DaXUS®

Data Acquisition when and where you need it

AstroNova™
Test & Measurement
Astro-Med.com/Daxus

*Y*ou can record and transmit data anywhere with Daxus. It is a small yet powerful data acquisition device that can be used as a single stand-alone unit for troubleshooting and maintenance, stacked for high channel count jobs, or networked with multiple units located throughout your facility for synchronized data recording in distributed networking applications.

Daxus captures, handles, and stores all data locally. You can record just a few signals or hundreds of parameters essential to maintaining efficient operations in any industry. Standing at just 120 mm tall x 324 mm wide (4.7˝ x 12.8˝) and weighing just 3.2 kg. (7 lbs.), the Daxus is compact and tough enough for any environment.
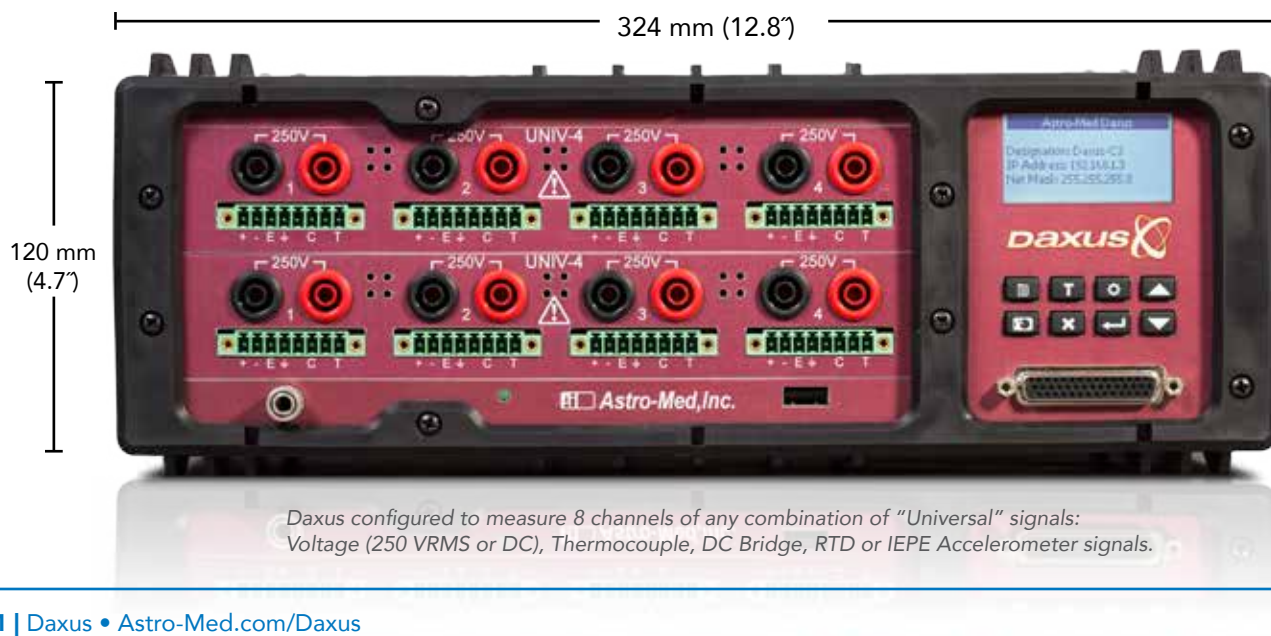
USE IN ANY CONFIGURATION:

Mobile App. Daxus is all about mobility. When you are away from your system, you can view real-time, scrolling waveform data of your ongoing data acquisition on your smartphone or tablet via the Daxus mobile app. You can also receive alerts and review recent captures for quick, on-the-spot troubleshooting.

Networked. Multiple Daxus units can be used throughout your operation. In networked applications, an unlimited number of Daxus units can be controlled and monitored from a central workstation or multiple PCs on the network. You can communicate with the Daxus units wirelessly or through the Gigabit Ethernet interface. Daxus captures, handles, and stores all data locally, so network bandwidth has no impact on sample rates.

You can view real-time, scrolling waveform data of your ongoing data acquisition on your smartphone or tablet via the Daxus mobile app.

