

CALIBRATION

An **annual calibration** by IET LABS, Inc. is highly recommended in order to maintain results consistent with product specifications. Only perform a field calibration when inaccurate values are suspected. Please visit www.ietlabs.com for details.

Field Calibration Overview

The total number of device resistance values to be entered during calibration are: OS-250 = **26**, OS-260 = **30**, OS-270 = **30**

To abort calibration, press “menu” at any time prior to entering the final residual resistance value. None of the previously entered resistance values will be saved.

Required Tools

Calibrated, high precision ohmmeter having an accuracy greater than or equal to the device being calibrated. The ohmmeter must have 4-wire ohms measurement capability and a minimum 6.5 digit resolution.

Instructions

1. Connect the ohmSOURCE device to the ohmmeter using the 4-wire ohms measurement setup.
2. Press “menu”, then select “3: Calibrate”.
3. Using the number keys, enter the resistance value requested by the screen prompt. Press “enter” to continue.
4. Follow the screen prompts for the remaining resistance values.
5. Enter the final residual resistance value and press “enter”.
6. When the message “Calibration Saved” is displayed, calibration is complete.

ACCESSORIES

Translation Table Add-on Part No. 91.0001
-Download Translation Data Tables to Simulate Transducers
Test Leads Part No. 91.0002
-Dual Banana Plug to Mini-Alligator Clips

SERVICE AND SUPPORT

IET LABS, Inc. offers full repair and calibration services at its corporate headquarters. Do not attempt to repair or modify the ohmSOURCE Electronically Controlled Resistance Box, as this will void the product warranty. Any service required other than battery replacement or calibration must be referred to IET LABS, Inc. Please contact IET LABS, Inc. or visit www.ietlabs.com for further information.

Telephone: (800) 899-8438 or (516) 334-5959
FAX: (516) 334-5988

534 Main Street
Westbury, NY 11590

WARRANTY

IET LABS, Inc. warrants to the original purchaser of the ohmSOURCE Electronically Controlled Resistance Box that it will repair or replace, at its option, any malfunctioning or defective part without charge for **six (6) months from the original purchase date**. Replaced or repaired parts are warranted for the remainder of the original warranty period. IET LABS, Inc. will provide labor and return shipping to the original purchaser for a warranty repair without charge.

TO OBTAIN WARRANTY SERVICE, the original purchaser must deliver, at its own expense, the product to: IET LABS, Inc., 534 Main Street, Westbury, NY 11590 USA.

THIS WARRANTY DOES NOT COVER:

- a) Batteries or test leads
- b) Routine calibration
- c) Defects caused by:
 - modification, alteration, repair or service of the product by anyone other than IET LABS, Inc.
 - misuse due to negligence or accident
 - operation or maintenance of the product in a manner contrary to the manufacturer’s instructions

Any express warranty not provided herein, and any remedy for breach of contract that but for this provision might arise by implication or operation of law, is hereby excluded and disclaimed. The implied warranties of merchantability and of fitness for any particular purpose are expressly limited to the terms mentioned above. Some states do not allow limitations on the duration of an implied warranty, so the above limitation may not apply to you.

Under no circumstances shall IET LABS, Inc. be liable to the original purchaser or to any other person for any special or consequential damages, whether arising out of breach of warranty, breach of contract, or otherwise. Some states do not allow the exclusion or limitation of special or consequential damages, so the above exclusion or limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

For further warranty information, contact IET LABS, Inc.



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Part No. 890002
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ohmSOURCE®
Electronically Controlled Resistance Box
Models OS-250, OS-260, OS-270

OPERATION MANUAL



INTRODUCTION

The ohmSOURCE Electronically Controlled Resistance Boxes are variable resistance output devices having several advanced features. Resistance values are entered via a calculator-style keypad or incrementally using a rotary switch. Values are prominently displayed, in ohms, on a large LCD and two banana jacks at the base of the device provide easily accessible outputs. Each device comes with stacking dual banana plug to mini-alligator clip test leads for simple connection to any application. Other features include:

Quick Value keys - store/recall up to four frequently used resistance values with one touch. User-definable.

Memory keys - 10 additional resistance memory locations (0 - 9).

Current Limiter - limits the amount of current passing through the device to prevent possible damage.

Increment Value setting - for use with rotary switch, user-definable or select standard resistance values (1%, 5%, 10%).

Open key - isolates the device from the application with the touch of a key.

Easy-to-Read Display - the output resistance value, in ohms, is easily read from the large graphical LCD display.

Automatic Residual Resistance - the residual resistance of the device is automatically included in the output resistance value.

100% mechanical isolation - device circuit is completely mechanically isolated from the output resistance.

Auto-Off Power - the device automatically shuts off after four minutes of inactivity to conserve power.

Translation Table Add-On - download and store up to three different tables for translating a known physical characteristic (i.e. temperature) to a resistance value. This feature is useful in simulating transducers such as thermistors and conductivity sensors.

Field Calibratable - easily calibrate the device with a high precision ohmmeter. (**Refer to Calibration section of this manual*)

Flash Software Updates - download and install the latest firmware updates from www.ietlabs.com.

