



WHITE PAPER

CT1002



UL 1449 3rd Edition

By: Chris Martin
SPD Product Manager



Several surge manufacturers have recently published articles regarding the dramatic changes occurring with the 3rd Edition of UL1449. These articles suggest that upcoming changes are so extreme it would be impossible for an existing product to meet them without major design changes. These scare tactics are simply not true and are attempts by competitors who have completed product evaluations to drive product specifications. We would like to provide you with a brief description of the upcoming changes to UL1449 3rd Ed. Surge manufacturers must complete evaluation to UL1449 3rd Ed. by 9/29/2009.

SVR (Suppressed Voltage Rating) Replaced by VPR (Voltage Protection Rating)

The SVR test was conducted with a 6kV 500A surge, the VPR rating will be measured utilizing a 6kV 3000A surge. The products have not changed just the surge current being used. If an SVR rating for a 120v system used to be 400v, you might expect the VPR rating to be in the 700-900v range. The increased value is because of the higher surge current being used to capture the clamping level of the surge device.

Types of SPDs

Four categories of surge protection devices have been created:

Type 1 devices are what we have often referred to as surge arrestors. Per NEC, surge arrestors can be installed on the line or load side of the main service disconnect (In 20kA or 10kA).

Type 2 devices are what we have often referred to as TVSS or SPD devices. These surge devices are permanently installed on the load side of the main service disconnect (In 20kA, 10kA, 5kA, or 3kA).

Type 3 devices are cord connected devices, or devices that are installed greater than 10m away from the panel they are protecting.

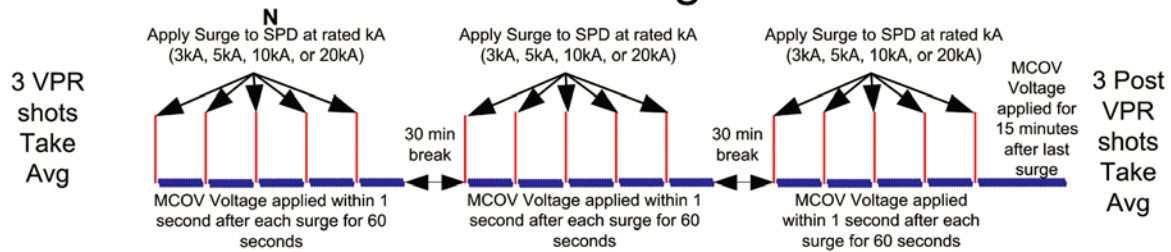
Type 4 devices are for surge components.

Current Technology is pleased to report that the following products will be listed to the higher standard as Type 1 surge protection devices; Select®2, TransGuard™, CurrentGuard™ Plus, CurrentGuard™, CurrentGuard™ Compact and our Electronic Grade Panelboard Extension product lines.

The term SPD (Surge Protection Device) will replace TVSS (Transient Voltage Surge Suppressor) as the proper name for addressing surge protectors.

The major change to UL1449 is the addition of the Nominal Discharge Current Test (In). This is a stress test where the unit under test is subjected to several surges and temporary over voltage events to stress the surge protector. Figure 1 below helps explain the test process.

I Nominal Discharge Current Test



Type 1 devices can only be tested at 10kA or 20kA. Type 2 devices can be tested at 3,5,10, or 20kA. The SPD manufacturer selects the type and the surge level for the product before testing. The SPD manufacturer also selects the MCOV (Maximum Continuous Operating Voltage) per mode to apply to the unit under test. Once those two parameters have been established by the surge manufacturer, the test can start.

To pass the test the unit must be fully functional and the pre and post VPR clamping levels can not vary by more than +/-10%.

These are the changes to UL1449 3rd Edition. As you can see none of these changes are related to the safety of the product. In fact, Current Technology has not had to modify any of our products designs to meet the new standards.