324 mm (12.8˝)

120 mm (4.7˝)

Daxus configured to measure 8 channels of any combination of "Universal" signals: Voltage (250 VRMS or DC), Thermocouple, DC Bridge, RTD or IEPE Accelerometer signals.

Recording and displaying Single-Ended Voltage, Differential Voltage, Thermocouple temperatures and Events from multiple networked Daxus units.

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In networked applications, an unlimited number of Daxus units can be controlled and monitored from a central workstation or multiple PCs on the network.

Stand-Alone. When used as a standalone device, simply configure your Daxus on a PC using the included software, then disconnect the PC and let the Daxus collect data. Or, you can load your Daxus setup files onto a USB thumb drive and upload them directly to the Daxus for storage. Daxus features a front panel display with dedicated control buttons for loading setup files, starting or stopping data captures and triggering. You can stack multiple Daxus units to achieve higher channel counts as needed.

Connect Daxus to record your signals

Observe in real-time at your PC

Or observe in real-time on your tablet while you're on the go

PC SOFTWARE

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You can stack multiple Daxus units with any mix of module types to achieve higher channel counts as needed

Your Daxus can be used either with or without a PC. For PC-based applications, the powerful Daxus software provides intuitive drop-down menus and a customizable control panel to set up one-touch controls for your convenience. Available functions include: loading and saving setup files, amplifier settings, data capture and triggering parameters, cursor measurements and review and analysis functions.

In **Real Time** operation, Daxus signals can be viewed on a PC in a scrolling waveform style. For those who need a **Scope** presentation, Daxus provides a DSO-style display that is useful for viewing high speed signals in detail or where a stationary waveform view is preferred. The **Review** capability is designed to bring up previously captured data for analysis including expansion, compression, search features, measurements and much more.

Daxus software also includes an advanced **Derived Channel** feature that enables real time mathematics on the fly. Pass your data through an equation that you create and you can see calculated values now, not after the fact. Derived channels can be developed based on data from any of the active channels and are displayed as additional channels. Math functions include: +, -, x, ÷, Square Root, Exponential, Sin, Cos, Tan, Absolute Value, Integration and Differentiation.
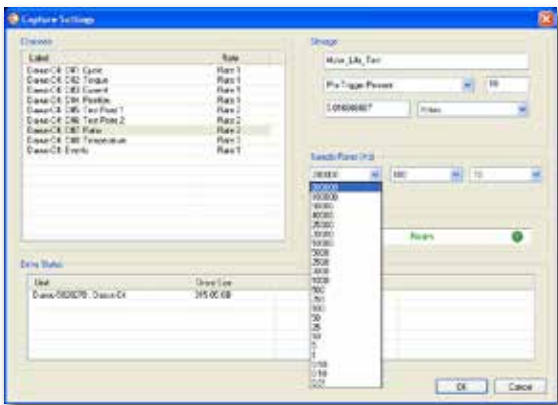
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Derived channels can be developed based on data from any of the active channels
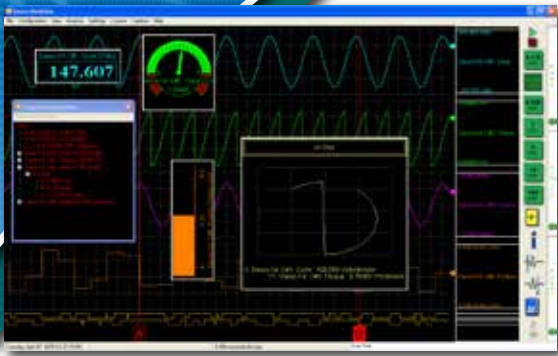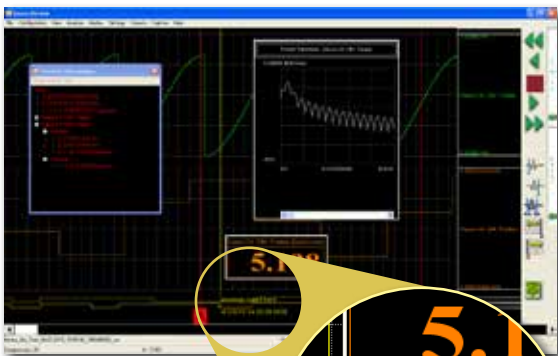
Customize your data viewing with waveforms, meters, cursor measurements or analysis windows.

