

## Programmable DC Power Supply

### MODEL 62000P SERIES

#### Key Features:

- Nine models : 62006P-100-25  
62006P-300-8  
62012P-80-60  
62012P-100-50  
62012P-600-8  
62012P-40-120  
62024P-80-60  
62024P-100-50  
62050P-100-100
- Wide range of voltage & current combinations with constant power
- Voltage range : 0 ~ 600V  
Current range : 0 ~ 120A  
Power range : 600W, 1200W, 2400W, 5000W
- Digital encoder knobs, keypad and function keys
- Power Factor Correction (0.95)
- High-speed Programming
- Precision V&I Measurements
- Current sharing for parallel operation with Master/Slave Control
- Auto Sequencing Programming : 10 Programs / 100 Sequences / 8 bit TTL
- Voltage & Current Slew Rate Control
- OVP, Current Limit, Thermal protection
- Remote sense, 5V line loss compensation
- APG (Analog Programmable Interface) with Isolated Analog Interface Card
- Optional GPIB control with SCPI
- Standard RS-232 interface
- LabView and Labwindows
- CE Certified
- Standard USB interface



## PROGRAMMABLE DC POWER SUPPLY MODEL 62000P SERIES

Chroma's new 62000P Series of programmable DC power supplies offer many unique advantages for ATE integration and testing. These advantages include a constant power operating envelope, precision readback of output current and voltage, output trigger signals as well as the ability to create complex DC transients waveforms to test device behavior to spikes, drops, and other voltage deviations. Designed for automated testing DC-DC converters and similar products, the 62000P sets a new standard for high accuracy programmable DC supplies.

The 62000P Series includes 9 different models ranging from 600W to 5000W, up to 120A and up to 600V. Due to their constant power operating envelope a single instrument can provide both high voltage/low current AND low voltage/high current thereby reducing the number of supplies needed in typical ATE applications.

The 62000P Series also includes 16 bit readback capability for accurate voltage and current readings. This means systems no longer need complex shunt/multiplexers to make accurate readings of the UUT's input parameters. The instruments also include I/O ports providing 8 bit TTLs, DC-ON, fault output signal and remote inhibit as well as an output trigger signal for system timing measurements.

Another unique capability of the 62000P Series supplies is their ability to create complex DC transient waveforms. This capability allows devices to be tested to DC voltage dropouts, spikes and other voltage variations making them an ideal choice for airborne device testing, inverter testing and other devices which will experience voltage interrupts. Applications include DC/DC Converter & Inverter voltage drop test, engine start-up simulation, battery automated charging, electronic product life cycle test, and etc.

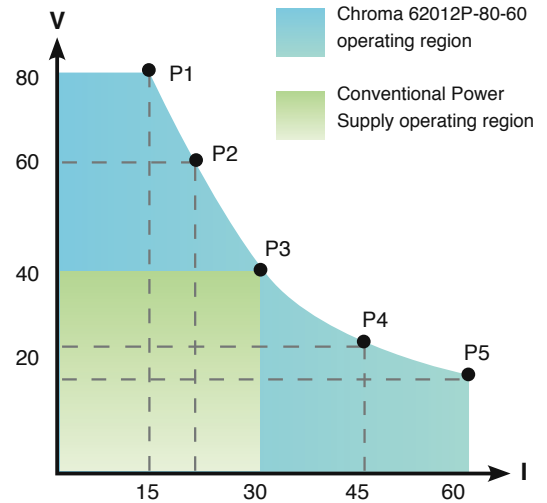


# Chroma



## WIDE OPERATING REGION WITH CONSTANT POWER

The 62000P Series supplies offer a wide operating region. For example, the output specification for model 62012P-80-60 is 1200W/80V/60A, it allows operating flexibly in various combinations as shown in the figure at the right. As shown conventional power supplies provide the same rated current at all output voltages, however, the 62000P provides greater current at lower output voltages. This means both low voltage/high current and high voltage/low current UUTs can be tested using a single supply avoiding the for multiple supplies saving cost and space within typical ATE systems.



