5VPxC SERIES HIGH POWER DC LOADS

5VPxC Series DC LOADS
Key features:

- Models from 6kW to 24kW
- Master/Slave Parallel Operation for Higher Power (or see 5VPxA Series for higher power models)
- Voltage Ranges, 150V, 600V, 1000V
- Current Ranges up to 2000A
- High-Speed 5 Digit Precision Metering Capability
- 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

GPIB RS232 USB LAN

OVERVIEW

The ADAPTIVE POWER 5VPxC 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 0.7Vdc and as high as 1200Vdc, the 5VPxC 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 5VPxC Series chassis represents industry-leading power density. With the casters removed, these loads can also be mounted in a standard 19" wide instrument rack.

The 5VPxC Series consists of a total of twenty four different models, providing a wide variation of possible current and power ranges. Starting at 6kW and ranging to 24kW per unit, all models offer dual voltage and current range capability for optimal accuracy and resolution. For applications requiring more than 24kW, multiple 5VPxC loads can be operated in a MASTER/SLAVE parallel configuration with all control and measurements performed by the MASTER unit.

SIMPLE OPERATION

All user controls are along the top edge of the front panel for convenient access and viewing. Rear panel mounted DC bus bars handle DC current up to 2000 Adc depending on model.

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

For DC load over 24kW, refer to the 5VPxA Series floor standing DC load models

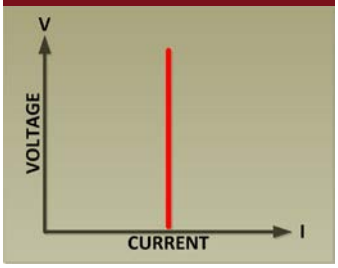
OPERATING MODES

All 5VPxC 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.

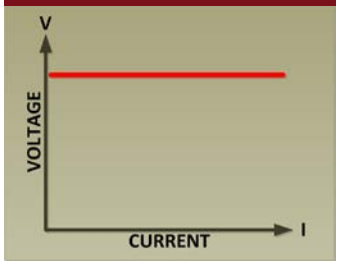
The 5VPxC Series also supports a maximum power point tracking mode (MPPT Mode) for solar panel development and test applications.

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.

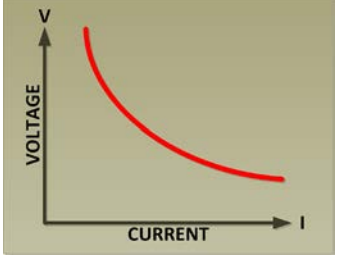
CONSTANT CURRENT



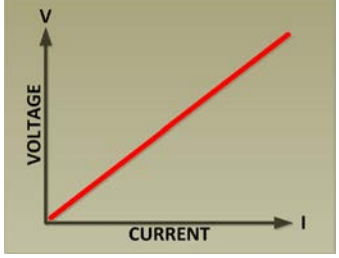
CONSTANT VOLTAGE



CONSTANT POWER



CONSTANT RESISTANCE

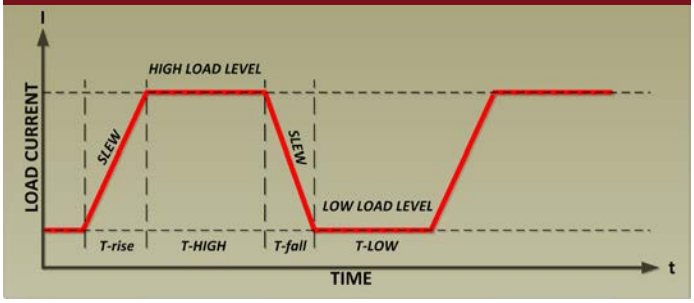


STATIC & DYNAMIC MODES

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 5VPxC 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 5VPxC 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.

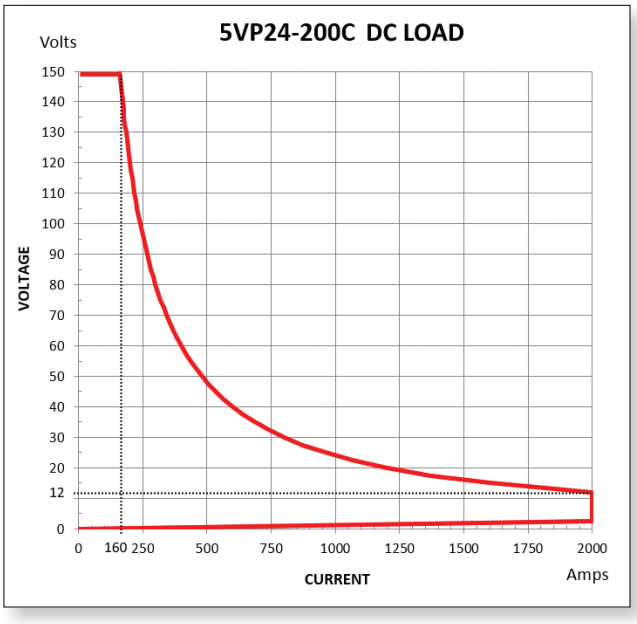
FLEXIBLE INPUT CAPABILITIES

5VPxC 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 the 24kW, 150V load model 5VP24-200C. Bounded by the maximum voltage of 600Vdc and maximum current of 240A, the input range follows a 24kW 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 5VPxC Series model, see pages 8 & 9.