Powerful data capture includes multiple sample rates, advanced triggering and automation.

Review and analyze your data and even add notes or highlights post-capture!

Any channel can be set up to display the **Engineering Units** of your choice with linear scaling. This allows data to be viewed in familiar terms such as Amps, PSI, RPM, Ft-lbs., etc.

A built-in **Meter Package** gives you the ability to display screen data in an easy to read visual format. Choose from various meter formats including gage, numeric, horizontal or vertical bar, needle and LED readouts. They can be sized and placed anywhere on the screen for a truly custom look and feel.

Easy-to-use Cursors allow immediate measurements with functions such as: Time, Sample Point, Average, Min/Max & Peak-Peak Slope, RMS, Sum, Sum of Squares, Variance, Standard Deviation and Area.

RECORDING CAPACITY

Each Daxus has loads of data recording capacity with a standard 500GB SATA drive or an optional Solid State Drive for more demanding environments. Intelligent Data Capture features include pre/post triggering, logical and/or triggers, multiple sample rates and data capture automation for repetitive testing. A battery backup ensures no loss of data in the event of a power disruption.

OPTIONAL INTERFACES

Interfaces include CAN Bus for automotive testing, IRIG time codes for aerospace applications and GPS time and location stamping for transportation or other applications.

Daxus records data in virtually any industry or environment
Automotive testing | Laboratory testing | Systems monitoring

DESIGN YOUR Daxus

The Daxus mainframe supports four different types of signal input modules pictured and described below. Each Daxus accepts two modules and there are three versions of Daxus:

1. An unpopulated mainframe for which you can specify two signal modules   PN: 42870000
2. A pre-packaged Daxus that includes two ISEV-4 signal input modules   PN: 42870100
3. A pre-packaged Daxus that includes two UNIV-4 signal input modules   PN: 42870200

UNIV-4
P/N: 32950000

The UNIV-4 module accommodates 4 signals. It accepts voltages up to 250 Vrms using double banana connectors. Additional universal capabilities are: DC bridge measurements, thermocouple measurements with a type U mini thermocouple plug in, and RTD and IEPE transducer measurements that use available adaptors for the screw terminal provided.

NIDX-16
P/N: 32950020

The NIDX-16 module accommodates 16 non-isolated differential signals up to 40 VDC. Connections are made utilizing screw terminal connectors.

ISEV-4
P/N: 32950005

The ISEV-4 module accommodates 4 signals. It accepts voltages up to 250 Vrms using double banana connectors.

IHVM-4
P/N: 32950030

The IHVM-4 module accommodates 4 signals. It accepts voltages up to 600 Vrms or 1000 VDC using double banana connectors.
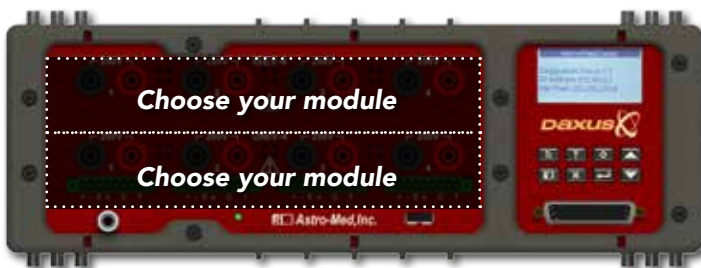
Daxus mainframe without modules
P/N: 42870000

