

New 3-phase AC filter power capacitors filled with nitrogen gas for long service life and high hotspot temperature

TDK Corporation announces the EPCOS B32377G, a new series of three-phase AC filter capacitors in delta connection filled with nonflammable nitrogen gas instead of the soft polyurethane resin used in the existing series. In line with the megatrend of the electrification of mobility and renewable energies, these capacitors suppress harmonic distortions and reduce reactive power at the input and/or the output of inverters. As a result, they improve the power quality and can make applications such as wind and solar energy as well as industrial drives more reliable.

These components with a diameter of from 75 to 136 mm and heights between 218 to 351 mm range from 3 x 15 μ F to 3 x 330 μ F with rated RMS voltages of 330 to 1000 V. As for lifetime expectancy at rated voltage, 250,000 hours at +70 °C at the hotspot and rated voltage compared to the usually specified 100,000 hours in the oil-filled technology. And a maximum hotspot temperature of +90 °C compared with the hotspot temperature of +85 °C for the oil-filled technology

The winding construction is based on a metalized polypropylene film with self-healing properties. It shows low losses ($\tan \delta$) of 0.7 to $1.2 \cdot 10^{-3}$ and a high pulse-current withstand capability of up to 27.3 kA. Their maximal RMS currents span up to more than 80 A (+ 55 °C ambient temperature)

The components are equipped with overpressure disconnectors for all 3 phases to ensure controlled disconnection in case of overload. Cage clamps with M4, M5, or M6 are used as terminals.

Main applications

- Input and output filters in inverter systems
- Filtering of harmonic distortion in power inverters

Main features and benefits

- Self-healing properties
- Low dissipation factor
- Delta connection for rated RMS voltages of 330 to 1000 V
- Filled with nitrogen gas, dry type
- Service life of 250,000 hours at a hotspot temperature of +70 °C and rated voltage
- Maximum hotspot temperature of +90 °C