

Waveform Recording Systems

for troubleshooting,
maintenance,
design qualification,
process monitoring,
and medical research

Featured Products



DI-710 Series

The DI-710 Series is a family of instruments that offers 14-bit measurement resolution with sample rates up to 14,400 Hz at a Full Scale Range of $\pm 10V$ and a stand-alone option that allows you to record data directly to a Secure Digital memory card. SD data may be uploaded via the Ethernet interface. See page 14 for more information.



DI-158 Series

The DI-158 Series is a family of Starter Kits featuring 4 fixed differential input channels, 12-bit measurement resolution, up to a 14,400 Hz sample throughput rate, and up to $\pm 64V$ full scale measurement range. The DI-158 is an affordable yet extremely powerful solution to your data acquisition needs. See page 26 for more information.



DI-718B Series with DI-8B Modules

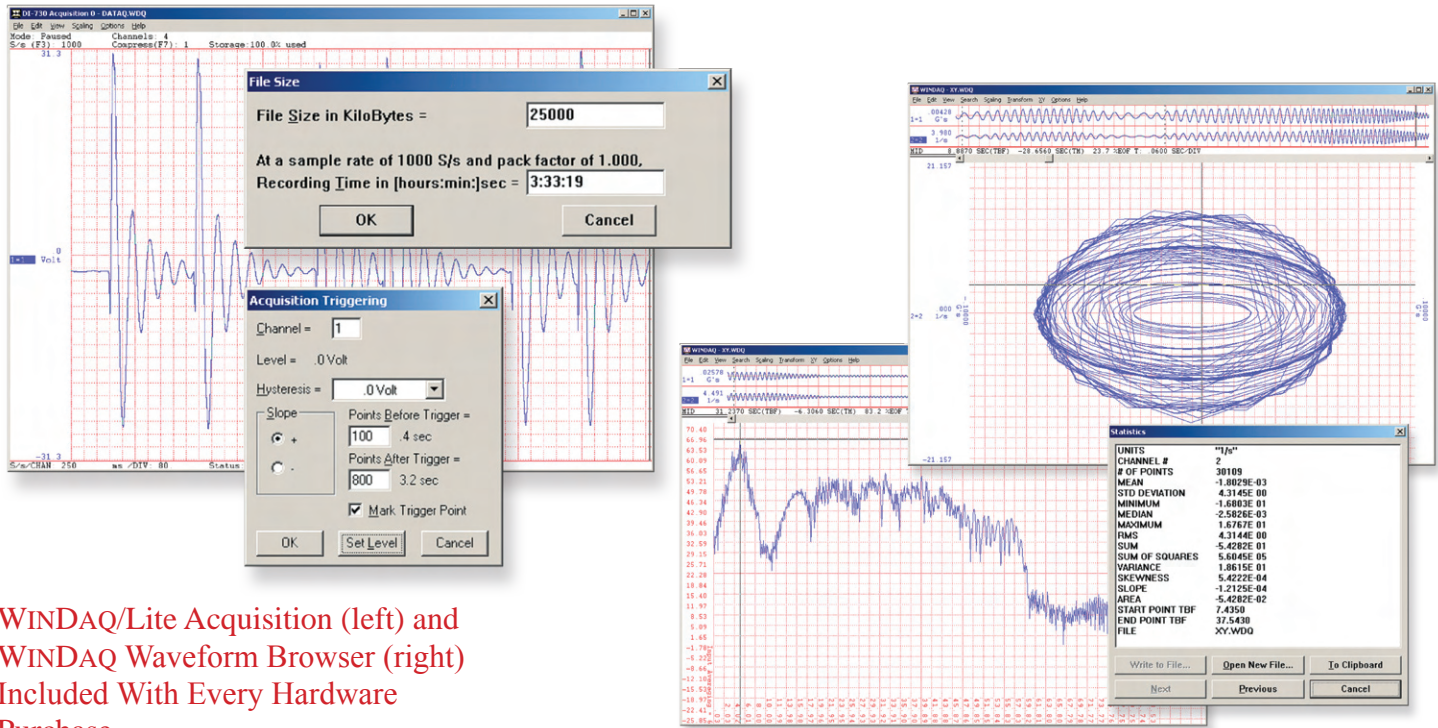
Identical in size and function to the DI-710, the DI-718B Series adds isolated 8B style plug-in amplifiers (up to eight). The small size of the DI-718B (5.44" \times 4.125" \times 1.5") and DI-8B modules (1.105" \times 1.65" \times 0.40") make this the smallest complete package for PC-based or stand-alone industrial data acquisition applications. See pages 16 and 17 for more information.

DI-730 Series

The DI-730 Series is our most popular data acquisition system. Offering $\pm 1000V$ channel-to-channel and input-to-output isolation, a wide dynamic measurement range of $\pm 10mV$ to $\pm 1000VDC$ (or peak AC) over six gain ranges, and USB, Ethernet, or printer port interface options, it is obvious why. The DI-730 is best suited for maintenance and troubleshooting DC drive systems and finds applications in industrial mills, high speed trains, and rail and seagoing locomotion, as well as RPM measurements from motors and generators, supply voltage and current measurements, and field current measurements from drive-roll, braking, and take-up motors. See page 11 for more information.



WINDAQ® Software



WINDAQ/Lite Acquisition (left) and WINDAQ Waveform Browser (right) Included With Every Hardware Purchase.

Features

Our WINDAQ Data Acquisition software packages offer real-time display and disk streaming for the Windows environment. The real time display operates in a smooth scroll or triggered sweep mode and can be scaled into any unit of measure. Event markers with comments allow annotation of data acquisition sessions with descriptive information while recording to disk. Raise productivity to new heights with WINDAQ's unique multitasking feature. Record waveform data to disk in the background while running any combination of programs in the foreground — even WINDAQ Waveform Browser playback software to review and analyze the waveform data as it's being stored! WINDAQ Waveform Browser playback software offers an easy way to review and analyze waveforms acquired by WINDAQ Data Acquisition Software. The software's disk streaming design allows data files of any length to be graphically displayed rapidly, in normal or reverse time directions. Seven standard cursor-based measurements and frequency domain and statistical analysis functions help simplify waveform analysis and interpretation. A data export feature allows any length of waveform data to be translated and reviewed by other applications, like Excel.

Explaining the differences between WINDAQ/Lite/Pro/Pro+ Recording Software

WINDAQ/Lite Recording Software
WINDAQ/Lite works at the full sample rate of the instrument for a single channel but is normally restricted to a maximum throughput of 240 Hz when recording two or more channels.

WINDAQ/Pro Recording Software
WINDAQ/Pro features a sample rate that is only limited by the maximum sample rate of the hardware.

WINDAQ/Pro+ Recording Software
In addition to WINDAQ/Pro's features, WINDAQ/Pro+ allows you to sample different channels at different rates. This is done by entering a sample rate divisor value (1 to 255) for each channel.

Hardware Supported
WINDAQ Software supports the following DATAQ Instruments hardware products: DI-148U, DI-150, DI-151, DI-154RS, DI-158 Series, DI-190, DI-194RS, DI-195B, DI-4xx products, DI-5xx products, most DI-7xx products, DI-5001. WINDAQ Software does not support DI-900MB products or the DI-770 Series.

Disk Streaming and Real Time Display to over 200kHz

True Multitasking Operation

Record up to 240 Channels

Built-in Data File Translator

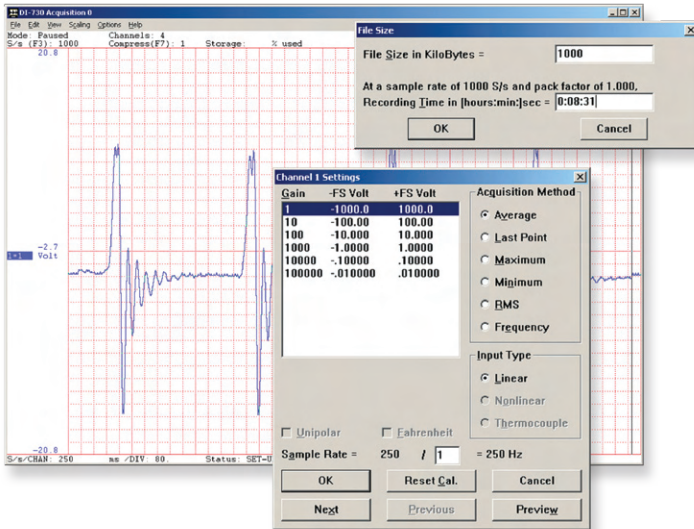
Variety of Cursor-Oriented Time and Amplitude Measurements

The WINDAQ software package includes both WINDAQ Data Acquisition software and WINDAQ Waveform Browser playback and analysis software. WINDAQ/Lite (includes WINDAQ Waveform Browser and WINDAQ/Lite Recording Software) is free with any hardware purchase. See pages 4-5 for an explanation of just a few of the many features included in this extremely versatile and powerful software package.

WINDAQ Recording Software

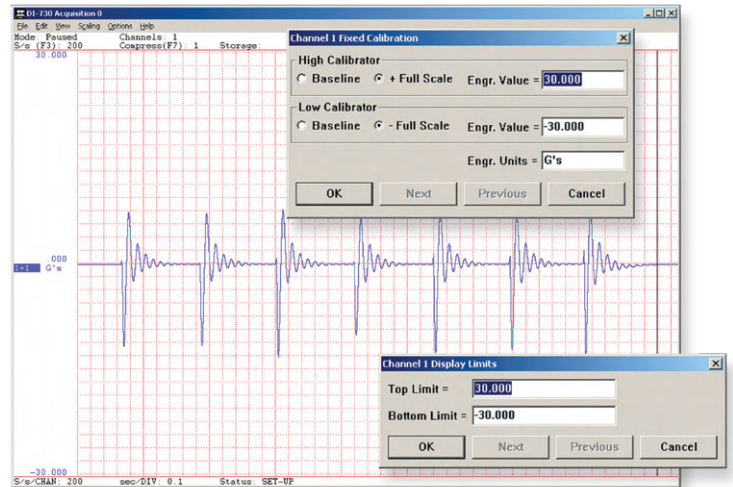
Setup

Double-click and enter the channels you want to acquire into the WINDAQ scan list. Click to select gain, signal averaging, true RMS, frequency, and peak or valley detection per channel. Click to define a single to 32-channel display — either triggered sweep (oscilloscope-like) or scrolling (chart recorder-like). Click again to define a sample rate ranging from less than one to up to 250,000 per second. With WINDAQ/Pro+ you can even define different sample rates on a per channel basis.



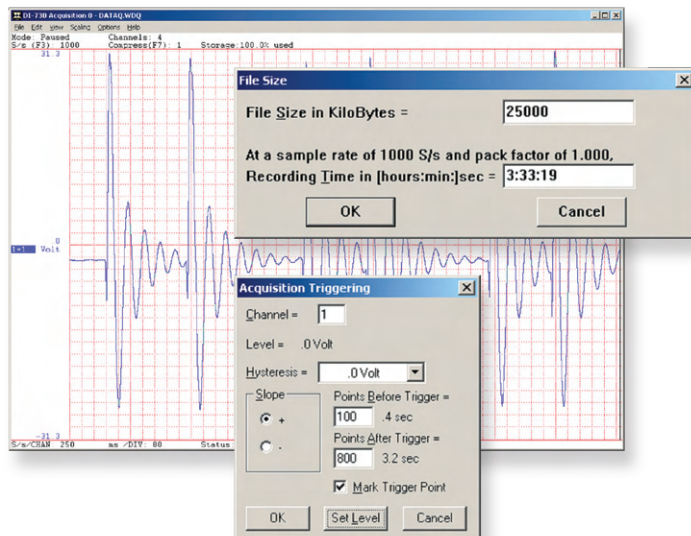
Calibrate

Define calibration per channel to display waveform values in meaningful units such as psi, °F or °C, amps, rpm, watts, horsepower — any unit of measure you need.



