



## EXPERTISE IN POWER FACTOR IMPROVEMENT

### ***SAVE MONEY BY LOWERING ELECTICITY BILL AND AVOID SEC PENALTY***

**Saudi Electricity Authority (SEC)** has introduced the penalty to customers who have not maintained power factor above 0.80. In subsequent years, this limit will be increased to 0.85 & then to 0.9.

This concept was introduced in UAE few years ago. **Prime Electrical Manufacturing Dubai** had been actively helping customers in UAE to implement Power Factor Improvement and has gained immense knowledge & expertise in this filed.

**Safwah Factory for Electrical Industries, Riyadh, Kingdom of Saudi Arabia** is associated with Prime Electrical Manufacturing to design & manufacture these products in Riyadh factory, in order to cater to needs of customers in Saudi Arabia.

### ***What is Power Factor?***

People are well aware of terms such as Voltage, Current & Frequency. But “Power Factor” may not be known to many.

Power Factor determines how effectively the power is transmitted & consumed. If Power Factor is poor, it will draw more current, resulting in more losses to SEC, and higher electricity Bill and penalty payment to customers!

### ***Why Higher Power Factor is desired?***

Let us take simple example of 3 phase, 400V, 60Hz 100kW load.

If the load is operating at 0.5 power factor, the current drawn will be –

$$\text{Current} = 100 \times 1000 / 1.732 \times 400 \times 0.5 = \mathbf{288.68 \text{ Amperes}}$$

However, if the power factor is improved to 1 (Unity), the current drawn will be –

$$\text{Current} = 100 \times 1000 / 1.732 \times 400 \times 1 = \mathbf{144.34 \text{ Amperes}}$$

**Thus, as Power Factor improves, current drawn goes down, & this will reduce your electricity Bill and also avoid penalty from SEC.**

**When Power Factor is poor, higher current drawn causes higher losses in Transmission & Distribution. It's a national waste and you can also reduce national waste by improving power factor.**

### ***How to Improve Power Factor ?***

Power Factor becomes lower due to inductive loads such as motors. The bad effect of inductive load can be neutralized by introduction of right amount of Capacitive load.



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### ***Is it so easy to add Capacitors & improve Power Factor ?***

Theoretically, it appears simple to fix capacitors to improve Power Factor.

But practically, it requires expertise because addition of capacitors has to be done thoughtfully, otherwise, it can lead to safety issues, explosion of capacitors, overcorrection resulting in more bill etc.

Also, loads are not constant, hence the right amount of capacitance must be switched in our out of circuit by proper sensing and switching.

Capacitor switching causes high voltage impulses generated in system. Also, Harmonics is another issue which needs to be considered carefully, otherwise failures of system may happen.

### ***How can Safwah Factory for Electrical Industries help you ?***

Because of immense experience of field trails and successful installations over past 15 years in GCC countries, we can precisely define your need of Power Factor Improvement & design the Power Factor improvement panel tailor made for your need.

We take care of Safety, long life of equipment, mitigate the problems of Harmonics by judicious use of reactors and also the guaranteed improvement in Power factor to make sure you save in Electricity Bills and also avoid penalty from SEC. We also make sure to offer you the solution at a very competitive pricing!!

Send e mail to us on [sales@safwah.com.sa](mailto:sales@safwah.com.sa) with details so that we can provide you optimum solution.