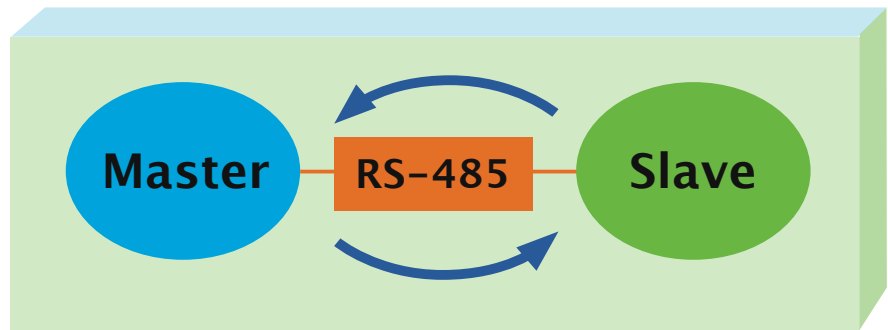
## MASTER/SLAVE PARALLEL & SERIAL CONTROL

When high power is required, it is common to connect two or more power supplies in parallel or series. The 62000P Series supplies have a smart Master / Slave control mode making series/parallel operation fast and simple. In this mode the master scales values and downloads data to slave units so programming is simple and current sharing automatic.

Front Panel



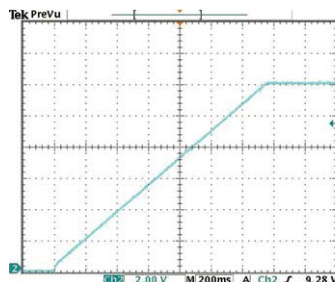
Remote GPIB



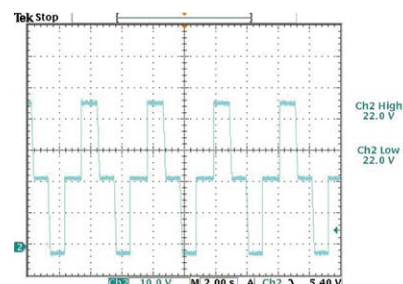
## PROGRAMMING SEQUENCES APPLICATIONS

The 62000P Series supplies allow for 100 user programmable sequences with time settings ranging from 5ms to 15000s, voltage /current slew rate control and 8 bit TTL output for automated test applications. Applications include DC/DC Converter & Inverter voltage dropout testing, engine start-up simulation, battery automated charging, product life cycle testing and airborne avionics testing.

