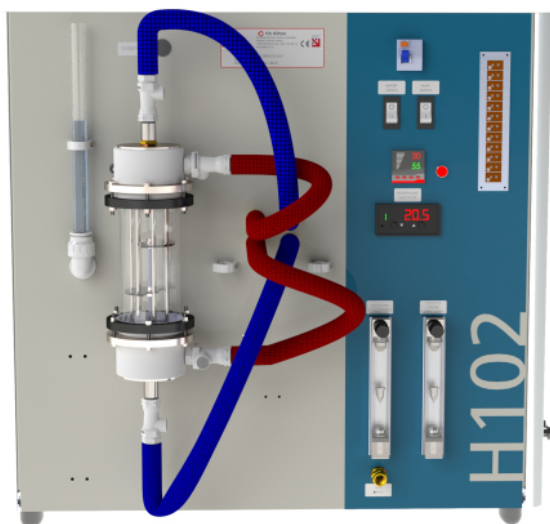


HEAT EXCHANGER SERVICE UNIT H102



Year 1
study

3
participants

Space required
1 x 1.5m

11
modules

Features

- Eleven (11) types of Heat Exchangers can be used on the H102 Service Unit
- Safe and Suitable For Unsupervised Student Operation
- Responds Rapidly to Control Changes
- Negligible Operating and Maintenance Costs
- Optional Computerised Data Acquisition Upgrade

Description

A bench mounted, panel with an integral electrical console that provides services for any of the 11 optional heat exchangers. Temperature controlled hot water is provided from an electrically heated tank by a continuously rated fixed speed pump. Mains cold water is pressure regulated. Hot and Cold flow is controlled and measured using variable area flowmeters. The optional heat exchangers are connected to the service unit using non-drip, self-sealing couplings. Electrical safety is provided by double pole overload and earth leakage circuit breakers. The hot water system is equipped with a safety temperature limiting device. The standard instrumentation consists of up to 12 type T thermocouples, displayed on a digital panel meter, and two flowmeters for hot and cold fluids. These enable all relevant heat transfer

calculations to be made. Optional Heat exchangers in some cases add other measurement configurations. The H102 unit is available either with or without Computerised Data Acquisition (data logging). There are eleven (11) Heat Exchangers are available for students to experiment with, as follows: H102A - Concentric Tube Heat Exchanger H102B - Plate Heat Exchanger H102C - Shell & Tube Heat Exchanger H102D - Jacketed Vessel with Coil and Stirrer H102E - Extended Concentric Tube Heat Exchanger H102F - Extended Plate Heat Exchanger H102G - Water/Water Turbulent Flow Heat Exchanger H102H - Coiled Concentric Tube Heat Exchanger H102J - Recycle Loops H102K - Film and Dropwise Condensation H102M - Water to Air Heat Exchanger Module

Related Laws/Applications

- Mechanical Engineering
- Nuclear Engineering
- Chemical Engineering
- Control and Instrumentation
- Plant and Process Engineering
- Building Services
- Engineering Physics
- Refrigeration
- Marine Engineering

Learning capabilities

- For detailed descriptions and experimental capabilities refer to individual data sheets for each optional heat exchanger.

Technical Specification

- 11 x Heat Exchangers available
- 12 Temperature inputs
- Hot water flow rate: 4...50 gm/s
- Cold water flow rate: 4...50gm/s
- Digital Temperature Indicator: 0.1°C resolution
- Water Heater: 3kW immersion heater
- Water heater protection: 80°C maximum thermostat

What's in the Box?

- 1 x H102
- 2 x Reinforced Water Supply & Drain hose
- 1 x Reinforced Tank Drain Down hose
- Fittings and couplings
- Power Cord
- Flying lead (115V only)
- 1 x Transformer (115V only)
- 2 year spares
- Instruction manual
- Packing List
- Test Sheet

You might also like

- H112 - Heat Transfer Service Unit
- H050 - Boyles Law Demonstrator
- H352 - Cross Flow Heat Exchanger
- H893 - Bench Top Cooling Tower
- H656 - Boiling Heat Transfer

Weights & Dimensions

- 760(L) x 485(W) x 760(H) mm (approx.)
- Net Weight: 39 kg (approx.)
- Gross Weight: 82 kg (approx.) - without transformer
- Packing Case Dimensions: 920(L) x 650(W) x 1050(H) mm (approx.)
- Packing case volume: 0.32m³ (approx.)

Essential Services

- 220-240 Volts, Single Phase, 50Hz (With earth/ground). Line current up to 13A at 230v.
- 110-120 Volts, Single Phase, 60Hz (With earth/ground). Line current up to 26A at 110v.
- 180 litres per hour (3litres/minute) at 20m head.

Data logger channel inputs where applicable*

Where the D103 Hilton Data Logger (HDL) is fitted, the following data can be recorded (where applicable):

H102/115/HC/4G & H102/230/HC/4G

- Hot water outlet °C
- Hot Water return °C
- Cold Water outlet °C
- Cold Water return °C
- Cold water flow gm/s
- Hot water flow gm/s
- Supply volts
- Module Temp °C
- Module Temp °C
- Module Temp °C
- Module Temp °C
- Module Temp °C
- Module Temp °C
- Module Temp °C
- Module Temp °C
- Module Temp °C
- Module Temp °C
- Module Temp °C

Ordering information

To order this product, please call PA Hilton quoting the following codes:
H102/230/4G - Heat Exchanger Service Unit, 230V
H102/115/4G – Heat Exchanger Service Unit, 115V
H102/230/HC/4G – Heat Exchanger Service Unit computer linked, 230V
H102/115/HC/4G – Heat Exchanger Service Unit computer linked, 115V

All brand and/or product names are trademarks of their respective owners. Specifications and external appearance are subject to change without notice. The colour of the actual product may vary from the colour shown in the brochure.

Copyright © 2018 P.A. Hilton Limited. All rights reserved. This technical leaflet, its contents and/or layout may not be modified and/or adapted, copied in part or in whole and/or incorporated into other works without the prior written permission of P. A. Hilton Limited. Hi-Tech Education is a registered trade mark of P. A. Hilton Limited.

COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS