www.atecorp.com (800) 404-ATEC

MODEL 62000H SERIES

- Power range : 5KW/10KW/15KW/18KW
- Current range : 0~375A
- Voltage range : 0~1800V/2000V(series)
- 200/220Vac, 380/400Vac, 440/480Vac
- High power density (18KW in 3U)
- Easy master/slave parallel & series operation
- Precision V&I measurements
- High-speed programming
- Voltage & current slew rate control
- Digital encoder knobs, keypad and function keys
- Current sharing operation
- Voltage ramp function (time range: 5 ms ~ 99 hours)
- Auto sequencing programming: 10 programs/100 sequences
- OVP, current limit, thermal protection
- Support CAN/Ethernet/USB/RS232/RS485/ **GPIB/APG** interfaces
- Remote sense line drop compensation
- Solar array simulation function
- Shade I-V curve simulation
- 10 program/100 I-V files







AC input voltage range :

- Standard analog programming interface
- Remote output ON/OFF (I/P)
- LabView and Labwindows
- I-V curve programming:
- CE Certified



PROGRAMMABLE DC POWER SUPPLY MODEL 62000H **SERIES**

Chroma's new 62000H Series of programmable DC power supplies offer many unique advantages for telecom, automated test system & integration, industrial, battery charge & simulation for hybrid cars and solar panel simulation. These advantages include high power density of 18KW in 3U, precision readback of output current and voltage, output trigger signals as well as the ability to create complex DC transient waveforms to test device behavior for spikes, drops, and other voltage deviations.

The 62000H Series includes different models ranging from 5KW to 18KW, with current range up to 375A and voltage range up to 1800V. The 62000H can easily parallel up to 11 units capable of 198KW with current sharing for bulk power applications, for example, battery bank simulation of 450V/150A/67.5KW for electric vehicle and military use.

There are 100 user programmable input status on the front panel for automated test

application and life cycle ON/OFF test. In addition, the 62000H has a 16 bit digital control with bright vacuum fluorescent display readout.

The 62000H series DC power supplies are very easy to operate either from the front panel keypad or from the remote controller via CAN/Ethernet/USB/RS232/RS485/GPIB/ APG. Its compact size with 3U only can be stacked on a bench in a standard rack without any difficulty.

Another unique capability of the 62000H 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 aerospace device testing, inverter testing and other devices which will experience voltage interrupts. Applications include DC/DC Converter & Inverter voltage drop test, engine startup simulation, battery automated charging, electronic product life cycle test, etc.



















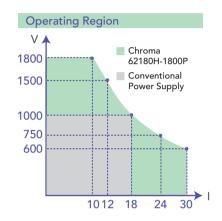
HIGH POWER DENSITY 18KW IN 3U PROGRAMMABLE DC POWER SUPPLY

The 62000H Series supplies offer a high power density envelop of maximum 18KW in 3U, deliver low output noise and ripple, excellent line and load regulation, and fast transient response. With wide range of voltage (30V~1800V), current (30A), suitable for every part of your manufacturing process from design to production testing.



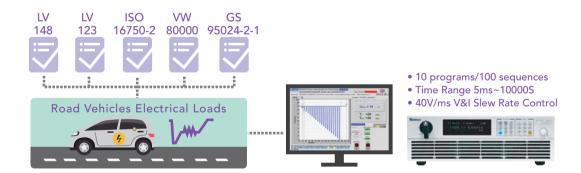
WIDE OPERATING REGION FOR OUTPUT (62000H-P SERIES)

The 62000H-P Series are equipped with active PFC low-current harmonic feed to grid, which can save power consumption and power system configuration under high-power testing. The 62000H-P has a wide operating region of output for users to operate in a broad voltage and current range at rated power that is not limited to a single operating point of full power. It is suitable for testing the products with diverse specifications such as electronic components, server power, battery application products, and automotive electronic components, etc. For instance, the model 62180H-1800P with 1800V/30A/18kW output can be operated flexibly in various combinations as shown in the figure.



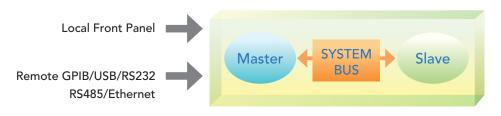
AUTOMOTIVE ELECTRICAL CHARACTERISTICS SIMULATION

The 62000H Series DC power supply has a high-speed CV dynamic response with controllable slew rate up to 40V/ms. It can be applied to many automotive regulations for electrical characteristics testing, including LV148, LV123, ISO 16750-2, VW 80000, GS 95024-2-1, etc., to perform dynamic voltage testing on automotive components and electrical systems during start-up and operation. Moreover, the graphical softpanel allows users to test with one click to quickly verifying the product stability, and saves the development timeline. (For detailed support items, please refer to Chroma's official website - Chroma Softpanel for Model 62000P & 62000H Series).



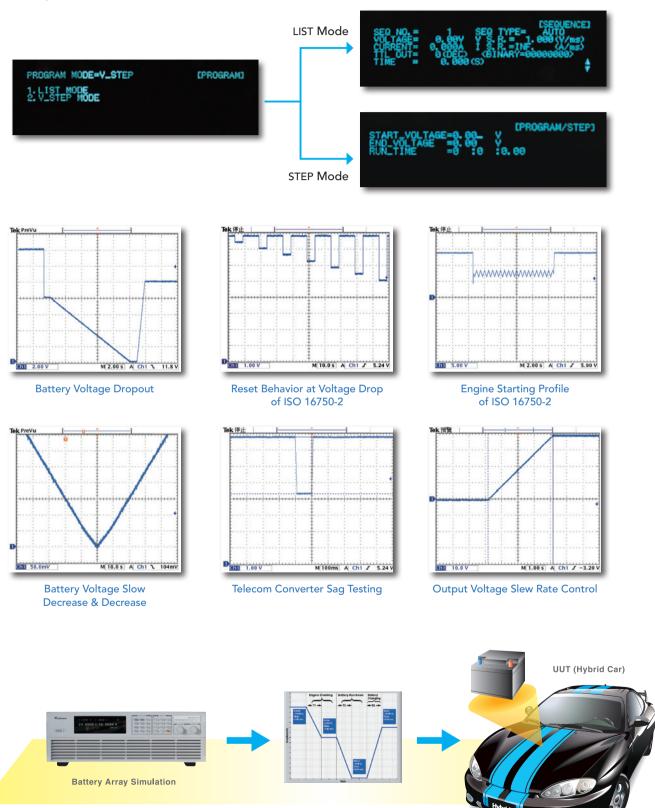
MASTER / SLAVE PARALLEL & SERIES OPERATION

When high power is required, it is common to connect two or more power supplies in parallel or series. The 62000H 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.



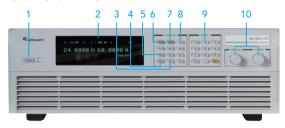
PROGRAMMING SEQUENCES APPLICATIONS

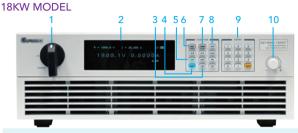
The 62000H Series supplies' LIST and STEP modes allows for auto sequencing function. The LIST mode allows for 100 user programmable sequences with time settings ranging from 5ms to 15000s and voltage / current slew rate control. The STEP mode allows for setting start, end voltage and run time of 10ms to 99 hours for automated test applications. Applications include DC/DC Converter & Inverter voltage dropout testing, engine start-up simulation, battery automated charging, battery voltage dropout simulation, product life cycle testing and avionics testing.



PANEL DESCRIPTION

5KW/10KW/15KW MODEL

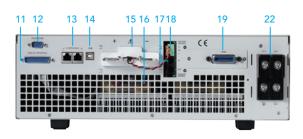


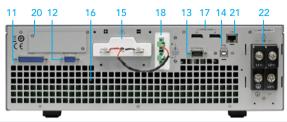


- 1. POWER Switch
- 2. VFD Display

Display setting, readings and operating status

- 3. LOCK Key Lock all settings
- 4. OUTPUT Key
 Enable or disable the output
- 5. CONFIG Key Set the system configuration
- 6. VOLTAGE Key
 Set the output voltage
- 7. CURRENT Key
 Set the output current
- 8. PROG Key Program the sequence
- 9. NUMERIC Key
 Set the data
- 10.ROTARY Key
 Adjust the V&I and set the parameter





- 11. Analog programming interface
 For analog level to program and monitor output
 voltage & current
- 12. RS-232 or RS-485 Interface (alternative)
- 13. System Bus
 For master/slave parallel and series control
- 14. USB Interface
- 15. OUTPUT Terminal

 Connect the output cable to a UUT
- 16. System Fan With fan speed control
- 17. Current Sharing Terminal
 Connect the cable to slave unit
- 18. Sense Terminal

 Connect the UUT for voltage compensation
- 19. GPIB or ETHERNET Interface
 (Option for 2kW/5kW/10kW/15kW models)
- 20. GPIB Interface (Option for 18kW model)
- 21. Ethernet Interface (Standard for 18kW model)
- 22. AC Input Terminal