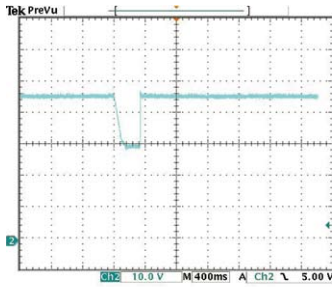
### Soft Start Testing



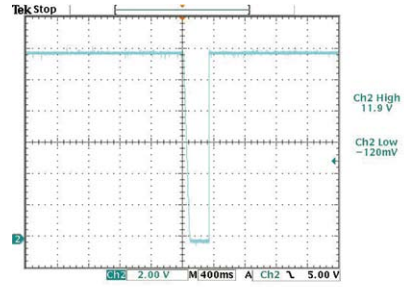
### Voltage Step Waveform



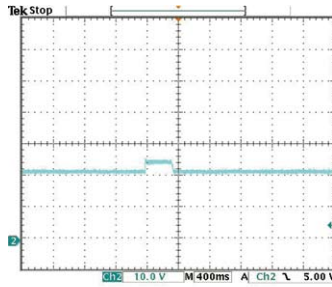
D/D Converter Sag Testing



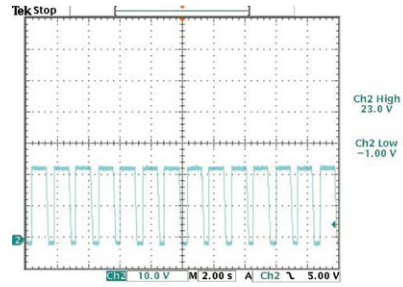
D/D Converter Cycle drop Testing



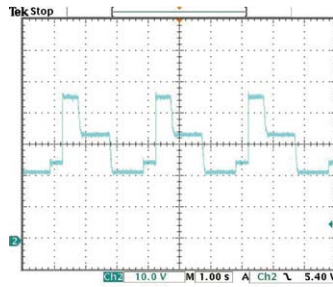
D/D Converter Surge Testing



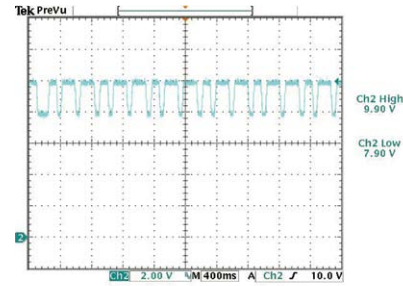
Pulse Charge of Battery



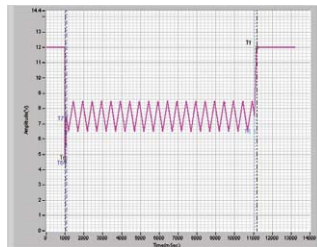
Life Cycle Testing



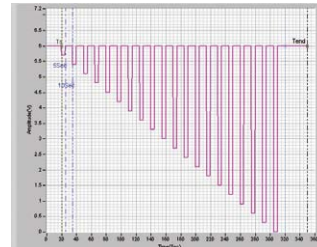
Line Regulation Testing



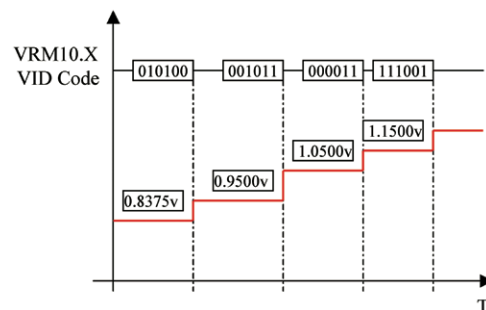
Starting Profile of ISO 16750-2



Reset Behavior at Voltage Drop of ISO 16750-2

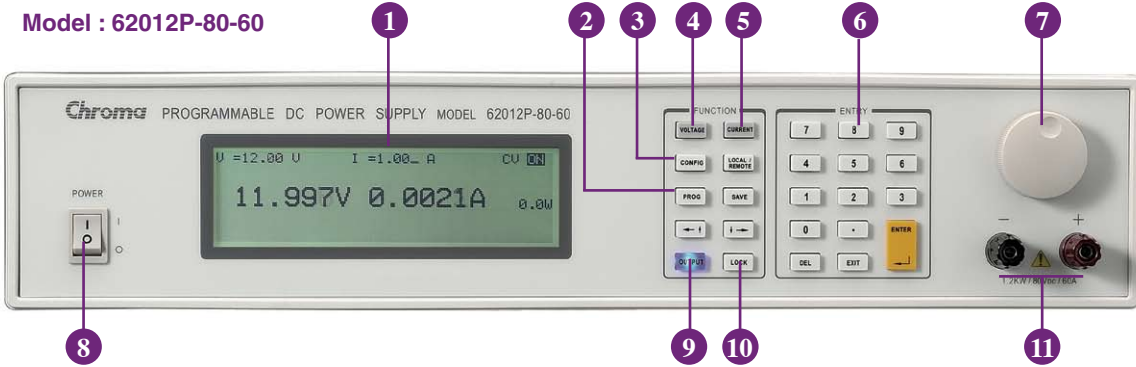


VID code Simulation for VRM/VRD



The 62000P Supplies provide 8 output TTL bits with timing control. These control lines can be used for VID control of VRMS or to control other discrete signals.

