

# LCR-600

## 100 KHZ HIGH PRECISION LCR METER



### Model LCR-600 comes with:

- LCR Meter
- BNC to Kelvin Clip Test Lead
- Power Cord
- User Manual

### Features

- Measures:  $L_s$ ,  $L_p$ ,  $C_s$ ,  $C_p$ ,  $R_s$ ,  $R_p$ ,  $D$ ,  $Q$ , ESR, ER, Z,  $\theta$ , DCR
- Frequency range: 100 Hz to 100 kHz
- Auto Range
- Auto Detect
- Sorting Function
- Open circuit compensation
- Short circuit compensation
- Measurements as accurate as 0.5%
- Two displays
- Display hold

### Overview

The LCR-600 is a high precision test instrument used for measuring the inductance (L), capacitance (C), and resistance (R) of an electrical component.

Use the LCR-600 to:

- Check ESR values of capacitors and inductors
- Sort and/or select components
- Measures unmarked and unknown components
- Measure capacitance, inductance, or resistance of cables, switches, circuit board foils, etc.



# LCR-600

## SPECIFICATIONS

| LCR-600               | Specification                                                         |
|-----------------------|-----------------------------------------------------------------------|
| Input Power           | 115/230 V, 50/60 Hz,<br>Fuse: 600/300 mA                              |
| Test Voltage          | Constant 0.6 V rms                                                    |
| Operating Environment | Temp: 0 °C ~ 40 °C<br>(32 °F ~ 104 °F)<br>Humidity: 20% ~ 80%         |
| Storage Environment   | Temperature: -20 °C ~ 70 °C<br>(-4 °F ~ 158 °F)<br>Humidity: 0% ~ 90% |

### LCR-600 Dimensions

Product Only

L x W x H

12 x 10 x 4 in

Weight

5.10 lbs

Shipping

L x W x H

15 x 12 x 6 in

Weight

7 lbs

### Impedance Accuracy (Ae)

| Freq\Z     | 0.1-1Ω                                                                                 | 1-10Ω   | 10-100kΩ | 100kΩ-1MΩ | 1MΩ-20MΩ         | 20MΩ -200MΩ |
|------------|----------------------------------------------------------------------------------------|---------|----------|-----------|------------------|-------------|
| DCR        | 4.0%+5d                                                                                | 1.0%+3d | 1.0%+2d  | 1.0%+3d   | 3.0%+5d          | 2.0%+5d     |
| 100/120 Hz | 4.0%+5d                                                                                | 0.5%+3d | 1.0%+2d  | 0.5%+3d   | 3.0%+5d          | 2.0%+5d     |
| 1 kHz      | 1.0%+5d                                                                                | 0.5%+3d | 0.5%+3d  | 2.0%+3d   | 1.0%+5d          | 5.0%+5d     |
| 10 kHz     | 1.0%+5d                                                                                | 0.5%+3d | 4.0%+2d  | 0.5%+3d   | 2.0%+5d          | -           |
| 100 kHz    | 2.0%+5d                                                                                | 1.0%+5d | 0.5%+3d  | 1.0%+5d   | 2.0%+5d (1-2 MΩ) |             |
| Note       | Table for D < 0.1. If D > 0., the accuracy should be multiplied by $\sqrt{(1+D^2)}$    |         |          |           |                  |             |
|            | Zc = 1/2πfC if D << 0.1 in capacitance mode<br>Zl =2πfL if D << 0.1 in inductance mode |         |          |           |                  |             |

