

2020

**GENERAL PRODUCT
CATALOG**

AC + DC Power Solutions

Vol.1

■ Programmable AC Power Source ■ Programmable DC Power Supply ■ Regenerative Grid Simulator

■ Power Supply for Military & Aerospace ■ Power Conditioner / AVR ■ Solutions & Systems

www.PreenPower.com

Your Ideal AC Source for High Power Testing

AFV⁺ series **Upgraded!**  10kVA~2000kVA

New Generation of High Power Programmable AC Source

The AFV⁺ series features low THD (total harmonics distortion), high reliability, multiple programming features, intuitive operations and leading power level. This latest high power programmable AC Power source of Preen can simulate different power line disturbances and record error logs. The new control software for the AFV⁺ series also provides great convenience for remote control and monitoring.

THD \leq 0.5%

Leading Performance on Harmonic Distortions

Regulation \leq 0.5%

Precise and Stable Output Performance

Power Line Disturbances

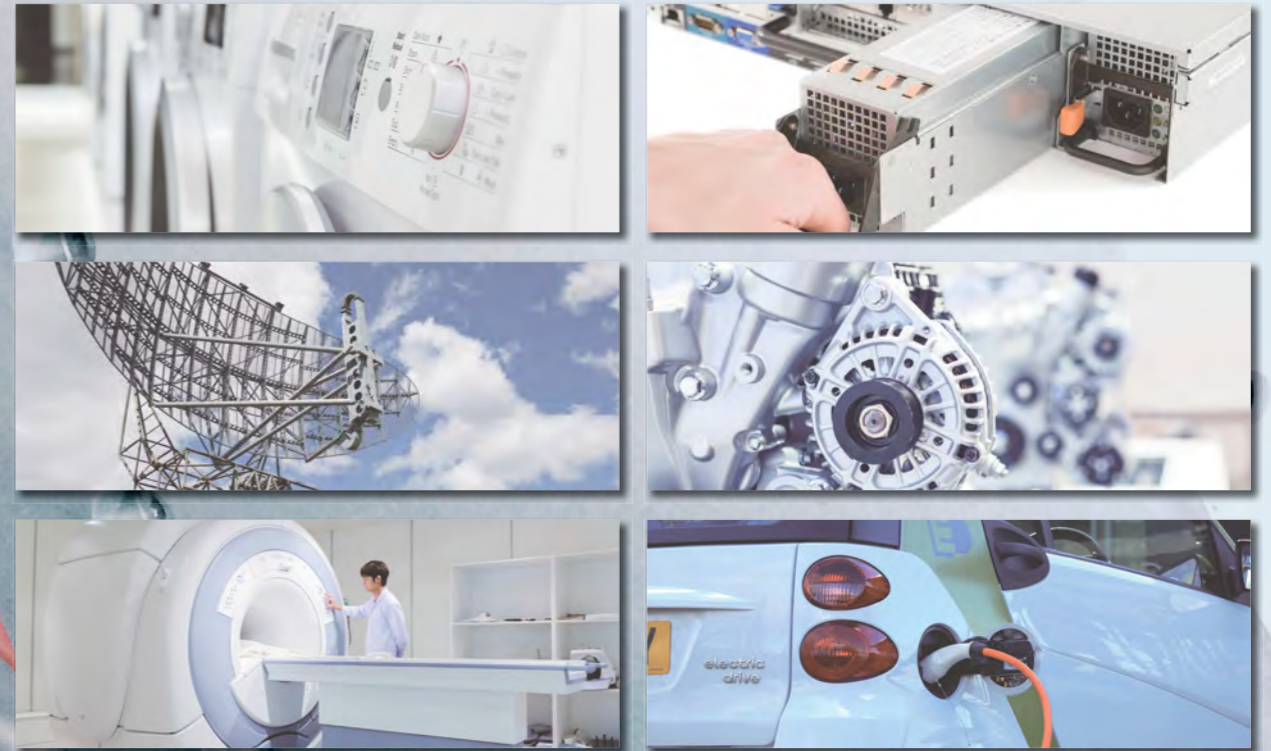
To Simulate Phase Unbalance, Phase Shifting and Phase Loss

- Intuitive Touch Screen Control New Version of Easy-to-use Local Operations
- New Control Software User-Friendly Control with Comprehensive Functions

Up to
600V_(L-N)
840Hz



P.27



The applications of the AFV⁺ series include switching power supplies, electric vehicle (EV) chargers, home appliances, aerospace & defense and medical equipment with high power, reliable and precise performance.

