Adding UL Listed and Recognized devices to a UL 508a panel without updating the file

The UL® 508a listing of a panel is an important safety and marketing requirement for all electrical panels in the U.S. The process of getting this certification can be long and expensive, so adding anything new to the panel can be a risky and sometimes equally expensive process. At the same time, surge protection is becoming a requirement by the NEC® in more situations with each code revision. Protecting your panel and the connected equipment from damaging transients and surges will not only allow you and your customer to meet these new requirements, but also significantly improve the life of connected equipment. While the value of surge protection is apparent, can it justify the cost of updating UL files? This application note explains how you can add Eaton UL registered and listed surge protective devices (SPDs) to your UL 508a panel without needing to update your UL file, immediately adding value to your products.

This application note is based on the official UL document *Requirements for Components Used in Industrial Control Panels* (February 4, 2019). The relevant sections to Eaton surge products are section 1: Listed Components, section 2: Recognized Components, and Table 2: Use of Surge Protective Devices. The first section states "Where a Listed device is provided in an industrial control panel and specific component requirements are not described in the UL 508A Standard, any Listed component is able to be used." The most important exception to this is that non-industrial devices such as consumer appliances and residential equipment shall not be used. Other exceptions are that this rule only applies to panels with source supplies under 1000 V, meaning low-voltage applications, and explosion and dust ignition proof enclosures marked for Class 1 or 2 hazardous locations. The second section states "A Recognized component installed through the wall of an industrial control panel enclosure is assumed to be for use on Type 1 enclosures only, regardless of markings and literature, unless the component and its environmental rating are specifically included in the manufacturer's procedure". The most important requirement for recognized devices is that the terminals of the recognized component shall be used for internal wiring connections only.

Table 2 in the UL document breaks down the requirements for surge devices based on listed type and location. It is important to check the most recently updated version of this table when including a listed device. A brief summary of the current table relevant to Eaton SPDs is as follows. Type 1 and Type 2 SPDs are allowed in the load side of service equipment, non-service feeder or branch circuits, and isolated control circuits. Additionally, Type 1 SPDs are allowed on the supply side of service equipment. For all the previously listed scenarios, the normal operating voltage and MCOV of the SPD must be equal to or greater than the applied circuit's line to line voltage. Type 2 SPDs require a 10 kA nominal discharge current when used on the load side of service equipment. SPDs used on equipment not listed in Table 2 must be procedure described. To ensure you are following the most up-to-date code, make sure you use the official UL document located on their website.

UL has made it very easy to incorporate listed and recognized devices in 508a panels with these clear and concise requirements. This means that all of Eaton's UL listed and recognized industrial surge protection products can be used in 508a low-voltage panels in most environments without the need to modify the UL file of the panel. Adding value and reliability to your products while remaining code compliant has never been easier. Getting ahead of the NEC curve, and your competitors, is only a phone call away.

Contact Eaton's industrial surge department at **1-800-647-8877** to discuss our many OEM surge protection options.

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