PQ-IVR® Power Quality Industrial Voltage Restorer

Instantaneously inject reactive power into the network

A momentary power outage causes billions of dollars in lost revenue each year. AMSC's Gridtec Solutions PQ-IVR power quality industrial voltage restorer eliminates hours of downtime and the need to recalibrate equipment due to slight voltage variations. The PQ-IVR system offers large industrial customers a superior way to mitigate disruptive power quality in milliseconds, resulting in improved reliability and smooth, efficient operation.

Shunt connected, no risk to critical load
The PQ-IVR system is a shunt-connected voltage protection solution for large industrial facilities, designed specifically to provide facility-wide protection against voltage swells and sags of up to 60% of nominal voltage. Unlike series-connected devices, the sag rebuild of the PQ-IVR system is not load dependent, so additional load can be added to the plant without impacting effectiveness.

Keeps on working
The PQ-IVR system does not shut down or go into bypass mode when detecting a voltage dip that originates within the industrial facility or exceeds the PQ-IVR rebuild design limits. The PQ-IVR sag rebuild depends on the fault current of the system.

Precise amounts injected
Each PQ-IVR system detects power quality problems within milliseconds, immediately injecting precise amounts of reactive power into the network to correct both balanced and unbalanced events.

Independent module operation improves reliability
AMSC's PQ-IVR systems use the latest proprietary PowerModule™ power electronic converters. They can be configured to meet a wide range of requirements, allowing industrial facilities to realize their full potential. Each system contains four-quadrant IGBT inverters stacked to handle the required output demand. Every PowerModule block operates independently, thereby improving reliability.

Smooth and efficient operation
With short lead times, quick payback and minimal impact on facility operations and infrastructure, PQ-IVR systems provide a cost-effective solution that allows industrial facilities to operate smoothly and efficiently.

Gridtec Solutions™

- Protects industrial facilities from momentary voltage sags and swells
- Protects against one-, two- and three-phase voltage sags up to 60% in depth
- Shunt connection eliminates risk to critical load
- Provides at least two seconds of ride-through at full power
- Uses proprietary IGBT inverters with millions of reliable operation hours

Gridtec Solutions™

PQ-IVR is a shunt-connected solution that poses no risk to critical load

PQ-IVR: Precisely injecting reactive power immediately into the network.

POWER RATINGS

Load Voltages:	400 V to 46 kV
Frequency:	50 or 60 Hz
Unit Output:	±2 - 100 MVAR reactive
Response and Rebuild Time:	Approx. 1.5 cycles
System Efficiency:	>99%

POWER ELECTRONICS

Inverter:	IGBT, 4-quadrant
Rating:	4 MVA modules with 2 second overload rating of 3.0 times continuous
Output:	480V, combined 3ø control (independent 1ø control)

MONITORING

Control Monitor:	Subcycle monitoring of customer voltage
System Monitor:	Interface to customer SCADA, remote monitoring optional

INSTALLATION DIMENSIONS AND CONFIGURATION

Inverter enclosure size is 8’ x 8’ x 8’ per 4 MVA module

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smarter, cleaner ...better energy

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