Electric Vehicle Supply Equipment Automatic Test System

Preen's EVSE ATS is designed based on the type and regulations of EV charger in various countries. Not only meeting multiple testing standard of EV charger, EVSE ATS also provides flexibility in system design. It can be configured according to customer's requirement or existing instruments, and automatically generates test results and reports. EVSE ATS is equipped with Preen's high power AC sources and loads, featuring various models and power levels, providing a cost-effective and reliable testing solution.

Complied with Standards

SAE-J1772 ,JEC 62196
NB/T 33001 ,NB/T33002
NB/T33008.1 ,NB/T33008.2
GB/T 18487.1 ,GB/T 27930

Compatible with Various Types of EV Charger

Suitable for US, Europe, Japan and China EV chargers.

Flexible System Design

Can be configured according to customer's needs to maximize testing efficiency.



Flexible Software Configuration

Configured according to customer's requirement and existing instruments.



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AC Power Corp. Over 30 Years of Excellence

For the past 30 years, AC Power Corp. (Preen) has been focusing on developing and manufacturing power supplies for testing, power conversion and power conditioning applications. With continuous effort on product innovations and quality improvements, AC Power Corp is able to establish its name as the leading power supply provider and has one of the highest total power shipped in the world. AC Power Corp. today offers a portfolio of programmable power supplies and solutions under the brand "Preen" for countless industries that include renewable energy, electric vehicle, automotive testing system and defense and aerospace.



Driven by the company motto: Value and Innovations, AC Power Corp.'s objective is to continuously provide the customers and markets with solutions that assist them to better innovate products and solve issues. The 30th Anniversary Logo is inspired by the idea of innovation, and it combines the number 30 with circuitry to symbolize the continuous endeavor and focus on product and organization innovations.

AC + DC Power Solutions for a variety of applications

Found in 1989, Preen (AC Power Corp.) is a world leader in power supply systems and has been developing AC and DC power supplies based on the core technology of power conversion. We provide advanced, reliable and cost effective power products including AC power source, DC power supply, regenerative grid simulator, powersupplies for aerospace and defense, and line conditioners.

Preen's customer base consists of major international corporations. Significant markets Preen served include electric vehicle, renewable energy, home appliance and consumer product manufacturing, military, aerospace, and general R&D and EMC compliance testing.



Renewable Energy

Electronics

Aerospace / Defense

EMC & Lab.

Control Room/
Data Center

Value & Innovation

With corporate office located in Taipei, Taiwan, Preen has total three manufacturing facilities and multiple branch offices and service location worldwide, including the U.S. office located in Irvine, CA. Preen's core philosophy, Value & Innovation, reflects on the continuously improvement of product quality and design. Many of our products are CE and RoHS certified, in line with international safety standard and environmental friendly development. All Preen's manufacturing facilities have ISO9001:2015 certifications. We keep rigorous controls on manufacturing processes and plant management to ensure only the top-quality products are delivered.

