

5VP Series DC LOADS

Key features:

- Models from 5kW to 60kW
- Master/Slave Parallel Operation of up to Eight 5VP Loads for Higher Power Needs up to 480kW
- Voltage Ranges, 60V, 600V, 1000Vdc or 1250Vdc
- 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
- Built-in EV Battery Discharge Protocols
- MPPT Mode for PV Panel Testing
- Go/NoGo Test Support
- Auto-Sequencing
- Movable Cabinets
- Available Interface Options are USB, RS232, GPIB and LAN



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 1250Vdc, the 5VP Series loads can provide a wide dynamic range of load conditions.

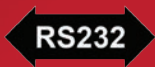
Target applications for these loads are product design & development, production test, incoming inspection, quality control and service.

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 thirty 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, up to eight 5VP loads can be operated in a MASTER/SLAVE parallel configuration with all control and measurements performed by the MASTER unit.

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.



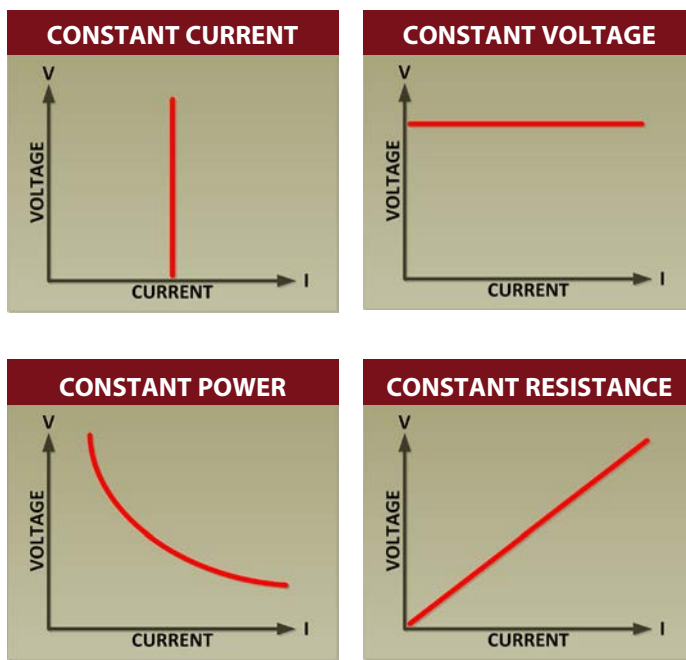
5VPxA SERIES HIGH POWER DC LOADS

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.



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.

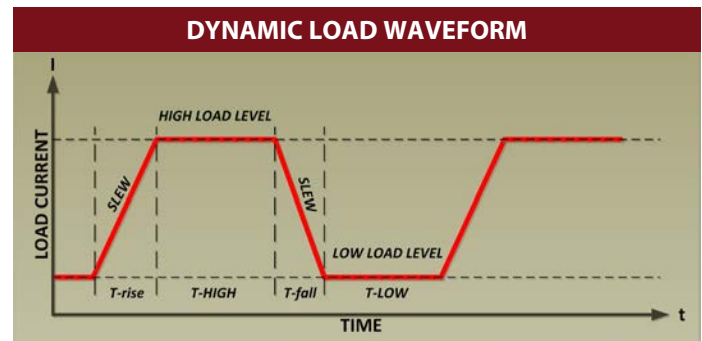
This flexible operating range allows the same load to be used for a wide range of EUTs and provides great flexibility.

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

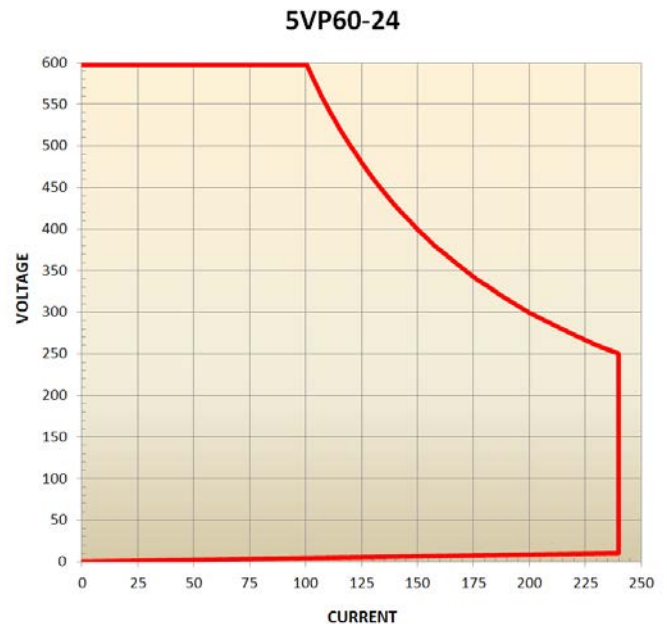
STATIC & DYNAMIC MODES

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.



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.



5VPxA SERIES HIGH POWER DC LOADS

BATTERY TEST MODES

For discharge testing of large electric vehicle (EV) battery packs, the 5VP Series offers built in Battery discharge profiles (BATT modes). This eliminates the need to develop special software for battery test applications. The five available battery test modes are shown in the table to the right.



BATT#	Test Type	Description
1	Discharge to state of charge and stop	Discharges battery in CC mode using set current level till preset battery end voltage is reached and then load is turned off.
2	Discharge to state of charge and hold	Discharges battery in CC mode using set current level till preset battery end voltage is reached and then switches to CV mode at set voltage.
3	Timed discharge test	Discharges battery in CC mode using set current level for the period of time specified. At end of test time, the load turns off and displays battery voltage.
4	Cycle Life test	Battery is discharged using current pulse mode using programmed sequence.
5	Ramp Discharge test	Expansion of Life Cycle test using programmed current slew rates between current discharge levels.

