

Iris Power Epoxy Mica Capacitors (80 pF)

Partial Discharge Sensors for Testing
High Voltage Electrical Equipment

The durable Iris Power Epoxy Mica Capacitors (EMCs) are designed to detect Partial Discharge (PD) activity in electrical equipment such as switchgear, isolated phase bus, and dry-type transformers, while not imposing on the equipment's operation or reliability in any way.

Iris Power EMCs are permanently installed (minimum one per phase) as close as possible to the equipment to be monitored to maximize sensitivity. In order to improve noise separation, the Iris Power EMCs are installed directionally or differentially, depending on the equipment.

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, to be collected and analyzed by an appropriate Iris Power portable instrument or continuous monitor.

PD monitoring is applicable to diverse equipment installations. That is why Qualitrol-Iris Power offers four different voltage rated EMCs – 6.9 kV, 16 kV, 25 kV and 35 kV. The choice of which couplers to install is dependent on the operating voltage of the equipment.

UNIQUE FEATURES

Mica Splittings Dielectric

Iris Power EMCs are safe for use in operating equipment because they use mica splittings as the dielectric. For example, the 16 kV version has an 80 mm (3 inch) stack of epoxy impregnated mica splittings as the main dielectric.

Voltage Endurance Testing

Independent voltage endurance testing proved that the 16 kV Iris Power EMC withstands over 1000 hours at 30 kVrms. According to statistical methods (IEEE 930-1987), this translates into 60,000 years of use at normal operating voltage. 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.



Over 60,000 Iris Power Epoxy Mica Capacitors are in service around the world, and have accumulated tens-of-millions of hours of reliable operation.



Iris Power EMCs are sold in coupler kits complete with all installation materials including the silicone rubber insulating boot (EMC boot) shown here. Where required, insulating tapes are available.

IRIS POWER EPOXY MICA CAPACITORS (80 pF)

EMC VOLTAGE RATING

	6.9 KV	16 KV	25 KV	35 KV
Minimum DEV @ 1pC (kV)	5.0	11.0	17.3	24.4
AC Hipot (kVrms)	15	33	51	71
DC Hipot (kV)	50	50	75	100
BIL (kV)	95	95	125	150
Mass (kg)	1.1	1.6	2.0	2.3
Height	95mm (3.75")	127mm (5.0")	206mm (8.1")	233mm (9.2")
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.

HAZARDOUS LOCATIONS

The Iris Power EMCs can be used with Iris Power instruments certified for hazardous locations provided that they are installed in the appropriate enclosure to comply with the ATEX directive or UL certification for hazardous locations.

RADIATION ENVIRONMENTS

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

OTHER SPECIFICATIONS

- Mica Splittings Dielectric
- Voltage endurance tested to >400 hours at 35 kVrms (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 (tested to IEEE 930-1987)
- Thermal Cycle Testing to -40°C to +150°C
- Inclined Plane Tracking Test (ASTM D2303-85): 300 minutes
- Comparative Tracking Index (IEC 60112): 600

Iris Power Epoxy Mica Capacitors is a trademark of Qualitrol-Iris Power.



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