NUCO CAPACITOR ELEMENTS

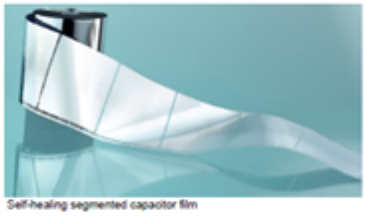
Capacitor Elements

The capacitor elements NUCO incorporates into the automatic capacitor systems utilize unique and exclusive triple safety features. The capacitor design incorporates the first ever segmented capacitor film that combines with traditional self-healing features.

The capacitor elements also incorporate true three phase over-pressure disconnection to safely isolate the capacitor at the end of its lifetime or when it experiences a severe overload. Most other capacitor products only disconnect two phases.

Capacitor elements are compliant with the following standard:

- UL 810
- CSA C22.2 No. 190
- IEC 60831



Self-healing segmented capacitor film

High Current Capability

The capacitor elements are designed with the ability to carry high currents well beyond those required by traditional electrical standards for capacitor elements.

This high current carrying capability designed into the capacitor from the onset at the capacitors rated voltage eliminates the need to de-rate a capacitor's voltage rating to address the need for higher current carrying capability.

Eliminating the need to de-rate the capacitor voltage rating saves both money and space.

NUCO's capacitors have the following characteristics:

- Maximum continuous current up to 2.25 times rated current. Standard capacitor banks utilize elements capable of carrying 1.5 times rated current continuously.
- Withstand inrush current up to 375 times rated current

Temperature Ratings

The capacitor elements are capable of operating continuously in an ambient temperature range up to 68°C. This ensures long life expectancy without the need to de-rate the capacitors.

Exceeding Industry Standards

NUCO's capacitor elements exceed all known industry standards, surpassing the requirements of UL, CSA, and IEC standards. This ensures a world leading capacitor of the highest durability.

Quality

The capacitor elements incorporate a proprietary mineral filler and stabilizer that minimizes partial discharges within the dielectric material.

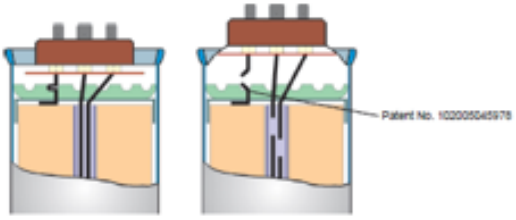
The vacuum drying process takes place under temperature controlled conditions for several days to eliminate humidity within the capacitor which, if present, would accelerate the aging process of the capacitor (reducing its life).

In addition, the capacitors incorporate a patented terminal design that provides maintenance free, anti-vibration lifetime connections.

Safety Features

The exclusive Triple Safety feature includes the following:

- Self healing at over-voltage
- Segmented film removes small segments of film to increase capacitor integrity and life expectancy
- Complete three phase disconnect through an over-pressure disconnect system when the capacitor has reached the end of its life or when the capacitor experiences a severe overload condition



The principle of the overpressure disconnector

Samples are regularly checked from the production line and tests performed on the samples to confirm proper operation of the safety system and to ensure the highest level of quality throughout each production run.

Mechanical Construction

Capacitor elements are made from a cylindrical aluminum case with a threaded M12 mounting stud. Capacitors are dry-type constructed from a low loss metallized polypropylene film. Terminals are touch safe.

Discharge resistors are permanently connected at the capacitor terminals to discharge the voltage to 50V or less within one minute after disconnected from power source.

Capacitor Tolerance

-5% to +5%
-1% to +1% available for tuning applications

Power Loss

Less than 0.5W per KVAR including the discharge resistor

Ambient Temperature

- UL/IEC: -40°C to +68°C (-40°F to 154°F)
- CSA: -40°C to +46°C (-40°F to +114°F)

Capacitor Element