

AUTOMATIC POWER FACTOR CORRECTION CAPACITORS



Power Factor Correction is accepted universally as one of the first steps recommended to reduce energy costs and improve energy efficiency. It works by “correcting” an inefficient electrical load or supply. Capacitors are automatically switched in to circuit to counteract the effects of an inductive load which is produced by all motors, pumps, air conditioning systems, refrigeration and general plant & machinery that use motors in their process or operation.

THERE ARE A NUMBER OF BENEFITS:

- ~ Removal of “Reactive Power” charges (penalty for operating an inefficient electrical supply)
- ~ Reduction in kva “Availability” & “Capacity” charges
- ~ Reduction in kw/h losses
- ~ Reductions in CO² emissions
- ~ Reduction in circuit currents
- ~ Improved electrical efficiency
- ~ Improved utility



Power Factor Correction not only returns financial savings on monthly electricity bills but also due to improved utility of the existing electricity supply would allow for additional plant to be connected to an otherwise overloaded inefficient supply, which in most cases would remove the need for a larger supply and associated costs.

PES - Power Efficient Systems Ltd are one of the leading manufacturers and suppliers of Energy Saving Systems for industrial and commercial clients within the UK. Our approach to energy reduction at a plants source or on individual circuits using a number of proven technologies combined is quite unique within the UK, and is proving to be a solid and cost effective route to reduce energy costs and carbon emissions in an ever increasing energy conscious environment.

With the main emphasis on Power Factor Correction and EnergyAce, our energy reduction system, we are continuing to deliver impressive results on energy reduction for many of our clients within all industrial and commercial sectors in the UK and overseas.

Our collaboration with Vishay one of the worlds largest and quality conscious manufacturers of capacitors allows Power Efficient Systems Ltd to manufacture cost effective energy saving products to a high quality standard ensuring unrivalled performance and reliability.

WHAT IS A POOR POWER FACTOR?

Power Factor is a degree of electrical efficiency with 1.00pf (unity) being the ultimate efficiency of 100%. Since 1990, recent changes from RECs to DNOs (Distribution Network Operators), changes to reactive power charges which came into force in 2008 and the new charging methodology which came into force in mid 2010, it is more important than ever to maintain a good healthy power factor.

The new methodology for "Reactive Power Charges" will in most cases penalise for a power factor of less than 0.95pf (95% efficient) and in some cases as high as 0.99pf (99% efficient) leading to heavy penalties for inefficient users.

The power factor above refers to a lagging power factor which is the effect of inductive loads created by motors etc. Although additional recent changes have also come into effect regarding "Leading" power factors which are commonly created by static non automatic DOL capacitors connected permanently on the supply. A "Reactive Charge" can also be introduced if the power factor is "Leading" beyond 0.95pf as experienced by one of our clients who suddenly attracted a "Reactive Charge" despite the average power factor on the site being recorded on the electricity bills as 0.99pf due mainly to the planned maintenance program introduced many years ago to ensure a good healthy power factor was maintained.

TYPICAL CASE STUDY OF VINYL FLOOR MANUFACTURER



Annual Savings Achieved

- ~ £42,929.00
- ~ 253.27 Tons Co2
- ~ 169685 kW/h site
- ~ 471600 kW/h inc transmission

System Savings

- ~ 1496 Amps per phase
- ~ 1076 kVa Demand
- Payback - R.O.I.
- ~ 11 Months

The site above is a world leader in vinyl floor manufacture with an annual electrical energy spend of around £7 million per annum on a 6 megawatt site.

The project included new power factor correction equipment and repairs to existing equipment to achieve an overall electrical efficiency of around 99% from a pre contract 85%.

Through our continued commitment to all our clients, via our service and maintenance department, the site continues to benefit from the improvements in electrical efficiency and greater utilisation of switchgear generating the annual savings as predicted.

SAVE AND PROTECT TODAY

To avoid higher energy costs and avoid potentially high penalties or for further details on our energy saving products & services, please contact our offices on 01695 559785, email us on post@pesgrouppltd.co.uk or visit us on www.energyace.co.uk



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Save & Protect with
EnergyAce