

Eaton Power-Suppress 600 isolates loads and attenuates noise

The modern school is a lot more than just desks and chalkboards. Many of the courses offered and even the way in which familiar subjects are taught are unrecognizable from just a few years ago.

The classrooms are high-tech digital places with each student on their own laptop or tablet. Teachers use computers coupled with state-of-the-art projectors, flat screen televisions, and smartboards, as opposed to chalk on slate.

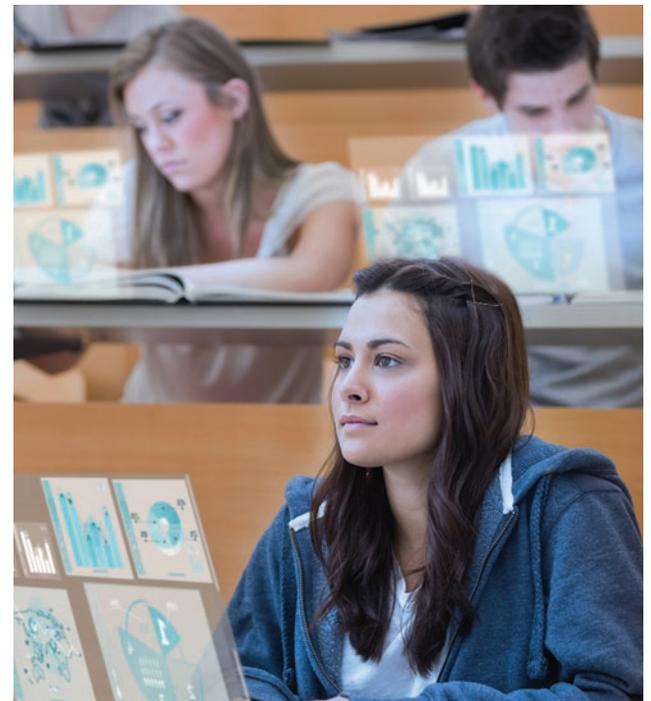


Computers have found their way into every classroom as an integral part of the learning experience. They are not just reserved for labs or libraries to teach word processing or for doing research. The labs are still there, but used for technology-focused classes that require more computing power than a tablet or a laptop can provide. The advanced technology integration does not stop there. Auditoriums are now Performing Arts Centers, with lighting, sound systems, and video capabilities that can rival or even exceed that of universities and professional facilities.

All this wonderful new technology revolutionizing the educational experience comes at a price. To operate effectively and efficiently, this equipment not only requires exceptional power quality but will also generate harmonics, which negatively impacts power quality. The Eaton Power-Suppress 600 power conditioning isolation transformer is the ideal product to protect your equipment from damaging effects of harmonic distortion and damaging power quality events.

Sophisticated electronics, like those used in today's advanced classrooms and school facilities, generate damaging harmonics that can cause issues and premature failures of other installed equipment. This means the educational equipment needs to be protected and isolated from harmful harmonic distortion. Harmonics generated from LED lighting, desktop computers, flat screen monitors, and tablet chargers cause voltage and current distortion.

Additionally, more traditional types of equipment, like blowers and pumps found in HVAC systems, create voltage transients and surges. These short duration voltage spikes are one of the most common causes of premature equipment failure. Sensitive loads are protected from these damaging phenomena through two basic means, isolation and attenuation, with isolation being the primary means of protection.



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The Power-Suppress 600 isolates loads and attenuates noise by establishing a new neutral-ground bond, creating a phase shift, and provides shielding between the primary and secondary windings. The new neutral prevents leakage of harmonic distortion from the system's neutral and ground to your equipment. Triplen harmonics from installed single-phase loads add on the neutral but are trapped in the delta and are not passed through to the rest of the system. The K13 rating allows for operation in harmonic-rich systems at 100% rated kVA. The 30° phase shift of the transformer shifts the 5th (negative sequence) and 7th (positive sequence) into the delta, which results in a reduction of those harmonics.

Attenuation or filtering is accomplished by the standard double-shielded design of the transformer. In-between the primary and secondary side of the Power-Suppress 600, two foil shields filter common mode noise, providing 126 dB of attenuation from the sine wave and shunt them to the equipment ground away from installed loads. An optional third shield can provide additional 20 dB of filtering capacity where the installation dictates. To provide additional filtering and protection coupled with the shielding, the Power-Suppress 600 offers the option to incorporate a UL 1449 / UL 1283 listed surge protector and filter. This protects installed equipment and the transformer from high-energy transients, along with providing 40 dB of transverse mode high-frequency filtering capability.

The Power-Suppress 600 provides industry-leading noise attenuation and isolation while exceeding the DOE 2016 efficiency requirements to provide the highest levels of protection coupled with low cost of operation. To ensure continuous operation at the highest levels of efficiency, the Power-Suppress 600 is offered with an available IR window. The IR window allows for easy and safe routine inspections of the interior connections of the transformer and helps ensure the functionality of your equipment while protecting the safety of maintenance personnel.

The integration of advanced technology into schools is an investment in the future. To ensure long-term operation of this equipment it must be properly protected. The highest quality protection can be provided by Eaton's Power-Suppress 600.

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