

# NEWSLETTER

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## Spiraling Energy Costs?

Managing the monthly electric bill has always been an ongoing challenge. However with the ever increasing costs, concerns over Global Warming and the decline in fuel resources, it is both our corporate and personal responsibility to reduce energy wastage as much as possible. This together with the present global economic situation it has never been more critical that companies reduce these avoidable costs.

**How do I reduce our energy costs?** This is often a difficult question to answer as there are many routes to a company operating more efficiently. It could be as simple as limiting peak power demands or if commercially viable, installing energy-saving equipment.

However it has been proven that by simply reducing the input voltage to a site or the installation of **Power Factor Correction** equipment often in the past overlooked, can produce a significant reduction of the electric bill for many plants.

In the UK the average L-N voltage is 242 Volts which although within BS EN 50160 regulatory levels is in fact quite high when considering that the majority of equipment is designed to operate at 220-230V +/- 10%. This higher voltage is actually having two negative effects;

**Reducing the life expectancy of the connected equipment** i.e. a 230V rated lamp operating at 240V will achieve only 55% of its rated life" (failing after 550hrs instead of 1000 hours)\*.

**Increased Energy Consumption** i.e. a 230V linear appliance used on a 240V supply will take 4.3% more current and consume almost 9% more energy\*.

\* Extracts from IEE 16<sup>th</sup> edition guide BS7671.

There are two ways to achieve this voltage reduction either through the installation of voltage optimization equipment or simply reducing the output from your supply transformer. To achieve either of these options an electrical survey would need to be conducted to determine your present voltage levels from which calculations can be made as to the best and most cost effective solution.

Another relatively inexpensive way of reducing your energy costs is the application of power factor correction equipment. The application of this equipment will improve how efficiently the site utilizes the energy supplied leading to financial savings.

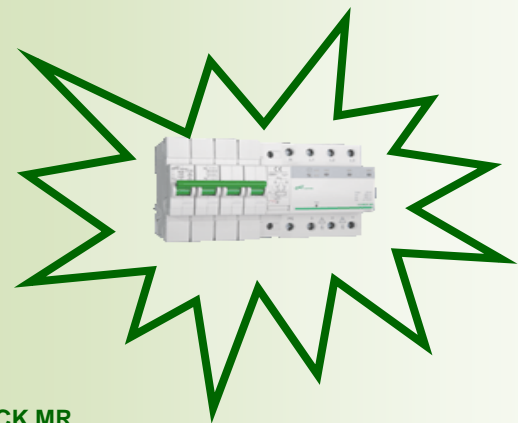
**I already have Power Factor Correction Equipment installed!** In this instance we don't need to convince you of the economical, technical and financial rewards these units provide. However, are you aware that most manufacturers recommend an annual service/inspection is conducted on this equipment to ensure you continue to receive these benefits? When was the last time you checked the operation of your PFC equipment?

We are independent specialists with over thirty years experience in the field of Power Quality/Power Factor Correction and can provide the following non-exhaustive services.



## FIRST POWER & SURGE PROTECTION LTD

NEW SURGE PRODUCT FOR 2010



### V-CHECK MR

**Class II protectors operating on main MCB w/ automatic reclosing**

The V-Check MR range of surge protective devices has been designed for combined protection both against transient and permanent (a.k.a. TOV) overvoltage's in single-phase or three-phase TT electrical power networks. The range includes an MCCB and the transient protector actuates the auto-reclosing MCB.

### 2MR ONE-PHASE PROTECTOR

The V-CHECK 2MR series of surge protective devices has been designed for combined protection both against transient & permanent (a.k.a. TOV) overvoltage's in single-phase TT electrical power networks. The protector is supplied w/built-in self-reclosing main MCB (6A to 25A) which serves also as a means for disconnecting (reconnecting) the network in case of permanent overvoltage.

**Advice Service** – Quiet often it only takes a phone call to quickly identify any potential financial savings to be gained. For free impartial advice please call us on any of the numbers listed.

**Power Factor Survey** – Using snapshot data to produce a report on the site power factor level. This survey will potentially lead to the identification of poor power factor levels and high supply voltage levels.

**Power Factor/Load Profile Surveys** – Week long, detailed and in-depth report on the site load profile. Used for identifying kW usage, power factor levels, maximum kW and kVA demands, harmonic distortion levels and any irregularities with the supply (i.e. high/low voltages). In 90% of cases this survey will lead to the following.

- Identification and correction of poor power factor levels will lead to financial savings by releasing kVA service capacity and removing reactive charges from utility bills.
- Identification and consequent reduction in supply voltage will reduce the kWh consumption of the site leading to a financial saving.
- By improving power factor levels and reducing the power used there is the possibility of negating any intended kVA service capacity increases for future load expansion requirements.
- Calculation of reduced CO<sub>2</sub> emissions in the production of reactive power.

**Specialist Power Quality Surveys** – As with Power factor/Load profile surveys but harmonic data is used to confirm compliance or non-compliance with ENA G5/4 -1, BS EN50160, P28 flicker etc...

**Existing Power Factor Equipment Inspection/Service/Repair** – We can service, inspect and repair PFC equipment from all manufacturers.

**Equipment Supply** – We can specify, supply and commission all types of power factor correction equipment, voltage optimisers and harmonic mitigation equipment.

**NB** A recently released document from the ENA/OFGEM of the proposed utility rate changes for 2010 show fairly significant increases in a lot of areas.

What is of particular interest is that there is not only a proposed introduction of reactive power charges to areas not presently charged but also a significant increase in the service kVA capacity rate (in some cases it may be as high as £0.60 per kVA). So basically what this means is that the payback time on Power Factor Correction equipment has been significantly reduced.

**For example:**

A site operating 600kW MD @ 0.8pf 750kVA with a service capacity of 800kVA

**Pre price increases.**

Site with a service capacity charge £1.30 per kVA  
By improving the power factor to 0.95 lagging the kVA MD would reduce by 132KVA to 618kVA

Therefore total annual savings of **£2052.00** based on a reduced service capacity (reactive power charges presently not implemented)

**New proposed price increases.**

Site with a service capacity charge £1.90 per kVA  
By improving the power factor to 0.95 lagging the kVA MD would reduce by 132kVA to 618kVA  
Annual savings of £3009.60 based on a reduced service capacity  
Approximate savings of £3276.00 for reactive power charge

**Therefore total annual savings of £6285.60 based on a reduced service capacity and no reactive power charges!**

## 4MR THREE-PHASE PROTECTOR

The V-CHECK 4MR series of surge protective devices has been designed for combined protection both against transient & permanent (a.k.a. TOV) overvoltage's in three-phase TT electrical power networks. The protector is supplied w/built-in self-reclosing main MCB (20A to 63A) which serves also as a means for disconnecting (reconnecting) the network in case of permanent overvoltage.

**Please do not hesitate to contact us regarding any of our services / products or if would like to receive one of our brochures, either contact us by e-mail or telephone.**



## Contact Details

**Web:** [www.firstpowerandsurgeprotection.com](http://www.firstpowerandsurgeprotection.com)

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