

The Need for Power Factor Correction

A power factor of -0.7 for example, indicates that only 70% of power supplied to your business is being used effectively and 30% is being wasted. The wasted power is the Reactive power (the foam in the previous example). Most loads are inductive in nature, which means the power factor will typically be less than unity. The further the power factor is from unity, the greater the apparent power drawn and therefore, the greater the current draw for the system.

The increased current may require an increase in the size of your transformers and installation power wiring. Increased current also results in increased heat which affects the longevity and lifespan of an electrical system. This can add a great deal of cost to the installation and may also limit the expansion of a plant.

Why is Power Factor important?

It's important because you may be paying for reactive power (foam) that you cannot use to power equipment. If you can reduce the foam, you can get more 'beer for your buck'. Improving the power factor results in less current being drawn, therefore less electricity costs, less heat and greater longevity of the electrical system.

Many power suppliers charge for the base load (kW) and a maximum demand tariff. If this maximum demand tariff is measured in kVA, then improving the power factor reduces the kVA of the installation, thus reduces the maximum demand tariff and thereby reducing your power costs.

It is actually a network regulation that customers maintain a specific minimum power factor (values depend on your region). Utility companies may charge customers a penalty on top of consumption charges when customer power factor is less than a determined value.

What is Power Factor Correction?

Poor Power Factor can be improved by installing Power Factor Correction (PFC) equipment.

Traditional solutions incorporate banks of capacitors that work as silent reactive power 'generators', often housed in a metal cabinet similar to the one that houses your electrical switchboard.

Fuseco offers the latest generation of advanced performance PFC solutions that do not need a capacitor bank and offer many advantages due to their compact and modular configuration.

How Can Power Factor Correction Help You?

An electrical load with a poor power factor draws more current than a load with an improved power factor for the same amount of useful power transferred and can put unnecessary strain on the electricity distribution network. By improving your power factor, you can reduce your electricity bills through lower monthly demand and capacity charges. Typically payback periods for power factor correction are between 1-3 years. Given the life expectancy of power factor correction equipment and the potential savings, it can be a very worthwhile investment.

Poor power factor may cause power losses and voltage drops, which can contribute to overheating and failure of motors and other equipment. If your electrical system is near capacity, installation of power factor correction equipment may help avoid costly infrastructure upgrades by lowering the existing electrical demand on your system and improving efficiency stability.