BATTERY TEST MODES

For discharge testing of large electric vehicle (EV) battery packs, the 5VPxC 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 5VPxC 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 5VPxC 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. All parallel units must be the same model. For all other 5VPxC 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.

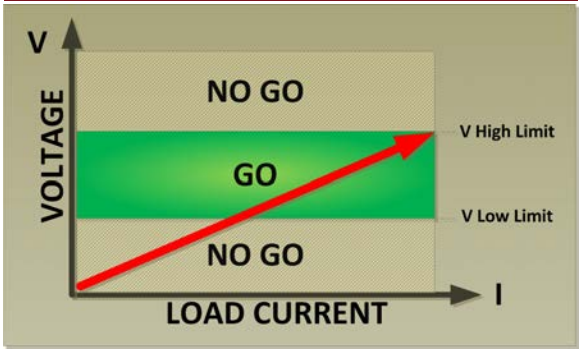
Configuring a parallel load system is easy by assigning one unit as the MASTER and up to seven additional units as SLAVES. This is accomplished from the front panel and parallel settings are retained at power off. A system cable connects between MASTER and SLAVES and routes all control and measurement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

GO/NOGO LIMIT TEST MODE



FRONT PANEL OPERATION

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

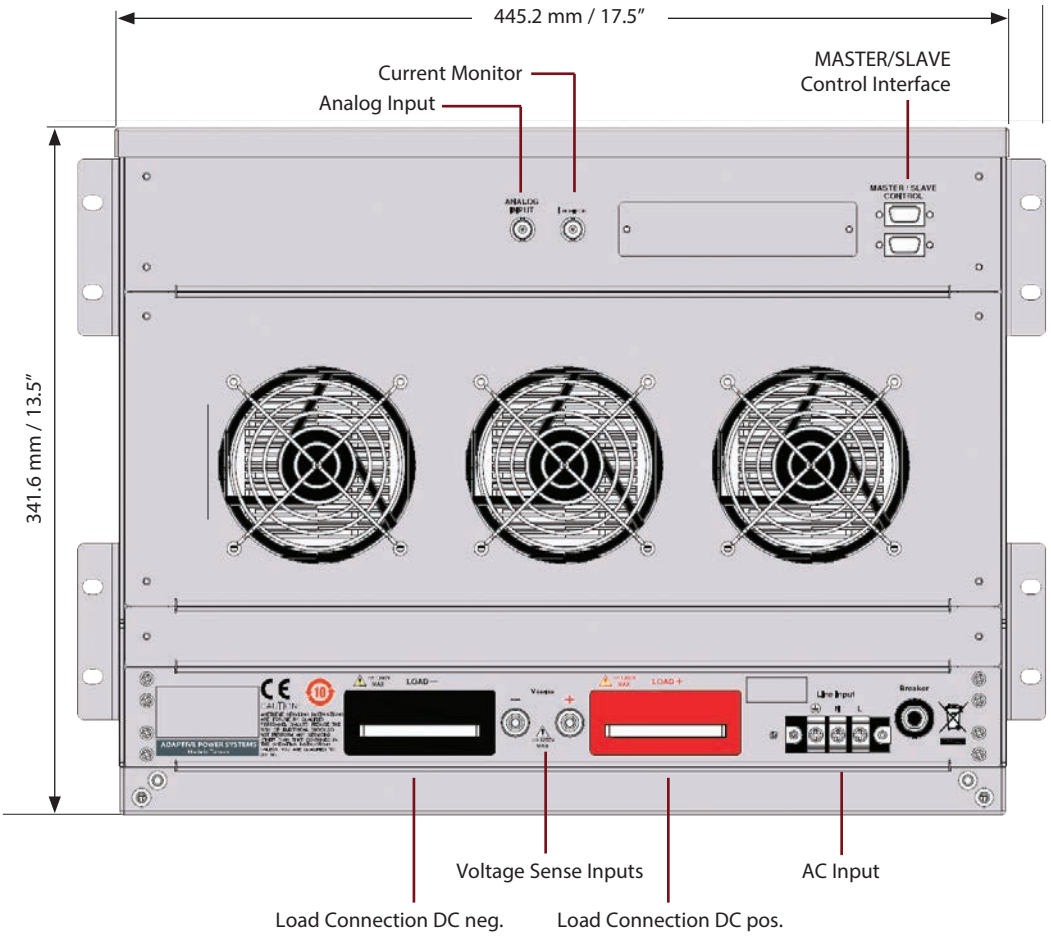
REAR PANEL

All AC input and DC Load connections are made at the rear panel of the 5VPxC 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 5VPxC chassis rear panel is recommended to ensure adequate air circulation through the load.