Company History

<ul style="list-style-type: none"> ○ 2019 <ul style="list-style-type: none"> - Launched high power programmable AC power supply, AFV+ series. ○ 2018 <ul style="list-style-type: none"> - Granted Taiwan Excellence Award for ADG-P series - Receives D&B Top 1000 Elite SME Award - Launched programmable DC power supply, ADG-L series ○ 2017 <ul style="list-style-type: none"> - Granted Taiwan Excellence Award for AFV-P series. ○ 2016 <ul style="list-style-type: none"> - Launched high performance programmable AC&DC power supply, AFV-P series. ○ 2015 <ul style="list-style-type: none"> - Launched programmable high power DC power supply, ADG-P series. - Provided 2000kVA programmable AC power source to Haier for centralized air conditioning system R&D and verification applications. (world's largest stand-alone programmable AC source) ○ 2014 <ul style="list-style-type: none"> - Granted "High Power Engineering Technology Research Center" by Jiangsu province. ○ 2012 <ul style="list-style-type: none"> - Launched the new regenerative grid simulator, PAS series. - Granted "Enterprise Technology Center" by Suzhou city. ○ 2011 <ul style="list-style-type: none"> - Annual sales of AC source exceeded 65MVA, which made Preen the world's biggest AC source manufacturer. 	<ul style="list-style-type: none"> ○ 2010 <ul style="list-style-type: none"> - Launched the programmable AC power source, AFV series. - Launched the first-generation grid simulator, ACST series. ○ 2009 <ul style="list-style-type: none"> - U.S. office established. ○ 2008 <ul style="list-style-type: none"> - Launched the shore power supply, BPS series. ○ 2007 <ul style="list-style-type: none"> - Launched the new generation of AFC series AC power source. - Launched the rack-mount DC power supply, ADC series. ○ 2001 <ul style="list-style-type: none"> - Manufacturing facility in Suzhou, China, established. ○ 1993 <ul style="list-style-type: none"> - Manufacturing facility in Tianjin, China, established. ○ 1990 <ul style="list-style-type: none"> - Launched the world's first energy-saving static line conditioner, APS series, with only the 1/4 of the size and weight of conventional ones. - Launched the first-generation of AC power source, AFC series. ○ 1989 <ul style="list-style-type: none"> - AC Power Corp. was established in Taipei, Taiwan.
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65
MVA

Programmable Models

General Models

Industry-Specific Models

AFV-P Series


CE, TAIWAN EXCELLENCE, RoHS Compliant, DC o/p

Interfaces: Ethernet, USB, RS-232, RS-485, GPIB, Analog

0-310V, 40-500Hz / 15-1000Hz

Single Phase, 600VA/1250VA/2500VA/5000VA

Programable AC Power Source P. 19



- Features:**
- Ideal for IEC-61000-4-11 pre-compliance test
 - Total 1200 steps
 - Power Line Disturbance Simulation (PLD)
 - Complimentary Control Software

Excellent Performance on THD & Regulation
New Touch Screen Control

AFV+ Series

CE, RoHS Compliant

Interfaces: RS-232, RS-422, RS-485, GPIB, Ethernet

0-310V, A: 45-500Hz, B: 45-120Hz, C: 300-840Hz

Single Phase, 10kVA-150kVA

High Power Programmable AC Power Source



P. 27

AFV Series

CE, RoHS Compliant

Interfaces: RS-232, RS-422, RS-485, GPIB, Ethernet

0-300V, 45-65Hz / 45-500Hz

Single Phase, 10kVA-150kVA

High Power Programmable AC Power Source



P. 35

AFC Series

Analog*

5-300V, 47-63Hz / 50Hz / 60Hz / 45-500Hz (opt.)

Single Phase, 3kVA-120kVA

Frequency Converter / AC Power Source * Control only



PWF Series

Interfaces: RS-232, RS-485, GPIB

L series: 0-300V, M series: 0-150V

L series: 45-500Hz, M series: 300-800Hz

Three Phase, L series: 20-120kVA, M series: 20-75kVA

Programmable Wide Frequency AC Power Source P.51



AMF Series

Analog*

115/200V±10%, 400Hz / 350-450Hz

Single Phase, 500VA-100kVA

400Hz Power Supply / Ground Power Unit * Control only



P. 45

PAS/PFV Series

Interfaces: RS-232, RS-485, GPIB, Ethernet, USB, Regenerative

0-300V, 45-65Hz / 40-70Hz (opt.)