SPECIFICATIONS

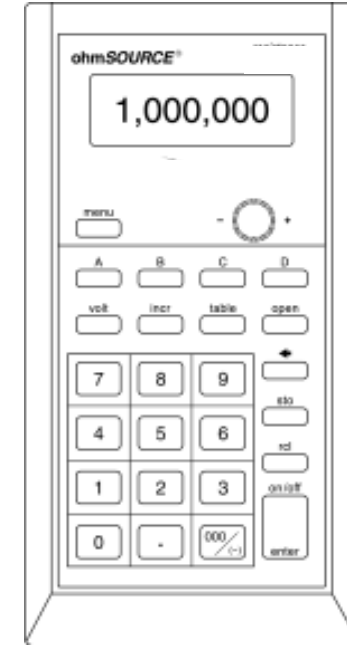
	Model OS-250	Model OS-260	Model OS-270
Range	0 to 24,000,000 Ω	0 to 24,000,000.0 Ω	0 to 1,500,000.00 Ω
Resolution	1 Ω	0.1 Ω	.01 Ω
Accuracy	± 1 Ω (up to 1,000 Ω) ± 0.1% (above 1,000 Ω)	± 0.5 Ω (up to 1,000.0 Ω) ± 0.1% (above 1,000.0 Ω)	± 0.1 Ω (up to 1,000.0 Ω) ± 0.01% (above 1,000.0 Ω)
Power Rating	1.0 W	1.0 W	1.0 W
Power Supply ...	4 AA alkaline batteries	4 AA alkaline batteries	4 AA alkaline batteries

Physical Specifications

Dimensions 7.68" x 3.98" x 1.73"
 Weight 18.5 oz (526 g)

FEATURES & KEY FUNCTIONS

KEY	DESCRIPTION	FUNCTION
menu	Displays the following submenu: 1: Standard Values 1: 1% Std Values 2: 5% Std Values 3: 10% Std Values 4: Ratiometric 2: Contrast 3: Calibrate 4: Version	Press "menu" and select one of the following: 1: Standard Values – each click of the rotary switch increases/decreases the displayed resistance value to the nearest industry standard resistance value. Select one of the following: 1: 1% Std Values 2: 5% Std Values 3: 10% Std Values 4: Ratiometric (increases/decreases displayed value by 0.8%) 2: Contrast – adjusts display contrast 3: Calibrate – device field calibration (<i>*Refer to Calibration section of this manual</i>) 4: Version – displays current firmware version and release date
Quick Value A, B, C, D	Recalls a resistance value with one touch. Default values: A: 10 kΩ, B: 100 kΩ, C: 1 MΩ, D: 10 MΩ	To change Quick Values, enter a resistance value using the number keys. Press "sto", then "A", "B", "C", or "D".
volt	Limits the amount of current passing through the device to protect it from possible damage. Default value: 0.5 V	Press "volt". Using the number keys, press the estimated value of the voltage being applied across the device's outputs. Press "enter" to save.
incr	Defines the amount each click of the rotary switch increases/decreases the displayed resistance value. Default value: Ratiometric (0.8% of displayed value)	Press "incr". Using the number keys, press the desired increment value. Press "enter" to save.
table	Loads up to 3 stored data tables for the translation of a known physical characteristic (i.e. temperature) to a resistance value.	Translation Table Add-On required.
open	Isolates the device by establishing an open circuit across the device outputs.	Press "open" to open the circuit. Press "open" again to close the circuit.
←	Deletes from the display the last character entered.	Press "←".
sto	Stores a resistance value in a Quick Value (A – D) or memory location (0 – 9).	Using the number keys, press the desired resistance value. Press "sto", then the desired Quick Value or memory location: A – D, 0 – 9.
rcl	Recalls a previously stored resistance value from a memory location (0 – 9).	Press "rcl", then a number key (0 – 9).
enter on / off	Turns the device on or off, and is used to select a resistance value.	To turn device on, press "enter" and release. To turn device off, press "enter" and hold for 3 seconds. Auto-Off after 4 minutes of inactivity.
0 - 9, 000	Used to enter a numerical value.	Key "000/(-)" multiplies the displayed value by 1000. (-) used with Translation Table Add-On only.



OPERATING INSTRUCTIONS

- Turn on the device by pressing and releasing "enter".
- Select a desired resistance value in one of the following ways:
 - Rotate switch;
 - Enter a value using the number keys, then press "enter";
 - Press a Quick Value key (A – D) to display a user-defined value or a factory default value.
 Default values are: A: 10 kΩ; B: 100 kΩ; C: 1 MΩ; D: 10 MΩ
 - Press "rcl" then a number key (0 – 9) to display a user-defined value or a factory default value.
 Default values are: 0: 100 Ω; 1: 1 kΩ; 2: 2 kΩ; 3: 3 kΩ; 4: 4 kΩ; and so on.
- Press "volt" and select the application voltage using the number keys, then press "enter". (Default: 0.5 V)

This feature restricts the use of resistance values that would cause the device to exceed its 1 W rating. It is important to check this setting prior to using the device.

- With the test leads provided, insert the dual banana plug into the output jacks on the device, then connect the mini-alligator clips to the application.
- To isolate the device from the application, press "open" to open the circuit. Press "open" again to close the circuit.
- To turn off the device, press and hold "enter" for 3 seconds. Auto-Off after 4 minutes of inactivity.