ORDERING INFORMATION

Power Rating	62000H Series Programmable DC Power Supply
2KW	62020H-150S: Programmable DC Power Supply 150V/40A/2KW with Solar Array Simulation
	62050H-40 : Programmable DC Power Supply 40V/125A/5KW
5KW	62050H-450 : Programmable DC Power Supply 450V/11.5A/5KW
3KVV	62050H-600 : Programmable DC Power Supply 600V/8.5A/5KW
	62050H-600S: Programmable DC Power Supply 600V/8.5A/5KW with Solar Array Simulation
	62075H-30 : Programmable DC Power Supply 30V/250A/7.5KW
	62100H-30 : Programmable DC Power Supply 30V/375A/11KW
	62100H-40 : Programmable DC Power Supply 40V/250A/10KW
10KW	62100H-100P*3 : Programmable DC Power Supply 100V/250A/10KW
TORVV	62100H-450 : Programmable DC Power Supply 450V/23A/10KW
	62100H-600 : Programmable DC Power Supply 600V/17A/10KW
	62100H-600S : Programmable DC Power Supply 600V/17A/10kW with Solar Array Simulation
	62100H-1000 : Programmable DC Power Supply 1000V/10A/10KW
	62150H-40 : Programmable DC Power Supply 40V/375A/15KW
	62150H-100P*3 : Programmable DC Power Supply 100V/375A/15KW
	62150H-450 : Programmable DC Power Supply 450V/34A/15KW
15KW	62150H-600 : Programmable DC Power Supply 600V/25A/15KW
	62150H-600S : Programmable DC Power Supply 600V/25A/15KW with Solar Array Simulation
	62150H-1000 : Programmable DC Power Supply 1000V/15A/15KW
	62150H-1000S : Programmable DC Power Supply 1000V/15A/15kW with Solar Array Simulation
18KW	62180H-1800P : Programmable DC Power Supply 1800V/30A/18KW
TORVY	62180H-1800S : Programmable DC Power Supply 1800V/30A/18KW with Solar Array Simulation
Options	A620024 : GPIB Interface for 2kW/5kW/10kW/15kW models (Factory installed)
	A620025 : Ethernet Interface for 62000H series (Factory installed)
	A620026 : Rack Mounting kit for 62000H series
	A6200039 : GPIB Interface for 12kW/18kW models
	A632013*4 : CAN interface for 62180H-1800P

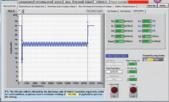
Note *1 : All models output power are available for 200/220Vac, 380/400Vac and 440/480Vac (600V/1000V models) line voltage.

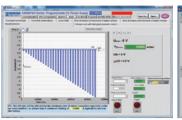
Note *2 : Call for availability. (30V/40V/100V/450V for 200/220 Vac and 440/480 Vac line voltage)

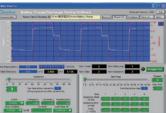
Note *3 : 62000H-P models include active PFC and constant power envelop operation. Note *4 : Call for availability.

SOFT PANEL









Program Sequences Function

ISO 16750-2 Standard for Voltage Transient Test

GS-95024 Standard for Voltage Transient Test

Battery Charge Test

ELECTRICAL SPECIFICATIONS -1

Model	62075H-30	62050H-40	62050H-450	62050H-600	62100H-30	62100H-40	62100H-100P	62100H-450	62100H-600	
Output Ratings										
Output Voltage	0-30V	0-40V	0-450V	0-600V	0-30V	0-40V	0-100V	0-450V	0-600V	
Output Current	0-250A	0-125A	0-11.5A	0-8.5A	0-375A	0-250A	0-250A	0-23A	0-17A	
Output Power	7500W	5000W	5000W	5000W	11250W	10000W	10000W	10000W	10000W	
Line Regulation	1									
Voltage					±0.01% F.	5.				
Current		±0.05% F.S.								
Load Regulation										
Voltage		±0.02% F.S.								
Current		±0.1% F.S.								
Voltage Measurement										
Range	6V / 30V	8V / 40V	90V / 450V	120V / 600V	6V / 30V	8V / 40V	20V/100V	90V/450V	120V/600V	
Accuracy					0.05% + 0.05%	6 F.S.				
Current Measurement										
Range	50A / 250A	25A / 125A	2.3A / 11.5A	1.7A / 8.5A	75A / 375A	50A / 250A	50A / 250A	4.6A/23A	3.2A/17A	
Accuracy					0.1% + 0.1%	F.S.				
Output Noise & Ripple										
Voltage Noise (P-P)	60mV	60mV	300mV	350mV	60mV	60mV	100mV	300mV	350mV	
Voltage Ripple (rms)	15mV	15mV	450mV	600mV	15mV	15mV	20mV	450mV	600mV	
Current Ripple (rms)	100mA	50mA	20mA	15mA	150mA	100mA	100mA	40mA	30mA	
OVP Adjustment Range										
Range	0-110% programmable from front panel, remote digital inputs									
Accuracy	± 1% of full-scale output									
Programming Response										
Rise Time: Full Load	6ms	8ms	60ms	20ms	60ms	60ms				
Rise Time: No Load	6ms	8ms	60ms	60ms	6ms	8ms	20ms	60ms	60ms	
Fall Time: Full Load	6ms	8ms	60ms	60ms	6ms	8ms	20ms	60ms	60ms	
Fall Time: 10% Load	100ms	100ms	250ms	250ms	100ms	100ms	625ms	250ms	250ms	
Fall Time: No Load	1s	1s	2.5s	2.5s	1s	1s	2.5s	2.5s	2.5s	
Slew Rate Control										
Voltage slew rate range	0.001V/ms ~ 5V/ms							0.001V/ms ~7.5V/ms	0.001V/ms ~10V/ms	
Current slew rate range	5V/ms 5V/ms 7.5V/ms 10V/ms 5V/ms 5V/ms 5V/ms ~7.5V/ms ~10V/m 0.001A~1A/ms, or INF									
Min. transition time	0.5ms									
Transient Response Time	Recovers within 1ms to +/- 0.75% of steady-state output for a 50% to 100% or 100% to 50% load change(1A/µs)									
Efficiency (Typical)	0.87	0.87	0.87	0.87	0.87	0.87	0.91	0.87	0.87	
Drift (30 minutes)	· · · ·									
Voltage	0.04% of Vmax					0.01% of Vmax	.01% of Vmax			
Current	0.06% of Imax						0.06% of Imax	x 0.06% of Imax		
Drift (8 hours)										
Voltage	0.02% of Vmax					0.005% of Vmax	0.02% of Vmax			
Current	0.04% of Imax					0.005% of Imax	0.04% of Imax			
Temperature Coefficient										
Voltage	0.04% of Vmax/°C						0.005% of Vmax/°C	0.04% of Vmax/°C		
Current			0.06% of	f Imax/°C			0.01% of Imax/°C	0,06% of	flmax/°C	

