A Great Leap for DC Power Supply

Industrial-leading Power Supply Up to 1800kW

Preen's ADG+ series is a high-power DC power supply, featuring low ripple, high accuracy and fast response. With optional I-V curve simulation and up to 300kW output per unit, it's ideal for EV motor, DC/DC converter, ESS, and inverter testing.

Auto Range
0-2000V, 0-2500A Adjustable

Low Ripple ≤ 0.05 % High Precision ≤ 0.1 %

Solar Array Simulation
Built-in EN50530 Simulation

High Output Power
30 kW-1800 kW

Complimentary Control Software
User-friendly & Intuitive Operation

ADG+ series

High Power Programmable DC Power Supply

Interfaces

Standard: RS-232 | RS-485 | USB | Ethernet | Analog

Option: GPIB

QR Code

Product Info.

Product Video

Output Power

30kW~1800kW

RoHS Compliant CE

Preen's newly released ADG+ series is a high-power-density programmable DC power supply. With the design of DSP control, it offers a great response time and high accuracy. The self-developed high power module enhances stability and heat dissipation, thus improving product quality. The output mode of CV, CC and CP are fully equipped. This series' single-unit power ranges from 30kW to 300kW, and with wide range of output voltage / current, it can reach up to 2000V, and up to 2500A in low-voltage high-current models. The output voltage and current can even be further expanded via parallel operation and series operation. The ADG+ series is ideal for testing EV motor/ compressor, server power supply, fuse, circuit breaker, contactor and PV inverter.

For communication interface, the uses can select the standard RS-485, RS-232, Analog Control, Ethernet, USB and optional GPIB. The product also equips with remote control software for users to control with ease via PC. The product is CE and RoHS certified.

* ADG+ series is an upgraded version of ADG-P series which is honored with the 2018 Taiwan Excellence Award

Intuitive Touch Screen and Rotary Knob

The upgraded HMI and 7" colored touch screen can clearly display the parameters and status of the product, and combined with the built-in programing function, user can easily perform various simulations.

The rotary knob can be used for fine tuning and quick selection to improves convenience on operation.

Emergency stop button is used for quick shut down, thus enhancing the protection function and meet the requirement for laboratory related testing field.

UPGRADED Advanced HMI with Intuitive Design for Easier and Safer Operation

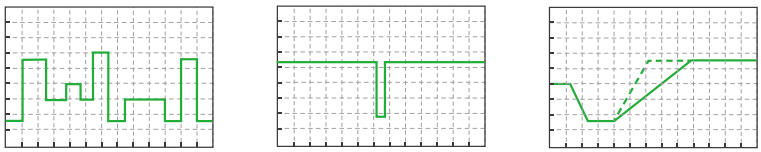
The ADG+ series employs 7" touch screen and rotary knob to provide intuitive display and easy-to-use control. The built-in programming function has been upgraded, so not only complex sequences can be set from the PC, but also from the touch screen. Emergency stop button is equipped for quick shut down, thus enhancing the product safety. Users can quickly access output settings and measurements, including voltage, current and power.

Master/Slave Parallel Operation

High Power + Master/Slave Operation
=Flexibility

The output power of the ADG+ series is up to 300kW per unit, which can be expanded to 1800kW through simple master-slave operation (max. 6 units). User can simply operate the master unit, the slave unit will receive and reply the data accordingly and equally share the load current. ADG+ series is one of the few high-power DC power supply with parallel feature on the market. The availability for single-unit and parallel operation provides greater flexibility for application.

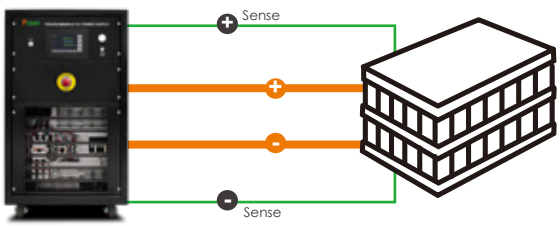
Programming Sequences and Simulations



DC Pulse | Voltage Sag | Slew Rate Control

The built-in programming function of the ADG+ series is consisted of GROUPs and STEPs. Users can set output voltage, output current and time to generate step or consecutive voltage/current changes, and set different rise/fall time according to their requirement. This built-in function and the ADG+ series control software allow users to create complex DC waveform with sophisticated coding. Making programming the DC power supply an easy task.

Remote Sensing



ADG+series | Electric Vehicle Battery

In the factory or laboratory, there is often a certain distance in the configuration of power and load. The Remote Sensing of ADG+ series is able to compensate the voltage drop caused by the cable length, so the user can avoid the inconvenience of adjusting the voltage.

