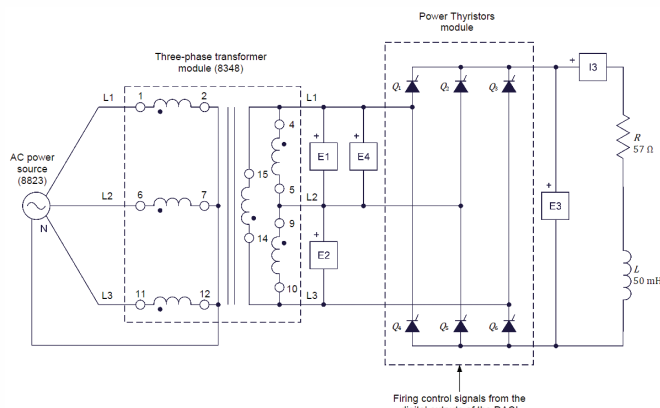


Thyristor Power Electronics

Course 86363

The Thyristor Power Electronics course introduces students to the power diode and thyristor, two electronic components used to control very large amounts of power in ac or dc power systems. The course begins with the study of both the single-phase and three-phase power diode rectifiers. Students are then introduced to thyristor operation. The remainder of the course deals with the following applications of the power thyristor: solid state relay, single-phase and three-phase ac power control circuits using either phase angle control or burst fire control, and three-phase thyristor bridge. Both the rectifier and inverter modes of operation are discussed when studying the three-phase thyristor bridge.



Typical thyristors for low-power, medium-power, and high-power applications.

Topic Coverage:

- » Study all aspects of the diode and how it operates.
- » Analyze the single-phase half-wave rectifier and single-phase full-wave (bridge) rectifier.
- » Calculate the average dc voltage provided by each type of rectifier.
- » Analyze the voltage and current waveforms present in these rectifiers.
- » Examine the advantages of three-phase rectifiers over single-phase rectifiers.
- » Study the operation of the thyristor in ac circuits with either a resistive load or inductive load.
- » Explore the thyristor three-phase rectifier/inverter.

- » Bonus content: using the equipment in this course, the Three-Phase AC Power Circuits and Three-Phase Transformer Banks courses can also be completed.

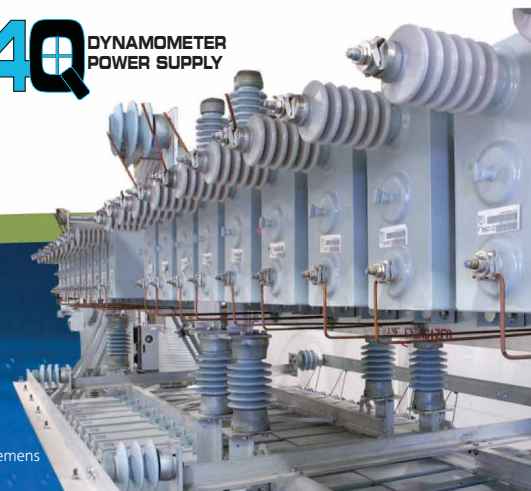
Features and Benefits:

- » Reliable and easy-to-connect thyristor module.
- » More than 12 thyristor circuits studied.
- » Easy-to-understand thyristor operation using an eight-channel oscilloscope.

