MODEL 5VP40-128 HIGH POWER DC LOAD

ADAPTIVE POWER SYSTEMS

5VP40-128 DC LOAD

Key features:

- 40kW Programmable DC Load
- Voltage Ranges 60V and 600V
- Current up to 1280 Adc
- High-Speed 5 Digit Precision Metering Capability
- Parallel Operation for Higher Power Applications
- Operating Modes: CC, CP, CR and CV
- Static and Dynamic CC Modes
- Fast Current Slew Rates
- Built-in Short Circuit Test
- Built-in Power Supply Over Current Protection Test Mode
- Built-in Power Supply Over Power Protection Test Mode
- Go/NoGo Test Support
- Auto-Sequencing
- Movable Cabinet
- Available Interface Options are USB, RS232, GPIB and LAN

GPIB RS232 USB UNIVERSAL SERIAL BUS LAN

OVERVIEW

The ADAPTIVE POWER 5VP40-128 Programmable DC Electronic Load is ideally suited for testing high current power supplies and batteries. With their ability to draw full current starting as low as 10.0 Vdc and as high as 600Vdc, the 5VP40-128 load can provide a wide dynamic range of load conditions.

Target applications for this load are product design & development, production test, incoming inspection, quality control and service.

The compact design and efficient air cooling of the 5VP Series cabinets represents industry-leading power density. The 5VP40-128 offers dual voltage and current range capability for optimal accuracy and resolution. For applications requiring more than 40kW, two or more 5VP40-128 loads can be operated in parallel. Higher power DC load models are available in the 5VP Series product line as well.

CABINET SYSTEM

All 5VP Series cabinets are fully integrated programmable DC load systems with easy mobility using ball-bearing locking casters. All user controls are along the top edge of the front panel for convenient access and viewing. Lower power level models will fit under work benches. Rear panel mounted DC bus bars handle DC current up to 1280 Adc depending on model.

The 5VP40-128 load offers high power performance and durability at an affordable price point.

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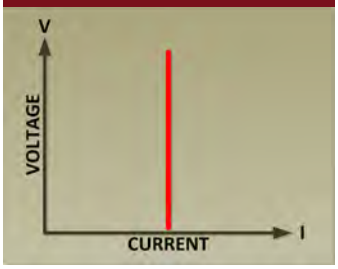
OPERATING MODES

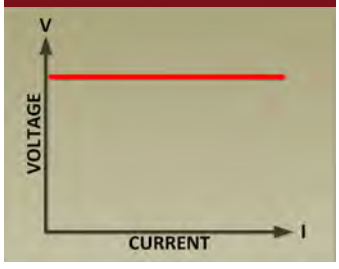
All 5VP Series loads support several modes of operation to accommodate a wide range of test requirements. Voltage sources like AC/DC power supplies are best tested using Constant Current (CC) mode. Battery chargers on the other hand can be tested using an E-load in Constant Voltage (CV)mode.

The available operating modes are Constant Current, Constant Voltage, Constant Power and Constant Resistance. A graphical representation of these modes of operation is shown here.

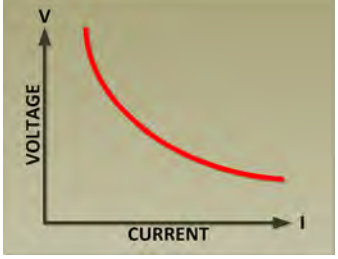
CONSTANT CURRENT



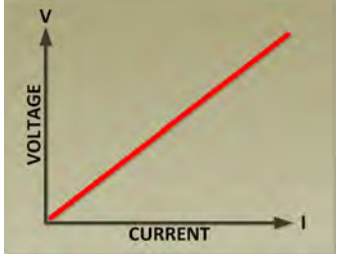
CONSTANT VOLTAGE



CONSTANT POWER



CONSTANT RESISTANCE

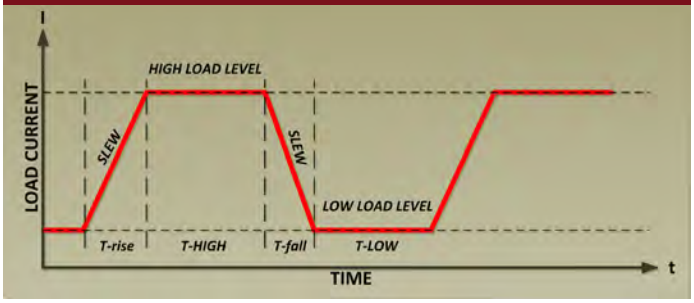


STATIC & DYNAMIC MODES

The demands put on power supplies to support increasingly complex electronics systems continue to escalate. It is no longer sufficient to test power supplies for static load conditions. Instead, dynamic load conditions requiring rapid changes in current demanded from the power supply need to be evaluated and tested. The 5VP Series Loads serve this purpose by offering high speed programmable dynamic load control.

