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March 2005

ADVANCED POWER DESIGN, INC.

Model VXI600

Programmable DC Power Supplies



- **Single, double or triple output**
- **Up to 600W, 30 amps, 0-120VDC**
- **6 ½ Digit Readback Capability**
- **VXI message based format**
- **Front Panel AC Input (115VAC or 220VAC)**

Format: VXI bus C-size (dual slot)
Size: 9.2”H x 2.4”W x 13.4”D
Weight: 6 lbs. +1 lb. per output

General Description

The VXI600 instruments are single, double or triple output power supplies on C-size VXI card formats. The instruments are message-based devices for ease of programming. And because AC input power (115VAC or 220VAC) enters directly into the front of the card, no special backplane modifications or backplane power supplies are needed. Each instrument contains an on board microprocessor for communications and control over the VXIbus backplane. They also feature non-volatile memory for storage of calibration data, default settings and output sequencing parameters.

Packaging

The VXI600 supplies are packaged as standard VXIbus dual-slot, C-size cards. Each instruments are comprised of five functional sections. The VXI600 Interface and Input Power Conditioning sections are common to all VXI600 models. These sections provide the necessary control circuitry for communications over the backplane and provides input AC power factor correction circuitry and EMI filtering.

The remaining three sections are independent and isolated output power stages. Each output stage may be customer selected from two standard stage types (0-65VDC or 0-120VDC). Each output stage is rated at 200W continuous output power.

ADVANCED POWER DESIGNS, INC.
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Parallelable Outputs

To provide for maximum flexibility in meeting a broad range of UUT power requirements, *like* output stages may be used in parallel. For example, an instrument configured with three 65V/200W output stages may be used as a triple output supply or as a single 600W power supply – completely under software control.

Cooling / EMI

The VXI600 supplies are fully enclosed and shielded to eliminate electromagnetic interference and to provide for controlled airflow. The instruments are designed to comply with all VXIbus specifications for close-field and far-field radiated emissions and susceptibility. In addition, each output state contains miniature cooling fans to ensure adequate cooling air even in instances where adjacent slots are vacant.

Output Sequencing

Output sequencing is provided by means of 20 programmable memory states for voltage level and dwell times. Sequencing can be incremented via SCPI commands or may be stepped through using any of the eight TTLTRG trigger commands from the VXI backplane.

SCPI Compatibility

The VXI600 recognizes commands utilized by the Industry standard SCPI, Standard Commands for Programmable Instruments. Thus, programming is consistent with other major power supply manufacturers for interoperability as well as simplifying programming and reducing test program development times.

Software Calibration/Message Based

The instruments include a message based interface allowing the VXI600 to be controlled using high-level commands which take the form of IEEE-488.2 ASCII strings. ASCII strings allow programming to occur similar to rack-and-stack instruments.

Overview

The VXI600 power supplies are designed to offer the VXI integrator an alternative to rack-and-stack IEEE-488 power supplies. The VXI architecture and available software provides unprecedented ease of integration, minimum software development effort and high reliability without adding additional chassis to your test system.

If you have selected the VXIbus as your next generation ATE platform, consider taking full advantage of its capabilities by eliminating antiquated rack-and-stack power supplies and replacing them with VXI-based equivalents. The end result will be a fully integrated test system which is elegant, simple and cost effective.

See WWW.VXIbus.com for more about VXI power instruments!

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Available Output Power Stages

	P65	P120		P65	P120
Output Rating			Readback Accuracy		
Voltage	0-65VDC	0-120VDC	Voltage	4mV	8mV
Current (at full voltage)	3.1A	1.67A	Current	4mA	2mA
Current (Maximum)	10A	5A	Voltage Response (10%-90%)	5mS	10mS
Continuous Power	200W	200W			
Normal Mode Noise			Voltage Regulation		
Rms	8mV	10mV	Vs Line	2mV	4mV
PK-PK	35mV	50mV	Vs Load	4mV	8mV
Programming Accuracy			Load Recovery Time		
Voltage	4mV	8mV	Max Deviation	75mV	100mV
Current	3mA	3mA	Settling Time	<50uS	<50uS

OUTPUTS

Modes of Operation: Constant Voltage
Constant Current

Programming Resolution: 16 bits
Readback Resolution: 20 bits

Remote/Local sense: Up to 50% of output maybe dropped across sense leads. Not to exceed 10V. Drop decrease voltage available at the load.

Output Sequencing:
Number of States: 20
Dwell Times: 10mS to 60S +/- 5mS

PROTECTION CIRCUITRY

Overvoltage: Programmable from 0 to FS. Output is down programmed and relay is opened when programmed value is reached.

Current Limit: Programmable from 0 to FS. Output will automatically switch to constant current mode when limit value is reached. Voltage will foldback.

Current Trip: Programmable from 0 to FS. Output is down programmed and relay is opened when programmed current is reached.

Overtemperature: Automatically disables the output if factory preset temperature is reached.

Short Circuit: Outputs are protected in the event of a short across output terminals.

INPUT POWER

Configuration: Single Phase
Voltage: 115VAC or 220VAC
Frequency: 47- 63Hz
Efficiency: >90%
Power Factor: >0.85

BACKPLANE POWER DRAW

(Assumes 3 output stages installed)

DCV	IPM	IDM
+5vdc	2.1A	1.95A
+12vdc	0.6A	0.5A
-12vdc	0.1mA	0.1mA

PHYSICAL

Operating Temperature: 0 to 50 deg C
Non-Op Temperature: -51 to 71 deg C
Humidity: 20% to 95% non-cond
Cooling: Internal Fans

Electrical Isolation:

Input to Output: 1500Vrms
Between Outputs: 300Vrms/500VDC
Outputs to Chassis: 240VDC
RFI / EMI: Mil-Std-461C
VDE 0871/6.78 LVL B
Safety (design for): UL, CSA, VDE

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	+24vdc	1.5A	1.1A

OPTIONS FOR VXI600 SUPPLIES	
Front Panel Display	Front Panel LED readouts provide visual readouts of output voltage and current for each channel.
Software Drivers	Drivers are available for HPVEE, Labview and CVI. Instrument drivers and graphical soft panels are provided for ease of integration and control.
Reverse Polarity Relays	Internal Reverse Polarity relays are available to provide for reversal of output polarity under software control.
Extended Warranty & Calibration	Service contracts are available to provide extended warranty service and factory calibrations.

FOUR REASONS TO USE VXIBUS POWER SUPPLIES	
They're Fast	Faster ATE means fewer test stations, fewer operators and higher returns on capital.
They're easy to use	Available Plug & Play Drivers mean easy integration. Plug-in installation. Means ATE is developed in a fraction of the time as older generation systems.
They're less cost	Embedded instruments eliminate redundant control boards, logic supplies and housings. Fewer parts and interconnections mean more simplified systems reducing assembly and labor driving down development and life cycle costs
They're smaller and lighter	For portable ATE or when floor space is limited embedded power supplies provide compact, lightweight alternatives to rack-and-stack. Size reductions almost always reduce cost.

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