5VP SERIES HIGH POWER DC LOADS

5VP Series DC LOADS

Key features:

- Models from 5kW to 60kW
- Voltage Ranges, 60V, 600V or 1000Vdc
- Current Ranges up to 1000 Adc
- High-Speed 5 Digit Precision Metering Capability
- Parallel Operation for High Power Applications
- Operating Modes: CC, CP, CR, CV, CC+CV & CP+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 Cabinets
- Available Interface Options are USB, RS232, GPIB and LAN

GPIB RS232 USB LAN

CE

OVERVIEW

The ADAPTIVE POWER 5VP Series Programmable DC Electronic Loads are ideally suited for testing high current power supplies and batteries. With their ability to draw full current starting as low as 3.0 Vdc and as high as 1000Vdc, the 5VP Series loads can provide a wide dynamic range of load conditions.

Target applications for these loads 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 5VP Series consists of a total of twenty four different model configurations, providing a wide variation of possible current and power ranges. Starting at 5 kW and ranging to 60 kW per cabinet, all models offer dual voltage and current range capability for optimal accuracy and resolution. For applications requiring more than 60kW, two or more 5VP loads can be operated in parallel.

CABINET SYSTEMS

The 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 1000 Adc depending on model.

The 5VP Series offers high power load performance and durability at an affordable price point.

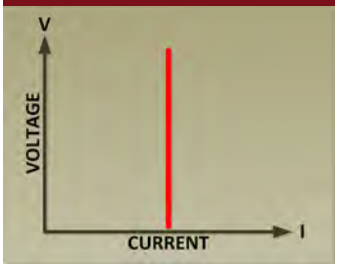
OPERATING MODES

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. **CC+CV** mode and **CP+CV** mode are also supported.

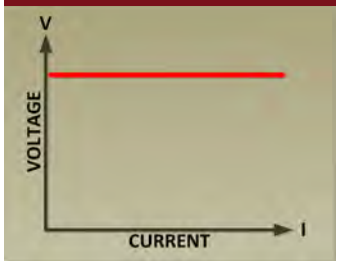
The 5VP Series also supports a maximum power point tracking mode (MPPT Mode) for solar panel development and test applications.

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

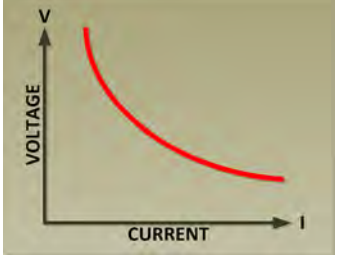
CONSTANT CURRENT



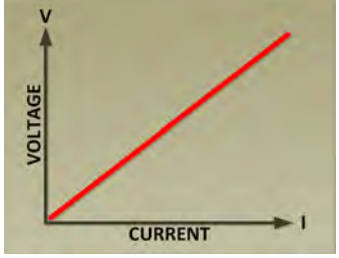
CONSTANT VOLTAGE



CONSTANT POWER



CONSTANT RESISTANCE

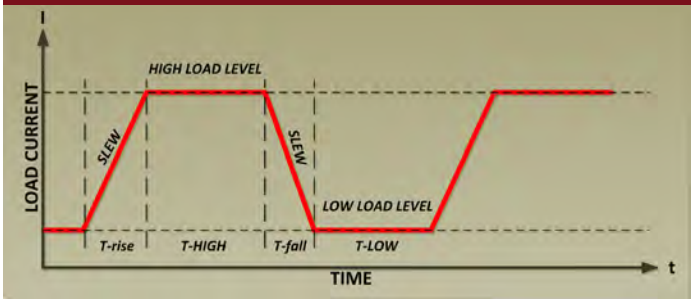


STATIC & DYNAMIC MODES

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.

FLEXIBLE INPUT CAPABILITIES

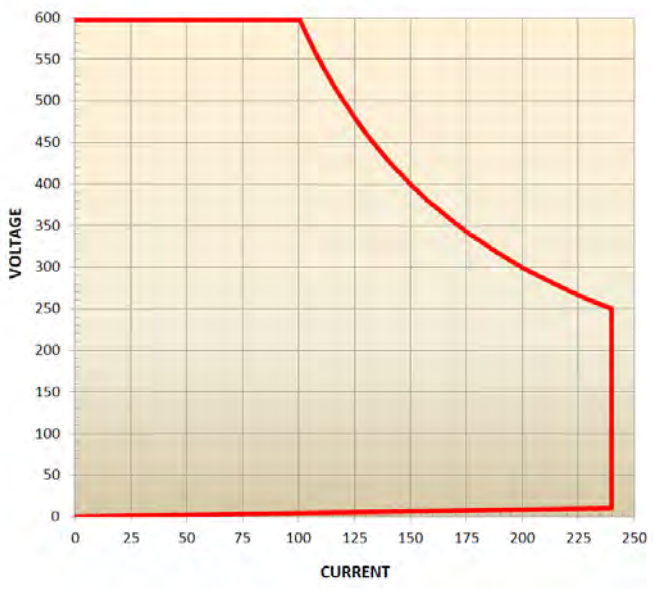
5VP Series loads are designed to accommodate a wide range of current input values within their maximum voltage and power capability. This allows the same loads to be used for higher voltage and low current requirements as well as low voltage higher current applications. A typical V-I operating curve is shown on the right for load model 5VP60-24. Bounded by the maximum voltage of 600Vdc and maximum current of 240A, the input range follows a 60kW power curve as shown.

Each load continuously tracks its input voltage current and power and safeguards against any operation outside of its operating limits.

This flexible operating range allows the same load to be used for a wide range of EUTs and provides great flexibility.

