

**RC-10**

**R-C CIRCUIT BOX**

# **INSTRUCTION MANUAL**



**Global Specialties, LLC**  
22820 Savi Ranch Parkway,  
Yorba Linda, CA 92887  
Phone #: 800-872-1028  
[www.globalspecialties.com](http://www.globalspecialties.com)

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## SECTION - 1 INTRODUCTION

### RESISTANCE-CAPACITANCE CIRCUIT BOX TYPE RC-10

The RC-10 provides a convenient selection of standard resistor and capacitor values available either separately or in series or parallel RC combinations. The unit includes 36 resistors ranging in value from 15 Ohms to 10megaohms, and 18 capacitors from 100 picofarads to 0.22  $\mu\text{f}$ .

Both resistors and capacitors have a 10% tolerance. The resistors have a power rating of one watt. The capacitors have a voltage rating of approximately 600 volts.

Some uses of the R-C Circuit Box include component substitution in servicing and circuit design applications, and establishing R-C circuits for checking impedance, reactance, and frequency characteristics. The unit is also useful for classroom applications to demonstrate Ohm's Law, capacitive reactance, and other circuit effects caused by introducing various resistance and capacitance combinations.

The R-C Circuit Box is provided with plug-in test leads with convenient alligator clip connectors (RSP-2). The unit measures 212mm x 77mm x 116mm (8.34" x 2.83" x 4.56") and weighs approximately 1.240 Kg (2.73 pounds).

**SECTION - 2**  
**OPERATING INSTRUCTIONS**

**RESISTANCE :**



**Note :-** All resistors in the RC-10 are rated at 1 Watt. Do not exceed this power level. The resistance selector or "R" switch has 18 positions with a HI/LO selector switch for each position, providing a total of 36 resistance values.

The resistor values on the "R" selector switch with no letter following are expressed in Ohms, for example, the value marked "100" indicates 100 Ohms.

A "K" following the value indicates "times 1000" for example, the value marked "100K" indicates 100,000 Ohms.

An "M" following the value indicates megaohms, or times "1,000,000". For example, the value marked "10M" indicates 10,000,000 ohms.

To select a resistance value, press R or C selector Push switch. Set the "R" rotary switch to the desired position and HI or LO push switch as appropriate. Make connections to the jacks indicated "R".

**Example #1 :** Resistance value : 1500 ohm.

1. Press "R" or "C" selector push switch.
2. Set the "R" rotary switch to the 1500/1.5M position.
3. Keep HI or LO push switch to "LO" position.
4. Make connections to the two panel jacks marked "R".

**Example #2** : Resistance value : 33K.

1. Press "R" or "C" selector push switch.
2. Set the "R" rotary switch to the "33/33K" position.
3. Press the "HI or LO" push switch to "HI" position.
4. Make connections to the two panel jacks marked "R".

**CAPACITANCE :**



**Note** : The capacitors in the RC-10 have a voltage rating of 600 volts. Do not exceed this rating.

The RC Circuit Box provides a selection of 18 capacitance values.

Note the capacitance values on the right side of the "C" switch are in microfarads ( $\mu\text{f}$ ), corresponding to 0.000001 farad. Values on the left side of the switch are in picofarads (pf), corresponding to 0.000001  $\mu\text{f}$ .

Press the R or C selector push switch. Set the capacitance or "C" rotary switch to the desired capacitance value. Make connections to the jacks marked "C".

**Example :**

Capacitance Value : 1500 pf.

1. Press R or C selector push switch.
2. Set the "C" rotary switch to "1500".
3. Make connections to the two panel jacks marked "C".

The capacitance value of the two lowest positions include the capacity of the RSP-2 Test leads. When the leads are used, the total capacity will be approximately 100 pf and 220 pf as marked on the panel. The capacity directly at the panel jacks will be slightly lower.

For best results, twist the two leads together along their entire length so that the capacity of the leads will be uniformly distributed.

### RESISTANCE CAPACITANCE COMBINATIONS :

#### SERIES RC :



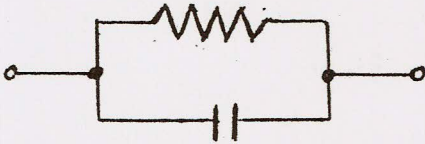
To obtain resistance/capacitance values in series, Press the selector push switch to "SERIES". Set the "R" and "C" Rotary selector switches to the desired values. Make connections to the two jacks marked R & C.