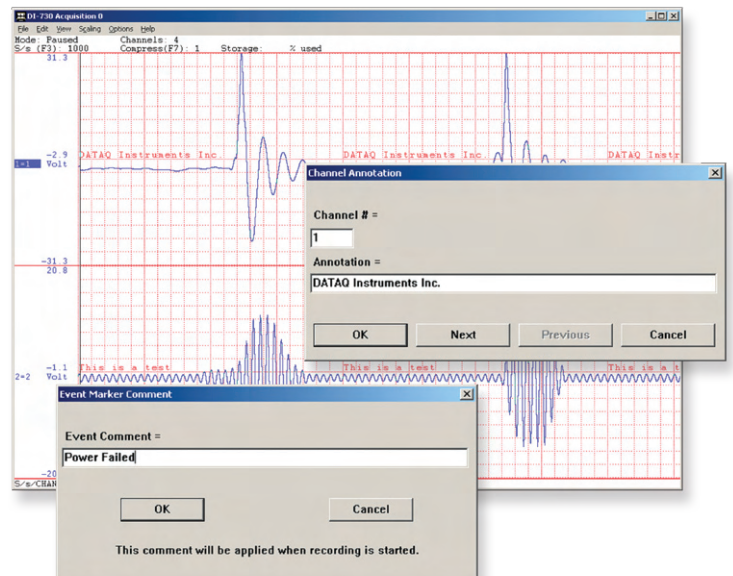
Record

Choose a continuous waveform recording mode or the triggered mode with selectable trigger level, slope, and pre- and post-trigger times. WINDAQ automatically time- and date-stamps, then streams acquired data to disk — record as much data as you need. At the same time, WINDAQ supplies a real-time graphical display of any or all channels so you always know where you are and where you are going.



Annotate

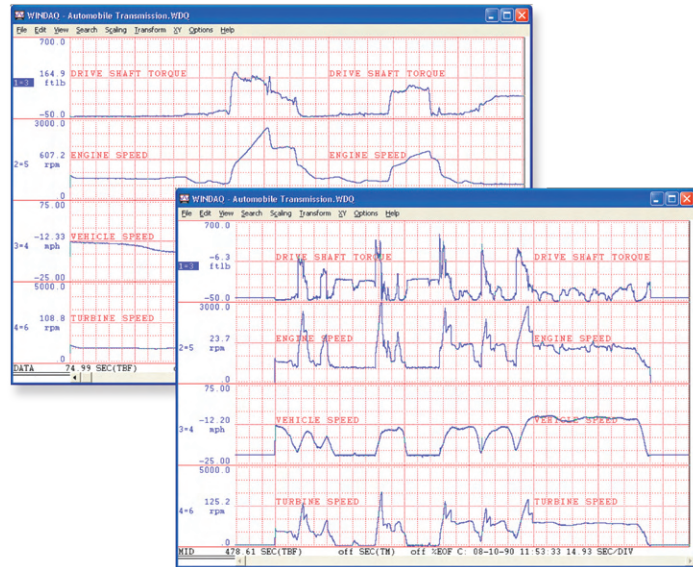
Of course, you can label any channel with text that describes it — “Motor 1,” “Engine speed,” “Vertical position,” etc. But WINDAQ also allows you to supply commented event markers while you record — “Beginning test phase 1,” “Small vibrations noticed,” “Starting cool-down cycle,” etc. Your comments and our acquired data combine to form a complete diary of your data acquisition session.



WINDAQ Playback Software

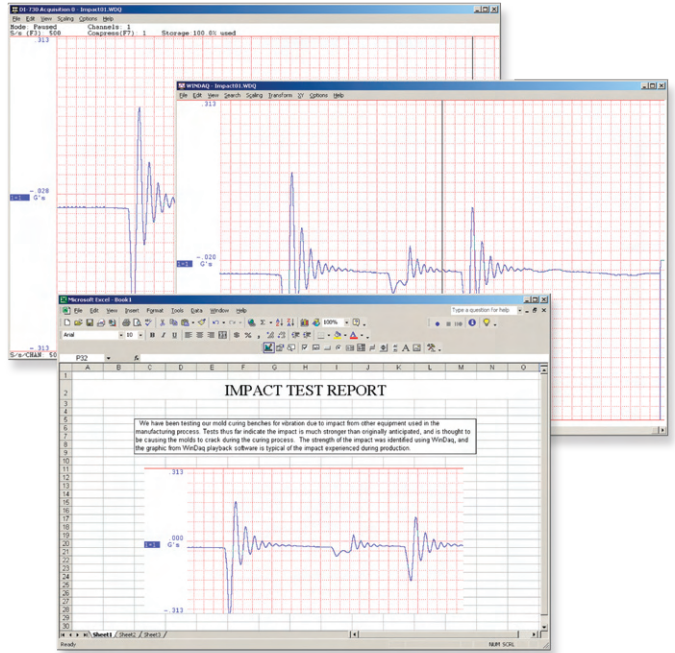
Playback

Recording is only half the solution. WINDAQ's Waveform Browser playback software allows you to graphically manipulate waveforms in ways you've never seen on a PC. Compress an entire recording to one screen-width for a bird's eye view, then expand around an area of interest for a closer look. Use the cursor to measure amplitudes and timing with precision. Move to any event marker with the click of a mouse button.



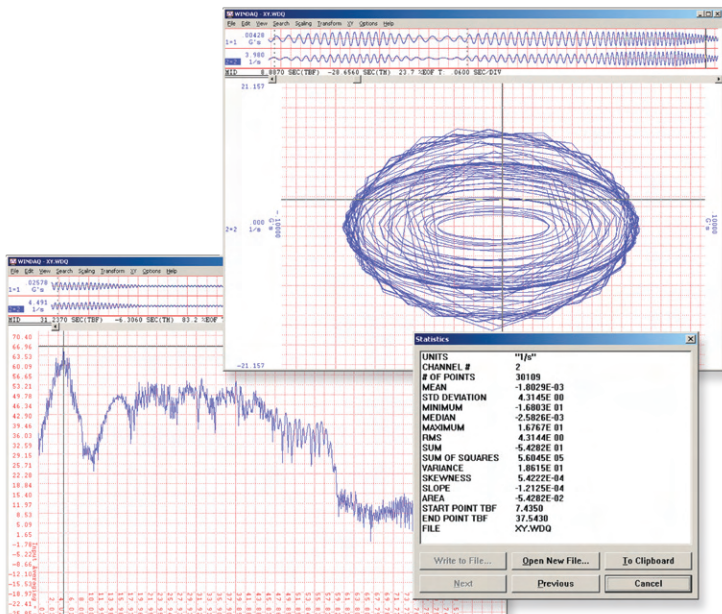
Multitask

Double your productivity and let WINDAQ record while you review last week's results from your spreadsheet or compose a memo with your word processor. You can even play back data already stored to disk while you are still recording.



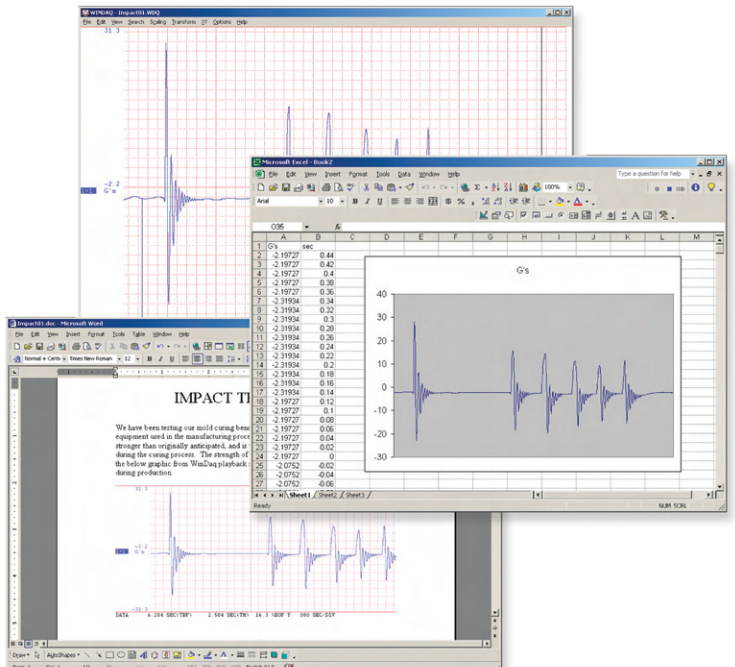
Analyze

Waveform interpretation is easy with our built-in analysis functions. Apply frequency and filtering analysis with the WINDAQ Waveform Browser FFT and DFT functions. Analyze any range of waveform data with the statistics function. Use X-Y plotting to examine the relationship of one channel to another. Extended analysis functions allow waveform peak detection, integration, differentiation, arithmetic operations, and more.

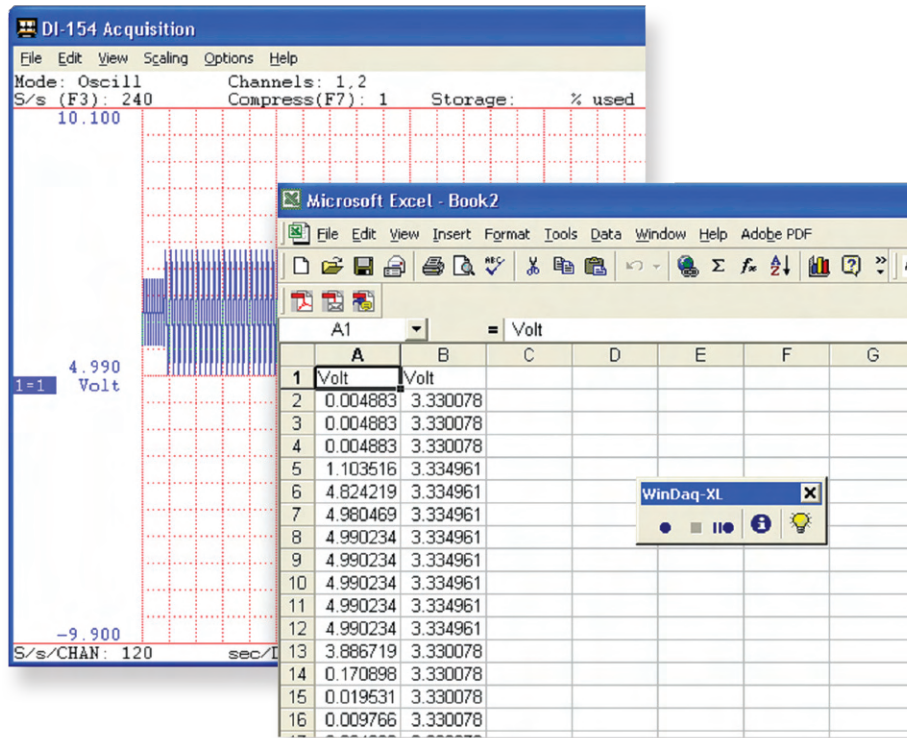


Export

The WINDAQ Waveform Browser can export any range of data to your spreadsheet, or any other analysis or presentation package you use. You can even copy a graphical image displayed by the WINDAQ Waveform Browser and paste it directly into a word processing document. Finally, export any range of waveform graphics to your printer for a hard copy record.



WINDAQ/XL Software



Features

Real-Time Waveform Data Port to Microsoft Excel

“Run WINDAQ Minimized” Function

True Multi-Tasking Operation

No Programming

Who should use this?

Those who need to mathematically combine WINDAQ-acquired waveforms to yield calculated channels in real time. Those who need a different waveform presentation than WINDAQ’s waveform versus time. For example, real time bar, column and pie charts. Program-adverse users who want nothing to do with a graphical or standard programming language, but who need to generate results in real time. Excel is the most widely-used spreadsheet software and it’s now simple to integrate it with WINDAQ.