For V-I Curves by specific 5VP Series model, see page 9.

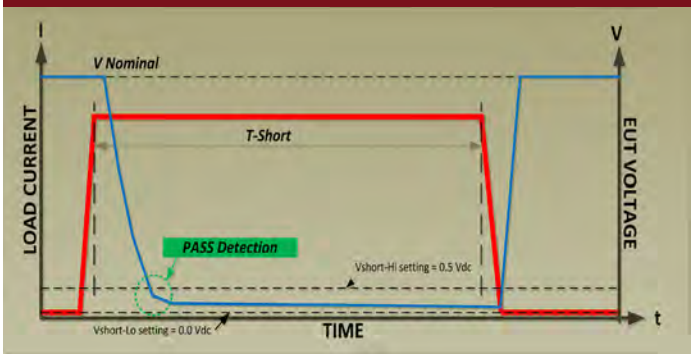
5VP60-24



SHORT CIRCUIT TESTING

Power supplies and batteries must be able to handle short circuit conditions without failing. The 5VP Series loads have a built-in short circuit test mode that allows easy PASS/FAIL detection as part of a test protocol. Programmable parameters short duration time (T-short) and Hi and Lo voltage limits for the EUT during short conditions. If the sensed voltage falls within the user-defined limits, a PASS is recorded.

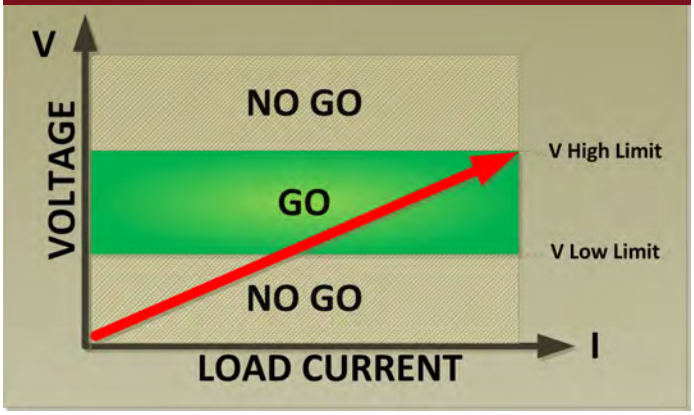
PASS/FAIL SHORT CIRCUIT TEST MODE



GO/NOGO LIMIT TESTING

The GO/NG mode of operation is a convenient way to automatically check any measured parameter like voltage, current or power against predefined upper and lower limits. Once set, the load continuously compares readings against these limits and issues a GO or NoGo error output.

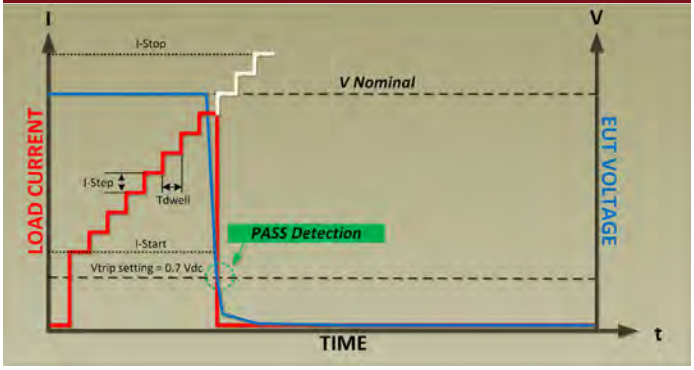
GO/NOGO LIMIT TEST MODE



OCP MODE TESTING

Testing the Over Current Protection (OCP) function of a power supply is easy when using the APS DC load. A special OPC mode allows setting of start current, end current and step size versus time. A preset voltage threshold level is used to detect protection trip current and terminate the test with either a PASS or FAIL result.

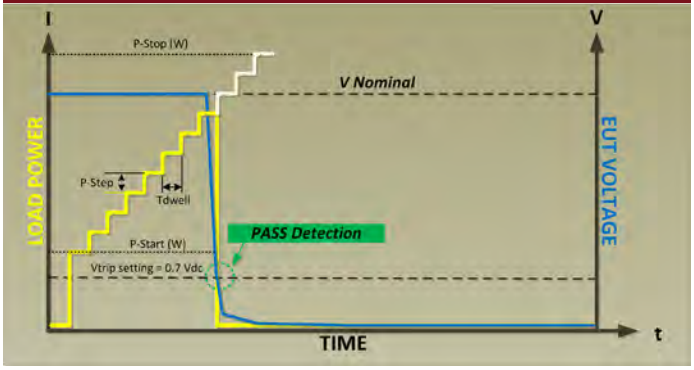
AUTOMATED OVER CURRENT TEST



OPP MODE TESTING

In addition to the OCP Test function, an Over Power Protection (OPP) test is provided as well. Conceptually, the test method is similar to the OCP test but instead of stepping the current, the power drawn by the load is stepped instead until the power supplies goes into protective shutdown or fold-back.