Three Phase, 30kVA-2000kVA

Regenerative Grid Simulator P. 41



P. 41

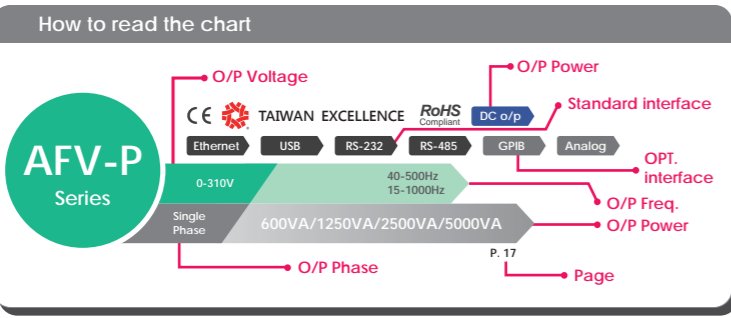
AMV Series

Interface: RS-485

115/200V ±10%, 400Hz / 300-500Hz

Three Phase, 30kVA-180kVA

400Hz Power Supply / Ground Power Unit P. 53



AAC

BPS Series

440V±5% (L-L), 47-63Hz, 50Hz, 60Hz

Three Phase, 300kVA-2,000kVA



Shore Power Supply P. 61



P. 61



Programmable

ADG-L Series  

0-160V to 0-1000V 4kW - 60kW

Programmable DC Power Supply P.67

General

ADC Series 

0-30V to 0-600V 2kW - 8kW

DC Power Supply P.85

Industry-Specific

ADS Series 

28V ±10%
270V ±10% (opt.)

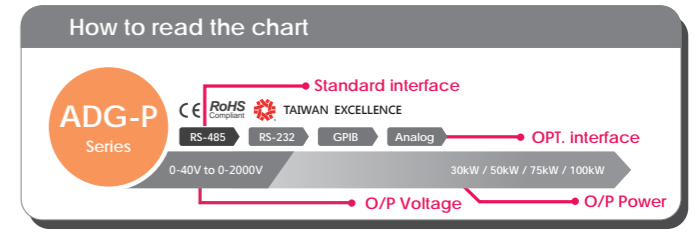
Military/Aerospace DC Power Supply 50A-4500A

P.89

ADG-P Series   

0-40V to 0-2000V 30kW / 50kW / 75kW / 100kW

Programmable High Power DC Power Supply P.77



4kW 8kW 12kW 30kW 100kW 300kW

Power Conditioner

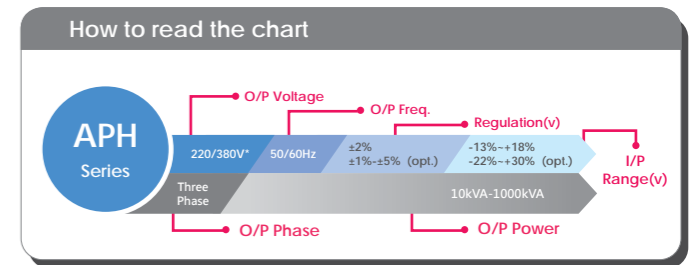
Power Conditioner

APS Series 

220/380V* 47-63Hz ± 2% ±18% ±25% (opt.)

Single Phase 1kVA-100kVA

Solid State Power Conditioner * Please consult us for other voltage levels. P. 95



AVR

APH Series
















220/380V* 47-63Hz ±2% -13%~+17%
±1%~±5% (opt.) -22%~+30% (opt.)

Three Phase 10kVA-600kVA

Inductive Automatic Voltage Regulator * Please consult us for other voltage levels. P. 101