The rear panel dimensions shown to the right are for a 5VP06-16C Chassis. Illustration shown here is for unit with the casters and levelers removed and the 19" rack ears attached.

Refer to specification tables on next pages for dimensions of other models. Height dimensions shown in specification tables are for unit with casters installed.



SPECIFICATIONS - 5VPxC Series DC LOADS - 150V Range

MODEL	5VP06-60C	5VP08-80C	5VP10-100C	5VP12-120C	5VP15-150C	5VP18-180C	5VP20-200C	5VP24-200C
OPERATING RANGES								
Power Ranges	0-6kW	0-8kW	0-10kW	0-12kW	0-15kW	0-18kW	0-20kW	0-24kW
Current Ranges	0-60A/0-600A	0-80A/0-800A	0-100A/0-1000A	0-120A/0-1200A	0-150A/0-1500A	0-180A/0-1800A	0-200A/0-2000A	0-200A/0-2000A
Voltage Range	0-150.0 V							
Minimum Voltage	0.7V @ Max. Current							
OPERATING MODES								
CC Mode Range	0-60A/0-600A	0-80A/0-800A	0-100A/0-1000A	0-120A/0-1200A	0-150A/0-1500A	0-180A/0-1800A	0-200A/0-2000A	0-200A/0-2000A
Resolution	0.96 mA/ 9.6 mA	1.28 mA / 12.8 mA	1.6 mA / 16 mA	1.92 mA / 19.2 mA	2.4 mA / 24 mA	2.88 mA / 28.8 mA	3.2 mA / 32 mA	3.2 mA / 32 mA
Accuracy	± 0.05% OF (SETTING + RANGE)							
CR Mode Range	15kΩ - 0.25Ω - 12mΩ	11.25kΩ - 0.1875Ω - 0.9mΩ	9kΩ - 0.15Ω - 0.7mΩ	7.5kΩ - 0.125Ω - 0.6mΩ	6kΩ - 0.1Ω - 0.5mΩ	5kΩ - 0.0833Ω - 0.4mΩ	4.5kΩ - 0.075Ω - 0.4mΩ	4.5kΩ - 0.075Ω - 0.4mΩ
Resolution	66.666µS/4.167µΩ	88.888µS/3.125µΩ	111.111µS/2.5µΩ	133.33µS/2.084µΩ	166.66µS/1.667µΩ	200µS/1.389µΩ	222.22µS/1.25µΩ	222.22µS/1.25µΩ
Accuracy	± 0.2% OF (SETTING + RANGE)							
CV Mode Range	0-150.0 V							
Resolution	2.5 mV							
Accuracy	± 0.025% OF (SETTING + RANGE)							
CP Mode Range	600W/6kW	800W/8kW	1000W/10kW	1200W/12kW	1500W/15kW	1800W/18kW	2000W/20kW	2400W/24kW
Resolution	9.6 / 96 mW	12.8 / 128 mW	16 / 160 mW	19.2 / 192 mW	24 / 240 mW	28.8 / 288 mW	32 / 320 mW	38.4 /384 mW
Accuracy	Low Range: ± 0.2% OF (SETTING + RANGE) / High Range: ± 0.1% 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:1000ms to 60000ms, resolution 1000ms							
PROTECTION								
Over Power (OP)	6300 W	8400 W	10500 W	12600 W	15750 W	18900 W	21000 W	21000 W
Over Current (OC)	624 A	832 A	1040 A	1248 A	1560 A	1872 A	2080 A	2080 A
Over Voltage (OV)	157.5 V							
Over Temperature (OT)	+90° C / 194° F							
DYNAMIC OPERATION								
T high & T low	0.010-9.999 / 99.99 / 999.9 / 9999ms							
Resolution, Accuracy	0.001 / 0.01 / 0.1 / 1ms, 1µs / 10µs / 100µs / 1ms + 50ppm							
Slew Rate | Resolution	0.00144 -9A/ uS | 0.036A/uS	0.00192 -12A/ uS | 0.048A/uS	0.0024 -15A/ uS | 0.06A/uS	0.00288 -18A/ uS | 0.072A/uS	0.0036 -22.5A/ uS | 0.009A/uS	0.00432 -27A/ uS | 0.108A/uS	0.0048 -30A/ uS | 0.12A/uS	0.0048 -30A/ uS | 0.12A/uS
Min. Rise Time	66.7µs Typical							
METERING								
Voltage Rng, Resol, Accuracy	0 - 15.0 V / 0 - 150.0 V, 0.25 mV / 2.5 mV , ± 0.025% OF (READING + RANGE)							
Current Range	0-60A/0-600A	0-80A/0-800A	0-100A/0-1000A	0-120A/0-1200A	0-150A/0-1500A	0-180A/0-1800A	0-200A/0-2000A	0-200A/0-2000A
Resolution	0.96 / 9.6 mA	1.28 / 12.8 mA	1.6 / 16 mA	1.92 / 19.2 mA	2.4 /24 mA	2.88 / 28.8 mA	3.2 / 32 mA	3.2 / 32 m
Accuracy	± 0.05% OF (READING + RANGE)							
Power Range	600W/6kW	800W/8kW	1000W/10kW	1200W/12kW	1500W/15kW	1800W/18kW	2000W/20kW	2400W/24kW
Resolution, Accuracy	0.1W / 1W , ± 0.075% OF (READING + RANGE)							
SHORT CIRCUIT								
Max. Short Current / Res.	600A/1.2mΩ	800A/0.9mΩ	1000A/7mΩ	1200A/6mΩ	1500A/5mΩ	1800A/4mΩ	2000A/4mΩ	2000A/4mΩ
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 - 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.)	400 VA	750 VA	750 VA	750 VA	1100 VA	1100 VA	1450 VA	1450 VA
Dimensions (H x W x D)	446x444x763mm 17.6" x 17.5 x 30"	572x444x763mm 22.5" x 17.5" x 30"	572x444x763mm 22.5" x 17.5" x 30"	572x444x763mm 22.5" x 17.5" x 30"	761x 444x763mm 30" x 17.5" x 30"	761x 444x763mm 30" x 17.5" x 30"	884x 444x763mm 34.8" x 17.5" x 30"	884x 444x763mm 34.8" x 17.5" x 30"
Weight (Net)	62 kg / 136.7 lbs	77.5 kg / 170.8 lbs	84.4 kg / 186.1 lbs	92 kg / 202.8 lbs	116.5 kg / 256.9 lbs	124 kg / 273.4 lbs	140.5 kg / 309.8 lbs	155 kg / 341.7 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

