

Rev1. 11/02/2010

Models: ESR60 ESR70 (ESR Plus) **Firmware Versions:** R3.0 and later

Items required: ESR60/70 with gold croc probes Fresh GP23A battery (or equiv) 1Ω 1% resistor 10Ω 1% resistor

Probe Compensation:

- 1. Ensure a good battery is installed in the instrument. Voltage (when unit is off) should ideally be >11.75V. Important self-tests are not performed if the battery is very low.
- 2. Ensure probes are gold plated croc probes and in good condition.
- 3. Clip each probe to each other as shown here:



- 4. Press and hold the "**on-test**" button until the message **Probe Compensation** is displayed. Note that it may take several seconds for the message to appear. Release the button.
- 5. As the probes are already shorted together, briefly press the "**on-test**" button when prompted.
- 6. The instrument should then display $\mathbf{O}\mathbf{K}$ and switch off.

Calibration Verification:

The ESR60 and ESR70 are designed specifically for the measurement of ESR. It is the accuracy of the ESR measurement that will be verified here.

- 1. Clip each probe to each other (as before).
- 2. Briefly press "on-test".
- 3. Verify that the displayed ESR value is between 0.00Ω and 0.02Ω inclusive.
- 4. Clip probes to a clean 1Ω 1% resistor. Ensure clips are fairly close (but not touching) the resistor body.
- 5. If the test did not start automatically*, briefly press the "**on-test**" button.
- 6. Verify that the displayed ESR value is between 0.96Ω and 1.05Ω inclusive.
- 7. Clip probes to a clean 10Ω 1% resistor.
- 8. If the test did not start automatically*, briefly press the "**on-test**" button.
- 9. Verify that the displayed ESR value is between 9.6Ω and 10.5Ω inclusive.

*Firmware R4.1 and later supports automatic analysis start upon the connection of a component (if the instrument is powered up). Older firmware requires a press of the **on-test** button to start an analysis.

Summary ESR measurement accuracy source data (ESR60 user guide Rev2 and later):							
Test Resistor	Resistor Tolerance	Min Resistance	Max Resistance	Instrument Tolerance	Instrument Resolution	Min acceptable reading	Max acceptable reading
0.00	0%	0	0	1.50%	0.02	-0.02	0.02
1.00	1%	0.99	1.01	1.50%	0.02	0.96	1.05
10.00	1%	9.9	10.1	1.50%	0.2	9.6	10.5