20171026

# LCR-600

## SPECIFICATIONS

### LCR-600 Dimensions

Product Only

L x W x H

12 x 10 x 4 in

Weight

5.10 lbs

Shipping

L x W x H

15 x 12 x 6 in

Weight

7 lbs

### $L_{DUT}$ Accuracy

| Freq.                                                                | Accuracy ( $Q > 10$ or $D < 0.1$ ) |                           |                    |             |             |
|----------------------------------------------------------------------|------------------------------------|---------------------------|--------------------|-------------|-------------|
| 100 Hz                                                               | 159 $\mu$ H~1.59mH                 | 1.59mH~15.9mH             | 15.9mH~159H        | 159H~1.59kH | 1.59kH~20kH |
|                                                                      | 4.0% +5d                           | 0.5%+3d                   | 1.0%+2d            | 0.5%+3d     | 3.0%+5d     |
| 120 Hz                                                               | 133 $\mu$ H~1.33mH                 | 1.33mH~13.3mH             | 13.3mH~133H        | 133H~1.33kH | 1.33kH~20kH |
|                                                                      | 4.0% +5d                           | 0.5%+3d                   | 1.0%+2d            | 0.5%+3d     | 3.0%+5d     |
| 1 kHz                                                                | 1.59 $\mu$ H~159 $\mu$ H           | 159 $\mu$ H~1.59mH        | 1.59mH~1.59H       | 1.59H~159H  | 159H~2.0kH  |
|                                                                      | 1.0% +5d                           | 0.5%+3d                   | 0.5%+3d            | 2.0%+3d     | 1.0%+5d     |
| 10 kHz                                                               | 1.59 $\mu$ H~15.9 $\mu$ H          | 15.9 $\mu$ H~159 $\mu$ H  | 159 $\mu$ H~1.59H  | 1.59H~15.9H | 15.9H~20H   |
|                                                                      | 1.0% +5d                           | 0.5%+3d                   | 4.0%+2d            | 0.5%+3d     | 2.0%+5d     |
| 100 kHz                                                              | 0.159 $\mu$ H~1.59 $\mu$ H         | 1.59 $\mu$ H~15.9 $\mu$ H | 15.9 $\mu$ H~159mH | 159mH~200mH | -           |
|                                                                      | 2.0%+5d                            | 1.0%+5d                   | 0.5%+3d            | 1.0%+5d     | -           |
| if $D > 0.1$ , the accuracy should be multiplied by $\sqrt{(1+D^2)}$ |                                    |                           |                    |             |             |

# LCR-600

## SPECIFICATIONS

### Note

- All accuracy values apply to primary measurements only
- Secondary measurements (D/Q/ESR/Ø) are reference only

You must discharge capacitors before connecting them to the LCR-600

### C<sub>DUT</sub> Accuracy

| Freq.                                                             | Accuracy (Q > 10 or D < 0.1) |               |               |               |               |               |
|-------------------------------------------------------------------|------------------------------|---------------|---------------|---------------|---------------|---------------|
| 100 Hz                                                            | 1.59mF~15.9mF                | 159μF~1.59mF  | 15.9nF~159μF  | 1.59nF~15.9nF | 79.6pF~1.59nF | 7.96pF~79.6pF |
|                                                                   | 4.0% +5d                     | 1.0%+3d       | 1.0%+2d       | 1.0%+3d       | 3.0%+5d       | 2.0%+5d       |
| 120 Hz                                                            | 1.33mF~1.33mF                | 133μF~1.33mF  | 13.3nF~133μF  | 1.33nF~13.3nF | 66.3pF~1.33nF | 6.63pF~66.3pF |
|                                                                   | 4.0% +5d                     | 1.0%+3d       | 1.0%+2d       | 1.0%+3d       | 3.0%+5d       | 2.0%+5d       |
| 1 kHz                                                             | 159μF~1.59mF                 | 1.59μF~159μF  | 1.59nF~1.59μF | 159pF~1.59nF  | 7.96pF~159nF  | 0.79pF~7.96pF |
|                                                                   | 3.0% +5d                     | 3.0%+5d       | 2.0%+5d       | 2.0%+5d       | 1.0%+5d       | 5.0%+5d       |
| 10 kHz                                                            | 15.9μF~159μF                 | 1.59μF~15.9μF | 159pF~1.59μF  | 15.9pF~159pF  | 0.79pF~15.9pF | -             |
|                                                                   | 1.0% +3d                     | 0.5%+3d       | 4.0%+2d       | 0.5%+3d       | 2.0%+5d       | -             |
| 100 kHz                                                           | 1.59μF~15.9μF                | 159nF~15.9μF  | 15.9pF~159nF  | 1.59pF~15.9pF | 0.79pF~15.9pF |               |
|                                                                   | 2.0%+5d                      | 1.0%+5d       | 0.5%+3d       | 1.0%+5d       | 2.0%+5d       |               |
| if D > 0.1, the accuracy should be multiplied by $\sqrt{(1+D^2)}$ |                              |               |               |               |               |               |