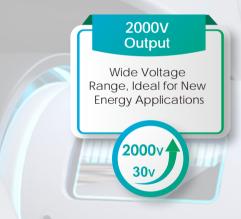
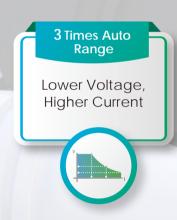
# Full-Range DC Power Supply for Your Needs

Wide voltage range from 0-30V to 0-2000V, with current capability up to 2550A

Designed for demanding applications, the ADG-L series delivers high-density power with exceptional stability and accuracy. Its modular design allows for scalable power up to 75kW, making it ideal for a wide range of industries.









## ADG-L series

### Programmable DC **Power Supply**









Ethernet GPIB

Option

#### **OR Code**





**Product** 

Product Video

Preen's new ADG-L series is a programmable DC power supply with high power density, low noise, and tight regulation. The combination of DSP and PWM technologies has enabled significant advances in stability and measurements. The ADG-L series includes 31 models with 5kW, 10kW and 15kW maximum output powers and several Auto Range models to provide a higher output current at lower output voltage. With CV/CC/CP modes and its high voltage and high power features, the ADG-L series is an ideal DC power for applications on photovoltaic (PV), electric vehicle (EV), battery charge simulation, fuse, and contactors.





#### **Output Power**

5kW/10kW/15kW

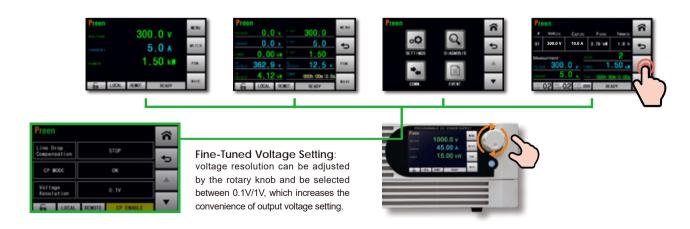




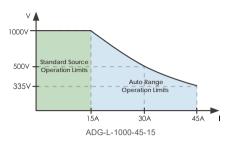
Parallel configuration is available for higher output level. The ADG-L series is operated via the 5" intuitive touch screen or the rotary knob to quickly access measurements, setting parameters, and configurations. The unit can also be controlled via standard RS-232, RS-485, Analog, Ethernet, USB and Analog remote interfaces, or through optional GPIB interface. The builtin simulation function allows devices to be tested on voltage dropouts, spikes and other repetitive testing for voltage and

#### Intuitive Touch Screen and Rotary Knob

The ADG-L series equips 5" touch screen and rotary knob to provide intuitive display and easy-to-use control. Users can quickly access output settings, measurements, sequences and system configurations from the touch screen. Sophisticated sequences can not only be set from the PC easily but also can be set from the touch screen.



#### **Auto Range Functions**



Auto range feature can generate a higher output current at lower output voltage, or a higher output voltage at lower output current. This feature is an ideal solution for both high current/low voltage and low voltage/high current DUT, and makes one unit to cover a wide range of applications to further save cost and space.

#### **Complimentary Control Software and Various Interfaces**





The ADG-L series can be controlled via the Preen Program to configure sophisticated sequences, save/ recall STEPs, and generate test result reports. This intuitive control software makes remote programming no longer a difficult task.













The DC power supply is equipped with RS-232/RS-485, Ethernet, USB and Analog for standard interfaces. Optional GPIB are also available for better integrations with automatic test systems and the needs of industry 4.0.

#### **Broader Voltage and Current Range**





The ADG-L series delivers highly flexible DC power solutions, ranging from 0-30V to 0-2000V\*1 with up to 2550A\*2 output current. Ideal for testing in the renewable energy and electric vehicle components, this series offers precise voltage and current control for various applications.

#### High Power Density: 15kW in 3U





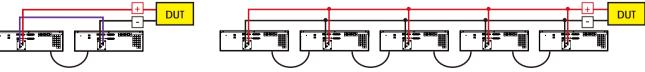
Employing PWM technology and DSP-based control, Preen's ADG-L series DC power supply has 15kW available only in 3U chassis, and with parallel configuration, 30kW only has 6U height.

The rack-mount enclosure is designed to accommodate a wide range of applications, especially for automatic test systems and integrations.

#### **Multiple Connections**



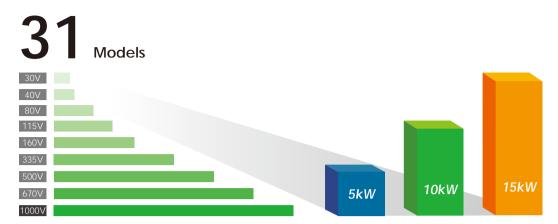




The single unit power of ADG-L series can reach up to 15kW, and can be expanded to 75kW through parallel connection, or can output up to 2000V through series connection. Each unit can be set as Master or Slave. The user can freely combine ADG-L series according to the load test requirements, thereby increases flexibility of the application.