Daxus pre-packaged with 2 ISEV-4 Modules
P/N: 42870100

Daxus pre-packaged with 2 UNIV-4 Modules
P/N: 42870200

The back of Daxus

MODULE SPECIFICATIONS

UNIV-4
P/N: 32950000

UNIV-4 COMMON SPECIFICATIONS

Channels Per Module	4
Rated Isolation	250 VRMS or DC, Cat II (iso-common to chassis and other iso-commons)
Frequency Counter Capability	Yes, all channels. Software selectable.
Counter Modes	Gated time frequency counter, cycle based frequency counter, pulse counter, pulse width detector, period width detector, duty cycle detector, gated pulse event counter, quadrature counter, edge separation detector.
Frequency ctr range	2 – 40 KHz
Frequency ctr accuracy	+ 0.07% of Measurement + .002 Hz
Min counter input amplitude	25% of span for frequency and pulse counters, 90% of span for all other modes
Pulse counter range	4,000,000,000 maximum. (16 bit display resolution)
Pulse width accuracy	.002% of measurement + .00167% of span + 0.7 µs
Pulse width range	25 µs – 2,500,000
Edge separation accuracy	.002% of measurement + .00167% of span + 0.7 µs
Edge separation range	25 µs – 5,000,000 µs
Period width accuracy	.001% of measurement + .00167% of span + 0.7 µs
Period width range	25 µs – 100,000 µs (10 Hz – 40 KHz)
Duty cycle accuracy	.5% (Inputs in the 1 Hz - 5 KHz range with 5% - 95% duty cycles)
Cold Start Drift	< 0.1% of attenuator (60 min.)

UNIV-4 SINGLE ENDED INPUT

Connector	Guarded banana jacks (red/black)
Input	Single-ended, AC/DC coupled
Sample Rate	200 KHz
A/D	16 bit SAR (one per channel)
Anti-Aliasing Filter	4 pole Bessel
Bandwidth	40 KHz (-3dB) (400V, 200V and 100V Attenuators) 35 KHz (-3dB) (10V and 1V attenuators)
AC Coupled 3dB Point	< 0.54 Hz (0.47 Hz typ)
Off Ground Measurements	Yes
Zero Suppression	Yes, digital.
Attenuator Ranges	1, 10, 50, 200 and 400 Volt
Measurement Ranges	± 400 V (400 VFS or 800 VFS w/ zero offset) ± 200 V (200 VFS or 400 VFS w/ zero offset) ± 100 V (100 VFS or 200 VFS w/ zero offset) ± 10 V (10 VFS or 20 VFS w/ zero offset) ± 1 V (1 VFS or 2 VFS w/ zero offset. 0.1V min span)
Max Rated Input	250 Vrms or DC, Cat II
Max Transient Input	± 800 V peak (not to exceed 250Vrms)
DC Accuracy (25°C)	± 0.06% of attenuator
Overshoot	< 0.25%
Intrinsic Noise (pk-pk)	< 0.02% of attenuator + .02% of span (400V through 10V atts) < 0.16% of attenuator + .02% of span (1V att)
IMR at 60 Hz	Better than -80 dB
Min Input Impedance	> 1 Megohm

UNIV-4 DIFFERENTIAL INPUT

Connector	8 wire screw terminal
Input	Differential, DC coupled
Sample Rate	200 KHz
A/D	16 bit SAR (one per channel)
Anti-Aliasing Filter	4 pole Bessel
Bandwidth	35 KHz

UNIV-4 DIFFERENTIAL INPUT (CONTINUED)

Measurement Ranges	± 1000 mV ± 100 mV ± 20 mV
Max Transient Input	± 20 V
Common Mode Voltage	± 10V
Zero Suppression	Yes, digital.
DC Accuracy (25°C)	± 0.06% of attenuator
Overshoot	< 0.25%
Intrinsic Noise (pk-pk)	< 0.02% of attenuator + .02% of span (1000 mV Att) < 0.05% of attenuator + .02% of span (100 mV Att) < 0.18% of attenuator + .02% of span (20 mV Att)
IMR at 60 Hz	Better than -60 dB
Min Input Impedance	> 300 Kilohm (150 Kilohm balanced to isolated common)

