

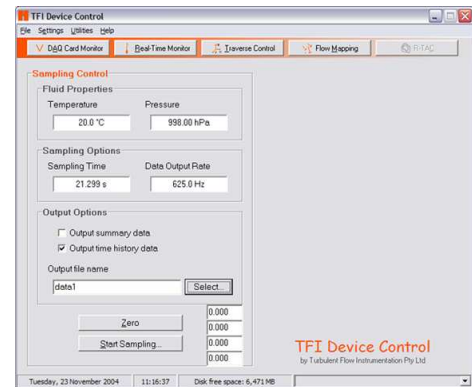
DEVICE CONTROL SOFTWARE

The Device Control software is designed to acquire, process and display data from any combination of products, including the TFI Cobra Probe and Dynamic Pressure Measurement Systems (DPMS). It is a powerful, easy-to-use, Windows-based software package that has been designed to simplify the process of configuring and obtaining data from these systems, but also incorporates some advanced features.

What does it do?

Main functions

- obtain data from a data acquisition devices
- process the pressure data from Cobra and ECA Probes into velocity data
- process the pressure data from the DPMS pressure modules
- display data in real time, as it is acquired and processed
- save data to disk if required (in binary or text formats) and print plots
- obtain, process and display data from 3rd party devices, such as force balances, accelerometers and hot-wire anemometers

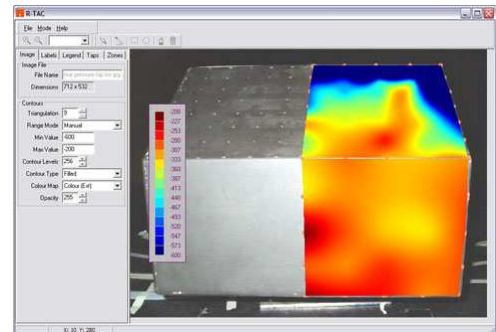


Other features

- saved data can be time-averaged summaries or full time histories
- post-processing of data (including that from other DAQ systems)
- replaying and printing previously recorded data
- controlling up to six axes of traverse
- facilitating static calibration of the Probes and DPMS and calibration of other devices

Advanced features

- real-time frequency analysis
- fully automated flow mapping
- simultaneous use of multiple Probes, pressure modules and other devices
- real-time animated contouring of DPMS pressure data using the R-TAC software module



What is it used for?

- Controls TFI instrumentation, such as probes, pressure modules and traverses
- Acquires and processes data from a wide range of instrumentation
- Simultaneous use of multiple instrumentation devices
- Real-time display, analysis and saving to disk of acquired data
- Real-time frequency analysis
- Post-processing of data acquired using other data acquisition systems
- Automated flow mapping over large measurement grids
- Replay of previously saved data (either as time histories or power spectra)

DEVICE CONTROL SOFTWARE DETAILS

Advantages over user-written software

The Device Control software provides a ready-to-use, user-friendly, Windows-based interface for controlling a wide range of instrumentation and is a single integrated solution for data acquisition, processing and display. It is flexible and can be configured to acquire data appropriately for different applications, and can also simultaneously acquire data from other reference sensors such as thermocouples, accelerometers and pressure transducers. Expandability via add-in modules allows extra functionality to be added as required.

How it works



- Acquires data from a supported data acquisition system or directly from a supported device
- For TFI probes and pressure modules, it corrects for the frequency response of pressure tubing within the instrumentation and between the instrumentation and measurement points
- Performs other required processing such as the calibration surface look-up required for Cobra Probes, or scaling via calibration factors
- Displays and stores data in real-time

Additional software module: R-TAC

- The Real-Time Animated Contouring (R-TAC) module is available with DPMS units
- R-TAC provides real-time display of pressure distribution contours superimposed on a photo or image of the test article
- Images can be saved to produce video of the dynamic pressure distribution, thus providing a very valuable tool for understanding flow structures

Performance

- Optimised processing to handle real-time processing from multiple devices
- Ultimate performance is dependent on the computer on which the software is installed
- Real-time data display up to 30 frames per second for the R-TAC software module

Minimum recommended requirements

- Windows-based laptop or desktop computer (200 MHz processor minimum)
- A supported A/D card (16-bit, 50 kHz preferred)
 - IOtech DaqBoard/2000 series for desktop computers
 - National Instruments M- and E-series for desktop or laptop computers
 - Quatech DAQP-16, or SuperLogics PCM16, for laptop computers
- Or other suitable data acquisition system (contact TFI)

Interfacing with other software

The Device Control software provides several methods for interfacing with other software. The data acquisition, processing and display functions can also be directly accessed from user software written in C, LabView, MATLAB and many other languages.

For further information

- Visit the TFI website at www.turbulentflow.com.au
- Contact Peter Mousley on (61 3) 9455 3890 or mousley@turbulentflow.com.au