BUILT-IN MPPT TRACKING MODE

To support testing of solar panel output under various light intensities and temperatures, the 5VP Series includes a standard Maximum Power Point Tracking (MPPT) mode. This mode uses a variation of the Perturbation and Observation (P&O) algorithm to establish the maximum operating point of the panel or panel string being tested.



MASTER / SLAVE PARALLEL MODE

All 5VPxA DC Loads can be configured as either MASTER or SLAVE unit. In this mode, up to eight DC loads can be paralleled for higher power load applications. For all 60V 5VP models and models 5VP50-50 and 5VP60-60, all parallel units must be the same model. For all other 5VP DC load models, units of different power ratings can be mixed in parallel systems. Note that some features like BATT, MPPT, CC+CV and CP+CV modes are not available in this mode.

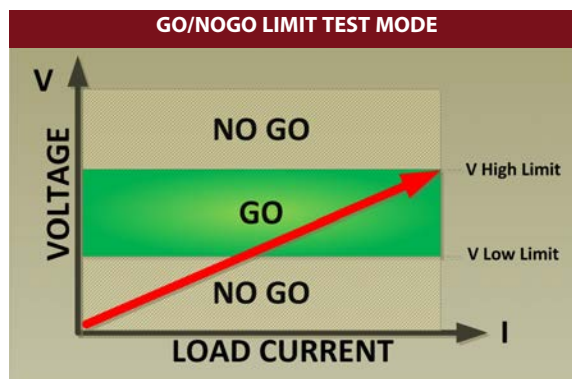
Configuring a parallel load system is easy by assigning one unit as the MASTER and up to seven additional units as SLAVES. This is accomplished from the front panel and parallel settings are retained at power off. A system cable connects between MASTER and SLAVES and routes all control and measurement signals. The MASTER unit will display total measurements. All load control is accomplished through the MASTER unit as well.



480kW MASTER / SLAVE Parallel System DC Load

GO/NOGO LIMIT TESTING

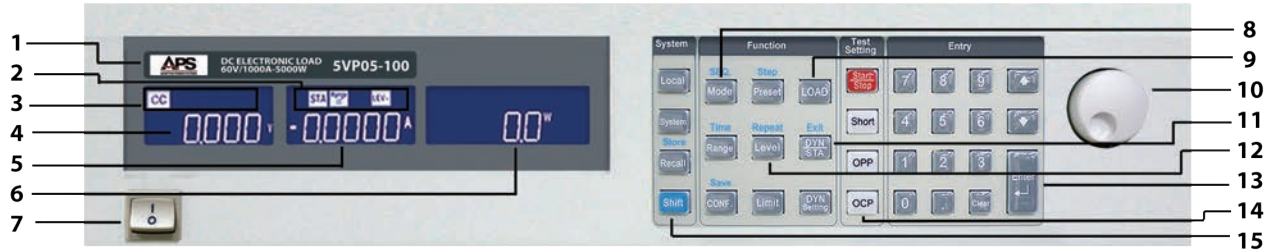
The GO/NG mode of operation is a convenient way to automatically check any measured parameter like voltage, current or power against predefined upper and lower limits. Once set, the load continuously compares readings against these limits and issues a GO or NoGo error output.



5VPxA SERIES HIGH POWER DC LOADS

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.



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| <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> 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 |
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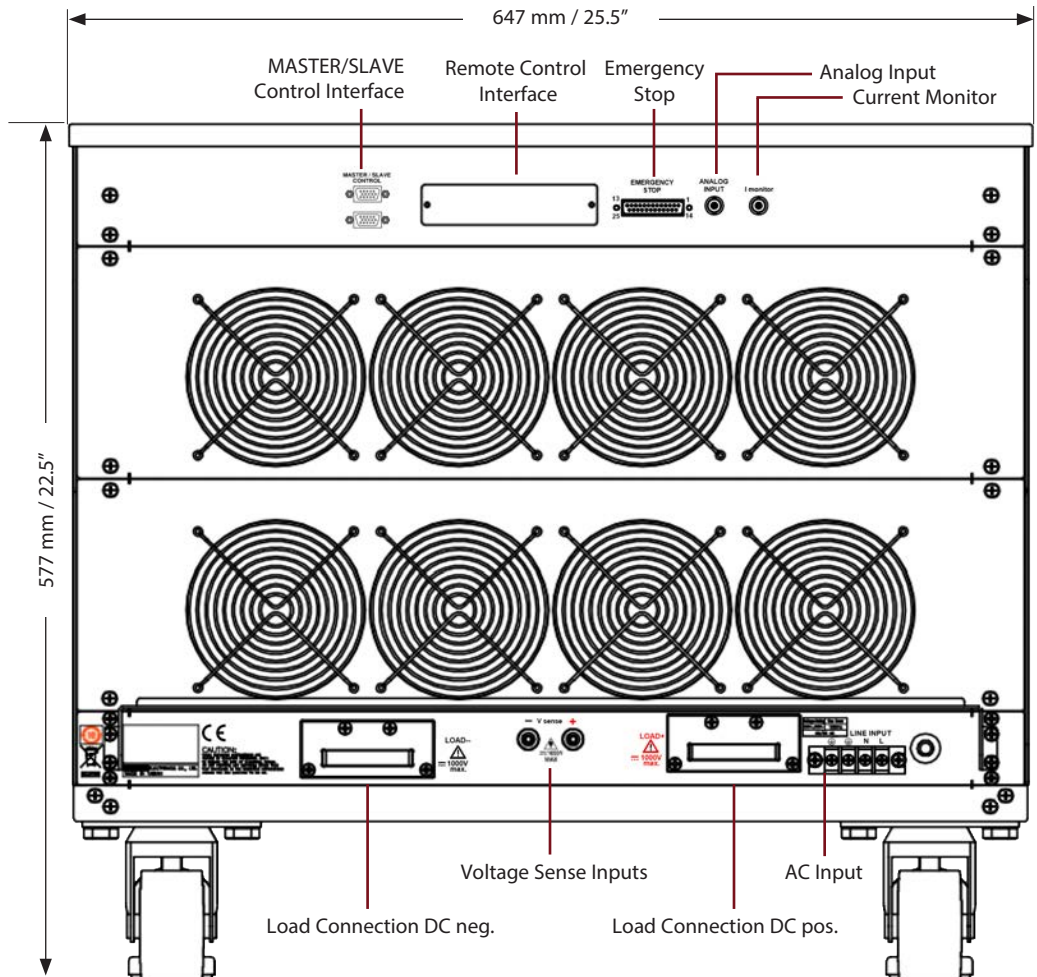
REAR PANEL