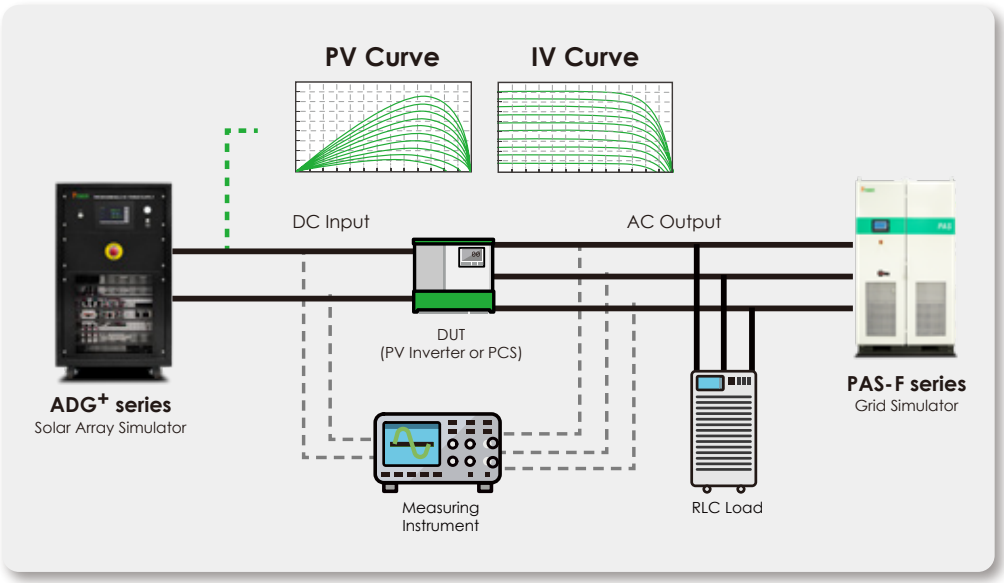
Solar Array Simulation (opt.)

ADG+ series high power programmable DC power supply options as solar array simulation function can be programmed from the front panel without using a controller. Using built-in SAS mode, only four input parameters are needed to establish an I-V curve, which simulates solar panels under different irradiation and temperature.

Using built-in EN50530 mode, the I-V curve is established according to the solar cell material (C-SI or thin film), and the user can program the output according to the irradiation and temperature. In addition, the user can also define I-V curves based on different material characteristic to simulate various solar cell materials.

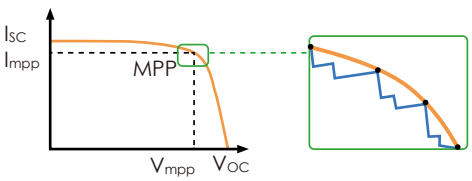
UPGRADED **Complete Solar Array Simulation and Easy Static & Dynamic MPPT Efficiency Validation**

- **Static & dynamic MPPT efficiency test (with optional remote control software).**
- **Simulation of I-V curve under different irradiation and temperature.**
- **Complied with standard SAS, EN50530, Sandia test regulation.**
- **IV curve can be user-defined and edited via remote control software.**
- **Simulation of output characteristic of various solar cell (C-SI and thin film).**
- **Accurate voltage and current measurement.**



SAS Testing Mode

Using SAS Mode, user can set Voc, Isc, Vmpp and Impp according to the spec of PV inverter, then the DSP control system performs P-V and I-V curve calculation accordingly. The dynamic irradiation adjustment is also available during output.



- **Voc** open circuit voltage
- **Vmp** voltage at the peak power point on the curve
- **Isc** short circuit current
- **Imp** current at the peak power point on the curve

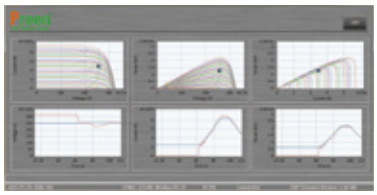
EN50530 Testing Mode

Mainly used for grid-tie inverters, the EN50530 Testing Mode features solar cell model of C-SI/thin-film and the feature of dynamic irradiations/temperature adjustment, user can verify the performance of the inverters: static & dynamic MPPT tracking efficiency, conversion efficiency and overall efficiency.

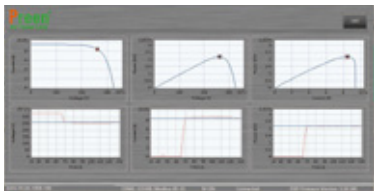
Solar Array Simulation Control Software (opt.)

