Synchronous motor belongs to the family of 3Phase Induction motors, with the difference that the rotor is not same as Induction motors instead has windings with slipring & slipring holder on the rotor. These motors have damper winding to make it start like Induction motors. These motors have 2 Types of Voltage Excitation, 3Phase for starting the motor & additional 110V DC across the rotor to lock the speed of the motor- Once it is excited with DC Voltage the rpm of the motor gets locked, in the sense that if the motor is running on No load or Full load the rpm remains the same.

The application of such motors is those machines which run only on fixed speed without any rpm change, sugar mills & textile color mixing.

This Model is the Industrial/Educational model suitable for demonstrating to students the complete know of the Basics, Components, Starting methods, DC Speed locking, Speed-Torque behavior, Wear & Tear & Maintenance of these motors packaged in small rating.

Students can make connections of their own with the help of the terminations provided for study of features viz Starting methods, Speed control, Speed-Torque, Speed locking, Effect of rotor excitation, Effect of voltage imbalance operation, Blocked rotor test.

Technical Specs :

Power ratings available : 350W / 750W / 1KW /2 KW / 3KW/ 5KW
Voltage Input: 440V AC 50hz & Additionally 110V DC for Rotor
RPM: 1440 / 2880 RPM
Single / Double shaft extension, SPDP, IP23, IC01, B3, Class-B, S1, Solid yoke

List of Experiments:

1) Starting by DOL Starter
2) Starting by reduced voltage starter.
3) Effect of High voltage induction at time of starting
4) DC Speed locking
5) Speed Control by VVVF method
6) Load test & No load test of machine
7) Speed-Torque Analysis
8) Voltage-Speed Analysis
9) Speed reversal
10) Efficiency Analysis
11) Blocked rotor test
12) Motor Operation
13) Generator Operation
14) Cold Resistance & Hot Resistance
15) Motor Operation parameters
16) Basic Overhauling Know how

Note: Specifications are subject to change.

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