



HIPOT TEST GUIDELINE

Purpose: To prevent failure due to wrong procedure followed for Hipot test.

Scope: Applicable to all end system user of power supply, General.

Testing is done to ensure the integrity of safety critical insulation. Between Primary and Secondary, reinforced insulation is required. Between Primary and Chassis Ground, basic insulation is required, Between Secondary and Chassis Ground, operational insulation is required,

Guidelines : Reinforced insulation cannot be tested without overstressing basic insulation on the end product, refer to UL60950-1,C5.2.2 or UL60601-1 2nded sec 20.4 or IEC 60601-1 3RDed section 8.8.3 , thus agencies permit test of components like power supply separately.

When testing on field in end system, special precautions need to be taken. For testing Basic Insulation 1500Vac between primary and chassis ground is applied. No special needs. As a precaution, it is advisable to put sleeve on the wires used to provide AC input to the power supply. For testing Reinforced Insulation an attempt to apply 3000/4000 Vac directly from primary to secondary on the finished product will over stress the primary to chassis ground and secondary to chassis insulation resulting in failure.

To properly test reinforced insulation the power supply needs to be removed from the chassis , in addition all paths to chassis ground as far as practical needs to be removed , especially items like Y –capacitors , and EOS personnel must be notified .



In some instances when applying the primary to secondary hi-pot voltage some arcing will be observed on the pwb , in all cases this arcing is to be limited to the secondary and ground trace locations , in some cases this arcing can cause secondary component failure . This is breakdown of operation insulation (secondary to chassis); it does not indicate a failure of primary to secondary insulation that is the crux of the test. And when failing in safe manner, the test is considered successful for safety.

It is also not the correct practice to instantaneously apply the hi pot, the recommended method is that not more than half the voltage is to be applied, then the voltage is to be gradually raised over a period of 10 sec to the full value which shall be maintained for 1-3 sec after which it shall be gradually lowered over a period of 10sec to less than half the full value.

Agencies further permit the use of the equivalent DC voltage whilst performing hi-pot tests.

It is advised to contact EOS in regards to special hi pot tests being practiced by the end user of EOS power supply not as per above guidelines .