ADG+ series options I-V curve remote control software with parameter setting and output waveform display to verify Dynamic & Static MPPT Efficiency of SAS Mode and EN50530 test regulations.

Dynamic MPPT Efficiency

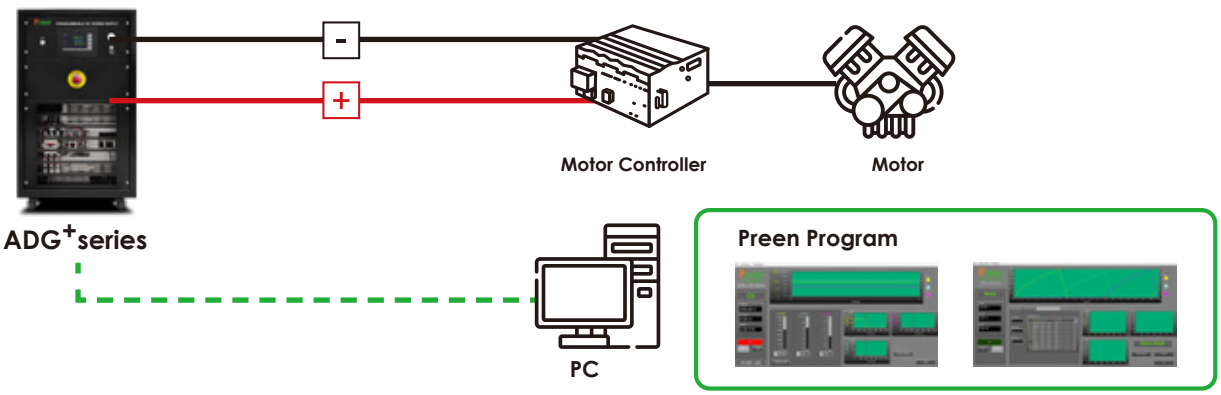
Static MPPT Efficiency

EV Testing Applications

EV Motor Controlling

Motor controlling, as the core component of electric vehicle, controls the initiation, speed, movement and direction of the motor drive, and converts the electrical energy of power battery and provide to the motor drive. ADG+ series has many high voltage models to simulate power battery of EV for motor controlling verification or aging testing.



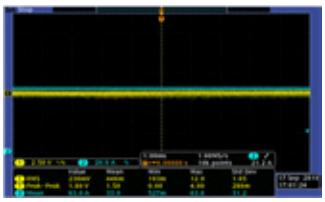
DC/DC Converters

Power batteries of electric vehicle convert DC high voltage to DC low voltage through DC/DC converters, such as 12V/24V of car lamp, wiper and car stereo. Featuring high power and high voltage, ADG+ series is suitable to simulate power batteries on different working conditions, such as voltage dip(sag), and voltage ramp or missing. From R&D verification to HALT/HASS Accelerated Life Testing, ADG+ series is an ideal choice for DC power supply.

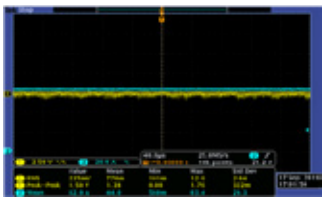
Industry-leading Performance

As an unique high-power single-unit programmable DC power supply, ADG+ series has a wide range of output voltage and current, which reach up to 2000V and 2500A continuously adjustable. Its single unit output is up to 300kW and provides customized parallel operation to expand capacity up to 1800kW. It features high power with excellent programming function, fast response and high stability. For communication interface, it has standard RS-485, RS-232, Ethernet, Analog Control, USB and optional GPIB. The STEP & RAMP modes allow easy setup on test sequence and depending on CV/CC/CP settings and load conditions, ADG+ series can operate as a current or voltage source.