NIDX-16
P/N: 32950020

NIDX-16 SPECIFICATIONS

Channels Per Module	16
Connector	8 wire screw terminals (8)
Input	Differential, DC coupled
Bandwidth	4 KHz (-3dB)
Sample Rate	20 KHz
A/D	16 bit SAR (one per channel)
Anti-Aliasing Filter	4 pole Bessel
Frequency Counter Capability	Yes, first 8 channels. Software selectable.
Counter Modes	Gated time frequency counter, cycle based frequency counter, pulse counter, pulse width detector, period width detector, duty cycle detector, gated pulse event counter, quadrature counter, edge separation detector.
Frequency ctr range	2 – 3 KHz
Frequency ctr accuracy	+ 0.07% of Measurement + .002 Hz
Min counter input amplitude	25% of span for frequency and pulse counters, 90% of span for all other modes
Pulse counter range	4,000,000,000 maximum. (16 bit display resolution)
Pulse width accuracy	.002% of measurement + .00167% of span + 0.7 µs
Pulse width range	25 µs – 2,500,000
Edge separation accuracy	.002% of measurement + .00167% of span + 0.7 µs
Edge separation range	25 µs – 5,000,000 µs
Period width accuracy	.001% of measurement + .00167% of span + 0.7 µs
Period width range	25 µs – 100,000 µs (10 Hz – 30 KHz)
Duty cycle accuracy	.5% (Inputs in the 1 Hz - 5 KHz range with 5% - 95% duty cycles)
Off Ground Measurements	Yes
Zero Suppression	Yes, digital.
Attenuator Ranges	40, 20, 10 5 and 1 Volt
Measurement Ranges	± 40 V (40 VFS or 80 VFS w/ zero offset) ± 20 V (20 VFS or 40 VFS w/ zero offset) ± 10 V (10 VFS or 20 VFS w/ zero offset) ± 5 V (5 VFS or 10 VFS w/ zero offset) ± 1 V (1 VFS or 2 VFS w/ zero offset)
DC Accuracy (25°C)	± 0.1% of attenuator
Overshoot	< 1%
Intrinsic Noise (pk-pk)	< 0.2% of attenuator
IMR at 60 Hz	Better than -60 dB
Min Input Impedance	> 500 Kilohm

ISEV-4
P/N: 32950005

IHVM-4
P/N: 32950030

ISEV-4 SPECIFICATIONS	
Channels Per Module	4
Rated Isolation	250 VRMS or DC, Cat II (iso-common to chassis and other iso-commons)
Sample Rate	200 KHz
A/D	16 bit SAR (one per channel)
Anti-Aliasing Filter	4 pole Bessel
Frequency Counter Capability	Yes, all channels. Software selectable.
Counter Modes	Gated time frequency counter, cycle based frequency counter, pulse counter, pulse width detector, period width detector, duty cycle detector, gated pulse event counter, quadrature counter, edge separation detector.
Frequency ctr range	2 – 40 KHz
Frequency ctr accuracy	+ 0.07% of Measurement + .002 Hz
Min counter input amplitude	25% of span for frequency and pulse counters, 90% of span for all other modes
Pulse counter range	4,000,000,000 maximum. (16 bit display resolution)
Pulse width accuracy	.002% of measurement + .00167% of span + 0.7 µs
Pulse width range	25 µs – 2,500,000
Edge separation accuracy	.002% of measurement + .00167% of span + 0.7 µs
Edge separation range	25 µs – 5,000,000 µs
Period width accuracy	.001% of measurement + .00167% of span + 0.7 µs
Period width range	25 µs – 100,000 µs (10 Hz – 40 KHz)
Duty cycle accuracy	.5% (Inputs in the 1 Hz - 5 KHz range with 5% - 95% duty cycles)
Cold Start Drift	< 0.1% of attenuator (60 min.)
Connector	Guarded banana jacks (red/black)
Input	Single-ended, AC/DC coupled
Bandwidth	40 KHz (-3dB)
AC Coupled 3dB Point	< 0.54 Hz
Off Ground Measurements	Yes
Zero Suppression	Yes, digital.
Attenuator Ranges	1, 10, 100, 200 and 400 Volt
Measurement Ranges	± 400 V (400 VFS or 800 VFS w/ zero offset) ± 200 V (200 VFS or 400 VFS w/ zero offset) ± 100 V (100 VFS or 200 VFS w/ zero offset) ± 10 V (10 VFS or 20 VFS w/ zero offset) ± 1 V (1 VFS or 2 VFS w/ zero offset. 0.1V min span)
Max Rated Input	250 Vrms or DC, Cat II
Max Transient Input	± 800 V peak (not to exceed 250Vrms)
DC Accuracy (25°C)	± 0.06% of attenuator
Overshoot	< 0.25%
Intrinsic Noise (pk-pk)	< 0.02% of attenuator + .02% of span (400V through 10V atts) < 0.16% of attenuator + .02% of span (1V att)
IMR at 60 Hz	Better than -85 dB
Min Input Impedance	> 1 Megohm

