



Features

- Parallel & Counter flow configurations can be studied in the same unit using valves.
- Requires only cold water supply for experimentation.
- Data Acquisition System with sensors & software included.

Tesca Concentric Heat Exchanger consists of a concentric tube exchanger in the form of "U", mounted on a support frame. The external surface of the exchanger is insulated. Six temperature sensors are installed in both the inlet and outlet tubes, to measure the fluid temperatures accurately. To minimize losses in the system, the hot water is fed through the inner pipe, with the cooling water in the outer annulus. Control valves are incorporated in each of the two streams to regulate the flow. The flow rates are measured using independent flow meters installed in each line.

Temperature and flow readings could continuously be captured and logged into the computer with a data Acquisition System. These data are useful for further calculations and analysis. On-line trending displays allow students to observe the fluctuations of flow and temperature readings immediately. Detailed Operation & Maintenance Manual is provided along with the trainer.

Note: Specifications are subject to change.

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Specifications

- Heat Exchanger: Max. working pressure : 7 bar
Max. working temperature : 80 oC
- Heater : 3 kW, immersion type
- Temperature Controller: Input : RTD or T/C Output : ON/OFF
- Circulation Pump: Capacity : 10 LPM @ 2m Voltage : 230 VAC
- Sump Tank: Material : stainless steel, Capacity : 30 L
- Rotameters: 0.2 - 3.0 LPM, 0.5 - 5.0 LPM
- Instrumentations: Temperature sensors, Flowmeter

DIGITAL INSTRUMENTATION

- 2 units of digital indicators
- 1 unit of flowmeter
- 1 unit of RTD sensors c/w transmitter

DATA ACQUISITION SYSTEM

- An electronic signal conditioning system Stand-alone data acquisition modules Windows based data acquisition software Data Logging
- Process Control
- Real-Time Display
- Tabulated Results
- Graph of Experimental Results
- Signal Analysis

Experimental Capabilities:

- Energy balance determination
- Temperature profiles in co- and counter-current flows
- Log mean temperature difference
- Heat transfer coefficient calculation
- Effect of flow rate on heat transfer rate
- Heat loss estimation and „k-factors“.

Required Services:

- Electric Supply 230 V AC, 16 A, Single Phase, Earthed.
- Water Supply: Cold tap water supply & Drainage