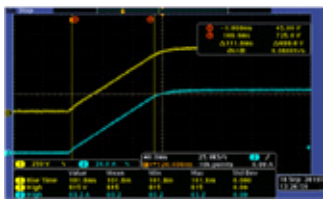
Low Ripple



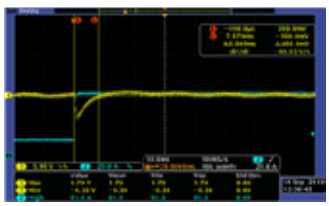
Low Noise



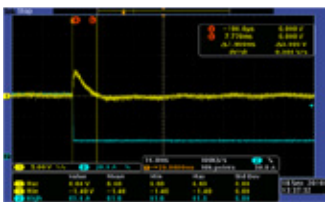
Fast Rise Time



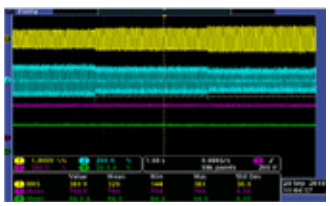
Fast Transient Response When Added Load



Fast Transient Response When Removed Load

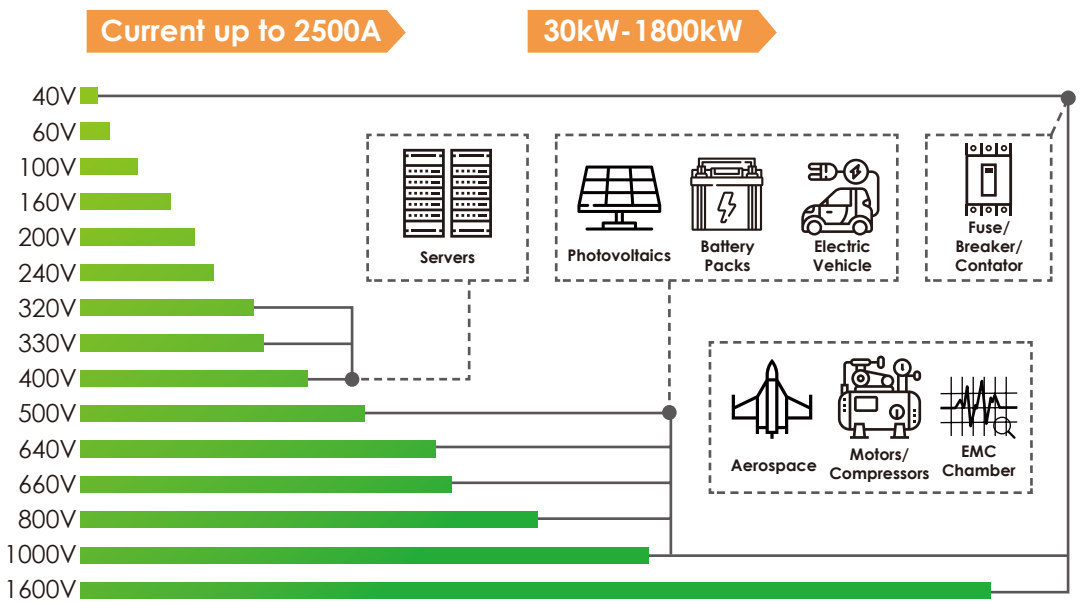


High Stability



Variety of Applications

ADG+ series has many output voltage ranges suitable for different market applications. Models over 400V output voltage are applicable for renewable energy, EV, and lithium battery industries. When it comes to circuit breakers, contactors or fuses that require high voltage or current, models with 2500A or 2000V can fulfill the power demands of this type of component testing. The 400V or 320V models can be applied to server related applications due to the increased needs for high voltage DC in data centers.



SPECIFICATIONS

ADG+ Series (30kW-50kW)

