

# DAXUS<sup>®</sup>



*Distributed or Stand-Alone Data Acquisition  
Compact and Rugged*



## AstroNova Test & Measurement

### Capture Critical Data Accurately & Reliably

Since 1969, AstroNova Test & Measurement has been a pioneer in the data acquisition industry. Building a strong legacy with our high quality, U.S. made products; our customers have come to rely on us for all their data recording requirements.

As engineers, we understand the importance of your data capture applications, which is why we design our products with both precision and user experience in mind. Through the years, we have developed a reputation for our accurate, turnkey products and unrivaled technical support engineers, known for providing expert support whenever it is needed.

Our company is committed to innovation and adaptation, ensuring we meet the ever-changing needs of our customers. Our customers know they can look to us for products that offer revolutionary solutions for data acquisition. Whatever our customers' data acquisition requirements, we offer the total solution for their tailored applications.



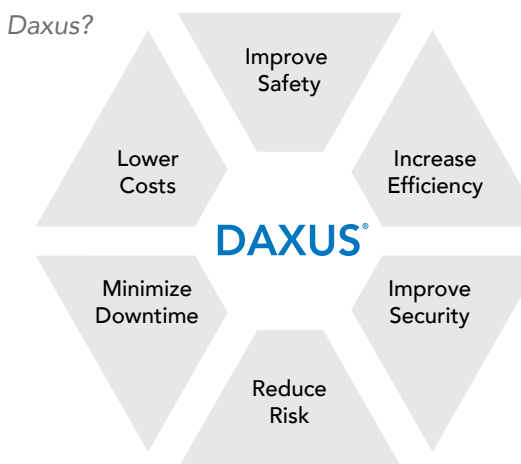
### Product Overview

Daxus is a versatile data acquisition platform for local or distributed measurements. Units can be connected directly to a host PC, operate as stand-alone high-speed data loggers, or deployed as part of a distributed measurement system spanning large distances. Its small size and rugged packaging make it ideal for use in the lab, field, or production environment.

The versatility of the Daxus platform is based on its unique design. Each Daxus system has a built-in real-time controller and high capacity standard or solid state hard drive. All data is stored locally, so network bandwidth has no impact on sample rates and critical data is always protected.

Daxus is a complete measurement solution. All systems ship with the Daxus application software, which allows you to configure systems and view data from any Daxus unit from any PC on the network.

Why choose Daxus?



<sup>1</sup> Requires optional adapter



## Acquire

Daxus units feature 2 slots that accept a variety of input modules. Each system can acquire up to 32 channels with sampling rates up to 200 KS/s per channel or as low as 1 sample per minute for long term monitoring. Multiple Daxus units can be stacked to increase the number of channels and all inputs can be synchronized by sharing clock signals or via GPS or IRIG2.

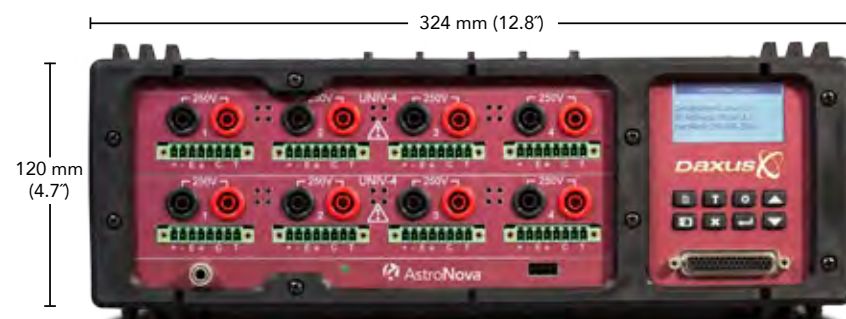
The Daxus system supports 3 different sampling rates per channel which allow you to acquire high speed and low speed data simultaneously and reduce file sizes. You can also create triggers to start and stop recording based on any input channel, event (e.g. external trigger signal), or a specific date and time. Pre and post trigger buffer sizes are configurable and triggers can be set to auto re-arm for capturing multiple events. The trigger key on the front panel allows you to trigger data captures manually.

The Utility / DIO port contains alarm inputs, alarm outputs, programmable outputs, and inputs for external sample clocks eliminating the need for a separate digital I/O module. Optional interfaces include IRIG for synchronizing data across multiple units, GPS for time and location, and CAN for vehicle applications. Selecting these options does not require you to give up a slot for input modules.

