



# PQ-IVR<sup>®</sup> 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.



- 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





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

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

**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