Model												
30kW	ADG-PLUS-40-750	ADG-PLUS-60-500	ADG-PLUS-100-300	ADG-PLUS-200-150	ADG-PLUS-240-125	ADG-PLUS-320-94	ADG-PLUS-400-75	ADG-PLUS-500-60	ADG-PLUS-640-47	ADG-PLUS-800-38	ADG-PLUS-1000-30	ADG-PLUS-1600-18
50kW	ADG-PLUS-40-1250	ADG-PLUS-60-834	ADG-PLUS-100-500	ADG-PLUS-200-250	ADG-PLUS-240-208	ADG-PLUS-320-156	ADG-PLUS-400-125	ADG-PLUS-500-100	ADG-PLUS-640-78	ADG-PLUS-800-63	ADG-PLUS-1000-50	ADG-PLUS-1600-31
AC Input												
Voltage	3Ø3W+G 323VAC-460VAC (Option 200VAC/208VAC/415VAC/440VAC/480VAC)											
Frequency	47-63Hz											
Power Factor	≥ 90% at maximum power											
DC Output												
Voltage	40V	60V	100V	200V	240V	320V	400V	500V	640V	800V	1000V	1600V
Current(30kW)	750A	500A	300A	150A	125A	94A	75A	60A	47A	38A	30A	18A
Current(50kW)	1250A	834A	500A	250A	208A	156A	125A	100A	78A	63A	50A	31A
Line Regulation	≤ 0.05%											
Load Regulation[*1]	≤ 0.1%									≤ 0.034%	≤ 0.02%	≤ 0.05%
Voltage Ripple (RMS)	≤ 0.4% F.S.			≤ 0.1% F.S.			≤ 0.1% F.S.				≤ 0.05% F.S.	
Voltage Noise (Peak)	≤ 2% F.S.					≤ 0.88% F.S.	≤ 0.88% F.S.	≤ 1.34% F.S.	≤ 0.88% F.S.	≤ 0.2% F.S.	≤ 0.2% F.S.	≤ 0.4% F.S.
Voltage Slew Rate[*2]	≤ 50ms			≤ 60ms	≤ 85ms		≤ 100ms	≤ 100ms	≤ 100ms	≤ 115ms	≤ 120ms	≤ 120ms
Transient Response[*3]	≤ 6 ms											
Measurement[*4]												
Voltage Accuracy	0.5% F.S.						0.1% F.S					
Voltage Resolution	≤ 100V@ 0.01V, > 100V@0.1V											
Current Accuracy	0.5% F.S. (≥ 1% Rated Current)											
Current Resolution	≤ 100A@ 0.01A, >100A@0.1A											
Power Accuracy	P=V*I Calculated											
Power Resolution	0.01KW											
General												
Mode	CC/CV/CP											
Efficiency[*6]	≥ 87% at maximum power for input 380V- 400V ≥ 84% at maximum power for other input voltage			≥ 90% at maximum power for input 380V- 400V ≥ 87% at maximum power for other input voltage								
Interfaces	Standard : RS-232, RS-485, Ethernet, USB, Analog Option : GPIB											
Analog Input Control (V & I)	0-5V, Accuracy: 1% F.S. (at output rated voltage & current ≥ 5%)											
Analog Output Monitor (V & I)	0-5V, Accuracy : 5% F.S.											
Remote Sensing	5% maximum voltage drop from product output to load			3% maximum voltage drop from product output to load						2% maximum voltage drop from product output to load		
Protections	Input : Vin OV, Vin Unbalance Output : OVP, OCP, OPP, OTP, LDC OV, Module OCP, Interlock open											
OVP Range	0-110% F.S.											
OCP Range	0-110% F.S.											
OPP Range	0-110% F.S.											
Operating Temperature	0℃ ~ 40℃											
Storage Temperature	-20℃ ~ 70℃											
Humidity	0-90%(Non condensing)											
Isolation	Input to Enclosure : 1500VAC Input to Output : 2000VDC Output to Enclosure : 2000VDC											
Dimension(H×W×D)[*5]	380VAC Input:1038×600×800 mm / 40.8x23.7x31.5 inch											
	200VAC/208VAC/480VAC Input:1382×600×800 mm / 54.4x23.7x31.5 inch											
Weight[*5] 380VAC	approx. 225 kg / 496.1 lbs			approx. 190 kg / 418.8 lbs								
Weight[*5] 200VAC/208VAC/480VAC	approx. 420 kg / 925.9 lbs			approx. 390 kg / 859.8 lbs								

*1 Load changes from 5% to 100% under nominal AC input.
*2 Measured from 10% to 90% of the output voltage change-resistive load, typical.
*3 Under nominal AC input, recovers to ±1% of full-scale output voltage for a 50% to 100% or 100% to 50% load change.
*4 The specifications are tested at ambient temperature of 25℃ ± 5℃ .
*5 Including wheels and weight tolerance is within ± 10 kg.
*6 At maximum output power.
* Above specifications are under output voltage over 1% F.S. and all specifications are subject to change without notice.

SPECIFICATIONS

ADG+ Series (75kW-100kW)