#### Example :

Series resistance/capacitance values : 150K/3300 pf.

1. Press the selector push switch to SERIES.
2. Set the "R" rotary selector switch to 150K/150 and the HI and LO push switch to HI.
3. Set the "C" rotary selector switch to "3300".
4. Make connections to the two panel jacks marked R & C.

### PARALLEL RC :

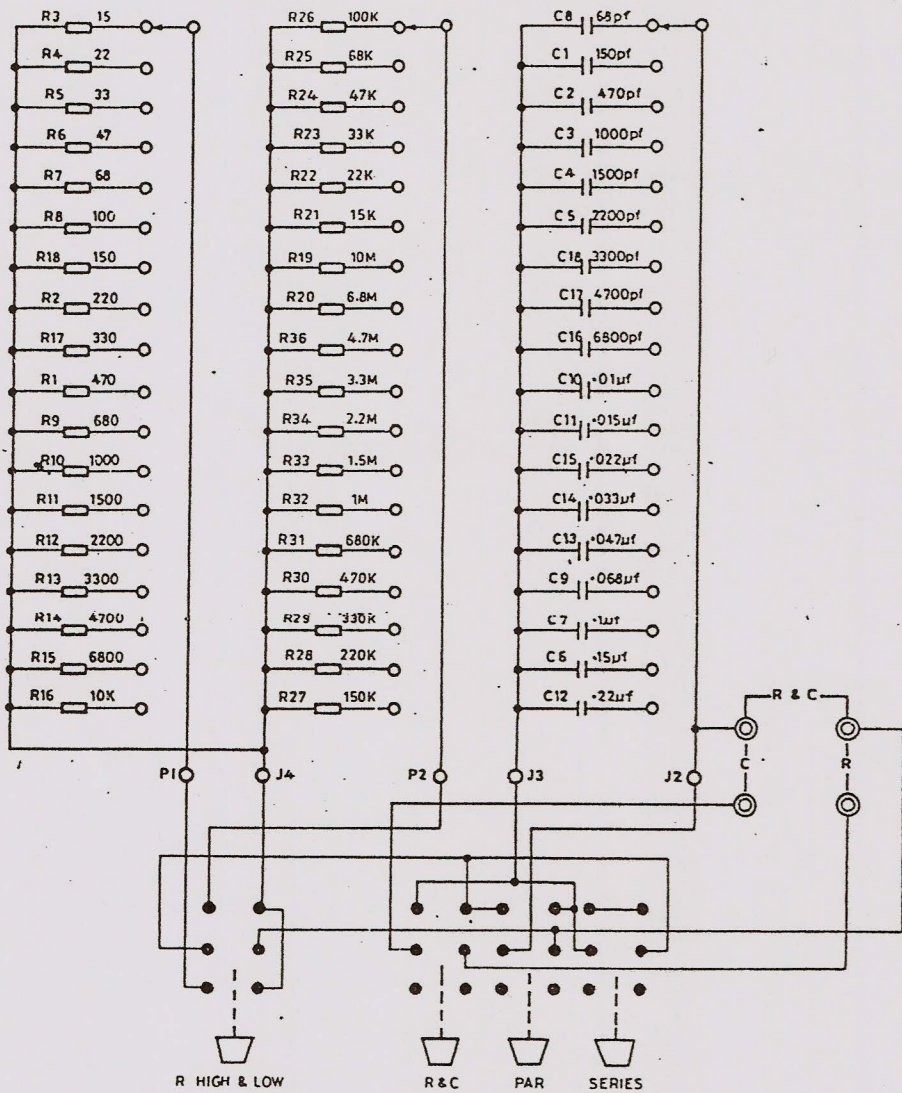


To obtain resistance capacitance values in parallel, Press the selector push switch to PAR. Set the "R" and "C" Rotary selector switches to the desired values. Make connections to the two panel jacks marked R & C.

### Example :

Parallel resistance/capacitance values : 150K/3300 pf.

1. Press the selector push switch to PAR.
2. Set the "R" Rotary switch to "150K/150" and HI or LO push switch to "HI".
3. Set the "C" Rotary selector switch to "3300".
4. Make connections to the two panel jacks marked R & C.



NOTE: ALL RESISTOR ARE 1W ±10% COMPOSITION

RC-10 SCHEMATIC DIAGRAM