SPECIFICATIONS - 5VPxC Series DC LOADS - 600V Range

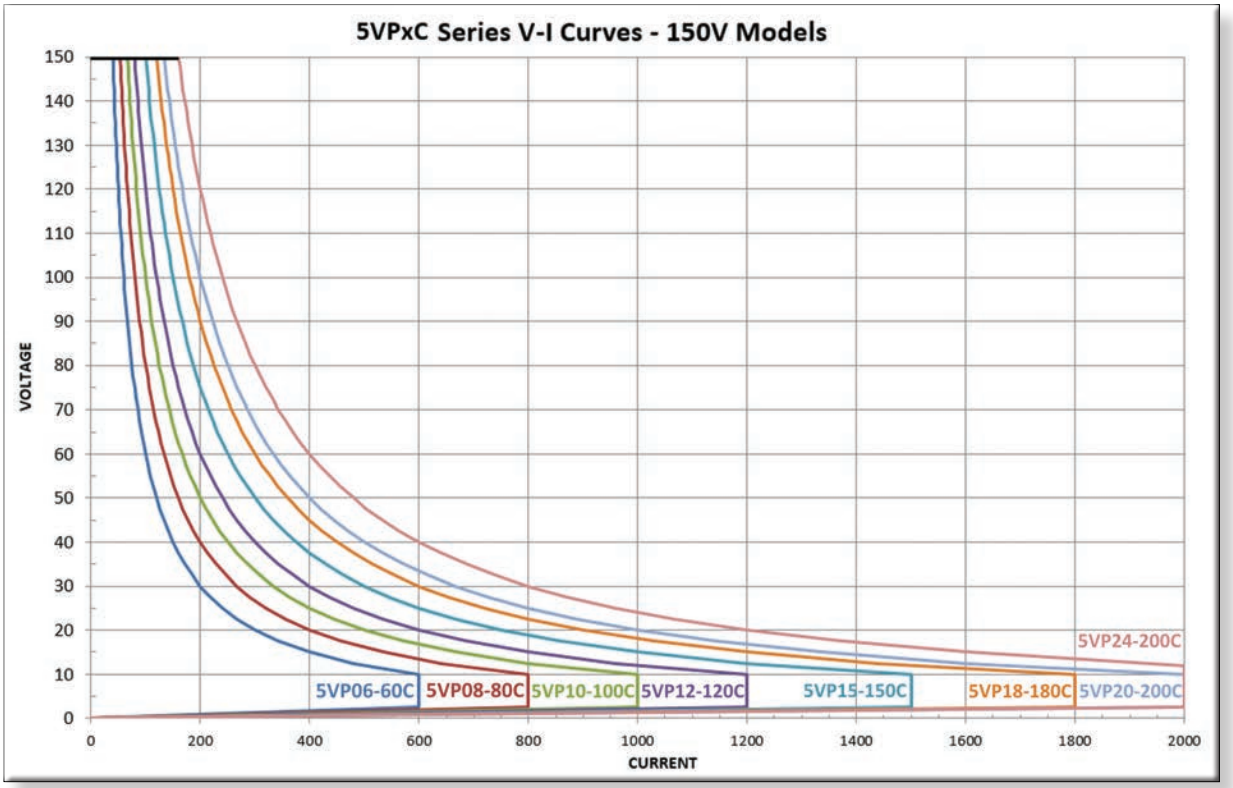
MODEL	5VP06-42C	5VP08-56C	5VP10-70C	5VP12-84C	5VP15-105C	5VP18-126C	5VP20-140C	5VP24-168C
OPERATING RANGES								
Power Ranges	0-6kW	0-8kW	0-10kW	0-12kW	0-15kW	0-18kW	0-20kW	0-24kW
Current Ranges	0-42A/0-420A	0-56A/0-560A	0-70A/0-700A	0-84A/0-840A	0-105/0-1050A	0-126A/0-1260A	0-140A/0-1400A	0-168A/0-1680A
Voltage Range	0-600.0 V							
Minimum Voltage	10V @ Max. Current							
OPERATING MODES								
CC Mode Range	0-42A/0-420A	0-56A/0-560A	0-70A/0-700A	0-84A/0-840A	0-105/0-1050A	0-126A/0-1260A	0-140A/0-1400A	0-168A/0-1680A
Resolution	0.672 mA/ 6.72 mA	0.896 mA / 8.96 mA	1.12 mA / 11.2 mA	1.344 mA / 13.44 mA	1.68 mA / 16.8 mA	2.016 mA / 20.16 mA	2.24 mA / 22.4 mA	2.688 mA / 26.88 mA
Accuracy	± 0.05% OF (SETTING + RANGE)							
CR Mode Range	85712Ω - 1.4285Ω - 11.66mS	64284Ω - 1.0714Ω - 0.01788Ω	51427Ω - 0.0143Ω - 0.0143Ω	42856Ω - 0.7142Ω - 0.01192Ω	34284Ω - 0.5714Ω - 0.009536Ω	28570Ω - 0.4161Ω - 0.007947Ω	25713Ω - 0.4285Ω - 0.007152Ω	21428Ω - 0.3571Ω - 0.00596Ω
Resolution	11.66µS/23.84µΩ	88.888µS/3.125µΩ	19.44µS/114.30µΩ	23.33µS/11.92µΩ	29.16µS/9.536µΩ	35µS/7.947µΩ	38.89µS/7.152µΩ	46.668µS/5.96µΩ
Accuracy	± 0.2% OF (SETTING + RANGE)							
CV Mode Range	0-600.0 V							
Resolution	10 mV							
Accuracy	± 0.025% OF (SETTING + RANGE)							
CP Mode Range	600W/6kW	800W/8kW	1000W/10kW	1200W/12kW	1500W/15kW	1800W/18kW	2000W/20kW	2400W/24kW
Resolution	9.6 / 96 mW	12.8 / 128 mW	16 / 160 mW	19.2 / 192 mW	24 / 240 mW	28.8 / 288 mW	32 / 320 mW	38.4 /384 mW
Accuracy	Low Range: ± 0.2% OF (SETTING + RANGE) / High Range: ± 0.1% 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:1000ms to 60000ms, resolution 1000ms							
PROTECTION								
Over Power (OP)	6300 W	8400 W	10500 W	12600 W	15750 W	18900 W	21000 W	21000 W
Over Current (OC)	436.8 A	582.4 A	728 A	873.6 A	1092 A	1310.4 A	1456 A	1747.2 A
Over Voltage (OV)	630 V							