<sup>\*1</sup> via series connection \*2 via parallel connection

#### Wide Voltage and Current Range

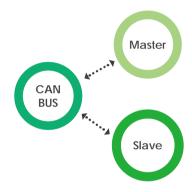


Preen's ADG-L series has 19 different models with three output power levels, 5kW, 10kW and 15kW. With up to 1000V output voltage and multiple Auto Range models, the ADG-L series covers a wide range of applications including electric vehicle, photovoltaic, battery, DC/DC converters and electronic products.

#### Master/Slave Parallel Operation



Through a simple and fast setup, the ADG-L series can generate higher power by connecting identical models in a Master/Slave parallel operation. Users only need to control the master unit for multiple units' setup and readbacks. The master unit automatically calculates the parameters and downloads data to slave units to make programming easier and current sharing more precise.



#### **Remote Sensing**



In many laboratories and factories, the DC power supply is located in a certain distance away from the DUT, and sometimes it causes voltage drop due to the resistance of the wires. The ADG-L series' Remote Sensing function is able to compensate voltage drops and provide a stable output voltage.

#### **Screen Lock Password Function**

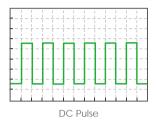




In order to prevent the operator from changing the set parameters by mistake, the new Screen Lock Password function is added on ADG-L series, so that the operator can only perform the output of the device, and only authorized personnel has the password to unlock the screen and edit parameters.

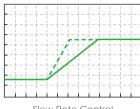
#### **Programming Sequences and Simulations**







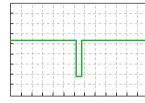
Program Setting Page







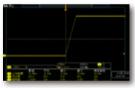
Wave Page



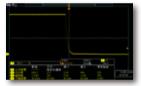
Voltage Sag

The built-in programming function of the ADG-L series has four types: Mode 1: Group 25 / Step 16, Mode 2: Group 10 / Step 40, Mode 3 : Group 5 / Step 80, Mode 4 : Group 2 / Step 200. Users can set each STEP's output voltage, output current and time to generate consecutive voltage/current changes or set different rise/fall time. This built-in function and the ADG-L series' control software allow users to create complex DC waveform without sophisticated coding. Making programming the DC power supply an easy task.

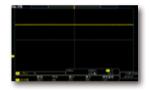
#### **Industry-leading Performance**



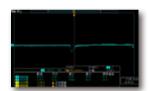
Fast Rise Time



Fast Fall Time



Low Voltage Ripple



Fast Transient Response

The ADG-L series is designed for low ripple, high accuracy and tight regulation for simulating different DC voltages. With fast transient response and rise time, the ADG-L series' DC sources are ideal to test DUT behavior to voltage sags, dropouts, ON/OFF tests and complex DC waveforms.

#### Multiple Ways of AC Input Connections

Conventional DC power supplies have only one type of AC input range and one way of input wirings. Different from most of high power DC power supply, the ADG-L series models offer more than two ways of input connections. For example, the 10kW models can have single phase or three phase input without factory modifications. This feature provides flexibility and convenience for users to operate the unit in different environments.

#### **Reverse Current Protection Module (opt.)**

ADG-L series has optional Reverse Current Protection Module. When the DUT generates the reverse energy flowing back to the output of ADG-L series it can effectively block the reverse current to protect ADG-L series from possible damages.

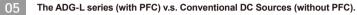
#### 0.99 Input Power Factor

The ADG-L series is equipped with active Power Factor Corrector (PFC) to enhance input PF up to industry-leading 0.99, which helps reducing the interference on the grid.

- 01 Effectively increase real power (P) and reduce reactive power (Q) for better energy saving and operation cost.
- 02 Able to suppress peak current and power loss to have lower harmonic distortions.

power) can effectively reduce 37% for energy saving.

- 03 Reduce input current to have compact and high power density DC sources.
- 04 Save more energy and lower carbon footprint for better environment.



Input Power (Apparent Power) Comparison

PF = 0.7

PF = 0.7

PF = 0.99

16.8kVA (40A)

Save 37% of input power

For a 15kW ADG-L model with 3-phase 4-wire 220/380V input, when power factor (PF) increases from 0.7 to 0.99 and efficiency improves from 0.8 to 0.9, input power (apparent)

#### PANEL DESCRIPTION



- 115V/160V/335V/500V/670V/1000V models
  5 6 7 8 9 10 11 12 13 14
- 30V/40V/80V models

  5 6 8 7 13 15 10 12 14

- 1. Power Switch
- 2. Touch Screen HMI
- 3. Rotary Knob
- 4. Output / Reset Button
- 5. DC Negative Output Terminal
- 6. DC Positive Output Terminal
- 7. Remote Sense Connector
- 8. USB Interface (for firmware update)
- 9. Serial and Parallel Switch
- 10. CANBUS Terminal Resister Switch
- 11. Accessory Power Outlet (5V&12V)

- 12. Analog Interface
- 13. Communication Interface:
  - USB
  - RS-232/RS-485(SCPI&MODBUS)
  - Ethernet
  - GPIB(opt.)
- 14. Input Terminals
- System Comm.
   (Master-Slave Parallel Interface)