Real-Time Link to Excel

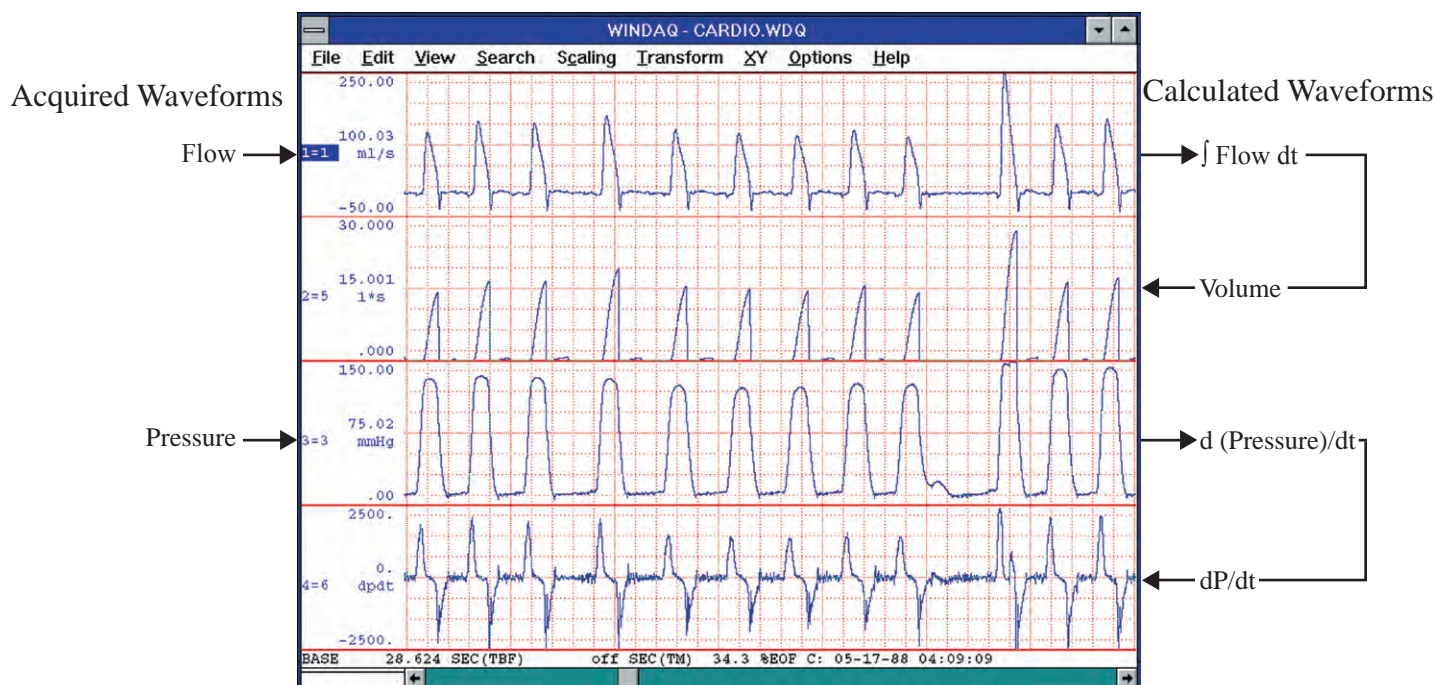
WINDAQ/XL is a software add-on to WINDAQ Acquisition software that allows acquired data to be ported to Microsoft Excel continuously in real time. The WINDAQ data acquisition application is unaffected by WINDAQ/XL, and both a WINDAQ and Excel screen may be displayed simultaneously. Once in a spreadsheet, the full analytical power of Excel may be brought to bear on WINDAQ-acquired data to generate a limitless array of real-time calculations that lend insight and perspective to many applications. WINDAQ/XL’s real-time transfer rate can achieve several hundred samples per second.

Further Insight into Data

Across the data acquisition landscape, there is a recurring need to derive more insight from acquired data in real time than the primary signals can provide. For example, combining torque and rpm to derive horsepower; voltage and current to derive power; statistical analyses including real time means, peaks, medians, standard deviations, etc.; real time pie, bar and column charts of raw or calculated data. WINDAQ/XL allows all this and more by applying the calculating power of Excel to WINDAQ-acquired data in real time.

Feature	Benefits
Real-time waveform data port to Microsoft Excel in real time	Extends the analytical reach of WINDAQ by providing a no-programming solution to calculate channels using the most prolific spreadsheet package available. WINDAQ/XL will also instantly port data from WINDAQ playback software into Excel without the need to generate intermediate files.
“Run WINDAQ Minimized” Function	WINDAQ runs in the background with only the Excel application displayed.
No Programming	You specify only a few parameters within Excel and the rest is automatically handled by Excel and WINDAQ/XL.

Advanced CODAS Analysis Software



The Waveforms displayed in windows 1 and 3 are the Advanced CODAS inputs. Advanced CODAS applied the desired analysis, calculates the resulting waveforms, and outputs the results in windows 2 and 4.

Features

Disk Streamer Performance

Generates calculated channels of any length limited only by storage space.

Insert and Overwrite Modes

Advanced CODAS allows calculated waveforms to overwrite or append themselves to a file as new channels.

Menus Or Batch Files

A single keystroke from the WINDAQ Waveform Browser screen activates the Advanced CODAS menu system of easy-to-use scripts. Simply enter calculation parameters, and activate the function. Often-used scripts may be combined into a batch file.

Seven Calculation Functions

Differentiator, Integrator, Rectifier, Moving Average Filter, Arithmetic Operations Utility, Peak and Valley Detector, and Report Generator.

Differentiator

Calculates a rate of change waveform with built-in, adjustable low-pass filtering.

Integrator With 4 Reset Methods

Generates the area bound by the curve, with reset: on zero crossing of the input waveform, on the level of the output waveform, on time, or as a function of an external event.

Rectifier

Used in the analysis of polarized signals, this function produces a rectified view of any waveform. Supported rectification functions are absolute value (full wave), positive unipolar (half wave) and negative unipolar (half wave).

Moving Average Filter

Also referred to as a boxcar integrator, this function is used for filtering noise or for generating mean waveforms. The function can also simulate a high pass filter to eliminate base line shifting.

Arithmetic Operations

This function allows you to combine waveforms as a function of arbitrary mathematical formulas. Also supports phase shifting of selected waveforms in precise increments.

Peak and Valley Detector

Detects cycle-by-cycle inflection points (minimum and maximum excursion) on any periodic waveform. Allows peak-only, valley-only, or peak and valley selections.

Report Generator

Generates a peak and valley report in spreadsheet format on a cycle-by-cycle or averaging basis. Reports value at peak, value at valley, rate (in Hz cycles/minute, or an interval in seconds), and mean.

Creates Calculated Channels of Any Length

Automatic File Management

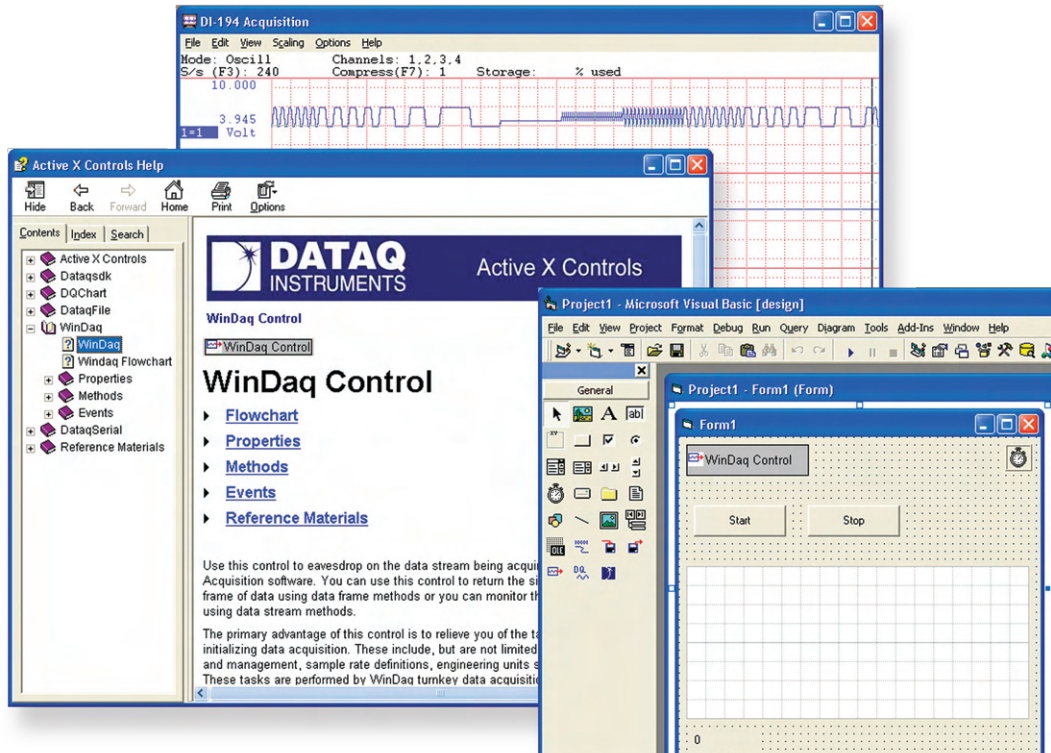
Automatic Calibration

Seven Waveform Calculation Modules

Seamless Access From Playback Software

Advanced CODAS is a software enhancement to WINDAQ playback software providing more sophisticated analysis and advanced functions. Beginning with acquired waveforms, Advanced CODAS creates new (calculated) channels without ever leaving the playback environment. The calculation functions, used individually or in any combination, may be applied to any waveform with fully automatic calibration in any desired unit of measure. Calculated channels are cleanly inserted into the waveform file and assume the characteristics of an acquired channel.

ActiveX Software



Features

Supported by a Multitude of Programming Environments Like Visual BASIC, Visual C++, Borland, C++, and LabVIEW

Supports most DATAQ Instruments Hardware Products

DATAQ Instruments' ActiveX control library supports the following products: DI-148U, DI-150, DI-151, DI-154RS, DI-158 Series, DI-190, DI-194RS, DI-195B, DI-4xx products, DI-5xx products, most DI-7xx products, DI-5001. The ActiveX control library does not support DI-900MB products or the DI-770 Series.

Use ActiveX Controls Universally

The ActiveX control standard defined by Microsoft describes modular, reusable software components that can be used universally by any environment that supports the standard. For example, without modification, the same controls may be used by Visual BASIC, Visual C, Excel, your favorite control software package, and even your Web browser. DATAQ Instruments' ActiveX control library consists of five components, each addressing a different application area. Context-sensitive on-line help is provided for each control.

Support for ActiveX is multiplying at literally an exponential rate. They are supported by virtually all programming environments like Visual BASIC, Visual C++, Borland C++, and LabVIEW. High level analysis environments like Excel can also support ActiveX controls. In all these situations, the program has full access to all the functionality provided by the control. In the case of DATAQ Instruments' controls, this functionality includes access to WINDAQ-acquired data in real time, complete control over data acquisition hardware functions, access to a graphic waveform plotting

utility, read/write access to WINDAQ data files, and more. Further, the universal nature of the ActiveX control standard ensures a consistent and highly simplified software-to-hardware interface that yields programming code that is tremendously reduced in both size and complexity.

Who Should Use the ActiveX Control Library?

- Anyone experienced in a programming language.
- Novice programmers who want to gain immediate results from their programming environment of choice.
- Anyone who needs to control a process using digital or analog outputs as a function of WINDAQ-acquired data.
- LabVIEW programmers who need a simple and effective way to implement DATAQ Instruments Hardware.

Hardware Selection Guide

Use WINDAQ® Software with most of our hardware products.
Go to page 25 for Hardware Accessories.

