

PRODUCT OVERVIEW

Elgar's VXP 3000 Programmable Power System combines both AC and DC modules in one rugged 7" high chassis. It's the ideal solution for test systems where high power density, small size and flexibility are the key priorities.

Up to four standard, high-efficiency 750 VA AC power modules can be installed to provide single or three-phase power at 0-135 VAC with frequencies from 350-999.9 Hz. Up to eight 200W DC power modules can be installed as individual power supplies, or similar voltage modules can be software paralleled to deliver up to 1600W in a single output. Voltage ranges to 200 VDC and 270 VAC are available. The modules are completely enclosed in metal shields to ensure that EMI/RFI noise is controlled.

FEATURES AND BENEFITS

HIGHEST POWER DENSITY AVAILABLE

Double-width AC modules and single-width DC modules can be combined and installed in a single 7" high rackmount chassis weighing less than 100 pounds, making it ideal for down-sized transportable ATE systems.

IEEE-488 INTERFACE

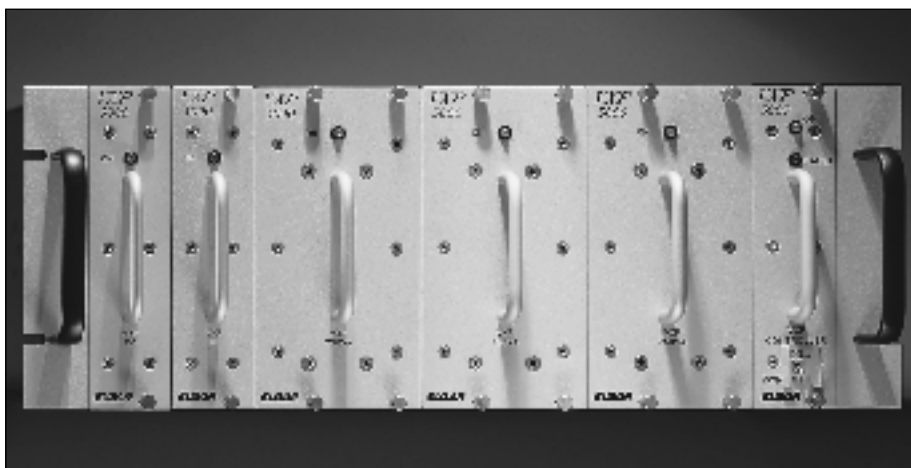
A choice of Elgar's ABLE syntax or optional CIIL (Control Interface Intermediate Language) for MATE applications provides complete frequency, voltage, current and general system control via the IEEE-488 GPIB.

FIELD RECONFIGURABLE

A VXP 3000 system can be reconfigured at any time by simply removing modules and replacing them with new modules.

POLARITY AND DISCONNECT RELAYS

Isolation relays are standard on all AC and DC modules. A polarity relay, standard on the DC modules, enables both positive and negative voltages to be programmed without external wiring changes to the user's load.



VXP 3000

EXPANDABLE

Expansion chassis can be added to supply up to 128 independent channels of AC or DC power or provide up to 6,750 VA of three-phase AC power at one GPIB address.

SOFTWARE PARALLELING

Multiple modules may be paralleled to fulfill higher power requirements (AC modules require a paralleling module).

HIGH VOLTAGE/HIGH CURRENT SUPPLIES

Optional Auxiliary Drive Modules, mounted in place of one or more of the standard DC modules, allow the user to program external high voltage or high power DC supplies as if they were standard VXP 3000 modules.

EMI/RFI CONTROL

By completely enclosing each module in a metal cage, the severe problems of radiated and conducted EMI/RFI are reduced.

NO DERATING

Unlike linear AC power amplifiers, the VXP 3000 AC modules have no derating for load power factors. Full rated VA is available into zero power factor loads.

APPLICATIONS

Due to its small size and high power density, the VXP 3000 is ideal for use in transportable ATE systems, where density and flexibility are the highest priorities. Since it is the world's only system combining a full complement of AC and DC sources at one GPIB address, it can perform comprehensive systems testing of an entire avionics suite.

Whether used in rack or transient case installations, the VXP 3000 supports the requirements of diversified applications typical in test system integration.

- Down-sized portable ATE systems
- System ATE test stations
- Avionics testing
- Calibration and repair depots
- Compliance test facilities

PROGRAMMING

The VXP 3000 is programmed via GPIB. Elgar's ABLE syntax provides simple, easy to use mnemonics for concise programming. Optional Control Interface Intermediate Language (CIIL) conforms to U.S. Air Force MATE guidelines. Please see the VXP 3000 manual for a complete list of ABLE and CIIL syntax.

AC AND DC MODULES

The DC modules are available in eight voltage ranges from 0-7 VDC to 0-200 VDC. The polarity relay enables both positive and negative voltages to be programmed without external wiring changes to the user's load. Precise regulation is always maintained via programmable internal or external remote voltage sensing.

750 VA AC modules are available that provide single phase power. For increased current, modules can be configured in a master/slave configuration, placing them in parallel (a paralleling module is required for this configuration). Multi-phase AC supplies are available through the use of multiple modules.

AUXILIARY DRIVE MODULES (ADM)

Auxiliary Drive Modules (programmable analog output modules) allow high power/high voltage external bulk supplies or loads to be controlled as if they were internal power or load modules. The ADM provides voltage and current programming and disconnect relay control.

LIMITLESS POWER

The ADM extends the normal power range of a programmable DC channel to 30 kW or more by using the flexibility of the VXP 3000 controller to program high power external power supplies.

ONE IEEE ADDRESS

Bulk supplies are treated as an additional VXP 3000 channel for ease of programming and do not require a separate GPIB address.

