

Controllix Corporation

Low Voltage Harmonic Filters



**Harmonic Current
Filtration Technology
Reduces Harmonics Problems
and Improves Power Factor**

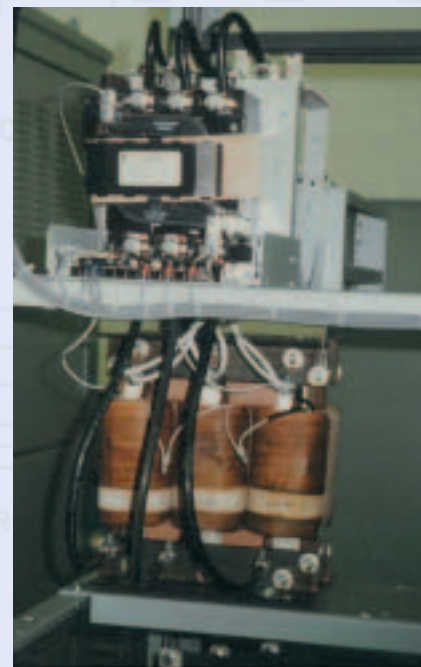
*From the World Leader in
Metal-Enclosed Capacitor Banks
and Power Quality Equipment*

Controllix Corporation

Harmonic problems are becoming more apparent because more equipment that produces harmonics is being applied to power systems. The need for continuous control of certain industrial processes has led to an increase of electronic equipment and motor drives.

Poor voltage waveforms due to harmonics or transients can lead to equipment failure as well as unnecessary and costly disruptions in production. Harmonic Filters from Controllix Corporation help industrial plants avoid these problems with reliable and cost-effective metal-enclosed harmonic filters.

Controllix low voltage power factor correction and harmonic suppression systems accommodate 240vac to 600vac requirements. Metal-enclosed capacitor equipment is available in fixed or switched arrangements, along with iron-core reactors, to solve harmonic problems. Controllix has decades of experience in preventing the occurrence of non-sinusoidal resonance. Successful integration in tuned L-C networks solves the problem of parallel resonance.



Leading in Power Quality for Over 40 Years

Low Voltage Harmonic Filter Banks



The most reliable solution to harmonics problems is the installation of a Controllix Harmonic Filter Bank. Controllix harmonic filters consist of capacitors connected in series with a reactor. The system's capacitors produce reactive power at the filter's fundamental frequency and the circuit is designed to achieve the required power factor correction. Controllix engineers determine the inductance of the reactor, typically below the 5th harmonic, so that a high proportion of harmonics enters the filter. Banks can be tuned to other frequencies depending upon project requirements.

Controllix Harmonic Filters operate in a manner similar to Controllix Low Voltage Automatic Capacitor Banks. When the microprocessor based controller senses the need for additional reactive power, stages of 50kvar (tuned below the 5th harmonic) are activated as required.

Controllix Low Voltage Automatic Filter Banks are designed for the improvement of power factor as well as harmonic voltage and current attenuation, IEEE 519 compliance, reduced system capacity, and improved voltage regulation. They are typically installed on or near the service entrance to automatically correct the total plant load.

Safe, Compact Design: Enclosures are fully-welded (not bolted) NEMA 1, 3R or 4X units of galvanized steel or stainless steel construction that allow integration into indoor, outdoor or unusual physical settings. The compact overall dimensions, top or bottom cable entry access and lifting eyes permit efficient handling and installation. Small footprint saves valuable space. Standard finish is ANSI Gray. Other colors available upon request.

Capacitors: Capacitors: Underwriters Laboratories (UL) listed low-loss (0.5 Watts per kVAR) capacitors are used. Capacitors are equipped with discharge resistors to drain residual voltage within one minute of de-energizing. The dielectric is biodegradable, environmentally friendly and non-toxic. Includes built-in pressure interrupter protecting capacitor from case rupture. An extended warranty is available on individual capacitor cells.

Controls: A programmable solid state electronic VAR controller is used that indicates the reactive load and provides a digital display of the facility's power factor. The microprocessor-based device provides accurate and reliable measurements and is programmable up to 12 steps. The controller automatically self adjusts to any capacitor step value, indicates and eliminates defective capacitor steps and provides a visual display of harmonic overload alarm. Indicating lights show the number of steps that have been energized.

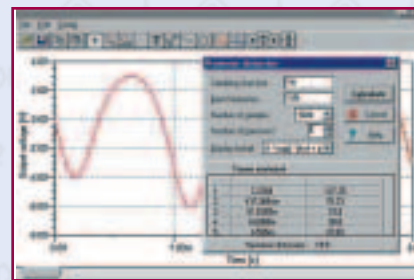


Iron-Core Reactors: Reactors tuned to the 4.7th harmonic or other frequencies upon request. 100% copper windings reduce temperature rise under load.

Switching Devices: Heavy duty contactors are specifically rated for capacitor switching to ensure long life and trouble free performance.

Access Door: The tamperproof front door has 3 point latching handles and stainless steel hinges. Available with optional circuit breaker with door interlock.

Capacitor Fuses: Each capacitor is equipped with a properly selected current limiting fuse with a blown fuse indicator.



ADDITIONAL ADVANTAGES:

- Complete, assembled systems are CSA certified to meet UL requirements.
- Ease of installation and start-up
- Removable lifting eyes, non-corrosive hardware
- Controllix commitment to engineering, manufacturing, customer service and after-sales support

OPTIONS:

- Remotely mounted current transformer required and is available as an option.
- Available in indoor (NEMA 1), outdoor (NEMA 3R) and NEMA 4X enclosures.
- Integration with other switchgear or motor starter components, including fixed individual at load capacitors
- Top or bottom entry
- Remote alarm contacts

AVAILABLE RATINGS:

240 Volts 25 - 300 kVAR
480 Volts 50 - 600 kVAR
600 Volts 50 - 600 kVAR

DIMENSIONS:

Units with six (6) or less steps:

46"Width x 36"Depth x 72"Height
117cmWidth x 92cmDepth x 183cmHeight

Units with more than six (6) steps:

82.5"Width x 36"Depth x 72"Height
220cmWidth x 92cmDepth x 183cmHeight

Banks for larger applications can be cost-effectively engineered using multiple enclosures.



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