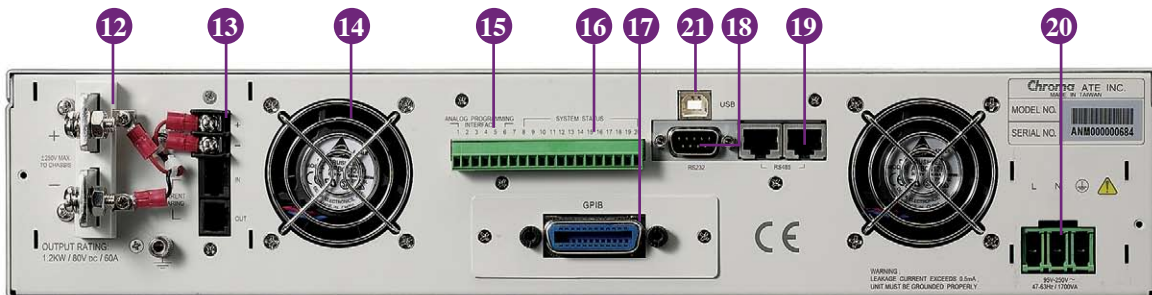
## PANEL DESCRIPTION



1. LCD Display	Display setting, readings and operating status
2. PROG Key	Program the sequence
3. CONFIG Key	Set the system configuration
4. VOLTAGE Key	Set the output voltage
5. CURRENT Key	Set the output current limit
6. NUMERIC Key	Set the data
7. ROTARY Key	Adjust the V&I and set the parameter
8. POWER Switch	
9. OUTPUT Key	Enable or disable the output
10. LOCK Key	Lock all settings
11. OUTPUT Terminal	Connect the output cable to a UUT

Note : 40V, 300V & 600V Model have no output terminal at the front panel.

### Model : 62012P-80-60



12. OUTPUT Terminal	Connect the output cable to a UUT
13. Sense Terminal	Connect the UUT for voltage compensation
14. System Fan	
15. Analog programming interface	For analog level to program and monitor output voltage & current
16. System I/O port	Send 8 bit TTL, DC-ON, fault output signal and remote inhibit and trigger input signal
17. GPIB Connector(Optional)	
18. RS-232 Connector	
19. RS-485 Connector	For master/slave control
20. AC Input Terminal	
21. USB Connector	

