



## COMPANY PROFILE - ALPHA POWER SOLUTIONS (PTY) LTD

### *Introduction*

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**Alpha Power Solutions**, in association with **Comar Benelux**, is a company that has over 35 years of experience in the field of **power factor correction, harmonics filtration and electrical power quality mitigation** in Europe and Southern Africa.

Combining **innovation** and **knowledge**, we are able to offer **total solutions** and **flawless service** to our costumers, through which we endeavour to create **mutually beneficial** and **long term relationships**.

Before offering a solution to our customers, we take the necessary electrical measurements of their network (short or long-term analysis), with our **sophisticated high-speed power analysers**. This allows us to better understand the power profile, power factor and power quality constraints and ensures that our offer is based on **sound** and **accurate** information. We also consider physical constraints (available space to install our hardware, ventilation etc) when submitting a proposal.

In order to meet the growing expectations and sophistication of our customers, Alpha Power Solutions endeavours to create and maintain **partnerships** with electro-technical suppliers and contractors as well as registered installers.

The supply, installation and servicing of power factor correction, harmonics filtration and power quality improvement equipment being our core business, ensures that our existing and future customers obtain tailor made solutions and support for their unique environments.

#### **For more information you can reach us at:**

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## ***About Power Factor Correction***

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### **Power factor**

Inductive electrical loads demand more power than they convert into useful energy. Induction motors, for example, convert at the most 80-90% of the delivered power into useful energy. The remaining power is used to establish an electromagnetic field in the motor.

The average power drawn by this electromagnetic field is zero: the power drawn into the field in one instant is returned in the next.

The electrical **current** drawn by inductive loads consists of **two elements**:

- the first of these is in-phase with the supply voltage (active or working power)
- the second and greater element is out-of-phase with the supply **voltage** and lags it by 90° electrically (reactive power)

The lagging current is primarily consumed by the field windings of an induction motor. The total current drawn by an inductive load is the vectorial sum of these two currents.

This additional current not only results in higher electricity costs but also causes voltage drops, and forces the engineers to oversize cables and transformers, which increases your costs.

Power factor is the ratio of Active Power (kW) over Apparent Power (kVA) and expresses how effectively power is being consumed.

### **Power factor correction equipment**

By nature of its electrostatic field, a capacitor stores energy whenever the voltage applied across it, is moving away from zero; it gives up energy after the voltage has crested.

This sequence is opposite to that of the magnetic field, so the capacitor can be used to supply magnetizing current that would otherwise be drawn from the utility source.

***Capacitors are generally the most economical source of reactive compensation.***

Other advantages of power factor correction equipment include:

- ✓ low losses (less than ¼ Watt/kVAr)
- ✓ essentially no maintenance
- ✓ light, compact units which can be combined as needed, make capacitors relatively easy to install and modify for reactive compensation purposes.

# *Alpha Power Solutions power factor correction panels*

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The modular concept of our capacitor racks allows for ease of assembly and troubleshooting.