Over Temperature (OT)	+90° C / 194° F							
DYNAMIC OPERATION								
T high & T low	0.010-9.999 / 99.99 / 999.9 / 9999ms							
Resolution, Accuracy	0.001 / 0.01 / 0.1 / 1ms, 1µs / 10µs / 100µs / 1ms + 50ppm							
Slew Rate | Resolution	0.0336 -21A/ uS | 0.084A/uS	0.0448 -28A/ uS | 0.112A/uS	0.056 -35A/uS | 0.14A/uS	0.0672 -42A/ uS | 0.168A/uS	0.084 -52.5A/ uS | 0.21A/uS	0.1008 -63A/ uS | 0.252A/uS	0.112 -70A/uS | 0.28A/uS	0.1334 -84A/ uS | 0.336A/uS
Min. Rise Time	20µs Typical							
METERING								
Voltage Rng, Resol, Accuracy	0 - 60.0 V / 0 - 600.0 V, 1 mV / 10 mV , ± 0.025% OF (READING + RANGE)							
Current Range	0-42A/0-420A	0-56A/0-560A	0-70A/0-700A	0-84A/0-840A	0-105/0-1050A	0-126A/0-1260A	0-140A/0-1400A	0-168A/0-1680A
Resolution	0.672/6.72mA	0.896/8.96 0mA	1.12/11.2mA	1.344/13.44mA	1.68/16.8mA	2.0161A/20.1mA	2.24/22.4mA	2.688/26.88mA
Accuracy	± 0.05% OF (READING + RANGE)							
Power Range	600W/6kW	800W/8kW	1000W/10kW	1200W/12kW	1500W/15kW	1800W/18kW	2000W/20kW	2400W/24kW
Resolution, Accuracy	0.1W / 1W , ± 0.075% OF (READING + RANGE)							
SHORT CIRCUIT								
Max. Short Current / Res.	420A / 23.9mΩ	560A / 17.9mΩ	700A / 14.3mΩ	840A / 12mΩ	1050A / 9.6mΩ	1260A / 8mΩ	1400A / 7.2mΩ	1680A / 6mΩ
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 - 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.)	400 VA	750 VA	750 VA	750 VA	1100 VA	1100 VA	1450 VA	1450 VA
Isolation - DC input to Chassis	1060 Vdc							
Dimensions (H x W x D)	446x444x763mm 17.6″x 17.5 x 30″	572x444x763mm 22.5″x 17.5″x 30″	572x444x763mm 22.5″x 17.5″x 30″	572x444x763mm 22.5″x 17.5″x 30″	761x 444x763mm 30″x 17.5″x 30″	761x 444x763mm 30″x 17.5″x 30″	884x 444x763mm 34.8″x 17.5″x 30″	884x 444x763mm 34.8″x 17.5″x 30″
Weight (Net)	62 kg / 136.7 lbs	77.5 kg / 170.8 lbs	84.4 kg / 186.1 lbs	92 kg / 202.8 lbs	116.5 kg / 256.9 lbs	124 kg / 273.4 lbs	140.5 kg / 309.8 lbs	155 kg / 341.7 lbs
Operating Range	0 - 40° C / 32 - 104° F							
EMC & Safety	CE Mark							

