



EDI
The Partial Discharge Experts

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*The Safest
Coupling Capacitor
on the Market*

Epoxy Mica Coupling Capacitors

Improving Plant and

Equipment Reliability

Through Innovation

and Service



EDI has a full complement of Epoxy Mica coupling capacitors. Typically the coupling capacitors are connected at the line terminal of motors and generators and switchgear. Three voltage levels are available: 8, 16 and 28 kV.

The epoxy resin used in the EDI capacitors is specifically designed for high voltage insulator applications. This material provides excellent insulation properties, high mechanical properties and superior resistance to chemicals including concentrated acids. The epoxy has superior arc resistance as compared to standard electrical grade epoxy materials and meets UL 94/V-0 requirements.

It is desired to have the capacitors located as close to the winding as

possible. This will reduce the attenuation effect. For more information about attenuation of PD signals, read our Application Guide "Importance of Bandwidth and Signal Attenuation". On Hydro Generators, additional capacitors are installed on the ring bus at the location of each phase group.

The most common value of capacitance in the market is 80 pF. 500 pF have been successfully used for motors below 6kV. 1000 pF and higher have not found wide acceptance for on-line monitoring, but are routinely used for laboratory testing (under controlled conditions).

Couplers are available from many suppliers, but several features are very important:

- Capacitor material used must be of a virgin mica splitting.
- Number of mica sections (should be as high as possible to reduce electrical stress.)
- The electrical protection circuits should be installed at the capacitor and the capacitor must be grounded at the point of installation. By having the capacitor grounded at the termination box (as many competitors do) will place testing

Working to Make the Possible Impossible

Epoxy Mica Coupling Capacitors



Specifications

- Capacitance (pF): 80
- Temperature Range: -50 C to 150 C
- Diameter (mm/Inch): 91/3.5
- Add 30 mm to height for the mounting base
- No termination box required since capacitors are grounded at the point of installation.
- Insulating boots are provided to reduce installation time since no taping would be required
- Frequency Range: 0.5 MHz to 500 MHz
- Sensitivity: 1 pC
- Dielectric Strength of the epoxy: 775 V/mi

personnel at risk to a high voltage electrical shock if the protection within the termination box has failed.

- Method of mounting the capacitor must be non-metallic. Some competitors use metal brackets, which reduces the tracking distance and subsequently the BIL rating.
- The Capacitor surface must not be machined. Some manufactures pour their molds in a cylindrical form and then machine the skirts. This breaks the glazed surface of the casting and causes a rough surface which is porous. High humidity, moisture, dirt and grease can then be easily absorbed into the capacitor. This contamination will then decrease the dielectric ability of the capacitor.

All of these factors should be considered when selecting the best capacitor for your application. By looking at the simple differentiation EDI offers, you will quickly see that EDI has the safest Coupling Capacitor in the market.

Red dyed water was poured on a leading competitors epoxy mica capacitor (left) and an EDI capacitor (right). As can be seen below, the water is retained on the left capacitor, even after shaking it. The pictures below are taken 1 hour after the water is poured onto the capacitor. As can be seen on the EDI capacitor, only small drops of dry dye are left on the surface.

For a copy of the video of this experiment you can contact EDI.

Voltage Rating (kV)	AC Hipot (kV)	BIL (kV)	Height (mm / Inch)	Mass (kg)
8	17	75	86 / 3.38	0.95
16	36	100	126 / 5.7	1.4
28	60	175	185 / 7.25	2.1

EDI has other sensors for the measurement of PD. Radio Frequency Current Transformers (RFCTs), Rogowski Coils, RTD Modules and our unique Type GS sensors. Please refer to the appropriate brochure for additional information on these other sensors.



**For Application Assistance,
Please Refer to Our Application Guides**