


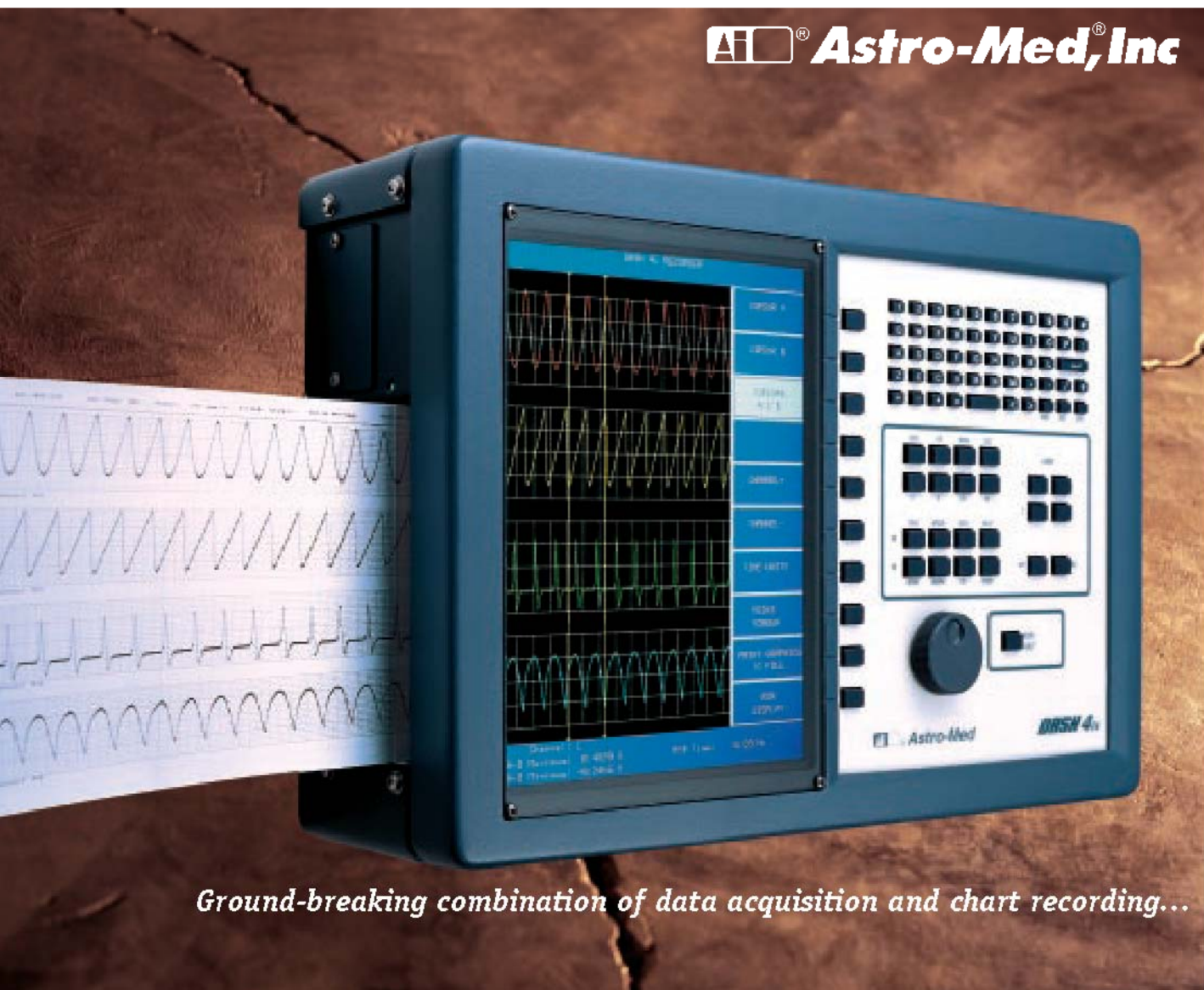
Introducing...

the New Dash 4u

Data Acquisition Recorder

- *Isolated Signal Conditioning for any application*
- *10.4" Color Monitor for real-time viewing and review*
- *Four channels with 50 kHz sample rate*
- *Two additional channels for real-time mathematics: addition, subtraction, multiplication, division, integration, differentiation, and three power calculations*
- *Internal 4 GByte hard drive for data capture*
- *100 MByte removable ZIP drive for data transfer*
- *Rugged compact case -- less than 22 lbs.*
- *Handy Z-fold chart*

 **Astro-Med, Inc**



Ground-breaking combination of data acquisition and chart recording...

Dash 4U: Power in a Lightweight, Portable Package

The new Dash 4U opens new horizons in portable data acquisition and recording. With four universal input channels plus two calculating channels, a big, bright 10.4-inch color monitor, built-in hard drive, Zip® drive and uninterruptable power supply, the Dash 4U is ideal for the most demanding applications.

Portable Design, Rugged Construction

The Dash 4U is the perfect take-along data acquisition recorder. Weighing only 22 lbs., it's small enough to easily fit under an airline seat. Pick it up, take it anywhere to acquire, record, and analyze virtually any signal.

Extended Universal Inputs

The Dash 4U features true universal inputs, allowing an extensive variety of signals to be recorded. No additional modules or front-end filtering. Just "plug and play".

The universal inputs support an extensive range of input signals -- single-ended, differential and isolated high voltage; thermocouples and RTD's; DC bridge and frequency to voltage conversions -- the Dash 4U handles them all with ease.

Big, Bright Monitor for Real-time Data Monitoring

Now you can monitor and review your data on a big, bright, color monitor. Data is easily visible, even at a distance and each waveform can be color coded for quick identification.

You can turn the chart off and monitor activity on the display, using the powerful triggering functions to only run the chart when necessary - saving paper and money.

Four Channels at 50 kHz

With individual 14-bit A/D converters and a 50 kHz sample rate per channel, the Dash 4U accurately reproduces signals with frequencies up to 5 kHz for voltage measurements and wide bandwidth for other measurements.

Two Additional Math Channels

In addition to the four standard universal input channels, the Dash 4U has the unique capability to perform real-time mathematical functions and display the results in real-time on the monitor and on the chart. Interchannel addition, subtraction, multiplication, division, integration and derivative are supported in addition to a number of power measurements including RMS, apparent power, true power and power factor.

