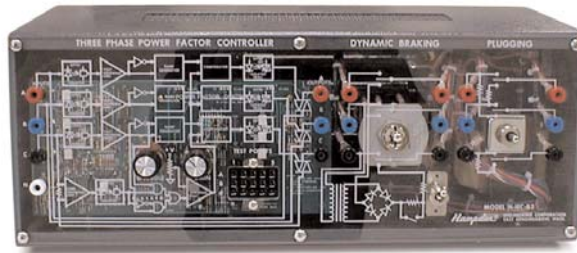


Hampden H-IEC-B3 Power Factor Controller

Purpose

The **Model H-IEC-B3** Power Factor Controller helps students learn the principle of the controller that improves the power factor of lightly loaded three-phase induction motors and the techniques for decelerating AC motors by dynamic and plug braking.



MODEL H-IEC-B3
Dimensions: 7½"H x 19"W x 8½"D
Shipping Weight: 25 lbs.

Description

Hampden **Model H-IEC-B3** contains three separate sections.

Power Factor Controller

It is characteristic of induction motors to have an extremely low power factor when running without load. The power factor improves as the motor is loaded, reaching its optimum value at full load. The power factor controller senses power factor, and reduces the applied voltage at less than full load. The consequent reduction in

out-of-phase current improves power factor. Fourteen test points permit analysis of circuit operation, while three fault switches provide troubleshooting experience.

Dynamic Braking

A bridge rectifier applies direct current to the stator of an induction motor when power is removed. The motor decelerates rapidly because of the counter-torque developed by current induced in the rotor.

Plugging

An AC motor is rapidly decelerated by reversing the phase rotation of the stator voltage, then removing power when the rotor reaches zero rpm.

Courseware provided with the **H-IEC-B3** includes a student manual containing an explanation of the principles of power factor control 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-B4 Adjustable Frequency Speed Controller

Purpose

The **Model H-IEC-B4** Adjustable Frequency Speed Controller helps students learn the principle of the controller that varies the speed of a three-phase induction motor by changing the frequency of the applied voltage.

Description

Induction motors with power line frequency voltage applied are constant speed machines. Speed depends on the number of poles per phase and on frequency. The Hampden **Model H-IEC-B4** contains the circuits and adjustments of commercial units. Incoming 208 volt single-phase AC is rectified and filtered to produce a DC supply voltage. The speed control adjustment varies the frequency of a ring counter. This counter supplies the firing pulses for the output drivers that switch the DC on and off. The result is a 3-phase square wave voltage,

whose frequency depends on the setting of the speed potentiometer. The frequency range is from 0Hz to 100Hz. Other adjustments on the trainer include:

ACC/DCC (Acceleration/Deceleration)

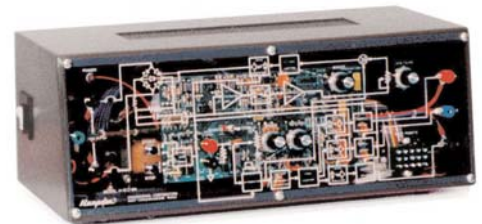
This control provides adjustable soft start and braking action by varying the time period over which frequency increases and decreases.

VOLTS/HZ (Volts per Hertz)

This control saves energy by lowering voltage (and thus current) when the motor is less than fully loaded.

Boost

This control adjusts the trainer's starting torque to match the breakaway torque required by the motor.



MODEL H-IEC-B4
Dimensions: 7½"H x 19"W x 8½"D
Shipping Weight: 25 lbs.

Fourteen test points available on the front of the trainer permit analysis of circuit operation, while fault switches provide troubleshooting experience.

Courseware provided with the **H-IEC-B4** includes a student manual containing an explanation of the principles of adjustable frequency speed control, 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
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