

Heat Transfer Training Systems

Educational Training Equipment for the 21st Century

Bulletin 682-1C

H-6821

Water Chiller Demonstrator

Purpose

The Hampden **Model H-6821** Water Chiller Demonstrator demonstrates the fundamental aspects of a water chiller system. This system utilizes a double pipe evaporator and condenser and allows the student to measure temperature and pressure at critical points throughout the cycle to better understand the various changes that occur in the cycle.

Description

The Hampden **Model H-6821** Water Chiller Demonstrator consists of a mobile frame with control panel, refrigeration system and a hot water loading system with tank.

Specifications

Mobil Frame:

Square mechanical tubing finished in instrument tan texture. Four swivel casters, two with locking devices.

Control Panel:

Enclosure:

14-gauge steel finished in instrument tan texture.

Panel:

11-gauge furniture steel finished in instrument white enamel.

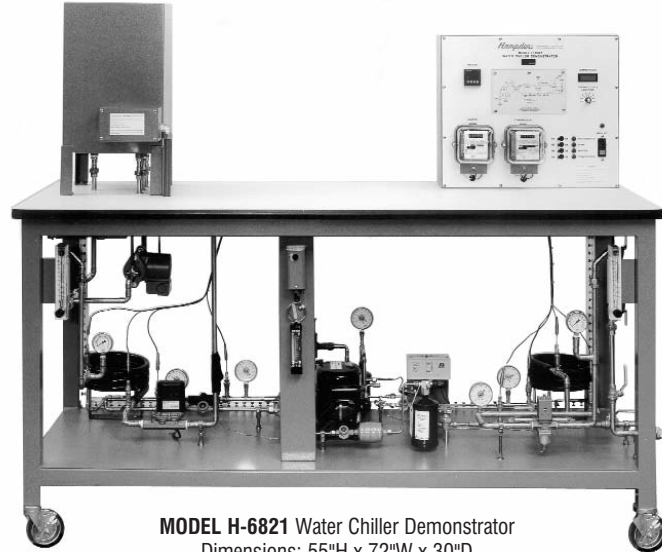
Nomenclature:

Silk-screen, black KEM enamel.

Detailed refrigeration and electrical diagram on mylar overlay protected by a Lexan panel.

Refrigeration System:

- Hermetic compressor 1/3HP
- Refrigerant: R-134a
- Condenser: Coaxial type water cooled
- Evaporator: Coaxial type, water chiller
- Metering Device: thermal expansion valve, TEV
- Flowmeter: R-134a
- Filter Drier
- Liquid Receiver



MODEL H-6821 Water Chiller Demonstrator
Dimensions: 55"H x 72"W x 30"D
Weight: 700 lbs.

- Suction Accumulator
- Sight glass
- Thermocouples
- Pressure and compound gauges
- Evaporator pressure regulator, EPR
- Pressure cutout switch, Hi & Lo combination
- Flowmeter, condenser cooling water
- Water valve, pressure controlled
- Valves, ball
- Circuit breakers pump compressor Heater circuit
- Selector switch, thermocouples

Manual:

- Operating Instructions

Chart:

- Enthalpy chart for R-134a

Computer Data Logging

This *OPTION* allows all the specified temperature points, pressure points and flow points to be monitored for data acquisition by National Instruments I/O modules interfaced into a PC computer through the USB port. Templates for LabVIEW® control software are included. Computer and National Instruments LabVIEW® Software are included. Specify **Model H-6821-CDL**.

Services Required

Electrical

220V AC 1 ϕ 50/60 Hz

Water

Loading System:

- Tank
- Circulating water pump
- Controller, heater
- Heating element, 1500 watts
- Thermocouples
- Pressure gauge
- Water valve, thermostatic
- Sight glass
- Valves, ball

Control Panel Components:

- Ground fault circuit interrupter circuit breaker
- Heater controller
- Temperature meter, digital
- Pilot lights
- Watt-hour meters compressor heater

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

Hampden
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