GE Energy

High Voltage Capacitor Units

fact sheet

Product Overview

GE High Voltage Capacitor Units are recognized as "best in class," having been designed to meet your diverse needs for increased durability and low field-failure rates. GE is the only manufacturer to produce its own HAZY* polypropylene dielectric film, which in conjunction with GE's Dielektrol* fluid provides low power loss, superior rating to size performance, higher reliability, and lower operating costs.

Unit ratings range from 25 to 900 kVAR for single-phase units, and 300 to 400 kVAR for three-phase units. Line-to-line ratings of three-phase banks range from 2.4 kV to 34.5 kV. All meet IEC® 60871, and IEEE® 18, with CSA ratings available on request.

GE's environmentally friendly and superior components assure a longer maintenance-free capacitor life.

Features and Benefits

- Bird caps offer increased protection from outages caused by wildlife.
- Brass terminal nut will strip before damage occurs to stud or bushing, should excessive torque be applied. Nuts are also easily replaced.
- Two stainless-steel Belleville washers provide constant spring pressure of 1000 pounds, forcing connectors to follow cold flow of conductors. Flattening of washers visually indicates a secure connection.
- Tin plated parallel-groove connectors are designed to accommodate copper or aluminum conductors from *#10 solid* to *#1 stranded* permit connection without threading or disassembling hardware.
- Half-inch solid terminal studs machined from tough stainless steel have been subjected to tightening torques of 70 ft-lbs without damage. The entire terminal can withstand torques well in excess of the 20 ft-lbs recommended to secure an electrical connection.
- Wet process porcelain bushings withstand severe weather. Stainless-steel flange and cap are bonded to the porcelain body using an active alloy bond (75 kV BIL to 200 kV BIL, 12 inch to 30 inch creep).
- Bushing flange is welded to the capacitor case, forming an extremely strong hermetic seal with fewer leaks than soldered bushings.
- Special dielectric fill-hole seal allows fill and seal under pressure to insure full impregnation, eliminating the threat of failures due to dielectric "voids."
- Deposited carbon discharge resistors assure stable resistance characteristics and sustained high-voltage strength.

- Deposited carbon discharge resistors are designed to drain the units' residual charge to 50 volts or less within five minutes, or 75 volts or less in 10 minutes for some IEC applications. These resistors contribute to safety for personnel during routine inspection or maintenance.
- Ultrasonic welding of foils avoid the possibility of solder damaging the rolls or insulation.
- Dead-soft annealed aluminum foil is processed to exacting requirements to assure power factor stability.
- Film foil dielectric of HAZY polypropylene plastic made at our capacitor plant facility provides a low loss, high reliability, long life product.
- Roll-pack clamping bands secure packs to proper length with no mechanical damage to the dielectric pad. Exact length control compresses pack to precise design dimensions to assure adequate space factor and eliminate threat of failure due to dielectric voids.
- Stainless-steel mounting brackets are welded to case at multiple points for extra strength.
- Many layers of high-dielectric-strength kraft paper insulate capacitor rolls from case. This insulation raises the capacitor Basic Insulation Level to that of distribution transformers of the same voltage rating.
- Stainless-steel case eliminated the need for protective repainting.
- Epoxy primer provides superior exterior coating adhesion to the stainless-steel case.
- Urethane exterior coating aids heat dissipation, provides pleasing appearance and exceeds ANSI C57.12.31 Pole-top Transformer standards.
- Unpainted strip on underside of mounting bracket provides automatic ground when capacitor is placed in rack or hanger.
- Assembled capacitor units are leak-tested using a high-sensitivity helium mass spectrometer.
- Heavy-duty flush welded stainless-steel bottom with runners gives superior strength and durability. Runners keep weld seams from dragging on the ground.

Application

GE Energy capacitors can be applied on high-voltage power transmission lines in both open stack racks and metal enclosed banks. These capacitors provide an economical source for:

- Voltage support
- VAR support
- Increased system capacity
- Improved power transfer capability

For more information about GE Energy's Service solutions, visit www.ge.com/energy. You can also contact your GE representative at energy.tdsolutions@ge.com.

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