ELECTRICAL SPECIFICATIONS -2

Current	Model	62100H-1000	62150H-40	62150H-100P	62150H-450	62150H-600	62150H-1000	62180H-1800P			
Output Current 0-10A 0-375A 0-375A 0-34A 0-25A 0-15A 0 ~ 30A Output Power 10000W 15000W 15000W 15000W 15000W 18000W	Output Ratings										
Dutput Power 10000W 15000W 15000W 15000W 15000W 15000W 15000W 18000W 1800	Output Voltage	0-1000V	0-40V	0-100V	0-450V	0-600V	0-1000V	0 ~ 1800V			
Line Regulation	Output Current	0-10A	0-375A	0-375A	0-34A	0-25A	0-15A	0 ~ 30A			
Voltage ±0.01% F.S.	Output Power	10000W	15000W	15000W	15000W	15000W	15000W	18000W			
Voltage ±0.01% F.S.	Line Regulation		130000 130000 130000								
Current ±0.05% F.S. Load Regulation Voltage ±0.05% F.S. ±0.02% F.S. ±0.02% F.S. ±0.02% F.S. ±0.02% F.S. ±0.05% F.S. ±0.02% F.S.		±0.01% F.S.									
Voltage											
Voltage	Load Regulation										
Current ±0.1% F.S. ±0.2% F.S. ±0.2% F.S.	Voltage	±0.05% F.S.	±0.02% F.S.	±0.02% F.S.	±0.02% F.S.	±0.02% F.S.	±0.05% F.S.	±0.05% F.S.			
Range 200V/1000V 8V/40V 20V/100V 90V/450V 120V/600V 200V/1000V 1100V / 1800				±0.1%	F.S.			±0.2% F.S.			
Accuracy	Voltage Measurement										
Accuracy	Range	200V/1000V	8V/40V	20V/100V	90V/450V	120V/600V	200V/1000V	1100V / 1800V			
Current Measurement Range 4A/10A 75A/375A 75A/375A 6.8A/34A 5A/25A 6A/15A 15A/30A Accuracy 0.1% + 0.1%F.S. Output Noise & Ripple Voltage Noise(P-P) 2550mV 60mV 100mV 300mV 350mV 2550mV 3500 mV Voltage Ripple(rms) 1500mV 15mV 20mV 450mV 600mV 1500mV 750 mV Current Ripple(rms) 180mA 150mA 100mA 60mA 45mA 270mA 250mA OVP Adjustment Range Range 0-110% programmable from front panel, remote digital inputs Accuracy ± 1% of full-scale output Programming Response Time Rise Time:Full Load 25ms (30% F.S. CC Load) 8ms 20ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: No Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: No Load 3s 1s 2.5s 2.5m 25ms 8ms (10% F.S. CC Load) 625ms 2.5s				0.	.05% + 0.05%F.S	5.					
Accuracy	•										
Output Noise & Ripple Voltage Noise(P-P) 2550mV 60mV 100mV 300mV 350mV 2550mV 3500 mV Voltage Ripple(rms) 1500mV 15mV 20mV 450mV 600mV 1500mV 750 mV Current Ripple(rms) 180mA 150mA 100mA 60mA 45mA 270mA 250mA OVP Adjustment Range Range 0-110% programmable from front panel, remote digital inputs Accuracy ±1% of full-scale output Programming Response Time Rise Time:Full Load 25ms (30% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Rise Time:No Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: Full Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: No Load 3s 1s 2.5s 2.5ms 3s 2.5s Slew Rate Control Voltage	Range	4A/10A	75A/375A	75A/375A	6.8A/34A	5A/25A	6A/15A	15A / 30A			
Voltage Noise(P-P) 2550mV 60mV 100mV 300mV 350mV 2550mV 3500 mV Voltage Ripple(rms) 1500mV 15mV 20mV 450mV 600mV 1500mV 750 mV Current Ripple(rms) 180mA 150mA 100mA 60mA 45mA 270mA 250mA OVP Adjustment Range Range 0-110% programmable from front panel, remote digital inputs Accuracy ±1% of full-scale output Programming Response Time Rise Time:Full Load 25ms (30% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: No Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: 10% Load 120ms (10% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 625ms Fall Time: 10% Load 3s 1s 2.5s 2.5s 2.5s 3s 2.5s Slew Rate Control Voltage slew rate range	Accuracy				0.1% + 0.1%F.S.		1				