READBCK ON ANY SUPPLY

The ADM can provide BIT (Built-In Test) readback of actual voltage and current from the external bulk supply. A current shunt must be available for readback capability.

SPECIFICATIONS

OUTPUT FOR DC MODULES

REGULATION

Load Voltage: $\pm 0.01\%$ of full scale voltage plus $\pm 0.01\%$ of programmed value measured at point of sense

Load Current: $\pm 0.1\%$ of full scale current over full rated compliance voltage

Efficiency: 75% typical

REGULATION

Line Voltage: $\pm 0.01\%$ of full scale for a $\pm 10\%$ input change

Line Current: $\pm 0.05\%$ of full scale current for a $\pm 10\%$ input change

RIPPLE AND NOISE

Voltage: 5 mV RMS or 0.02% of full scale voltage, whichever is greater, measured from 20 Hz to 5 MHz. 25 mV plus 0.2% of full scale peak to peak voltage as measured from 20 Hz to 5 MHz

Current: 0.05% RMS of full scale

PROGRAMMING FOR DC MODULES

VOLTAGE

Range: Zero to full scale

Accuracy: $\pm 0.05\%$ of full scale voltage plus $\pm 0.05\%$ of programmed voltage

Resolution: Voltage = 1 part in 15400 min

CURRENT LIMIT SHUTDOWN

Range: 5% to full scale

Accuracy: $\pm 2\%$ of full scale

Resolution: Current = 1 part in 3850

Constant Current: (maximum module voltage programmed as above)

Range: 5% to full scale

Accuracy: $\pm 2\%$ of full scale

Resolution: Current = 1 part in 3850

OUTPUT AC MODULES

REGULATION

Load: $\pm 0.15\%$ of full scale voltage from 50% load to full rated linear resistive load

Line: $\pm 0.1\%$ of full scale voltage at full rated linear resistive load for nominal line $\pm 10\%$

Distortion: (THD) 1.75% maximum for 350 Hz to 450 Hz at full rated linear resistive load

Efficiency: 85% (typical)

PROGRAMMING FOR AC MODULES

VOLTAGE

Range: Zero to full scale

Accuracy: $\pm 0.25\%$ of full scale at point of sense from 5% of full scale to full scale with no load at 400 Hz

Resolution: 0.1 VAC

CURRENT LIMIT SHUTDOWN

Range: 5% of full scale to full scale current

Accuracy: $\pm 2\%$ of full scale current

Resolution: 0.01A

FREQUENCY

Range: 350 Hz to 1000 Hz

Accuracy: $\pm 0.1\%$ of programmed value

Resolution: 0.1 Hz

PHASE ANGLE

All three-phase systems have the phase angles programmable relative to a 0 degree reference phase

Range: Each phase is independently programmable relative to the reference phase from 0 degrees to 359.5 degrees.

Accuracy: ± 2 degrees for a balanced linear resistive load from 350 Hz to 450 Hz at full rated output voltage

Resolution: 0.5 degrees

SYSTEM PROGRAMMING

Interface: IEEE-488.2

GPIB Address: Switch selectable

Languages: Elgar's ABLE (Atlas Based Language Extension) or CIIL

Controller:

MODEL	INTERFACE	MNEMONIC
VXP 2001	IEEE-488	CIIL
VXP 2002	IEEE-488	ABLE

INPUT

Input Voltage: 115 VAC/230 VAC $\pm 10\%$, 1 ϕ ; 208 VAC $\pm 10\%$, 3 ϕ (optional)

Frequency: 47 Hz to 440 Hz

Power: The input power is a function of the number and power rating of modules selected for the system.

Efficiency: DC modules are typically 75% efficient. AC modules are typically 85% efficient.

Input Power Factor: The single-phase input power factor is typically 0.7.

GENERAL

TEMPERATURE

Operation: 0°C to +55°C

Non-Operating: -40°C to +85°C

ALTITUDE

100% of full rated power up to 5,000 ft

WARMUP

30 minutes maximum at 25°C

VIBRATION

MIL-STD-810D, Method 514.3

MIL-T-28800C for class 5 equipment

Shock Non-operating

MIL-STD-810, Method 516.3, Procedure 1, Shock level 15 g's

MECHANICAL

Size: 7"H x 19"W x 22.6" D RETMA rack

Weight: Chassis/controller 37.3 lbs; AC module 16 lb; DC module 5.5 lb; blank module 0.82 lb typical

DC Power Modules

Model	Output Voltage	Watts	Output Currents	Width/Slots
VXP-D07V01	0-7	143.5	0-20.5	1.8"/1
VXP-D14V01	0-14	200	0-14	1.8"/1
VXP-D20V01	0-20	200	0-10	1.8"/1
VXP-D32V01	0-32	200	0-6.5	1.8"/1
VXP-D40V01	0-40	200	0-5	1.8"/1
VXP-D60V01	0-60	200	0-3.3	1.8"/1
VXP-D100V01	0-100	200	0-2	1.8"/1
VXP-D200V01	0-200	200	0-1	1.8"/1

AC Power Modules

Model	Output Voltage/ Phase	Volt Ampres Maximum	Output Current Maximum	Width Slots	Output Frequency
VXP-A751	0-135 VAC/1 ϕ	750	7.0A	3.6"/2	350-1000 Hz
VXP-A2250-3	0-135 VAC L-N/3 ϕ	2250	7.0A	NA/6	350-1000 Hz
VXP-A2250-1	0-135 VAC/3 ϕ	2250	21A	NA/8	350-1000 Hz
VXP-A6570-3	0-135 VAC/3 ϕ	6750	21A	NA/24*	350-1000 Hz

Note: Full range programming of voltage, current, frequency and phase angle for AC power modules. VXP-A751 has 26 VAC auxiliary output standard, 5 VAC available. Consult factory for complete specifications.

*Three chassis