#### ORDERING INFORMATION

#### ADG-L Series (5kW-15kW)

Model Number	Description
ADG-L-30-170	Programmable DC Power Supply(5kW/30V/170A)
ADG-L-40-125	Programmable DC Power Supply(5kW/40V/125A)
ADG-L-80-62	Programmable DC Power Supply(5kW/80V/62.5A)
ADG-L-80-170-5	Programmable DC Power Supply(5kW/80V/170A) (Auto Range Model)
ADG-L-115-45	Programmable DC Power Supply (5kW/115V/45A)
ADG-L-160-32	Programmable DC Power Supply (5kW/160V/32A)
ADG-L-335-15	Programmable DC Power Supply (5kW/335V/15A)
ADG-L-30-340	Programmable DC Power Supply(10kW/30V/340A)
ADG-L-40-250	Programmable DC Power Supply(10kW/40V/250A)
ADG-L-80-125	Programmable DC Power Supply(10kW/80V/125A)
ADG-L-80-340-10	Programmable DC Power Supply(10kW/80V/340A) (Auto Range Model)
ADG-L-335-45-5	Programmable DC Power Supply (5kW/335V/45A) (Auto Range Model)
ADG-L-115-90	Programmable DC Power Supply (10kW/115V/90A)
ADG-L-160-63	Programmable DC Power Supply (10kW/160V/63A)
ADG-L-335-30	Programmable DC Power Supply (10kW/335V/30A)
ADG-L-335-90-10	Programmable DC Power Supply (10kW/335V/90A) (Auto Range Model)
ADG-L-500-20	Programmable DC Power Supply (10kW/500V/20A)
ADG-L-670-15	Programmable DC Power Supply (10kW/670V/15A)
ADG-L-670-45-10	Programmable DC Power Supply (10kW/670V/45A) (Auto Range Model)
ADG-L-30-510	Programmable DC Power Supply(15kW/30V/510A)
ADG-L-40-375	Programmable DC Power Supply(15kW/40V/375A)
ADG-L-80-187	Programmable DC Power Supply(15kW/80V/187.5A)
ADG-L-80-510-15	Programmable DC Power Supply(15kW/80V/510A) (Auto Range Model)
ADG-L-115-135	Programmable DC Power Supply (15kW/115V/135A)
ADG-L-160-94	Programmable DC Power Supply (15kW/160V/94A)
ADG-L-335-45	Programmable DC Power Supply (15kW/335V/45A)
ADG-L-335-135-15	Programmable DC Power Supply (15kW/335V/135A) (Auto Range Model)
ADG-L-500-30	Programmable DC Power Supply (15kW/500V/30A)
ADG-L-670-23	Programmable DC Power Supply (15kW/670V/23A)
ADG-L-1000-15	Programmable DC Power Supply (15kW/1000V/15A)
ADG-L-1000-45-15	Programmable DC Power Supply (15kW/1000V/45A) (Auto Range Model)
ADG-L-008	Multiple Units Connection Cord DB25 (Male*2) 50 cm
ADG-L-013	GPIB Interface Board
ADG-L-014	Reverse Current Protection Module
ADG-L-015	I-V Curve Simulation and Remote Control Software
ADG-L-017	Input Voltage 3Ø4W+G 340-528 Vac
ADG-L-018	Remote Control Box
ACCS-001	USB to RS-485 converter +RS-232/RS-485 Cable M-F type (2M)
ACCS-003	RS-232/RS-485 Cable M-F type (2M)

<sup>\*</sup>For 30V, 40V, 80V models, please contact us for input voltage options.