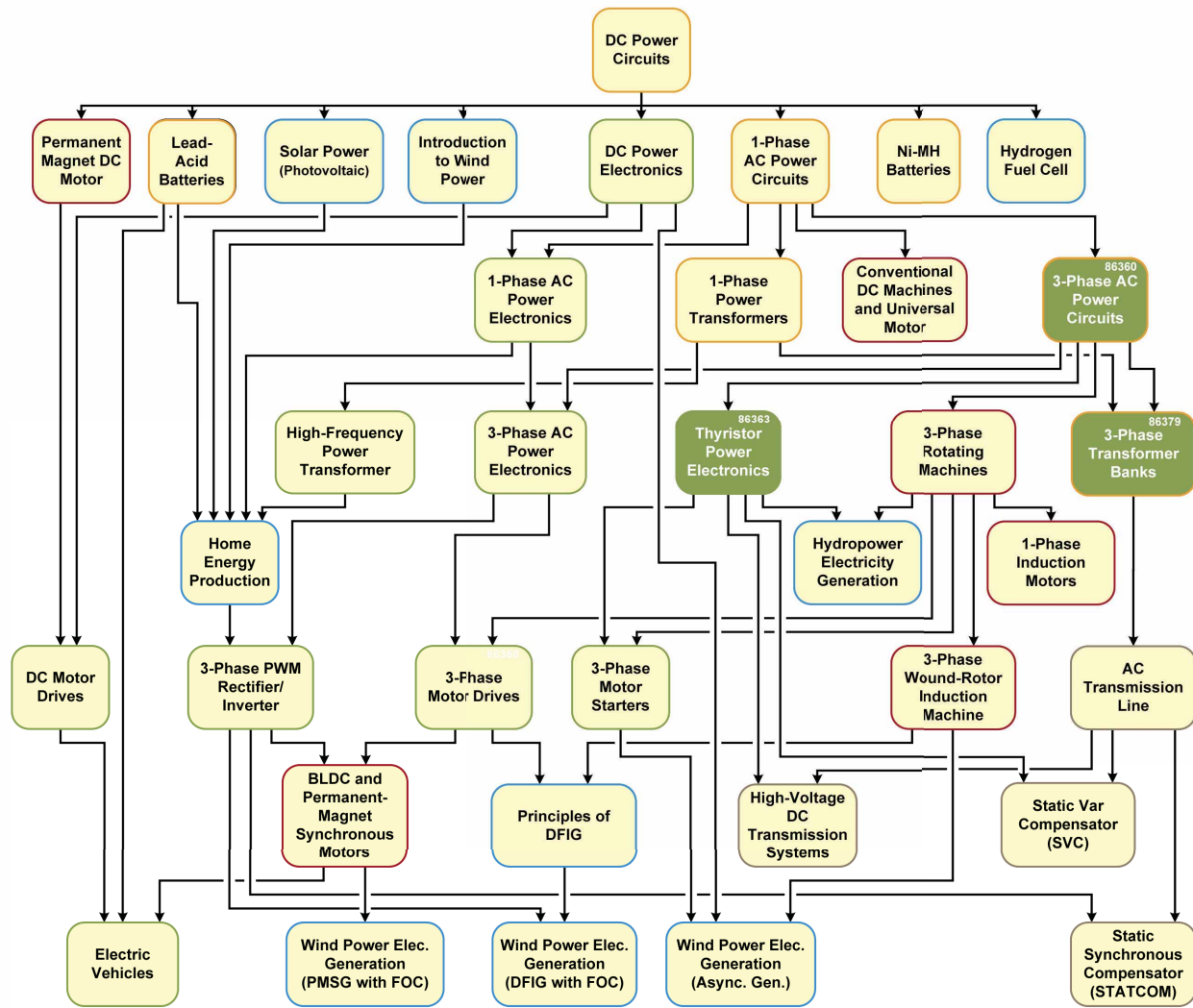


Lab-Volt®

Photo courtesy of Siemens



Lab-Volt Electric Power Technology Training Program



Equipment

Qty	Model	Description	Qty	Model	Description
1	8134-2	Workstation	1	8960-C	Four-Quadrant Dynamometer/Power Supply
1	8311	Resistive Load	1	9063-B	Data Acquisition and Control Interface
1	8325-A	Filtering Inductors/Capacitors	1	9069-3	Thyristor Control Function Set
1	8331	Capacitive Load	1	30004-2	24 V AC Power Supply
1	8348-4	Three-Phase Transformer Bank	1	86363-1	Student Manual/Instructor Guide
1	8823	Three-Phase Power Supply	Bonus content:		
1	8841-2	Power Thyristors	1	86360-1	Student Manual/Instructor Guide
1	8842-A	Rectifier and Filtering Capacitors	1	86379-1	Student Manual/Instructor Guide
1	8951-L	Connection Leads			

Lab-Volt reserves the right to make product improvements at any time and without notice. **Note:** A computer is required to perform the exercises.