	Product	Interface ¹	Max Sample Rate ²	A/D Resolution	# of Channels ³	Analog Output	Digital I/O	Page
PC-Connected Data Acquisition Systems	DI-194RS	C	240Hz	10-bit	4SE	No	2/1	27
	DI-148U	U	14.4kHz	10-bit	8SE	No	6 ⁶	27
	DI-158	U	14.4kHz	12-bit	4DI	Yes	4 ⁶	26
	DI-195B	C	240Hz	12-bit	2 5B	No	-	26
	DI-710	U E	4.8kHz	14-bit	16SE/8DI	No	8 ⁶	14
	DI-718B	U E	4.8kHz	14-bit	8 8B	No	2/0 ⁷	16
	DI-718Bx	E	4.8kHz	14-bit	16 8B	No	8 ⁶	18
	DI-720	P U E	250kHz	16-bit ⁵	32SE/16DI	Yes	8/8	10
	DI-722	P U E	50kHz	16-bit ⁵	32SE/16DI	Yes	-	13
	DI-730	P U E	150kHz	14-bit	8DI, 16SE/8DI	Yes	-	11
	DI-785	E ⁴	180kHz	16-bit ⁵	32 5B	Yes	8/8	20
	DI-788	E ⁴	180kHz	16-bit ⁵	32 8B	Yes	8/8	21
¹ C=COM Port (Serial RS-232); P=Parallel Printer Port; U=USB; E=Ethernet. ² Maximum sample rates could vary depending upon interface and PC speed. ³ SE=Single-ended; DI=Differential; 5B=Configured for DI-5B signal conditioning modules; 8B=Configured for DI-8B signal conditioning modules. ⁴ USB to Ethernet converter available. ⁵ 14-bits when used with WINDAQ Software. ⁶ Bi-directional bits. ⁷ Two Inputs for Remote Control.								
Stand-Alone Data Loggers	DI-710	U E ⁸	14.4kHz	14-bit	16SE/8DI	No	8 ¹⁰	14
	DI-718B	U E ⁸	14.4kHz	14-bit	8 8B	No	2/0 ¹¹	16
	DI-718Bx	E ⁹	14.4kHz	14-bit	16 8B	No	8 ¹⁰	18
⁸ The DI-710, DI-718B, and DI-718Bx stand-alone data loggers can record data directly to Secure Digital (SD) memory. Data may be uploaded to PC via Ethernet cable. ⁹ USB to Ethernet converter available. ¹⁰ Bi-directional bits. ¹¹ Two Inputs for Remote Control.								
Expansion and Signal Conditioning	DI-78B	-	-	-	16 8B	-	-	19
	DI-8B	Industrial-Grade Amplifiers						17
	DI-725/E	-	-	-	32DI	-	-	12
Isolated Thermocouple Measurements	DI-1000TC-4	C U ¹²	5Hz	0.8°C	4DI	No	-	15
	DI-1000TC-8	C U ¹²	5Hz	0.8°C	8DI	No	-	15
¹² Adapter required.								
Oscilloscope	DI-770 ¹³	U	100MHz	up to 16-bit	2	No	-	23
	¹³ Not Supported by WINDAQ Acquisition and Playback Software (uses WINDAQ/Scope software).							
Modbus Distributed	DI-900MB Series ¹⁴	RS-485	Varies dependent upon module.					24
	¹⁴ Not Supported by WINDAQ Acquisition and Playback Software (uses 900MB Configuration software).							

DI-730 Portable Systems

NEW Ethernet Interface provides distributed and synchronous data acquisition. See page 22 for more information.



Features

DI-730 Offers Isolation, Wide Dynamic Measurement Range

The eight-channel DI-730 Series features a measurement range of $\pm 10\text{mV}$ to $\pm 1000\text{VDC}$ (or peak AC) over six gain ranges with $\pm 1000\text{V}$ channel-to-channel and input-to-output isolation. Replace entire racks of isolation amps, high and low voltage amps, and data acquisition subsystems with one, portable, lightweight $9 \times 7.3 \times 1.5$ inch instrument. Channel-to-channel isolation protects delicate control circuits, equipment, and personnel from high common-mode voltages.

Applications

Use the DI-730 for wide dynamic range measurements, especially those involving AC or DC electric motors. Examples include paper, aluminum, and steel mills; high speed trains; and rail and seagoing locomotion. The high sample rate, exceptional isolation, and CMR characteristics of the DI-730 make it well-suited for maintenance and troubleshooting of DC drive systems. Other applications include RPM measurements from motor/generators, supply voltage and current measurements, and field current measurements from drive-roll, braking, and take-up motors.

Synchronized Distributed Ethernet Data Acquisition

The Ethernet communications option connects DI-730 Series products to any local area network (LAN). Direct Internet access is also possible. This patent-pending communication option uses standard CAT-5 cable to yield continuous data acquisition throughput rates up to 150kHz. Multiple DI-730 products (with an Ethernet interface) may be daisy-chained together to form an ad-hoc extended network of autonomous, yet fully synchronous data acquisition stations. Station separation can be as far as 100 meters. See page 22 for more information.

High Resolution Capability

DI-730 series instruments apply 14 bits of resolution and you can resolve $0.30\mu\text{V}$.

Easy to Connect and Use

All instruments connect in seconds to your PC's parallel port, Ethernet connector, or USB port. The DI-730 Series has integral banana jacks for easy signal connection.

**For Electric Motor/
Generator Maintenance
and Troubleshooting in
Mills, Locomotion, and
DC Drive Systems**

**Standard Printer Port,
Optional USB or Ethernet
Interface**

14-Bit Resolution

The DI-720 Series and DI-730 Series are families of instruments that offer high resolution waveform recording capability. They communicate through your PC's parallel port in EPP, bidirectional, or standard mode. Other optional communication interfaces include USB and Ethernet.

DI-725 and DI-725E Expansion Systems



Top: Front Panel
Bottom: Rear Panel

Features

- 32-Channel Expander**
- Programmable Gain**
- Powered By Host Instrument**
- Small Size (9 x 7.3 x 1.5 Inches)**
- Can Be Stacked and Secured With Optional Stacking Brackets**

The DI-725 is a 32-channel analog expansion unit for DI-720, DI-722, DI-730, and DI-740 instruments. It is available in two models — base measurement range and extended measurement range (DI-725E). The base model features 32 differential analog inputs, a programmable gain amplifier with gain selections of 1, 2, 4, and 8, and a ± 10 volt full scale measurement range. The extended measurement range model increases the full scale measurement range to ± 20 volts.

General Purpose DI-725

Model DI-725 offers 32 differential input channels. Each may be programmed for a measurement range of ± 1.25 , ± 2.5 , ± 5 , and ± 10 volts full scale per channel.

725E for Rugged Applications

The Model DI-725E expands the base model DI-725 to offer a measurement range of ± 2.5 , ± 5 , ± 10 , and ± 20 volts full scale, which is also programmable per channel. Further, this model provides a differential amplifier per channel with input protection to 120V RMS.

Easy to Connect and Use

The DI-725/E comes in the same sleek package as the DI-720, DI-722, and DI-730, which measures only 9 x 7.3 x 1.5 inches. Access to the analog inputs is provided through dual 37-pin, D-type connectors.

Custom Range Configurations

Since the DI-725E's extended measurement range channels use an amplifier per channel, many custom ranges can be configured for minimal additional cost. Contact us with your special requirements and let us quote a system that is perfectly suited for your application.

Differential Inputs

Allows you to connect to a wider range of signals with greater noise immunity and flexibility. In return for the 32 expansion channels it provides, each DI-725/E consumes two channels from its host instrument. For example, when a single DI-725 is connected to a DI-720, the combination delivers 62 total channels (30 are still available on the host instrument). When connected to a DI-730, the DI-725/E adds 32 high level differential inputs to the host's 8 wide measurement range inputs for a diverse blend of 40 total channels. A total of 240 channels may be configured using multiple DI-725/E's.

No Additional Power Supply

The DI-725/E derives power from the host instrument—no additional power required.

Stackable with Optional Hardware

Optional stacking brackets (part #100671) allow the DI-725/E to be stacked and mounted to the host instrument. The stacking brackets come complete with mounting hardware to make installation a snap. An optional stainless steel carrying handle (part #100690) is also available for convenient system handling.

DI-722 Data Acquisition System

NEW Ethernet Interface provides distributed and synchronous data acquisition. See page 22 for more information.



Features

Product Highlights

The DI-722 Series offers added flexibility with customer-specified measurement ranges allowing difficult measurements such as in-vehicle testing or any other measurement application where a $\pm 10V$ full scale range is inadequate. The DI-722 Series also features full differential measurement capability. Channels will tolerate up to 120V RMS normal and common-mode voltages without damage. 16- and 32-channel configurations are available.

Easy To Connect and Use

All instruments connect in seconds to your PC's parallel port, Ethernet connector, or USB port. Connect your input signals to the DAS-16 compatible, 37-pin "D" connectors or use the optional DI-706, which provides convenient guarded banana jacks for signal connection.

Custom Range Configurations

Since the DI-722's extended measurement range channels use an amplifier per channel, custom ranges can be configured with minimal added cost. Contact us with your special requirements and let us quote a system that is suited for your application.

Synchronized Distributed Ethernet Data Acquisition

The Ethernet communications option connects DI-722 Series products to any local area network (LAN). Direct Internet access is also possible. This patent-pending communication option uses standard CAT-5 cable to yield continuous data acquisition throughput rates up to 200kHz. Multiple DI-722 products (with an Ethernet interface) may be daisy-chained together to form an ad-hoc extended network of autonomous, yet fully synchronous data acquisition stations. Station separation can be as far as 100 meters. See page 22 for more information.

Expansion Flexibility

Expand the analog channel capacity of DI-722-16 instruments now or any time in the future with our DI-725, a 32-channel analog input expander backpack. Or choose our DI-75B, an eight-channel, signal conditioned analog input backpack that allows you to make any conceivable industrial measurement with full isolation.

± 2.5 to $\pm 20V$ Full-Scale Measurement Range Per Channel

Input Protection to 120V RMS Per Channel

Full Differential Measurement Capability

14-Bit Minimum Resolution

The DI-722 Series provides differential inputs featuring an amplifier per channel which dramatically reduces channel cross-talk compared to other multiplexed systems. This rugged design allows measurement ranges of ± 2.5 , ± 5 , ± 10 , and $\pm 20V$ full scale, programmable per channel, with 120V RMS over voltage protection (other custom measurement ranges also available). These features allow the DI-722 Series to be used with confidence and security in any application where measurements exceed $\pm 10V$ full scale and where the potential for an accidental high-voltage (up to 120V RMS) connection exists.

DI-710 Data Acquisition/Logger System



Visit us on the web to check out our special online bonus bundle offer!

Features

Low-Cost, Portable, USB or Ethernet Data Logger/Acquisition System

16 Single-ended, 8 Differential Analog Inputs

Stand-alone Data Logger Option Allows Data to be Saved to Removable SD Memory

The DATAQ Instruments DI-710 Series of products is a family of eight instruments for general purpose and stand-alone data acquisition applications. Options include interface type, input voltage range, and standard (PC-tethered) or stand-alone operation. Interface options are USB or Ethernet. Gain ranges have selectable factors per channel of 1, 2, 4, and 8, or 1, 10, 100, and 1000. Instruments with the stand-alone option feature a built-in multimedia socket that accepts standard Secure Digital (SD) memories to which acquired data may be stored without a connected PC.

Stand-alone Operation

Use a Secure Digital Card to record and store data—up to 1GB. FIFO memory configuration allows the DI-710 to record continuously using a circular buffer approach or to record-until-full. A push button allows manual start/stop control over the recording process. A multi-color LED shows instrument status (Record, Standby, Busy, Error).

Wide Signal Measurement Range

Suitable for use with many different signal sources, the 16-channel single-ended, 8-channel differential DI-710 features a per channel measurement range of $\pm 10V$ over four gain ranges. This allows you to simultaneously measure a wide range of signals with ease.

High Throughput Rate

Supports sample throughput rates up to 4800 samples/sec to PC (depending on host computer speed) or 14400 samples/sec to memory card (stand-alone models).

High Resolution

14-bit resolution analog to digital conversion provides a responsive instrument capable of registering changes as small as one part in $\pm 8,192$ ($\pm 0.012\%$ of the full scale measurement range).