#### **SPECIFICATIONS**

#### ADG-L Series (5kW)

Model		ADG-L- 30-170	ADG-L- 40-125	ADG-L- 80-62	ADG-L- 80-170-5	ADG-L- 115-45	ADG-L- 160-32	ADG-L- 335-15	ADG-L- 335-45-5			
Output Powe	er	5kW	5kW	5kW	5kW	5kW	5kW	5kW	5kW			
INPUT												
Input Voltage	e		1Ø 2W+G 1	87-264 VAC			1Ø 2W+G 187-264 VAC 3Ø3W+G 187-264 VAC 3Ø4W+G 340-460 VAC					
Input Curren	t					30A						
nput Freque	ncy				47	Hz-63 Hz						
Power Factor	r		≥ 0.99 at r	max. power			≥ 0.99	at max. power				
OUTPUT												
Voltage		0~30V	0~40V	0~80V	0~80V	0 - 115V	0 - 160V	0 - 335V	0 - 335V			
Current		0~170A	0~125A	0~62.5A	0~170A	0 - 45A	0 - 32A	0 - 15A	0 - 45A			
Voltage Ripp	ole (RMS)*1	≤0.15% F.S.	≤0.1% F.S.	≤ 0.05% F.S.	≤ 0.08% F.S.	≤ 0.25% F.S.	≤ 0.2% F.S.	≤ 0.08% F.S.	≤ 0.08% F.S.			
Voltage Ripp (peak to pe	ole*1	≤2% F.S.	≤1.5% F.S.	≤ 0.8% F.S.	≤ 0.8% F.S.	≤ 1.6% F.S.	≤ 1.6% F.S.	≤ 0.8% F.S.	≤ 0.8% F.S.			
Voltage Line Regulation		≤0.1% F.S.	≤0.1% F.S.	≤ 0.1% F.S.	≤ 0.1% F.S.	≤ 0.1% F.S.	≤ 0.1% F.S.	≤ 0.1% F.S.	≤ 0.1% F.S.			
Voltage Load Regulation <sup>2</sup>		≤0.1% F.S.	≤0.1% F.S.	≤ 0.1% F.S.	≤ 0.1% F.S.	≤ 0.3% F.S.	≤ 0.3% F.S.	≤ 0.1% F.S.	≤ 0.1% F.S.			
Current Ripp	le (RMS)	≤0.05% F.S.	≤ 0.08% F.S.	≤0.1% F.S.	≤ 0.05% F.S.	≤ 0.25% F.S.	≤ 0.2% F.S.	≤0.15% F.S.	≤ 0.15% F.S.			
Current Line		≤0.05% F.S.	≤0.05% F.S.	≤0.05% F.S.	≤ 0.05% F.S.	≤ 0.03% F.S.	≤ 0.03% F.S.	≤ 0.03% F.S.	≤ 0.03% F.S.			
Current Load	l Regulation	≤0.15% F.S.	≤0.15% F.S.	≤ 0.15% F.S.	≤ 0.15% F.S.	≤ 0.2% F.S.	≤ 0.2% F.S.	≤ 0.2% F.S.	≤0.15% F.S.			
	Rise Time	≤8ms	≤8ms	≤ 15ms	≤ 15mS	≤ 25ms	≤ 25ms	≤ 30ms	≤ 30ms			
Slew Rate <sup>'3</sup>	Fall Time (Full Load)	≤3ms	≤3ms	≤ 8ms	≤ 8mS	≤ 30ms	≤ 30ms	≤ 45ms	≤ 45ms			
	Fall Time (No Load)		1			≤ 3s						
Transient Res	ponse*4					≤ 5ms						
	g & Measureme	nt										
Voltage Prog Accuracy	ramming		≤ 0.08% F	F.S. +0.01V			≤ 0.08°	% F.S. +100mV				
Voltage Mea				F.S. +0.01V		≤ 0.08% F.S. +100mV						
Voltage Reso			10	mV		100mV						
Current Prog Accuracy Current Mea				F.S. +0.1A		≤ 0.3% F.S. +60mA						
Accuracy			≤ 0.2% F	S. +0.1A			≤ 0.2°	% F.S. +60mA				
Current Reso	lution		0.	1A				10mA				
Power Progra Accuracy	amming		≤ 0.3	% F.S.			≤	0.4% F.S.				
Power Measi Accuracy	urement		≤ 0.3	% F.S.			≤	0.4% F.S.				
Power Resolu	ution		0.0	1kW			0.01kW					
General Spe												
Efficiency <sup>*5</sup>		≥ 87% at max.	≥ 88% at max.	≥ 90% at r	max. power	≥ 87% at r	max. power	≥ 90% a	t max. power			
Interfaces				Sta	ndard: RS-232, RS	S-485, Ethernet, U	ISB, Analog					
Analog Input	t Control	0-5V, 4-20mA, A		(at output rated vo %)	ltage & current ≥		0-5V,	Accuracy : 2%				
Analog Outp (V & I)	out Monitor		0-5V, Accura	acy : 2% F.S.				-				
Remote Sens	sing					≤ 5V						
Operating Te	emperature				0,	°C ~ 40°C						
Storage Tem	perature				-20	0°C ~ 70°C						
Protections		OVP · OCP · O		V · LDC OV · Rer	note Error · FAN	OVP · OC	CP · OPP · OTP ·	Vin OV · Vin Unbala	ance 、LDC OV			
OVP Range			0 - 110	0% F.S.			0 -	110% F.S.				
				0% F.S.				110% F.S.				
OCP Range		0 - 110% F.S. 0 - 110% F.S.										
OCP Range			0 - 110	0% F.S.			0 -	110% F.S.				
OCP Range OPP Range Dimension (F	łxWxD)	132		0% F.S. / 5.2 x 17.4 x 28.8	3 inch			nm / 5.2 x 17.4 x 27.	2 inch			

<sup>\*1</sup> When output current is  $\ge 2\%$  of rated current. \*2 The load variation is 0-100% at rated input voltage. \*3 The time required for the output voltage to change from 10% to 90% or 90% to 10% at full scale.
\*4 Under nominal AC input, recovers to ±1% of full-scale output voltage for a 50% to 100% or 100% to 50% load change. \*5 When voltage output is at the max. voltage
\*6 weight tolerance is within ±10% \* The above is the specification when the output voltage and current are 1% or more
\*\* The company's products are constantly being developed and improved, and the specifications are subject to change without prior notice.

