USHA ELECTRIC
Energy Management Solutions

Usha Electric Power Pvt. Ltd.

APFC Panel with Thyristor Switch

Thyristor switching of capacitors for Power Factor improvement has many advantages over conventional contractor switching. Thyristor Switching is highly with minimum maintenance, especially suitable for fast variable loads, where contractor Switching systems fail to give desired results. The capacitors are switched at'' ZERO CURRENT CROSS OVER THRESHOLD'' In this type of system; Thyristor's are used for switching capacitors. This is usually used in variable load conditions.

Automatic Power Factor correction is typical for large electrical systems with fluctuating load where it is common to connect number of capacitors to main power distribution station or substation. The capacitors are controlled by controller which continuously monitors the relative power demand. The relay connects or disconnects the capacitors to compensate for actual reactive power of the total load and reduce overall demand supply. Thyristor Switches are used to put the capacitors on and off in the system.

Features

- Load P.F. correction is quick and consistently near to the set value. Total P.F. correction is achieved within few hundred milliseconds.
- Fast P.F. correction reduces maximum demand more effectively, hence more savings on account of reduction in MD charges.
- Capacitors are switched through thyristors at "zero current crossover threshold". Hence the capacitor connection to the mains is always smooth, transient free and absolutely without generation of harmonics and voltage spikes.
- Single and multi stage configurations
- Compensated and uncompensated filters
- Switched and fixed filter banks

Benefits

- Reduced voltage & current distortion levels
- Compliance with standards & regulations
- Avoidance of Power Factor, harmonic penalties & kVA demand charges
- Improved voltage profile
- Reduced losses in equipment & feeders / cables
- Prevents mal operation / nuisance tripping of drives, relays etc
- Reduced loading on transformer, lower heating and extended life