Memory and Storage with 4.2 GB internal hard drive and 100 MB Zip Drive

The Dash 4U is much more than just a chart recorder - it's a complete data acquisition and management system. Record data to the 4.2 GByte internal hard drive for playback and review later. Conveniently transfer data to the built-in removable Zip drive and use your computer for further analysis or archiving. Also transfer data directly to a PC via built-in Ethernet or SCSI interfaces.

Review and Playback

Once data has been captured to memory, the Dash 4U monitor really goes to work. Captured data can be displayed on the screen, giving you a quick look at all your data files. On screen cursors handle the rest, providing timing and amplitude information. For even more detail, simply zoom in on important events.

Laser-printer Quality Chart Resolution

Even with the built-in monitor and huge data storage capability, there

are many times when only a chart print-out will suffice -- so we added a sharp, 300 dpi print engine to the Dash 4U. The high resolution, 5.5-inch wide chart gives you real-time recording at the touch of a button. Chart speeds from 1mm/hour to 100 mm/sec can be selected from the front panel and channels can be displayed in any format, from individual to overlap to completely custom.

Setup Entire Test From PC

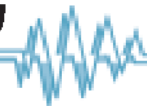
Using AstroSET™, the Dash 4U offline setup program, test setup is easier than ever. With its intuitive interface, this Windows®-based program gets you up and running in minutes.

AstroVIEW C Software

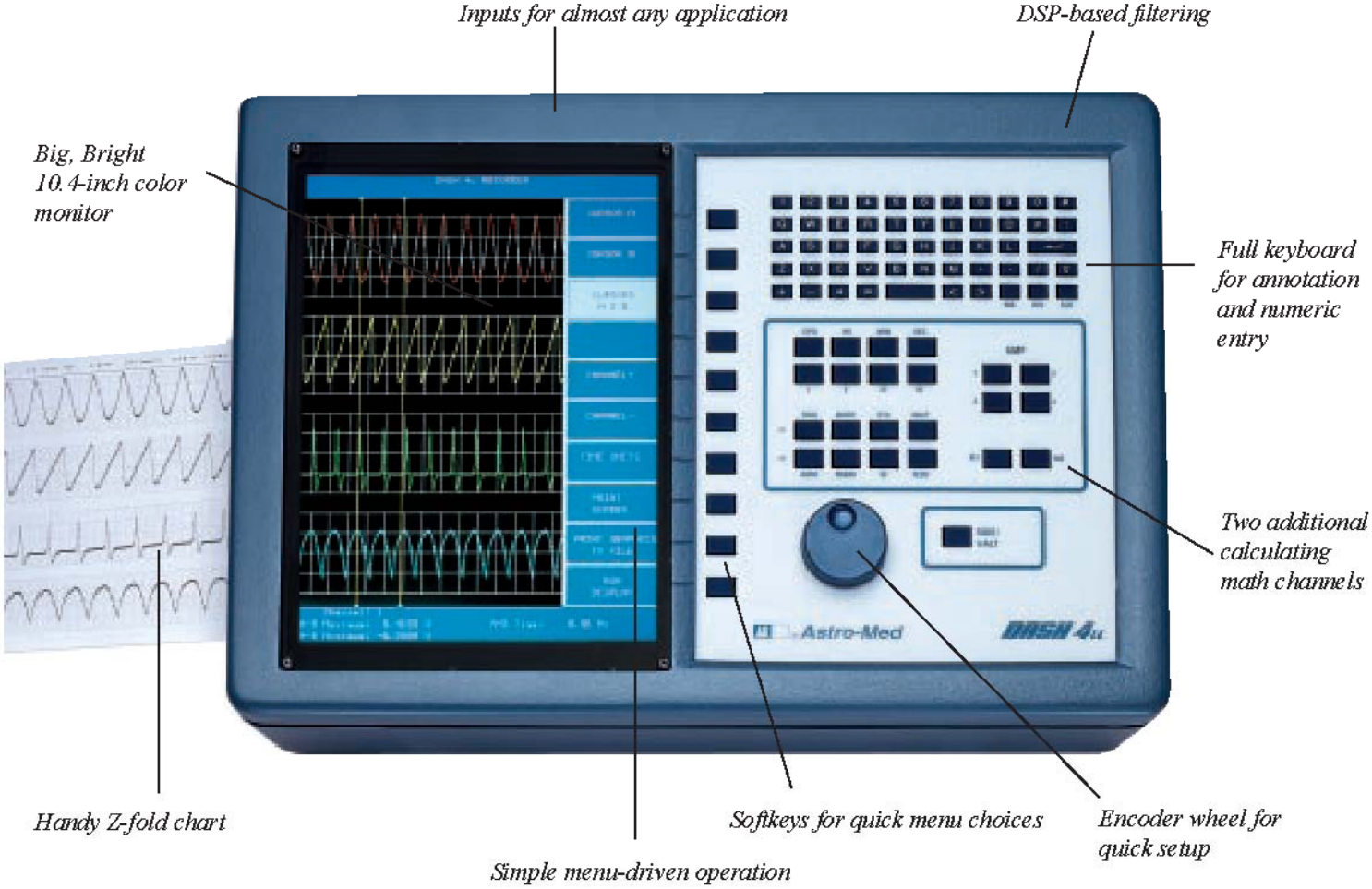
And once you have your data, AstroVIEW C, the Dash 4U's Windows®-based data transfer, review and analysis software package, makes it easier than ever to get the most from your data. Fast transfer from recorder to PC, viewing data on your computer monitor, importing data into your data analysis program - [AstroVIEW C does it all.](#)



Special Features of the Dash 4u



Front View



End View



An Isolated Input for Any Application



The Dash 4u has universal inputs - in almost every sense of the word. A single set of connectors provides direct connection for single-ended or differential voltage, thermocouple, DC Bridge, RTD, High Voltage and Frequency to Voltage measurements. The Dash 4u eliminates the need to keep track of external adaptor modules - just plug in and measure.

Universal Inputs

The Dash 4u comes with four isolated universal input channels, eight event channels and two calculating math channels.