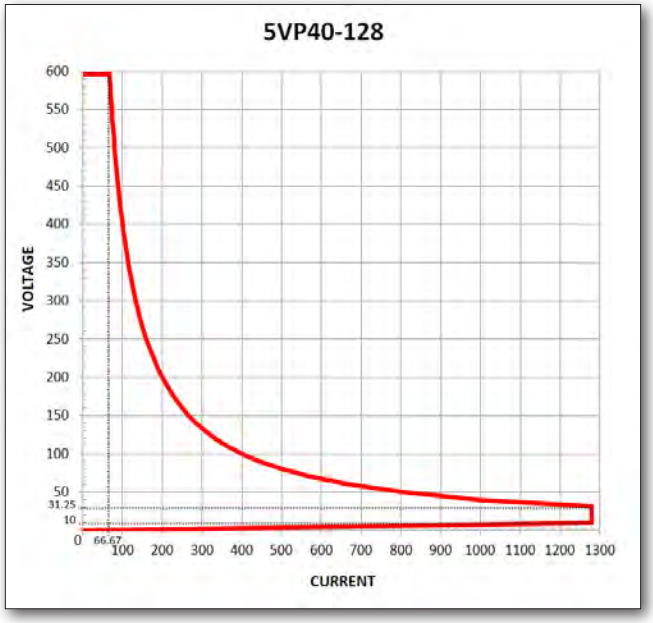
The diagram below illustrates the variable load current slew rates and dwell times that can be programmed on the 5VP Series loads.

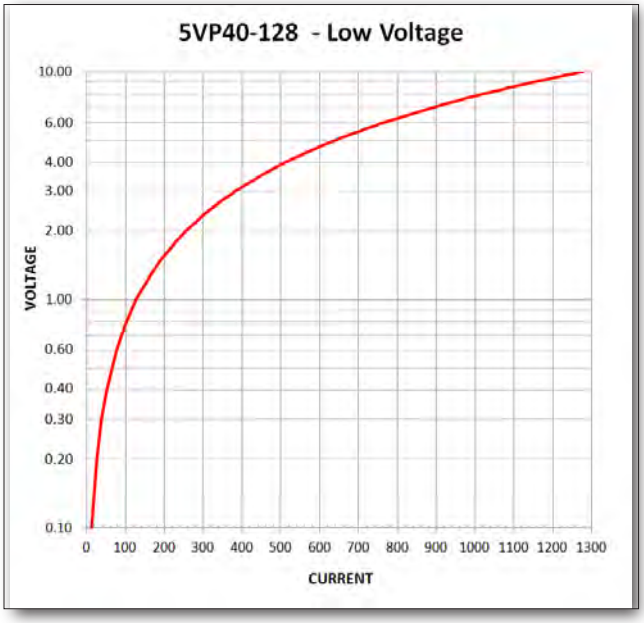
DYNAMIC LOAD WAVEFORM



Sequences of variable slew rates and test levels can be stored in non-volatile memory for recall during dynamic transient load test execution. This makes it possible to simulate real-world demanding load conditions on power supplies driving modern electronics. With current slew rates ranging up to several Amps per microsecond and dwell times down to 50 microseconds, thorough transient stability testing of power supply designs is possible. Advanced remote sense and control feedback loops ensure stable and repeatable testing with little or no distortion during load transitions.