## ELECTRICAL SPECIFICATIONS

Model	62006P-100-25	62006P-300-8	62012P-40-120	62012P-80-60	62012P-100-50	62012P-600-8	62024P-80-60	62024P-100-50	62050P-100-100
<b>Output Ratings</b>									
Output Voltage	0-100V	0-300V	0-40V	0-80V	0-100V	0-600V	0-80V	0-100V	0-100V
Output Current	0-25A	0-8A	0-120A	0-60A	0-50A	0-8A	0-60A	0-50A	0-100A
Output Power	600W	600W	1200W	1200W	1200W	1200W	2400W	2400W	5000W
<b>Line Regulation</b>									
Voltage	0.01%+6mV	0.01%+18mV	0.01%+2mV	0.01%+8mV	0.01%+10mV	0.01%+18mV	0.01%+8mV	0.01%+10mV	0.01%+8mV
Current	0.01%+5mA	0.03%+20mA	0.01%+25mA	0.01%+10mA	0.01%+12mA	0.03%+20mA	0.01%+10mA	0.01%+12mA	0.01%+24mA
<b>Load Regulation</b>									
Voltage	0.01%+10mV	0.01%+50mV	0.01%+3mV	0.01%+12mV	0.01%+18mV	0.01%+50mV	0.01%+12mV	0.01%+18mV	0.01%+12mV
Current	0.01%+5mA	0.03%+40mA	0.01%+10mA	0.01%+20mA	0.01%+28mA	0.03%+40mA	0.01%+20mA	0.01%+28mA	0.01%+56mA
<b>Voltage Measurement</b>									
Rnage	20V / 100V	60V / 300V	8V / 40V	16V / 80V	20V / 100V	120V / 600V	16V / 80V	20V / 100V	20V / 100V
Accuracy	0.05% + 0.05%F.S.								
<b>Current Measurement</b>									
Range	5A / 25A	1.6A / 8A	24A / 120A	12A / 60A	10A / 50A	1.6A / 8A	12A / 60A	10A / 50A	20A / 100A
Accuracy	0.1% + 0.2%F.S.								
<b>Output Noise (0-20MHz)</b>									
Voltage (P-P)	85 mV	180 mV	90 mV	100 mV	100 mV	180 mV	100 mV	100 mV	50 mV
Voltage Ripple (rms)	10 mV	90 mV	10 mV	10 mV	15 mV	90 mV	10 mV	15 mV	15 mV
Current Ripple (rms)	10 mA	60 mA	120 mA	30 mA	20 mA	60 mA	30 mA	20 mA	40 mA
<b>OVP Adjustment Range</b>									
110% of Vset to 110% of Vmax									
<b>Slew Rate Range</b>									
Voltage (with USB)	0.001V - 10V/ms	0.01V - 10V/ms	0.001V - 5V/ms	0.001V - 10V/ms	0.01V - 10V/ms	0.01V - 10V/ms	0.001V - 10V/ms	0.001V - 10V/ms	0.001A - 2A/ms
Current (with USB)	0.001A - 1A/ms								
<b>Programming Response Time (Typical)</b>									
Rise Time (Full & No Load)	10 ms	30 ms	8 ms	8 ms	10 ms	60 ms	8 ms	10 ms	10 ms
Fall Time	300 ms(max)	2.5 s(max)	240 ms(max)	240 ms(max)	300 ms(max)	5 s(max)	240 ms(max)	300 ms(max)	850 ms(max)
Efficiency	0.75	0.75	0.8	0.8	0.8	0.8	0.85	0.85	0.85
<b>Drift (8 hours)</b>									
Voltage	0.02% of Vmax								
Current	0.04% of Imax								
<b>Temperature Coefficient</b>									
Voltage	0.02% of Vmax/°C								
Current	0.04% of Imax/°C								
<b>Transient response time</b>									
10 % step change	3 mS								
10 % step change	180 mV	600mV	150mV	250 mV	250 mV	600mV	250 mV	250 mV	250 mV
<b>Voltage limit@Series Mode</b>									
	500V	800V	200V	400V	500V	800V	400V	500V	500V
<b>AC Line Input Voltage Ranges</b>									
	95 to 250Vac	95 to 250Vac	95 to 250Vac	95 to 250Vac	95 to 250Vac	95 to 250Vac	190 to 250Vac (Single phase)	190 to 250Vac (Single phase)	190 to 250Vac (3phase 4 wire, Delta connection) or 342 to 440Vac (3phase 5 wire, Y connection)
<b>Weight</b>									
	13kg								28kg
<b>Operating Temperature</b>									
	0 - 40°C								
<b>Dimensions(HxWxD)mm</b>									
	88 x 428 x 425								177 x 428 x 566

All specifications are subject to change without notice.

\*note : Contact the factory for availability of USB interface for Model 62006P-100-25,62006P-300-8,62012P-80-60,62012P-100-50,62012P-600-8.