AUTOMATED OVER POWER TEST



Various Sizes of 5VP Series Models shown

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

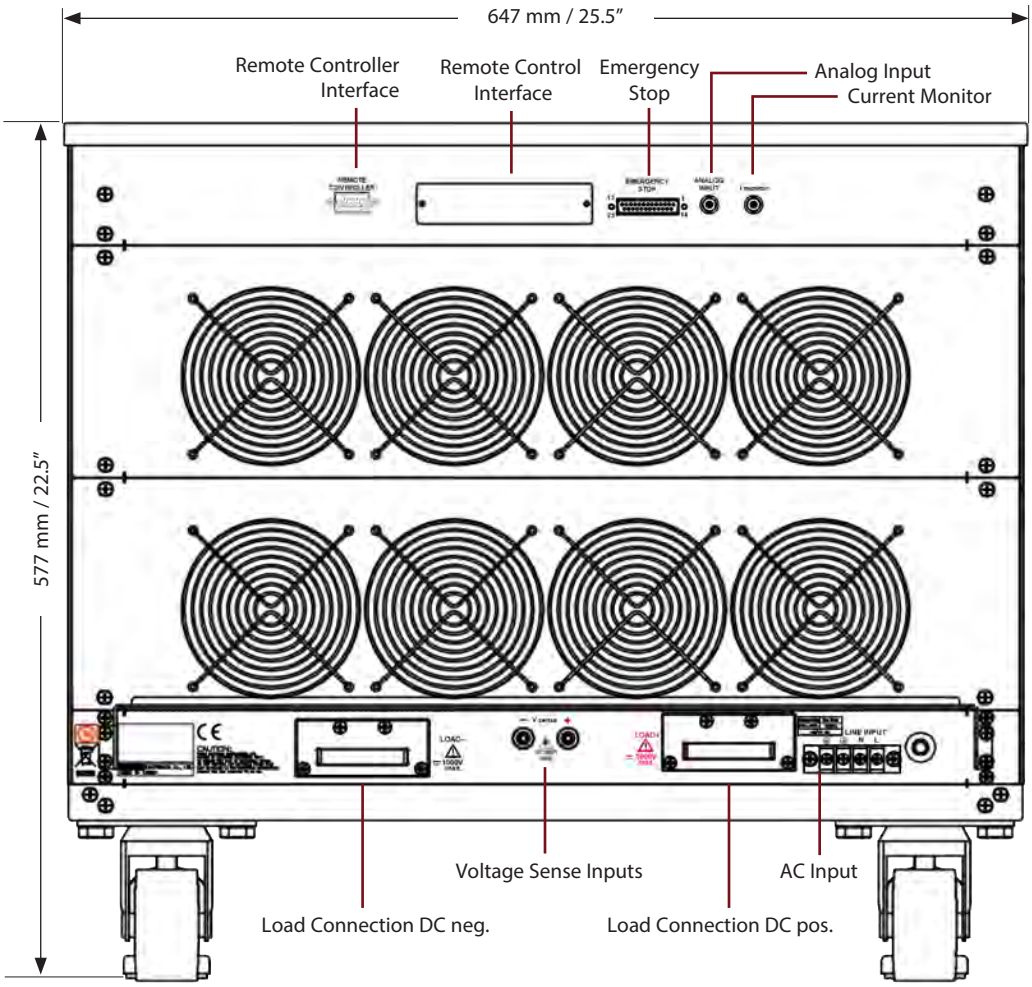
REAR PANEL

All AC input and DC Load connections are made at the rear panel of the 5VP Series chassis. This leaves the front panel clear from any cable clutter and potential trip hazards.

Air intake is from the front and exhaust is at the rear. Some clearance behind the 5VP chassis rear panel is recommended to ensure adequate air circulation through the load.

The rear panel dimensions shown to the right are for a 5VP 10kW Chassis. Refer to specification tables on next pages for dimensions of other models.

Note: Remote Control Interfaces and Emergency Stop connectors are options. See Ordering Information on back page of datasheet for details.