Voltage Ripple(rms) 1500mV 15mV 20mV 450mV 600mV 1500mV 750 mV Current Ripple(rms) 180mA 150mA 100mA 60mA 45mA 270mA 250mA OVP Adjustment Range Range 0-110% programmable from front panel, remote digital inputs Accuracy ±1% of full-scale output Programming Response Time Rise Time:Full Load 25ms (30% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: No Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: 10% Load 120ms (10% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 625ms Fall Time: No Load 3s 1s 2.5s 2.5s 2.5s 3s 2.5s Slew Rate Control Voltage slew rate range 0.001V/ms	Output Noise & Ripple										
Current Ripple(rms) 180mA 150mA 100mA 60mA 45mA 270mA 250mA OVP Adjustment Range Range 0-110% programmable from front panel, remote digital inputs Accuracy ±1% of full-scale output Programming Response Time Rise Time:Full Load 25ms (30% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Rise Time:No Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: Full Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: 10% Load 120ms (10% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 625ms Fall Time: No Load 3s 1s 2.5s 2.5s 2.5s 3s 2.5s Slew Rate Control Voltage slew rate range 0.001V/ms ~ 0.00	Voltage Noise(P-P)	2550mV	60mV	100mV	300mV	350mV	2550mV	3500 mV			
OVP Adjustment Range Range 0-110% programmable from front panel, remote digital inputs Accuracy ±1% of full-scale output Programming Response Time Rise Time:Full Load 25ms (30% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Rise Time:No Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: Full Load 25ms (50% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 90ms Fall Time: No Load 120ms (10% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 625ms Fall Time: No Load 3s 1s 2.5s 2.5s 2.5s 3s 2.5s Slew Rate Control Voltage slew rate range 0.001V/ms	Voltage Ripple(rms)	1500mV	15mV	20mV	450mV	600mV	1500mV	750 mV			
Range 0-110% programmable from front panel, remote digital inputs Accuracy ± 1% of full-scale output Programming Response Time Rise Time:Full Load 25ms (30% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: No Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: Full Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: 10% Load 120ms (10% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 625ms Fall Time: No Load 3s 1s 2.5s 2.5s 2.5s 3s 2.5s Slew Rate Control Voltage slew rate range 0.001V/ms	Current Ripple(rms)	180mA	150mA	100mA	60mA	45mA	270mA	250mA			
Range 0-110% programmable from front panel, remote digital inputs Accuracy ± 1% of full-scale output Programming Response Time Rise Time:Full Load 25ms (30% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: No Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: Full Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: 10% Load 120ms (10% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 625ms Fall Time: No Load 3s 1s 2.5s 2.5s 2.5s 3s 2.5s Slew Rate Control Voltage slew rate range 0.001V/ms											
Accuracy ± 1% of full-scale output Programming Response Time Rise Time:Full Load 25ms (30% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Rise Time:No Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms 90ms Fall Time: Full Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: 10% Load 120ms (10% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 625ms Fall Time: No Load 3s 1s 2.5s 2.5s 3s 2.5s Slew Rate Control Voltage slew rate range 0.001V/ms 40V/ms 0.001V/ms ~7.5V/ms ~7.5V/ms ~10V/ms ~40V/ms 20V/ms Current slew rate range 0.001A~0.1A/ms, or INF	, ,	0-110% programmable from front panel, remote digital inputs									
Rise Time:Full Load 25ms (30% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Rise Time:No Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: Full Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: 10% Load 120ms (10% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 625ms Fall Time: No Load 3s 1s 2.5s 2.5s 2.5s 3s 2.5s Slew Rate Control 0.001V/ms 0.001V/ms 0.001V/ms 0.001V/ms 0.001V/ms 0.001V/ms ~10V/ms ~40V/ms 0.001V/ms Current slew rate range 0.001V/ms ~5V/ms ~5V/ms ~7.5V/ms ~10V/ms ~40V/ms 20V/ms	Accuracy										