File Protection

When powered down unexpectedly, the DI-710 Stand-alone model retains all acquired data on its memory card.

Easy to Connect and Use

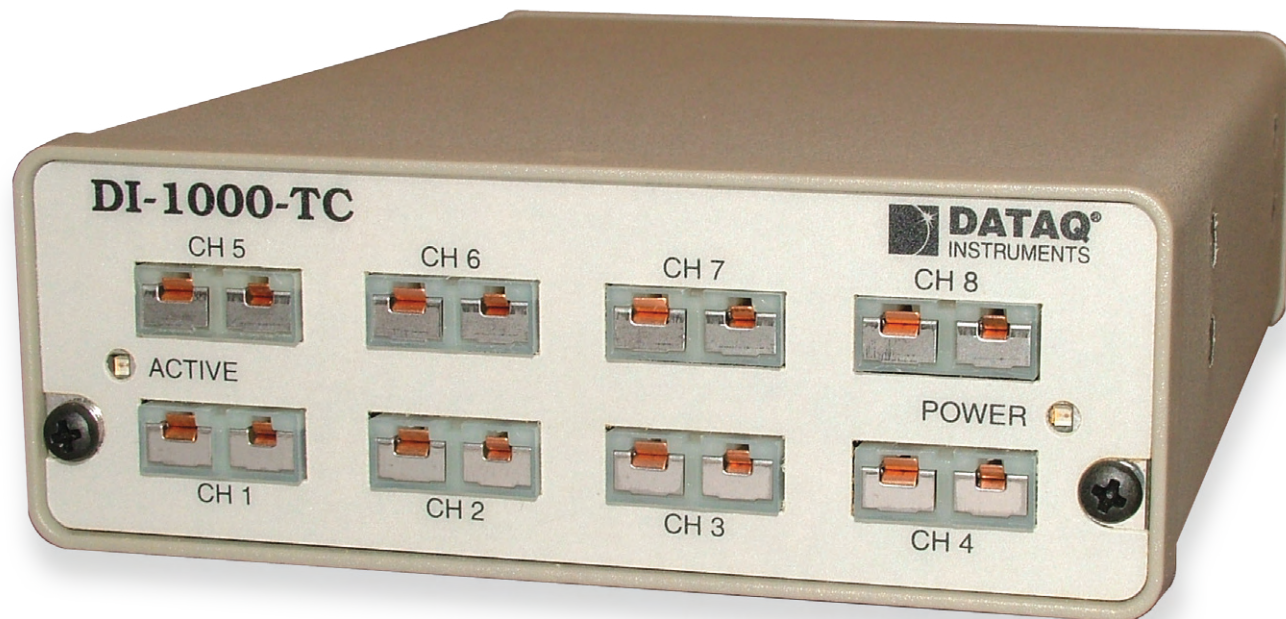
Installs in seconds. Simply connect to your computer's USB port or an Ethernet port. Connect power, then connect your signals to the provided screw terminal blocks (16 ports each). Stand-alone models just need a memory card and power connection.

Included Software

Be up and running minutes out of the box with WINDAQ software. WINDAQ/Lite Recording and Playback software is included free with the purchase of every DI-710 instrument. Use WINDAQ/Lite Playback software to review, measure, compare, and analyze data during or after a recording session.

Configuration Software is included for all stand-alone models allowing a complete data acquisition configuration to be designed and downloaded to the DI-710 from any local or remote PC. Uploading software is also provided to allow you to read data stored to the SD card over the DI-710's Ethernet interface.

DI-1000TC for Temperature Measurements



Features

Portable

The DI-1000TC is provided in a small (13.81D × 10.48W × 3.81H centimeters; 5⁷/₁₆D × 4¹/₈W × 1¹/₂H inches) enclosure consisting of an aluminum base and all-steel wraparound.

High Accuracy and Resolution

Allows sharpened decisions with an overall accuracy of ±0.2% of span, and temperature resolution as fine as 0.08°C.

Isolation

The DI-1000TC's 1000VDC and Peak AC input-to-output and channel-to-channel isolation allows grounded TC measurements.

Use with your PC or your PDA!



Built-in RS-422 Interface

The built-in RS-422 interface allows DI-1000TC units to connect to any host PC through an adapter via an RS-232 or USB port and also serves as an expansion port for other DI-1000 instruments. USB or RS-232 Adapter Required.

Expandable

Multiple DI-1000TC units may be connected individually, or used as expansion units with any combination of DI-1000 instruments to address any application-specific situation. For example, multiple DI-1000TCs may be connected to each other to provide unique twelve, sixteen, twenty, or other channel counts. DI-1000TC products may also be mixed and matched with other DI-1000 instruments to yield unique measurement configurations that feature various input types (e.g., simultaneous TC, strain, digital I/O, and voltage) all with sample synchronization.

1000VDC and Peak AC Input-to-Output and Channel-to-Channel Isolation

Supports 7 TC Types

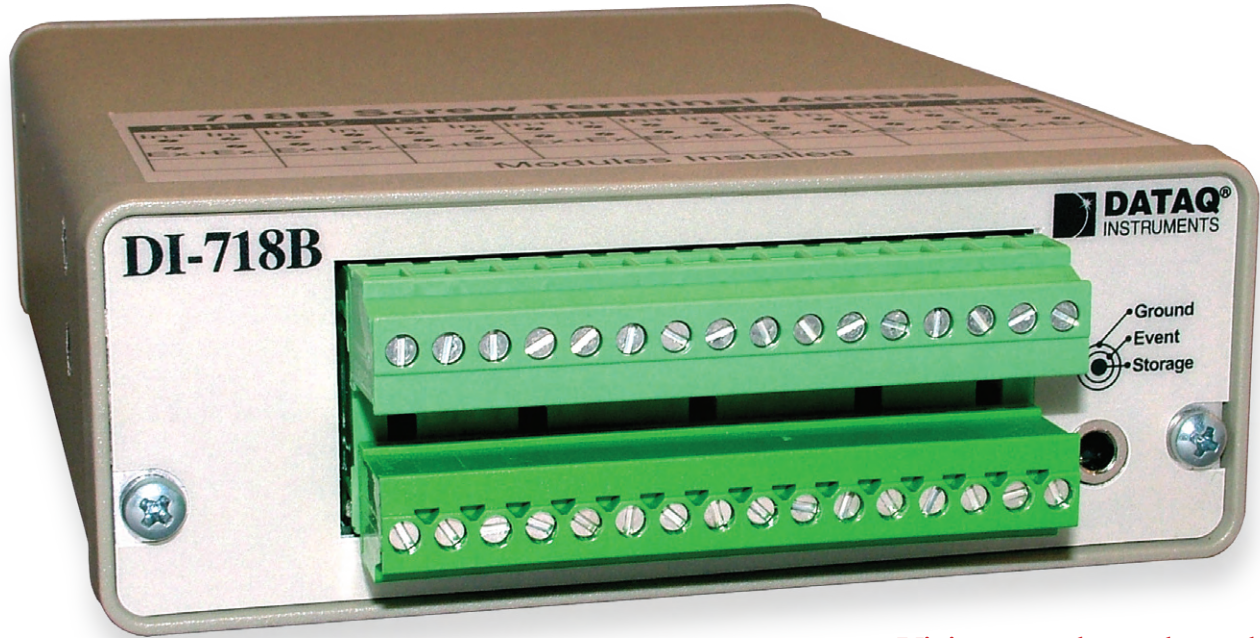
Built-in Open TC Detection

Wide CJC Range

USB or RS-232 Adapter Required

DATAQ Instruments' DI-1000TC Series products are a line of instrumentation modules designed for temperature measurements using thermocouples. The unit is provided in 4- or 8-channel versions, each channel supports one of seven thermocouple types: J, K, T, E, S, B, or R. Temperature measurements may range from -200°C to +1820°C (-328°F to +3308°F), depending upon thermocouple type. Each DI-1000TC thermocouple channel features a panel-mounted, miniature spade connector and all input channels are electrically isolated up to 1000VDC or peak AC.

DI-718B Data Acquisition/Logger System



Visit us on the web to check out our special online bonus bundle offer!

Features

Low-Cost, Portable, USB or Ethernet Data Logger/Acquisition System

Accepts 8 Fully Isolated DI-8B Plug-In Amplifiers

Stand-alone Data Logger Option Allows Data to be Saved to Removable SD Memory

The Model DI-718B is identical in size and function to the DI-710, but is designed to accept isolated DI-8B style plug-in amplifiers. Up to eight amplifiers may be installed in the DI-718B housing. With over 90 different modules available, DI-8B signal conditioners can interface with virtually any industrial signal. The intrinsic isolation of DI-8B amplifiers allows accurate and safe measurements even in the presence of high off-ground voltages. The small size of the DI-718B ($5.44 \times 4.125 \times 1.5$ inches) and DI-8B modules ($1.105 \times 1.65 \times 0.40$ inches) make this the smallest complete package for PC-based or stand-alone industrial data acquisition applications.

For Use with DI-8B Plug-in Signal Conditioning Modules

Each channel on the DI-718B accommodates one DI-8B module providing a single channel of isolated input protection, amplification, and filtering. DI-8B modules are plugged into a socketed backplane and are secured with a mounting screw. Each channel has 4 corresponding screw terminals for signal connections: channel+, channel-, excitation+, and excitation-. These terminals satisfy all transducer inputs and provide sensor excitation if necessary. Access to the DI-8B modules is through a removable front panel.

High Throughput Rate

Supports sample throughput rates from 0.0034 Hz up to 4800 Hz when acquiring data to a PC (depending on host computer speed) or from 0.0017Hz up to 14400Hz when recording to a memory card (stand-alone models).

High Resolution

14-bit resolution analog to digital conversion provides a responsive instrument capable of registering changes as small as one part in $\pm 8,192$ ($\pm 0.012\%$ of the full scale measurement range).

Stand-alone Operation

Use a Secure Digital Card to record and store data—up to 1GB. FIFO memory configuration allows the DI-718B to record continuously using a circular buffer approach or to record-until-full. A push button allows manual start/stop control over the recording process. A multi-color LED shows instrument status (Record, Standby, Busy, Error).

File Protection

When powered down unexpectedly, the DI-718B Stand-alone model retains all acquired data on its memory card.

Included Software

Be up and running minutes out of the box with WINDAQ software. WINDAQ/Lite Recording and Playback software is included free with the purchase of every DI-718B instrument. Use the Playback software to review, measure, compare, and analyze data during or after recording data. Configuration Software is included for all stand-alone models allowing a complete data acquisition configuration to be designed and downloaded to the DI-718B from any local or remote PC. Uploading software is also provided to read data stored to SD over an Ethernet interface.

DI-8B Series Industrial Amplifiers

Visit us on the web to check out our special online bonus bundle offer!



Shown: A DI-718B with four DI-8B modules installed and an SD card.

Features

There is a DI-8B module for almost any industrial signal. Use the following list as a general guide to determine which module best suits your needs.

Model	Description
DI-8B30	Analog Voltage Input Modules ($\pm 10\text{mV}$ to $\pm 100\text{mV}$), 3Hz Bandwidth
DI-8B31	Analog Voltage Input Modules ($\pm 1\text{V}$ to $\pm 60\text{V}$), 3Hz Bandwidth
DI-8B32	Analog Current Input Modules
DI-8B33	Isolated True RMS Input Modules
DI-8B34	Linearized 2- or 3-Wire RTD Input Modules
DI-8B35	Linearized 4-Wire RTD Input Modules
DI-8B36	Potentiometer Input Modules
DI-8B38	Strain Gage Input Modules
DI-8B40	Analog Voltage Input Modules ($\pm 10\text{mV}$ to $\pm 100\text{mV}$), 1kHz Bandwidth
DI-8B41	Analog Voltage Input Modules ($\pm 1\text{V}$ to $\pm 60\text{V}$), 1kHz Bandwidth
DI-8B42	2-Wire Transmitter Interface Modules
DI-8B45	Frequency Input Modules
DI-8B47	Linearized Thermocouple Input Modules
DI-8B50	Analog Voltage Input Modules ($\pm 20\text{mV}$ to $\pm 100\text{mV}$), 20kHz Bandwidth
DI-8B51	Analog Voltage Input Modules ($\pm 1\text{V}$ to $\pm 60\text{V}$), 20kHz Bandwidth

Direct Interface to Thermocouples, RTDs, Strain Gages, Voltage, and Process Current Signals

High Accuracy, Low Drift Input-to-Output Isolation

Mix-and-Match Modules

The DI-8B Series Industrial Amplifiers are low cost, high performance plug-in signal conditioners designed for use with DI-718B Data Logger/Data Acquisition Systems. One-fifth the size of competing products, DI-8B modules offer fully functional performance with superior specifications such as $\pm 0.05\%$ accuracy, $\pm 0.02\%$ linearity, three poles of filtering, 1000VDC/Peak AC Input-to-Output isolation (when used with the DI-718B), 500VDC/Peak AC Channel-to-Channel isolation (when used with the DI-718B), low output noise, small size (1.105" \times 1.65" \times 0.40"), and much more.

