



Power Quality Solutions Beyond the UPS

Over the past several decades, the power quality industry, spearheaded primarily by UPS manufacturers, has done a very good job educating the end user about the implications of poor power quality. The primary application for power quality equipment has been in data center and telephone switching installations where a UPS (either rotary or static) typically offers the best value for the protection delivered.

These environments have requirements for support during a loss of power (blackout). But with this education, many have come to assume that the UPS is the appropriate corrective measure for all applications. In all too many instances, commercial or industrial sites install a UPS where the level of protection is well beyond what is actually needed at a cost far higher than a correctly applied solution.

There is no such thing as absolutely clean power. This is an example where clean enough should be the consideration. The level of power quality required in a high availability data center is very different than that required in a manufacturing operation, where poor power quality can still have devastating effects but the cost of providing an alternate energy source (UPS battery) can be prohibitive. For these cases, if the only solution being considered is a UPS, the decision may be to do nothing with costly results.

In many non-data center sites, a more focused answer should be considered. For a problematic motor application the answer may be voltage regulation. For sites where excessive harmonic content is present, a more focused solution of either active or passive harmonic cancellation may provide the level of protection required. For sites with high noise levels or problems with the 3rd harmonic (from switch mode power supplies) a simple isolation transformer may suffice. In any of these cases, a voltage regulator or other targeted device can be a far simpler, and much less expensive, solution. The challenge is determining what power quality issues are present and how big a factor they play in the site operation. After that, the decision of which type of equipment will solve the problem is far easier.

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