



Automatic Power Factor Controller Unit (APFC)



AE Automatic Electric Ltd.

Old Values...
New Trends

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Automatic Power Factor Controller Unit (APFC)

For Controlling Electricity Bills



INTRODUCTION :

APFC system is use full for improvement of Power Factor in Three phase power system. The said system should be useful wherever Motors, Lifts, Water pumps, Lighting switches etc.

The leading & lighting loads supply from

Three phase have power factor ranging from 0.95 (lag) to unity. But loads like induction motors, transformers, inductive ballasts etc usually have very low lagging power factor. The range is generally from 0.5 (lag) to 0.9 (lag). Single phase inductive motors may have power factor as low as 0.4 (lag) & electric welding machines have power factor up to 0.2 (lag).

NECESSITY OF INCORPORATING THE APFC SYSTEM :

When the power factor is low and to maintain same KW output, the KVA capacity is to be increased at specified voltage. This will be at the expense of drawing extra current from the Utility and will lead to following adverse, undesirable effects on the equipments & the Utility supply.

- 1 **Large KVA for given amount of power will lead to -**
 - a) Exceeding permissible temperature rise of generators, transformers, switchgear & cables in turn reducing the insulation level & eventually premature failure of equipments leading to short circuits.
 - b) Over loading of transformers.

- 2 **Poor voltage regulation of the system voltage due to high current fetched by the cables leading to high cable drop lead to -**
 - a) Starting torque of motors
 - b) Necessity of expensive voltage regulating equipment to limit the fluctuations.
 - c) Florescent light flickering.
 - d) Reduction in elimination of incandescent lamp.
 - e) Rate of heat energy generation is reduced.
- 3 **High energy consumption & cost**
- 4 **Penalty from utilities for exceeding the sanctioned maximum demand.**
- 5 **Blocking enjoyment of financial benefits for maintaining healthy Power Factor conditions.**

THE ADVANTAGES OF INSTALLING APFC PANEL ARE AS FOLLOWING.

- 1 **Reduction in the electricity bills.**
- 2 **KVA consumption is reduced leading to reduction in installation size & Increase in available power.**
- 3 **Temperature rise of cables & machines is reduced, leading to increased life.**
- 4 **Efficiency of machines is increased.**
- 5 **Enjoying the benefits of maintaining the P. F. between 0.95 lag to unity.**

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