

## Performance matters

# Consider voltage conditioning to improve your data center's overall performance

While data center construction is becoming leaner and more modular, technical solutions are becoming more diverse. Servers and storage devices – long seen as the mission-critical core of data centers – are increasingly viewed as being synergistic with infrastructure such as ventilation and cooling systems. This has heightened interest in improving the integrity of power streams in the plant environment through the retrofit of new technology.

Uninterruptible power supply (UPS) solutions are seen by most data centers as the gold standard of voltage conditioning. A UPS safeguards against surges, sags and outages, making it ideal for server applications where even a brief outage is unacceptable. By contrast, the failure of a support system – if limited in duration – often can be accommodated without any severe impact. Furthermore, certain types of data centers, such as animation or weather supercomputers, can absorb a limited outage without catastrophic loss of data.

Active voltage conditioners (AVCs) are designed to be a cost-effective option for plant managers who have decided that UPS voltage conditioning is not an optimal solution. While this can stem from any number of reasons, the decision point is the same – AVCs protect against surges and sags but they have no battery, and therefore cannot provide power in an outage.

In some data center cases, the use of AVCs as a power conditioning technology is justified, especially if outages are very rare. Voltage sags are by far the biggest risk to power continuity: sags typically account for 90 percent or more of power events. This can make a strong case for the small, lightweight, battery-free AVC as a way to condition power to less-sensitive loads.



The PCS100 AVC range offered by ABB corrects voltage sags and surges within a few milliseconds, and is available in load capacities of 150 kVA to 2.4 MVA. The PCS100 product line will become increasingly specialized this year with the introduction of the AVC-40 and AVC-20. The AVC-40 is designed for sag correction where the network is stable but affected by external factors such as the weather, and the AVC-20 will provide continuous voltage regulation where the network is weak and unstable.

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