The NIDX-16 module provides 2 analog outputs for powering transducers or generating waveforms to stimulate a unit under test. You can output standard waveforms such as sine or square waves or user defined custom waveforms. The optional breakout box provides 2 additional analog outputs.

The Daxus architecture provides advanced digital signal processing (DSP) technologies that allow you to configure custom filters and perform frequency measurements on a per channel basis.

Reduce testing costs and increase flexibility with the UNIV-4 universal input module. The UNIV-4 alleviates the need for dedicated modules by allowing you to perform voltage, DC bridge, thermocouple, RTD, and IEPE accelerometer measurements in a single module.



Daxus configured to measure 8 channels of universal inputs including Voltage, Thermocouple, DC Bridge, RTD, or IEPE accelerometer signals

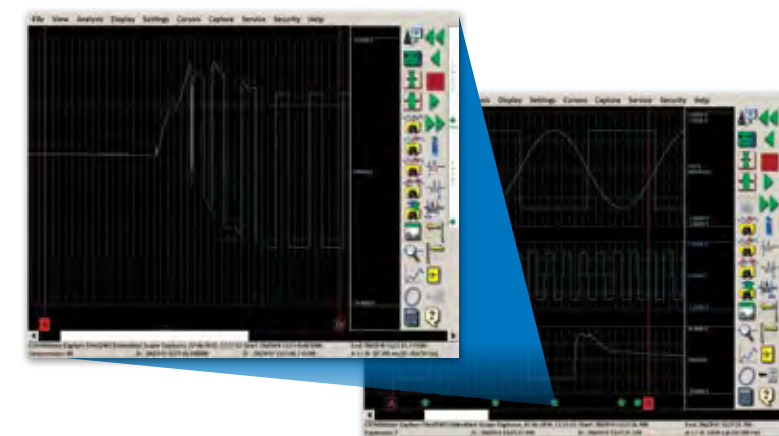
<sup>2</sup> Requires optional GPS/IRIG/CAN module



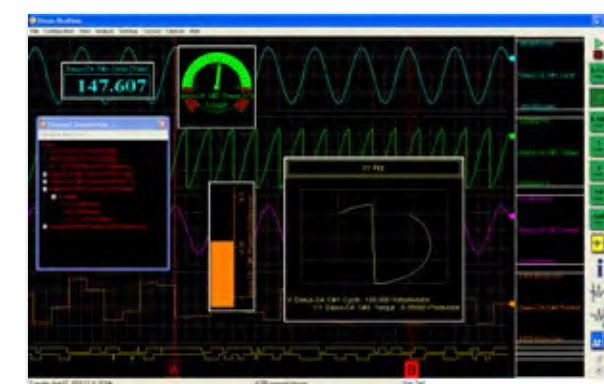
## Visualize

All Daxus systems come with the easy to use Daxus application software which allows you to configure systems, view data in real-time, review saved data, and transfer or copy data from the Daxus to your PC. In networked applications, you can connect to any unit from any PC on the network. Reviewing or transferring data during a capture does not interrupt the current acquisition.

**Scope Mode** is a powerful feature that allows you to acquire and save data at low sample rates while capturing high speed snapshots based on user defined triggers. This is particularly useful for capturing intermittent signals or analyzing the timing between signals. Icons on the real-time display indicate when a scope capture has occurred and trigger events are embedded in the data file. High speed data from scope captures is saved in separate files and can be viewed in a scope-like display with high time-base resolution and cursor measurements without interrupting long term trending.



**Channel meters** provide a way to view any channel as a digital readout, bar meter, moving needle, or analog gauge making it easy to view current values at a glance. You can visualize the relationships between inputs by plotting them in *XYZ* plots. Channel meters and *XYZ* plots can be sized and placed anywhere on the display for easy viewing.



For viewing data on the go, AstroNova offers the **Daxus mobile app** which allows you to view data in real-time, review data files, and receive alerts on your smart phone or tablet.