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: The Emergency Stop is an option. See Ordering Information on back page of datasheet for details.



5VPxA SERIES HIGH POWER DC LOADS

SPECIFICATIONS - 5VP Series DC LOADS - 60V Range

MODEL	5VP05-100A	5VP10-100A	5VP15-100A	5VP20-100A	5VP25-100A	5VP30-100A	5VP35-100A	5VP40-100A
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	0-3.5kW / 0-35kW	0-4.0kW / 0-40kW
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	0-100A / 0-1000A	0-100A / 0-1000A
Voltage Range	0-60.0 V							
Minimum Voltage	0.1V @ 100A / 0.7V ¹ @ 1000A							
OPERATING MODES								
CC Mode Range	0-100A / 0-1000A							
Resolution	1.6mA / 16.0mA							
Accuracy	± (0.1% OF SETTING + 0.2% RANGE)							
CR Mode Range	3600Ω - 0.06Ω / 0.06Ω - 0.001Ω							
Resolution	277 μS / 0.001 mΩ							
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	0-3.5kW / 0-35kW	0-4.0kW / 0-40kW
Resolution	8mW / 80mW	16mW / 160mW	24mW / 240mW	32mW / 320mW	40mW / 400mW	48mW / 480mW	56mW / 560mW	64mW / 640mW
Accuracy	± 0.5% OF (SETTING + RANGE)							
CC+CV / CP+CV Modes	Accuracy: ± 1.0% OF (SETTING + RANGE). Note: Not available in MASTER/SLAVE mode.							
MPPT Mode	P&O + Scanning, sampling & P&O interval:10ms to 2000ms							
PROTECTION								
Over Power (OP)	5250 W	10500 W	15750 W	21000 W	26250 W	31500 W	36750 W	42000 W
Over Current (OC)	1040 A	1040 A	1040 A	1040 A	1040 A	1040 A	1040 A	1040 A
Over Voltage (OV)	63.0 V							
Over Temperature (OT)	+85° C / +185° F							
DYNAMIC OPERATION								
T high & T low	0.150-9.999 / 99.99 / 999.9 / 9999ms							
Resolution, Accuracy	0.001 / 0.01 / 0.1 / 1ms, 1μs / 10μs / 100μs / 1ms + 50ppm							
Slew Rate, Resolution	24mA-1.5A/μs / 240mA-15A/μs, 6mA/μs / 60mA/μs							
Min. Rise Time	66.7μs Typical							
METERING								
Voltage Rng, Resol, Accuracy	0 - 6.0 V / 0 - 60.0 V, 0.1 mV / 1.0 mV, ± 0.025% OF (READING + RANGE)							
Current Rng, Resol, Accuracy	0-100A / 0-1000 A, 1.6mA / 16mA, ± 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	0-3.5kW / 0-35kW	0-4.0kW / 0-40kW
Resolution, Accuracy	0.01 W / 0.1 W	0.1 W / 1.0 W, ± 0.125% OF (READING + RANGE)						
SHORT CIRCUIT								
Max. Short Current	1000 A							
MASTER / SLAVE PARALLEL OPERATION								
No of Units	MASTER + 7 SLAVES / All loads must be same model / Modes available: CC,CR, CV, CP							
ANALOG I/O								
Analog Monitor Out / Input	0 - 10V 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	3250 W	3700 W
Dimensions (H x W x D)	577x647x766mm 22.7"x25.5"x30.2"		736x647x766mm 29"x25.5"x30.2"	889x647x766mm 35"x25.5"x30.2"	1048x647x766mm 41.3"x25.5"x30.2"	1201x647x766mm 47.3"x25.5"x30.2"	1353x647x766mm 53.3"x25.5"x30.2"	1509x647x766mm 59.4"x25.5"x30.2"
Weight (Net)	100 kg / 220.5 lbs	130 kg / 286.6 lbs	170 kg / 374.8 lbs	220 kg / 485.0 lbs	280 kg / 617.3 lbs	340 kg / 749.6 lbs	390 kg / 860 lbs	430 kg / 948 lbs
Operating Range	0 - 40° C / 32 - 104° F							
EMC & Safety	CE Mark							

Note 1: 0.7Vdc @ 1000A applies to static load conditions. Starting voltage must be > 5Vdc. For dynamic operation, min. voltage is 5Vdc @ 1000A