Isolated Single-Ended Voltage

Ideal for a wide variety of measurements, the single-ended input is designed for voltages up to 250 Vrms, 400 V full scale range. Simply select the full-scale voltage you need from hundreds of ranges and start recording.

Differential Voltages

No need to worry about having to supply external amplification to millivolt signals. With the Dash 4u the differential voltage input is designed to accept low level voltages, from 5 mV to 1600 mV full scale.

Thermocouple

The thermocouple input supports Types J, K, E and T thermocouples and has a bandwidth of 10 Hz. Linearization and cold junction compensation are standard, as well as Fahrenheit and Celsius scale measurements.

DC Bridge

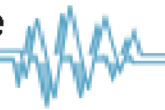
Perfect for a wide variety of load cells and pressure transducers, the DC bridge input offers an isolated 10V excitation source at up to 30 mA. You can balance inherent offset with the touch of a button using the Dash 4u's autobalance feature. Designed for transducers with 1 to 3 mV/V outputs, this input can be used for other DC bridge measurements with the addition of completion resistors.

RTD

The Dash 4u also supports direct connection of platinum RTD's with a 100-ohm nominal impedance, or PT100. The RTD input supports 2-, 3-, and 4-wire RTD measurements, with linearization optimized for a temperature range from -100°C to 450°C.

Frequency-to-Voltage

The frequency-to-voltage input adds the capability of direct frequency recording. Any input type on channel 1 can be used to measure frequency with spans from 5 to 5000 Hz.



Real-Time Signal Mathematics

Two Dedicated Math Channels

With the built-in math functions of the Dash 4u, you can add, subtract, multiply or divide different signals in real-time. Imagine - no more waiting until after you have captured your data to make important decisions.

The Dash 4u has two dedicated, real-time math channels in addition to the four universal input channels.

The Dash 4u's intuitive, menu-driven interface allows you to quickly set up interchannel math. You can customize the scaling by choosing output range, offset, filtering and units for each channel. Or at the touch of a button, the Dash 4u will automatically optimize your output scaling for you.

Additional functions provided

in the MATH menu include: root mean square (rms), integration, differentiation, apparent power, true power and power factor.

The math signals can be viewed in either Y-T or numeric format. The math channel can be recorded in real time or logged numerically.

Post Process FFT

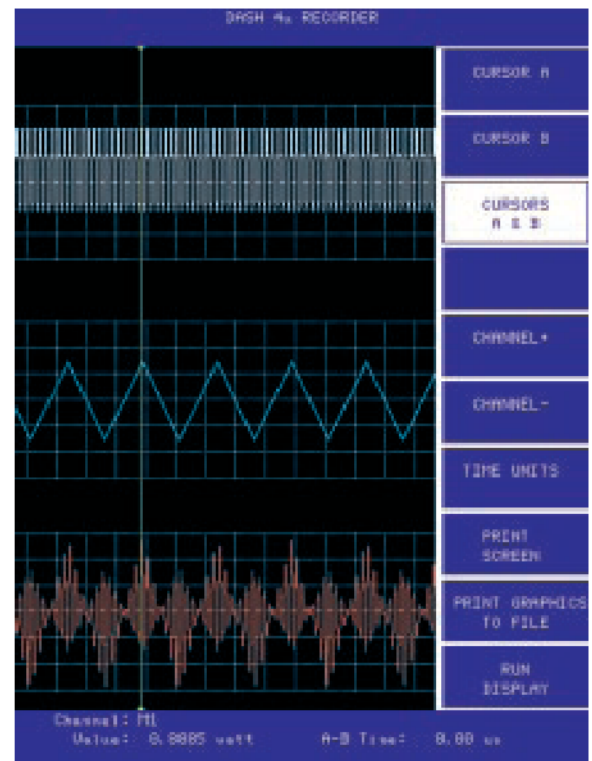
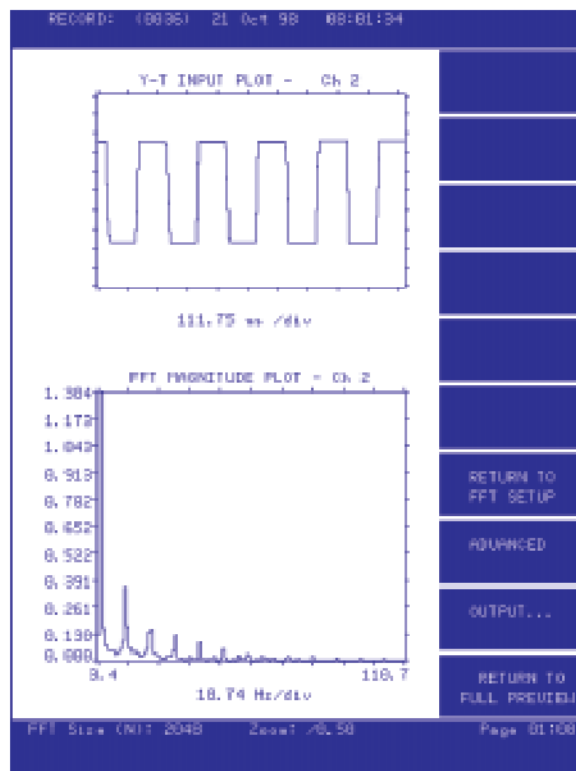
The Dash 4u Math Feature also includes powerful FFT analysis software for analyzing data captured on the hard drive. Using cursors on the built-in monitor, you can choose the precise window of data for analysis. In addition, the Dash 4u lets you select from rectangular, triangular or Hamming window filtering as well as FFT window sizes ranging from 256 to 2048 points.

Original Data and FFT Results Displayed Simultaneously

The FFT results - along with the original signal plot - are displayed on the monitor, giving you a quick look at the results, while on-screen cursors provide precise measurements. For a permanent record, a hard-copy can be printed at the touch of a button. To tailor the output for your application, the Dash 4u allows your FFT to be output in logarithmic, linear or magnitude squared format.

Built-in Power Analysis Functions

The Dash 4u provides power measurement capability utilizing the realtime math channels. Apparent power, true power, and power factor can be calculated in realtime based on your voltage and current inputs. Power measurement data can be saved along with the original inputs, for a complete power analysis.