SPECIFICATIONS - 5VP Series DC LOADS - 60V Range

MODEL	5VP05-100	5VP10-100	5VP15-100	5VP20-100	5VP25-100	5VP30-100
OPERATING RANGES						
Power Ranges	0-0.5kW / 0-5kW	0-1.0kW / 0-10kW	0-1.5kW / 0-15kW	0-2.0kW / 0-20kW	0-2.5kW / 0-25kW	0-3.0kW / 0-30kW
Current Ranges	0-100A / 0-1000A	0-100A / 0-1000A	0-100A / 0-1000A	0-100A / 0-1000A	0-100A / 0-1000A	0-100A / 0-1000A
Voltage Range	0-60.0 V					
Minimum Voltage	0.1V @ 100A / 0.7V @ 1000A					
OPERATING MODES						
CC Mode Range	0-100A / 0-1000A	0-100A / 0-1000A	0-100A / 0-1000A	0-100A / 0-1000A	0-100A / 0-1000A	0-100A / 0-1000A
Resolution	1.667mA / 16.67mA	1.667mA / 16.67mA	1.667mA / 16.67mA	1.667mA / 16.67mA	1.667mA / 16.67mA	1.667mA / 16.67mA
Accuracy	± (0.1% OF SETTING + 0.2% RANGE)					
CR Mode Range	0.001 - 0.06Ω / 0.06 - 3600Ω					
Resolution	0.001mΩ / 277μΩ					
Accuracy	± 0.2% OF (SETTING + RANGE)					
CV Mode Range	0-60.0 V					
Resolution	1.0 mV					
Accuracy	± 0.05% OF (SETTING + RANGE)					
CP Mode Range	0-0.5kW / 0-5kW	0-1.0kW / 0-10kW	0-1.5kW / 0-15kW	0-2.0kW / 0-20kW	0-2.5kW / 0-25kW	0-3.0kW / 0-30kW
Resolution	8.34mW / 83.4mW	16.7mW / 167mW	25mW / 250mW	33.4mW / 334mW	41.7mW / 417mW	50mW / 500mW
Accuracy	± 0.5% OF (SETTING + RANGE)					
CC+CV / CP+CV Modes	See CC, CV and CP mode specifications					
PROTECTION						
Over Power (OP)	5250 W	10500 W	15750 W	21000 W	26250 W	31500 W
Over Current (OC)	1010 A	1050 A	1050 A	1050 A	1050 A	1050 A
Over Voltage (OV)	63.0 V					
Over Temperature (OT)	+85° C / +185° F					
DYNAMIC OPERATION						
T high & T low	0.150-9.999/.../9999ms	0.050-9.999 / 99.99 / 999.9 / 9999ms (20 kHz)				
Resolution	0.001 / 0.01 / 0.1 / 1ms					
Accuracy	1μs / 10μs / 100μs / 1ms + 50ppm					
Slew Rate	24mA-1.5A/μs	66.4mA-4.15A/μs				
	240mA-15A/μs	664mA-41.5A/μs				
Min. Rise Time	66.7μs Typical	24μs Typical				
METERING						
Voltage Range	0 - 6.0 V / 0 - 60.0 V					
Resolution	0.1 mV / 1.0 mV					
Accuracy	± 0.025% OF (READING + RANGE)					
Current Range	0-100A / 0-1000 A					
Resolution	1.667mA / 16.67mA					
Accuracy	± 0.1% OF (READING + RANGE)					
Power Range	0-0.5kW / 0-5kW	0-1.0kW / 0-10kW	0-1.5kW / 0-15kW	0-2.0kW / 0-20kW	0-2.5kW / 0-25kW	0-3.0kW / 0-30kW
Resolution	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W
Accuracy	± 0.125% OF (READING + RANGE)					
SHORT CIRCUIT						
Max. Short Current	1000 A					
ANALOG I/O						
Analog Monitor Out / Input	0 - 10 V out F.S. / 1KΩ Zout, Non-isolated / 0 - 10V in for F.S. current @ 10V (CC Mode only)					
AC INPUT AND PHYSICAL SPECIFICATIONS						
AC Input	100-240Vac ± 10%, 50/60 Hz					208-240Vac ± 10%
Power Consumption (max.)	600 W	1000 W	1450 W	1900 W	2350 W	2800 W
Dimensions (H x W x D)	577x647x766mm 22.7"x25.5"x30.2"		736x 647x766mm 29"x25.5"x30.2"	889x 647x 766mm 35"x25.5"x30.2"	1048x647x766mm 41.3"x25.5"x30.2"	1201x647x766mm 47.3"x25.5"x30.2"
Weight (Net)	100kg / 220.5 lbs	130kg / 286.6 lbs	170kg / 374.8 lbs	220kg / 485.0 lbs	280kg / 617.3 lbs	340kg / 749.6 lbs
Operating Range	0 - 40° C / 32 - 104° F					
EMC & Safety	CE Mark					

