

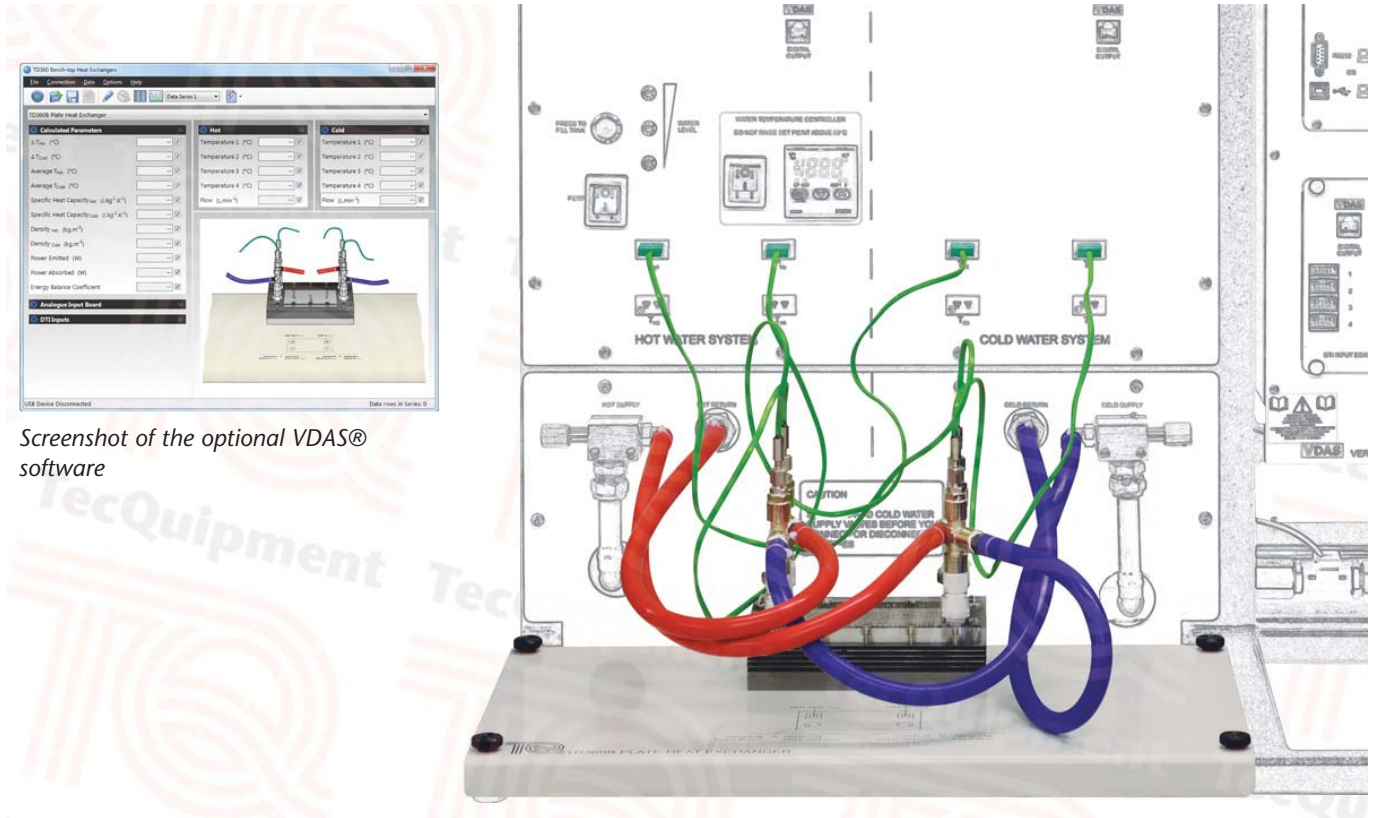


Thermodynamics

TD360b

Plate Heat Exchanger

Shows how a compact plate heat exchanger works



Screenshot of the optional VDAS® software

- One of a set of optional heat exchangers for use with TecEquipment's TD360 Service Module
- Popular type heat exchanger, used in industry but designed for teaching
- Simple and safe to use – foolproof fittings allow students to change and connect the heat exchanger quickly and easily – needs no tools
- Clear outside casing, so students can see its construction
- Bedplate with a clear schematic diagram to help students understand how to connect the heat exchanger
- Corrosion-resistant materials for use with ordinary clean water at safe temperatures

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- An ISO 9001 certified company

TD360b

Plate Heat Exchanger

Description

This heat exchanger is a set of metal plates separated by spacers (gaskets). The plates and gaskets have holes that make the hot and cold flow run on alternate sides of the plates, therefore transferring heat. The metal plates have flow disturbers on their sides to help improve the heat transfer. Plate heat exchangers are compact and therefore good for applications with limited space. It is also easy to alter their design to change their capacity - you simply add or remove plates and spacers.

The Service Module (TD360) provides hot and cold water to the heat exchanger and all the instruments needed to measure its performance. All fluid connections to the heat exchanger are self-sealing quick connectors - for safety and simplicity. The hot and cold fluid streams have different connectors to reduce errors. Connecting the heat exchanger takes less than one minute.

The heat exchanger is on a bedplate that has a clear schematic diagram showing the connections. The bedplate fixes to the Service Module with thumbscrews (students need no tools).

Standard Features

- Five-year warranty
- Made in accordance with the latest European Union directives



The Service Module (TD360) shown with the Plate Heat Exchanger module and the optional VDAS® unit (VDAS-F)

Experiments

- Demonstration of heat transfer from one fluid to another through a solid wall.
- Energy balance and efficiency calculations.
- Demonstration of parallel-flow and counter-flow operation of heat exchangers.
- Measurement of the heat transfer coefficient, and the effect of fluid flow rates and the driving force (temperature differential) upon it.
- Introduction to the logarithmic mean temperature difference in heat exchangers.
- Comparison of different types of heat exchanger in terms of performance, size and relative cost (only if you have two or more optional heat exchangers).

Essential Base Unit

- Service Module (TD360)

Operating Conditions

Operating environment:
Laboratory

Storage temperature range:
−25°C to +55°C (when packed for transport)

Operating temperature range:
+5°C to +40°C

Operating relative humidity range:
80% at temperatures < 31°C decreasing linearly to 50% at 40°C

Sound Levels

Less than 70 dB(A)

Specifications

Nett dimensions and weight:
500 mm x 260 mm x 100 mm and 2.4 kg

Other details:

- Transparent top cover
- Four stainless steel plates each 0.005 m² and 1 mm thick with flow disturbers on surface
- EPDM rubber plate spacers
- Heat transfer area 0.02 m²
- Connection to Service Module with quick connectors

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