#### ADG-L Series (10kW)

Model		ADG-L- 30-340	ADG-L- 40-250	ADG-L- 80-125	ADG-L- 80-340-10	ADG-L- 115-90	ADG-L- 160-63	ADG-L- 335-30	ADG-L- 335-90-10	ADG-L- 500-20	ADG-L- 670-15	ADG-L- 670-45-10			
Output Power		10kW	10kW	10kW	10kW	10kW	10kW	10kW	10kW	10kW	10kW	10kW			
INPUT															
Input Voltage			A: 3Ø4W+G : 3: 3Ø3W+G			1Ø 2W+G 187-264 VAC 3Ø3W+G 187-264 VAC 3Ø4W+G 340-460 VAC (Option 3Ø4W+G 340-528 VAC)									
Input Current			A: 3ØY B: 3ØΔ			1Ø : 60A 3ØΔ: 35A 3ØY : 19A									
Input Frequenc	у						47 Hz-63 H								
Power Factor						≥	0.99 at max. լ	power							
OUTPUT		0~30V	0~40V	0~80V	0~80V	0 - 115V	0 - 160V	0 - 335V	0 - 335V	0 - 500V	0 - 670V	0 - 670\			
Voltage Current		0~340A	0~250A	0~125A	0~340A	0 - 113V	0 - 63A	0 - 30A	0 - 90A	0 - 300V 0 - 20A	0 - 070V	0 - 45A			
Voltage Ripple	(RMS)*1	≤ 0.25% F.S.	≤0.15% F.S.		≤ 0.1% F.S.	≤ 0.3% F.S.	≤ 0.3% F.S.	≤ 0.15% F.S.	≤ 0.15% F.S.	≤ 0.08% F.S.	≤ 0.08% F.S.	≤0.08% F.			
Voltage Ripple peak)*1	(peak to	≤4% F.S. ≤3% F.S. ≤1.5% F.S. ≤2% F.S.				≤ 2.5% F.S.	≤ 2.5% F.S.	≤ 1.6% F.S.	≤ 1.6% F.S.	≤ 0.8% F.S.	≤0.8% F.S.	≤ 0.8% F.S			
Voltage Line Re	egulation	≤0.1% F.S.	≤0.1% F.S. ≤0.1% F.S. ≤0.1% F.S. ≤0.1% F.S. ≤0.1% F.S. ≤0.1% F.S.				≤ 0.1% F.S.	≤ 0.03% F.S.	≤0.03% F.S.	≤ 0.03% F.					
Voltage Load F	Regulation <sup>*2</sup>	≤0.1% F.S.			≤0.1% F.S.		≤ 0.3% F.S.	≤ 0.3% F.S.	≤ 0.3% F.S.	≤0.05% F.S.	≤ 0.05% F.S.	≤ 0.05% F.			
Current Ripple	(RMS)	≤.05% F.S.	≤0.05% F.S.	≤0.08% F.S.	≤0.05% F.S.	≤ 0.3% F.S.	≤ 0.2% F.S.	≤ 0.3% F.S.	≤ 0.2% F.S.	≤ 0.5% F.S.	≤0.5% F.S.	≤ 0.25% F.5			
Current Line Re	gulation	≤ 0.05%F.S.	≤0.05% F.S.	≤ 0.05% F.S.	≤ 0.05% F.S.	≤ 0.1% F.S.	≤ 0.1% F.S.	≤ 0.2% F.S.	≤ 0.2% F.S.	≤ 0.05% F.S. +50mA	≤ 0.05%F.S. +50mA	≤ 0.05%F. +50mA			
Current Load R	egulation	≤0.15% F.S.	≤0.15% F.S.	≤0.15% F.S.	≤0.15% F.S.	≤ 0.2% F.S.	≤ 0.2% F.S.	≤ 0.3% F.S.	≤ 0.3% F.S.	≤0.25% F.S.	≤ 0.25% F.S.	≤ 0.25% F.			
	Rise Time	≤ 8ms	≤ 8ms	≤ 15ms	≤ 15ms	≤ 25ms	≤ 25ms	≤ 30ms	≤ 30ms	≤ 55ms	≤ 60ms	≤ 60ms			
Slew Rate*3	Fall Time (Full Load)	≤ 3ms	≤ 3ms	≤ 8ms	≤ 8ms	≤ 30ms	≤ 30ms	≤ 45ms	≤ 45ms	≤ 45ms	≤ 45ms	≤ 45ms			
	Fall Time (No Load)	≤ 3s													
Transient Respo	onse*4						≤ 5ms								
	Measurement														
Voltage Progran Accuracy	mming		≤ 0.08% F.	S. +0.01V				≤	0.08% F.S. +	100mV					
Voltage Measu Accuracy	rement		≤ 0.08% F.	S. +0.01V		≤ 0.08% F.S. +100mV									
Voltage Resolu			10n	nV			100mV								
Current Prograi Accuracy	mming		≤ 0.2% F.	S. +0.1A		≤ 0.3% F.S. +60mA									
Current Measu	rement		≤ 0.2% F.	S. +0.1A					≤ 0.3% F.S. +	60mA					
Accuracy Current Resolut	ion		0.1	IA					10mA						
Power Program	ming		≤ 0.3%	6 F.S.					≤ 0.4% F.	S.					
Accuracy Power Measure	ement														
Accuracy			≤ 0.3%	6 F.S.		≤ 0.4% F.S.									
Power Resolution			0.01	kW					0.01kW						
General Specs  Efficiency <sup>*5</sup>		≥ 87% at max. power	≥ 88' max. p		≥ 90% at max. power		% at		% at	≥ 87% at max. power	≥ 90% at max.				
Interfaces					· ·	andard: RS-23		thernet, USB,							
Analog Input (V & I )	Control		, Accuracy : oltage & cu		at output rated	0-5V, Accuracy : 2%									
Analog Outpi (V & I )	ut Monitor	0-5V, Accuracy : 2% F.S.													
Remote sense compensation							≤ 5V								
Operating Tem							0°C ~ 40°C -20°C ~ 70°								
Storage Tempe	rature	OVP ·	OCP · OPP	· OTP · Vii	n OV ·				OTD 1" -::	No. 11 1 1	1000:				
Protections					ror · FAN Error				OTP · Vin OV	Vin Unbalance	· LDC OV				
OVP Range							0 - 110% F.								
OCP Range							0 - 110% F. 0 - 110% F.								
OPP Range  Dimension (HxWxD)						0 - 110% F.S. 132 x 442 x 692 mm / 5.2 x 17.4 x 27.2 inch									
OPP Range Dimension (Hx\	NxD)	132 x 442	x 731.5 mm	/ 5.2 x 17.4	x 28.8 inch			132 x 442 x	692 mm / 5.2	x 17.4 x 27.2 inc	:h				

