



stability, reliability,  
proven



**Gridtec**  
Solutions

## Power Quality Solutions

### The proven solution for power system stability and reliability

Every year, billions of dollars in revenue are lost due to momentary power quality problems. The slightest variations in voltage can cause hours of downtime, resulting in lost productivity and the need for recalibration of equipment.

Twenty-first century industrial companies are embracing automation, miniaturization and computer-controlled manufacturing processes to boost their productivity and be more competitive.

However, advanced systems tend to be highly sensitive to even the briefest variations in electrical power quality. When voltages decline for even a few cycles, computer-driven devices can fail on several levels.

Adjustable speed drives can stop, fuses can blow, lights can blink, motors can slow down, PLCs and other process control equipment can drop out – compromising your operations.

### Providing cost-effective power quality solutions for a variety of industrial applications

Through its Gridtec Solutions®, AMSC® offers modular, cost-effective power quality solutions for a variety of industrial applications, including auto parts manufacturing, semiconductor fabrication, chemical processing, data center protection and high-energy physics.

We offer a range of solutions for industrial applications that protect against voltage swells and sags, allowing sensitive equipment to operate, resulting in high levels of availability and enhanced profitability. Our Static Var Compensator (SVC) and Power Quality Industrial Voltage Restorer (PQ-IVR®) systems provide large industrial customers with smooth, efficient, and cost effective operations.

From system components to turnkey solutions, we offer flexible solutions to solve our customer's power supply challenges.



**Stability, reliability, profitability.** Our cost-effective power quality solutions provide efficiency, protection and secure connection, helping industrial facilities achieve smooth, efficient and reliable operation and realize their full profit potential.

#### Static VAR Compensators

AMSC's SVC solution eliminates voltage sags and flicker, giving electric utilities and large electricity users the most cost-effective way to connect large loads to circuits.

These systems are highly portable, configurable, and can be field-modified, reducing the costs normally associated with upgrades.

More affordable than alternative solutions, this high speed control system boasts integral sensing, actuating and system diagnostics, has no moving parts, operates as needed (>100 k operations / day) and eliminates flicker, ringing transients and re-strike.

We routinely solve problems caused by starting large motors, metal shredders and crushers or operating sawmills, pump or pipeline stations, shipyards, coal mines, feed plants or energy intensive processes.

#### Power Quality Industrial Voltage Restorers

AMSC's PQ-IVR system provides instantaneous, facility-wide protection against voltage swells and one-, two-, and three-phase sags up to 60% of nominal voltage. Unlike a series connected device, the sag rebuild of a PQ-IVR system is not load dependent, meaning additional load can be added to the plant without impacting the effectiveness of the PQ-IVR solution. Also, a PQ-IVR system does not shut down ("go into bypass mode") when it detects a voltage dip that originates within the industrial facility itself or exceeds the rebuild design limits of the PQ-IVR.

AMSC'S PQ-IVR system detects power quality problems within milliseconds, and counteracts them before they turn into costly productivity problems.

PQ-IVR system incorporates IGBT-based power electronic converters and can be configured to meet a wide range of customer requirements, helping industrial facilities realize their full profit potential.

#### Our SVC System Solutions provide the following benefits

- Dynamic reactive power compensation
- Voltage regulation through state-of-the-art thyristor valves
- Three-phase voltage balancing
- Flicker mitigation and oscillation damping
- Solid-state componentry for lower maintenance, higher reliability
- Advanced, user-friendly digital control that directly interfaces with SCADA systems and can be controlled locally or remotely

#### Our PQ-IVR System Solutions provides the following benefits

- Additional load can be added to the plant without impacting effectiveness
- Each system contains IGBT based inverters stacked and operates independently to improve reliability
- Shunt connected; mitigating risk to critical load
- Enabling industrial facilities to operate smoothly and efficiently

#### We offer fully engineered, turnkey services for our Power Quality solutions, including

- T&D planning
- Project management
- Construction management
- Professional substation
- Design engineering
- Substation control and protection
- Commissioning and testing



- Mitigate disruptive power quality problems
- Reliable voltage protection for industrial facilities
- Bring enhanced efficiency to existing networks
- Smooth, efficient, cost effective operation

# Power Quality Solutions

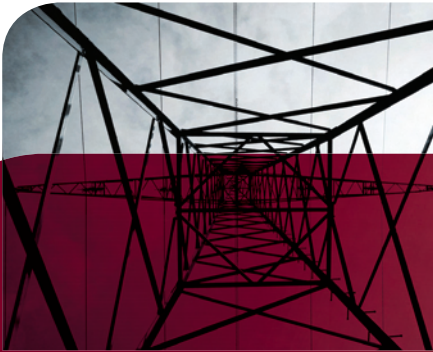
## About AMSC's Gridtec Solutions

AMSC's Gridtec Solutions are a set of engineering planning services and advanced grid systems that optimize network reliability, efficiency and performance from the point of generation through transmission and distribution. We supply components, systems and solutions to some of the industry's biggest names. From wind parks to solar power plants and from utilities to large industrial manufacturers, our commitment is to deliver the right solution for our customers, each and every time. Whether a simple component or complex system-level solution, we focus on ensuring that the investment is right, and right for you – delivering reliability, security, efficiency, scalability and tangible long-term benefits.

**For invaluable advice and compelling solutions, we are the partner you can turn to.**

## About AMSC

AMSC (NASDAQ: AMSC) generates the ideas, technologies and solutions that meet the world's demand for smarter, cleaner ... better energy. Through its Windtec Solutions, AMSC enables manufacturers to launch best-in-class wind turbines quickly, effectively and profitably. Through its Gridtec Solutions, AMSC provides the engineering planning services and advanced grid systems that optimize network reliability, efficiency and performance. The company's solutions are now powering gigawatts of renewable energy globally and enhancing the performance and reliability of power networks in more than a dozen countries. Founded in 1987, AMSC is headquartered near Boston, Massachusetts with operations in Asia, Australia, Europe and North America.



## Talk to us about

- Solving your most complex power challenges
- Enhancing competitive advantage
- Improving your system's performance, reliability and profitability

[www.amsc.com](http://www.amsc.com)

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Whether you wish to make new advances in renewable technology, optimize power generation or delivery, or simply gain a better understanding of the issues you face, please get in touch. We're here to help.



smarter, cleaner  
... better energy

