COOPER POWER SERIES

Wildfire Mitigation Power Capacitors

Stopping issues before they can propagate

Wildfire Mitigation Capacitors offer a high level of protection and low fire risk.

Wildfire Mitigation upgrades are available with all Eaton capacitor unit duty offerings. These units are designed for application in remote areas where maintenance is a challenge or areas with a higher risk of fire events. Each unit includes upgraded construction features, which results in an extremely durable and robust capacitor, with a tank rupture curve defined through 20 kA.

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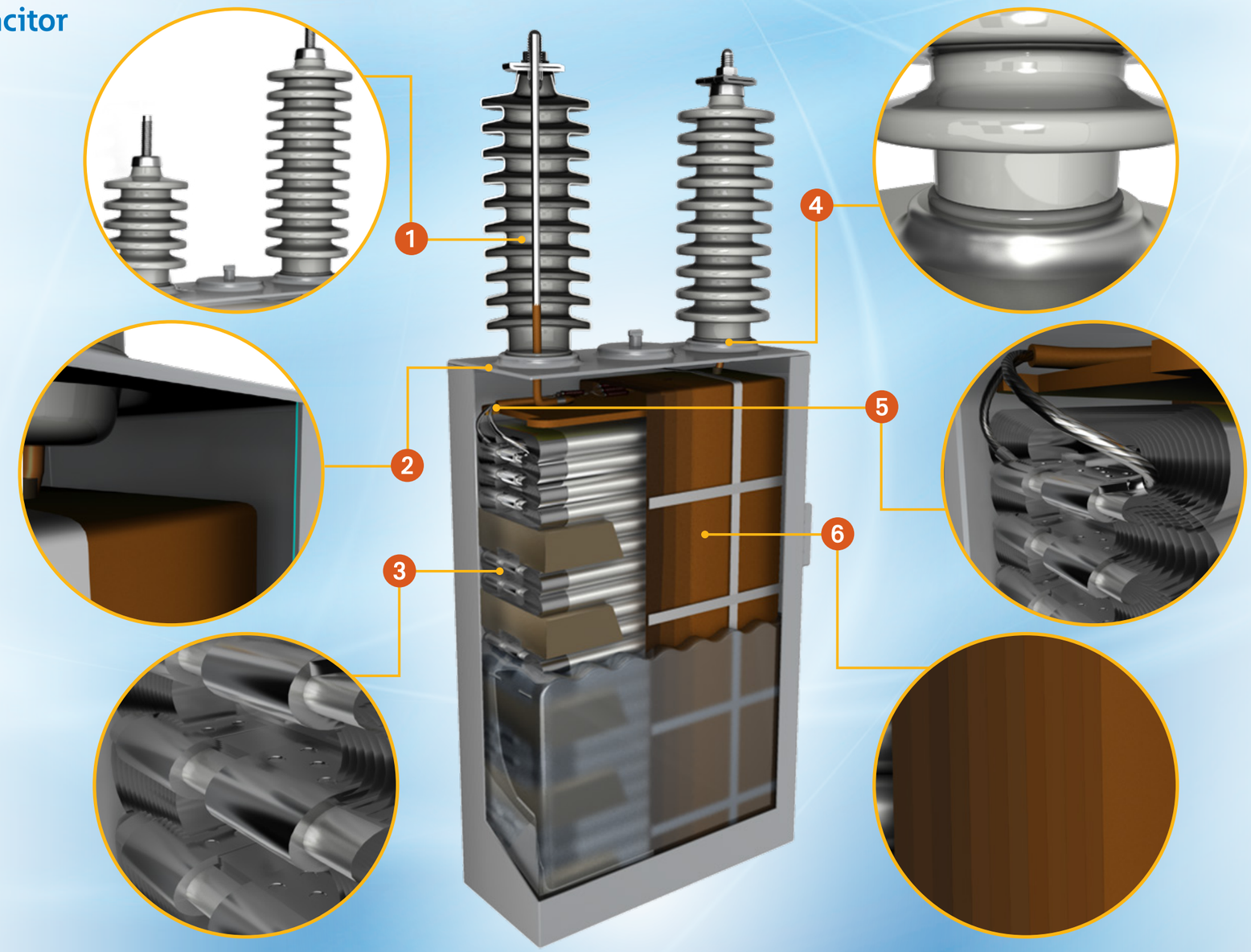
Wildfire Mitigation Capacitor unit features explained

1. **High creep bushings** — Eaton's capacitor porcelain bushings are available in 12", 22", 32" and 35" creepage. To provide customers with additional design margin, Wildfire Mitigation units will include bushing upgrades to the next highest rating (where available). For example, an application that typically would require 12" of creepage we will be providing 22". This additional creepage will help prevent pollution build up, debris related outages, or flashover events.

2. **Enclosure thickness** — The capacitor enclosure delivers mechanical means to isolate internal electrical connections to the external environment and provides mechanical support to the overall system. Wildfire Mitigation units feature an increase in material thickness by 20%, raising the wall thickness to 0.060". This additional material provides added strength to support higher rupture currents and will yield additional protection from environmental damage.

3. **Double crimps** — To further improve on the legacy designs, the Wildfire Mitigation Units include a 100% increase on the quantity of low resistance EX mechanical crimp connectors at all series and parallel terminations.

   By increasing the quantity of these mechanical crimp connectors, the Wildfire Mitigation units can achieve improved short circuit ratings due to the increase in clamp pressure, increased cross sectional area of contact for current transition, and lower contact resistance for energy dissipation.