5VPxA SERIES HIGH POWER DC LOADS

SPECIFICATIONS - 5VP Series DC LOADS - 600V Range

MODEL	5VP05-16A	5VP10-32A	5VP15-48A	5VP20-64A	5VP25-80A	5VP30-96A	5VP35-112A	5VP40-128A
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	0-3.5kW / 0-35kW	0-4.0kW / 0-40kW
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	0-112A / 0-1120A	0-128A / 0-1280A
Voltage Range	0 - 600.0 V							
Minimum Voltage	10V @ 160A	10V @ 320A	10V @ 480A	10V @ 640A	10V @ 800A	10V @ 960A	10V @ 1120A	10V @ 1280A
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	0-112A / 0-1120A	0-128A / 0-1280A
Resolution	0.256mA / 2.56mA	0.512mA / 5.12mA	0.768mA / 7.68mA	1.024mA / 10.24mA	1.28mA / 12.8mA	1.536mA / 15.36mA	1.792mA / 17.92mA	2.048mA / 20.48mA
Accuracy	± (0.1% OF SETTING + 0.2% RANGE)							
CR Mode Range	15000Ω-3.75Ω 3.75Ω-0.063Ω	12500Ω-1.875Ω 1.875Ω-0.0315Ω	15000Ω-1.25Ω 1.25Ω-0.021Ω	11250Ω-0.9375Ω 0.9375Ω-0.01575Ω	11250Ω-0.75Ω 0.75Ω-0.0126Ω	12500Ω-0.625Ω 0.625Ω-0.0105Ω	6428.4Ω-0.5357Ω 0.5357Ω-0.009Ω	5625Ω-0.46875Ω 0.4687Ω-0.00787Ω
Resolution	4.4μS / 63μΩ	8.8μΩ / 0.0315mΩ	13.3μΩ / 0.021mΩ	17.7μΩ/0.01575mΩ	22.2μΩ / 0.0126mΩ	26.6μΩ / 0.0105mΩ	31.1uS / 0.009mΩ	35.5uS / 0.0078mΩ
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	0-3.5kW / 0-35kW	0-4.0kW / 0-40kW
Resolution	8mW / 80mW	16mW / 160mW	24mW / 240mW	32mW / 320mW	40mW / 400mW	48mW / 480mW	56mW / 560mW	64mW / 640mW
Accuracy	± 0.5% OF (SETTING + RANGE)							
CC+CV / CP+CV Modes	See CC, CV and CP mode specifications. Not available in MASTER/SLAVE mode.							
MPPT Mode	P&O + Scanning, sampling & P&O interval:10ms to 2000ms							
PROTECTION								
Over Power (OP)	5250 W	10500 W	15750 W	21000 W	26250 W	31500 W	36750 W	42000 W
Over Current (OC)	168 A	336 A	504 A	672 A	840 A	1008 A	1164.8 A	1331.2 A
Over Voltage (OV)	630.0V							
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, Accuracy	0.001 / 0.01 / 0.1 / 1ms, 1μs / 10μs / 100μs / 1ms + 50ppm							
Slew Rate	12.8mA-800mA/μs 128mA-8A/μs	25.6mA-1.6A/μs 256mA-16A/μs	38.4mA-2.4A/μs 384mA-24A/μs	51.2mA-3.2A/μs 512mA-32A/μs	64mA-4A/μs 640mA-40A/μs	76.8mA-4.8A/μs 768mA-48A/μs	0.0896A-5.6A/uS 0.896A-56A/uS	0.1024A-6.4A/uS 1.024A-64A/uS
Min. Rise Time	20μs Typical							
METERING								
Voltage Rng, Resol, Accuracy	0 - 60.0 V / 0 - 600 V, 0.1 mV / 1.0 mV, ± 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	0-112.0A / 0-1120A	0-128.0A / 0-1280A
Resolution	0.256mA / 2.56mA	0.512mA / 5.12mA	0.768mA / 7.68mA	1.024mA / 10.24mA	1.28mA / 12.8mA	1.536mA / 15.36mA	1.792mA / 17.92mA	2.04mA / 20.48mA
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	0-3.5kW / 0-35kW	0-4.0kW / 0-40kW
Resolution	0.1W / 1.0W	0.1W / 1.0W	0.1W / 1.0W	0.1W / 1.0W	0.1W / 1.0W	0.1W / 1.0W	0.1W / 1.0W	0.1W / 1.0W
Accuracy	± 0.125% OF (READING + RANGE)							
SHORT CIRCUIT								
Max. Short Current	160 A	320 A	480 A	640 A	800 A	960 A	1120 A	1280 A
MASTER / SLAVE PARALLEL OPERATION								
No of Units	MASTER + 7 SLAVES / Load can be different power / Modes available: CC,CR, CV, CP						All loads must be same model	
ANALOG I/O								
Analog Mon. Out / Input	0 - 10V 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	3250 W	3700 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"	1353x647x766 mm 53.3"x25.5"x30.2"	1509x647x766mm 59.6"x25.5"x30.2"
Weight (Net)	100 kg / 220.5 lbs	130 kg / 286.6 lbs	170 kg / 374.8 lbs	220 kg / 485.0 lbs	280 kg / 617.3 lbs	340 kg / 749.6 lbs	390 kg/859.8 lbs	430 kg/947.9 lbs
Operating Range	0 - 40° C / 32 - 104° F							
EMC & Safety	CE Mark							

