMENTS.com](http://www.REEDINSTRUMENTS.com) for the most up-to-date manuals, datasheets, product guides and software.

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