SPECIFICATIONS - 5VP Series DC LOADS - 600V Range

MODEL	5VP05-16	5VP10-32	5VP15-48	5VP20-64	5VP25-80	5VP30-96	5VP50-21	5VP60-24
OPERATING RANGES								
Power Ranges	0-0.5kW / 0-5kW	0-1.0kW / 0-10kW	0-1.5kW / 0-15kW	0-2.0kW / 0-20kW	0-2.5kW / 0-25kW	0-3.0kW / 0-30kW	0-5.0kW / 0-50kW	0-6.0kW / 0-60kW
Current Ranges	0-16.0A / 0-160A	0-32.0A / 0-320A	0-48.0A / 0-480A	0-64.0A / 0-640A	0-80.0A / 0-800A	0-96.0A / 0-960A	0-21.0A / 0-210A	0-24.0A / 0-240A
Voltage Range	0 - 600.0 V							
Minimum Voltage	20V @ 160A	20V @ 320A	20V @ 480A	20V @ 640A	20V @ 800A	20V @ 960A	20V @ 210A	20V @ 240A
OPERATING MODES								
CC Mode Range	0-16.0A / 0-160A	0-32.0A / 0-320A	0-48.0A / 0-480A	0-64.0A / 0-640A	0-80.0A / 0-800A	0-96.0A / 0-960A	0-21.0A / 0-210A	0-24.0A / 0-240A
Resolution	0.267mA / 2.67mA	0.534mA / 5.34mA	0.8mA / 8.0mA	1.067mA / 10.67mA	1.334mA / 13.34mA	1.6mA / 16.0mA	0.35mA / 3.5mA	0.4mA / 4.0mA
Accuracy	± (0.1% OF SETTING + 0.2% RANGE)							
CR Mode Range	0.0378Ω-3.75Ω 3.75Ω-15000Ω	0.0192Ω-1.875Ω 1.875Ω-12500Ω	0.0126Ω-1.25Ω 1.25Ω-15000Ω	0.0096Ω-0.9375Ω 0.9375Ω-11250Ω	0.0078Ω-0.75Ω 0.75Ω-11250Ω	0.0066Ω-0.625Ω 0.625Ω-12500Ω	0.0286Ω-2.857Ω 2.857Ω-8571Ω	0.0834Ω-2.5Ω 2.5Ω-7500Ω
Resolution	63µΩ / 4.4µΩ	0.032mΩ / 0.0088mΩ	0.021mΩ / 0.0133mΩ	0.016mΩ / 0.0177mΩ	0.013mΩ / 0.0222mS	0.011mΩ / 0.0266mΩ	47.7uΩ / 5.83uS	41.7uΩ / 6.66uS
Accuracy	± 0.2% OF (SETTING + RANGE)							
CV Mode Range	0-600.0 V							
Resolution	10 mV							
Accuracy	± 0.05% OF (SETTING + RANGE)							
CP Mode Range	0-0.5kW / 0-5kW	0-1.0kW / 0-10kW	0-1.5kW / 0-15kW	0-2.0kW / 0-20kW	0-2.5kW / 0-25kW	0-3.0kW / 0-30kW	0-5.25kW / 0-50kW	0-6.0kW / 0-60kW
Resolution	8.34mW / 83.4mW	16.7mW / 167mW	25mW / 250mW	33.4mW / 334mW	41.7mW / 417mW	50mW / 500mW	87.5mW / 875mW	0.1W / 1.0 W
Accuracy	± 0.5% OF (SETTING + RANGE)							
CC+CV / CP+CV Modes	See CC, CV and CP mode specifications							
PROTECTION								
Over Power (OP)	5250 W	10500 W	15750 W	21000 W	26250 W	31500 W	52500 W	63000 W
Over Current (OC)	168 A	336 A	504 A	672 A	840 A	1008 A	220.5 A	252 A
Over Voltage (OV)	630.0 V							
Over Temperature (OT)	+85° C / +185° F							
DYNAMIC OPERATION								
T high & T low	0.050-9.999 / 99.99 / 999.9 / 9999ms (20 kHz)							
Resolution	0.001 / 0.01 / 0.1 / 1ms							
Accuracy	1µs / 10µs / 100µs / 1ms + 50ppm							
Slew Rate	12.8mA-800mA/µs	25.6mA-1.6A/µs	38.4mA-2.4A/µs	51.2mA-3.2A/µs	64mA-4A/µs	76.8mA-4.8A/µs	16.8mA-1.05A/uS	19.2mA-1.2A/uS
	128mA-8A/µs	256mA-16A/µs	384mA-24A/µs	512mA-32A/µs	640mA-40A/µs	768mA-48A/µs	168mA-10.5A/uS	192mA-12A/uS
Min. Rise Time	20µs Typical							
METERING								
Voltage Range	0 - 60.0 V / 0 - 600 V							
Resolution	0.1 mV / 1.0 mV							
Accuracy	± 0.025% OF (READING + RANGE)							
Current Range	0-16.0A / 0-160A	0-32.0A / 0-320A	0-48.0A / 0-480A	0-64.0A / 0-640A	0-80.0A / 0-800A	0-96.0A / 0-960A	0-21.0A / 0-210A	0-24.0A / 0-240A
Resolution	0.267mA / 2.67mA	0.534mA / 5.34mA	0.8mA / 8.0mA	1.067mA / 10.67mA	1.334mA / 13.34mA	1.6mA / 16.0mA	0.35mA / 3.5mA	0.4mA / 4mA
Accuracy	± 0.1% OF (READING + RANGE)							
Power Range	0-0.5kW / 0-5kW	0-1.0kW / 0-10kW	0-1.5kW / 0-15kW	0-2.0kW / 0-20kW	0-2.5kW / 0-25kW	0-3.0kW / 0-30kW	0-5.0kW / 0-50kW	0-6.0kW / 0-60kW
Resolution	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W
Accuracy	± 0.125% OF (READING + RANGE)							
SHORT CIRCUIT								
Max. Short Current	160 A	320 A	480 A	640 A	800 A	960 A	210 A	240 A
ANALOG I/O								
Analog Mon. Out / Input	0 - 10 V out F.S. / 1KΩ Zout, Non-isolated / 0 - 10V in for F.S. current @ 10V (CC Mode only)							
AC INPUT AND PHYSICAL SPECIFICATIONS								
AC Input	100-240Vac ± 10%, 50/60 Hz					208-240Vac ± 10%, 50/60 Hz		
Power Consumption (max.)	600 W	1000 W	1450 W	1900 W	2350 W	2800 W	5450 W	5500 W
Dimensions (H x W x D)	577x647x766mm 22.7"x25.5"x30.2"		736x 647x766mm 29"x25.5"x30.2"	889x 647x 766mm 35"x25.5"x30.2"	1048x647x766mm 41.3"x25.5"x30.2"	1201x647x766mm 47.3"x25.5"x30.2"	1360x853x766 mm 53.6"x33.6"x30.2"	1513x85366mm 59.6"x33.6"x30.2"
Weight (Net)	100kg / 220.5 lbs	130kg / 286.6 lbs	170kg / 374.8 lbs	220kg / 485.0 lbs	280kg / 617.3 lbs	340kg / 749.6 lbs	510kg/1124.4 lbs	630kg/1388.9 lbs
Operating Range	0 - 40° C / 32 - 104° F							
EMC & Safety	CE Mark							