The powerful FFT analysis function is illustrated in the screen capture above. Note that both the original data and the FFT plot are displayed simultaneously. The screen capture to the right illustrates the realtime math capabilities of the Dash 4u data acquisition recorder.

Dash 4u: Power in a Lightweight, Portable Package

10.4 inch Color Display for Real-time Waveform Monitoring and Data Review

Real-time, full-size, color monitor

The Dash 4u displays real-time, real-size waveforms on a big, bright 10.4-inch color monitor. Waveforms are displayed in different colors, producing sharp, easy-to-read data.

Automatic color change with over-range conditions

The power of the color monitor becomes clear when the range limit feature is used. With this feature, you simply select range limits for each channel - independent of other channels - and your waveform will change color whenever these limits are exceeded. This is ideal for monitoring and troubleshooting critical data.

On-screen review with cursors

The monitor offers much more than just great real-time waveforms. The Dash 4u lets you review recorded signal on the monitor, giving you instant access to data. For even greater detail, you can repeatedly zoom in on data.

On-screen cursors make measurements even easier

Timing information may be displayed in relative time, absolute time, or samples. Waveform amplitudes are displayed in volts or in your predefined engineering units. With the Dash 4u, you'll never have to guess about important data again.

Intuitive, menu-driven interface

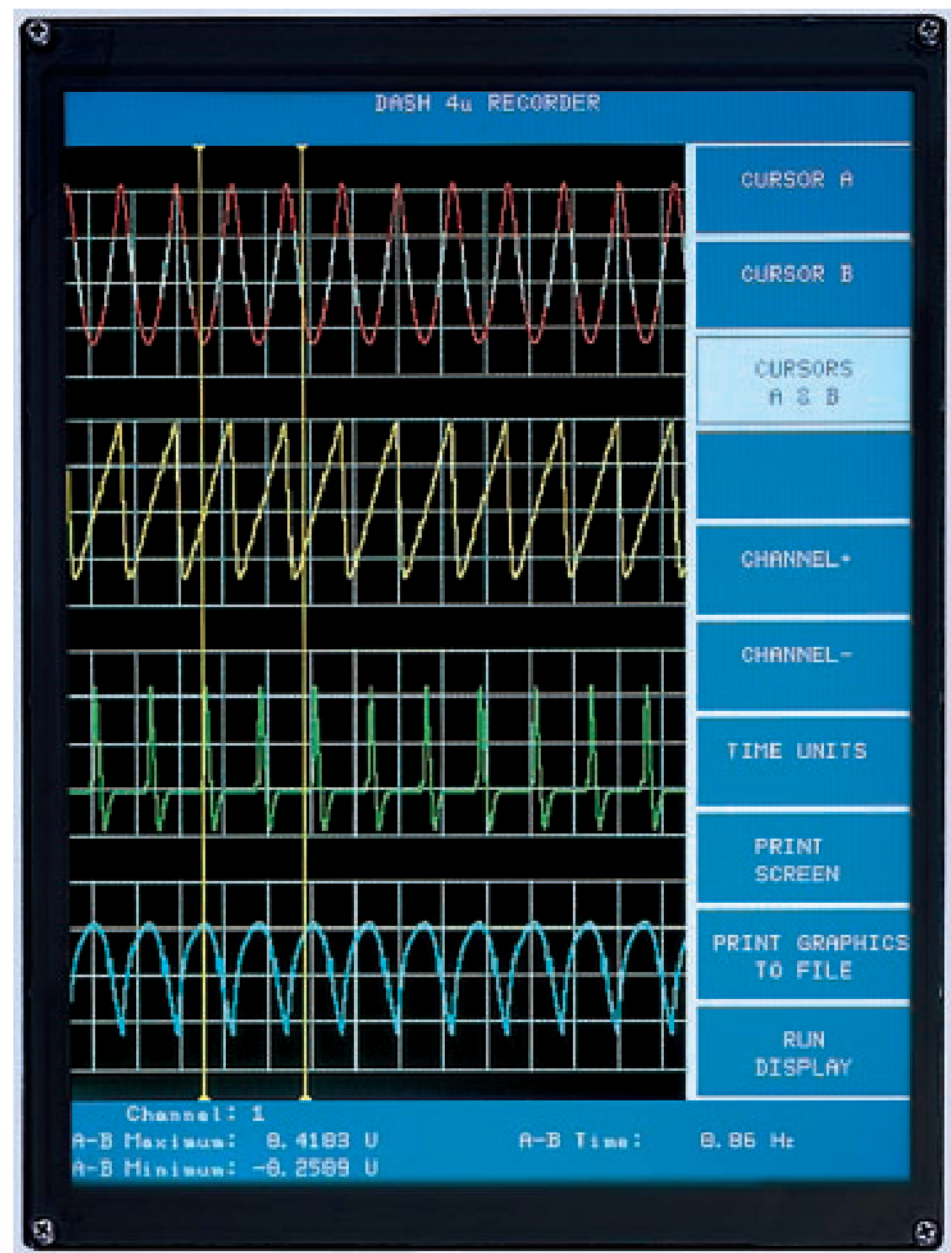
In addition to providing superb data display and review, the monitor provides the Dash 4u's user interface. Large, easy-to-read menus are logically grouped and selected by

softkeys, making all of the powerful features of the Dash 4u recorder easily and instantly accessible.

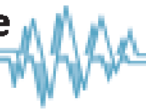
Print Screen to Paper or file

For a quick printout of data, simply press Print Screen for a

laser-printer resolution printout to the Dash 4u's integral chart. A bitmapped image of the screen may also be saved to the internal ZIP drive, a great feature for incorporating data into reports.



The bright, color active matrix LCD display adds a multitude of benefits. The cursors let you measure and analyze signals on-screen, the limit notification feature shown on the top waveform, provides an automatic color change if the waveform exceeds a preset level and multiple waveform colors simplify waveform identification.