VOLTAGE - CURRENT OPERATING PROFILES





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SPECIFICATIONS - 5VP40-128

MODEL		5VP40-128	
OPERATING RANGES			
Power Ranges		40KW	40KW
Current Ranges		0 - 128A	0 - 1280A
Voltage Range		0 - 600V	
Minimum Voltage		10V @1280A	
OPERATING MODES			
CC Mode	Range	0 - 128A	0 - 1280A
	Resolution	2.134mA	21.34mA
	Accuracy	± (0.1% of Setting + 0.2% of Range)	
CR Mode	Range	1404Ω ~ 0.468Ω	0.468Ω ~ 0.008Ω
	Resolution	35.6uS	8uΩ
	Accuracy	±0.2% of (Setting + Range)	
CV Mode	Range	600V	
	Resolution	10mV	
	Accuracy	±0.05% of (Setting + Range)	
CP Mode	Range	4KW	40KW
	Resolution	0.064W	0.64W
	Accuracy	±0.5% of (Setting + Range)	
PROTECTION			
Over Power (OP)		105%	
Over Current (OC)		105%	
Over Voltage (OV)		105%	
Over Temperature (OT)		Yes	
DYNAMIC OPERATION			
T high & T low		0.050~9.999 / 99.99 / 999.9 / 9999ms	
Resolution		0.001 / 0.01 / 0.1 / 1ms	
Accuracy		1uS/10us/100us/1ms + 50ppm	
Slew Rate		0.1024A~6.4A/us	1.024A~64A/us
		25.6mA/us	256mA/us
Min. Rise Time		20us (typical)	20us (typical)
METERING			
Voltage	Range	0~60V	60~600V
	Resolution	1mV	10mV
	Accuracy	±0.025% of (Reading + Range)	
Current	Range	0~128A	128~1280A
	Resolution	2.134mA	21.34mA
	Accuracy	±0.1% of (Reading + Range)	
Power	Range	0~4KW	40KW
	Resolution	0.1 W	1 W
	Accuracy	±0.125% of (Reading + Range)	
SHORT CIRCUIT			
Max. Short Current		1280A	
Load ON Voltage		0.4 - 100V	
Load OFF Voltage		0 - 99V	
AC INPUT AND PHYSICAL SPECIFICATIONS			
AC Input		208-240Vac ± 10%	
Power Consumption (max.)		3700 W	
Dimensions (H x W x D)		1513 mm x 647 mm x 766 mm / 59.6" x 25.5" x 30.2"	
Weight (Net)		430 Kg / 948 lbs.	
Operating Range		0 – 40°C / 32 – 104°F	
EMC & Safety		CE Mark	

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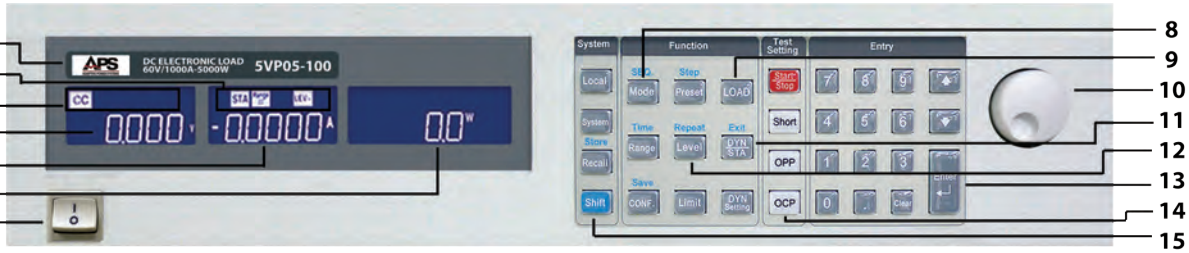
FRONT PANEL OPERATION

The 5VP Series Load has an easy to use front panel layout consisting of large white LED back-lit LCD readouts and a keypad, shuttle combination for settings and parameter entry. Status indicator LED's accompany the various function and mode setting keys so the operational state of the DC load is easily observed by the operator. The digital rotary encoder makes slewing of parameters very intuitive.



1. Model Number and ranges
2. Go/NoGo indicator and REMOTE state indicator.
3. Operating Mode Indicators
4. Multi-purpose 5 digit display - Voltage
5. Multi-purpose 5 digit display - Current
6. Multi-purpose 5 digit display - Power
7. Power On/Off Switch
8. MODE selection key
9. LOAD ON/OFF button and indicator
10. Shuttle Knob, parameter selection and slewing
11. DYNAMIC mode button and indicator
12. High or Low Range Selection and indicator
13. Numeric keypad and cursor keys
14. Start/Stop, SHORT, OCP and OPP Test keys and indicators
15. System Key Area

ORDERING INFORMATION:

Line 1: Specify DC Load Model 4VP40-128

Line 2: Specify Remote Control Option:
None, Opt GPIB, Opt RS232. Opt USB or Opt LAN

Line 3: Specify Load Cable Option. (See Table)

Ship kit:

- User Manuals in PDF Format on CD ROM.
- Analog Input BNC Cable (1 meter/39.4").
- Voltage Sense alligator clip lead, Red (1 meter, 39.4")
- Voltage Sense alligator clip lead, Black (1 meter, 39.4")
- LAN/USB Driver CD ROM (with Opt USB or Opt LAN).
- Certificate of Conformance.

Service and Support

Adaptive Power Systems' customer support is second to none. Our Customer Support Program provides the training, repair, calibration, and technical support services that our customers value. So, in addition to receiving the right test equipment, our customers can also count on excellent support before, during and after the sale. With company owned support and service centers around the world, support is never far away.

New Product Warranty: AC Sources & Loads: 1 year, DC Power Supplies: 2 years.

Complete calibration and repair services are offered at our US, European and Chinese manufacturing facilities (see contact info below). Calibrations are to original factory specifications and are traceable to NIST (National Institute of Standards and Technology).

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