

Heat Transfer Training Systems

Educational Training Equipment for the 21st Century

Bulletin 685-2D

H-6852 Modular Heat Exchanger System

Purpose

The Hampden **Model H-6852** Modular Heat Exchanger System has been developed to investigate the fundamental principles of heat transfer devices. The apparatus permits the student to move from classroom theory to hands-on applications with practical training. The student shall measure the variables that affect the overall heat transfer coefficient. The hot and cold fluid temperatures as well as flow rates are monitored at strategic locations. The unit can be configured to operate four different types of heat exchanger modules using quick connect couplers eliminating the use of tools.

Description

The **Model H-6852** Modular Heat Exchanger System consists of the following modules:

- H-6852-A** Control Module
- H-6852-B** Service Module
- H-6852-G** Thermocouple Module Set (4)
- H-6852-H** Thermocouple Probe
- H-6852-I** Flow Transducer Module set (2)
- H-6852-K** Hose Set (various lengths)

This system is designed for table top mounting, all modules consist of bases with rubber feet, and incorporate disconnect hose connections or electrical interface connections where required.

The **H-6852-A** Control Module consists of one digital temperature indicator with selector switch, two digital flowmeters, one micro-processor-based temperature controller, one main ground fault circuit breaker, pump switch, thermocouple receptacles, flow transducer receptacles and duplex receptacle.

The **H-6852-B** Service Module consists of a hot water source with circulation pump. Cold water is supplied direct from the local source. Ball valves are provided for on-off control along with needle valves (2) for flow control.

Thermocouples are located in both hot and cold fluid streams for accurate measurement of the input and output fluid temperatures. Fluid flow is measured with flow transducers in both hot and cold fluid streams.

Service Requirements

- Power: 120V AC, 1 ϕ , 60Hz, 15A
- Water: Cold
- Waste: Water Drain

Optional Modules

- H-6852-C** Concentric Tube Heat Exchanger Module Option
- H-6852-D** Shell-and-Tube Heat Exchanger Module Option
- H-6852-E** Plate Heat Exchanger Module Option
- H-6852-F** Jacketed Tank with Stirrer Option
- H-6852-J** Data Logging I/O Module with LabVIEW® Software and **H-LTCS** Laptop

The **H-6852-J** Data Logging option consists of interface components consisting of National Instruments I/O modules, power supply and converters to process six thermocouples and two 4-20 mA inputs directly to the USB port of your PC computer via USB cable. Templates for LabVIEW® control software are included. LabVIEW® Software and **H-LTCS** Laptop are also included.



Model H-6852 Modular Heat Exchanger System shown with optional modules; **H-6852-D**, **-E**, **-F**, and **-J**

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

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Model H-6852-A
Control Module (front view)



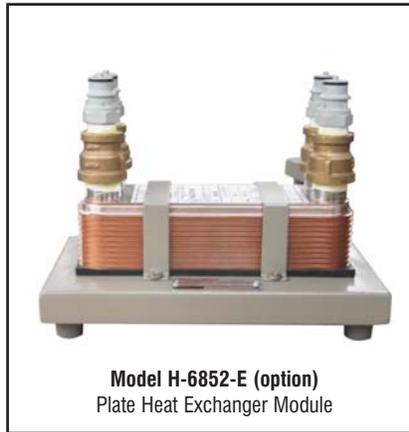
Model H-6852-B
Service Module



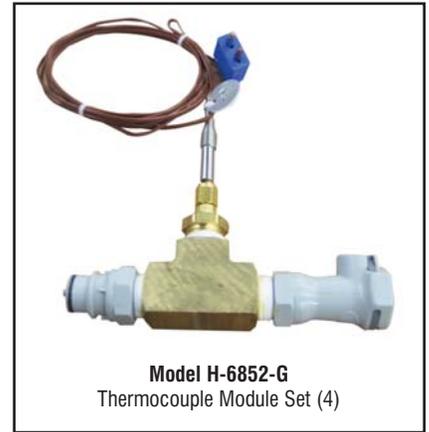
Model H-6852-C (option)
Concentric Tube Heat Exchanger Module



Model H-6852-D (option)
Shell-and-Tube Heat Exchanger Module



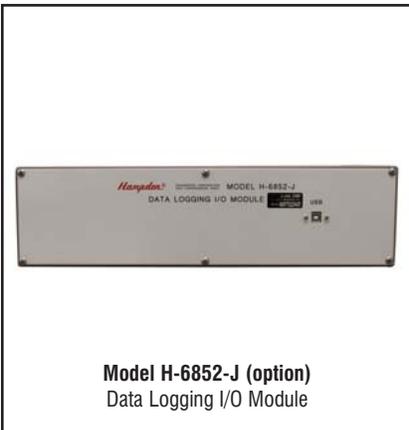
Model H-6852-E (option)
Plate Heat Exchanger Module



Model H-6852-G
Thermocouple Module Set (4)



Model H-6852-I
Flow Transducer Module Set (2)



Model H-6852-J (option)
Data Logging I/O Module



Model H-6852-F (option)
Jacketed Tank with Stirrer Module

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