SPECIFICATIONS - 5VPxC Series DC LOADS - 1200V Range

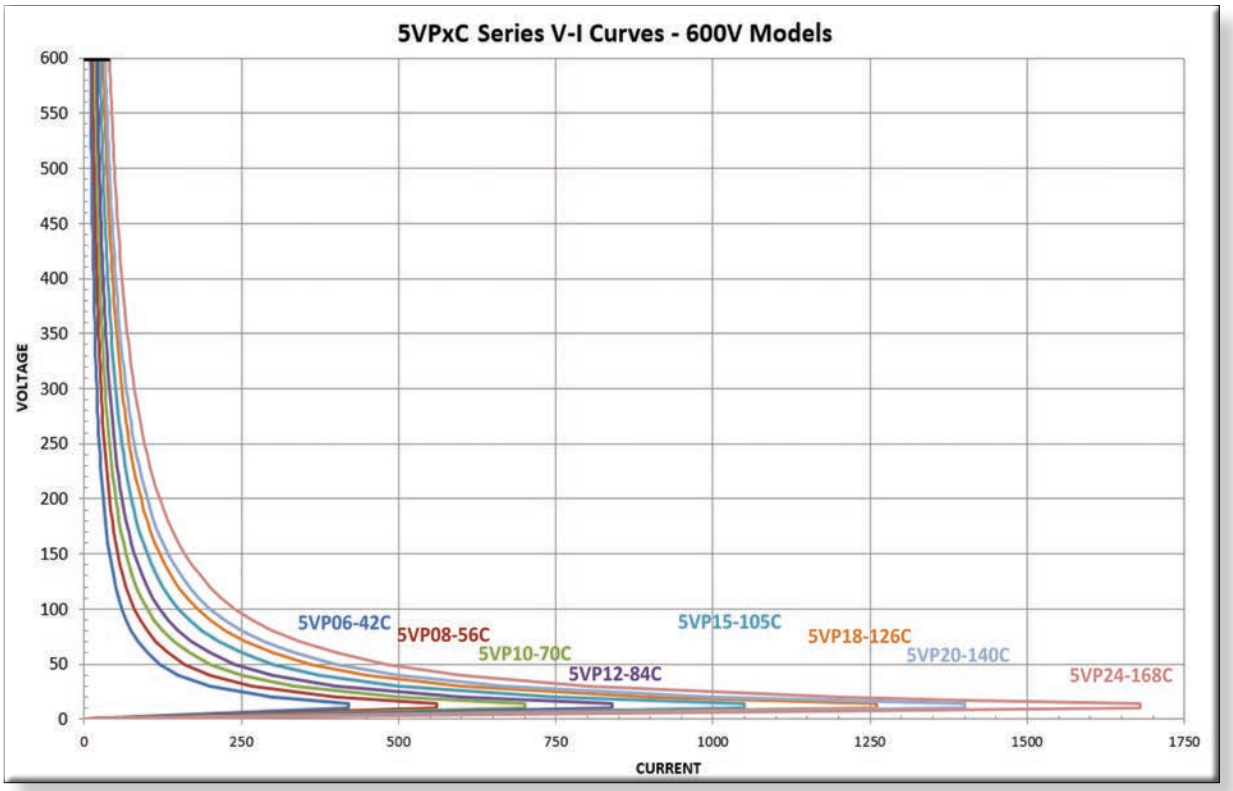
MODEL	5VP06-24C	5VP08-32C	5VP10-40C	5VP12-48C	5VP15-60C	5VP18-72C	5VP20-80C	5VP24-96C
OPERATING RANGES								
Power Ranges	0-6kW	0-8kW	0-10kW	0-12kW	0-15kW	0-18kW	0-20kW	0-24kW
Current Ranges	0-24A/0-240A	0-32A/0-320A	0-40A/0-400A	0-48A/0-480A	0-60/0-600A	0-72A/0-720A	0-80A/0-800A	0-96A/0-960A
Voltage Range	0-1200.0 V							
Minimum Voltage	15V @ Max. Current							
OPERATING MODES								
CC Mode Range	0-24A/0-240A	0-32A/0-320A	0-40A/0-400A	0-48A/0-480A	0-60/0-600A	0-72A/0-720A	0-80A/0-800A	0-96A/0-960A
Resolution	0.384 mA/3.84 mA	0.512 mA/5.12 mA	0.64 mA / 6.4 mA	0.768 mA/7.68 mA	0.96 mA/9.6 mA	1.152mA/11.52mA	1.28 mA/12.8 mA	1.536mA/15.36mA
Accuracy	± 0.05% OF (SETTING + RANGE)							
CR Mode Range	30kΩ - 5Ω - 3.33µS	22.5kΩ - 3.75Ω - 0.0468Ω	18kΩ - 3Ω - 0.0375Ω	15kΩ - 2.5Ω - 0.0312Ω	12kΩ - 2Ω - 0.0025Ω	10kΩ - 1.666Ω - 0.0208Ω	9kΩ - 1.5Ω - 0.0187Ω	7.5Ω - 1.25Ω - 0.00156Ω
Resolution	3.333µS/83.33µΩ	4.444µS/62.5µΩ	5.5555µS/50µΩ	6.6666µS/41.66µΩ	8.3333µS/33.33µΩ	10µS/27.778µΩ	11.111µS/25µΩ	13.333µS/20.83µΩ
Accuracy	± 0.2% OF (SETTING + RANGE)							
CV Mode Range	0-1200.0 V							
Resolution	20 mV							
Accuracy	± 0.025% OF (SETTING + RANGE)							
CP Mode Range	600W/6kW	800W/8kW	1000W/10kW	1200W/12kW	1500W/15kW	1800W/18kW	2000W/20kW	2400W/24kW
Resolution	9.6 / 96 mW	12.8 / 128 mW	16 / 160 mW	19.2 / 192 mW	24 / 240 mW	28.8 / 288 mW	32 / 320 mW	38.4 /384 mW
Accuracy	Low Range: ± 0.2% OF (SETTING + RANGE) / High Range: ± 0.1% 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 + Scanni240ng, sampling & P&O interval:1000ms to 60000ms, resolution 1000ms							
PROTECTION								
Over Power (OP)	6300 W	8400 W	10500 W	12600 W	15750 W	18900 W	21000 W	25200 W
Over Current (OC)	249.6 A	332.8 A	416 A	499.2 A	624 A	748.8 A	832 A	998.4 A
Over Voltage (OV)	1260 V							
Over Temperature (OT)	+90° C / 194° F							
DYNAMIC OPERATION								