View real-time data with the Daxus mobile app

## Product Highlights

- Local or distributed measurements
- Data acquisition speeds up to 200 KS/sec per channel
- Scalable architecture with up to 480 channels supported in the Daxus software
- Gigabit Ethernet for real-time viewing or transferring data over the network
- Synchronous measurements across multiple systems
- Wired or Wi-Fi connectivity
- Complete and easy to use software
- Embedded controller and Linux OS provides real-time performance and reliability
- Rugged design tested to MIL-STD-810
- Optional CAN interface
- Ideal for power monitoring and recording with the optional IHVM-4P power module
- Advanced triggering and digital signal processing capabilities



## Analyze

Daxus provides powerful tools to help you analyze data quickly and easily.

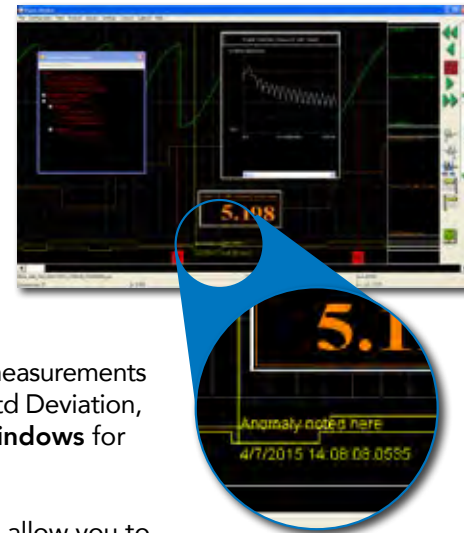
The **derived channel** feature allows you to create up to 6 calculated channels or combine any 4 channels based on user-defined equations. Derived channels are calculated in real-time and can be displayed and recorded along with the original input channels in real-time or review mode. You can also apply advanced filtering options post-capture.

To aid in analyzing acquired data,  **cursors** provide built-in measurements such as average, Min-Max, Peak-Peak, slope, RMS, Sum, Std Deviation, and others. You can also configure **Fourier Transform windows** for viewing and analyzing frequency content in real-time.

**Advanced counter functions** based on DSP technologies allow you to make many common frequency measurements and eliminate the need for a separate counter / timer module – regardless of the input module type. Available functions include frequency, duty cycle, edge separation, quadrature encoder, gated pulse counter, pulse width, and more.

**User Notes** can be added during an acquisition and are saved as part of the data file for later review.

Analysis and control functions can be extended and automated using Python scripting or LabVIEW.



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



## Store

With Daxus, all data is stored locally on an internal hard drive and streamed across the network on demand. This ensures that critical data is always captured regardless of network reliability. Choose from a 500GB hard disk drive (standard) or optional solid state drives for rugged environments and faster read / write speeds.

You can store derived channels, events, and notations along with measurement data to reduce post-processing and recall important events. Export only the channels or timeframe you select to ASCII using the application Daxus software. AstroNova also provides the free AstroVIEW X software for viewing data from any AstroNova data acquisition system and exporting to other common file formats.

The built-in Li-ion battery automatically charges when the system is connected to power and provides backup power for continued operation and no loss of data in the event of a power outage.



## Print

Daxus software enables the user to print data to a PDF file or printer in real-time, scope, or review modes.



## Configure

Each Daxus chassis features 2 slots for signal input modules. To configure your Daxus system, select from the input modules below.

### Step 1: Choose your input modules



UNIV-4

Part Number	Module	Description
32950000	UNIV-4	4-Ch Universal Module for Voltage, DC Bridge, Thermocouple, RTD, and IEPE transducers <sup>3</sup> . Accepts up to 250 Vrms or DC (Cat II)



ISEV-4

Part Number	Module	Description
32950005	ISEV-4	4-Ch Isolated Voltage Module accepts up to 250 Vrms or VDC (Cat II)



NIDX-16

Part Number	Module	Description
92950020	NIDX-16	16-Ch Non-isolated Differential Voltage Input Module accepts up to 30 Vrms or 40 VDC



IHVM-4

Part Number	Module	Description
32950030	IHVM-4	4-Ch High Voltage Module accepts up to 600 Vrms or DC (Cat III) or 1,000 Vrms or DC (Cat II)

