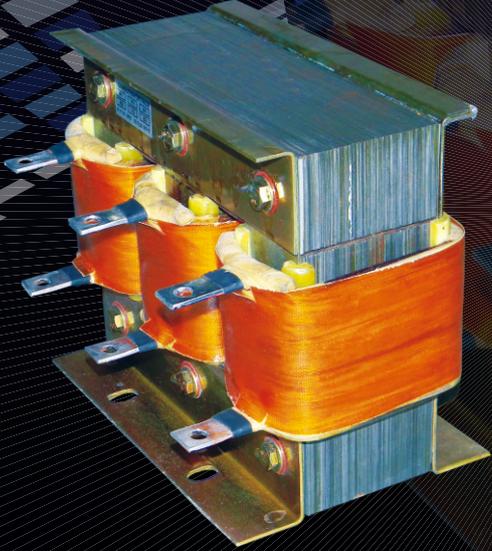


HARMONIC FILTER REACTOR

Capacitor + Reactor Combination



Why use a harmonic filter reactor in a power factor correction capacitor bank ?

- ◆ Capacitors are required to improve power factor, and possible system interaction may occur with the installation of a plain capacitor bank, which can lead to resonance.
- ◆ Permissible distortion limits of the local utility or applicable standards are exceeded, and filters are required to reduce them.
- ◆ A combination of 1 & 2 above, whereby capacitor are required to improve power factor and with the addition of the capacitors, permissible distortion limits are exceeded.

Benefits of using De-tuned reactor.

- ◆ Pro-long the life of power factor capacitor by reducing overheating, or fuse failure.
- ◆ Prevent nuisance input fuse blowing or circuit breaker tripping.
- ◆ Reduce over heating of transformer.
- ◆ Reduce the harmonic current in the electrical supply system.
- ◆ Addressing the harmonic problems created by non-linear load such as AFD's, AC-DC converter, DC drives, welding m/c etc.

Important : The use of specific filtering factor requires careful system analysis. As a general rule, filtering factor of 7% is used where imported harmonics from the power source is the main concern.

Blocking (De-Tuned) Reactor System :

The Reactor + Capacitor combination is designed to have a Resonance Frequency below the first denomination Harmonics (usually 5th Harmonic in a 3 Phase 3 Wire Loading System). Hence by De-Tuning a circuit we force the Resonant Frequencies below the lowest order Harmonics present in the system. This in effect corrects PF at fundamental frequency, and at higher order Harmonic Frequency, it operates as a de-tuned system.

- ◆ De-Tuning Factor : (5.67%, 7% to 14%)
- ◆ Ratings : 5 to 120 KVAR
- ◆ Insulation : Class F (Class H available on Demand)
- ◆ Material : Aluminum or Copper Wound.
- ◆ Voltage : 415 /440 V (other voltages available on request)

Power Quality Analysis :

We provide Power Quality Analysis services also, as it is required for proper filter design. Power Quality Analysis would involve collection of data regarding Voltage, Current, PF, KW, KVA, Harmonics, (THD Levels and Individual Harmonics) by data logging to understand system power quality details.

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