SPECIFICATIONS - 5VP Series DC LOADS - 1000V Range

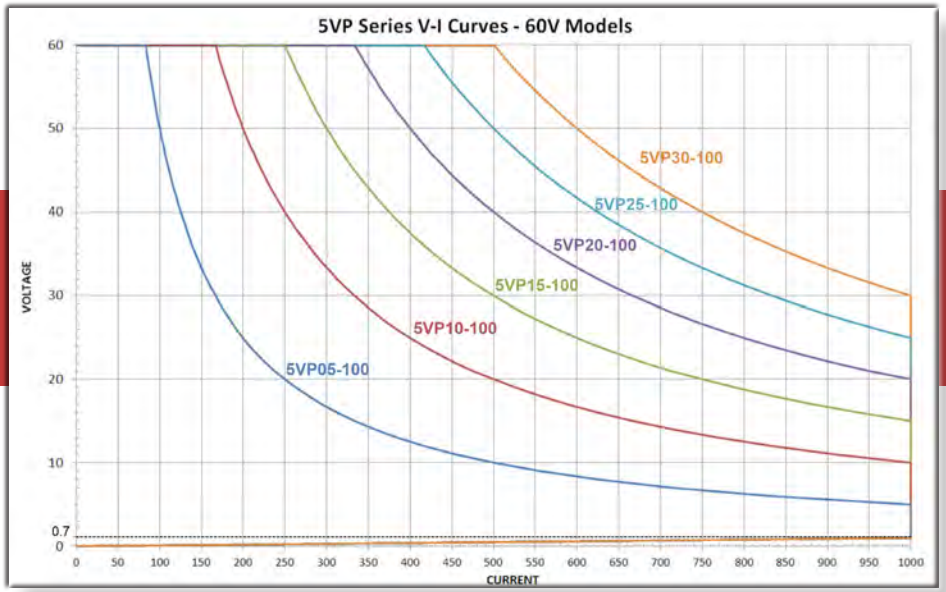
MODEL	5VP05-05	5VP10-10	5VP15-15	5VP20-20	5VP25-25
OPERATING RANGES					
Power Ranges	0-0.5kW / 0-5kW	0-1.0kW / 0-10kW	0-1.5kW / 0-15kW	0-2.0kW / 0-20kW	0-2.5kW / 0-25kW
Current Ranges	0 - 5.0 A / 0 - 50 A	0 - 10 A / 0 - 100 A	0 - 15 A / 0 - 150 A	0 - 20 A / 0 - 200 A	0 - 25 A /0 - 250 A
Voltage Range	0 - 1000 V				
Minimum Voltage	20V @ 50A	20V @ 100A	20V @ 150A	20V @ 200A	20V @ 250A
OPERATING MODES					
CC Mode Range	0 - 5.0 A / 0 - 50 A	0 - 10 A / 0 - 100 A	0 - 15 A / 0 - 150 A	0 - 20 A / 0 - 200 A	0 - 25 A /0 - 250 A
Resolution	0.08mA / 0.8mA	0.16mA / 1.6mA	0.25mA / 2.5mA	0.32mA / 3.2mA	0.4mA / 4mA
Accuracy	± (0.1% OF SETTING + 0.2% RANGE)				
CR Mode Range	0.4008Ω-20Ω / 20Ω-24000Ω	0.2004Ω-10Ω/ 10Ω-12000Ω	0.1344Ω-6.666Ω /6.666Ω-8000Ω	0.1008Ω-5Ω / 5Ω-6000Ω	0.0804Ω-4Ω/ 4Ω-4800Ω
Resolution	0.334mΩ / 0.833μΩ	0.167mΩ / 1.666μΩ	0.112mΩ / 2.5μΩ	0.084mΩ / 3.33μΩ	0.067mΩ / 4.166μΩ
Accuracy	± 0.2% OF (SETTING + RANGE)				
CV Mode Range	20.0 - 1000.0 V				
Resolution	16mV				
Accuracy	± 0.05% OF (SETTING + RANGE)				
CP Mode Range	0-0.5kW / 0-5kW	0-1.0kW / 0-10kW	0-1.5kW / 0-15kW	0-2.0kW / 0-20kW	0-2.5kW / 0-25kW
Resolution	8mW / 80mW	16mW / 160mW	25mW / 250mW	32mW / 320mW	40mW / 400mW
Accuracy	± 0.5% OF (SETTING + RANGE)				
CC+CV / CP+CV Modes	See CC, CV and CP mode specifications				
PROTECTION					
Over Power (OP)	5250 W	10500 W	15750 W	21000 W	26250 W
Over Current (OC)	52.0 A	104.0 A	156.0 A	208.0 A	260.0 A
Over Voltage (OV)	1040.0 V				
Over Temperature (OT)	+85° C / +185° F				
DYNAMIC OPERATION					
T high & T low	0.050 - 9.999 / 99.99 / 999.9 / 9999ms (20 kHz)				
Resolution	0.001 / 0.01 / 0.1 / 1ms				
Accuracy	1μs / 10μs / 100μs / 1ms + 50ppm				
Slew Rate	0.004A-0.25A/μs	0.008A-0.5A/μs	0.012A-0.75A/μs	0.016A-1A/μs	0.02A-1.25A/μs
	0.04A-2.5A/μs	0.08A-5A/μs	0.12A-7.5A/μs	0.16A-10A/μs	0.2A-12.5A/μs
Min. Rise Time	20μs Typical				
METERING					
Voltage Range	0 - 100.0 V / 100 - 1000 V				
Resolution	1.6 mV / 16 mV				
Accuracy	± 0.025% OF (READING + RANGE)				
Current Range	0 - 5.0 A / 0 - 50 A	0 - 10 A / 0 - 100 A	0 - 15 A / 0 - 150 A	0 - 20 A / 0 - 200 A	0 - 25 A /0 - 250 A
Resolution	0.08mA / 0.8mA	0.16mA / 1.6mA	0.25mA / 2.5mA	0.32mA / 3.2mA	0.4mA / 4mA
Accuracy	± 0.1% OF (READING + RANGE)				
Power Range	0-0.5kW / 0-5kW	0-1.0kW / 0-10kW	0-1.5kW / 0-15kW	0-2.0kW / 0-20kW	0-2.5kW / 0-25kW
Resolution	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W
Accuracy	± 0.125% OF (READING + RANGE)				
SHORT CIRCUIT					
Max. Short Current	50 A	100 A	150 A	200 A	250 A
ANALOG I/O					
Analog Monitor Out / Input	0 - 10 V out F.S. / 1KΩ Zout, Non-isolated / 0 - 10V in for F.S. current @ 10V (CC Mode only)				
AC INPUT AND PHYSICAL SPECIFICATIONS					
AC Input	100-240Vac ± 10%, 50/60 Hz				
Power Consumption (max.)	600 W	1000 W	1450 W	1900 W	2350 W
Dimensions (H x W x D)	577 x 647 x 766 mm 29" x 25.5" x 30.2"		736 x 647 x 766 mm 29" x 25.5" x 30.2"	889 x 647 x 766 mm 35" x 25.5" x 30.2"	1048 x 647 x 766 mm 41.3" x 25.5" x 30.2"
Weight (Net)	100kg / 220.5 lbs	130kg / 286.6 lbs	170kg / 374.8 lbs	220kg / 485.0 lbs	280kg / 617.3 lbs
Operating Range	0 - 40° C / 32 - 104° F				
EMC & Safety	CE Mark				

