



Application Note

Measuring Large Capacitors with the 1865-52 Component Test Fixture:

The 1865-52 Component Test fixture provides for easy connection of a series-quieting resistor. When the capacitor is large enough to draw more than 1.5mA for a long period of time the 1865 instrument will go into "OVERLOAD" even if a large quieting resistor is in place. Why? The quieting resistor circuitry is illustrated in Figure 1.

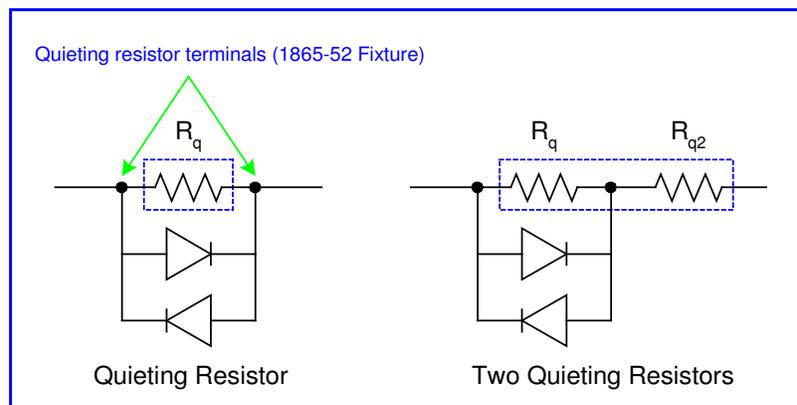


Figure 1: Single and Dual Quieting Resistors

The diodes allow for faster charge and discharge times but cause a problem for very large capacitors. The charge current through the diode may exceed 2mA long enough to cause the 1865 instrument to shut down. The easiest solution is to stack a second resistor supplied with the fixture in series with the quieting resistor. Use the short banana cable and alligator clip to connect from the end of R_{q2} to the HI connector. Use a second banana cable to connect the two LO connectors. Refer to Figure 2.

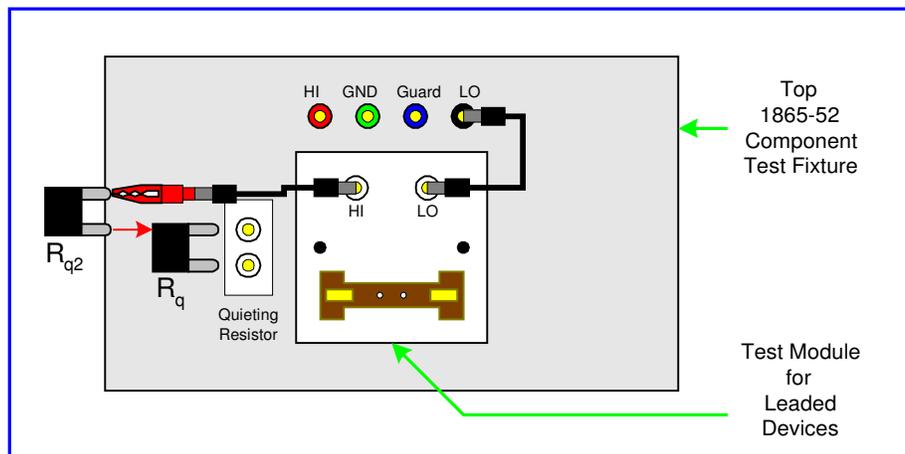


Figure 2: Connection of two Quieting Resistors to 1865-52 Fixture

1865-52 Component Test Fixture

Figure 3 shows the 1865-52 Component Test Fixture. It includes a module for leaded devices, a module for SMD devices, alligator clips, banana plug cables, a 100k Ω double banana plug resistor, a 1M Ω double banana plug resistor, a shorting double banana plug and other connector accessories. The 1865-52 fixture has a resistance measurement range of 1M Ω to 100T Ω . Maximum test voltage is 1000V and maximum test current is 10mA. The specified leakage current is $\leq 0.5\text{pA}$ with the maximum voltage applied for greater than one minute. The 1865-52 fixture incorporates a safety interlock so the 1865 instrument makes a measurement only when the 1865-52 fixture cover is closed.

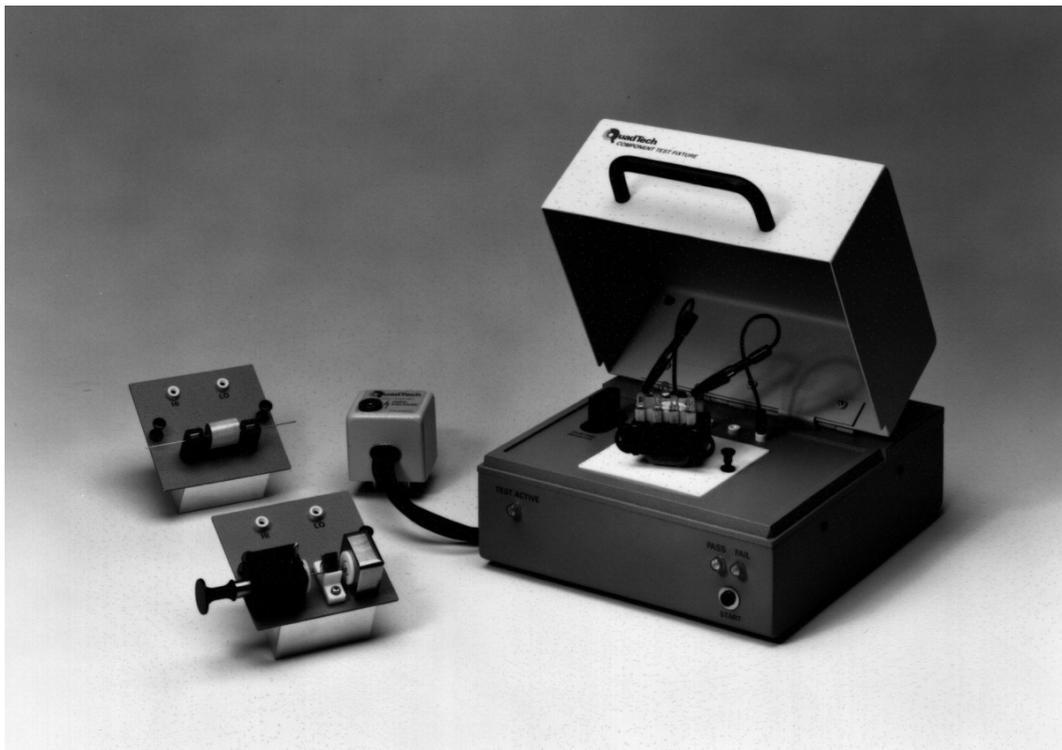


Figure 3: 1865-52 Component Test Fixture

For complete product specifications on the 1865 Megohmmeter/IR Tester or any of IET Lab's products, visit us at www.ietlabs.com. Call us at 1-800-899-8438 or email your questions to sales@ietlabs.com

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