

Controllix Corporation

Medium Voltage Metal-Enclosed Capacitor Banks



**Metal-Enclosed
Capacitor Banks
Improve Power Factor
and Reduce Utility Bills**

**Available in Fixed,
Switched & Multi-Step
Arrangements for
2.4kV to 46kV
Requirements**

Controllix Corporation Medium Voltage Capacitor Banks not only improve power factor, significantly reducing energy bills, but also remove reactive current from a power distribution system. This provides additional usable load capacity and improves the efficiency of motors and equipment.

Controllix metal-enclosed banks are completely self-contained units that come fully assembled, tested and ready for interconnection. Problems associated with mistakes during installation are eliminated. The self-supporting and weatherproof assemblies provide a protected, aesthetically pleasing and environmentally friendly package. All live parts are contained in a grounded, key-interlocked enclosure with no external hardware, reducing the risks and the associated liability of trespassing public or untrained employees becoming exposed to electrical hazards.

Controllix Medium Voltage banks have a small footprint and may not need to be located within a fenced-in substation. Maintenance costs for Controllix equipment are very low compared to open rack equipment. Installation costs may be reduced, as the need for special equipment and highly trained personnel during start-up will be minimized due to the construction and control features inherent in bank design.

Incorporation of Controllix power factor correction equipment in utility, industrial, institutional and commercial applications improves system performance and efficiency, resulting in significant cost savings.



Leading in Power Quality for Over 40 Years

Medium Voltage Metal-Enclosed Capacitor Banks



Ratings: Standard voltage ratings are 2.4kV through 46kV. Configurations are available to meet any size requirement. Units comply with NEC, IEEE and ANSI standards.

Construction: Enclosures feature fully welded construction of sturdy 11-gauge carbon steel with a structural steel base. Enclosures are also available in Galvalume, stainless steel and aluminum. Doors are internally hinged and have 3-point latching with provisions for padlocking. The enclosure is processed to inhibit rust with a phosphate base preparation, followed with primer and ANSI #61 gray enamel finish (for indoor applications) or ANSI #70 (for outdoor installations). Other colors are available upon request. The base of outdoor enclosures is undercoated. Other colors are available upon request. Ventilation and heaters are provided to meet requirements.

Disconnect Switch: The incoming compartment typically contains an externally operated, non-load break, three-pole disconnect switch. This device is used as a means to disconnect the capacitor unit from the power system and provide the "visible break" required by the National Electrical Code (NEC). Line fuses can be added in the incoming compartment for additional protection.



Capacitors: Single-phase or three-phase capacitors with one, two or three bushings are used. Capacitors comply with IEC, IEEE and CSA standards. Each capacitor is easily removed for ease of inspection and maintenance. Capacitors are equipped with discharge resistors to drain residual voltage within five minutes of de-energizing. The dielectric is biodegradable, environmentally friendly and non-toxic.

Capacitor Fuses: Each capacitor is provided with a properly coordinated current limiting fuse equipped with blown fuse indication.

Controls: A variety of control technologies are available, including automatic controllers that can bring on stages based on power factor, current, VAR loading or time-of-day. Blown fuse alarms, neutral unbalance protection and networking are also available. A remote current transformer is required for VAR control.



Switching Devices: In switched applications stages are controlled by vacuum switches, vacuum contactors, circuit breakers or other approved switching options.

Ground Switch: A manually operated, interlocked ground switch assures additional personnel safety by discharging stored energy from the capacitors and/or main bus. The ground switch is designed for quick, easy operation and is located so that switch position can be confirmed through the compartment viewing window.

Inrush Reactors: In switched applications wound conductors are provided to control and minimize inrush current that is found with "back to back" switching in a capacitor system.



Interlock System: Units are provided with a key interlock system preventing entrance into the unit while the unit is energized.

Bus Systems: Copper or aluminum main bus and ground bus are utilized, along with polymer or porcelain support insulators.

UNBALANCE DETECTION SCHEME:

PT (Neutral to Ground) for Ungrounded Wye banks
CT (Neutral to Ground) for Grounded Wye Banks
CT (Between Neutrals) for Split Wye Banks
CT on phases for Delta Connections

OPTIONS:

Top or Bottom Entry
Control Power Transformer
Remote Alarm Relay
Main Incoming Line Fuses
Surge Arresters
Roof Bushings
Zero Voltage Closing Vacuum Switches
Metering or Circuit Monitoring

Current Transformer: A separately mounted CT is required and is available as an option.



Controllix Corporation

21415 Alexander Road • Walton Hills, Ohio 44146 • U.S.A.

Tel.: +440.232.8757 • Fax: +440.232.1893

Email: sales@controllix.com