<sup>3</sup> Adapters required for thermocouple, RTD, and IEPE transducers



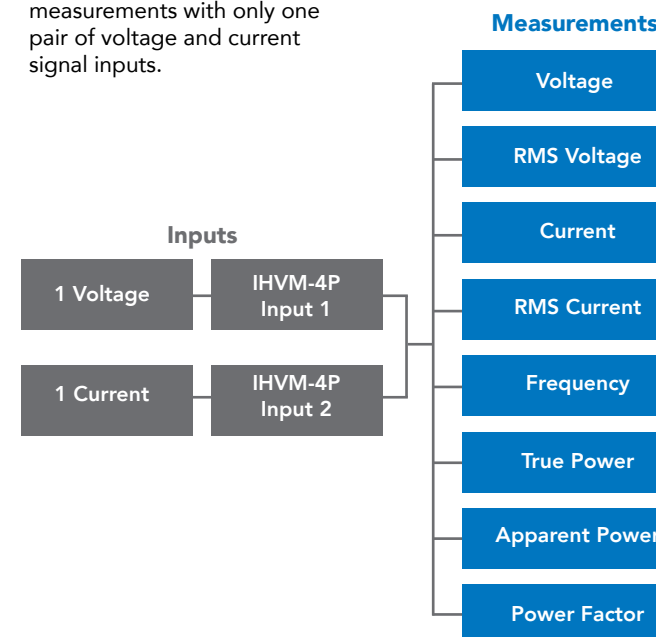
IHVM-4P

Part Number	Module	Description
32950035	IHVM-4P	4-Ch Isolated High Voltage Module accepts up to 600 Vrms or 1000 VDC (Cat III) or 1,000 Vrms or DC (Cat II) with 16 selectable measurements including power quality

Minimize Inputs. Maximize Measurements. Reduce Post-Processing.

### Power Mode

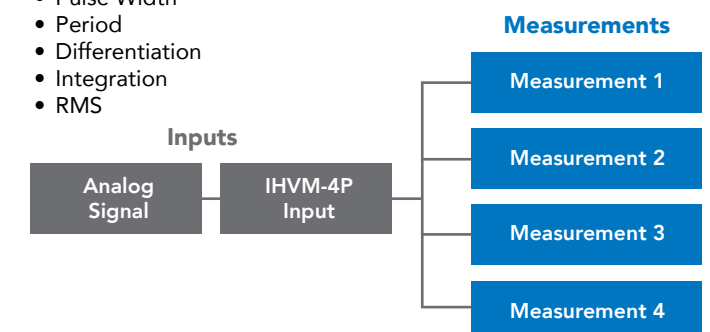
Acquire eight power quality measurements with only one pair of voltage and current signal inputs.



### Standard Mode

Select up to four measurements per signal input. Nine available measurement options.

- Raw Signal
- Frequency (Time Based)
- Frequency (Cycle Based)
- Duty Cycle
- Pulse Width
- Period
- Differentiation
- Integration
- RMS



