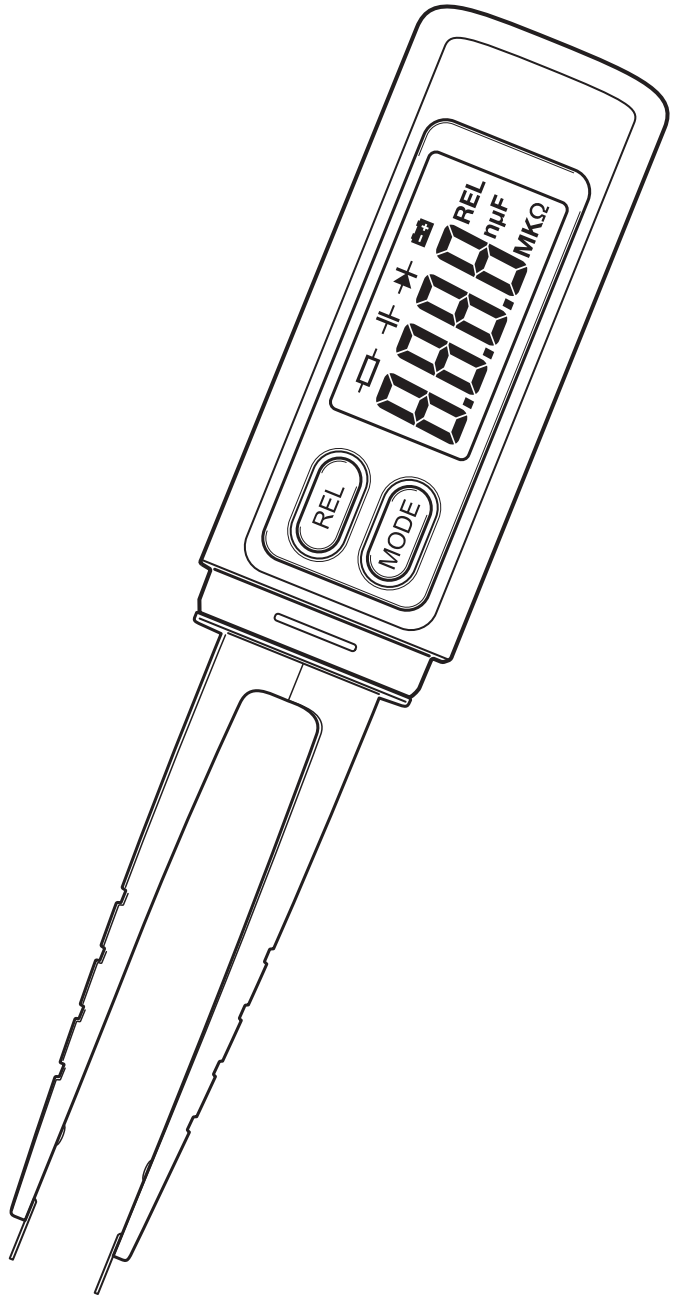
User's Guide

EXTECH INSTRUMENTS

R/C SMD Tweezers
Model RC100



Introduction

Congratulations on your purchase of the Extech RC100 SMD Tweezers. This device offers rapid and accurate capacitance and resistance measurements of chip components. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

Precautions and Safety measures

When using this meter, the user must observe all normal safety rules

- Allow a 30 seconds warm-up before use.
- If the meter is used near noise generating equipment the display may become unstable or indicate large errors.
- Do not use the meter if it appears damaged.
- Use the meter only as specified in this manual; otherwise, the protection provided by the meter may be impaired.
- Do not operate the meter near explosive gas, vapor, or dust.
- To avoid damages to the instrument, do not exceed the maximum limits of the input values.
- Caution: Don't use this device if working voltage is above 50V DC or 36 V AC rms. Such voltages pose a shock hazard and damage the meter
- When using this meter, keep your fingers away from the metal of the meter.
- Before changing functions, disconnect the test clip from the circuit under test.
- Replace the battery when the  symbol appears. With a low battery, the meter might produce false readings.

Symbols:

Symbols used in this manual and on the meter:

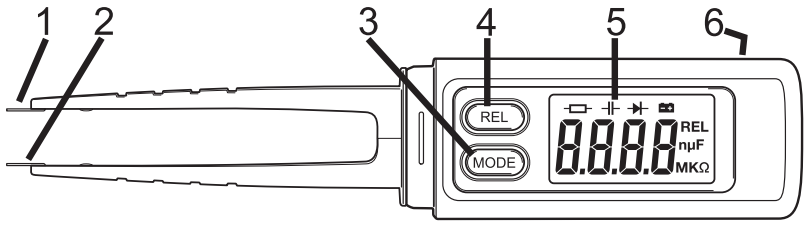


Caution: refer to the instruction manual. Incorrect use may result in damage to the device or its components.