Single Phase 1kVA 10kVA 100kVA Three Phase 45kVA 300kVA 1,000kVA

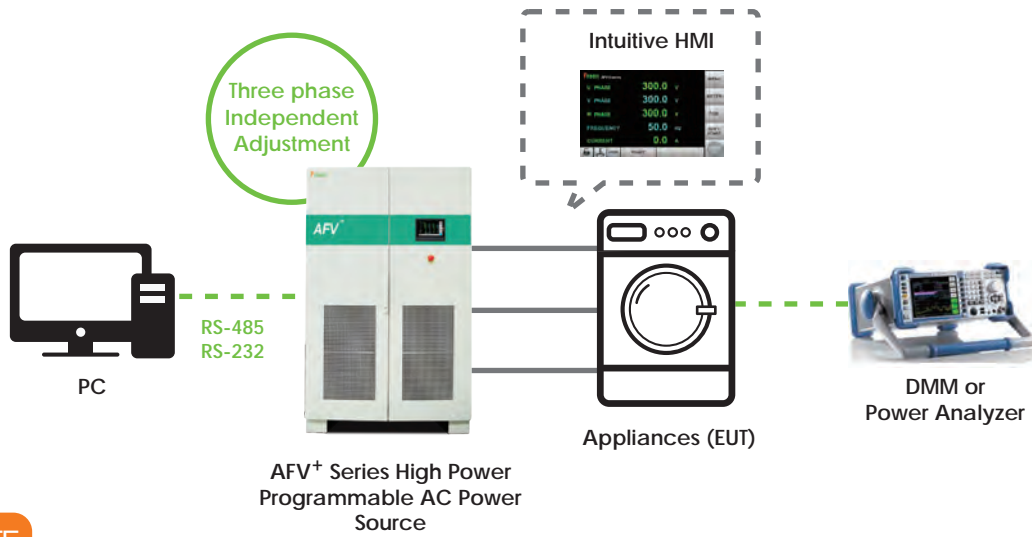
Product Applications

AC Power Supply	AFV-P Series 
	PWF Series 
	AFV Series 
	AFV+ Series 
	AFC Series 
	AMF Series 
	PAS/PFV Series 
	AMV Series 
	BPS Series 
DC Power Supply	ADG-L Series 
	ADG-P Series 
	ADC Series 
	ADS Series 
Power Conditioner	APS Series 
	APH Series 

Home Appliance	Laboratory/Certification Bureau	Industrial Power Supply	Renewable Energy	Electric Vehicles	IT / SMT Production Line	Medical Industry	Aerospace & Defense	Transportation	Motor & Compressor	Shore Power & Shipbuilding	Communication Industry
○	○	○		○	○		○	○	○		
	○						○				
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1

Home Appliances Testing Applications

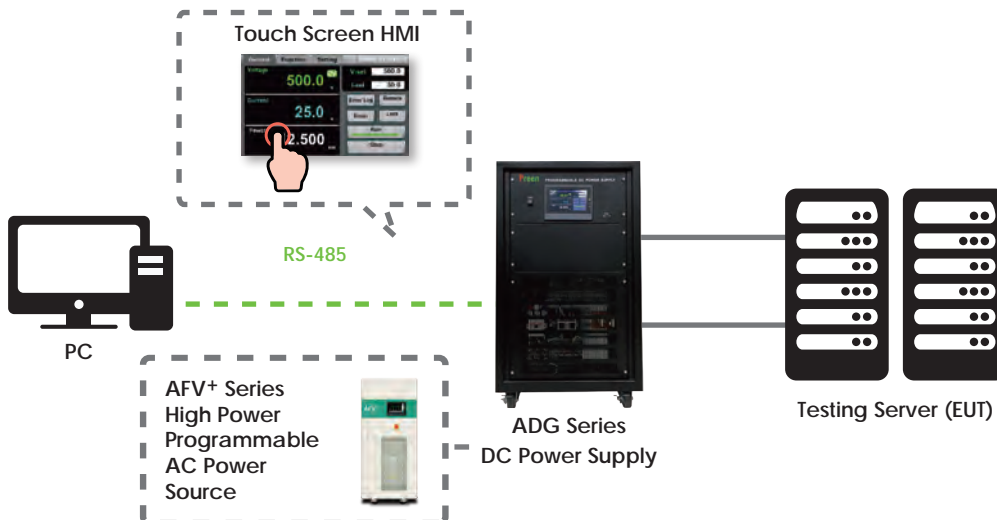


NOTE

During the home appliance manufacturing process, quality examination, burn-in or aging test, there are several different test items need to be accomplished. For example, products need to do the performance test under the real world grid conditions. The AFV+ series can simulate not only stable grid conditions but also fluctuated or unbalanced grid situations.

