

Application Note

Battery Impedance Measurements

The QuadTech/IET Labs 7000 Series and 7600 Plus Precision LCR Meters are particularly well suited to measure the internal impedance of batteries. The advantages to using a 7600 Plus and 7000 Series instrument for battery impedance measurement are:

- ❑ **Automatic** Measurement
- ❑ The 7000 Series Instrument measures the **AC resistance**. The battery voltage would effect a DC resistance measurement.
- ❑ The 7000 Series instrument measures **capacitance** when the dissipation factor (D_f) is large.
- ❑ The **4-Terminal Kelvin** connection makes it easy to block the DC voltage without effecting the measurement.

A blocking capacitor, shown in Figure 1, is required in the IH lead to avoid battery discharge into the instrument. The capacitor should be installed into the test fixture and should have a reactance of less than 10Ω at the test frequency ($160\mu\text{F}$ at 120Hz).

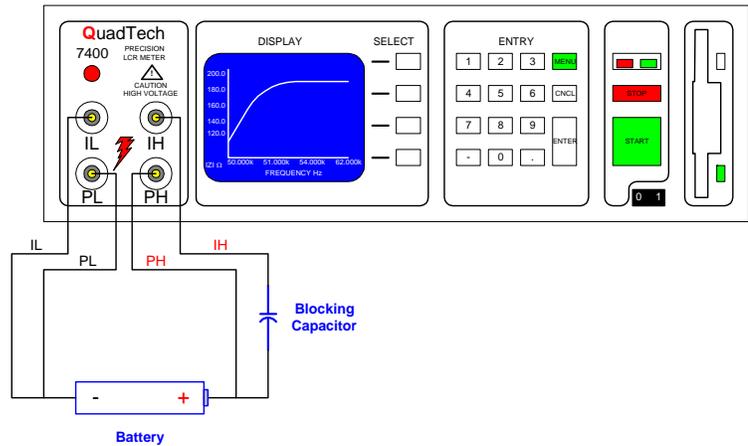


Figure 1: QuadTech 7400 Precision LCR Meter