Rise Time:No Load 25ms 8ms 20ms 60ms 60ms 25ms 90ms Fall Time: Full Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: 10% Load 120ms (10% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 625ms Fall Time: No Load 3s 1s 2.5s 2.5s 2.5s 3s 2.5s Slew Rate Control Voltage slew rate range 0.001V/ms	Programming Response T	ime				•					
Fall Time: Full Load 25ms (50% F.S. CC Load) 8ms 20ms 60ms 25ms (50% F.S. CC Load) 90ms Fall Time: 10% Load 120ms (10% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 625ms Fall Time: No Load 3s 1s 2.5s 2.5s 2.5s 3s 2.5s Slew Rate Control Voltage slew rate range 0.001V/ms 40V/ms 0.001V/ms ~5V/ms ~5V/ms ~7.5V/ms ~10V/ms ~40V/ms 0.001V/ms ~20V/ms Current slew rate range 0.001A~0.1A/ms, or INF	Rise Time:Full Load	25ms (30% F.S. CC Load)	8ms	20ms	60ms	60ms	25ms (50% F.S. CC Load)	90ms			
Fall Time: 10% Load 120ms (10% F.S. CC Load) 100ms 625ms 250ms 250ms 80ms (10% F.S. CC Load) 625ms Fall Time: No Load 3s 1s 2.5s 2.5s 3s 2.5s Slew Rate Control Voltage slew rate range 0.001V/ms 40V/ms 0.001V/ms ~5V/ms 75V/ms 75V/ms 0.001V/ms ~10V/ms ~10V/ms ~40V/ms 0.001V/ms ~20V/ms Current slew rate range 0.001A~0.1A/ms, or INF	Rise Time:No Load	25ms	8ms	20ms	60ms	60ms	25ms	90ms			
Fall Time: No Load 3s 1s 2.5s 2.5s 2.5s 3s 2.5s Slew Rate Control Voltage slew rate range 0.001V/ms / 40V/ms 0.001V/ms / 0.001V/ms / 7.5V/ms	Fall Time: Full Load	25ms (50% F.S. CC Load)	8ms	20ms	60ms	60ms	25ms (50% F.S. CC Load)	90ms			
Slew Rate Control Voltage slew rate range 0.001V/ms 40V/ms 0.001V/ms 75V/ms 0.001V/ms	Fall Time: 10% Load	120ms (10% F.S. CC Load)	100ms	625ms	250ms	250ms	80ms (10% F.S. CC Load)	625ms			
Voltage slew rate range 0.001Vms 40V/ms 0.001V/ms ~5V/ms 0.001V/ms ~5V/ms 0.001V/ms ~7.5V/ms 0.001V/ms ~10V/ms 0.001V/ms ~40V/ms 0.001V/ms ~40V/ms 0.001V/ms ~40V/ms	Fall Time: No Load	3s	1s	2.5s	2.5s	2.5s	3s	2.5s			
Voltage slew rate range 40V/ms ~5V/ms ~5V/ms ~7.5V/ms ~10V/ms ~40V/ms 20V/ms Current slew rate range 0.001A~0.1A/ms, or INF	Slew Rate Control										
·	Voltage slew rate range							0.001V/ms ~ 20V/ms			
	Current slew rate range	0.001A~0.1A/ms, or INF									
Min. transition time 0.5ms	Min. transition time	0.5ms									
Transient Response Time Recovers within 1ms to +/- 0.75% of steady-state output for a 50% to 100% or 100% to 50% load change (1A/µs) 1.5ms *6	Transient Response Time	Recovers within 1ms to	teady-state output fo	or a 50% to 1009	1.5ms *6						
Efficiency (Typical) 0.85 0.87 0.92 0.87 0.87 0.87 0.9	Efficiency (Typical)	0.85	0.87	0.92	0.87	0.87	0.87	0.9			
Drift (30 minutes)	Drift (30 minutes)										
Voltage 0.04% of Vmax 0.01% of Vmax 0.04% of Vmax	Voltage	0.04% of Vm	ax	0.01% of Vmax	0.04% of Vmax						
Current 0.06% of Imax 0.06% of Imax 0.06% of Imax	Current	0.06% of Ima	эх	0.06% of Imax	0.06% of Imax						
Drift (8 hours)	Drift (8 hours)										
Voltage 0.02% of Vmax 0.005% of Vmax 0.02% of Vmax	Voltage	0.02% of Vm	ax	0.005% of Vmax	0.02% of Vmax						
Current 0.04% of Imax 0.005% of Imax 0.04% of Imax	Current	0.04% of Ima	ах	0.005% of Imax	0.04% of Imax						
Temperature Coefficient											
Voltage 0.04% of Vmax/°C 0.005% of Vmax/°C 0.04% of Vmax/°C	Voltage	0.04% of Vmax	x/°C	0.005% of Vmax/°C	0.04% of Vmax/°C						
Current 0.06% of Imax/°C 0.01% of Vmax/°C 0.06% of Imax/°C	Current	0.06% of Imax	⟨/°C	0.01% of Vmax/°C		C	0.06% of Imax/°C				

