Flowmeter Data Acquisition

ADInstruments PowerLab® & LabChart®

Transonic® Gold Standard Research Flowmeters pair well with ADInstruments PowerLab® data acquisition and analysis systems to provide seamless solutions for life science research.

Transonic® analog flow, pressure, pressure-volume, ECG & temperature signals are easily converted to digital data format in the PowerLab® 26 & 35 Series hardware. LabChart® Data Acquisition Software displays and records the data to make analysis a simple task. Calculate a wide range of parameters including mean flow, cardiac output, heart rate, stroke volume, systemic vascular resistance and more in real time. Pressure-volume measurements require the PV Loop Module that is included in LabChart®PRO. Use PowerLab® and LabChart® to integrate and manage all your research devices and data signals with up to 32 channels of data.

LabChart® 7 Requirements (v7.0.3 or later):

- Windows® Operating System (Windows Vista SP1 or Windows 7 (32-bit and 64-bit editions) or Windows XP SP2 or later and .NET 2.0 SP2 or .NET 3.5 SP1)

- Macintosh Mac®OS X v10.4 or later (v10.6 or later for LabChart® Reader)

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THE MEASURE OF   BETTER RESULTS.

PowerLab® Data Acquisition Systems

Series 26

Two analog input channels + standard PowerLab® A/D hardware.

- PowerLab 2/26 with LabChart Pro (PL2602/P)
- PowerLab 2/26 with LabChart (PL2602)

Four analog input channels + standard PowerLab® A/D hardware.

- PowerLab 4/26 with LabChart Pro (PL2604/P)
- PowerLab 4/26 with LabChart (PL2604)

Series 35

Eight analog input channels + standard PowerLab® A/D hardware.

- PowerLab 8/35 with LabChart Pro (PL3508/P)
- PowerLab 8/35 with LabChart (PL3508)

Sixteen analog input channels + standard PowerLab® A/D hardware.

- PowerLab 16/35 with LabChart Pro (PL3516/P)
- PowerLab 16/35 with LabChart (PL3516)

PowerLab® Standard Features

- Supplied with LabChart® or LabChart®Pro Software
- Accepts analog signals in the range of ± 10 volts. Transonic® flowmeter output is ± 5 volts
- Inputs: up to 16 (depending on the model); 1- 4 configurable as single ended or differential (through ADI pod & software); 4-16 single ended to BNC
- Resolution: 16 bit Analog to Digital Conversion
- Series 26 Sampling Rate: 100 kHz per channel max. Series 35 Sampling Rate: 200 kHz on 1-2 inputs; 100 kHz 3-4 inputs; 40 kHz 5-8 inputs; 20 kHz 9-16 inputs with up to 400,000 samples/sec. aggregate
- High-Speed USB 2.0 interface for connection to Windows and MacOS computers.
- No dials or switches, does not require programming. Status Indicator Light confirms operational status.
- Sends signals to control another device via two independent software controlled outputs for stimulation or pulse generation.
- Trigger input – to start & stop recording in PowerLab® from an external device.
- Compatible with Transonic® Research Flowmeters, other third party instrumentation, signal conditioners, and other ADI devices.
- 5-year hardware warranty

LabChart® Software Features

- Welcome Center: Provides access to LabChart® resources and materials within one interface. Open your LabChart® files, access all ADInstruments documents including demo files and supporting documents or clone document settings easily.

- Channel Settings: Fast and easy set up. All gain ranges and filter settings are available for all channels from one screen. You can record multiple blocks of data with different sampling speeds, filter settings and amplification.

- Input Amplifier: Preview the signal in real time prior to recording to select the appropriate amplification, filter settings, perform units conversion and others to optimize your recording parameters

- Continuous Auto Scale allows you to scale all data channels and will automatically adjust the display dynamically to the available display area as needed during live sampling or review scrolling.

- Data Pad provides a powerful and easy means of extracting experimental data. Users can log any raw or calculated signal from any channel into the Data Pad. The Data Pad directly exports to an Excel or other OLE file.

- The Display Split Bar feature allows the user to divide the display area to review and compare previously recorded data with data being acquired. Display options include Overlay, Zoom View, DVM Windows and XY View.

- Stimulator Feature allows flexible triggering and stimulation options facilitating generation of a wide variety of stimulus waveforms and patterns.

- Cyclic Measurements: Perform various cyclic analyses on periodic signals. Numerous statistics and functions are available online and offline. Customizable presets are also available to assist with accurate and fast detection of the periodical signals.

- Sample from Multiple PowerLab® devices into a single LabChart® file with a BioHarness System. Record up to 32 channels of live data in one file.

- Use Analysis Manager in conjunction with LabChart® Modules to save the analysis settings associated with any number of data regions. This enables analysis of separate data regions within a data file, multiple analyses of the same or different data regions, and the results of each analysis to be saved and recalled. The Analysis Manager can also be used with LabChart® alone to save and recall selections of data and/or active points in both Chart and Scope View.

