High Voltage

CES 2000 Series 3

Coupling Capacitors and Measuring Dividers

Description
High Voltage Coupling-Capacitors are used mainly for Partial Discharge Measurements in High Voltage Testing as per IEC60270. The Measurements of Partial Discharge according to IEC is based on measurement of High Frequency Voltage Drop across a Measuring Impedance in the Ground lead of the Test Object or of the Coupling Capacitor. Any partial Discharges appearing in or on a Test Object Under High Frequency Charge Transfer between the high Voltage Potential and ground give rise to a High Frequency Current. This current produces a voltage drop across the measuring
impedance which is connected to the partial discharge meter for evaluation, measurement and display.

Design
Depending on the rated voltage the coupling capacitor may consist of one or more several capacitor units connected in series.

Insulation
The Coupling Capacitors are insulated for indoor use. The Capacitor CES 3-60 to CES 3-600 are Insulated. The low inductance wound capacitor elements are installed in an insulating Cylinder and held in position with special fixtures. They are carefully dried in high vacuum and impregnated with EHV grade oil. The insulation of the capacitor elements and the dimensions of the insulating cylinder are designed for a test voltage of 120% of rated voltage.

Hermetic Sealing
All oil insulated Coupling Capacitors are Hermetically Sealed against the outer atmosphere using a metallic expansion bellow. This prevents absorption of moisture by the active parts or the insulating oil.

Mobile Base
All type coupling capacitors are mounted on a mobile base with swivel wheels allowing ease of transport.

Electrodes
Type CES 3-120, CES 3-150 have aluminium cast flanges, CES 3-300 and above are provided with suitably dimensioned aluminium to toroidal electrodes for corona free operation up to rated voltage.

Electrical Connections
All types of coupling Capacitors are equipped with an UHF coaxial socket for connection to the Measurement Impedance. The neutral end of the lowest capacitor stage is brought to this socket. The measuring cable socket of the oil insulated capacitors is protected against over voltage by gas filled surge diverters.

When the measuring cable is removed, the connection socket of all capacitor types must be short circuited by a shorting Plug included in the supply. Grounding screw on the base is provided for connection of a ground lead.

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