T high & T low	0.010-9.999 / 99.99 / 999.9 / 9999ms							
Resolution, Accuracy	0.001 / 0.01 / 0.1 / 1ms, 1µs / 10µs / 100µs / 1ms + 50ppm							
Slew Rate | Resolution	0.0192 -12A/ uS | 0.048A/uS	0.0256 -16A/ uS | 0.064A/uS	0.032 -20A/uS | 0.08A/uS	0.0384 -24A/ uS | 0.096A/uS	0.048 -30A/uS | 0.12A/uS	0.0576 -36A/ uS | 0.144A/uS	0.064 -40A/uS | 0.16A/uS	0.0768 -48A/ uS | 0.192A/uS
Min. Rise Time	20 µs Typical							
METERING								
Voltage Rng, Resol, Accuracy	0 - 120.0 V / 0 - 1200.0 V, 2 mV / 20 mV , ± 0.025% OF (READING + RANGE)							
Current Range	0-24A/0-240A	0-32A/0-320A	0-40A/0-400A	0-48A/0-480A	0-60/0-600A	0-72A/0-720A	0-80A/0-800A	0-96A/0-960A
Resolution	0.384 mA/3.84 mA	0.512 mA/5.12 mA	0.64 mA / 6.4 mA	0.768 mA/7.68 mA	0.96 mA/9.6 mA	1.152mA/11.52mA	1.28 mA/12.8 mA	1.536mA/15.36mA
Accuracy	± 0.05% OF (READING + RANGE)							
Power Range	600W/6kW	800W/8kW	1000W/10kW	1200W/12kW	1500W/15kW	1800W/18kW	2000W/20kW	2400W/24kW
Resolution, Accuracy	0.1W / 1W , ± 0.075% OF (READING + RANGE)							
SHORT CIRCUIT								
Max. Short Current / Res.	240A / 62.5mΩ	320A / 46.9mΩ	400A / 37.5mΩ	480A / 31.3mΩ	600A / 25mΩ	720A / 20.9mΩ	800A / 18.8mΩ	960A / 15.7mΩ
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 - 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.)	400 VA	750 VA	750 VA	750 VA	1100 VA	1100 VA	1450 VA	1450 VA
Isolation - DC input to Chassis	2120 Vdc							
Dimensions (H x W x D)	446x444 x 763mm 17.6" x 17.5 x 30"	572x444x763mm 22.5" x 17.5" x 30"	572x444x763mm 22.5" x 17.5" x 30"	572x444x763mm 22.5" x 17.5" x 30"	761x 444x763mm 30" x 17.5" x 30"	761x 444x763mm 30" x 17.5" x 30"	884x 444x763mm 34.8" x 17.5" x 30"	884x 444x763mm 34.8" x 17.5" x 30"
Weight (Net)	62 kg / 136.7 lbs	77.5 kg / 170.8 lbs	84.4 kg / 186.1 lbs	92 kg / 202.8 lbs	116.5 kg / 256.9 lbs	124 kg / 273.4 lbs	140.5 kg / 309.8 lbs	155 kg / 341.7 lbs
Operating Range	0 - 40° C / 32 - 104° F							
EMC & Safety	CE Mark							