2

Server Testing Applications

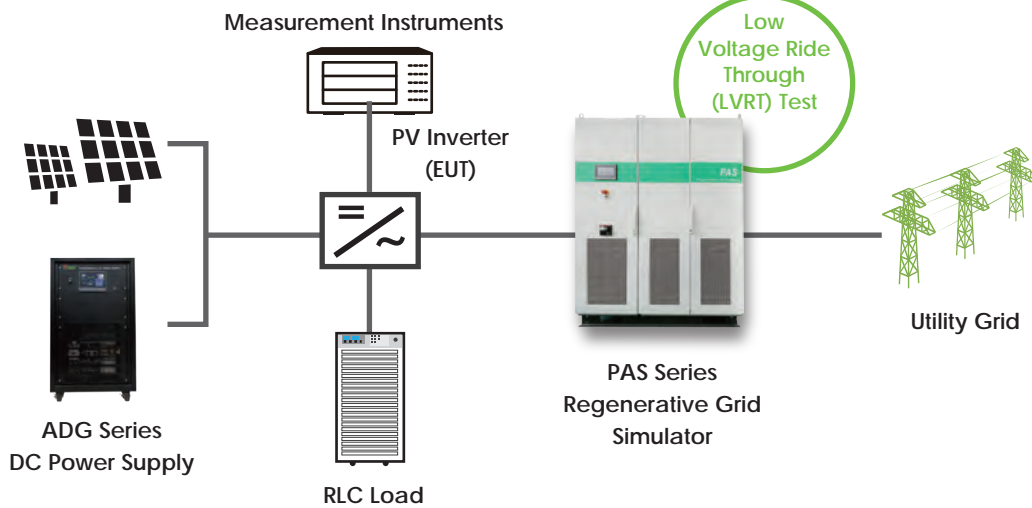


NOTE

During the manufacturing process, server needs to be tested under severe environment for durability in order to find the defects and improve its reliability. The EUT also need to do a series of tests like stability, integrity, or EMI compatibility test. The ADG series or AFV+ series, can provide high quality and stable DC or AC power source for powering up the server devices and simulate different variation tests.

3

PV Inverter Test System

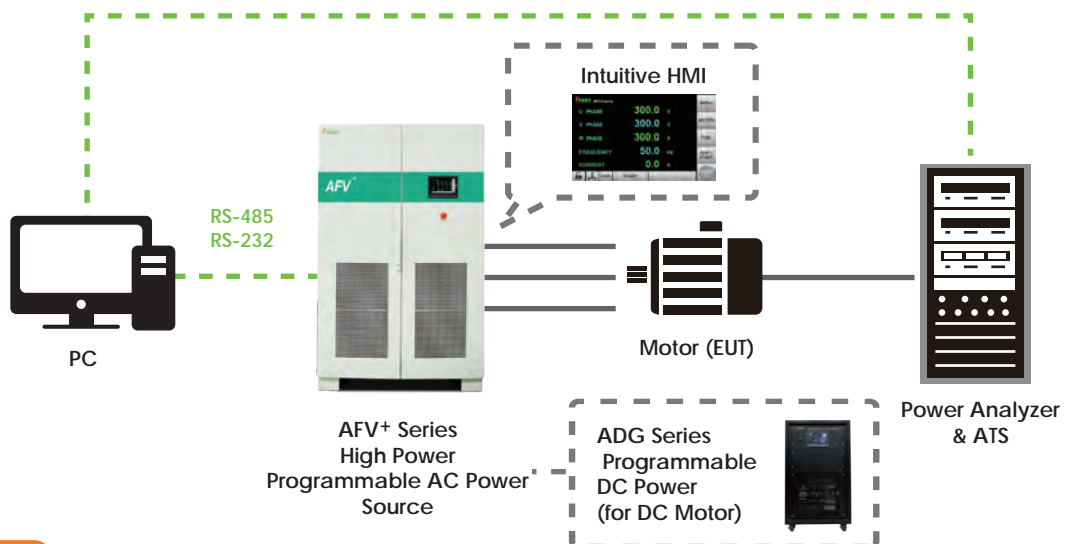


NOTE

With the rapid development of smart grid, solar power has become a major source for renewable energy. A PV system is a device that converts DC power from sunlight into AC power, and PV inverter is a key component of the system. Preen's PAS series is used to simulate various grid systems, and it can simulate compliance test for UL 1741, BDEW and other related testing standards or PV inverter regulations.