<sup>\*1</sup> When output current is  $\geq$  2% of rated current. \*2 The load variation is 0-100% at rated input voltage. \*3 The time required for the output voltage to change from 10% to 90% or 90% to 10% at full scale.

<sup>\*4</sup> Under nominal AC input, recovers to ±1% of full-scale output voltage for a 50% to 100% or 100% to 50% load change. \*5 When voltage output is at the max. voltage \*6 weight tolerance is within ±10% \*The above is the specification when the output voltage and current are 1% or more \*\*The company's products are constantly being developed and improved, and the specifications are subject to change without prior notice.

#### ADG-L Series (15kW)

Model		ADG-L- 30-510	40-375	ADG-L- 80-187	ADG-L- 80-510-15	ADG-L- 115-135	ADG-L- 160-94	ADG-L- 335-45	ADG-L- 335-135-15	ADG-L- 500-30	ADG-L- 670-23	ADG-L- 1000-15	ADG-L- 1000-45-15					
Output Power		15kW	15kW	15kW	15kW	15kW	15kW	15kW	15kW	15kW	15kW	15kW	15kW					
INPUT		101111	10	101111	101111	TORTY	TORVV	TORTY	TORTY	TORVV	TORVV	TORVV	TORVV					
Input Voltage			A: 3Ø4W+G B: 3Ø3W+G			1Ø 2W+G 187-264 VAC 3Ø3W+G 187-264 VAC 3Ø4W+G 340-460 VAC (Option 3Ø4W+G 340-528 VAC)												
Input Current			A: 3Ø\ B: 3Ø <i>L</i>			1Ø:90A 3Ø∆:52A 3ØY:30A												
Input Frequenc	су						47 Hz-	-63 Hz										
Power Factor						≥ 0.99 at max. power												
OUTPUT		_																
Voltage		0~30V	0~40V	0~80V	0~80V	0 - 115V	0 - 160V	0 - 335V	0 - 335V	0 - 500V	0 - 670V	0 - 1000V	0 - 1000V					
Current		0~510A	0~375A	0~187.5A	0~510A	0 - 135A	0 - 94A	0 - 45A	0 - 135A	0 - 30A	0 - 23A	0 - 15A	0 - 45A					
Voltage Ripple		≤0.25% F.S.	≤0.2% F.S.	≤0.15% F.S.	≤0.15% F.S.	≤0.3% F.S.	≤0.3% F.S.	≤0.15% F.S.	≤0.15% F.S.	≤0.15% F.S.	≤0.15% F.S.	≤ 0.1% F.S.	≤0.1% F.S.					
Voltage Ripple (peak to peak		≤ 4% F.S.	≤ 3% F.S.	≤ 1.5% F.S.	≤ 2% F.S.	≤1.6% F.S.	≤1.6% F.S.	≤1% F.S.	≤1% F.S.	≤0.8% F.S.	≤0.8% F.S.	≤0.5% F.S.	≤0.5% F.S.					
Voltage Line R	egulation	≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.					
Voltage Load Regulation*2		≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.2% F.S.	≤0.2% F.S.	≤0.2% F.S.	≤0.2% F.S.	≤0.2% F.S.	≤0.2% F.S.	≤0.1% F.S.	≤0.1% F.S.					
Current Ripple	(RMS)	≤ 0.05% F.S.	≤ 0.05% F.S.	≤ 0.08% F.S.	≤ 0.05% F.S.	≤0.1% F.S.	≤0.1% F.S.	≤0.15% F.S.	≤0.1% F.S.	≤0.25% F.S.	≤0.25% F.S.	≤0.5% F.S.	≤0.25% F.S.					
Current Line Re	egulation	≤ 0.05% F.S.	≤ 0.05% F.S.	≤ 0.05% F.S.	≤ 0.05% F.S.	≤0.05% F.S. +50mA	≤ 0.05% F.S.	≤ 0.05% F.S.	≤ 0.05% F.S.	≤ 0.05% F.S.	≤ 0.05% F.S.	≤ 0.05% F.S.	≤ 0.05% F.S.					
							+50mA	+50mA	+50mA	+50mA	+50mA							
Current Load R		≤0.15% F.S.	≤0.15% F.S.	≤0.15% F.S.	≤ 0.15% F.S.	≤ 0.1% F.S.	≤ 0.1% F.S.	≤ 0.2% F.S.	≤ 0.2% F.S.	≤ 0.3% F.S.	≤ 0.3% F.S.	≤ 0.3% F.S.	≤ 0.3% F.S.					
	Rise Time	≤ 8ms	≤ 8ms	≤ 15ms	≤ 15ms	≤ 25ms	≤ 30ms	≤ 30ms	≤ 30ms	≤ 55ms	≤ 60ms	≤ 90ms	≤ 90ms					
Slew Rate <sup>*3</sup>	Fall Time (Full Load)	≤ 3ms	≤ 3ms	≤ 8ms	≤ 8ms	≤ 30ms	≤ 45ms	≤ 45ms	≤ 45ms	≤ 45ms	≤ 45ms	≤ 40ms	≤ 40ms					
	Fall Time (No Load)	≤ 3s																
