IRIS POWER EPOXY MICA CAPACITORS (80 pF)

Partial Discharge Sensors for Testing Motors and Generators

Iris Power Epoxy Mica Capacitors (EMCs) are designed to detect Partial Discharge (PD) activity in motors, generators and bus without imposing on the machine's operation or reliability in any way.

Over 80,000 Iris Power Epoxy Mica Capacitors are in service around the world, and have accumulated tens-of-thousands of years of reliable operation.

Iris Power EMCs are permanently installed, with at least one per phase, as close as possible to the stator winding to maximize sensitivity.

Iris Power's 80 pF EMCs are designed to block the 50/60 Hz power frequency and allow only high frequency (>40MHz) signals to pass through, be collected and analyzed by an Iris Power portable instrument or continuous monitor.

Iris Power offers four different Epoxy Mica Couplers to accommodate voltage ratings:

- **6.9 kV**
- **16 kV**
- **25 kV**
- **28 kV**

The EMCs meet all the reliability requirements in IEC TS 60034-27-2 and IEEE 1434 for PD sensors.

MICA SPLITTINGS DIELECTRIC

Iris Power EMCs are safe for use in operating equipment because they have the excellent electrical properties of the mica splitting dielectric. For example, there is an 80 mm (3 inch) layer of epoxy impregnated mica splitting as the main dielectric in the 16 kV version. In comparison, a typical 13.8 kV stator coil has only about 3 mm (0.12 inch) thickness of epoxy mica paper.

VOLTAGE ENDURANCE TESTING

Independent voltage endurance testing (IEEE 1043) proved that the 16 kV Iris Power EMC withstands over 1,000 hours at 30 kVrms. According to statistical methods (IEEE 930-1987), this translates into 60,000 years of use at normal operating voltage. By comparison, the average 13.8 kV stator winding coil is expected to withstand only 400 hours of exposure to 30 kVrms.

The Iris Power EMC's excellent endurance and thermal stability is due to the use of mica splittings, as opposed to mica paper or ceramics.

Iris Power EMCs are provided in coupler kits complete with all materials required for installation including the silicone rubber insulating boot.

IRIS POWER EPOXY MICA CAPACITORS (80 pF)

EMC Voltage Rating	6.9 kV	16 kV	25 kV	28 kV
DEV @ 1pC	8.0 kV	18.6 kV	29.0 kV	32.3kV
AC Hipot	15 kVrms	33 kVrms	51 kVrms	57 kVrms
Mass	1.1 kg	1.6 kg	2.0 kg	2.0 kg
Height	95mm (3.75”)	127mm (5.0”)	206mm (8.1”)	206mm (8.1”)
Diameter	86mm (3-3/8”)	86mm (3-3/8”)	86mm (3-3/8”)	86mm (3-3/8”)

DC AND IMPULSE CAPABILITY (BIL)

Iris Power EMCs have been independently tested to DC Hipot and lightning impulse strengths greater than any other apparatus in its voltage class. For example, the 16 kV EMC have passed over 50kV DC and 90kV BIL required by ANSI C37.20.2.

HAZARDOUS LOCATIONS

The Iris Power EMCs are can also be used in hazardous environments with options available for ATEX certified EMCs (II 2 Exe II Tx Gb).

RADIATION ENVIRONMENTS

Iris Power EMC kits with installation material according to IEEE 323-1983 for nuclear power generating stations are available.

OTHER SPECIFICATIONS:

- Voltage endurance tested: >1,000 hours at 30 kVrms for the 16 kV EMC
- Capacitance rating: 80 pF +/- 4 pF
- Dissipation factor: 0.10%
- PDEV Sensitivity: 1 pC (ASTM D1868 and IEC 60270)
- Bandwidth into 50 ohms: (-3dB); 40 MHz to 350 MHz
- Operating temperature range: -50°C to +130°C (-58°F to +266°F)
- Calculated 60,000 year life (IEEE 930- 1987)
- Thermal Cycle Testing to -40°C to +150°C
- Inclined Plane Tracking Test: 300 min (ASTM D2303-85)
- Comparative Tracking Index: 600 min (IEC 60112)
- Lifetime Warranty on Manufacturers Defects (contact for details)

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SYSTEM CERTIFICATION ISO 9001:2008 SGS
VER 4 - 8 / 16