

# Decade Box

## RDB-10 User Manual

Model RDB-10 from Global Specialties is a hand held Resistance decade box that creates a specific resistance value using a combination of switches. Designed with accuracy to meet the needs of industry and education alike.

The RDB-10 is a compact, convenient tool for aiding in engineering design and testing as well as calibration of test equipment.

It offers 7 decades of resistance ranges, from 1  $\Omega$  to over 11 M $\Omega$  in 1  $\Omega$  steps. Easy-to-use slide switches allow for straightforward addition and subtraction of resistance values. RDB-10 is a passive device that requires no power source.

### Operation

#### Binding Post Connections

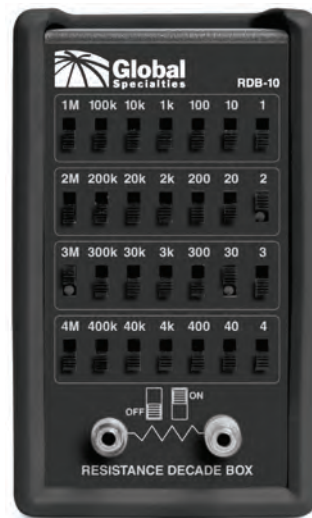
To connect the RDB-10, connect the positive lead to the RED post and the negative lead to the BLACK post. To make the connection, a banana plug can be inserted directly into the posts. An alternate method is to thread wire through the posts. In order to do this, unscrew the post, thread your wire, and re-tighten the post as necessary. An alligator clip can be attached to the plugs as well. Use alligator clips with caution to avoid wearing down the posts.

#### Range Selection

The RDB-10 contains 28 switches organized in a 4 x 7 grid. Each row offers 7 decades of resistance ranges. When a switch is in the ON position, the value marked above the switch is added to the total resistance. For example, to obtain an output resistance of 40.23 k $\Omega$ , the switches for 40 k $\Omega$ , 200  $\Omega$ , and 30  $\Omega$  will be in the **ON** position.

#### Testing

The RDB-10 can be used for calibration of test equipment due to its 1% accuracy. For calibration, set the RDB-10 to the desired value and connect the terminals of your test equipment to the output of RDB-10. The readout of the device you are testing should be the selected resistance value (+ 0.3 $\Omega$  internal resistance - approx.). If not, adjust the device you are testing accordingly.



### Features

- > Calibrate test equipment with high accuracy of 1%
- > 28 switches organized in a clean 4 x 7 grid for easy use
- > All switches clearly display a visible white dot when in the ON position
- > Includes a protective rubber holster with tilt-stand for ease of use and viewing
- > Ideal for service, prototype and experimental and educational use
- > Set at any resistance value from 1 ohm to 11 Megohms in one ohm increments
- > Input terminals accept standard banana plugs, are wires, spade lugs or alligator clips
- > One Year Warranty

### Specifications

|                        |                                                                           |
|------------------------|---------------------------------------------------------------------------|
| Resistance ranges:     | 1 to 11,111,110 $\Omega$ in 1 $\Omega$ steps                              |
| Internal Resistance:   | 0.3 $\Omega$                                                              |
| Power :                | 1 W Resistors                                                             |
| Connection:            | Two (2) binding posts                                                     |
| Accuracy:              | 1 %                                                                       |
| Operating conditions : | Temp: 32 to 122 $^{\circ}$ F (0 to 50 $^{\circ}$ C)<br>Humidity: < 80 %RH |
| Dimensions:            | 6" x 3.7" x 1.9"                                                          |
| Weight Approx.:        | 0.95 lbs                                                                  |