Transient Resp	onse <sup>*4</sup>						≤ 5	ms										
Programming	& Measurement																	
Voltage Progra Accuracy	mming		≤ 0.08% F	.S. +0.01V					≤ 0.08% F.	S. +100mV								
Voltage Measi Accuracy	urement		≤ 0.08% F	.S. +0.01V		≤ 0.08% F.S. +100mV												
Voltage Resolu	ution		10r	mV					100	mV								
Current Progra Accuracy	mming		≤ 0.2% F	S. +0.1A		≤ 0.4% F.S. +60mA												
Current Measu Accuracy	ırement		≤ 0.2% F	.S. +0.1A		≤ 0.4% F.S. +60mA												
Current Resolu			0.	1A		10mA												
Power Progran Accuracy	nming		≤ 0.3°	% F.S.		≤ 0.4% F.S.												
Power Measure Accuracy	ement		≤ 0.3°	V = 0					≤ 0.4% F.S.									
Accuracy				% F.S.					≤ 0.49	% F.S.								
Power Resoluti	on		0.01							% F.S. 1kW								
Power Resoluti		≥ 87% at max. power			nax. power	≥ 87% at n	nax. power	≥ 90% at n	0.0		≥ 90	)% at max. pc	ower					
Power Resoluti General Specs			0.01 ≥ 88% at	kW			S-232, RS-48	≥ 90% at n 35, Ethernet, I : GPIB	0.0°	IkW ≥ 87% at	≥ 90	)% at max. pc	wer					
Power Resoluti General Specs Efficiency'5	S	0-5V, 4-20	0.01 ≥ 88% at	≥ 90% at n	(at output		S-232, RS-48	S5, Ethernet, I	0.0°	≥ 87% at max. power	≥ 90	)% at max. pc	ower					
Power Resoluti General Specs Efficiency' <sup>5</sup> Interfaces Analog Input (V & I) Analog Outp	Control	max. power	0.01 ≥ 88% at max. power	kW ≥ 90% at n  cy: 1% F.S. current ≥ 5	(at output 5%)		S-232, RS-48	S5, Ethernet, I	0.0 <sup>o</sup>	≥ 87% at max. power	≥ 90	)% at max. pc	ower					
Power Resoluti General Specs Efficiency '5 Interfaces Analog Input (V & I ) Analog Outp (V & I )	Control	max. power	0.01 ≥ 88% at max. power  DmA, Accura ed voltage &	kW ≥ 90% at n  cy: 1% F.S. current ≥ 5	(at output 5%)		S-232, RS-48	85, Ethernet, I : GPIB	0.0 <sup>o</sup>	≥ 87% at max. power	≥ 90	)% at max. pc	wer					
Power Resoluti General Specs Efficiency <sup>-5</sup> Interfaces Analog Input (V & I) Analog Outp (V & I)	Control ut Monitor compensation	max. power	0.01 ≥ 88% at max. power  DmA, Accura ed voltage &	kW ≥ 90% at n  cy: 1% F.S. current ≥ 5	(at output 5%)		S-232, RS-48 Option	85, Ethernet, I : GPIB	0.0 <sup>o</sup>	≥ 87% at max. power	≥ 90	)% at max. pc	ower					
Power Resoluti General Specs Efficiency <sup>*5</sup> Interfaces Analog Input (V & I) Analog Outp (V & I) Remote sense	Control  ut Monitor  compensation  pperature	max. power	0.01 ≥ 88% at max. power  DmA, Accura ed voltage &	kW ≥ 90% at n  cy: 1% F.S. current ≥ 5	(at output 5%)		S-232, RS-48 Option	35, Ethernet, I : GPIB	0.0 <sup>o</sup>	≥ 87% at max. power	≥ 90	)% at max. pc	ower					
Power Resoluti General Specs Efficiency <sup>*5</sup> Interfaces Analog Input (V & I) Analog Outp (V & I) Remote sense Operating Tem	Control  ut Monitor  compensation  pperature	max. power	0.01 ≥ 88% at max. power  DmA, Accura ed voltage &	kW ≥ 90% at n  cy: 1% F.S. current ≥ 5	(at output %)	Standard: R	S-232, RS-48 Option ≤ \$ 0°C ~ -20°C	35, Ethernet, I : GPIB	0.0° nax. power USB, Analog 0-5V, Acct	≥ 87% at max. power	≥ 90	)% at max. pc	wer					
