

DV DF SET

Double Voltage Double Frequency Test Set (Rewound)

This test set provides a continuously variable output voltage at double frequency to test the insulation between turns of coils, layer to layer, terminals of windings with either uniform or graded insulation and also between the windings and earth, with graded insulation of both Distribution and Power transformers.

An alternating Voltage of sine wave form (as much as possible) at double frequency (100 Hz.) and double in amplitude can be applied at one side of the transformer under test while the windings, which are not connected to the source of excitation, are left on open circuit.

This tester setup is generally used to perform induced voltage test on the transformers. This set up consists of the used motor and generator combination to develop the required voltage and frequency.

The system consists of two main parts coupled together.

- A) An induction motor as prime mover.
- B) A specially selected generation unit.



Both the above units are fitted on a common platform and coupled each other by belts drive. The three phase input to the prime mover has to be give through a suitable starter. The input to the generating unit is to be given through a variable voltage source (external) of appropriate capacity. The out can be taken from the generating unit.

A suitable control cum metering panel can be ordered separately. The panel consists of the following.

- a) A digital voltmeter with selector switch for o/p.
- b) A Digital ammeter with selector switch for o/p.
- c) A Digital frequency meter for o/p.
- d) Suitable starter.
- e) MCB / Fuse Protection for output.

FEATURES

- » Robust construction
- » Corrosion-resistance
- » Low consumption of power

SPECIFICATIONS

- » Capacity: Depending upon KVA rating of the under test Transformer
- » Type of motor: AC Motor OR DC Motor
- » Input to motor: For AC Motor 415V, 3 Phase, 50 Hz or For DC Motor DC Supply
- » Alternator (Generator): Variable AC by Variac OR Variable DC
- » Dimmer stat: Apply dimmer stat to the generator terminals
- » Output voltage: 900 V AC
- » Output frequency: Double of Input Frequency or Triple of Frequency



Each distribution or Power transformers have to pass DVDF Test. DVDF means Double Voltage Double Frequency. As the name stands – transformer should be tested with double the voltage then the rated voltage and as same double the frequency then the rated frequency. In India rated frequency is fixed 50 Hz. Now for DVDF test of transformer we need to apply almost 100 Hz cycle with double voltage then the rated coil voltage. As per IS DVDF supply should be applied to the transformer for almost 60 sec. As most Distribution transformer has the rated LV is 433V so for DVDF test we need to apply 866V.

Other winding kept open means transformer is tested in No Load condition. Now as per KVA capacity of Transformer DVDF Test Set should be designed. Most DVDF test set are constructed with the help of Motor and Generator to be coupled with each other. Here Generator means Alternator is specially wound and designed for 1000V and 100Hz. Now Motor is supplied with normal supply which will rotate the Alternator also, rotating alternator will produce the supply as 1000V with 100 Hz cycle. To monitor the voltage level as well frequency, digital or analog meter could be connected at the output of alternator. For that purpose panel is designed. Panel also controls the input supply for motor, and hence it could be also provided with over load protection.

The construction of alternator could be done in two different options. We could have an old AC motor, dismantle the winding from core and core should be wound with new winding and this new winding is designed as 1000V and 100Hz. Now this alternator to be coupled mechanically with appropriate capacity AC Motor. By applying AC supply to AC Motor we could get DVDF output from Alternator. This is called refurbish or reconditioned DVDF Test Set.

In other option we have to choose DC Motor. DC motor's armature is wound for DVDF output and is coupled with DC Motor. This DC Alternator is to be coupled mechanically with other DC Motor. By controlling input supply of DC Motor we could get DVDF output from DC Alternator. The control panel for this type of test set get some complexity as it consists different type of supply like armature winding of DC Motor, field winding of Motor, field winding of Alternator etc., and by controlling these all we got variable output Voltage as well frequency. Control panel also consists of meters for output voltage as well frequency.

If we apply double frequency then supply should be applied for 60 sec. as same if we apply 150 Hz then supply should be applied for 30 sec., as same for 200 Hz it should be 15 sec. Now more than 200 Hz or less than 15 Sec time period is not allowed as per IS.

OTHER PRODUCTS

Testing Instruments supports manufacturers, repairers, agency owners and contractor in each Power Sector related industry with a breadth of critical services.

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- » Winding Resistance Test Set.
- » Contact Resistance Test Set.
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- » All Kind of Transformers, Variacs (Auto Transformers) and Inductors.
- » Epoxy Resin cast high volt transformer. (1KV TO 100KV).
- » DC Power Supply.

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