



The study of power electronic devices, motor drives and circuits is an essential part of any course on power electrical systems. The Series 70 Power Electronics trainers and modules are meant to provide a complete course on modern theory and practise, covering the principles, characteristics, and operation of single and three phase power electronic circuits and motor drives.

The 70 Series Power Electronics trainers and modules form part of the Powerframe range of trainers that provides a flexible and cost-effective way to build a Power and Machines laboratory facility. Three products are available that can be chosen to provide a course of study that fits your training requirements.

They are:

- Thyristor Control Principles 70-002
- Thyristor & Motor Control 70-003
- D.C. Motor Control 70-005

The system is so designed that the Thyristor Control Principles Trainer 70-002 can be used to teach DC Motor Control by the inclusion of additional units available in the upgrade package 70-004.

The systems operate from Three Phase supplies, 5 wire connection including Earth, of either 230V/400 V or 120/208 V @ 50/60 Hz 800 VA max, depending on the voltage version.

Thyristor Control

Principles:

To understand the theory and functioning of Single and Three Phase thyristor circuits, this trainer

includes a Firing and Bridges panel, a Three Phase Supply Panel, and electrical loads, instrumentation, and other components.

Curriculum Coverage:

The Thyristor Control Principles trainer teaches you all you need to know about thyristor control circuits. Starting with the fundamentals of uncontrolled rectification and simple control utilising thyristors, the trainer can be used as the foundation for a programme, progressing through Single and Three Phase controlled rectification and their accompanying firing needs.

The characteristics of various loads: inductive, capacitive and resistive, are studied under half and full-wave, Single and Three Phase rectification, both controlled and uncontrolled. The range of assignment work that can be carried out with the trainer includes:

- Introduction to Power Electronics
- Uncontrolled Rectification Circuits
- Single Phase half wave
- Single Phase full wave
- Three Phase half wave
- Three Phase full wave
- Fully Controlled Rectification Circuits
- Single Phase half wave
- Single Phase full wave
- Three Phase half wave
- Three Phase full wave
- Half Controlled Rectification Single Phase
- Half Controlled Rectification Three Phase
- AC Control Single and Three Phase

Output from the various converters is measured for Average and RMS values in conjunction with the various RLC load combinations.

Note: Specifications are subject to change.