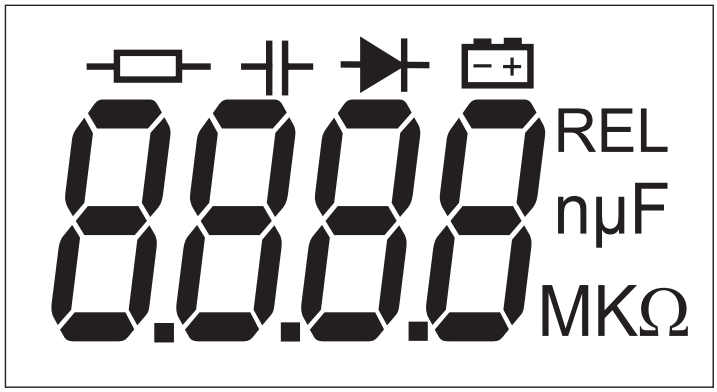
Conforms to IEC1010

Product Description



1 Cathode “-“ input (negative)
2 Anode “+” input (positive)
3 POWER and MODE key
This key is used to power the meter and to select the measurement function. Press the key for >4 seconds to turn power off.
4 REL key
Press this key once to enter into the Relative mode, press again to return to the normal mode.
5 LCD display
6 Battery cover (on rear)

LCD Display



Operation

Resistance

> ⚠ To avoid electrical shock or damage to the meter, disconnect circuit power and discharge all high-voltage capacitors before measuring resistance.

1. Press the MODE key to select the ⊣▭⊢ mode.
2. Connect the test tips to the object being tested and read the measured value on the display.

NOTE:

a. When measuring the high-resistance (> 1MΩ), it may take a few seconds for the reading to stabilize, this is normal.

b. When the input is not connected, i.e. an open circuit, the "OL" (overange) icon will be displayed.

Capacitance

> ⚠ To avoid electrical shock or damages to the meter under test, disconnect circuit power and discharge all high-voltage capacitors before measuring capacitance.

1. Press the MODE key to select the ⊣⊢ mode.
2. Connect the test clips to the capacitor being tested and read measured value on the display.

NOTE:

a. When measuring large valued capacitors (200uF range), it may take up to 30 seconds for the reading to stabilize, this is normal.

b. To improve the accuracy of measurements less than 4nF, subtract the residual capacitance of the meter and tips by pressing the REL key with the tips open circuited.

Diode measurement

> ⚠ To avoid electrical shock or damage to the meter, disconnect circuit power and discharge all high-voltage capacitors before testing diodes.

1. Press the MODE key to select the ⊣▶⊢ mode.
2. Connect the + tip to the anode and the - tip to the cathode of the diode under test.
3. The meter will show the approx. forward voltage of the diode. If the lead connection is reversed "OL" displayed.

Specifications

General specifications

MAX. Voltage	50V MAX between terminals and earth ground
Sample Rate:	3 times/sec for digital data
Display	4000 count (3 3/4 digits) LCD display
Over Range	"OL" indication
Low battery	 indication
Auto power off	15 minutes if there are no key presses
Power source	(2) AG13 button cell or equivalent
Pollution degree	2
Altitude	< 2000 m
Operating temp	32 to 104°F (0~40 °C)
Operating RH	<80% RH, non-condensing
Storage temp	14 to 140°F (-10~60°C)
Storage RH	<70% RH, battery removed
Temperature Coefficient	0.5×(specified accuracy) / °C (<18 °C or >28 °C)
Dimensions	181(L)×35(W)×20(H) mm
Weight	65g. Approx. (battery included)

Range specifications

* Accuracy: ±(% of reading + number of digits) at 18°C to 28°C (64°F to 82°F) with relative humidity to 80%.

⚠ Caution: Don't use this device if the working voltage is above 50V DC or 36 V AC rms.

Resistance

Range	Resolution	Accuracy
400Ω	0.1Ω	±(1.2% of rdg +3digits)
4kΩ	1Ω	
40kΩ	10Ω	
400kΩ	100Ω	
4MΩ	1kΩ	
40MΩ	10kΩ	±(2.0% of rdg +5 digits)

Capacitance

Range	Resolution	Accuracy
4nF	1pF	±（5.0% of rdg +5 digits）
40nF	10pF	±（3.0% of rdg +5 digits）
400nF	100pF	
4μF	1nF	
40μF	10nF	±（3.0% of rdg +5 digits）
200μF	100nF	

Diode Test

Range	Description	Test Condition
	Displays forward voltage drop	Forward DC Current: approx. 1mA Reversed DC Voltage: approx. 1.5V

Maintenance

General Maintenance

Periodically wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents.

Battery replacement

> ***Before replacing the battery, disconnect test tips from any circuit under test***

Use the following procedure:

When the battery voltage drop below proper operation range the symbol will appear on the LCD display and the battery need to be replaced.

1. Slide the battery cover in the direction of the arrow to open the battery cover.
2. Replace the battery with two new 1.5V batteries (AG13).
3. Replace the battery cover.

Warranty

EXTECH INSTRUMENTS CORPORATION warrants the basic instrument to be free of defects in parts and workmanship for one year from date of shipment (a six month limited warranty applies on sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 EXTENSION 210 for authorization or visit www.extech.com for more information. **A Return Authorization (RA) number must be issued before any product is returned to Extech.** The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

Calibration and Repair Services

Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.



Support line (781) 890-7440

Technical Support: Ext. 200; E-mail: support@extech.com

Repair & Returns: Ext. 210; E-mail: repair@extech.com

Product specifications subject to change without notice

For the latest version of this User's Guide and other up-to-the-minute product information, visit our website:
www.extech.com

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