## Step 2: Choose your Options and Accessories

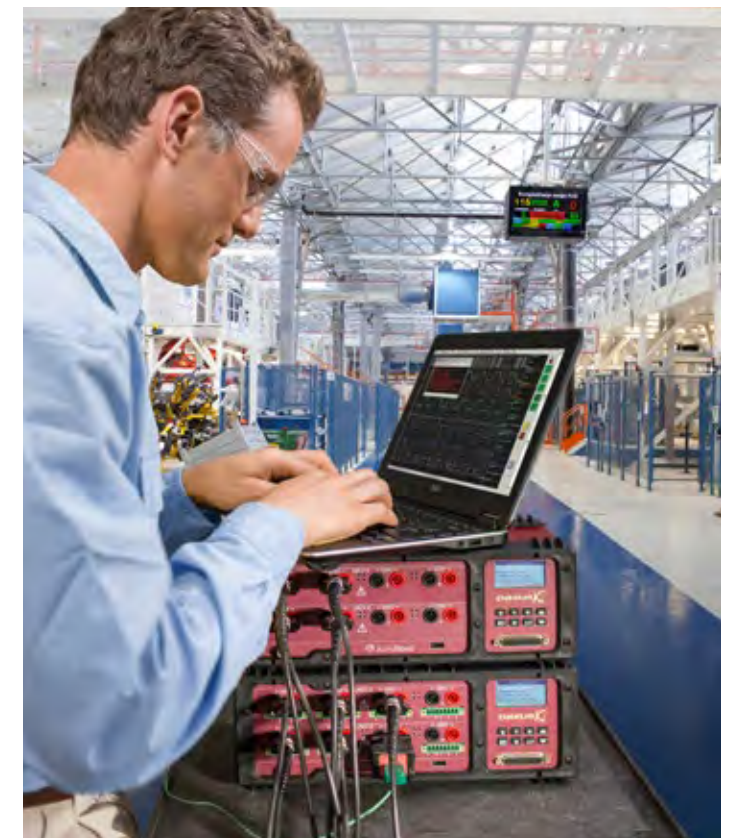
Part Number	Model	Description
<b>Options</b>		
31862964	DAX-SSD400	31862964
31862968	DAX-SSD800	DAX-SSD800 Solid-State Drive Option, 800 GB
42662100	DAX-IR/GPS	DAX-IR/GPS IRIG Decoding Option supports IRIG A, B, E, G, NASA 36 time codes with GPS location and timing
42662200	DAX-CAN/GPS	DAX-CAN/GPS CAN Bus Interface to view and record CAN Bus data and other analog signals with GPS location and timing
32930000	DAX-OCBB	Options Card Breakout Box provides two analog outputs, two relays, two CAN Bus ports, one IRIG input and two general purpose I/O's via the GPS/CAN/IRIG interface above (15-pin D-Sub connection included)
<b>Accessories</b>		
27535000	DAX-ANT	DAX-ANT GPS Antenna
27537000	DAX-WIFI	DAX-WIFI Wireless USB Adaptor
32950502	ADP-T	Thermocouple Adapter
32950503	ADP-R	RTD Adapter
32950501	ADP-I	IEPE Adapter
32940000	DCP-12	DCP-12 Automotive Power Module, 9-36V Input Voltage
32940100	DCP-72	DCP-72 Railway Power Module, 43-101V Input Voltage
42737000	SC-DAX	SC-DAX Soft Carry Case for Daxus
41047300	HC-DAX	HC-DAX Hard Pelican Transport Case
27432050	BLNK-D	Blank Module (covers 1 module slot)
42798100	DAX-RACK	DAX-RACK Rack-mount kit for Daxus
<b>Lead Sets and Probes</b>		
13442000	GL-40	General Use Lead Set contains 2 each — probe handles, right angle to straight plug test lead, test clips, and medium alligator clips (1 red, 1 black)
13441003	LC-40	Test Leads/Clips pair of test leads and pincer clips (1 red, 1 black)
13441201	LC-40S	Test Leads/Spades pair of test leads with spade connector for # 8 screw
26487100	CLM-420A	4 to 20 mA Current Loop Adaptor for current loop measurements
24661201	SL261	Current Probe reads AC or DC current, 100 A maximum
24661200	MR411	Current Probe reads AC or DC current, 600 A maximum
24661100	MR521	Current Probe reads AC or DC current, 1500 A maximum
24661300	MN255	Current Probe reads AC current, 240 A maximum
24661400	SR759	Current Probe reads AC current, 1200 A maximum
24661500	JM875	Current Probe reads AC current, 3000 A maximum
24661600	FP300A	Flexible Current Probe reads AC current, 300 A maximum
24661700	FP3000A	Flexible Current Probe reads AC current, 3000 A maximum
24661620	FP6000A	Flexible Current Probe reads AC current, 6000 A maximum
25765000	ADP-4810	High Voltage Probe reads up to 1000 Vrms
10532211	BNC-BAN-I	Connector insulated Female BNC to standard insulated double Banana plug
12360007	CABLE-BNC	Cable, Male BNC to Male BNC, 12" (30.5 cm) length
<b>Software</b>		
14004910	DAX-SW	Daxus Offline Software additional license for one user
14004930	DAX-SWSL	Daxus Offline Software site license (5 users)
<b>Service</b>		
EW-DAX	EW-DAX	12-Month Extended Warranty with Quick-Swap Loaner

## Daxus System Specifications

<b>System</b>	
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
<b>Data Acquisition</b>	
Recording Method	Internal 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 (400GB or 800GB SSD optional)
<b>General</b>	
Maximum Channels	32 (module dependent)
Pre-capture Filter	Lowpass, highpass, bandpass, band-stop
Advanced DSP	RMS, Integration, Differentiation
Post-capture Filter	Lowpass, highpass, bandpass, band-stop, 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
<b>Additional Features</b>	
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
<b>Unit Power</b>	
Input Voltage	14-24 VDC
Power Consumption	60 W Max (35W Typical)
<b>AC Power Adapter (included)</b>	
Input voltage	100-240 VAC
Frequency	50 - 60 Hz
Output voltage	19V DC
Maximum Power	70W