5VPxA SERIES HIGH POWER DC LOADS

SPECIFICATIONS - 5VP Series DC LOADS - 600V / 1000V Range

MODEL	5VP50-21A	5VP60-24A	5VP05-05A	5VP10-10A	5VP15-15A	5VP20-20A	5VP25-25A
OPERATING RANGES							
Power Ranges	0-5.0kW / 0-50kW	0-6.0kW / 0-60kW	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	0-21.0A / 0-210A	0-24.0A / 0-240A	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 - 600.0 V			0 - 1000 V			
Minimum Voltage	10V @ 210A	10V @ 240A	10V @ 50A	10V @ 100A	10V @ 150A	10V @ 200A	10V @ 250A
OPERATING MODES							
CC Mode Range	0-21.0A / 0-210A	0-24.0A / 0-240A	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	0.35mA / 3.5mA	0.4mA / 4.0mA	0.08mA / 0.8mA	0.16mA / 1.6mA	0.24mA / 2.4A	0.32mA / 3.2mA	0.4mA / 4mA
Accuracy	± (0.1% OF SETTING + 0.2% RANGE)			± (0.1% OF SETTING + 0.2% RANGE)			
CR Mode Range	8571Ω - 2.857Ω / 2.857Ω - 0.0477Ω	7500Ω - 2.5Ω / 2.5Ω - 0.0417Ω	24000Ω - 20Ω / 20Ω - 0.2004Ω	12000Ω - 10Ω / 10Ω - 0.1002Ω	8332.5Ω - 6.666Ω / 6.666Ω - 0.066792Ω	6000Ω - 5Ω / 5Ω - 0.0501Ω	4800Ω - 4Ω / 4Ω - 0.0804Ω
Resolution	5.83μS / 47.7μΩ	6.66μS / 41.7μΩ	0.833μS / 0.334mΩ	1.666μS / 0.167mΩ	2.4μS / 0.1132mΩ	3.33μS / 0.0835mΩ	4.166μS / 0.0668mΩ
Accuracy	± 0.2% OF (SETTING + RANGE)			± 0.2% OF (SETTING + RANGE)			
CV Mode Range	0-600.0 V			10.0 - 1000.0 V			
Resolution	10 mV			16mV			
Accuracy	± 0.05% OF (SETTING + RANGE)			± 0.05% OF (SETTING + RANGE)			
CP Mode Range	0-5.25kW / 0-50kW	0-6.0kW / 0-60kW	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	87.5mW / 875mW	0.1W / 1.0 W	8mW / 80mW	16mW / 160mW	25mW / 250mW	32mW / 320mW	40mW / 400mW
Accuracy	± 0.5% OF (SETTING + RANGE)			± 0.5% OF (SETTING + RANGE)			
CC+CV / CP+CV Modes	See CC, CV and CP mode specifications. Not available in MASTER/SLAVE mode.						
MPPT Mode	P&O + Scanning, sampling & P&O interval:10ms to 2000ms						
PROTECTION							
Over Power (OP)	52500 W	63000 W	5250 W	10500 W	15750 W	21000 W	26250 W
Over Current (OC)	220.5 A	252 A	52.0 A	104.0 A	156.0 A	208.0 A	260.0 A
Over Voltage (OV)	630.0 V			1040.0 V			
Over Temperature (OT)	+85° C / +185° F			+85° C / +185° F			
DYNAMIC OPERATION							
T high & T low	0.050-9.999 / 99.99 / 999.9 / 9999ms (20 kHz)		0.050 - 9.999 / 99.99 / 999.9 / 9999ms (20 kHz)				
Resolution, Accuracy	0.001 / 0.01 / 0.1 / 1ms, 1μs / 10μs / 100μs / 1ms + 50ppm						
Slew Rate	16.8mA-1.05A/μS	19.2mA-1.2A/μS	0.004A-0.25A/μs	0.008A-0.5A/μs	0.012A-0.75A/μs	0.016A-1A/μs	0.02A-1.25A/μs
	168mA-10.5A/μS	192mA-12A/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			20μs Typical			
METERING							
Voltage Rng, Resol, Accuracy	0-60.0V 0-600V, 0.1 mV / 1.0 mV, ±0.025%		0 - 100.0 V / 100 - 1000 V, 1.6 mV / 16 mV, ± 0.025% OF (READING + RANGE)				
Current Range	0-21.0A / 0-210A	0-24.0A / 0-240A	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	0.35mA / 3.5mA	0.4mA / 4mA	0.08mA / 0.8mA	0.16mA / 1.6mA	0.24mA / 2.4mA	0.32mA / 3.2mA	0.4mA / 4mA
Accuracy	± 0.1% OF (READING + RANGE)			± 0.1% OF (READING + RANGE)			
Power Range	0-5.0kW / 0-50kW	0-6.0kW / 0-60kW	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	0.1 W / 1.0W	0.1 W / 1.0W	0.1 W / 1.0W	0.1 W / 1.0W	0.1 W / 1.0W	0.1 W / 1.0W	0.1 W / 1.0W
Accuracy	± 0.125% OF (READING + RANGE)			± 0.125% OF (READING + RANGE)			
SHORT CIRCUIT							
Max. Short Current	210 A	240 A	50 A	100 A	150 A	200 A	250 A
MASTER / SLAVE PARALLEL OPERATION							
	MASTER + 7 SLAVES / Load can be different power / Modes available: CC,CR, CV, CP						
ANALOG I/O							
Analog Monitor Out / Input	0 - 10V 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		100-240Vac ± 10%, 50/60 Hz				
Power Consumption (max.)	5450 W	5500 W	600 W	1000 W	1450 W	1900 W	2350 W
Dimensions (H x W x D)	1360x853x766 mm 53.6"x33.6"x30.2"	1513x853x766mm 59.6"x33.6"x30.2"	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)	510 kg / 1124.4 lbs	630 kg / 1388.9 lbs	100 kg / 220.5 lbs	130 kg / 286.6 lbs	170 kg / 374.8 lbs	220 kg / 485.0 lbs	280 kg / 617.3 lbs
Operating Range	0 - 40° C / 32 - 104° F			0 - 40° C / 32 - 104° F			
EMC & Safety	CE Mark			CE Mark			

5VPxA SERIES HIGH POWER DC LOADS

SPECIFICATIONS - 5VP Series DC LOADS - 1000V Range (continued)