- Editable Macros Advanced Scripting automate your recording and analysis with macros. Basic, complex and event-based VB macros may be programmed and edited to suit your needs.
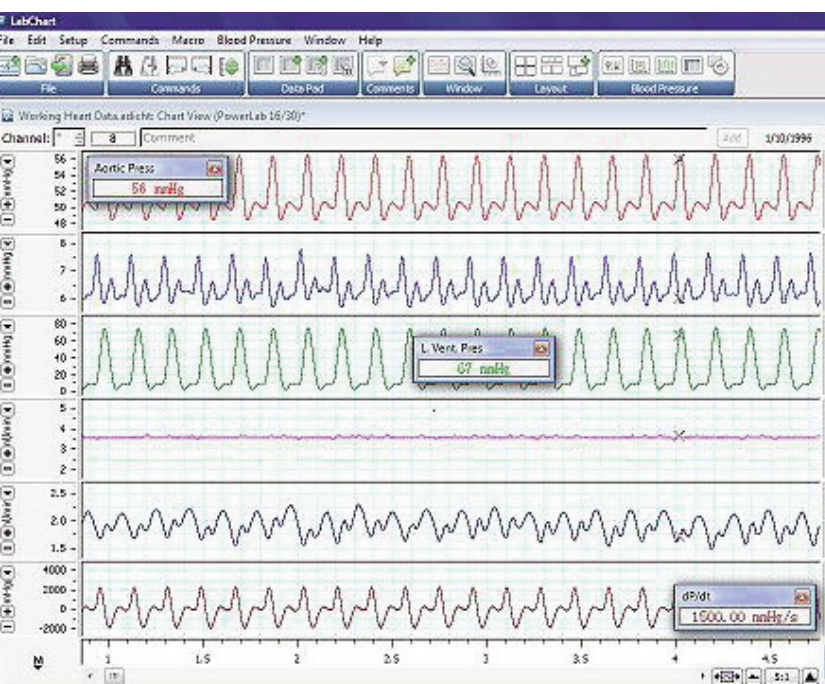
ADDITIONAL SOFTWARE & EXTENSIONS

- LabChart® Extensions are free to download and provide additional data formatting, filtering, visualization, measurement and calculation features.

- LabChart® Reader is a free, reduced-functionality version of LabChart® that lets you share real data, not just static images.

- LabChart®PRO comprises LabChart® software, LabChart® Modules and 5 years of FREE upgrades in one powerful value added package. You can also obtain any new LabChart® Modules released during the 5 year period at no extra cost. (excludes GLP Client and Server). All software is conveniently available for download.

- GLP & 21 CFR Part 11: The GLP Client and the GLP Server software provide PowerLab® users with an easy and reliable data acquisition solution for a GLP and 21 CFR Part 11 compliant environment. The GLP software is only available for LabChart® for Windows (not LabChart® for Macintosh).

LabChart® Modules

LabChart® Modules are software add-ons that provide highly specialized data acquisition and analysis features for specific applications. They include the following modules:

WINDOWS & MACINTOSH COMPATIBLE

HRV (Heart Rate Variability): Used to analyze beat-to-beat variation in recordings of ECG or arterial pulse signal. HRV performs calculations and displays results as data is recording.

Metabolic: Permits specialized human metabolic data acquisition and analysis

Video Capture: Adds audio and video capability to LabChart. Permits synchronized recording and playback of a Windows Media Video or QuickTime movie and LabChart® data files.

Spike Histogram: Enables detection, discrimination and analysis of extracellular neural spike activity.

DMT Normalization: Calculates optimal pretension conditions for isolated vessels with Danish MyoTechnology (DMT) wire myographs.

WINDOWS COMPATIBLE ONLY

Blood Pressure: Automatically detects, analyzes and reports cardiovascular parameters from arterial or ventricular pressure signals, online or offline.

PV Loop: Records and analyzes left ventricular pressure and volume data for hemodynamic research in animals. Loop area and hemodynamic parameters, during and after sampling, can be calculated.

ECG Analysis: Detects and reports the onset, amplitude and interval times of PQRST from human and animal ECG signals.

**Dose Response:** Permits calculation of dose response data from LabChart® recordings.

Peak Analysis: Automatic detection and analysis of multiple, but not overlapping, signal waveforms.

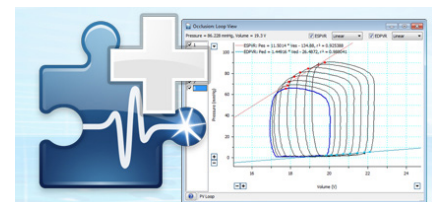**Cardiac Output:** CO, baseline temperature derived from LabChart® thermodilution curve recording.

Circadian Analysis: Analyzes LabChart® recordings with a daily pattern; generates graphical and tabular views of the daily and averaged circadian data.
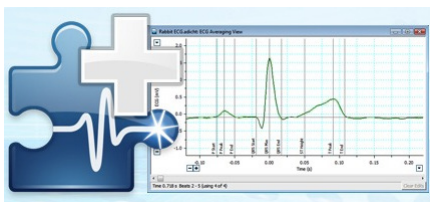
ECG Analysis

Cardiac Output

PV Loop

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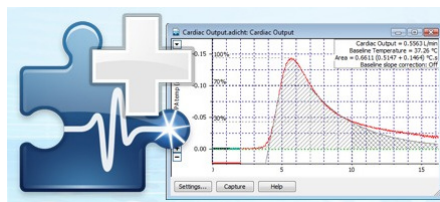
Transonic Systems Inc. is a global manufacturer of innovative biomedical measurement equipment. Founded in 1983, Transonic sells "gold standard" transit-time ultrasound flowmeters and monitors for surgical, hemodialysis, pediatric critical care, perfusion, interventional radiology and research applications. In addition, Transonic provides pressure and pressure volume systems, laser Doppler flowmeters and telemetry systems.