High Resolution Printing

300 dot per inch, razor-sharp resolution, z-fold chart

The Dash 4u has a 5.5-inch wide chart with crystal clear, 300 dpi printing. The Z-fold chart can be configured to best suit your applications. Choose the waveform size and location for each channel. With AutoChart, select overlap or individual mode; number of channels and other details -- and the grid size will be generated automatically. You decide whether you want minor grids or no grids at all. Major grid lines can even be

synchronized with the recorder timing marks.

Five forms of alphanumeric printing

The amazingly powerful Dash 4u gives you five different ways to add annotation to the chart -- making your chart record even more complete and useful.

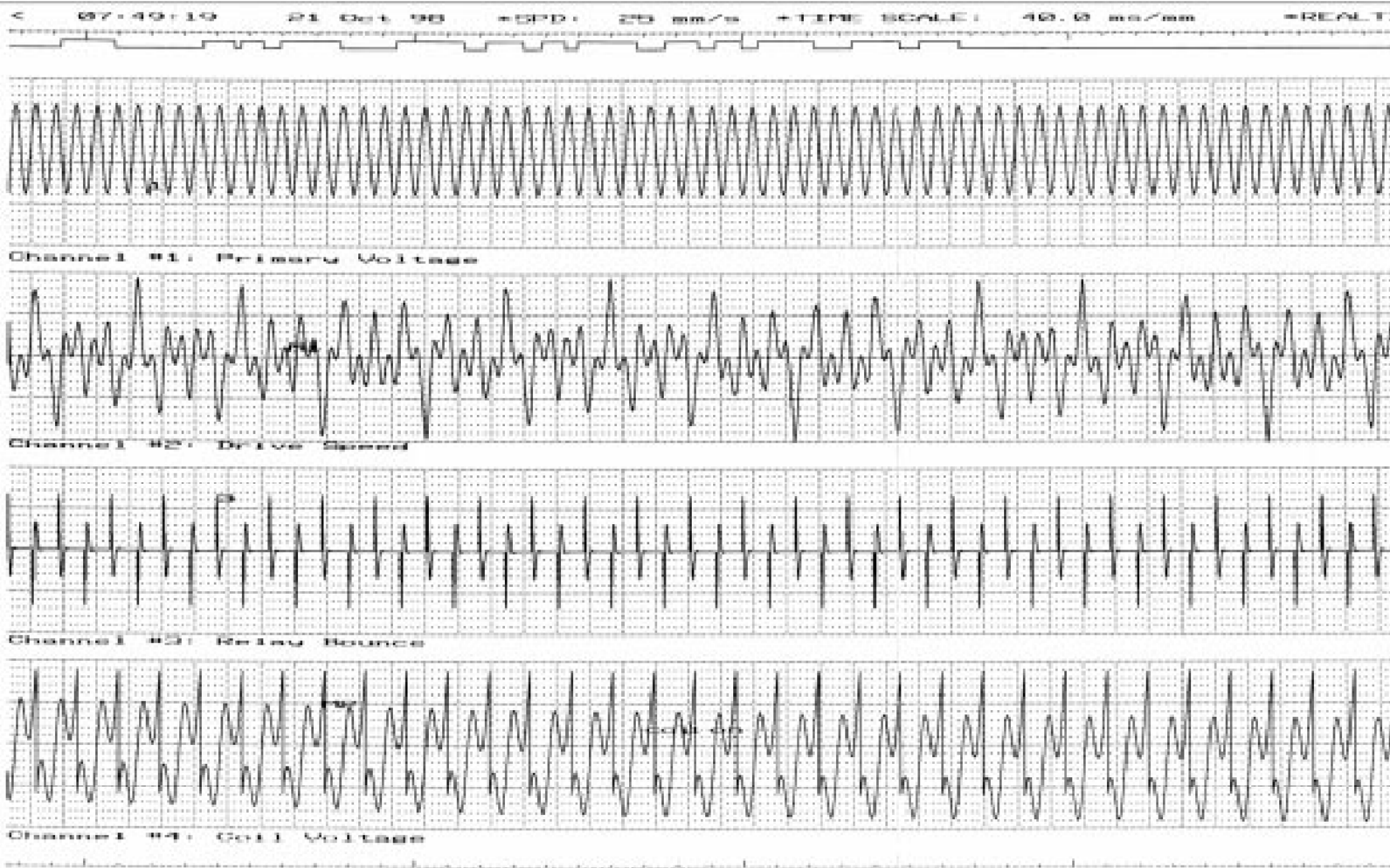
The System Log automatically prints time, date, speed, timebase, operating mode, and user-defined information continually across the top of the chart.

There are six, 128-character, user-defined Channel Annotation Buffers that not only identify each of the waveforms, but contain specific detailed information about each channel.

Each channel has an Amplifier Report that is printed automatically between the channels.

A Numeric Channel ID is printed next to each waveform, simplifying waveform identification.

Finally, the Dash 4u has an "on-the-fly" demand buffer what prints up to 128 characters of text, anywhere on the chart.



The actual chart sample reproduced above illustrates the clarity and flexibility of the Dash 4u chart recorder feature. The stepper motor chart drive system provides hundreds of chart speeds. You can select any chart speed from 1 to 100 mm per second, minute or hour with the touch of a button. For further convenience, remote start/stop and remote chart drive using external signals are standard.

Data Capture/Data Archiving

Huge Memory

The Dash 4u is the only 4-channel recorder with a built-in 4 Gigabyte hard drive for data storage, for almost unlimited data capture. By recording *directly to the hard drive* you have the advantage of non-volatile data storage without creating excessive chart paper records.

Independent Data Capture

With the Dash 4u, the data capture feature is completely independent of real-time recording, allowing you to view a few channels on the monitor or chart while simultaneously capturing all six signals to the hard drive.

Flexible Acquisition Parameters

The Dash 4u offers unparalleled flexibility when acquiring data. Choose data capture sample rates

ranging from once per minute to 50kHz per channel, spanning applications from process trending to voltage glitch capture. The Dash 4u will even calculate data capture duration based on your settings.

Intelligent Triggering

Data capture to the internal hard drive can be initiated by a wide range of triggering events -- including: manual triggering via front panel key; defined waveform activity including slope, level, window and slew rate triggers; time-based clock triggers; or activity from an external source.

External triggers are communicated through the UTILITY D-shell and can be combined in "AND" or "OR" relationships to create a large number of trigger options.

