Surge Protection Solution is Top of its Class at Metropolitan School District of Lawrence Township

Customer

Metropolitan School District of Lawrence Township

Markets Served

Education

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Phil Ritchie, Maintenance Supervisor and Indoor Air Quality Coordinator - Metropolitan School District of Lawrence Township

Background

As the seventh largest school district in the state of Indiana, the Metropolitan School District (MSD) of Lawrence Township serves some 16,000 students in kindergarten through 12th grade. Encompassing 25 campuses throughout the Indianapolis area, the district includes 11 elementary schools, three middle schools, two high schools, a career center, several early learning centers and an alternative school. With a reputation for high achievement and an award-winning staff, the MSD of Lawrence Township is recognized for eight National Blue Ribbon Schools, standardized test scores consistently above state and national averages, a graduation rate of 97 percent, and more than 75 percent of students pursuing post secondary education.

To help maintain its solid reputation, the district depends on the availability of clean power at all of its school sites. From keeping classrooms properly ventilated to sustaining accessibility to electronic equipment to maintaining the continuous operation of fire alarms, the district requires 24/7 uptime to ensure that neither safety nor quality of education are ever compromised.

Challenge

Four years ago, the MSD of Lawrence Township was forced to review its power protection strategy after repeated failures plagued multiple school sites. "We were experiencing a lot of problems with power," explained Phil Ritchie, maintenance supervisor and indoor air quality coordinator for the district. "We were suffering a lot of loss, especially in our building automation equipment, and looking for a way to prevent that."

Dirty power — predominantly sags and surges — was determined to be the culprit in the vast majority of incidents. "We'd arrive in the morning and there would be all kinds of electrical problems, mainly caused by surges," Ritchie recalled. "Our equipment was being taken offline a lot."

While crashing circuit boards within various building automation systems was one of the most costly and damaging issues the district was encountering, many school sites were also experiencing problems with failing fire alarm panels, lost variable frequency drives and circuit boards in HVAC equipment, and downed tech boards, lighting ballasts and public address systems.

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Compounding the problem was the fact that several of the district's schools relied on older equipment for which spare parts were not readily available. As a result, an unexpected surge had the ability to not only take a piece of equipment offline, but render it permanently useless.

Furthermore, when a school's fire alarm or smoke detector panel failed, the entire safety system went offline. When this occurred during off hours, a technician had to be dispatched to investigate and repair the problem, often at a hefty overtime rate. Even worse, if a circuit board crashed during school hours and could not be promptly mitigated, the site was no longer safe for students. "Losing a day of school is very costly," Ritchie emphasized.

Solution

In an effort to avoid the potentially devastating effects of downtime, as well as preserve its equipment investment, the MSD of Lawrence Township sought a solution to protect its campuses from surges and other harmful power anomalies.

Following the completion of a survey and evaluation at two school sites, a list of criteria for a solution was developed including:

- the ability to maintain continuous system uptime
- a robust product capable of withstanding the district's susceptibility to detrimental surges
- a solution to protect aging equipment from failing and requiring subsequent replacement

To meet these requirements, the MSD of Lawrence Township chose a transient voltage surge suppression solution (TVSS) from Eaton. Eaton offers premier surge protection devices designed to safeguard equipment even in the harshest electrical conditions. Backed by a 20-year free replacement warranty, the UL-listed solutions meet strict guidelines for durability and protection.

Eaton's TVSS solutions help extend the protected products' life by preventing adverse effects from environmental factors and maintaining consistent long-term performance. Furthermore, the surge devices offer the best suppression of high-energy, impulse-generated transients, as well as the widest range of application compatibility. With symmetrical surge current distribution and high current density capability, Eaton's solutions feature Active Tracking Network® (ATN) suppresses both switching-generated ringing and high-energy, impulse-generated transients.

In May 2003, Eaton's TVSS products were installed at Skiles Test Elementary and Lawrence Central High School on the schools' main service entrances, main distribution panels, fire alarm panels, energy management panels, main kitchen panels and, at the elementary school, on the rooftop air conditioning units.

Within two months of instating the surge protection devices, all power problems were eliminated on both campuses, prompting the district to purchase additional Eaton TVSS products to safeguard all of its remaining schools. The district's confidence in the Eaton solution has reached a point where, any time a new project arises, the Eaton representative is consulted. Furthermore, Eaton's TVSS products are now the standard for district schools. "Now every building at all 25 schools are protected," Ritchie reported. "This solution has made a world of difference."

Results

The Eaton surge protection solution has not only eliminated the district's power problems and ensured the high availability of its critical systems, but has done so while generating an exceptional return on investment (ROI). Prior to implementing the solution, the MSD of Lawrence Township was replacing an average of five BAS circuit boards per year at a cost of approximately $17,500. Restoring damaged Variable Frequency Drives in HVAC equipment was racking up another $40,000 per year, while replacing various other surge-damaged boards accounted for an additional $20,000.

"Because so much of our equipment was nearly obsolete, we view the solution almost like an equipment investment," noted Ritchie.

Working with Eaton, the MSD of Lawrence Township:

- increased the uptime of its building automation systems, safety systems and other electronic equipment
- reduced equipment and maintenance costs
- reduced overtime charges for alarm-related repair

"I've recommended this solution to other school districts and corporations — basically, to anyone who is having these types of problems," Ritchie said. "If you've got something you want to protect, this is the most cost-effective way to do so."

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