MODEL	5VP30-30A	5VP35-35A	5VP40-40A	5VP50-50A	5VP60-60A
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	10V @ 300A	10V @ 350A	10V @ 400A	10V @ 500A	10V @ 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	0.48mA / 48mA	0.56mA / 5.6mA	0.64mA / 6.4mA	0.875mA / 8.75mA	1.0mA / 10mA
Accuracy	± (0.1% OF SETTING + 0.2% RANGE)				
CR Mode Range	3999.6Ω - 3.333Ω / 3.333Ω - 0.033396Ω	3428.4 - 2.857Ω / 2.857Ω - 0.0286266Ω	3000Ω - 2.5Ω / 2.5Ω - 0.02505Ω	2280Ω - 1.9Ω / 1.9Ω - 0.02Ω	2000Ω - 1.666Ω / 1.666Ω - 0.01668Ω
Resolution	5μS / 0.056mΩ	5.833μS / 0.047711mΩ	6.66μS / 0.0417mΩ	8.7uS / 32μΩ	10uS / 27.833μΩ
Accuracy	± 0.2% OF (SETTING + RANGE)				
CV Mode Range	10.0 - 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. Not available in MASTER/SLAVE mode.				
MPPT Mode	P&O + Scanning, sampling & P&O interval:10ms to 2000ms				
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-2.5A/uS	48mA-3A/uS
	0.24A-15A/μs	0.28A-17.5A/μs	0.32A-20A/μs	0.42A-25A/uS	0.48mA-30A/uS
Min. Rise Time	20μs Typical				
METERING					
Voltage Rng, Resol, Accuracy	0 - 100.0 V / 100 - 1000 V, 1.6 mV / 16 mV, ± 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	0.48mA / 48mA	0.56mA / 5.6mA	0.64mA / 6.4mA	0.875mA / 8.75mA	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	0.1 W / 1.0W	0.1 W / 1.0W	0.1 W / 1.0W	0.1 W / 1.0W	0.1 W / 1.0W
Accuracy	± 0.125% OF (READING + RANGE)				
SHORT CIRCUIT					
Max. Short Current	150 A	175 A	200 A	250 A	300 A
MASTER / SLAVE PARALLEL OPERATION					
	MASTER + 7 SLAVES / Load can be different power / Modes available: CC,CR, CV, CP				
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)	1197 x 647 x 766 mm 47.3" x 25.5" x 30.2"	1353 x 647 x 766 mm 53.6" x 25.5" x 30.2"	1509 x 647 x 766 mm 59.6" x 25.5" x 30.2"	1353 x 853 x 766 mm 53.6" x 33.6" x 30.2"	1508 x 853 x 766 mm 59.6" x 33.6" x 30.2"
Weight (Net)	340 kg / 749.6 lbs	390 kg / 859.8 lbs	430 kg / 948.0 lbs	510 kg / 1124.4 lbs	630 kg / 1388.9 lbs
Operating Range	0 - 40° C / 32 - 104° F				
EMC & Safety	CE Mark				

5VPxA SERIES HIGH POWER DC LOADS

SPECIFICATIONS - 5VP Series DC LOADS - 1250V Range

MODEL	5VP05-02.5A	5VP10-05A	5VP15-07.5A	5VP20-10A	5VP25-12.5A
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 - 2.5 A / 0 - 25 A	0 - 5 A / 0 - 50 A	0 - 7.5 A / 0 - 75 A	0 - 10 A / 0 - 100 A	0 - 12.5 A / 0 - 125 A
Voltage Range	0 - 1250 V				
Load ON Voltage	0 - 250 V				
OPERATING MODES					
CC Mode Range	0 - 2.5 A / 0 - 25 A	0 - 5 A / 0 - 50 A	0 - 7.5 A / 0 - 75 A	0 - 10 A / 0 - 100 A	0 - 12.5 A / 0 - 125 A
Resolution	0.04mA / 0.4mA	0.08mA / 0.8mA	0.12mA / 1.2mA	0.16mA / 1.6mA	0.2mA / 2mA
Accuracy	± (0.1% OF SETTING + 0.2% RANGE)				
CR Mode Range	60000Ω - 50Ω / 50Ω - 5.02Ω	30000Ω - 25Ω / 25Ω - 1.251Ω	20004Ω - 16.67Ω / 16.67 - 0.834Ω	15000Ω - 12.5Ω / 12.5Ω - 0.672Ω	12000Ω - 10Ω / 10Ω - 0.501Ω
Resolution	0.3334μS / 0.834mΩ	0.6667μS / 0.417mΩ	0.9998μS / 0.1278mΩ	1.333μS / 0.209mΩ	1.6667μS / 0.167mΩ
Accuracy	± 0.2% OF (SETTING + RANGE)				
CV Mode Range	10.0 - 1250.0 V				
Resolution	20mV				
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	24mW / 240mW	32mW / 320mW	40mW / 400mW
Accuracy	± 0.5% OF (SETTING + RANGE)				
CC+CV / CP+CV Modes	See CC, CV and CP mode specifications. Not available in MASTER/SLAVE mode.				
MPPT Mode	P&O + Scanning, sampling & P&O interval:10ms to 2000ms				
PROTECTION					
Over Power (OP)	5250 W	10500 W	15750 W	21000 W	26250 W
Over Current (OC)	26.0 A	52.0 A	78.0 A	104.0 A	130.0 A
Over Voltage (OV)	1300 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	0.002A-0.125A/μs 0.02A-1.25A/μs	0.004A-0.25A/μs 0.04A-2.5A/μs	0.006A-0.375A/μs 0.06A-3.75A/μs	0.008A-0.5A/μs 0.08A-5A/μs	0.01A-0.625A/μs 0.1A-6.25A/μs
Min. Rise Time	20μs Typical				
METERING					
Voltage Rng, Resol, Accuracy	0 - 125.0 V / 125 - 1250 V, 3 mV / 20 mV, ± 0.025% OF (READING + RANGE)				
Current Range	0 - 2.5 A / 0 - 25 A	0 - 5 A / 0 - 50 A	0 - 7.5 A / 0 - 70 A	0 - 10 A / 0 - 100 A	0 - 12.5 A / 0 - 125 A
Resolution	0.04mA / 0.4mA	0.08mA / 0.8mA	0.12mA / 1.2mA	0.16mA / 1.6mA	0.2mA / 2mA
Accuracy	± 0.1% OF (READING + RANGE)				
Power Range	0-1.0kW / 0-5kW	0-1.0kW / 0-10kW	0-1.0kW / 0-15kW	0-1.0kW / 0-20kW	0-1.0kW / 0-25kW
Resolution	0.01 W / 0.1 W	0.1 W / 1.0 W	0.1 W / 1.0 W	0.1 W / 1.0 W	0.1 W / 1.0 W
Accuracy	± 0.125% OF (READING + RANGE)				
SHORT CIRCUIT					
Max. Short Current	25 A	50 A	75 A	100 A	125 A
MASTER / SLAVE PARALLEL OPERATION					
	MASTER + 7 SLAVES / Load can be different power / Modes available: CC,CR, CV, CP				
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)	100 kg / 220.5 lbs	130 kg / 286.6 lbs	170 kg / 374.8 lbs	220 kg / 485.0 lbs	280 kg / 617.3 lbs
Operating Range	0 - 40° C / 32 - 104° F				
EMC & Safety	CE Mark				

