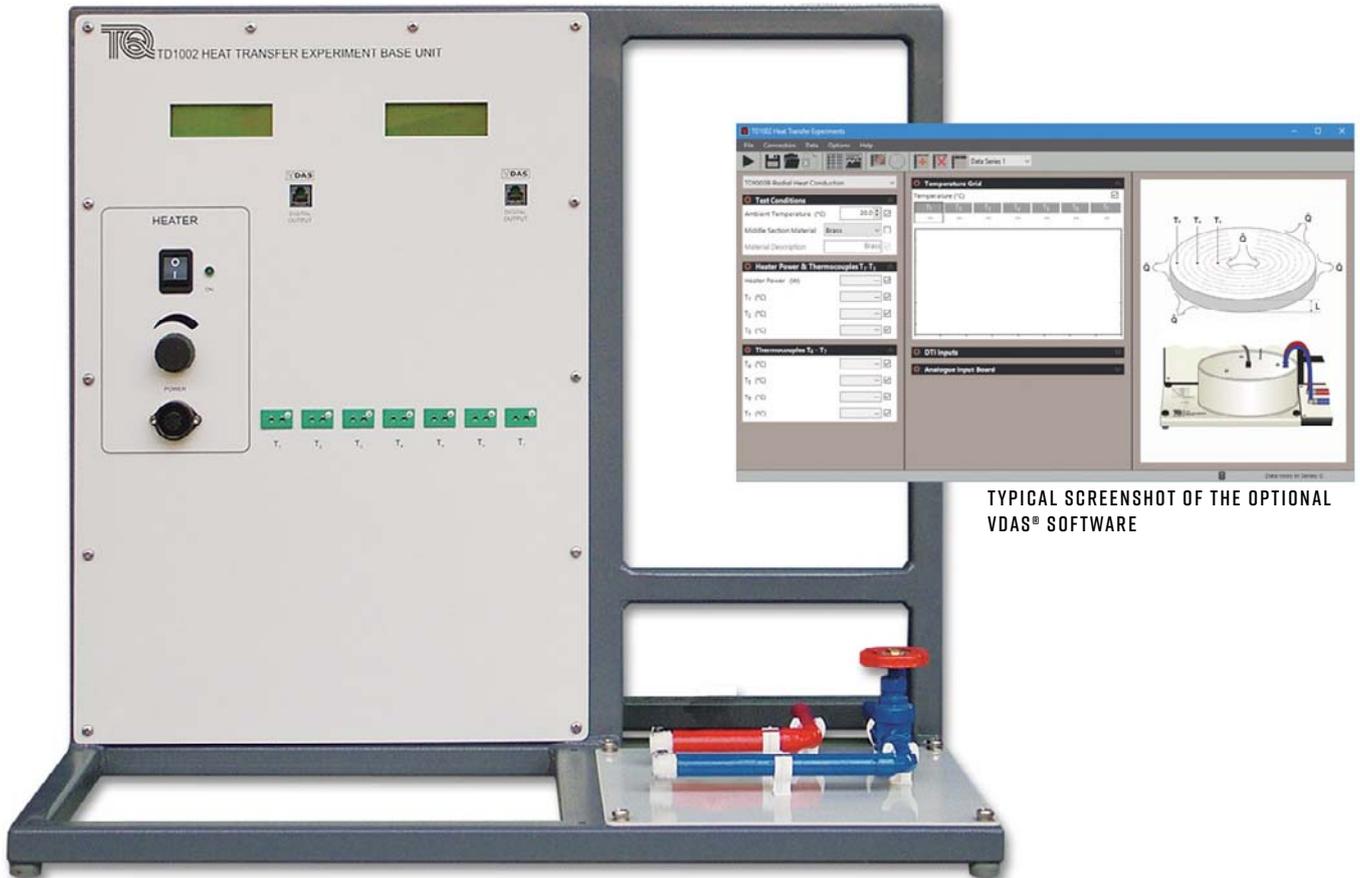




**VDAS® TD1002**

# HEAT TRANSFER EXPERIMENTS BASE UNIT

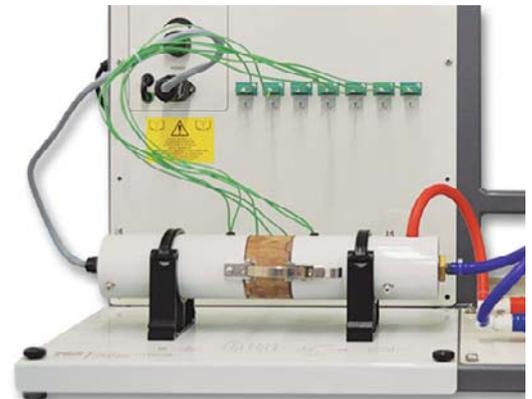
A bench-top base unit for demonstrating different methods of heat transfer. Requires at least one of the four optional experiments.



TYPICAL SCREENSHOT OF THE OPTIONAL VDAS® SOFTWARE

## KEY FEATURES

- A self-contained bench-top base unit with four optional experiments
- Simple and safe to use – foolproof fittings allow students to change and connect the optional experiments quickly and easily – needs no tools
- Clear digital displays of all readings – you do not need a computer to work it or take readings
- The experiments each have a bedplate with a clear schematic diagram to show students how they connect, and the measuring point positions
- Can connect to TecEquipment’s Versatile Data Acquisition System (VDAS®)



SHOWN WITH ONE OF THE EXPERIMENT MODULES



# HEAT TRANSFER EXPERIMENTS BASE UNIT

## DESCRIPTION

The Base Unit (TD1002) is the core of the TD1002 range. It provides cold water and heater power to the optional experiments and all the instruments needed to measure their performance.

The base unit's water system connects to a suitable cold water supply and drain. It includes a hand-operated valve to help give a controllable water flow and a simple return pipe, both colour-coded.

The water connections to the optional experiments are self-sealing quick connectors – for safety and simplicity. The inlet and outlet fluid streams have different colours to reduce errors. Changing an experiment takes less than a minute.

The base unit provides a variable and measured electrical current to the heater in each experiment and works with a safety switch to stop the heater from becoming too hot. It also includes sockets for the thermocouples built into each optional experiment.