DI-718Bx Data Acquisition/Logger System



Visit us on the web to check out our special online bonus bundle offer!

Features

Stand-alone Data Logger Option Allows Data to be Saved to Removable SD Memory

Accepts 16 Fully Isolated DI-8B Plug-In Amplifiers

Sample Rates from 0.0017Hz up to 14,400Hz

The DI-718Bx Series Data Acquisition/Data Logger System is designed for general purpose and stand-alone data logging applications that require signal conditioning. DI-718Bx instruments may be purchased with or without stand-alone capability. Instruments without this option must remain tethered to a PC's Ethernet port (can be via a network) during data acquisition and use the PC's own program and memory to store acquired data. Instruments with the stand-alone data logging option feature a built-in socket that accepts standard Secure Digital (SD) memories to which acquired data may be stored.

For Use with DI-8B Plug-in Signal Conditioning Modules

Each channel on the DI-718Bx accommodates one DI-8B module providing a single channel of isolated input protection, amplification, and filtering. DI-8B modules are plugged into a socketed backplane and are secured with a mounting screw. Each channel has 4 corresponding screw terminals for signal connections: channel+, channel-, excitation+, and excitation-. These terminals satisfy all transducer inputs and provide sensor excitation if necessary. Access to the DI-8B modules is through a removable top panel.

High Throughput Rate

Supports sample throughput rates from 0.0034 Hz up to 4800 Hz when acquiring data to a PC (depending on host computer speed) or from 0.0017Hz up to 14400Hz when recording to a memory card (stand-alone models).

High Resolution

14-bit resolution analog to digital conversion provides a responsive instrument capable of registering changes as small as one part in $\pm 8,192$ ($\pm 0.012\%$ of the full scale measurement range).

Stand-alone Operation

Use a Secure Digital Card to record and store data—up to 1GB. FIFO memory configuration allows the DI-718B to record continuously using a circular buffer approach or to record-until-full. A push button allows manual start/stop control over the recording process. A multi-color LED shows instrument status (Record, Standby, Busy, Error).

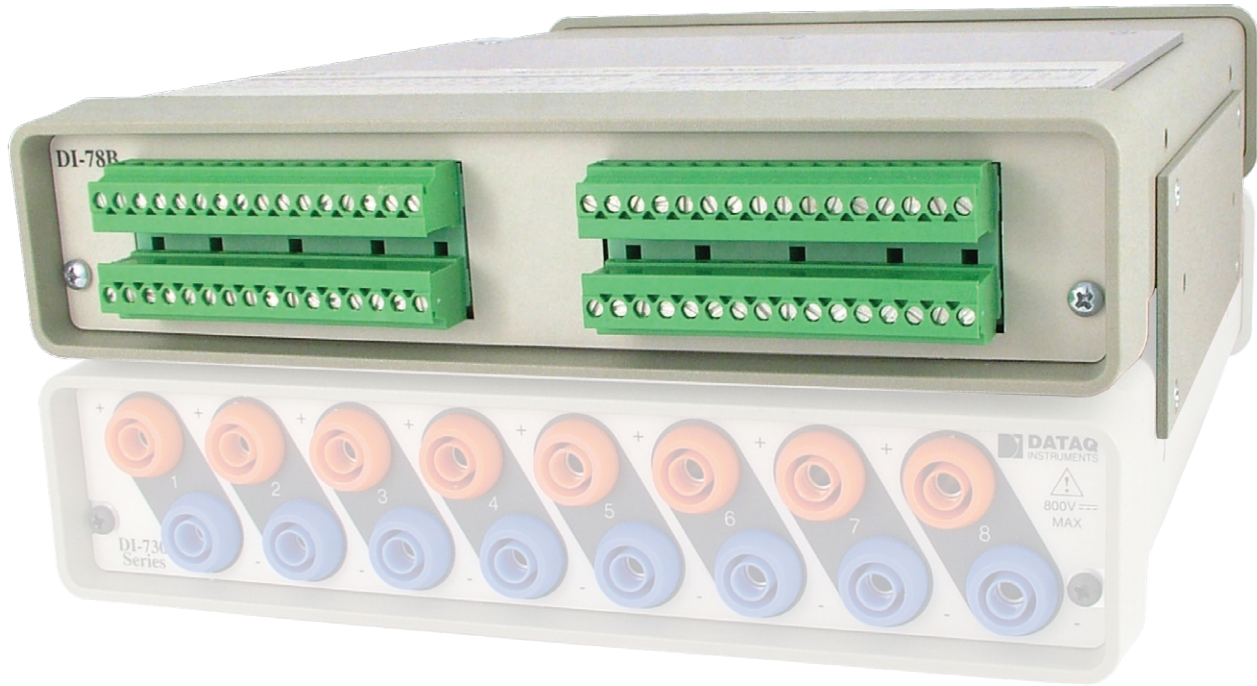
File Protection

When powered down unexpectedly, the DI-718Bx Stand-alone model retains all acquired data on its memory card.

Included Software

Be up and running minutes out of the box with WINDAQ software. WINDAQ/Lite Recording and Playback software is included free with the purchase of every DI-718Bx instrument. Use the Playback software to review, measure, compare, and analyze data during or after recording data. Configuration Software is included for all stand-alone models allowing a complete data acquisition configuration to be designed and downloaded to the DI-718Bx from any local or remote PC. Uploading software is also provided to read data stored to SD over the Ethernet interface.

DI-78B Signal Conditioning Backpack



Shown: A DI-78B mounted atop a DI-730 Series Instrument.



Features

Add a DI-78B to the DI-720, or DI-730 for Any Industrial Measurement Application

Add the DI-78B to DI-720 or DI-730 instruments for a complete, easy, and convenient signal conditioning solution. Each channel consumes one channel from its host instrument in return for the isolated, signal-conditioned input it provides. One DI-78B may be connected to any DI-720 or DI-730 instrument to add 16 signal-conditioned input channels in addition to any remaining channels on the host instrument.

Make Industrial Measurements Through DI-8B Plug-in Signal Conditioning Modules

Each channel on the DI-78B accommodates one DI-8B module, which provides a single channel of isolated input protection, amplification, and filtering. Each channel has four corresponding screw terminals for your signal connections: channel+, channel-, excitation+, and excitation-. These terminals satisfy all transducer inputs and provide sensor excitation when necessary. Access to the DI-8B modules is through a removable top hatch cover.

Flexible Power Requirements

When used with either a DI-720 or DI-730, the DI-78B can be powered by these instruments through a supplied power jumper cable.

Similar Footprint

The DI-78B has the same dimensions as our DI-720 and DI-730 instruments (9"L × 7.29"W × 1.52"H). This allows the DI-78B to be easily stacked and mounted to the host instrument.

Easy to Connect

The DI-78B connects to the host instrument in seconds with the supplied interconnecting cable. Simply connect one end of this cable to the EXPANSION port on the host DI-720 or DI-730 instrument and connect the other end to EXPANSION IN on the DI-78B's rear panel.

Stackable with Included Hardware

The included stacking brackets allow the DI-78B to be stacked and mounted to the host instrument. The stacking brackets come complete with mounting hardware to make installation a snap. An optional stainless steel carrying handle is also available for convenient system handling.

16-Channel, 8B Module Expansion Device for DI-720 and DI-730 Series Instruments

Mix and Match Isolated Modules for any Industrial Measurement

Powered from the Host Instrument

Model DI-78B is a backpack expander for DI-720, DI-722, and DI-730 products. It is a sleek unit that has the same footprint and height (9"L × 7.29"W × 1.52"H) as DI-720 and DI-730 products, yielding an extremely capable yet compact solution for industrial measurements. The DI-78B accepts up to sixteen 8B-style modules (measurements include thermocouple, voltage, strain, frequency, process current, RTD, and potentiometric). DI-8B modules may be mixed and matched in any combination suitable for your application. A maximum of one DI-78B may be used with a DI-720, DI-722, or DI-730 instrument. The DI-78B is powered by the host unit using a supplied jumper cable.

DI-785 Industrial Data Acquisition System

NEW Ethernet Interface provides distributed and synchronous data acquisition. See page 22 for more information.



Features

Accepts 32 Fully Isolated DI-5B Plug-In Amplifiers

Distributed Synchronous Ethernet Interface

14-Bit Resolution

Up to 180KHz Sample Throughput Rate

The DI-785 supports 32 isolated input channels designed specifically for DI-5B isolated amplifier modules and incorporates our new patent-pending synchronous Ethernet interface. The 785 provides the most complete, cost-effective, and adaptable data acquisition system available. Use any combination of DI-5B signal conditioning modules to suit any application. Connect multiple 785s (and/or DI-720/730/788) systems together to form one synchronized data acquisition system.

For Use with Plug-in Signal Conditioning Modules

Each channel on the DI-785 accommodates one DI-5B module. These modules provide a single channel of isolated input protection, amplification, and filtering. Signal conditioning modules are plugged into a socketed backplane and are secured with a mounting screw. Each channel has 4 corresponding screw terminals for signal connections: channel+, channel-, excitation+, and excitation-. These terminals satisfy all transducer inputs and provide sensor excitation if necessary. Access to the signal conditioning modules is through a removable top panel.

High Throughput Rate

Supports sample throughput rates up to 180,000 samples per second.

Built-in AC Power Supply

The built-in switching AC power supply allows the DI-785 to be powered directly from AC line voltage.

High Resolution

14-bit resolution analog to digital conversion provides a responsive instrument capable of registering changes as small as one part in $\pm 8,192$ ($\pm 0.012\%$ of the full scale measurement range).

Synchronized Distributed Ethernet Data Acquisition

The Ethernet communications option connects DI-785 products to any local area network (LAN). Direct Internet access is also possible. This patent-pending communication option uses standard CAT-5 cable to yield continuous data acquisition throughput rates up to 180kHz. Multiple DI-785, DI-788, DI-720, or DI-730 products may be daisy-chained together to form an ad-hoc extended network of autonomous, yet fully synchronous data acquisition stations. Station separation can be as far as 100 meters. See page 22 for more information.

Convenient Signal Connection

Eight 16-position removable screw terminal blocks allow signal connections to be made easily to the DI-785.

Included Software

Be up and running minutes out of the box with WINDAQ software. WINDAQ/Lite Recording and Playback software is included free with the purchase of every DI-785 instrument. Use the Playback software to review, measure, compare, and analyze data during or after recording data.

DI-788 Industrial Data Acquisition System

NEW Ethernet Interface provides distributed and synchronous data acquisition. See page 22 for more information.



Features

For Use with Plug-in Signal Conditioning Modules

Each channel on the DI-788 accommodates one DI-8B module. These modules provide a single channel of isolated input protection, amplification, and filtering. Signal conditioning modules are plugged into a socketed backplane and are secured with a mounting screw. Each channel has 4 corresponding screw terminals for signal connections: channel+, channel-, excitation+, and excitation-. These terminals satisfy all transducer inputs and provide sensor excitation if necessary. Access to the signal conditioning modules is through a removable top panel.