Model								
75kW		ADG-PLUS-40-1875	ADG-PLUS-60-1250	ADG-PLUS-100-750	ADG-PLUS-320-234	ADG-PLUS-640-117	ADG-PLUS-1000-75	ADG-PLUS-1600-47
100kW		ADG-PLUS-40-2500	ADG-PLUS-60-1666	ADG-PLUS-100-1000	ADG-PLUS-320-312	ADG-PLUS-640-156	ADG-PLUS-1000-100	ADG-PLUS-1600-63
AC Input								
Voltage		3Ø3W+G 323VAC-460VAC (Option 200VAC/208VAC/415VAC/440VAC/480VAC)						
Frequency		47-63Hz						
Power Factor		≥ 90% at maximum power						
DC Output								
Voltage		40V	60V	100V	320V	640V	1000V	1600V
Current(75kW)		1875A	1250A	750A	234A	117A	75A	47A
Current(100kW)		2500A	1666A	1000A	312A	156A	100A	63A
Line Regulation		≤ 0.05%						
Load Regulation[*1]		≤ 0.1%	≤ 0.1%	≤ 0.1%	≤ 0.05%	≤ 0.05%	≤ 0.05%	≤ 0.05%
Voltage Ripple (RMS)		≤ 0.5% F.S.	≤ 0.5% F.S.	≤ 0.4% F.S.	≤ 0.1% F.S.		≤ 0.1% F.S.	≤ 0.1% F.S.
Voltage Noise (Peak)		≤ 2.5% F.S.			≤ 0.65% F.S.	≤ 0.35% F.S.	≤ 0.3% F.S.	≤ 0.3% F.S.
Voltage Slew Rate[*2]		≤ 50ms			≤ 90ms	≤ 120ms	≤ 120ms	≤ 120ms
Transient Response[*3]		≤ 10ms						
Measurement[*4]								
Voltage Accuracy		0.5% F.S				0.1% F.S		
Voltage Resolution		≤ 100V@ 0.01V, > 100V@0.1V						
Current Accuracy		0.5% F.S. (≥ 1% Rated Current)						
Current Resolution		≤ 100A@ 0.01A, > 100A@0.1A						
Power Accuracy		P=V*I Calculated						
Power Resolution		0.01KW						
General								
Mode		CC/CV/CP						
Efficiency[*6]		≥ 87% at maximum power for input 380V- 400V ≥ 84% at maximum power for other input voltage			≥ 90% at maximum power for input 380V- 400V ≥ 87% at maximum power for other input voltage			
Interfaces		Standard : RS-232, RS-485, Ethernet, USB, Analog Option : GPIB						
Analog Input Control (V & I)		0-5V, Accuracy: 1% (at output rated voltage & current ≥ 5%)						
Analog Output Monitor (V & I)		0-5V, Accuracy : 5% F.S.						
Remote Sensing		5% maximum voltage drop from product output to load			3% maximum voltage drop from product output to load		2% maximum voltage drop from product output to load	
Protections		Input : Vin OV, Vin Unbalance Output : OVP, OCP, OPP, OTP, LDC OV, Module OCP, Interlock open						
OVP Range		0-110% F.S.						
OCP Range		0-110% F.S.						
OPP Range		0-110% F.S.						
Operating Temperature		0℃ ~ 40℃						
Storage Temperature		-20℃ ~ 70℃						
Humidity		0-90%(Non condensing)						
Isolation		Input to Enclosure : 1500VAC, Input to Output : 2000VDC, Output to Enclosure : 2000VDC						
Dimension(H×W×D)[*5]		380VAC Input: 1492x600x800 mm / 58.7x23.7x31.5inch						
		75kW : 200VAC/208VAC/480VAC Input: 1837x600x800 mm / 72.3x23.7x31.5 inch 100kW : 480VAC Input: 1837x600x800 mm / 72.3x23.7x31.5 inch 100kW : 200VAC/208VAC Input: 1897×600×800 mm / 74.7x23.7x31.5 inch						
Weight[*5]	380VAC	approx. 345 kg / 760.6 lbs			approx. 300kg / 661.3 lbs			
	200VAC/208VAC/480VAC	approx. 625 kg / 1377.9 lbs			approx. 574kg / 1265.4 lbs			

*1 Load changes from 5% to 100% under nominal AC input. *2 Measured from 10% to 90% of the output voltage change-resistive load, typical.

*3 Under nominal AC input, recovers to ±1% of full-scale output voltage for a 50% to 100% or 100% to 50% load change. *4 The specifications are tested at ambient temperature of 25℃ ± 5℃ .

*5 Including wheels and weight tolerance is within ± 10 kg.

*6 At maximum output power.

* Above specifications are under output voltage over 1% F.S. and all specifications are subject to change without notice.