Clear, multiline digital displays on the base unit show the temperatures and heater power of each experiment.

A spare area to the right of the base unit frame allows you to fit the optional VDAS-F hardware.

Each optional experiment is on a bedplate that has a clear schematic diagram showing the connections and measuring point positions. The bedplate fixes to the base unit with thumbscrews (students need no tools).

**NOTE:** You need at least one of the optional experiments. You cannot do experiments with just the base unit.

You can do tests with or without a computer connected. However, for quicker tests with easier recording of results, TecQuipment can supply the optional Versatile Data Acquisition System (VDAS®). This gives accurate real-time data capture, monitoring and display, calculation and charting of all the important readings on a computer (computer not included).

## STANDARD FEATURES

- Supplied with comprehensive user guide
- Five-year warranty
- Made in accordance with the latest European Union directives

## AVAILABLE EXPERIMENT MODULES

- Linear Heat Conduction Experiment (TD1002a)
- Radial Heat Conduction Experiment (TD1002b)
- Extended Surface Heat Transfer Experiment (TD1002c)
- Conductivity of Liquids and Gases Experiment (TD1002d)

## RECOMMENDED ANCILLARIES

- VDAS-F (frame-mounted version of the Versatile Data Acquisition System)

## 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)

## ESSENTIAL SERVICES

### BENCH SPACE NEEDED:

650 mm x 480 mm

### WATER:

Clean, cold water supply and waste

**NOTE:** Your cold water supply must be between 5°C and 15°C

### ELECTRICAL SUPPLY:

Single Phase 50 Hz to 60 Hz

90 VAC to 250 VAC at 5 A

## SPECIFICATIONS

TecQuipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

### NETT DIMENSIONS AND WEIGHTS:

Base unit (TD1002): 650 mm x 480 mm x 590 mm high and 24 kg

### PACKED DIMENSIONS AND WEIGHT:

800 mm x 600 mm x 940 mm and 40 kg