ENERDOOR
Engineered by Finmotor

PF Correction

Power Factor Correction – Static Var Generator

Applications

- Motors
- Inductive loads

Benefits

- Saves electricity cost
- Compact design

Features

- No capacitor banks
- Unaffected by harmonics
- Remote controlled

Introduction

This white paper discusses Enerdoor's newly developed product, the FINSVG Static Var Generator and how it benefits markets in terms of saving both money and energy using power factor correction.

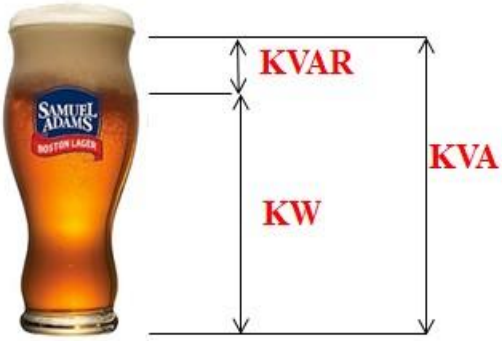
Power Factor, or the ratio of real power to apparent power, has an ideal measurement of 1. Currently, numerous manufacturing plants are experiencing low power factor. Electrical utility companies are often charging these plants penalties and additional fees when the power factor correction is 90% or less. As an incentive for facilities to improve power factor, electrical utility companies offer a credit on electricity bills when the power factor is greater than 95%.

Low power factor does not only create additional costs. It also causes unnecessary stress on certain equipment in the facility- leading to premature failure.

The Challenge

Most loads in modern facilities are inductive loads such as motors and transformers.

An induction motor requires working power (Kw) to perform the actual work and reactive power (kVAR) to sustain the magnetic field.



Other devices with non-linear loads that affect the power factor are rectifiers, fluorescent lamps, electric welding or arc furnaces.

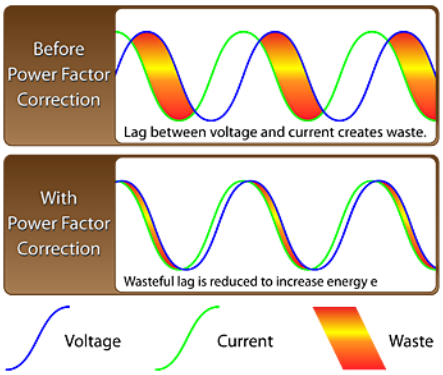
Today, end user facilities are continuing to evaluate solutions and are starting to require that new OEM equipment be compliant with a minimum of 90-95% power factor.

The Solution

Capacitor banks are the most commonly used solution in the industry. Although capacitor banks help with power factor correction, there is definitely room for improvement.

Enerdoor developed a technology system controlled by IGBT technology. Unlike capacitor banks, the FINSVG is immune to harmonics through active load balancing by advance digital control. The compensation capacity never declines and the system is capable of compensating both inductive and capacitive reactive power.

The Enerdoor FINSVG offers compensation starting at 30 KVAR with a modular design and can either be wall or rack mounted. It is available starting at 208 Vac.



The Enerdoor static VAR generator may be installed in either a single unit system or multiple, parallel modules for entire facilities.

The parallel concept allows for easy installation in new or existing applications. The following features of the FINSVG make this product highly reliable:

- Unaffected by harmonic resonance
- IGBT is monitored and will automatically reduce power if the temperature exceeds safe operating levels.
- Remote control RS485, Modbus, Profibus, Ethernet

The Result

The Enerdoor FINSVG offers a solution for linear and non-linear loads with leading or lagging power factor.

Recent design features make the FINSVG highly reliable and remote controllable. Its compact size and rack & wall mount options offer easy installation to OEMs or end user facilities. Overall, the features and benefits of the FINSVG provide a better solution for power factor correction than the commonly used capacitor banks.

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