HT114

Tubular Heat Exchanger Module

Overview

The tubular heat exchanger module is one of the modules to be connected to the heat exchanger supply unit to enable trainees to perform experiments on different heat exchanger types. The tubular heat exchanger is ideally suited for investigating the functioning and behavior of a tubular heat exchanger in operation.



Specifications

- The tubular heat exchanger is connected to the heat exchanger supply unit using quick-release couplings.
- Hot water flows through the outer tube and cold water through the inner tube.
- Part of the thermal energy of the hot water is transferred to the cold water.
- Flow rates of hot and cold water passing through the tubular heat exchanger are controlled valves at the heat exchanger supply unit.
- The supply hose can be reconnected using quick-release couplings, allowing the flow direction to be reversed.
- This allows parallel flow or counter flow operation.
- The inlet and outlet temperatures of the tubular heat exchanger are measured by temperature sensors located at the supply connections on the heat exchanger supply unit.
- There are two additional temperature sensors on the tubular heat exchanger for measuring the temperature after half of the transfer section.

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Experiments

- Function and behaviour during operation of a tubular heat exchanger
- Plotting temperature curves:
  - » In parallel flow operation
  - » In counterflow operation
- Calculation of mean heat transfer coefficient
- Comparison with other heat exchanger types

Technical Data

Heat transfer area: 0.0367 m^2

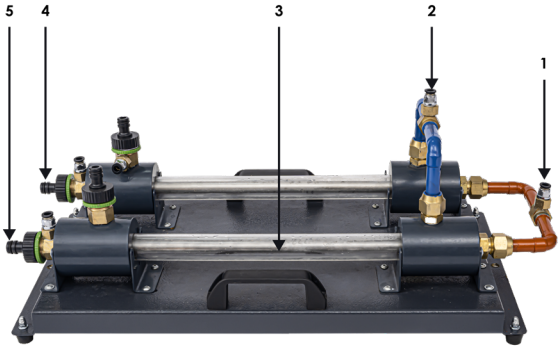
Inner tube:

- Material: stainless steel.
- Diameter: 16mm

Outer tube:

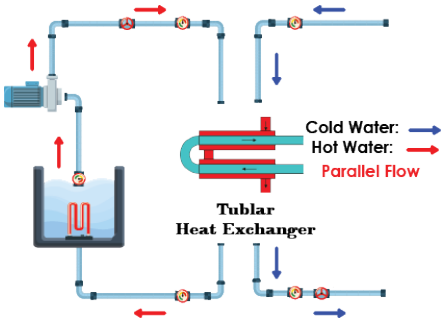
- Material: Acrylic.
- Diameter: 26mm

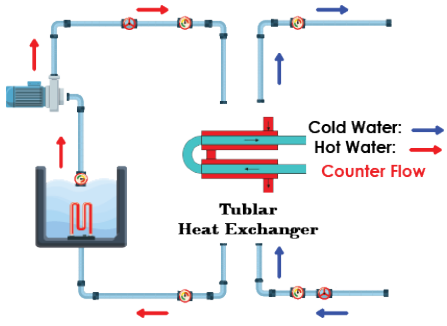
Component



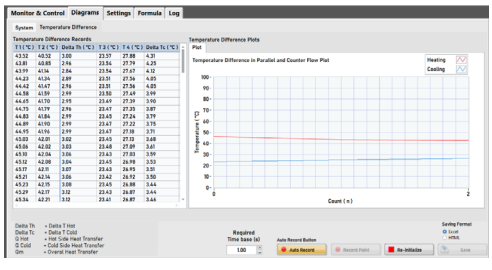
1	Hot water temperature sensors
2	Cold water temperature sensors
3	Concentric tubes
4	Cold water connection
5	Hot water connection

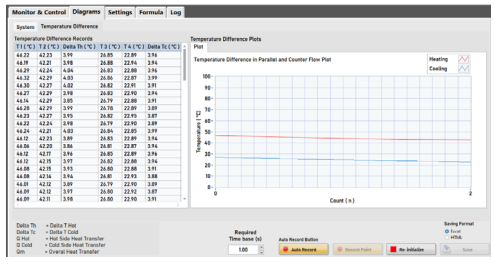
Schematics





Software Screenshots





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Scope of Delivery

- Tubular Heat Exchanger Module (HT114)

Required for Operation

- Heat Exchanger supply unit (HT109)

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