SPECIFICATIONS

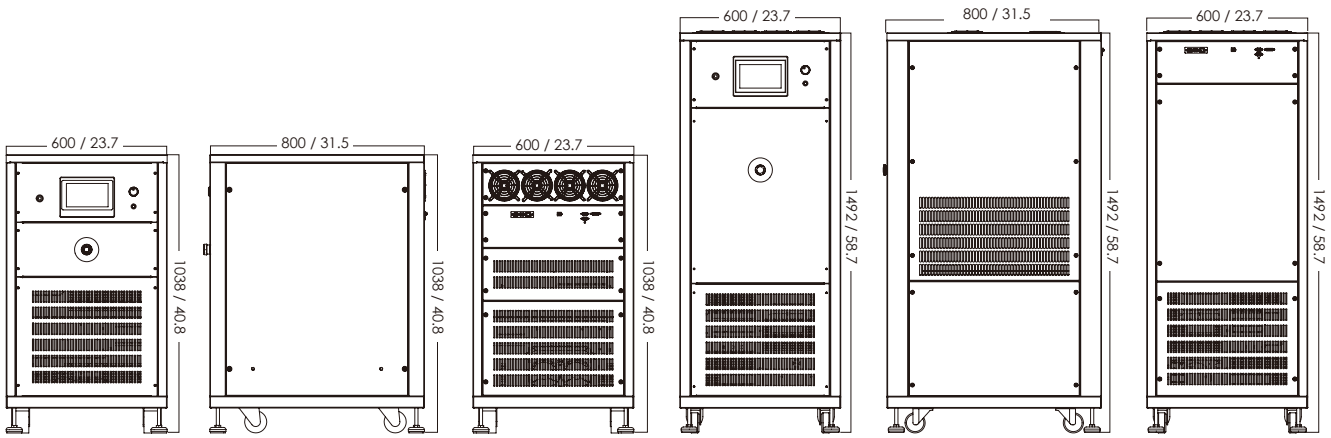
ADG+ Series (300kW)

Model			
300kW	ADG-PLUS-500-900-300	ADG-PLUS-1000-450-300	ADG-PLUS-1500-300-300
AC Input			
Voltage	3Ø3W+G 323VAC-460VAC		
Frequency	47-63Hz		
Power Factor	≥ 90% at maximum power		
DC Output			
Voltage	500V	1000V	1500V
Current	900A	450A	300A
Line Regulation	≤ 0.05%		
Load Regulation[*1]	≤ 0.1%	≤ 0.05%	≤ 0.03%
Voltage Ripple (Vrms)	≤ 0.15% F.S.	≤ 0.1% F.S.	
Voltage Noise (Vp-p)	≤ 0.5% F.S.		
Voltage Slew Rate[*2]	≤ 150ms		
Transient Response[*3]	≤ 20ms		
Measurement[*4]			
Voltage Accuracy	≤ 0.2% F.S.		
Voltage Resolution	0.1V		
Current Accuracy	≤ 0.5% F.S. (at ≥ 1% Rated Current)		
Current Resolution	0.1A		
Power Accuracy	P=V*I Calculated		
Power Resolution	0.1KW		
General			
Mode	CC/CV/CP		
Efficiency[*6]	≥ 90% at maximum power for input 380V- 400V		
Interfaces	Standard: RS-232, RS-485, Ethernet, USB, Analog Option : GPIB		
Analog Input Control (V & I)	0-5V, Accuracy : 1% F.S. (at output rated voltage & current ≥ 5%)		
Analog Output Monitor (V & I)	0-5V, Accuracy : 5% F.S.		
Remote Sensing	3% maximum voltage drop from product output to load		
Protections	Input : Vin OV, Vin Unbalance Output : OVP, OCP, OPP, OTP, LDC OV, Module OCP, Interlock open		
OVP Range	0-110% F.S.		
OCP Range	0-110% F.S.		
OPP Range	0-110% F.S.		
Operating Temperature	0℃ ~ 40℃		
Storage Temperature	-20℃ ~ 70℃		
Humidity	0-90%(Non condensing)		
Isolation	Input to Enclosure : 1500VAC , Input to Output : 2000VDC , Output to Enclosure : 2000VDC		
Dimension(H×W×D)	2000×1200×1100 mm / 78.7x47.2x43.3 inch		
Weight[*5]	approx. 2180kg / 4806 lbs	approx. 2150kg / 4740 lbs	

*1 Load changes from 5% to 100% under nominal AC input.
*2 Measured from 10% to 90% of the output voltage change-resistive load, typical.
*3 Under nominal AC input, recovers to ±1% of full-scale output voltage for a 50% to 100% or 100% to 50% load change.
*4 The specifications are tested at ambient temperature of 25℃ ± 5℃ .
*5 Weight tolerance is within ± 10 kg.
*6 At maximum output power.
* Above specifications are under output voltage over 1% F.S. and all specifications are subject to change without notice.

DIMENSIONS

Unit : mm (inch)



ADG+ 30/50kW *

ADG+75/100kW *

* The diagrams and dimensions are for 380V input models.