Power Resoluti General Specs Efficiency's Interfaces Analog Input (V & I) Analog Outp (V & I) Remote sense Operating Tem Storage Tempe	Control  ut Monitor  compensation  pperature	max. power	0.01 ≥ 88% at max. power  DmA, Accura ed voltage &	kW ≥ 90% at n  cy: 1% F.S. current ≥ 5	(at output %)	Standard: R	S-232, RS-48 Option ≤ \$ 0°C ~ -20°C	55, Ethernet, I : GPIB 5V 40°C ~ 70°C OV ~ Vin Unb	0.0° nax. power USB, Analog 0-5V, Acct	≥ 87% at max. power	≥ 90	)% at max. pc	wer					
Power Resoluti General Specs Efficiency's Interfaces Analog Input (V & I) Analog Outp (V & I) Remote sense Operating Tem Storage Tempor Protections OVP Range	Control  ut Monitor  compensation  pperature	max. power	0.01 ≥ 88% at max. power  DmA, Accura ed voltage &	kW ≥ 90% at n  cy: 1% F.S. current ≥ 5	(at output %)	Standard: R	S-232, RS-48 Option	55, Ethernet, I: GPIB  50  40°C  70°C  OV \ Vin Unb	0.0° nax. power USB, Analog 0-5V, Acct	≥ 87% at max. power	≥ 90	)% at max. pc	wer					
Power Resoluti General Specs Efficiency'5 Interfaces Analog Input (V & I) Analog Outp (V & I) Remote sense Operating Tem Storage Tempor	Control  ut Monitor  compensation  pperature	max. power	0.01 ≥ 88% at max. power  DmA, Accura ed voltage &	kW ≥ 90% at n  cy: 1% F.S. current ≥ 5	(at output %)	Standard: R	S-232, RS-48 Option ≤ \$ 0°C ~ -20°C · 0 - 110	55, Ethernet, I : GPIB 5V 40°C ~ 70°C OV \ Vin Unt 1% F.S.	0.0° nax. power USB, Analog 0-5V, Acct	≥ 87% at max. power	≥ 90	)% at max. pc	wer					
Power Resoluti General Specs Efficiency <sup>*5</sup> Interfaces Analog Input (V & I) Analog Outp (V & I) Remote sense Operating Tem Storage Tempe Protections OVP Range OCP Range	Control  ut Monitor  compensation  nperature  erature	0-5V, 4-2C	0.01 ≥ 88% at max. power  DmA, Accura ed voltage &	≥ 90% at n  cy: 1% F.S. current ≥ 5  acy: 2% F.S	(at output 5%)	Standard: R	S-232, RS-48 Option  \$\leq \{\frac{1}{2}\}  \text{OTP}  \text{Vin}  0 - 110  0 - 110  0 - 110  \text{Vin}   \text{Vin}   \text{Vin}   \text{Vin}  \text{Vin}  \text{Vin}  \text{Vin}  \text{Vin}  \text{Vin}  \text{Vin}  \text{Vin}  \text{Vin}  \text{Vin}  \text{Vin}   \text{Vin}  \text{Vin}   \text{Vin}   \text{Vin}   \text{Vin}	55, Ethernet, I: GPIB  5V  40°C  ~ 70°C  OV \ Vin Unt  9% F.S.  19% F.S.	0.0° nax. power USB, Analog 0-5V, Accu	≥ 87% at max. power		)% at max. pc	wer					

<sup>\*1</sup> When output current is  $\geq$  2% of rated current. \*2 The load variation is 0-100% at rated input voltage. \*3 The time required for the output voltage to change from 10% to 90% or 90% to 10% at full scale.

<sup>\*4</sup> Under nominal AC input, recovers to ±1% of full-scale output voltage for a 50% to 100% or 100% to 50% load change. 
\*5 When voltage output is at the max. voltage
\*6 weight tolerance is within ±10% 
\*The above is the specification when the output voltage and current are 1% or more

\*\* The company's products are constantly being developed and improved, and the specifications are subject to change without prior notice.