4

Motor Testing Applications

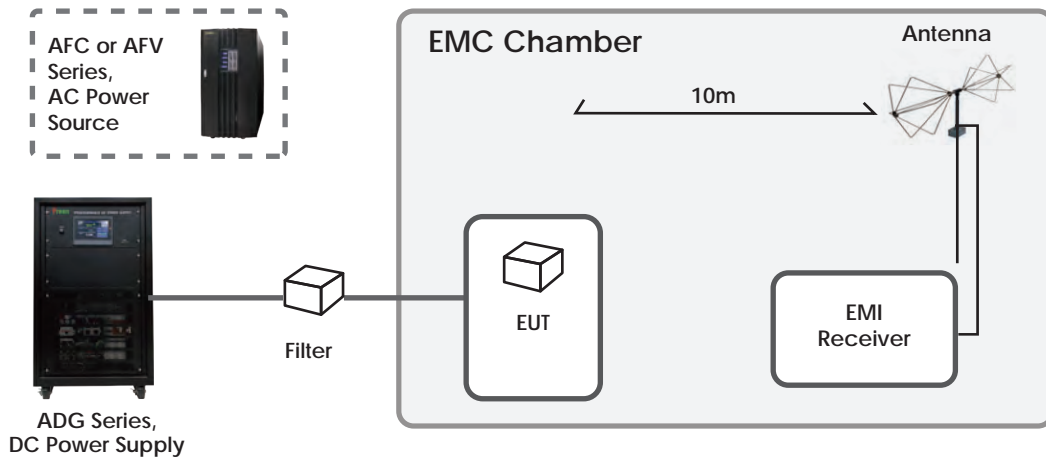


NOTE

The series of test for compressors and motors include, for example, locked rotor test, cooling capability, performance test, residual moisture content, start-up endurance and etc. during production and R&D development for different standards. Preen's AFV+ series or ADG serie can provides a stable and clean power source for powering up the testing motor under different conditions.

5

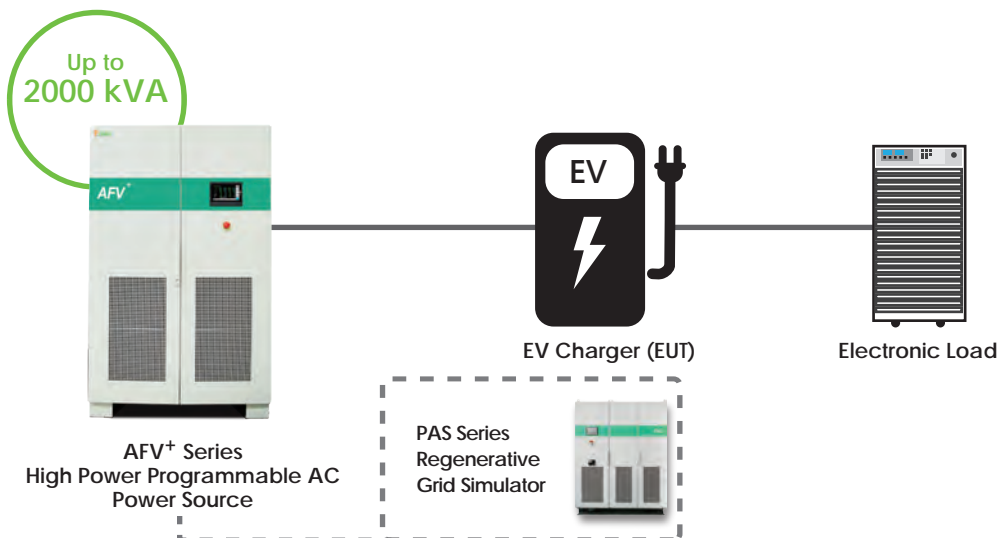
EMC Chamber Power



NOTE Electromagnetic compatibility (EMC) is a comprehensive assessment of electronic products' emission (EMI) and immunity (EMS). It is one of the most important indicators of a product's quality. In the EMC test, an adjustable, reliable and low interference AC power source or DC power supply is essential to obtain precision measurement. Preen's AC source, AFC and AFV series, and DC power supply, ADG series, are ideal chamber power for a variety of EMC applications.