Pre- and Post-Trigger Acquisition

In addition to an extensive variety of triggers, the Dash 4u let's you define how much of the record is captured *before a trigger occurs*. You can see the events leading up to a trigger, the trigger point itself, and what occurred after the trigger -- the entire picture!

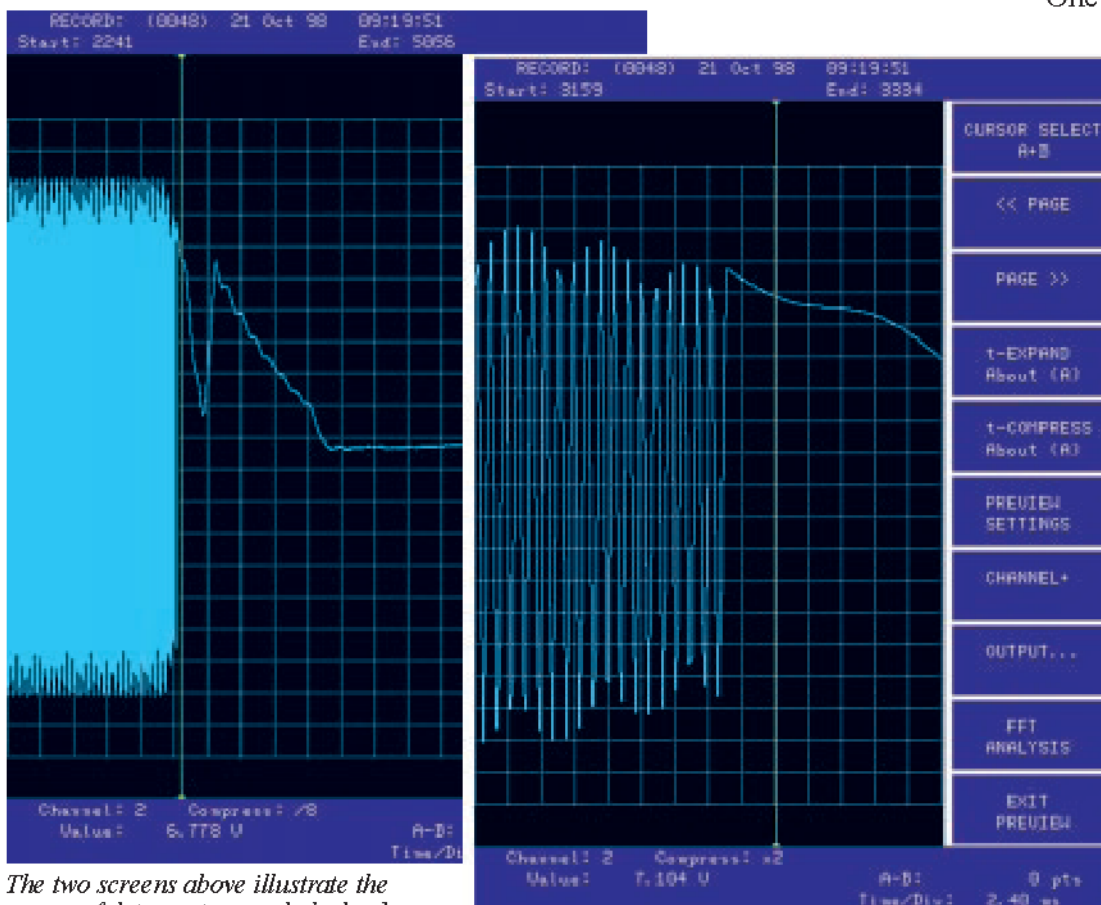
Automated Data Capture

Data can be captured to the hard drive in a variety of ways. Let your application dictate your method, not the recorder. Configure the Dash 4u for single or multiple captures, with automatic or manual re-arming. This powerful feature allows you to leave the Dash 4u anywhere to find intermittent faults, transients or signal anomalies.

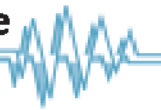
Screen Preview of Captured Data

One of the most useful and innovative features is the Screen Preview option. It allows you to review data records on the display and then, if desired, playback selected screens to paper or save to Zip disk. A complete review of the record, even in varying chart formats, can be done without using any chart paper.

On-screen cursors provide timing and amplitude information, simplifying data interpretation. Use the cursors to select a portion of data and use the ZOOM utility for all the detail you need.



The two screens above illustrate the power of data capture and playback, with the playback screen revealing important additional waveform information.



Data Transfer

AstroVIEW C™ Software

AstroVIEW C, the Dash 4u's Windows-based data transfer, review and analysis software package, makes it easier than ever to get the most from your data. From fast transfer from recorder to PC to viewing data on your computer monitor to importing data into your data analysis program, AstroVIEW C does it all. And best of all, AstroVIEW C will run under Windows 95, Windows 98 and Windows NT.

AstroVIEW C and Data Transfer

The Dash 4u and AstroVIEW C offer you a number of ways to get data to your PC quickly and easily. Whether the application is at a remote site or as near as your laboratory, the Dash 4u has the answer.

Zip Drive

With the Dash 4u's built-in 100 MByte Zip Drive and AstroVIEW C, you can easily copy data acquired by the Dash 4u onto your PC's hard drive. Data stored on a Zip disk can also be read back into the Dash 4u, making it an ideal tool for data archival and playback.

SCSI

For applications where data transmission rates between the Dash 4u and a PC are important, SCSI transfer fits the bill. Simply connect the Dash 4u's SCSI port to a Windows® computer with SCSI board installed and transfer data at up to 1 MByte per second.

Ethernet

For network applications, you can connect the Dash 4u's Ethernet interface to your network and let everyone share the data.

For remote applications, a laptop computer with Ethernet gives you access to your data no matter where you're located.

AstroVIEW C and Data Review

Review data quickly and easily on a PC using AstroVIEW C's powerful Data Review functions. From timing to amplitude measurements, you can get the information you need in the format you need it. Since AstroVIEW C reads data directly in your engineering units, you save the time and trouble of converting units with macros.

Because AstroVIEW C brings data directly into Windows, you can print data directly to a laser printer or paste into Microsoft Word® with a simple mouse click.