SPECIFICATIONS - 5VP Series DC LOADS - 1000V Range

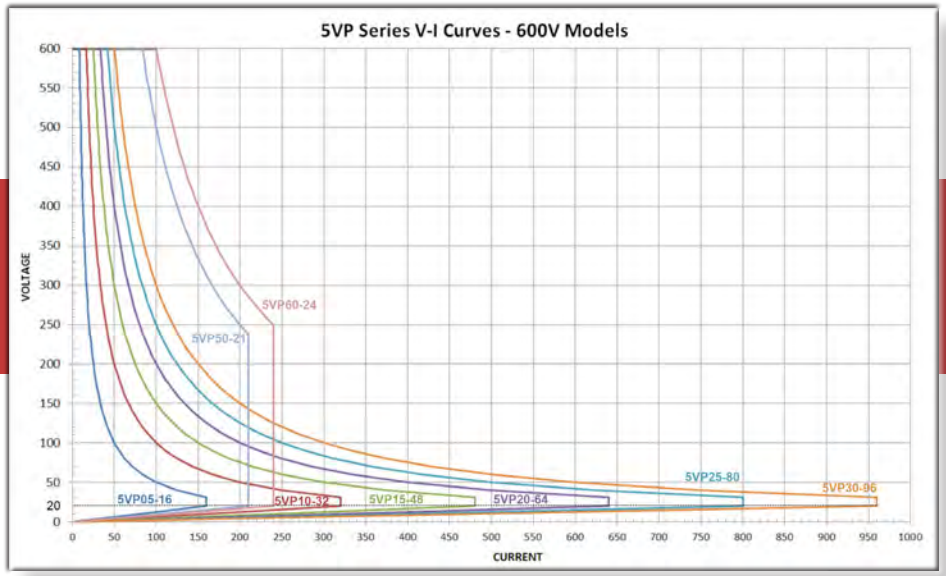
MODEL	5VP30-30	5VP35-35	5VP40-40	5VP50-50	5VP60-60
OPERATING RANGES					
Power Ranges	0-3.0kW / 0-30kW	0-3.5kW / 0-35kW	0-4.0kW / 0-40kW	0-5.0kW / 0-50kW	0-6.0kW / 0-60kW
Current Ranges	0 - 30 A / 0 - 300 A	0 - 35 A / 0 - 350 A	0 - 40 A / 0 - 400 A	0 - 52.5 A / 0 - 500 A	0 - 60 A /0 - 600 A
Voltage Range	0 - 1000 V				
Minimum Voltage	20V @ 300A	20V @ 350A	20V @ 400A	20V @ 500A	20V @ 600A
OPERATING MODES					
CC Mode Range	0 - 30 A / 0 - 300 A	0 - 35 A / 0 - 350 A	0 - 40 A / 0 - 400 A	0 - 52.5 A / 0 - 500 A	0 - 60 A /0 - 600 A
Resolution	0.5mA / 5mA	0.56mA / 5.6mA	0.64mA / 6.4mA	0.875mA / 87.5mA	1.0mA / 10mA
Accuracy	± (0.1% OF SETTING + 0.2% RANGE)				
CR Mode Range	0.0672Ω-3.333Ω /3.333Ω-4000Ω	0.0576Ω-2.857Ω/2.857Ω-3428.4Ω	0.0504Ω-2.5Ω/2.5Ω-3000Ω	0.0384Ω-1.905Ω/ 1.905Ω-11430Ω	0.0333Ω-1.666Ω/1.666Ω-10000Ω
Resolution	0.056mΩ / 5.0005μΩ	0.048mΩ / 5.84μΩ	0.042mΩ / 6.66μΩ	32uΩ / 8.75uS	27.8uΩ / 10uS
Accuracy	± 0.2% OF (SETTING + RANGE)				
CV Mode Range	20.0 - 1000.0 V				
Resolution	16mV				
Accuracy	± 0.05% OF (SETTING + RANGE)				
CP Mode Range	0-3.0kW / 0-30kW	0-3.5kW / 0-35kW	0-4.0kW / 0-40kW	0-5.0kW / 0-50kW	0-6.0kW / 0-60kW
Resolution	50mW / 500mW	56mW / 560mW	64mW / 640mW	87.5mW / 875mW	0.1 W / 1.0 W
Accuracy	± 0.5% OF (SETTING + RANGE)				
CC+CV / CP+CV Modes	See CC, CV and CP mode specifications				
PROTECTION					
Over Power (OP)	31500 W	36750 W	42000 W	52500 W	63000 W
Over Current (OC)	312 A	364 A	416 A	520 A	624 A
Over Voltage (OV)	1040.0 V				
Over Temperature (OT)	+85° C / +185° F				
DYNAMIC OPERATION					
T high & T low	0.050 - 9.999 / 99.99 / 999.9 / 9999ms (20 kHz)				
Resolution	0.001 / 0.01 / 0.1 / 1ms				
Accuracy	1μs / 10μs / 100μs / 1ms + 50ppm				
Slew Rate	0.024A-1.5A/μs	0.028A-1.75A/μs	0.032A-2A/μs	42mA-2.625A/uS	48mA-3A/uS
	0.24A-15A/μs	0.28A-17.5A/μs	0.32A-20A/μs	420mA-26.25A/uS	480mA-30A/uS
Min. Rise Time	20μs Typical				
METERING					
Voltage Range	0 - 100.0 V / 100 - 1000 V				
Resolution	1.6 mV / 16 mV				
Accuracy	± 0.025% OF (READING + RANGE)				
Current Range	0 - 30 A / 0 - 300 A	0 - 35 A / 0 - 350 A	0 - 40 A / 0 - 400 A	0 - 52.5 A / 0 - 500 A	0 - 60 A /0 - 600 A
Resolution	0.5mA / 5mA	0.56mA / 5.6mA	0.64mA / 6.4mA	0.8mA / 8mA	1.0mA / 10mA
Accuracy	± 0.1% OF (READING + RANGE)				
Power Range	0-3.0kW / 0-30kW	0-3.5kW / 0-35kW	0-4.0kW / 0-40kW	0-5.0kW / 0-50kW	0-6.0kW / 0-60kW
Resolution	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W	0.01 W / 0.1W
Accuracy	± 0.125% OF (READING + RANGE)				
SHORT CIRCUIT					
Max. Short Current	300 A	350 A	400 A	500 A	600 A
ANALOG I/O					
Analog Monitor Out / Input	0 - 10 V out F.S. / 1KΩ Zout, Non-isolated / 0 - 10V in for F.S. current @ 10V (CC Mode only)				
AC INPUT AND PHYSICAL SPECIFICATIONS					
AC Input	208-240Vac ± 10%, 50/60 Hz				
Power Consumption (max.)	2800 W	3250 W	3700 W	5450 W	6200 W
Dimensions (H x W x D)	1201 x 647 x 766 mm 47.3" x 25.5" x 30.2"	1360 x 647 x 766 mm 53.6" x 25.5" x 30.2"	1513 x 647 x 76 6mm 59.6" x 25.5" x 30.2"	1360 x 853 x 766 mm 53.6" x 33.6" x 30.2"	1513 x 853 x 766 mm 59.6" x 33.6" x 30.2"
Weight (Net)	340kg / 749.6 lbs	390kg / 859.8 lbs	430kg / 948.0 lbs	510kg / 1124.4 lbs	630kg / 1388.9 lbs
Operating Range	0 - 40° C / 32 - 104° F				
EMC & Safety	CE Mark				

