Hampden H-IEC-DC1 Mag-Amp Control

Purpose

The **Model H-IEC-DC1** Mag-Amp Control helps students learn the principles of magnetic amplifiers and their application to controlling the speed of DC motors through the technique of field weakening.

MODEL H-IEC-DC1
Dimensions: 7½"H x 19"W x 8½"D
Shipping Weight: 25 lbs.

Description

Hampden **Model H-IEC-DC1** contains three separate sections.

Speed Control

This component contains a magnetic amplifier, having both a control and a bias winding. The student can connect the mag-amp in various configurations to observe how a small change in control current produces a large change in load current. The student also learns how the speed of a DC motor can be varied above base speed, by modifying field current.

Plugging

A DC motor is rapidly decelerated by reversing the polarity of the voltage applied to the armature, then disconnecting it when the armature reaches zero rpm.

Dynamic Braking

This section contains the controls needed for rapidly decelerating a DC motor by means of the counter-torque generated by the current produced by the armature's CEMF when power is removed.

Courseware provided with the **H-IEC-DC1** includes a student manual containing an explanation of the fundamentals of magnetic amplifiers, as well as student learning exercises and a coordinated instructor's manual. Also provided with the trainer is a set of cords.

Hampden H-IEC-DC2 SCR Control

Purpose

The **Model H-IEC-DC2** SCR Control helps students learn the principle of silicon-controlled rectifiers and their application to controlling the speed of DC and universal motors, below base speed, by varying the average voltage applied to the armature.

Description

A SCR drive operates from the 1Ø AC power line. It first rectifies the AC to pulsating DC, then turns power off for a portion of each pulsation. The net effect is to vary the average value of the voltage applied to the armature from 0 volts (motor not running) to full rated voltage (motor running at rated speed)

The **Model H-IEC-DC2** contains the following adjustments:

- **Maximum Speed**—Sets the top speed desired.
- **Minimum Speed**—Sets the slowest speed desired.
- **IR Compensation**—Boosts the applied voltage to compensate for the IR drop in the armature, which increases with increasing load.
- **Current Limit**—Limits the starting current to the value required to produce desired starting torque.
- **Remote Control**—Jacks are provided to allow external voltage signals to control the output speed.

MODEL H-IEC-DC2
Dimensions: 7½"H x 12"W x 8½"D
Shipping Weight: 25 lbs.

Courseware provided with the **H-IEC-DC2** includes a student manual containing an explanation of the fundamentals of silicon-controlled rectifiers as well as student learning exercises and a coordinated instructor's manual. Also provided with the trainer is a set of cords.

All Hampden units are available for operation at any voltage or frequency

Hampden® ENGINEERING CORPORATION

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