

Ultravar™

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ACTIVE FILTER SYSTEM

Ultravar is a trademark of GE.



Ultravar™ Active Filter

- Dynamic current injection for harmonic cancellation and power factor correction
- Reduces harmonics for IEEE 519 (1992) standard compliance
- Decreases harmonic related overheating of cables, switchgear and transformers
- Reduces downtime caused by nuisance thermal tripping of protective devices
- Increases electrical network reliability and reduces operating costs
- Compensates each phase independently
- UL and CSA approved
- Parallel connection allows for easy retrofit and installation of multiple units for large networks
- Filters to the 50th harmonic
- Filters entire network or specific loads depending on installation point
- Response to load fluctuations begins in 40 microseconds with 8 milliseconds for full response to step load changes
- IGBT based power electronic technology
- 50, 100 and 300A models for 208 to 480V, 50/60 Hz three phase networks

Ultravar™ Active Filter reduces problematic harmonic levels and provides instantaneous power factor correction. Cost savings result from reduced downtime and maintenance. In addition, over-sizing of distribution equipment to provide for harmonics and poor power factor can be avoided. Ultravar™ Active Filter dynamically corrects power quality by providing: Active Harmonic Filtration, Resonance Prevention, Power Factor Correction and Dynamic VAR Compensation

The Harmonic Problem

Although power electronic loads and devices which have rapid and frequent load variations have become abundant due to their many process control related benefits, they have one major drawback in common: they produce harmonics. Harmonics may disrupt other loads and increase operating costs and lower the reliability of the electrical network. The current waveform required by power electronic loads is quite different than the sinusoidal voltage delivered by the utility. This 'non-linear' current draw (Figure 1) results in the creation of harmonics.

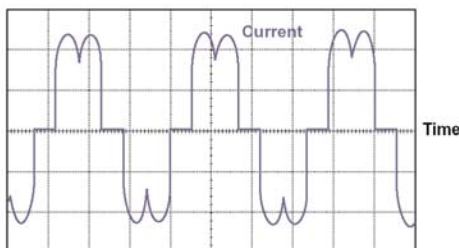
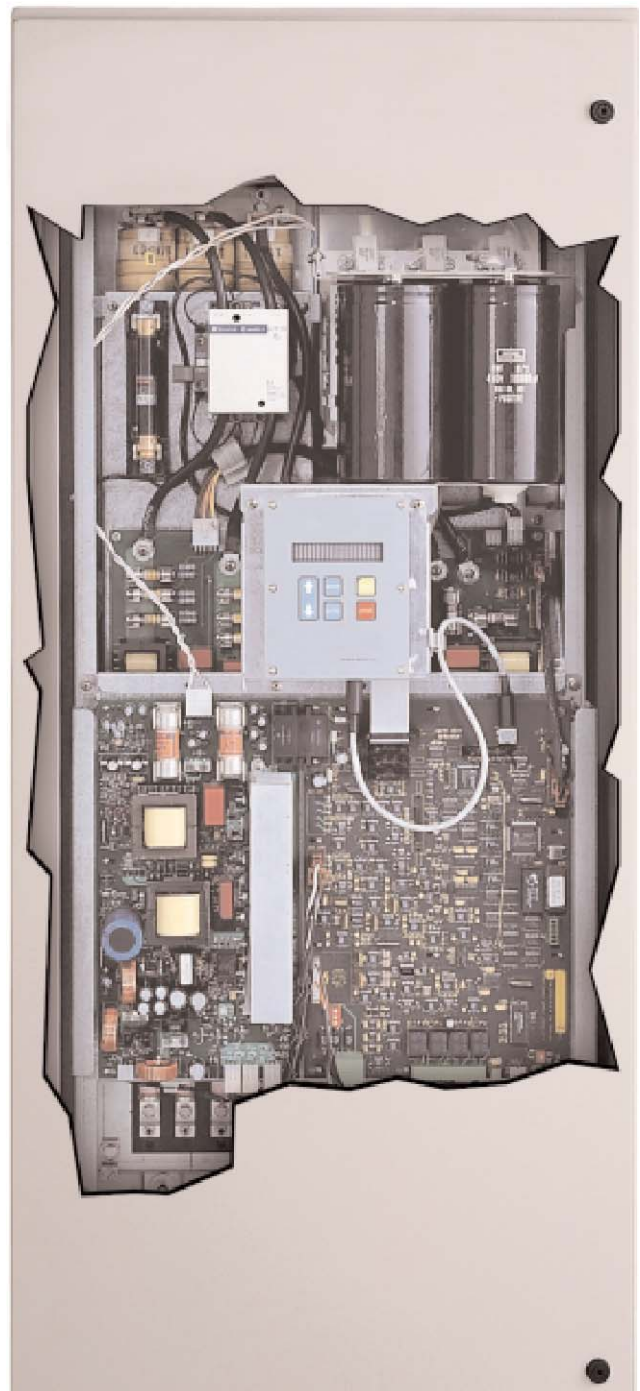


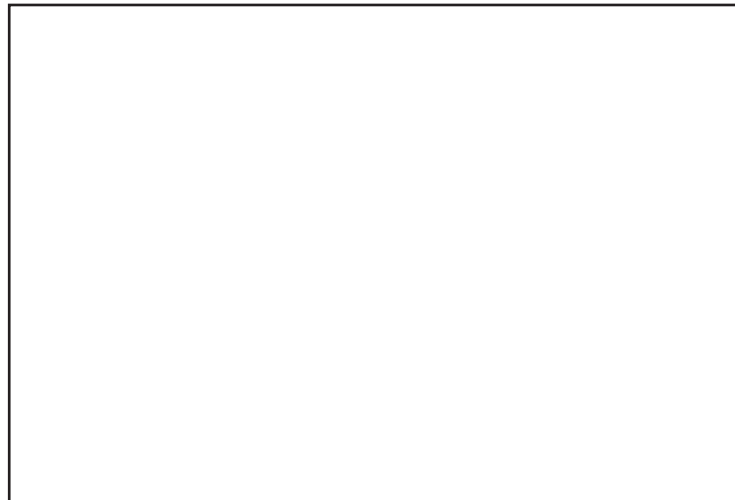
Figure 1: Non-linear current

Symptoms of problematic harmonic levels include overheating of motors, drives, cables, thermal tripping of protective devices and logic faults of digital devices all of which can result in downtime. In addition the life span of many devices may be reduced by overheating. Furthermore, by reducing harmonic levels, the need to oversize transformers and cables to account for harmonic heating effects is lessened.

With this in mind, the IEEE 519-1992 recommended practice establishes limits on current distortion that individual facilities can feed back on to the utility grid. Many utilities enforce these limits and with the decrease in capital spending due to deregulation of the industry, many more utilities are expected to start to enforce these limits.



Ultravar™ offers other power quality products. For additional information on line & load reactors, high voltage capacitor equipment and harmonic solutions, contact your Ultravar office or the address below.



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