

Heat Transfer Training Systems

Educational Training Equipment for the 21st Century

Bulletin 684C

H-6840 Educational Thermo-Electric Pump

Purpose

The Hampden **Model H-6840** Educational Thermo-Electric Pump demonstrates the Peltier Effect. In 1834, Jean C. A. Peltier discovered that the passage of an electrical current through the junction of two dissimilar conductors cools or heats the junction, depending on the direction of current. It turns out that the heat generation (or absorption rate) is proportional to the magnitude of the current and dependent on the temperature of the junction.

The Thermo-Electric effect has applications in the field of mini-temperature control requirements for electronics, space and missile internal guidance systems.

Description

The Hampden **Model H-6840** Educational Thermo-Electric Pump Demonstrator is a self-contained table-top unit oriented towards a clear display and understanding of the Thermo-Electric Peltier Effect.

The unit will operate as a heat pump, DC Generator or Refrigerator.

Specifications

Base and Control Panel:

Steel, base is finished in instrument tan and the control panel in white enamel

Feet:

Levelers

Nomenclature:

Silkscreen, black KEM enamel

Temperature Cell:

Test Cell with Thermometer

Thermoelectric Module:

Watts: 25

Maximum Input: 3.5 volts at 11.2 Amps



Model H-6840 Educational Thermo-Electric Pump

Dimensions: 36"H x 36"W x 14"D, Shipping Weight: 174 lbs.

Control Panel Accessories:

Circuit Breaker
Pilot Light
Power Cord
Meters
Control Switches
Electric Heater
DC Power Supply
Fan with Control

Manuals:

Operating Instructions

Services Required

Electrical: 120V AC, 1 ϕ , 60Hz

Computer Data Logging

This feature adds two dual element thermocouples with receptacles, digital meters with analog outputs terminated at associated Hampden HR-1S receptacles, and digital temperature meter with transfer switch into the system. One interface package containing National Instruments I/O modules is provided for interfacing into aPC computer through the USB port.

Computer is included. LabVIEW® control software and templates for LabVIEW® control software are included.

Specify **Model H-6840-CDL** ♦

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

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