Note *1 : Please specify GPIB or Ethernet Interface (alternative) at time of order.

Note *2 : All models output power are available for 200/220Vac, 380/400Vac and 440/480Vac (600V/1000V models) line voltage.

Note *3 : Call for availability. (30V/40V/100V/450V for 200/220 Vac and 440/480 Vac line voltage)

GENERAL SPECIFICATIONS

Programming & Measurem	ant Pacalitian							
Voltage (Front Panel)	ient nesolution		0,1mV / 1mV / 10mV / 100mV (V0) < 10V / 40V / 600V / 1800V)				
Current (Front Panel)			0.1mA / 1mA / 10 mA (IO					
Voltage (Digital Interface)			0.002% of					
Current (Digital Interface)			0.002% of	<u> </u>				
Voltage (Analog Interface)			0.04% of	·				
Current (Analog Interface)			0.04% of	<u> </u>				
Remote Interface			0.04% 01	IIIIax				
			Cho in als	d				
Analog programming			Standa					
USB			Standa	<u> </u>				
RS-232			Standa	· ·				
RS485			Standa					
GPIB			Option					
Ethernet			Optional (Standard fo					
System BUS(CAN)			Standard for maste	r/slave control				
Programming Accuracy								
Voltage (Front Panel and D			0.1% of Vmax / 0.05% of Vma	· · · · · · · · · · · · · · · · · · ·				
Current (Front Panel and D	igital Interface)		0.3% of Imax / 0.2% of Imax (62	000H-100P/1800P models)				
Voltage (Analog Interface)		0.2% of Vmax						
Current (Analog Interface)		0.3% of Imax						
GPIB Command Response	Time							
Vout setting			GPIB send command to DC	source receiver <20ms				
Measure V & I			Under GPIB command u	sing Measure <25ms				
Analog Interface (I/O)								
Voltage and Current Progra	amming inputs		0.40\/1./0.5\/1./0.5\	1 /420 A (FC				
(I/P)	<i>y</i> .		0-10Vdc / 0-5Vdc / 0-5k c	ohm / 4-20 mA of F.S.				
Voltage and Current monit	or output (O/P)		0-10Vdc / 0-5Vdc /	4-20mA of F.S.				
External ON/OFF (I/P)		TTL:Active Low or High(Selective)						
DC_ON Signal (O/P)		Level by user define. (Time delay = 1 ms at voltage slew rate of 10V/ms.)						
CV or CC mode Indicator (C)/P)	TTL Level High=CV mode ; TTL Level Low= CC mode						
OTP Indicator (O/P)	,	TTL: Active Low						
System Fault indicator(O/P)		TTL: Activ					
Auxiliary power supply(O/F		Nomir	nal supply voltage : 12Vdc / Maxi)mΔ			
Safety interlock(I/P))	Nonni	Time accuracy		/IIIA			
Remote inhibit(I/P)			TTL: Activ					
Series & Parallel Operation		Maste	er / Slave control for 10 units (Ser		tc \			
<u> </u>		Maste	er / Slave Control for To units (Ser	ies. two units / Faranei. ten uni	115)			
Auto Sequencing(List Mod	ie)		10					
Number of program Number of sequence			10					
<u> </u>				2006				
Dwell time Range		5ms - 15000S Manual / Auto / External						
Trig. Source			Manual / Auto	/ External				
Auto Sequencing (Step Mo	ide)			<u> </u>				
Start voltage		0 to Full scale						
End voltage		0 to Full scale						
Run time		10ms - 99hours						
Input Specification								
AC input voltage 3phase , 3 wire + ground		3 Ø 200~220Vac \pm 10% VLL ; 3Ø 380~400Vac \pm 10% VLL ; 3Ø 440~480Vac \pm 10% VLL						
AC frequency range			47-63	Hz				
May Current	200/220 Vac	5KW Model : 39A	10KW Model : 69A	15KW Model : 93A				
Max Current	380/400 Vac	5KW Model : 22A	10KW Model : 37A/30A *5	15KW Model : 50A/30A *5	18KW Model : 37A			
(each phase)	440/480 Vac	5KW Model : 19A	10KW Model : 32A	15KW Model : 44A				
General Specification								
			30V/40V model : 5% of full scale	voltage per line(10% total)				
Maximum Remote Sense Line Drop		100V model : 2.5% of full scale voltage per line (5% total) ;						
		>100V model : 2% of full scale voltage per line (4% total)						
Compensation		1000V model : 1% of full scale voltage per line (2% total) ;						
		1800V model : 0.5% of full scale voltage per line (1% total)						
Operating Temperature Range		0°C ~ 50°C *1						
Storage Temperature Range		-40°C ~ +85°C *7						
Dimension (HxWxD)		132.8 x 428 x 610 mm / 5.23 x 16.85 x 24.02 inch ; 18KW model : 132.8 x 428 x 660 mm / 5.23 x 16.85 x 25.99 inch						
		5KW Model : Approx. 23 kg / 50.66 lbs ; 10KW Model : Approx. 29 kg / 63.88 lbs *2 *3						
Weight		15KW Model : Approx. 35 kg / 77.09 lbs *4 ; 18KW Model : Approx. 40 kg / 88.19 lbs						
			62100H-1000/62150H-1000/6					

 $Note *2: The weight is approx.\ 35 kg/77.09 \ lbs \ for \ Model \ 62100 H-1000.$

Note*3 : The weight is approx. 38kg/83.77 lbs for Model 62150H-100P.

Note*4 : The max. input current (each phase) is 20A for Model 62100H-100P.

Note*5: The max. input current (each phase) is 30A for Model 62100H-100P/62150H-100P.

Note*6 : Recovers within 1.5ms to $\pm 1.5\%$ of steady-state output for a 50% to 75% or 75% to 50% load change (0.1A/ms)

Note*7 : Storage temperature range is -25° C ~ 70° C for Model 62180H-1800P.

