

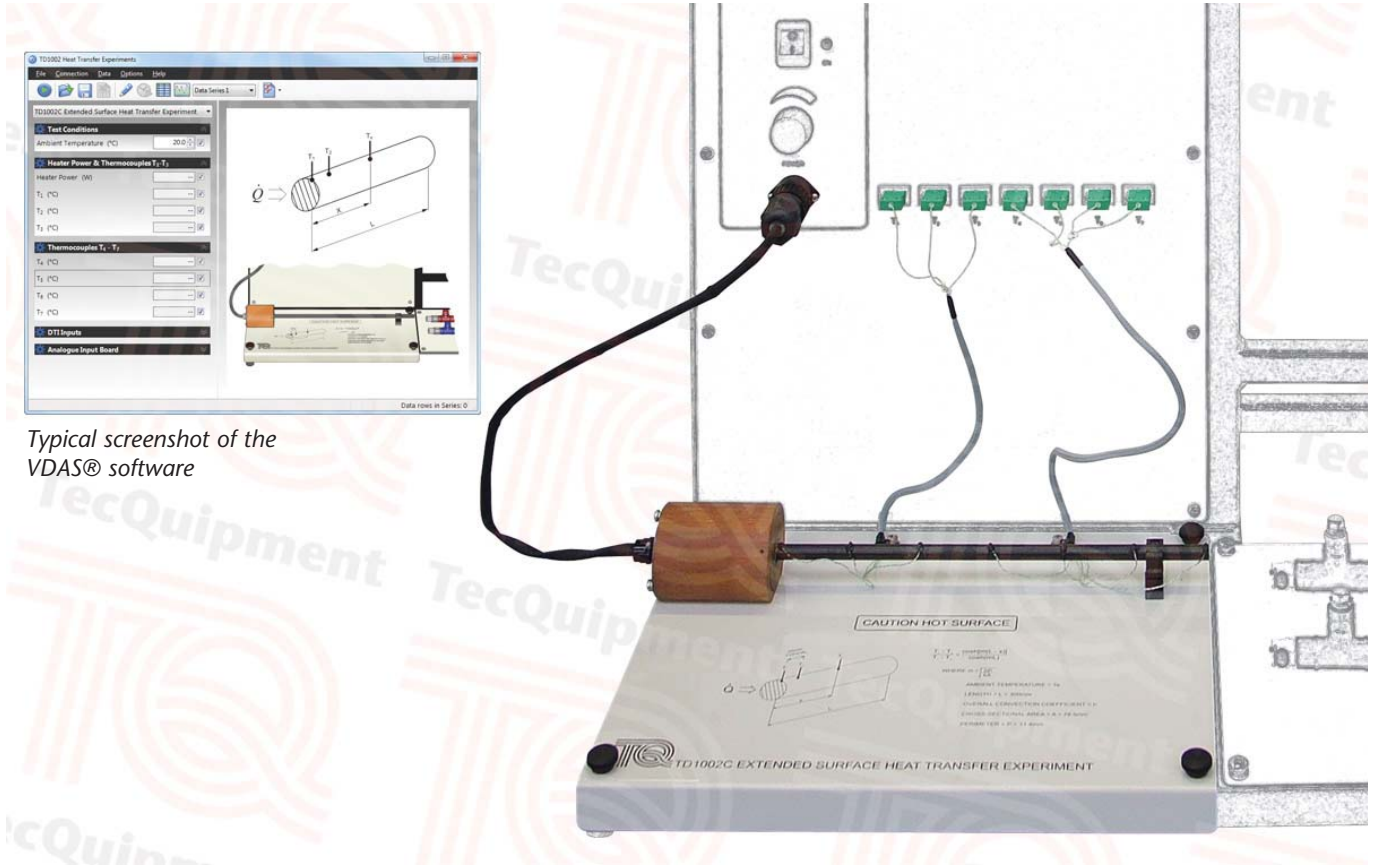


## Thermodynamics

## TD1002c

## Extended Surface Heat Transfer Experiment

**Shows students an example of conduction combined with losses due to radiation and convection**



Typical screenshot of the VDas® software

- One of four optional experiments for the Heat Transfer Experiments base unit (TD1002)
- Fits quickly and easily onto the Heat Transfer Experiments Base Unit and water connections have self-sealing quick connectors – needs no tools
- Shows how a long thin rod conducts heat along it and how heat is lost due to radiation and convection
- Clear schematic printed on the baseplate aids student understanding
- An ideal practical example of combined heat transfer
- Safe, low-voltage heater with over-temperature cut-out

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# TD1002c

## Extended Surface Heat Transfer Experiment

### Description

This experiment has a thin solid bar with an electric heater (heat source) at one end. It mounts on a base plate with a clear schematic of the experiment layout. The bar has a matt black coating for a consistent and predictable emissivity value. Thermocouples measure the temperature along the surface of the bar at equally spaced intervals. The electric heater and thermocouples connect to sockets on the Heat Transfer Experiments Base Unit.

Heat conducts along the bar and transfers to the local surroundings by natural convection and radiation. Students use initial test results to predict the temperatures and heat flow along the bar.

### Standard Features

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

### Experiments

- To show how heat transfers from the surface of a solid bar or rod
- To show the temperatures on, and heat flow through, the solid bar to its surroundings

### Essential Base Unit

- Heat Transfer Experiments Base Unit (TD1002)

### 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)

### Technical Details

*Nett dimensions and weights:*  
Extended Surface Heat Transfer Experiment (TD1002c):  
430 mm x 280 mm x 90 mm high and 2 kg

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