5VP SERIES HIGH POWER DC LOADS

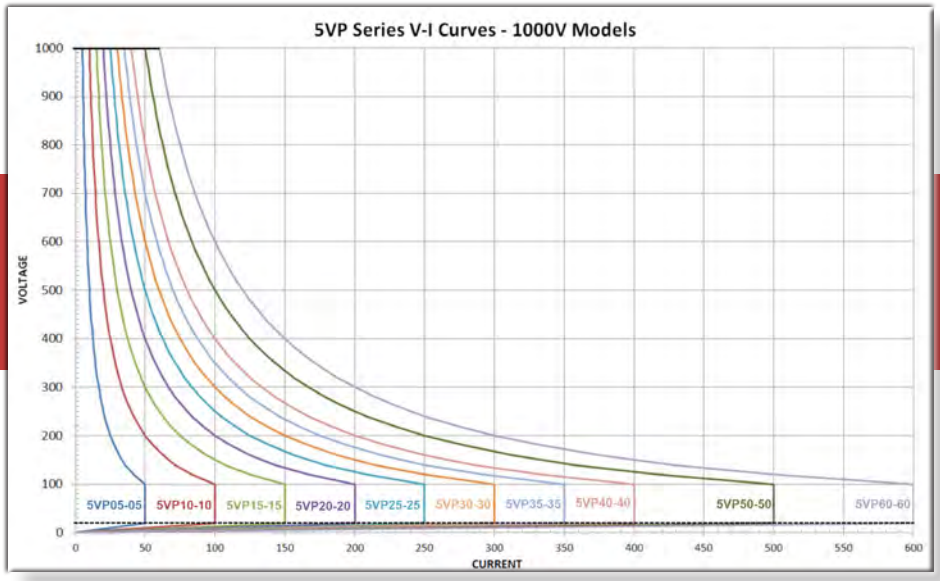
5VP - 60V Models



5VP - 600V Models



5VP - 1000V Models



5VP SERIES HIGH POWER DC LOADS

ORDERING INFORMATION:

Line 1: Specify DC Load Model:
5VPxxx-xx Cabinet System

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

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

Options:

-EIO External Analog & Digital Control I/O

-ES Emergency Stop

Note: These options cannot be retrofitted and **must** be specified at time or order.

Emergency stop Option

Available Load Cable Options:

Option P/N	Description	MOQ
OPT-C1KA1	Load Cable, 1000A rated, 1 meter	2
OPT-C1KA2	Load Cable, 1000A rated, 2 meter	2
OPT-C1KA3	Load Cable, 1000A rated, 3 meter	2
OPT-C1KA4	Load Cable, 1000A rated, 4 meter	2
OPT-C1KA5	Load Cable, 1000A rated, 5 meter	2

AC Input Voltage

Please specify AC Line input voltage at the ship-to location on the order as either 120Vac or 230Vac for 5VP models less than 30kW. For 30kW and higher power loads, AC input is 230Vac±10%.

Included in Mainframe 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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