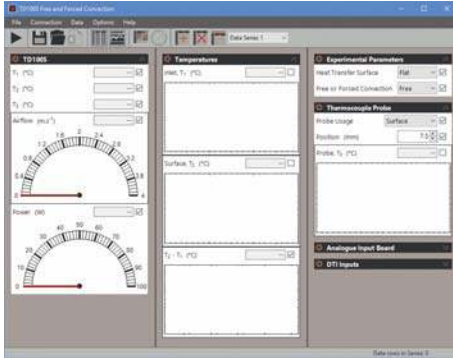


FREE AND FORCED CONVECTION

VDAS® TD1005

Illustrates free and forced convection from different heat transfer surfaces.



SCREENSHOT OF THE OPTIONAL VDAS® SOFTWARE

- Includes three of the most common heat transfer surfaces – flat plate, pinned and finned
- Thermocouples and a sensitive anemometer measure temperatures and air velocity – show on a digital display
- Additional hand-held thermocouple probe included to measure temperatures along the length of the pins and fins of two heat transfer surfaces
- Variable-speed fan and variable-power heat source for a range of tests



LEARNING OUTCOMES:

- Comparing free and forced convection for different surfaces
- Comparison of free convection from vertical and horizontal (finned) surfaces
- Comparison of heat transfer surface efficiency
- Comparing the coefficient of heat transfer and Nusselt number for forced and free convection
- Temperature distribution along finned and pinned surfaces

The bench-top equipment includes a vertical duct that holds the chosen heat transfer surface and all instruments needed. TecQuipment include three different common heat transfer surfaces with the equipment.

RECOMMENDED ANCILLARIES:

- Bench-mounted version of the Versatile Data Acquisition System (VDAS-B) 299

ALTERNATIVE PRODUCTS:

- Forced Convection Heat Transfer (TD1) 249
- Heat Transfer Experiments (TD1002) 250
- Emissivity – Natural Convection and Radiation (TD1011) 247
- Cross-Flow Heat Exchanger (TE93) 261
- Water-to-Air Heat Exchanger (TD1007) 263