5VPxA SERIES HIGH POWER DC LOADS

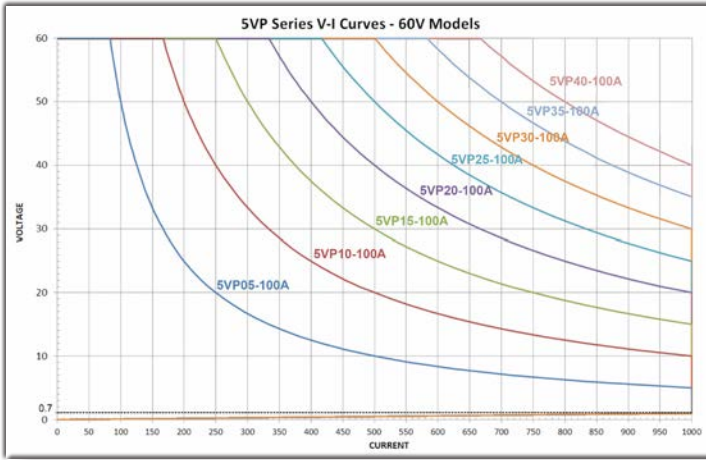
SPECIFICATIONS - 5VP Series DC LOADS - 1250V Range (continued)

MODEL	5VP30-15A	5VP35-17.5A	5VP40-20A	5VP50-25A	5VP60-30A
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 - 15 A / 0 - 150 A	0 - 17.5 A / 0 - 175 A	0 - 20 A / 0 - 200 A	0 - 25 A / 0 - 250 A	0 - 30 A / 0 - 300 A
Voltage Range	0 - 1250 V				
Load ON Voltage	0 - 250 V				
OPERATING MODES					
CC Mode Range	0 - 15 A / 0 - 150 A	0 - 17.5 A / 0 - 175 A	0 - 20 A / 0 - 200 A	0 - 25 A / 0 - 250 A	0 - 30 A / 0 - 300 A
Resolution	0.24mA / 24mA	0.28mA / 2.8mA	0.32mA / 3.2mA	0.42mA / 4.2mA	0.48mA / 4.8mA
Accuracy	± (0.1% OF SETTING + 0.2% RANGE)				
CR Mode Range	9996Ω - 8.333Ω / 8.33Ω - 0.417Ω	8568Ω - 7.14Ω / 7.14Ω - 0.357Ω	7500Ω - 6.25Ω / 6.25Ω - 0.315Ω	5712Ω - 4.76Ω / 4.76Ω - 0.24Ω	5004Ω-4.17Ω / 4.17Ω-0.21Ω
Resolution	2.0008μS / 0.0139mΩ	2.334μS / 0.119mΩ	2.6667uS / 0.105mΩ	3.5014uS / 0.08mΩ	3.9968uS / 0.07μΩ
Accuracy	± 0.2% OF (SETTING + RANGE)				
CV Mode Range	10.0 - 1250.0 V				
Resolution	20mV				
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	48mW / 480mW	56mW / 560mW	64mW / 640mW	84mW / 840mW	96 mW / 960 mW
Accuracy	± 0.5% OF (SETTING + RANGE)				
CC+CV / CP+CV Modes	See CC, CV and CP mode specifications. Not available in MASTER/SLAVE mode.				
MPPT Mode	P&O + Scanning, sampling & P&O interval:10ms to 2000ms				
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, 1μs / 10μs / 100μs / 1ms + 50ppm				
Accuracy	1μs / 10μs / 100μs / 1ms + 50ppm				
Slew Rate	0.012A-0.75A/μs 0.12A-7.5A/μs	0.014A-0.875A/μs 0.14A-8.75A/μs	0.016A-1A/μs 0.16A-10A/μs	0.02A-1.25A/uS 0.2A-12.5A/uS	0.024A-1.5A/uS 0.24A-15A/uS
Min. Rise Time	20μs Typical				
METERING					
Voltage Rng, Resol, Accuracy	0 - 125.0 V / 125 - 1250 V, 2 mV / 20 mV, ± 0.025% OF (READING + RANGE)				
Current Range	0 - 15 A / 0 - 150 A	0 - 17.5 A / 0 - 175 A	0 - 20 A / 0 - 200 A	0 - 25 A / 0 - 250 A	0 - 30 A / 0 - 300 A
Resolution	0.24mA / 2.4mA	0.28mA / 2.8mA	0.32mA / 3.2mA	0.42mA / 4.2mA	0.48mA / 4.8mA
Accuracy	± 0.1% OF (READING + RANGE)				
Power Range	0-10kW / 0-30kW	0-10kW / 0-35kW	0-10kW / 0-40kW	0-10kW / 0-50kW	0-10kW / 0-60kW
Resolution	0.1 W / 1.0W	0.1 W / 1.0W	0.1 W / 1.0W	0.1 W / 1.0W	0.1 W / 1.0W
Accuracy	± 0.125% OF (READING + RANGE)				
SHORT CIRCUIT					
Max. Short Current	300 A	350 A	400 A	500 A	600 A
MASTER / SLAVE PARALLEL OPERATION					
	MASTER + 7 SLAVES / Load can be different power / Modes available: CC,CR, CV, CP			MASTER + 7 SLAVES / All loads must be same model	
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 766 mm 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)	340 kg / 749.6 lbs	390 kg / 859.8 lbs	430 kg / 948.0 lbs	510 kg / 1124.4 lbs	630 kg / 1388.9 lbs
Operating Range	0 - 40° C / 32 - 104° F				
EMC & Safety	CE Mark				