High Throughput Rate

Supports sample throughput rates up to 180,000 samples per second.

Built-in AC Power Supply

The built-in switching AC power supply allows the DI-788 to be powered directly from AC line voltage.

High Resolution

14-bit resolution analog to digital conversion provides a responsive instrument capable of registering changes as small as one part in $\pm 8,192$ ($\pm 0.012\%$ of the full scale measurement range).

Synchronized Distributed Ethernet Data Acquisition

The Ethernet communications option connects DI-788 products to any local area network (LAN). Direct Internet access is also possible. This patent-pending communication option uses standard CAT-5 cable to yield continuous data acquisition throughput rates up to 180kHz. Multiple DI-788, DI-785, DI-720, and DI-730 products may be daisy-chained together to form an ad-hoc extended network of autonomous, yet fully synchronous data acquisition stations. Station separation can be as far as 100 meters. See page 22 for more information.

Convenient Signal Connection

Eight 16-position removable screw terminal blocks allow signal connections to be made easily to the DI-788.

Included Software

Be up and running minutes out of the box with WINDAQ software. WINDAQ/Lite Recording and Playback software is included free with the purchase of every DI-788 instrument. Use the Playback software to review, measure, compare, and analyze data during or after recording data.

Accepts 32 Fully Isolated DI-8B Plug-In Amplifiers

Distributed Synchronous Ethernet Interface

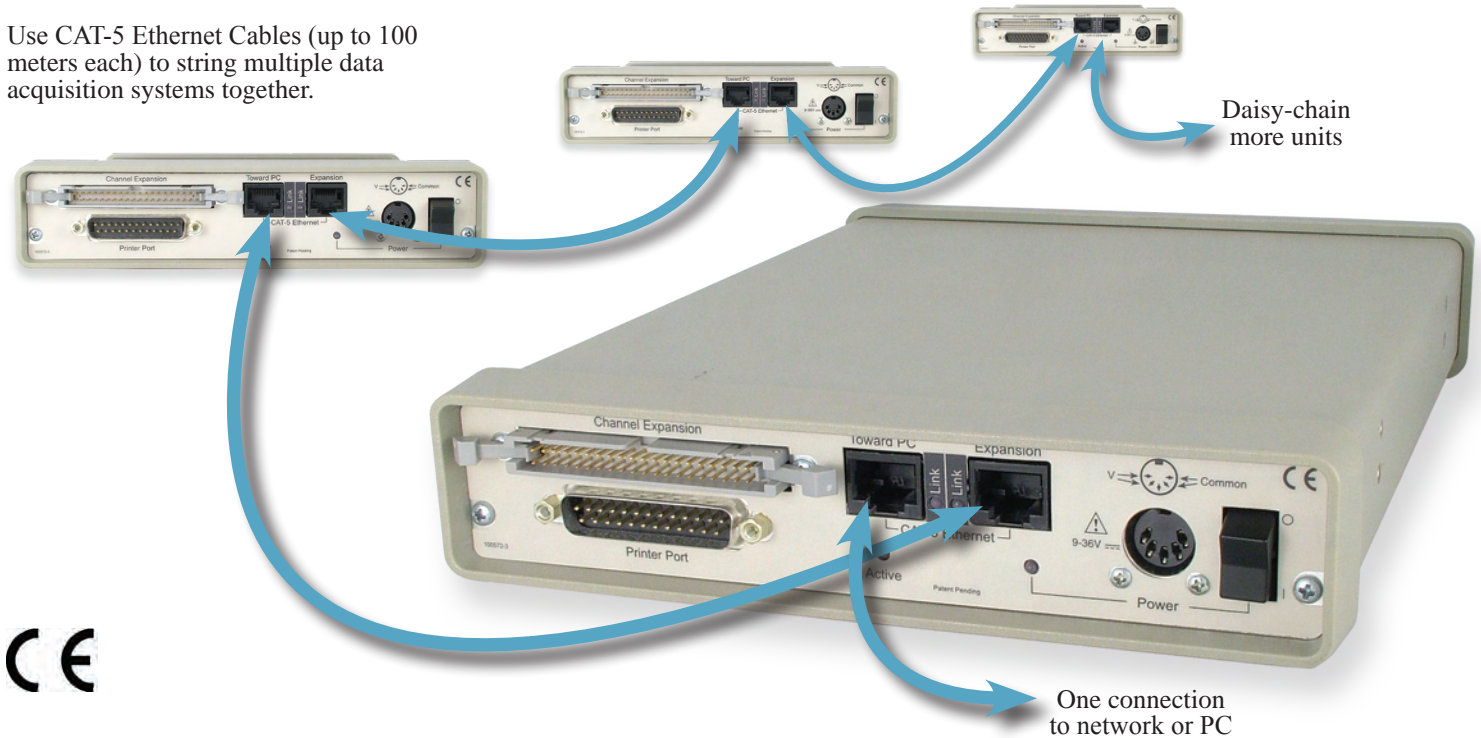
14-Bit Resolution

Up to 180kHz Sample Throughput Rate

The DI-788 supports 32 isolated input channels designed specifically for DI-8B isolated amplifier modules and incorporates our new patent-pending synchronous Ethernet interface. The 788 provides the most complete, cost-effective, and adaptable data acquisition system available. Use any combination of DI-8B signal conditioning modules to suit any application. Connect multiple 788s (and/or DI-720/730/785) systems together to form one synchronized data acquisition system.

Distributed Synchronous Data Acquisition

Use CAT-5 Ethernet Cables (up to 100 meters each) to string multiple data acquisition systems together.



Daisy-chain more units

One connection to network or PC

Features

Connect Multiple DI-720, DI-722, DI-730, DI-785 and/or DI-788 Ethernet products together to form one distributed synchronous data acquisition system

Customize a data acquisition system to suit any application

Data acquisition systems are typically synchronized or distributed, but not both. Now, a new patent-pending class of high-speed data acquisition hardware from DATAQ Instruments gives you the best of both worlds. With it you can acquire data across a dispersed network of data acquisition systems, with complete synchronization.

Distribute over Large Distances

Multiple DI-720, DI-722, DI-730, DI-785, and/or DI-788 Ethernet products may be daisy-chained together with CAT-5 cable to form an ad-hoc extended network of separated, yet fully synchronous data acquisition stations. The maximum distance between stations can be as much as 100 meters, and, using multiple stations, a distributed data acquisition network of virtually any length may be deployed.

High Sample Rates

The Ethernet option of DI-720, DI-722, DI-730, DI-785, and DI-788 products can yield continuous data acquisition rates up to 180KHz throughput for a single device (hardware dependent). Multiple devices connected to the same network can achieve a total throughput rate as high as 1MHz or more (each unit is limited to 150KHz).

Included Software

WINDAQ software supplied with Ethernet interface versions of the DI-720, DI-722, DI-730, DI-785, and DI-788 provide a complete environment for managing multiple networks and ensuring synchronous data acquisition, real time display, stream-to-disk, playback, export, and analysis.

Typical Applications

Metal Mill applications

- Steel strip mill
- Continuous Pickle lines
- Temper steel rolling mills
- Continuous steel casting
- Seamless steel pipe mills
- Continuous aluminum casting
- Aluminum rolling mills

Pulp and paper mills

- Wire processes
- Presses
- Dryers
- Size presses
- Calendars
- Reelers
- Unwinders and slitters

PLC fine tuning and troubleshooting to detect:

- Electrical sequencing variations and flaws
- Mechanical valve actuation latencies
- Motor timing conflicts
- Hydraulic spikes or drop outs

Structural wind/weather measurements and audits

- Tall buildings
- Long bridge spans
- Floating platforms like oil rigs
- Extended length vessels like super tankers

Web printing press

DI-770 PC Oscilloscope



Features

Flexible Performance

Used by itself or in combination with other DATAQ Instruments products, the DI-770 Oscilloscope replaces conventional digital storage oscilloscopes (DSOs) that lack the DI-770's small size and direct computer compatibility. Add to this the instrument's ability to operate incrementally as a voltmeter, data logger, spectrum analyzer, and a function/arbitrary waveform generator and the instrument is solidly positioned as an alternative to multiple, bulky conventional instruments. Size matters in field maintenance and troubleshooting applications and the DI-770 Oscilloscope is the smallest multi-instrument solution available.

5 Virtual Instruments in One

DI-770 Hardware coupled with the provided WINDAQ/Scope Software essentially offers 5 virtual instruments: an Oscilloscope, Voltmeter, Data Logger, Spectrum Analyzer, and Function/Arbitrary Waveform Generator.

High Resolution

8-, 12-, 14-, or 16-bit measurement resolution is possible depending upon sample rate.

Easy to Connect and Use

The DI-770 oscilloscope features a USB 2.0 interface that is backward compatible with USB 1.1. Power is derived directly through the USB cable so no external power supply is required.

Compact Size

Measuring only 9 × 7.3 × 1.5 inches—the same size as our DI-720 and DI-730 Series instruments—the DI-770 oscilloscope is the smallest multi-instrument solution for field maintenance and troubleshooting applications.

Stackable

The DI-770 oscilloscope can be directly mounted on any DI-720 or DI-730 Series instrument to create a system combination capable of addressing the entire industrial spectrum of voltages and frequencies.

High Measurement Range and Sample Rate

Each channel provides a 200mV to 80V full scale input range, a 128K sample record buffer, and supports a sampling rate per channel of up to 100 MHz, depending upon the model.

200mV to 80V Full Scale Measurement Range

USB Interface

2 Analog Input Channels

Sample Throughput Rates up to 100MHz

Up to 16-bit Measurement Resolution

DI-770 Series Oscilloscope products provide hardware and software to support high speed data acquisition in a manner that is both price- and performance-competitive with stand-alone digital storage oscilloscopes. Two hardware versions are offered, one sampling at a maximum rate of 25 MHz and another at 100 MHz. Both are supported by WINDAQ/Scope software which offers five virtual instruments in one: An oscilloscope, voltmeter, spectrum analyzer, data logger, and a function/arbitrary waveform generator. These features offer unprecedented instrumentation power, speed, and flexibility.

DI-900 MB Series



Shown: a DI-902MB, a DI-932MB, and a DI-942MB

Features

**Din Rail Mountable
Analog and Discrete I/O
Modules**

**Modbus-RTU Protocol
for Distributed I/O
Applications**

**RS-485 Communication
Up to 115K bps**

All DI-900MB modules communicate over a high-speed RS-485 network supporting data transfer rates up to 115K baud. Analog input modules accept variable DC voltage, current, and thermocouple sensor signals and feature local limit alarm capabilities. Analog output modules provide DC voltage or current field control signals for local displays, recorders, variable frequency drives, valves, and other control equipment. Discrete I/O modules monitor and/or control the on/off status of industrial devices. All modules may be mixed/matched and coexist on the same Modbus network.

The DI-900MB Series is a collection of analog and discrete I/O modules with Modbus-RTU protocol network communication. These modules are ideal for a wide variety of distributed I/O applications including data acquisition and control, process monitoring, and test and measurement. Windows-based configuration software simplifies module setup with easy selection of input/output ranges, alarm set points, and other operating parameters.