ORDERING INFORMATION

ADG+ Series (30kW-300kW)

Model Number	Description	Model Number	
ADG-PLUS-40-750	Programmable DC Power Supply (30kW/40V/750A)	ADG-PLUS-100-750	Programmable DC Power Supply (75kW/100V/750A)
ADG-PLUS-60-500	Programmable DC Power Supply (30kW/60V/500A)	ADG-PLUS-320-234	Programmable DC Power Supply (75kW/320V/234A)
ADG-PLUS-100-300	Programmable DC Power Supply (30kW/100V/300A)	ADG-PLUS-640-117	Programmable DC Power Supply (75kW/640V/117A)
ADG-PLUS-200-150	Programmable DC Power Supply (30kW/200V/150A)	ADG-PLUS-1000-75	Programmable DC Power Supply (75kW/1000V/75A)
ADG-PLUS-240-125	Programmable DC Power Supply (30kW/240V/125A)	ADG-PLUS-1600-47	Programmable DC Power Supply (75kW/1600V/47A)
ADG-PLUS-320-94	Programmable DC Power Supply (30kW/320V/94A)	ADG-PLUS-40-2500	Programmable DC Power Supply (100kW/40V/2500A)
ADG-PLUS-400-75	Programmable DC Power Supply (30kW/400V/75A)	ADG-PLUS-60-1666	Programmable DC Power Supply (100kW/60V/1666A)
ADG-PLUS-500-60	Programmable DC Power Supply (30kW/500V/60A)	ADG-PLUS-100-1000	Programmable DC Power Supply (100kW/100V/1000A)
ADG-PLUS-640-47	Programmable DC Power Supply (30kW/640V/47A)	ADG-PLUS-320-312	Programmable DC Power Supply (100kW/320V/312A)
ADG-PLUS-800-38	Programmable DC Power Supply (30kW/800V/38A)	ADG-PLUS-640-156	Programmable DC Power Supply (100kW/640V/156A)
ADG-PLUS-1000-30	Programmable DC Power Supply (30kW/1000V/30A)	ADG-PLUS-1000-100	Programmable DC Power Supply (100kW/1000V/100A)
ADG-PLUS-1600-18	Programmable DC Power Supply (30kW/1600V/18A)	ADG-PLUS-1600-63	Programmable DC Power Supply (100kW/1600V/63A)
ADG-PLUS-40-1250	Programmable DC Power Supply (50kW/40V/1250A)	ADG-PLUS-500-900-300	Programmable DC Power Supply (300kW/500V/900A)
ADG-PLUS-60-834	Programmable DC Power Supply (50kW/60V/834A)	ADG-PLUS-1000-450-300	Programmable DC Power Supply (300kW/1000V/450A)
ADG-PLUS-100-500	Programmable DC Power Supply (50kW/100V/500A)	ADG-PLUS-1500-300-300	Programmable DC Power Supply (300kW/1500V/300A)
ADG-PLUS-200-250	Programmable DC Power Supply (50kW/200V/250A)	ADG-PLUS-001	GPIB Interface Converter
ADG-PLUS-240-208	Programmable DC Power Supply (50kW/240V/208A)	ADG-PLUS-002	Cable for RS-485 (10m)
ADG-PLUS-320-156	Programmable DC Power Supply (50kW/320V/156A)	ADG-PLUS-003	200V/208V Input Voltage (30-50kW)
ADG-PLUS-400-125	Programmable DC Power Supply (50kW/400V/125A)	ADG-PLUS-004	480V Input Voltage (30-50kW)
ADG-PLUS-500-100	Programmable DC Power Supply (50kW/500V/100A)	ADG-PLUS-005	200V/208V Input Voltage (100kW)
ADG-PLUS-640-78	Programmable DC Power Supply (50kW/640V/78A)	ADG-PLUS-006	480V Input Voltage (75-100kW)
ADG-PLUS-800-63	Programmable DC Power Supply (50kW/800V/63A)	ADG-PLUS-007	I-V Curve Simulation and Remote Control Software
ADG-PLUS-1000-50	Programmable DC Power Supply (50kW/1000V/50A)	ADG-PLUS-008	200V/208V Input Voltage (75kW)
ADG-PLUS-1600-31	Programmable DC Power Supply (50kW/1600V/31A)	ADG-PLUS-009	Reverse Current Protection Module
ADG-PLUS-40-1875	Programmable DC Power Supply (75kW/40V/1875A)	ACCS-001	USB to RS-485 converter +RS-232/RS-485 Cable M-F type (2M)
ADG-PLUS-60-1250	Programmable DC Power Supply (75kW/60V/1250A)	ACCS-003	RS-232/RS-485 Cable M-F type (2M)