4. **CapSeal bushing bond** — The Wildfire Mitigation unit design features a gasket free bushing bonding process to reduce failure modes associated with material aging failures. This hermetic sealed automated epoxy connection is performed on both ends of the bushing — at terminal caps and tank cover. This process shortens the cycle time, reduces production variation over legacy designs, and results in improved bonding strength versus solder processes and improved seal life and reliability versus gasket designs.

5. **Improved terminal leads** — Eaton's terminal leads are a continuous wire that features a mechanical crimp to connect with internal unit construction. Eaton's capacitor wire is then routed through our bushing and soldered to the terminal connection point without interruption, thereby drastically eliminating transition points and material property change areas.

   Wildfire Mitigation units have increased wire gauge size and use a double crimping technique. These features allow the wire to survive longer and run cooler under electrical currents well beyond the unit's rating or design point. This allows the unit to withstand higher impulse levels and overvoltage conditions.

6. **Major insulation** — Once the capacitor core is completely assembled, it is wrapped in major insulation. Kraft paper is used as a barrier to provide isolation between the capacitor internal electrical connections and the enclosure/tank, which is stainless steel.

   Capacitor units are typically manufactured with 7 or 9 layers of major insulation. To provide additional design margin, we have standardized all Wildfire Mitigation unit construction to use 12 sheets of major insulation.

   This will increase the capability of the unit to withstand higher impulse levels and terminal to case overvoltage without failing to the enclosure.

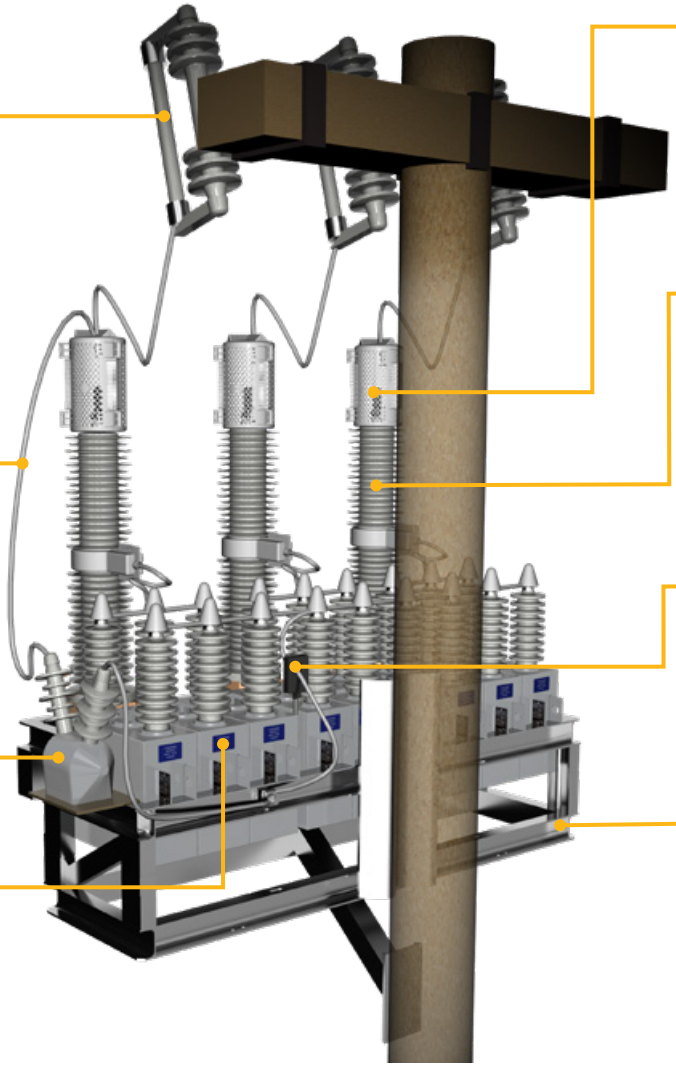
Typical wildfire mitigation pole mounted bank features

Current limiting fuse
Protects the bank from overloads and secondary fault events. Features current limiting line protection with no gas, sparks or debris emitted during fuse operation.

Wire insulation
All wiring features increased wire gauge size to run cooler and protective sleeving/ insulation to prevent the risk of a shorting event.

Dry type transformer
Utilizes an oil free design with low maintenance and increased application life. Prevent the risk of leaking oil and fluid ignition failures.

Wildfire Mitigation Capacitor units
Available in 3, 6, 9 and 12 unit banks. Each unit features the performance and design benefits described previously.



Wildlife protection
All wire terminations include guards and covers to reduce potential animal caused failure modes — nesting, ingesting materials, direct contact shorts, etc. Designs are compliant with IEEE Std. 1656.

Vacuum capacitor switch
Available with 3-phase TriSync switch (shown) or 1-phase Edison Capacitor Switch (ECS). Each phase utilizes a single vacuum bottle with permanent magnet solenoid mechanism. No maintenance is required, and no risk of oil leaking.

Neutral sensor
Used to measure imbalance between bank phases. This allows for repeatable monitoring of capacitor units' health and proactive maintenance options.

Light weight frame
Constructed of high strength 6061-T6 aluminum alloy. Frame is free standing, with integrated lifting and mounting provisions for rapid installation.

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Printed in USA
Publication Number SA230004EN / GG
June 2023

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