V-I OPERATING RANGE PROFILES BY VOLTAGE RANGE

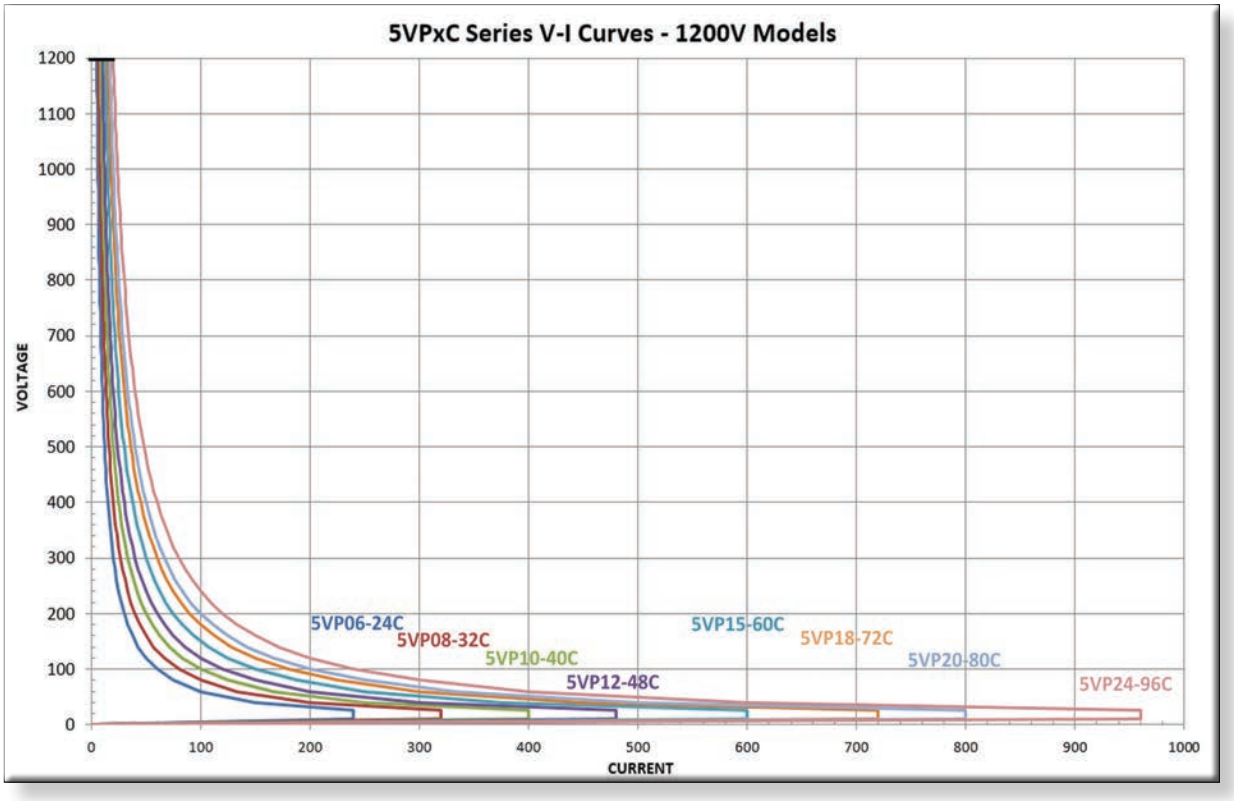
5VPxC - 150V Models



5VPxC - 600V Models



5VPxC - 1200V Models



Various Sizes of 5VPxC Series Models shown

6kW Models *8kW, 10kW & 12kW Models* *15kW &18kW Models* *20kW & 24kW Models*

5VPxC SERIES HIGH POWER DC LOADS

ORDERING INFORMATION:

Line 1: Specify DC Load Model:
5VPxxx-xxC Rack Mount DC Load

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

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

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 5VPxC 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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