## ORDERING INFORMATION

- 62006P-100-25** : Programmable DC Power Supply, 100V / 25A / 600W
- 62006P-300-8** : Programmable DC Power Supply, 300V / 8A / 600W
- 62012P-40-120** : Programmable DC Power Supply, 40V / 120A / 1200W
- 62012P-80-60** : Programmable DC Power Supply, 80V / 60A / 1200W
- 62012P-100-50** : Programmable DC Power Supply, 100V / 50A / 1200W
- 62012P-600-8** : Programmable DC Power Supply, 600V / 8A / 1200W
- 62024P-80-60** : Programmable DC Power Supply, 80V / 60A / 2400W
- 62024P-100-50** : Programmable DC Power Supply, 100V / 50A / 2400W
- 62050P-100-100** : Programmable DC Power Supply, 100V / 100A / 5000W
- A620004** : GPIB Interface for Model 62000P Series
- A620006** : Rack Mounting Kit for Model 62000P Series (2U)
- A620009** : Softpanel for 62000P Series
- A620015** : Rack Mounting Kit for Model 62050P-100-100



**Model 62050P-100-100**

## GENERAL SPECIFICATIONS

<b>Programming &amp; Measurement Resolution</b>	
Voltage (Front Panel)	10 mV
Current (Front Panel)	10 mA
Voltage (Remote Interface)	0.003% of Vmax
Current (Remote Interface)	0.002% of Imax
Voltage (Analog Programming Interface )	0.04% of Vmax
Current (Analog Programming Interface )	0.04% of Imax
<b>Programming Accuracy</b>	
Voltage Programming (Front Panel and Remote Interface )	0.1% of Vmax
Voltage Programming (Analog Programming Interface )	0.2% of Vmax
Current Programming (Front Panel and Remote Interface )	0.3% of Imax
Current Programming (Analog Programming Interface )	0.3% of Imax
<b>Programming Response Time</b>	
Rise Time : For a programmed 5% to 95% step in output voltage.(Full & No Load)	See Electrical Specification
Fall Time : For a programmed 95% to 5% step in output voltage. (The fall time will be affected by the external loading from UUT.)	
Vout setting (USB send command to DC source receiver)	10ms
?Volt , ? Current (under USB command using Fetch)	10ms
?Volt , ? Current (under USB command using Measure)	70ms
<b>Analog Programming Interface</b>	
Voltage and Current Programming inputs	0~10Vdc or 0~5Vdc of F.S.
Voltage and Current monitor	0~10Vdc or 0~5Vdc of F.S.
Isolation : Maximum working voltage of any analog programming signal with respect to chassis potential.	70Vdc
<b>Auxiliary Power Supply</b>	
Output Voltage	12Vdc
Maximum Current Source Capability	10mA
<b>Remote inhibit function (I/O)</b>	
Use to disable the output of DC power supply; Active Low	TTL
<b>DC-ON Output Signal</b>	
Indicate the output status; Active High	TTL
<b>Fault output signal</b>	
Indicate if there is a fault/protection occurred; Active Low	TTL
<b>Series &amp; Parallel operation function with Master / Slave control</b>	
Voltage limit @ Series Mode	See Electrical Specification
Voltage limit @ Series Mode (Refer to Ground)	240 Volt
Number of DC Power Supplies allowed @ Master / Slave control mode	5
<b>Auto Sequencing Programmable Function</b>	
Number of program	10
Number of sequence	100
Time Range	5ms - 15,000S
TTL signal out	8 bits
TTL source capability	7 mA
<b>Voltage Step Mode Programmable Function</b>	
Start_Voltage Range	See each mode V range
End_Voltage Range	See each mode V range
Total Run Time Range (hhh:mm:ss.sss)	10ms - 99 hours
<b>Slew Rate Control Function</b>	
Voltage slew rate range (The fall slew rate will be affected by the discharge rate of the output capacitors especially under no load condition.)	See Electrical Specification
Current slew rate range	See Electrical Specification
Minimum transition time.	0.5 ms
<b>Remote Sense</b>	
Line loss compensation	5V

All specifications are subject to change without notice.

Developed and Manufactured by :

**CHROMA ATE INC.**

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