ELECTRICAL SPECIFI	FICATIONS WITH SOLAR ARRAY SIMULATION								
Model	62020H-150S 62050H-600S 62100H-600S 62150H-600S 62150H-1000S 62180H-1								
Output Ratings									
Output Voltage	0 ~ 150V								
Output Current	0 ~ 40A	0 ~ 8.5A	0 ~ 17A	0 ~ 25A	0 ~ 15A	0 ~ 30A			
Output Power	2000W 5000W 10000W 15000W 15000W 18000								
Line Regulation	1.0040/ 50								
Voltage	\pm 0.01% F.S. \pm 0.01% F.S.								
Current			\pm 0.05% F.S.			\pm 0.05% F.S.			
Load Regulation									
Voltage	\pm 0.05% F.S. \pm 0.05% F.S.								
Current			± 0.1% F.S.			± 0.2% F.S.			
Voltage Measurement									
Range	60V / 150V	120V / 600V	120V / 600V	120V / 600V	200V / 1000V	1100V / 1800V			
Accuracy			0.05% +	0.05%F.S.					
Current Measurement									
Range	16A / 40A	3.4A / 8.5A	6.8A / 17A	10A / 25A	6A / 15A	15A / 30A			
Accuracy	10,1,10,1	01111101011		0.1%F.S.	0,1,10,1	10717 0071			
Output Noise&Ripple			3,0						
Voltage Noise(P-P)	450 mV	1500 mV	1500 mV	1500 mV	2550 mV	3500 mV			
Voltage Ripple(rms)	65 mV	650 mV	650 mV	650 mV	1950 mV	750 mV			
Current Ripple(rms)	80 mA	150 mA	300 mA	450 mA	270mA	250mA			
OVP Adjustment Range	JO IIIA	100 111/4	JUU IIIA	400 IIIA	ZI VIIIA	2301117			
Range	0 - 110% programmable from front name I remade digital innuts								
Accuracy	0 ~ 110% programmable from front panel, remote digital inputs.								
Programming Response T	± 1% of full-scale output								
Rise Time:									
	10ms	30ms	30ms	30ms	25ms	90ms			
50%F.S. CC Load	(6.66A loading) Soms Soms Soms Porns								
Rise Time:	10ms 30ms 30ms 25ms								
No Load									
Fall Time:	10ms 30ms 30ms 25ms 90ms								
50%F.S. CC Load	(6.66A loading)	001113	001113	001113	201113	701113			
Fall Time:	83ms 100ms 100ms 100ms 90ms 62								
10%F.S. CC Load	(1.33A loading)								
Fall Time: No Load	300ms 1.2s 1.2s 1.2s 3s 2.5s								
Slew Rate Control									
Voltage Slew Rate Range	0.001V/ms~15V/ms	0.001V/ms~20V/ms	0.001V/ms~20V/ms	0.001V/ms~20V/ms	0.001V/ms~40V/ms	0.001V/ms~20V/m			
Current Slew Rate Range	0.001A/ms ~	0.001A/ms ~	0.001A/ms ~	0.001A/ms ~	0.001A/ms ~	0.001A/ms ~			
Current Siew Rate Range	1A/ms, or INF	0.1A/ms, or INF	0.1A/ms, or INF	0.1A/ms, or INF	0.1A/ms, or INF	0.1A/ms, or INF			
Minimum Transition Time	0.5ms								
	Recovers within 1 ms to ± 0.75% of steady-state output								
Transient response time	for a 50% to 100% or 100% to 50% load change (1A/us)								
Efficiency	0.77(Typical) 0.87(Typical) 0.9(Typical)								
Programming & Measurer			3.37(1	J /		(.)p/			
Voltage (Front Panel)	10 mV	10 mV	10 mV	10 mV	100mV	100mV			
Current (Front Panel)	1mA 1mA 1mA 1mA 1mA 10m								
Voltage (Digital Interface)	0.002% of Vmax								
Current (Digital Interface)	0.002% of Imax								
Voltage (Analog Interface)	0.002% of finax 0.04% of Vmax								
C . / A \	0.040/								
Programming Accuracy	U.U4% OT IMAX								
Programming Accuracy									
Voltage (Front Panel and	0.1% of Vmax								
Digital Interface)									
Current (Front Panel and	0.3% of Imax 0.2% of Imax								
Digital Interface)									
Voltage (Analog Interface)	0.2% of Vmax								
Current (Analog Interface)	0.3% of Imax								
Parallel Operation*2	Master / Slave control via CAN for 10 units up to 150kW *1 (Parallel: ten units) up to 198kW *3								
Auto Sequencing (I-V program)									
Number of program			1	0					
Number of sequence	100								
Dwell time Range	1s ~ 15,000S								
Trig. Source									
	Manual / Auto								

Note*1: Max. Power is 20kW for 62020H-150S. Note*2: There is parallel mode for DC power supply

when the I-V curve function is enabled.

Note*3: For higher power > 198kW, please call for availability. Note*4 : Recovers within 1.5ms to $\pm 1.5\%$ of steady-state output

for a 50% to 75% or 75% to 50% load change (0.1A/ms)

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