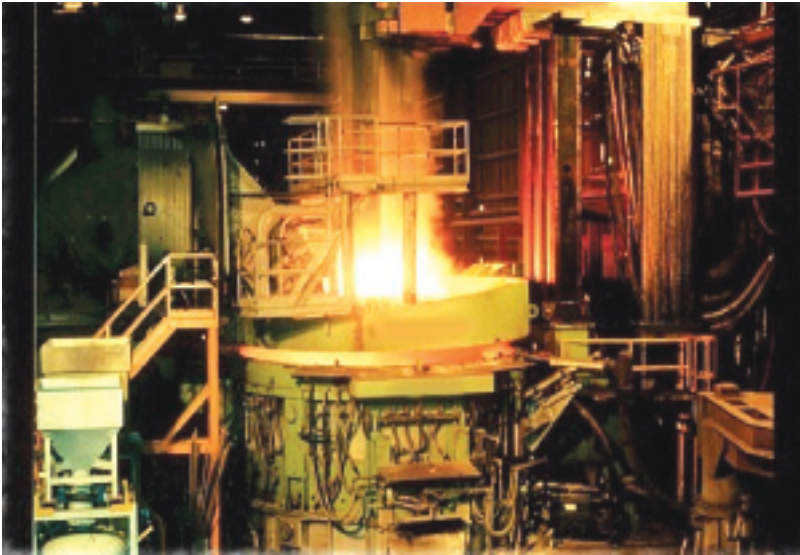


ACTIVE POWER FLOW CONTROLLER (PFC)

**Active VAR support for multiple applications up to 245kV
Capacitor Free Voltage Conditioning Solution
Load Support with storage options**



Description

The Active Power Flow Controller (PFC) from Vectek Electronics is an inverter based system that provides dynamic VAR and KW support exactly as required. The PFC is a flexible device that can be used in multiple applications.

From raw VAR support to complex applications with varying loads and frequencies, the PFC provides the ideal solution. Its dynamic response capabilities provide a smooth and accurate supply of VARS to the system at all times.

This includes continuous power factor correction.

When adding storage to the PFC the unit can be used for peak shaving, wind farm storage, pulse power and voltage sag protection.

The PFC is a 100% power electronic solution and therefore allows for simple application engineering and virtually no network interaction unlike a capacitor based solution.

Benefits of not using capacitors

- Does not resonate with the supply
- Few harmonic issues
- Continuous smooth compensation
- Sub-cyclic response
- Fast and easily controlled current contribution
- Select or ignore specific harmonics
- No Contactor inrush
- Transformer coupled

APPLICATIONS

- Electric Arc Furnaces (EAFS)
- Welders
- Wind Farms, voltage support
- Car shredders, Motor start
- Amusement Park rides

WITH Optional Storage

- Peak shaving
- Power arbitrage
- Pulse power
- Voltage stability

KEY FEATURES

- Power Factor correction, std.
- Flicker (Pst) Reduction
- VAR Support
- kW Support c/w Storage options
- CAPACITOR FREE
- Voltage independent
- Short circuit protected
- Extensive diagnostics
- Fault log
- Voltage event log
- Separate coupling transformer

Applications for PFC Active VAR Support

Electric Arc Furnace and Welder Flicker

Issue

Flicker caused by lack of VARS consumed by EAF or welders. This causes flicker that cannot be tolerated by other customers of the utility. Utilities insist on correcting at the point of common coupling (PCC).

PFC Solution

Active VAR correction - No capacitors

- PFC Targets Frequency of EAF and vectors of voltage flicker
- Less kVARs required

Wind Farms Voltage Support

Issue

Wind turbines frequently do not provide sufficient VARS, if VARS are required from the network there are voltage sag and stability problems that, when severe, can cause the turbines to shut down.

PFC Solution

Capacitor Free, active VAR support provides continuous VARS when required.

- Very fast response keeps wind turbines online
- No risk of resonance or other capacitor issues.
- Compact and cost effective solution

Car Shredders / Motor Start / Amusement Park Rides

Issue

When a motor starts or a load such as a car crusher jams, they draw a large inrush current (VARS) to maintain their mechanical loads at full operating capacity.

PFC Solution

Sub-cyclic correction of VARS allows for mechanical loads and the electrical network to continue to operate with little or no effect/degradation.

- No step changes in Voltage or VARS
- Compact and easily installed

PFC with STORAGE

Pulse Power

Issue

Some customers have loads that require a very large kW supply but only for a few seconds at a time. At other times they draw minimal kW from the utility. In these cases it is often not economical for the utility to increase the feeder and/or transformer size to handle the short time peak loads

PFC Solution

The PFC with storage will provide not only the VARS required in this application but can deliver the additional KW required for the pulse power requirement.

- The load will draw maximum kW from the line, then extra kW required will be provided from the storage
- Load and network will both see very limited power excursions.

Peak Shaving

Issue

The ability to use electricity as and when you want to is now a reality. Most utilities charge penalties for exceeding your demand maximums for each month. These fees can be very costly. One way to handle these events is to reduce your load during peak time or find a power source for those short periods of time.

PFC Solution

The PFC with sufficiently rated storage system is a perfect solution for peak shaving . It has the ability to load share with the line and provide only the excess kW required to meet the peak demand reduction <1/2 cycle.

Power Arbitrage / Wind Farm

Issue

Many utilities charge time of day rates with peaks more than three times the day's lowest rates. Can you use the power at the lowest rate and save it for the more expensive time of day. In wind farms you need a method to store power when the wind is blowing

and deliver it when the wind is calm.

PFC Solution

The PFC in conjunction with a large capacity energy storage device can provide deferred power on an as needed basis.

- Stores power when the wind is blowing or while the rates are at the lowest of the day and then supplying the power as needed at the desired rate or when there is no wind.
- Built in Grid connect capabilities make this a simple application for the active PFC.

SPECIFICATIONS

- Connects to all voltages up to 245kV class
- 1/2 cycle response time.
- Power Factor Correction standard, user can specify target PF.
- Option - Harmonic correction of load current THD.
- Fully charge storage option at same rate of discharge.
- User selectable target frequencies to provide most effective VAR support.
- Redundant modules available for increased reliability.
- Compact footprint.
- Reliable low voltage power electronics.



570 Hood Road
Suite 20
Markham, Ontario
L3R 4G7 Canada
Tel: 416 849-2299
Fax: 416 849-2298

info@omniverter.com
www.omniverter.com