<b>Battery</b>	
Battery Type	Lithium Ion (rechargeable)
Charge Time	4 Hours
Battery Life	20 minutes on single charge
<b>Physical</b>	
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.)
<b>Compliance</b>	
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
<b>Environmental</b>	
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 1*
Vibration	MIL-810-F Method 514.5, Procedure 1*

\*With solid state drive option



## Daxus® Input Module Specifications

UNIV-4	
<b>UNIV-4 Common Specifications</b>	
Connector Type	Guarded banana jacks, 8-wire screw terminal
A/D resolution	16-bit
Measurement range (single-ended)	0.1V to 250V
Measurement range (differential)	2mV to 1V
DC Accuracy	+/- 0.06% of attenuator
Channels Per Module	4
Rated Isolation	250 VRMS or DC, Cat II (iso-common to chassis and other iso-commons)
<b>UNIV-4 Single Ended Input</b>	
Input	Single-ended, AC/DC coupled
Sample Rate	200 KHz
Bandwidth	40 KHz (-3dB) (400V, 200V and 100V Attenuators) 35 KHz (-3dB) (10V and 1V attenuators)
<b>UNIV-4 Differential Input</b>	
Input	Differential, DC coupled
Sample Rate	200 KHz
Bandwidth	35 KHz
<b>NIDX-16 Specifications</b>	
Connector Type	Guarded banana jacks
A/D resolution	16-bit
Measurement ranges	0.1V to 40V
DC Accuracy	< 0.12% of attenuator (0.5V attenuator) < 0.10% of attenuator (1V attenuator) < 0.08% of attenuator (5V attenuator) < 0.04% of attenuator (10V, 20V and 40V attenuators)
Channels Per Module	16
Input	Differential, DC coupled
Bandwidth	4 KHz (-3dB)
Sample Rate	20 KHz

<b>ISEV-4 Specifications</b>	
Connector Type	Guarded banana jacks
A/D resolution	16-bit
Measurement ranges	0.1V to 250V
DC Accuracy	+/- 0.06% of attenuator
Channels Per Module	4
Rated Isolation	250 VRMS or DC, Cat II (iso-common to chassis and other iso-commons)
Sample Rate	200 KHz
Input	Single-ended, AC/DC coupled
Bandwidth	40 KHz (-3dB)
<b>IHVM-4 Specifications</b>	
Connector Type	Guarded banana jacks
A/D resolution	16-bit
Measurement ranges	1V to 1000VDC or 600Vrms
DC Accuracy	+/- 0.06% of attenuator
Channels Per Module	4
Input	Differential, DC coupled
Bandwidth	35 KHz (-3dB)
Rated Isolation	600 VRMS or DC, Cat III (channel to chassis and other channels) 1,000 VRMS or DC, Cat II (channel to chassis and other channels)
Sample Rate	200 KHz
<b>IHVM-4P Specifications</b>	
Connector Type	Guarded banana jacks
A/D resolution	16-bit
Measurement ranges	1V to 1000VDC or 600Vrms
DC Accuracy	+/- 0.06% of attenuator
Channels Per Module	4
Input	Differential, DC coupled
Bandwidth	14 KHz (-3dB)
Rated Isolation	600 VRMS or DC, Cat III (channel to chassis and other channels) 1,000 VRMS or DC, Cat II (channel to chassis and other channels)
Sample Rate	50 KHz



The Daxus is also available rack mounted



### Supported Throughout Your Equipment's Lifetime

#### Technical Support

Our worldwide Field Sales Engineer team is available to visit your facility for one-on-one consultation to review your specific application and recommend the correct set-up for your production needs.

Our dedicated Sales and Support Engineers are ready to answer any questions and provide 24/7 support through our intuitive paging system at our facility in the USA, ensuring a response around the clock. To help you get started, AstroNova includes easy-to-use quick start guides with each system. Onsite start-up assistance is also available upon request.

#### Repair

If needed, AstroNova is prepared to repair your equipment. Our return process makes repairs quick and simple. Upon arrival of your device, your feedback will be reviewed, device examined and a recommended course of action will be determined. During the repair process, a device can be loaned to keep you up and running.

