POWERSIDE®

Pole-MVar

A Filtered Capacitor Bank For Elevated Performance

Solving a Problematic Factor on the Pole

Pole-mounted capacitor banks are a popular choice to address power-factor correction and voltage regulation on overhead lines. But this approach often creates a Catch-22 for the utility: Adding capacitor banks to a network with high levels of harmonic distortion can cause harmonic resonance. **Impacts can be severe:**

- **Sustained overvoltage and other distortion issues**
- **Damage to the capacitors and other equipment**
- **Noncompliance with IEEE 519 limits**
- **Grid instability**

With limited space on the pole, utilities need a way to take care of resonance without installing substation filters. Powerside's Pole-MVar fits the need perfectly.

Pole-MVar: A Compact, Efficient Solution to Ensure Reliable Operation

Purpose-built to improve power factor, voltage stability, and increase distribution network capacity, the filtered Pole-MVar bank not only compensates reactive power — but also includes reactors that dampen harmonic distortion and prevent resonance. With selectable tuning frequencies, utilities have the option to either configure the unit for improving harmonic distortion, or for more resonance protection.

A POLE-MOUNTED CAPACITOR SOLUTION THAT DOES MORE

Pole-MVar offers a number of advantages:

- **Improves power factor to reduce losses**
- **Enhances system capacity**
- **Regulates network voltage**
- **Prevents resonance**
- **Mitigates harmonics**
- **Avoids the challenges of pad-mounted banks (i.e., rights-of-way)**

Utilities Can "Manage in the Moment" vs. Designing For Unknowns

Prior to the development of Pole-MVar, the only viable way to mitigate resonance was to perform a network analysis and simulation study before specifying the capacitor banks. Besides being time consuming, results were simply a best-guess due to limited data and assumptions about load conditions that might not occur. Powerside worked with a utility to overcome this time-consuming process — **resulting in an innovative, compact design that puts capacitors and inductors in a single streamlined unit to adjust for conditions on the fly.**

Designing For Easy Installation is Essential

Due to its reactors, Pole-MVar is heavier than capacitor-only systems with the same number of VARs. To compensate for the increased weight, **we designed a separate lightweight mounting frame to pre-install on the pole.** This makes it easier to lift the Pole-MVar unit into the proper position.

Pole-MVar Technical Specs	
Voltage	4.16–13.8 kV (5–15 kV voltage class)
Capacity	300 kVAR–1200 kVAR
Network Harmonics	Moderate/High
Load Characteristics	Fixed/Variable
Compensation Type	Fixed/Auto filtered
Switching Type	None/Vacuum switching
Max. # of Steps	1
Controller	Optional microprocessor controller based on Volt/Var, power factor, and current
Network Connection	3-phase
Short Circuit Level	12 kA (Asymmetrical); higher values on request
Impulse Withstand Voltage	60 kV–95 kV (Impulse)
Power Frequency Withstand Voltage (HiPot)	19 kV–36 kV (1-minute 50/60 Hertz)
Switching Device	Optional vacuum switch
Filter Type	De-tuned/Single tuned, with selectable reactor tap for 3.78, 4.2 & 4.5
Protection (ANSI)	Over voltage (59) Under voltage (27) Overcurrent (50/51)
Maximum Altitude (ASL)	3281 ft/1000 m without derating
Operating Temperature (F/C)	-40° F to 122° F / -40° C to 50° C (CSA 22.2 no.190 compliant)
Enclosure Rating	NEMA 3R
Communication	Modbus, Ethernet, Profibus, 61850
Power Quality Relay	Single harmonic overload tripping
Additional Enhancements	• QubeScan cloud-based platform with PQube® 3 power quality monitoring unit • Cut-out fuse • VMI voltage/current sensor • Control power transformer (CPT) • Protection relay • Volt/Var control • Power factor control • Reactive power control • Communication module • Pole-mounted control cabinet

Manage reactive energy without compromising anything.
Get Pole-MVar today.

powerside.com/Pole-MVar

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