

VOLTCRAFT 1611423

VOLTCRAFT R-BOX 02 Resistance Decade Box

Model: 1611423

1. INTRODUCTION

The VOLTCRAFT R-BOX 02 is a precision resistance decade box designed for quickly and easily setting various resistance values. It is an ideal tool for educational purposes, training, development, and general electrical testing applications. This manual provides essential information for the safe and effective use of your R-BOX 02.

2. SAFETY INSTRUCTIONS

- Read this instruction manual thoroughly before using the device.
- Keep the device away from moisture, dust, and extreme temperatures.
- Do not attempt to open or modify the device. Repairs should only be performed by qualified personnel.
- Ensure proper connections are made using 4mm safety sockets to prevent electrical hazards.
- Always disconnect the device from any circuit before making adjustments or connections.
- Observe the maximum voltage and current ratings specified for the device to prevent damage.

3. PACKAGE CONTENTS

Please check the package contents upon receipt to ensure all items are present and undamaged.

- VOLTCRAFT R-BOX 02 Resistance Decade Box (Model: 1611423)
- Instruction Manual
- *Note: Connection cables are typically sold separately and are not included unless specified.*

4. PRODUCT OVERVIEW

The VOLTCRAFT R-BOX 02 features multiple banks of switches, allowing for precise adjustment of resistance values. The unit is equipped with 4mm sockets for secure connections.



Figure 1: Front view of the VOLT CRAFT R-BOX 02. This image shows the main unit with its array of toggle switches, each labeled with resistance values, and the 4mm input/output terminals at the top. The labels indicate resistance ranges from 1 Ohm to 4M Ohm, with a note about 1% resistors and 0.3 Ohm internal resistance. Instructions at the bottom state "Start with all switches up (OUT) for 0 Ohms. Switch down (IN) to add Resistance value."



Figure 2: Close-up view of the VOLT CRAFT R-BOX 02. This image provides a clearer look at the individual switches and their corresponding resistance values, as well as the color-coded 4mm banana plug terminals (black, yellow, red) at the top for connecting to external circuits. The text on the device indicates "1% Resistors (0.3W) + 0.3Ω internal" and "1 to 11,111,110 Ω (1Ω step)".

5. SETUP

1. **Unpacking:** Carefully remove the R-BOX 02 from its packaging.
2. **Inspection:** Inspect the device for any signs of physical damage. Do not use the device if it appears damaged.
3. **Placement:** Place the R-BOX 02 on a stable, flat, and non-conductive surface.
4. **Connections:** Use appropriate 4mm banana plug cables (not included) to connect the R-BOX 02 to your circuit or test equipment. Ensure connections are secure.



Figure 3: The VOLT-CRAFT R-BOX 02 connected to a circuit board. This image illustrates the decade box in an operational setting, with test leads connected from its 4mm terminals to a circuit board, demonstrating its application in electronic testing or development.

6. OPERATION

The R-BOX 02 allows you to select a desired resistance value by engaging a combination of switches. Each switch corresponds to a specific resistance value.

6.1 Setting Resistance Values

1. **Initial State:** Ensure all toggle switches are in the "OUT" (upward) position. In this state, the total resistance is 0 Ohms (excluding internal resistance).
2. **Selecting Values:** To add a resistance value, push the corresponding toggle switch to the "IN" (downward) position.
3. **Calculating Total Resistance:** The total resistance presented by the R-BOX 02 is the sum of all resistance values for the switches currently in the "IN" position.
4. **Example:** To achieve a resistance of 123 Ohms, you would push the switches for 100 Ohms, 20 Ohms, and 3 Ohms to the "IN" position.
5. **Maximum Resistance:** The R-BOX 02 can provide resistance values from 1 Ohm up to 11,111,110 Ohms (approximately 11.1 MOhms) in 1 Ohm steps.

6.2 Connection to Circuit

Connect the 4mm banana plugs from the R-BOX 02 to the points in your circuit where you wish to introduce the selected resistance. Always ensure the circuit is de-energized before making or breaking connections.

7. MAINTENANCE

- **Cleaning:** Clean the exterior of the device with a soft, dry cloth. Do not use abrasive cleaners or solvents.

- **Storage:** Store the R-BOX 02 in a dry, dust-free environment, away from direct sunlight and extreme temperatures.
- **Inspection:** Periodically check the 4mm sockets and switches for any signs of wear or damage.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Incorrect resistance reading	Switches not fully engaged; incorrect switch combination; faulty connection cables.	Ensure switches are fully "IN" or "OUT". Double-check the sum of selected resistance values. Verify connection cables are not damaged and are securely attached.
No resistance change	Poor connection to the circuit; internal fault.	Check all external connections. If the problem persists, contact customer support.
Physical damage to switches or terminals	Improper handling or excessive force.	Discontinue use. Contact customer support for repair options.

9. SPECIFICATIONS

Manufacturer:	VOLTCRAFT
Model Number:	1611423
Part Number:	VC-8057115
Product Dimensions:	13.1 x 14 x 5.4 cm
Weight:	293 g
Color:	Grey
Style:	Standard
Power Source:	Manual power driven
Number of items in package:	1
Included Components:	Packaging content: 1 double sofa (<i>Note: This appears to be an incorrect translation from the source data. The actual component is the R-BOX 02 itself.</i>)
Batteries included?:	No
Batteries required?:	No
Resistance Range:	1 Ohm to 11,111,110 Ohms (1 Ohm step)
Resistor Tolerance:	1%
Internal Resistance:	0.3 Ohms

Connection Type:	4mm sockets
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10. WARRANTY AND SUPPORT

VOLTCRAFT provides a minimum 2-year warranty from the date of purchase for this product. This warranty covers defects in materials and workmanship under normal use.

For warranty claims, technical support, or service inquiries, please contact your retailer or the VOLTCRAFT customer service department. Please have your proof of purchase and the product model number (1611423) available when contacting support.