#### Upgrade

AstroNova is continuously evolving. By innovating and enhancing devices, we allow you to do more and perform better. In doing so, we give you a chance to be a part of technology evolution and upgrade your equipment. Whether it is hardware or software, we will ensure your devices remain current to meet your ever-changing requirements.

#### Warranty

AstroNova Test & Measurement equipment is covered by a one-year warranty on all parts and labor. An extended warranty is also available for an additional fee.

#### Lease

Capital expense budget not available? We have you covered. AstroNova Test & Measurement collaborates with a leasing company allowing you to lease the devices you need to get started now. Get underway with a low down payment and reasonable monthly fee.



The innovative design of the Daxus makes it ideal for distributed measurements. The Daxus can operate stand-alone or in a networked environment and the high capacity hard drive and battery backup ensure that data is always protected. The embedded controller and Linux operating system deliver real-time performance and reliability and the built-in digital signal processing (DSP) capabilities reduce the need for post-processing.

For stand-alone applications, such as vehicle testing or long term monitoring in the field, Daxus systems feature flexible power inputs including 100-240 VAC, 12 VDC, and 72 VDC<sup>1</sup>.

<sup>1</sup>Requires optional DCP-12 or DCP-72 power adapter



# AstroNova® Test & Measurement

## Why Choose AstroNova Test & Measurement?

**Innovative** - AstroNova (formerly Astro-Med) has been developing innovative Test & Measurement products since 1969.

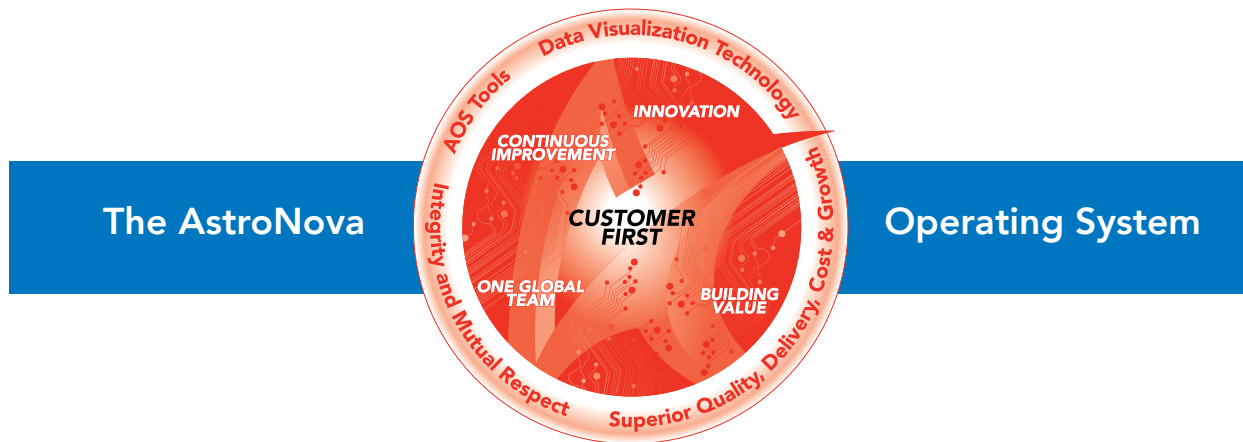
**Easy-To-Use** - Designed with the user in mind from firmware to software, our all-in-one data acquisition systems are easy to use, saving time and money.

**Reliability** - Constructed for durability and portability, our products are rugged and ideal for mobile use over time.


**Flexibility** - Our systems support a wide variety of sensors. Universal input modules reduce the cost of testing by providing the flexibility to connect multiple sensor types to a single module.

**Commitment** - We value our customers and are committed to providing total satisfaction. Our technical support engineers are located at our facility in the USA and around the world with on-site training and startup assistance is available.


**Collaboration** - Our approach is partnering with our customers to understand their needs and propose solutions based on their unique challenges.



## Other Data Acquisition Products Available from AstroNova



**Real-Chart RC-300** provides high resolution, real time, wide format printed charts for up to 32 channels of data. Real-Chart works with TMX® or as a standalone network printer with digital data via ethernet.



**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.



**SmartCorder® DDX-100** is a compact and portable all-in-one data acquisition system with battery power. Ideal for field testing and troubleshooting.

## AstroNova Worldwide Presence

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