Empowering Your Business with

Power Quality Systems



POWERING CONNECTIONS

Mactek Solutions

Voltage Stabilization & Power Protection Solutions

✓ Active Voltage Regulation and Stabilization: Deployment of Automatic Voltage Compensators (AVCs) and Active Power Filters (APFs) to provide dynamic voltage regulation, mitigate voltage sags, swells, and flickers, and ensure a stable power supply for sensitive industrial and commercial loads.

✓ Mitigation of Voltage Sags and Swells: Utilization of advanced power electronics and control algorithms to detect and instantaneously compensate for voltage deviations, maintaining output voltage within tight tolerances (e.g., ±1% of nominal) even under rapidly changing load or grid conditions.

✓ Improved Equipment Performance and Lifespan: By providing a consistent and clean power supply, our power quality solutions protect voltage-sensitive equipment (e.g., PLCs, CNC machines, medical devices) from damage, reducing premature failures, maintenance costs, and extending operational life.

✓ Enhanced Energy Efficiency and Harmonic Mitigation: Integration of active harmonic filters to suppress current and voltage harmonics, improving power factor, reducing energy losses, and preventing overheating of transformers and cables, thereby enhancing overall system efficiency.

Technical Specifications

Features	Specifications
System Type	Automatic Voltage Compensator (AVC), Dynamic Voltage Restorer (DVR), Active Power Filter (APF)
Voltage Regulation	±1% to ±2% of nominal output voltage
Response Time	< 2 milliseconds (typical for sag/swell correction)
Correction Range	Up to ±40% of nominal voltage (for sags/swells)
Power Capacity	50kVA to 5MVA+
Efficiency	> 98% (for AVC); > 97% (for APF)
Harmonic Mitigation	Total Harmonic Distortion (THD) reduction to < 5% (IEEE 519 compliant)
Power Factor Correction	Dynamic PF correction to > 0.99 lagging/leading
Cooling	Forced air cooling with redundant fans or liquid cooling
Communication	Modbus RTU/TCP, Ethernet/IP for SCADA/BMS integration
Compliance	IEC 61000-4-11 (Voltage Sags/Swells), IEEE 519 (Harmonic Limits), IEC 61000-3-2/12 (Harmonic Emissions)

Why Choose Us?

01. Unwavering Power Stability: Our Automatic Voltage Compensators (AVCs) provide instantaneous and precise voltage regulation, eliminating sags, swells, and flickers to deliver a perfectly stable power supply, crucial for the optimal performance and longevity of your sensitive equipment.

02. Maximized Operational Uptime: By actively protecting your critical loads from grid disturbances, our power quality solutions prevent costly interruptions, reduce equipment malfunctions, and ensure continuous, reliable operation, thereby maximizing your productivity.

03. Significant Cost Savings: Beyond protecting assets, our solutions enhance energy efficiency by mitigating harmonics and improving power factor, leading to reduced electricity bills, lower maintenance costs, and a prolonged lifespan for your electrical infrastructure.

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