IHVM-4 SPECIFICATIONS	
Channels Per Module	4
Connector	Guarded banana jacks (red/black)
Input	Differential, DC coupled
Bandwidth	35 KHz (-3dB)
Rated Isolation	600 VRMS or DC, Cat IV (channel to chassis and other channels) 1,000 VRMS or DC, Cat III (channel to chassis and other channels)
Sample Rate	200 KHz
A/D	16 bit SAR (one per channel)
Anti-Aliasing Filter	4 pole Bessel
Frequency Counter Capability	Yes, all channels. Software selectable.
Counter Modes	Gated time frequency counter, cycle based frequency counter, pulse counter, pulse width detector, period width detector, duty cycle detector, gated pulse event counter, quadrature counter, edge separation detector.
Frequency ctr range	2 – 30 KHz
Frequency ctr accuracy	+ 0.07% of Measurement + .002 Hz
Min counter input amplitude	25% of span for frequency and pulse counters, 90% of span for all other modes
Pulse counter range	4,000,000,000 maximum. (16 bit display resolution)
Pulse width accuracy	.002% of measurement + .00167% of span + 0.7 µs
Pulse width range	25 µs – 2,500,000
Edge separation accuracy	.002% of measurement + .00167% of span + 0.7 µs
Edge separation range	25 µs – 5,000,000 µs
Period width accuracy	.001% of measurement + .00167% of span + 0.7 µs
Period width range	25 µs – 100,000 µs (10 Hz – 30 KHz)
Duty cycle accuracy	.5% (Inputs in the 1 Hz - 5 KHz range with 5% - 95% duty cycles)
Off Ground Measurements	Yes
Zero Suppression	Yes, digital.
Attenuator Ranges	40, 200 and 1000 Volt
Measurement Ranges	± 1,000 V (1000 VFS or 2000 VFS w/ zero offset) ± 200 V (200 VFS or 400 VFS w/ zero offset) ± 40 V (40 VFS or 80 VFS w/ zero offset)
Max Rated Input	600 Vrms or DC, Cat IV, 1000V DC, Cat III
DC Accuracy (25°C)	± 0.06% of attenuator
Overshoot	< 0.25%
Intrinsic Noise (pk-pk)	< 0.18% of attenuator + .05% of span (40V att) < 0.045% of attenuator + .02% of span (200V att) < 0.015% of attenuator + .025% of span (1000V att)
IMR at 60 Hz	Better than -60 dB
Min Input Impedance	> 10 Megohm

ACCESSORIES

ADP-I *P/N: 32950501*
IEPE adapter for UNIV-4 module

ADP-T *P/N: 32950502*
Thermocouple adapter for UNIV-4 module

ADP-R *P/N: 32950503*
RTD adapter for UNIV-4 module

GL-40 *P/N: 13442000*
General Use Lead Set

LC-40 *P/N: 13441003*
Test Leads/Clips pair of test lead and pincer clips (1 red, 1 black)

LC-40S *P/N: 13441201*
Test Leads/Spades pair of test leads with spade connector for # 8 screw

CLM-420 *P/N: 26487000*
4 to 20 mA Current Adapter for current loop measurements

DCS-8 *P/N: 13123000*
10 A, 100 mV Current Shunt for current measurement

SL261 *P/N: 24661201*
Current Probe reads AC or DC current, 100 A maximum

MR411 *P/N: 24661200*
Current Probe reads AC or DC current, 600 A maximum

MR521 *P/N: 24661100*
Current Probe reads AC or DC current, 1500 A maximum

MN255 *P/N: 24661300*
Current Probe reads AC current, 240 A maximum

SR759 *P/N: 24661400*
Current Probe reads AC current, 1200 A maximum

JM875 *P/N: 24661500*
Current Probe reads AC current, 3000 A maximum

FP300A *P/N: 24661600*
Flexible Current Probe reads AC current, 300 A maximum

FP3000A *P/N: 24661700*
Flexible Current Probe reads AC current, 3000 A maximum

FP6000A *P/N: 24661620*
Flexible Current Probe reads AC current, 6000 A maximum

ADP-4810 *P/N: 25765000*
High Voltage Probe reads up to 1000 Vrms

SOFT CASE DAXUS
P/N: 42737000
Soft Carry Case for Daxus

SYSTEM

PC Connection	Gigabit Ethernet (10/100/1000Base-T)
Input Module Slots	2
Link Ports	Multiple unit synchronization for higher channel counts
Digital I/O	8 Events, alarms, programmable I/O
User Interface	Display with easy-to-use menu system and dedicated buttons for local control.

