

## Modular Home Testing Comparison Advantages and Disadvantages of AC and DC Hipot Testing

*The Slaughter Company*

### Testing Advantages

AC Testing Advantages	DC Testing Advantages
<p><b>Full Test Voltage Can Be Applied Instantly</b> With an AC Hipot tester, the full test voltage can be applied instantly without the need to ramp the voltage.</p>	<p><b>No Need to Disconnect Fixtures, Loads and Appliances</b> As long as the test voltage is ramped up slowly, the breaker box can be tested with all of the loads connected, simplifying the testing process and shortening the total test time.</p>
<p><b>No Need to Discharge the DUT</b> The breaker panel doesn't need to be discharged for an extended period of time. This is very helpful if you are using a DC Hipot tester that does not have an automatic discharge feature.</p>	<p><b>Lower Output Current Capacity</b> The output current capacity of a DC tester can be much lower than that of an AC tester. This lowers the cost of the Hipot tester and is less dangerous for test operators to use.</p>
<p><b>Tests DUT in Both Polarities</b> An AC tester performs a Hipot test in both the positive and negative polarities, providing an accurate waveform similar to what the breaker panel sees on its input under normal conditions.</p>	<p><b>Accurate Leakage Current Measurements</b> A DC tester provides a more accurate reading of the leakage current by reading only real current.</p>

### Testing Disadvantages

AC Testing Disadvantages	DC Testing Disadvantages
<p><b>Inaccurate Current Measurements</b> An AC Hipot tester measures total current. Reading total current doesn't provide an accurate leakage measurement -- it makes your leakage current readings much higher than they actually are.</p>	<p><b>Mandatory Discharge of the DUT</b> Since the DC tester charges up the breaker panel to the test voltage, the DUT needs to be discharged before the test is finished. Failing to do this will result in an energized panel. This is specially important if your tester does not have an automatic discharge feature.</p>
<p><b>Requires Higher Output Current Capability</b> An AC tester requires a higher current output capability than a DC tester. This is due to the current it must supply to both the resistance of the insulation and the capacitance of the cabling and fixturing of the home. Higher output current capability is usually more expensive, and can be more dangerous to test operators if a shock occurs.</p>	<p><b>Tests DUT in One Polarity</b> The DC test only stresses the breaker panel in one polarity, thought by some to be an inaccurate representation of the voltage input the DUT would see under normal conditions.</p>