AstroVIEW C and Data Measurement

AstroVIEW C is simple enough for anyone to use but powerful enough to handle however much data you give it. For troubleshooting or trending applications, it lets you review an entire record -

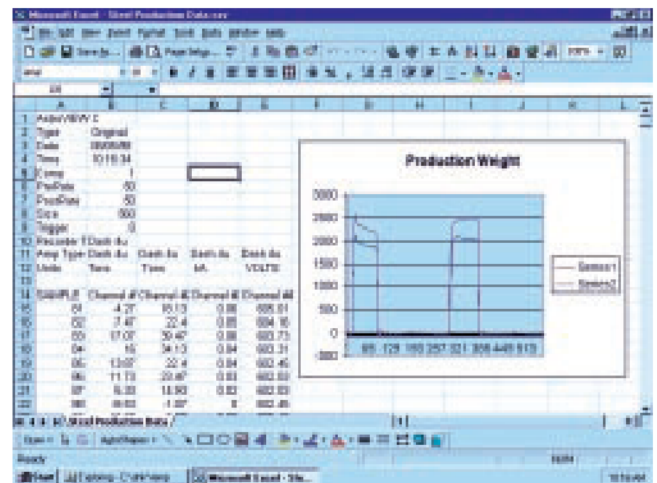
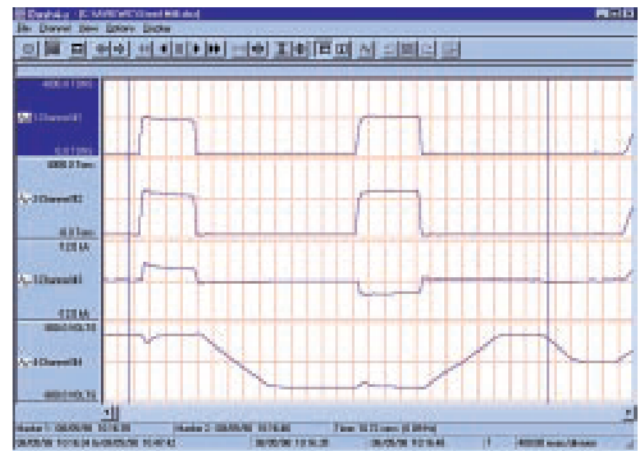
The screen on the upper right illustrates some of the data review capabilities of AstroVIEW C. Data can also be exported into many popular spreadsheet formats such as the Excel® screen shown to the right.

minutes, days, or even weeks of data - all on a single screen.

For even more detail, simply click on important data and perform a timing or amplitude zoom in seconds.

Import Data to Popular Spreadsheets

After capturing data with the Dash 4u and viewing it with AstroVIEW C, built-in conversion routines allow you to convert Dash 4u data to popular spreadsheet formats such as Excel®, Lotus 123®, DADiSP® and MathCad®. It has never been easier to get data from your chart recorder to your analysis program.



Specifications for the Dash 4u Recorder

Summary of Features of the Dash 4u

Isolated, Single-ended Voltage Measurements

Ideal for a wide variety of voltage measurements, the input is designed for voltages between 0.1 and 400 V full scale

Differential Voltage Measurements

The isolated, differential input module accepts inputs from 5 mV to 1600 mV full scale

Thermocouple Measurements

The Thermocouple Input supports Type J, K, E and T thermocouples and has a 10 Hz bandwidth

Frequency Measurements

The Frequency-to-Voltage Input extends the Dash 4u's capability for frequency recording. Frequency range is from 5 Hz to 5 kHz.

Resistance Temperature Detector (RTD)

The Dash 4u supports both 2-wire and 4-wire RTD measurements, with linearization optimized for a temperature range from -100°C to 450 °C

DC Bridge

Perfect for a wide variety of load cells and pressure transducers, the DC Bridge Input offers an isolated 10V excitation source at up to 30 mA

Chart Recorder

Recording method: Direct thermal
Chart size: 140mm W x 139mm L (5.5" W x 5.47" L); Z-fold, 300 sheets, 200'
Resolution: 12 dpm (300 dpi) amplitude and time axis

Waveform Inputs

Number of inputs: Four
Isolation: All signals isolated from chassis and other inputs to 250 Vrms
Bandwidth: 5 kHz (-3dB) except where noted

Data Capture

Media: Sample direct to disk
Sample rate: 0.0167 Hz (once per second) to 50 kHz per channel
Disk capacity: 2 billion samples, 1000 records

Digital Signal Processing

Sample rate: 50 kHz
ADC resolution: 14-bit
Functions: Filter, RMS

Front Panel Display

Type: Active matrix color LCD
Viewing area: 10.4" (diagonal); resolution 640 x 480

Record Review

Formats: Strip chart, numeric tabular, XY-plot
Display: Use cursors to select sections and make measurements

Storage Media

Internal hard drive: 4 GByte std
Removable drive: ZIP™ drive standard

Physical

Case material: Cast aluminum
Dimensions: 16.4" L x 11.2" W x 5.2" H
Weight: 22 lbs. (10 kg)

Isolated, Single-ended Voltage Measurements

Input types: Isolated, single-ended
Connector: Guarded banana jack
Max. rated input: ± 250 Vrms
Measurement ranges: 10 to 400Vfs; 1 to 40 Vfs; 0.1 to 4 Vfs
Accuracy (25°C): $\pm 0.5\%$ of full scale
Input coupling: DC
Minimum input impedance: 1 Mohm
Filter choices: Low pass with stops from 1 Hz to 5 kHz; High pass with starts from 0.1Hz to 100 Hz; Notch with 50 or 60 Hz bandpass center
Zero suppression: Yes
User engineering units: Yes

Differential Voltage Measurements

Input type: Isolated, differential
Connector: Screw terminal header
Absolute max. input: ± 40 V, differential
Measurement range: 200 to 1600 mVfs; 50 to 500 mVfs; 5 to 50 mVfs
Accuracy (25°C): $\pm 0.5\%$ of f.s. ± 50 μ V
Input coupling: DC
Minimum input impedance: 1 Mohm
Filter choices: Low pass with stops from 1 Hz to 5 kHz; high pass with starts

from 0.1Hz to 100 Hz; Notch with 50 or 60 Hz bandpass center
Calibration: Semi-automated using calibration module
Autobalance: Yes (limited to max. span)
Zero suppression: Yes
User engineering units: Yes