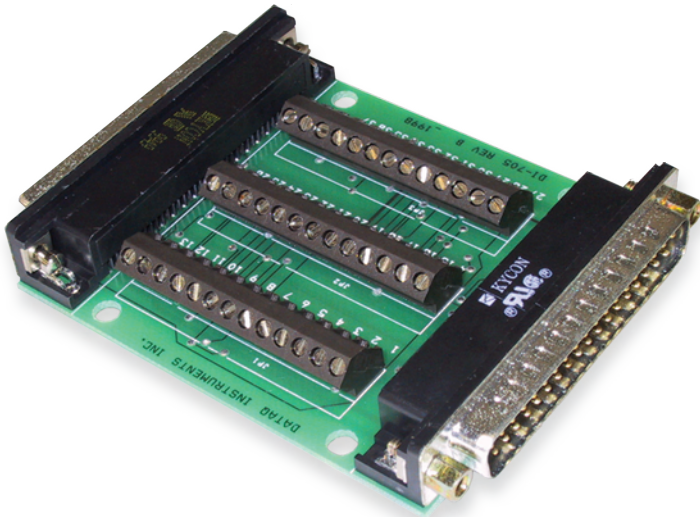
Model:	901	902	903	904	905	906	913	914	917	918	924	932	934	942
Analog Inputs														
DC Voltage								X						
DC Current							X							
DC millivolt											X			
Thermocouple											X			
RTD/resistance												X	X	
Frequency														X
AC current*							X							
Analog Outputs														
DC voltage										X				
DC current									X					
Discrete Inputs														
Active low	X		X											
Active high				X		X								
Discrete Output														
Sinking (low-side switch)		X	X											
Sourcing (high-side switch)					X	X								
Limit alarm							X	X	X	X	X			
Limit alarm												X	X	X
Power Configuration														
DC powered	X	X	X	X	X	X	X	X	X	X	X	X	X	X
AC powered	X	X	X	X	X	X	X	X	X	X	X	X	X	X

*requires external sensor

Data Acquisition Accessories

DI-205

The DI-205 is a 16-channel signal interface (or termination panel) for general purpose input and output. It supports any of our instruments that have 37-pin D-type input connectors and provides a convenient approach for connecting digital input/output, analog output, and analog input (both single-ended and differential) signals. Access is via terminal strip for digital and analog output signals and 5-way binding posts (banana sockets) for analog input. Includes a 6-foot cable for connection to the host data acquisition instrument.



DI-705

The DI-705 is a screw terminal signal interface that provides an alternate way to interface analog input and digital input/output signals to any of our instruments that have 37-pin D-type input connectors. The DI-705 provides signal access through screw terminal strips when plugged into the host instrument's 37-pin D-type connector. The terminal strips accept 16 to 22 gauge wire and each screw terminal is silk screened with the corresponding "D" connector pin number. The DI-705 also features a 37-pin male "pass-through" connector, which allows you to connect CABL-4, the DI-75B, or any 37-pin DAS-16 compatible device to the host instrument while still allowing screw terminal access.

DI-706

The DI-706 is a banana jack signal interface that provides an alternate way to interface analog input signals to any of our instruments that have 37-pin D-type input connectors. When plugged into the host instrument's 37-pin D-type connector, the DI-706 provides signal access (32 channels) through banana jacks located on the top panel of the instrument. The DI-706 is offered in two configurations; one for host instruments that feature differential-only measurement capability (DI-722, DI-725, etc.), and one for host instruments that offer both differential and single-ended measurement capability (DI-720 Series, etc.).



CABL-4 (16 BNC Female to 37-Pin D-Type Female)

CABL-4 is an interface cable that has a four-foot overall length and features a 37-pin D-type female connector on one end and 16 individually labeled female BNC connectors on the other. CABL-4 allows the fast connect/disconnect of typically high level analog input signals through its popular BNC style connectors. CABL-4 is designed primarily for use with DI-720 Series and DI-722 Series instruments.

Data Acquisition Starter Kits

DI-158 Series

- Record Data at sampling rates up to 14,400 samples/second.
- Low-cost, compact data acquisition kit with 12-bit resolution.
- Convenient USB interface.
- Four $\pm 10V$ or $\pm 64V$ fixed differential analog inputs.
- Four general purpose bidirectional digital ports.

Product Highlights

DI-158 products break new ground in price and performance, offering advanced features and options usually reserved for more expensive instruments. A channel scan list, high sample throughput rates, and an advanced computer interface are just some of the features combined to produce a robust instrument that can be applied to nearly any data acquisition situation where low and high level signals need to be acquired to a PC. These USB devices are powered directly through the USB interface. Gain range per channel options are 1, 2, 4, and 8 with a full scale range of ± 10 volts or 1, 2, 4, 8, 16, 32, 64, 128, 256, and 512 with a full scale range of ± 64 volts.

Each kit includes: (1) Model DI-158 data acquisition hardware device; (2) a CD-ROM containing WINDAQ acquisition and analysis software, a full multi media software demonstration, application notes and articles; (3) a communications cable to connect to your PC; and (4) a screwdriver to connect signals.



DI-195B

- Low-Cost Starter Kit With Signal-Conditioned Inputs.
- Two Input Channels, 12-Bit, $\pm 5V$ ADC.
- Convenient Serial Port Interface.
- Accepts DI-5B Series Plug-In Signal Conditioners.
- Includes WINDAQ/Lite recording and playback software.

Product Highlights

The DI-195B starter kit is a low-cost, two-channel data acquisition starter kit with one important distinction; it features signal-conditioned inputs. It offers 12-bit measurement accuracy, a $\pm 5V$ analog measurement range, up to 240 samples/second throughput, and a convenient serial port interface. Best of all, the signal-conditioned inputs allow you to connect to virtually any industrial signal (i.e., VDC, VAC, thermocouple, RTD, frequency, current, potentiometer, strain, etc.) with 600 volt input-to-output isolation.

Our DI-195B starter kit provides a taste of the exceptional power and speed possible with WINDAQ software. When connected to your PC's serial port, the DI-195B starter kit allows you to record, display, and analyze data using your own signals. The DI-195B is a small compact instrument measuring only $3\frac{3}{4} \times 6\frac{1}{2}$ inches.

Each kit includes: (1) Model DI-195B data acquisition hardware device; (2) a CD-ROM containing WINDAQ acquisition and analysis software, a full multi media software demonstration, application notes and articles; (3) a communications cable to connect to your PC; (4) a power adapter; and (5) a screwdriver to connect signals.



Data Acquisition Starter Kits

DI-148U

- Low-cost, compact data acquisition kit with 10-bit resolution.
- Convenient USB interface.
- Record data at sampling rates up to 14,400 samples/second.
- Eight $\pm 10V$ single-ended analog inputs.
- Six general purpose bidirectional digital ports.

Product Highlights

The DI-148U is a PC-based instruments that offers high data acquisition performance for an extremely low price. The DI-148U has eight single-ended analog input channels with a fixed ± 10 Volt full scale range. Analog to Digital conversion resolution is 10 bits, allowing a minimum voltage sensitivity of $\pm 19.5mV$. Six bidirectional TTL ports may be used for general-purpose control. Two built-in, 8-position screw terminal connectors allow easy and secure access to all DI-148 signal I/O connections without the need for extra options. The DI-148U is highly portable and comes in a small plastic enclosure measuring $2\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{4}$ inches and weighing only 3 ounces. Power is derived through the USB port so no external power source is required.

Each kit includes: (1) Model DI-148U data acquisition hardware device; (2) a CD-ROM containing WINDAQ acquisition and analysis software, a full multi media software demonstration, application notes and articles; (3) a USB communications cable to connect to your PC; and (4) a screwdriver to connect signals.



DI-194RS

- Low-cost, compact data acquisition kit with 10-bit measurement resolution.
- RS-232 (serial port) interface.
- Record data at sampling rates up to 240 samples/second.
- Four $\pm 10V$ single-ended analog inputs.
- Two digital input bits for remote control.
- One digital output with a square wave generator.

Product Highlights

The DI-194RS is our lowest cost (\$24.95*) PC-based data acquisition starter kit offering four single-ended analog input channels at a $\pm 10V$ full scale measurement range with 10-bit resolution. It features a serial port interface for easy connection and installation to your computer. Power is derived through the serial port interface so no external power is required. Two digital input bits are provided for remote start/stop and remote event marker placement. A digital output port is provided with an onboard square wave signal generator.

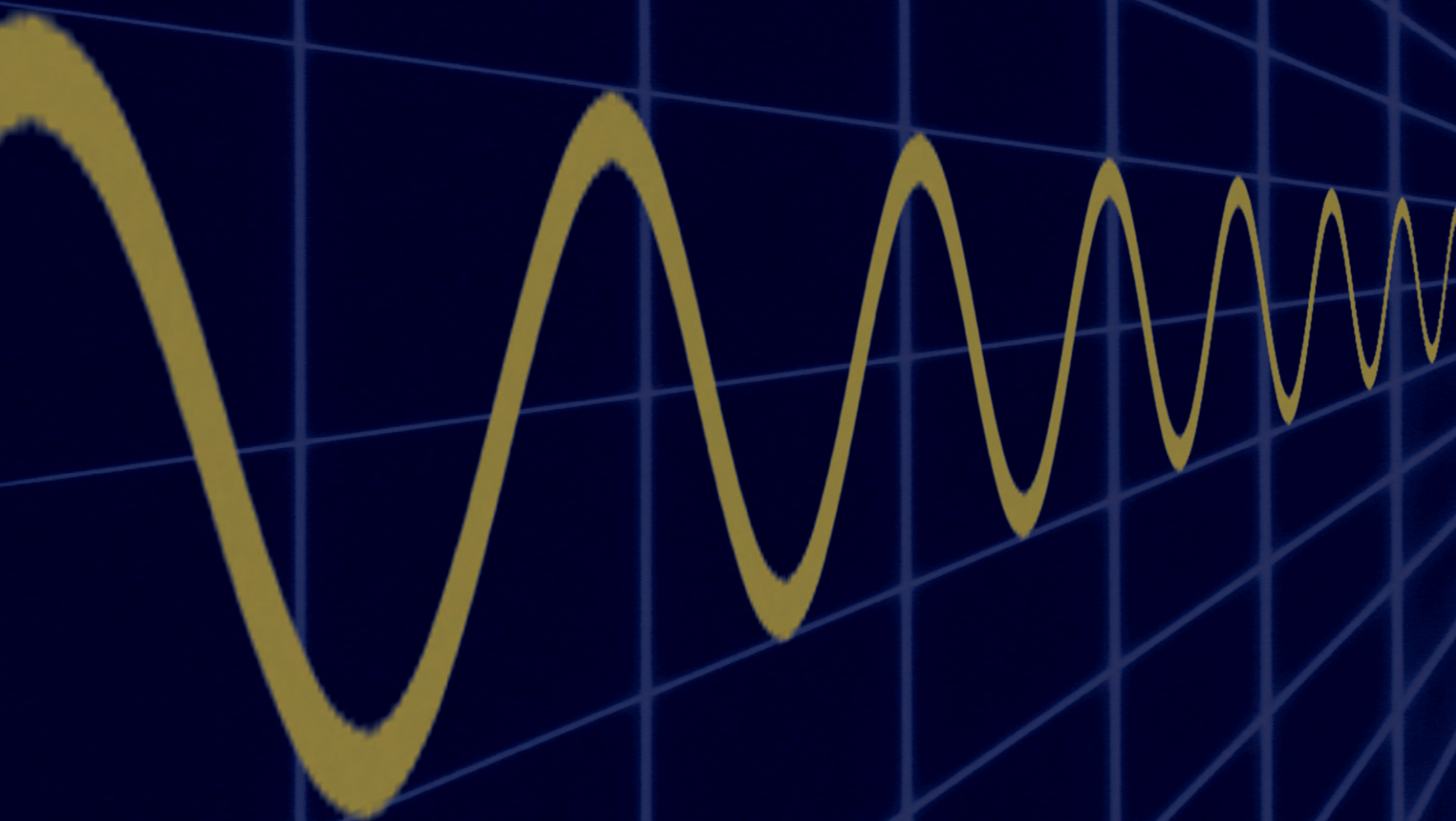
The DI-194RS comes in a compact lightweight package measuring only $2\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{4}$ inches and weighing less than 3 ounces. The built-in 8 port screw terminal block allows for quick and easy signal connections. The DI-194RS is the most affordable and convenient way to try our WINDAQ data acquisition and analysis software package.

Each kit includes: (1) Model DI-194RS data acquisition hardware device; (2) a CD-ROM containing WINDAQ acquisition and analysis software, a full multi media software demonstration, application notes and articles; (3) an RS-232 Serial Port communications cable to connect to your PC; and (4) a screwdriver to connect signals.



*For purchases made in the U.S. only.

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