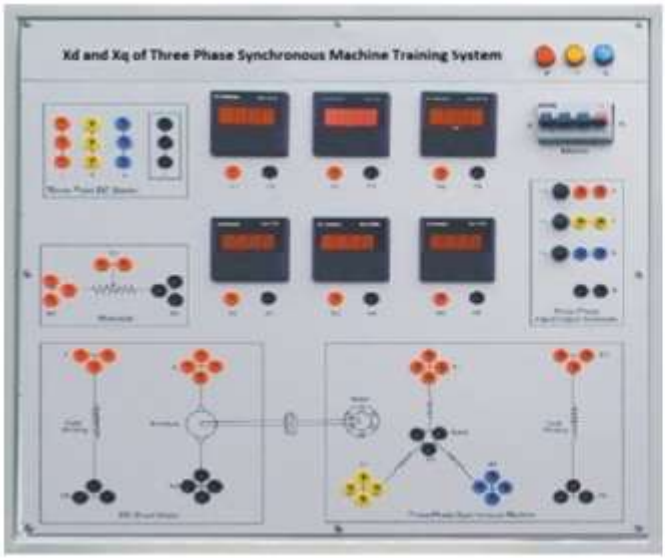
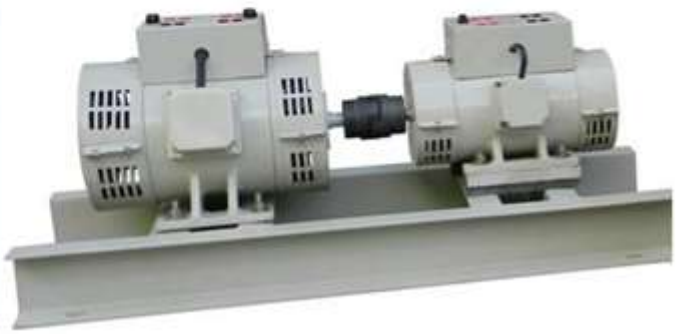
Measurement of Xd and Xq of Three Phase Synchronous Machine Training System





** Shown image is just for illustration original may differ

Introduction

Measurement of Xd and Xq of Three Phase Synchronous Machine Training System is an exclusive product designed to demonstrate the operating principle and functioning of Three Phase Synchronous Generator. This machine lab can change the mechanical energy to electrical energy. It helps students to analyze and calculate the significant parameters such as positive, negative and zero sequence impedance, direct and Quadrature axis reactance etc. to correctly construct Three Phase Synchronous Generator.
All protection circuits are in built so there is very less chance of fault or danger to user. The varied scope of learning makes the subject understands complete.

Product Features

- Built-in DC Regulated Power Supply
- Machine with standard electrical loading arrangement
- Machine winding consist of copper for long term service
- Machine Conforms to all leading industrial standards with Class “F” Insulation
- 2mm x 4mm Heavy Duty Base/Channel with facility to concrete machine
- Standard Lovejoy coupler is used to couple machines
- Provided with non contact Digital speed measuring equipment
- Digital microcontroller based measuring devices with high accuracy and resolution
- Front board consist of MS Material with power coating / Epoxy paint to avoid any rust
- Specially designed BS10 Terminals and patch cords for electrical safety
- Three Phase Supply indication lamps
- Earthing screw provided at the back side of the control set-up
- Screen Printed diagrammatic representation for the ease of connections.
- Product should be provided with protection fuses, colored patch cords, single & three phase cords, learning manual having theory operating procedure with connecting diagram, FAQ, Glossary, etc

Technical Specifications

Both the machines are flexibly coupled and mounted on a "C" Channel base with suitable interconnection

DC Machine (act as Motor)

Type	: Shunt
Power Rating	: 2HP
Voltage Rating	: 220VDC ± 10%
Speed	: 1500 rpm ± 10%
Insulation	: Class 'F'
Enclosure	: SPDP
Duty	: Continuous
Mounting	: Horizontal Foot Mounted
Shaft Extension	: Single Sided
Loading arrangement	: Electrical
Terminals box	: Epoxy paint with terminals and fuses brought out at the top
Machine Base	: MS "C" Channel with suitable interconnection

Three Phase Auto-Synchronous AC Machine (Act as Motor)

Type	: Salient type with damper winding
Power Rating	: 3HP
Voltage Rating	: 415VAC ± 10%, 50Hz
Configuration	: Star Connected
Rated Current	: As per standard
DC Excitation Voltage	: 110VDC± 10%
DC Excitation Current	: 2A
Speed	: 1500 rpm ± 2%
Insulation	: Class 'B/F'
Enclosure	: SPDP

DC Power Supply

Fixed DC Voltage	: 220VDC ± 10%, 2A
Variable DC Voltage	: 0 to 220VDC ± 10%, 12A

Digital Meters used

AC Voltmeter	: 1 No
AC Ammeter	: 1 No
DC Voltmeter	: 1 No
DC Ammeter	: 2 Nos

Digital Tachometer

Range	: 19,999 rpm
Type	: Contact / Non-contact

Protection Devices

MCB (DP)	: 1No
Glass Fuse	: 3Nos
Grounding Nut	: Available at the rear side of the panel

Experiments Can be performed:

- Study and Measurement of Direct Axis (Xd) and Quadrature Axis (Xq) Reactance by Slip Test
- Study and Measurement of Positive Sequence Impedance of Three Phase Synchronous G enerator
- Study and Measurement of Negative Sequence Impedance of Three Phase Synchronous Generator
- Study and Measurement of Zero Sequence Impedance of Three Phase Synchronous Generator

Supporting Accessories supplied with Product

- Patch Cords of different color scheme, Single Phase Mains Cord, Extra Glass Fuses, Operating Manual (softcopy), Digital Tachometer.

****Please feel free to share your queries or requirements by filling your details in ask query section or request a Quote section on the website, we will be happy to cater your requirement.**

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