



Power Electronics Lab

Introduction

Power electronics studies the application of semiconductor devices to the conversion and control of electrical energy. Power electronic circuits are the backbone of almost every modern convenience, from cellphones to large power transmission systems.

A power electronic circuit is intended to control or convert power at levels far above the device ratings. Thus the situations encountered in the power electronics laboratory course will often be unusual in an electronics setting. Safety rules are important, both for the people involved and for the equipment

Scope of the Lab

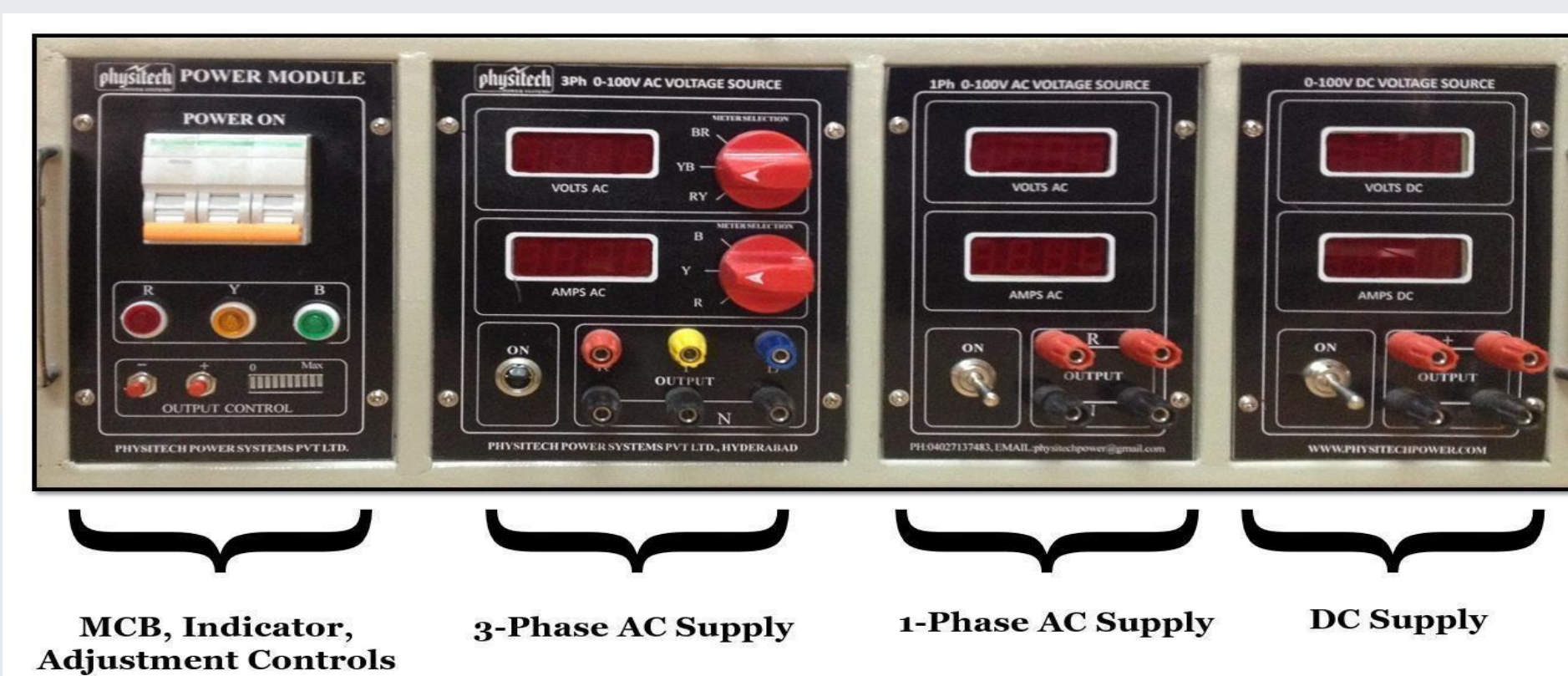
- In this Lab students will be experiencing modelling, simulation and experimental verification different power electronics devices/converter applications.
- Students are also provided with power electronic drives for performing minor projects as part of the power electronic course.

Infrastructure



- MATLAB - 2015a
- P-Sim Software
- 3- \emptyset Power Module
- SCR – Diode Power Module
- IGBT – Diode Power Module

Major Equipment



Application Areas

- HVDC Transmission
- Solar System
- Industrial Drives
- Hybrid Electrical vehicle
- Air craft
- Elevators
- Smart Grid
- UPS
- Modern Traction System.

List of experiments

- Introduction to Power electronics Lab simulation and Hardware setup.
- Single Phase Uncontrolled (Diode) Rectifier.
- Three Phase Uncontrolled (Diode) Rectifier.
- Single phase and Three phase uncontrolled rectifier with Smoothing Capacitor
- To study the operation of single phase fully controlled converter.
- To study the operation of single phase half controlled converter.
- To study the operation of Three phase fully controlled converter.
- To study the operation of Buck, Boost, and Buck-Boost DC – DC Converter
- PWM and Non – PWM Inverter.
- AC to AC Control using Triac

Safety Rules

- Always wear safety shoes when working with High Voltage-level power.
- Keep the work area neat and clean.
- Making or Disconnecting the circuit 3phase MCB should be **OFF**.

Contact Details

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