DATA ACQUISITION

Recording Method	Internal SATA disk drive.
Maximum Sample Rate	200,000 samples/second/channel
Minimum Sample Rate	1 sample/minute
Multiple Sample Rates	Yes, up to 3 different rates
Total Capacity	500 GB (100GB or 200GB SSD optional)
Maximum Record	Limited to drive size
Time Stamp	Time and Date automatically saved with data
Header	Information on units, range, sample rates, etc. saved with data
Events	Recorded with data
Trigger Point	Pre and post trigger is user adjustable
Auto Re-Arm	Allows automatic stacking of captures
QuickLook	Yes

SIGNAL MODULES

ISEV-4	4-Channel Isolated Voltage Module (accepts up to 250 Vrms)
UNIV-4	4-Channel Universal Module Voltage and DC Bridge (accepts up to 250 Vrms). Supports thermocouple, RTD and IEPE transducers with available adapters
IHVM-4	4-Channel High Voltage Module (accepts up to 600 Vrms or 1000 VDC)
NIDX-16	16-Channel Non-isolated Differential Voltage Module (accepts up to 30 Vrms or 40 VDC)

GENERAL

Maximum Channels	32 (module dependent)
Engineering Units	User defined units with y=mx+b scaling
Pre-capture Filter	Lowpass, highpass, bandpass, bandstop
Advanced DSP	RMS, Integration, Differentiation
Post-capture Filter	Lowpass, highpass, bandpass, bandstop, RMS
Counter Modes	Gated time frequency counter, cycle based frequency counter, pulse counter, pulse width detector, period width detector, duty cycle detector, quadrature counter, edge separator. (module dependent)

Math Functions	Addition, Subtraction, Multiplication, Division, Trigonometric, Statistical and other general math functions
Calibration	Semi-automated to external reference

ADDITIONAL FEATURES

GPS	For time and location synchronization
IRIG Timestamp	IRIG A and B for timecode synchronization
CAN bus	Support for CAN signal acquisition, 2 ports
Wireless	Wireless connectivity

UNIT POWER

Input Voltage	14-24 VDC
Power Consumption	60 W Max (35W Typical)

AC POWER ADAPTER (INCLUDED)

Input voltage	100-240 VAC
Frequency	50 - 60 Hz
Output voltage	19V DC
Maximum Power	70W

BATTERY

Battery Type	Lithium Ion (rechargeable)
Charge Time	4 Hours
Battery Life	20 minutes on single charge

PHYSICAL

Enclosure	Aluminum
Dimensions (inches)	324mm W x 180 mm D x 120 mm H (12.8″ W x 7″ D x 4.7″ H) with endcaps
Weight	3.2 kg (7 lbs.)

COMPLIANCE

Safety	EN 61010-1:2010, UL 61010-1:2012, CSA C22.2:2012
EMC	FCC Part 15, Subpart B, Class A, EN 61326
Power Harmonics	IEC1000-3-2

ENVIRONMENTAL

Operating Temp	0 to 40 °C (32 to 104 °F)
Storage Temp	-20 to 60 °C (-4 to 140 °F)
Operating Humidity	10% to 90% non condensing
Shock	MIL-810-F Method 516.5, Procedure I* *With solid state drive option
Vibration	MIL-810-F Method 514.5, Procedure I* *With solid state drive option

Other Data Acquisition Products Available from AstroNova

TMX: The TMX features up to 96 channels, an exclusive full-color 17″ advanced touch screen technology, a dedicated, 1 TByte Removable Hard Drive for Data Capture, and pre-defined set up options.

TMX-18: The TMX-18 features 18 channels of voltage and DC Bridge inputs, a high resolution, 17″ touch screen display, and pre-defined set up options.

DDX100 Smartcorder: The DDX 100 features a 15″ color touchpane and 500 GB of storage. DDX100 is a powerful, portable, high-speed Data Acquisition System. Complete system solution that includes everything needed to record data in 1 piece of equipment.

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