Thermocouple Measurements

Input type: Isolated, differential
Connector: Screw terminal header
Absolute maximum input: ± 40 V
Specified ranges: Type J: 0°C to 760°C; Type K: 0°C to 1370°C; Type T: -100°C to 400°C; Type E: -100°C to 750°C
Accuracy (25°C): 0.5% of meas. $+1$ °C
Bandwidth: 10 Hz (-3dB)
Linearization: NIST polynomial
User engineering units: °C or °F

Frequency Measurements

Channel: Channel 1 only
Input type: Any Dash 4U input type
Minimum signal amplitude: 20% of attenuator setting (p•p)
Specified range: 5 Hz to 5 kHz
Minimum/Maximum span: 50 Hz/5 kHz
Accuracy (25°C): 0.5% of span plus 0.1% of reading

Resistance Temperature Detector (RTD)

Input type: Isolated, differential
Connector: Screw terminal (4-wire)
Probe type: DIN 43760 (PT100)
Specified range: -100°C to 450°C
Menu limits: -100°C to 600°C
Minimum span: 50°C
Maximum span: 500°C
Excitation type: Current
Accuracy (25°C): 0.5% of meas. $+ 0.5$ °C
Bandwidth: 10 Hz (-3dB)
User engineering units: °C or °F

DC Bridge

Input type: Isolated, full bridge
Connector: Screw terminal header
Absolute max. input: ± 40 V differential
Excitation: Isolated 10V @30 mA
Measuring ranges: 50-500 mV; 5-50 mVfs
Accuracy (25°C): $\pm 0.5\%$ of f.s. ± 50 μ V
Input coupling: DC
Minimum input impedance: 1 Megohm
Filter choices: Low pass with stops from 1 Hz to 5 kHz; High pass with starts from 0.1 Hz to 100 Hz; Notch with 50 or 60 Hz bandpass center
Autobalance: Yes (limited by max. span)
User engineering units: Yes

Specifications for the Dash 4u Recorder

Dash 4u General Recorder Specifications

Chart Recorder

Recording method: Direct thermal
Chart size: 140mm W x 139mm L (5.5" W x 5.47" L); Z-fold, 300 sheets, 200'
Resolution: 12 dpm (300 dpi) amplitude and time axis
Chart speed: 1 mm/hr to 100 mm/s
Remote start/stop: TTL level or switch closure
Max. waveform size: 128 mm
Amplitude grids: 6 independent grids up to 125 mm wide; grid placement automatic or user-defined
Time marking: Tri-state (x1, x10, x100) mark on either chart edge; grid time lines can be synchronized to time mark; selectable time mark reference (0.02 to 1 sec.)
Annotation: System log printed automatically (time, date, speed); each grid has one line of text (128 ASCII characters); an on-demand text buffer available (128 characters)
Signal conditioner: Auto-annotation using end-of-grid text buffer
Channel ID: Each channel labeled with channel number; top and bottom grid values can be annotated

Data Capture

Media: Sample direct to disk (non-volatile)
Sample rate: 0.0167 Hz (once per second) to 50 kHz per channel
Disk capacity: 2 billion samples, 1000 records
Time stamp: Time and date automatically saved with data
Header: Information on units, range, sample rates, etc., saved with data
Events: All event inputs can be captured with waveforms
Trigger point location: Pre- and post-trigger percentage, user adjustable
Auto-arm: Automatic stacking of captures
Dual sample rate: Independent control over pre- and post-trigger sample rates
Auto playback and re-arm: Yes

Data Logger

Data logger: Numerical printout of waveform data in user-specified engineering units; up to 2 lines per second

Digital Signal Processing

Sample rate: 50 kHz
ADC resolution: 14-bit
Functions: Filter, RMS
Filter choices: Low pass with stops from 1 Hz to 1000 Hz; High pass with starts from 0.1 Hz to 100 Hz; 50/60 Hz Notch.
Math channels: Addition, subtraction, multiplication, division, root mean square (rms), integration, differentiation with filter, true power, apparent power, power factor

Event Inputs

Number of inputs: 8 external event markers
Input type: TTL with pull-ups, 0V to 5V, 0.2 msec duration

Front Panel Display

Type: Active matrix color LCD
Viewing area: 10.4" (diagonal); resolution 640 x 480
Functions: Control menus, waveform review

Miscellaneous input/output

Output: Net trigger
Input: External sample rate; external arm; external chart run/halt; print-on-demand buffer; external trigger; external abort; external chart speed

Physical

Case material: Cast aluminum
Dimensions: 16.4" L x 11.2" W x 5.2" H
Weight: 22 lbs. (10 kg)
Input voltage: 120/240 VAC (50/60 Hz)
Safety standards: Meets UL 3101, CSA 1010, IEC 1010
EMI standards: Meets FCC Class A, EN55011, EN 50082-1

Record Review

Formats: Strip chart, numeric tabular, XY-plot
Display: Use cursors to select sections and make measurements
Chart: Playback at x1/8 to x8
ZIP archive: Up to 45 million samples
ASCII conversion: Direct conversion to PC/ASCII/Excel format

Storage Media

Internal hard drive: 4 GByte std
Removable drive: ZIP™ drive standard

Trigger

Basic: Trigger controls data capture and dual speed
Sources: Signal tests, events, clock, external TTL and menus
Combinations: Logic "OR" with limited "AND"

Trigger Acquisition Sources

Window: All active waveform channels simultaneously
Special: Slew rate; slope/level
Event: Binary combination of active event
Clock: Time of day or periodic
Other sources: Both manual and hardware trigger inputs

Waveform Inputs

Number of inputs: Four
Isolation: All signals isolated from chassis and other inputs to 250 Vrms
Bandwidth: 5 kHz (-3dB) except where noted

ZIP Drive

Format: MS-DOS® format
Function: Setup files, software upgrades and data transfer/archive
Menu functions: Format, rename, delete, copy, print (ASCII)