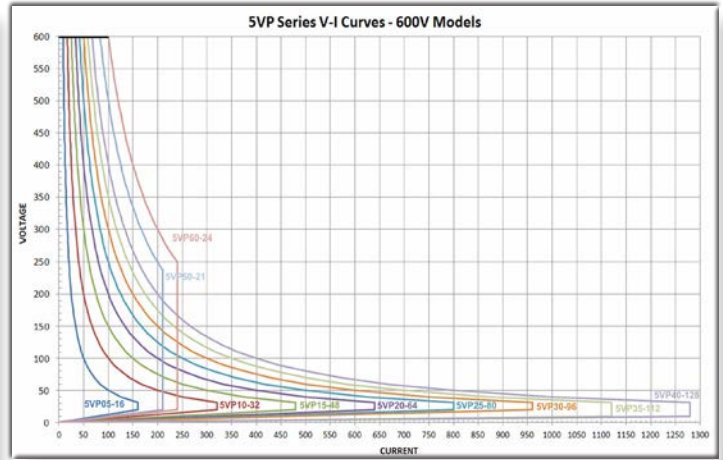
5VPxA SERIES HIGH POWER DC LOADS

V-I OPERATING RANGE PROFILES BY VOLTAGE RANGE

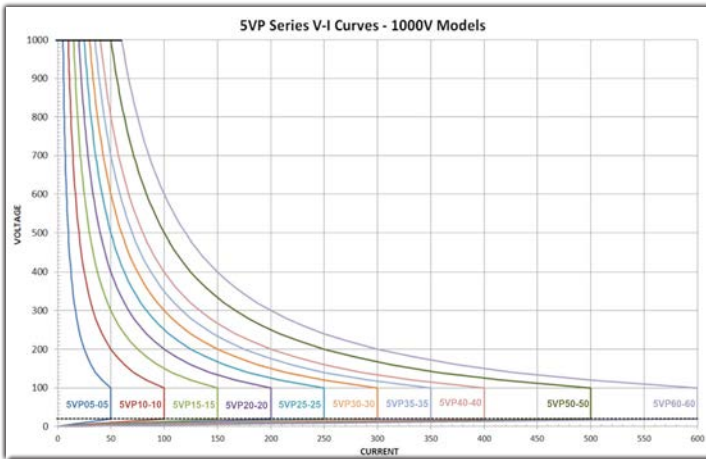
5VP - 60V Models



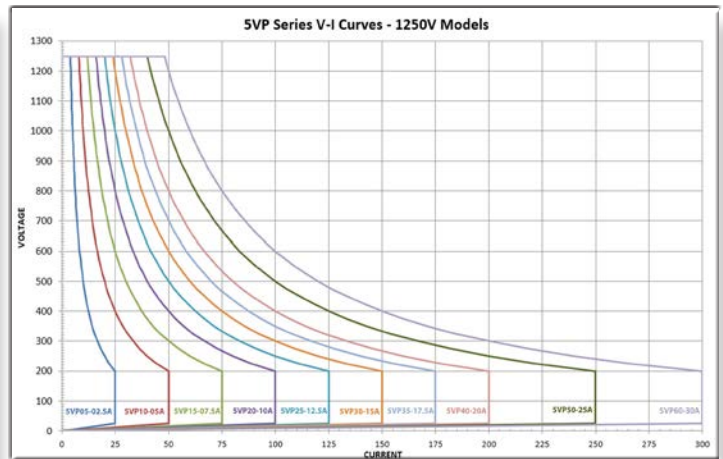
5VP - 600V Models



5VP - 1000V Models



5VP - 1250V Models



Various Sizes of 5VP Series Models shown

5VPxA SERIES HIGH POWER DC LOADS

ORDERING INFORMATION:

Line 1: Specify DC Load Model:
5VPxxx-xxA 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 to the right)

Emergency Stop & I/O Options:

Option P/N	Description
Opt -ES	Emergency Stop 5VP, 5VP-A Series
Opt -EIO-A	External I/O card 5VP-A Series, 60 ~ 1000V
Opt -EIO-A1	External I/O card 5VP-A Series, 1250V
Opt -ES-EIO-A	External I/O card 5VP-A Series, 60 ~ 1000V
Opt -ES-EIO-A1	External I/O card 5VP-A Series, 1250V

Note: These options cannot be retrofitted and **must** be specified at time of 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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