6

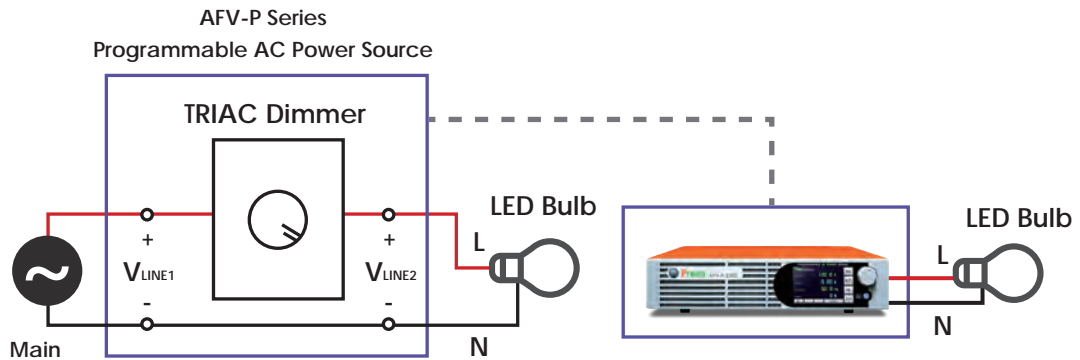
EV Charger Testing Applications



NOTE Before EV charger's ready for installation, it has to do a series of tests to ensure its reliability and safety. For example, input AC characteristic test, control signal test, performance test, safety features and etc. are required test items. Preen's AFV+ series can provide the variable power source or PAS series can source or sink power for testing bi-directional EV charger.

7

LED TRIAC Dimmer Simulation

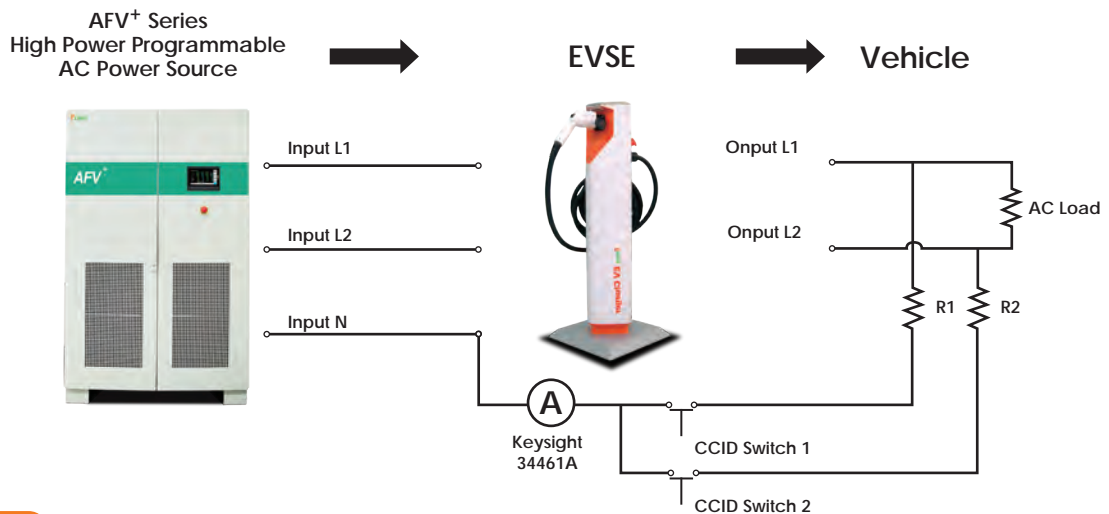


NOTE

AFV-P series can simulate output of TRIAC dimmer by controlling the phase angle so as to achieve accurate LED phase angle control output. The simulation of Leading Edge Dimming and Trailing Edge Dimming enables the R&D and quality assurance personnel to test and certify the characteristic of LED bulb, and improve the efficiency of production and testing. It is more accurate and convenient than the traditional dimming control.

8

EV Charger CCID Leakage Current Testing Application



NOTE

This system mainly provides electric performance test and communication protocol test of AC charger, and optimizes and integrates the testing items of related standards. It can simulate the simultaneous output and communication operation of the charger to test whether the magnetic field generated by the high-capacity transmission will interfere with the communication. And it also can simulate the corresponding protection of the charger when the signal voltage of control pilot changes during the charging process.

AC Power Source Selection Guide

Programmable Models

Series	AFV-P	PWF		AFV	AFV+ ^{NEW}
		L model	M model		
Output Phase	1Ø	3Ø	3Ø	1Ø / 3Ø	1Ø / 3Ø
Output Power	0.6-5kVA	20-200kVA	20-75kVA	10-2000kVA	10-2000kVA
Output Voltage	0-310V	0-300V	0-150V	0-300V	0-310V
Output Frequency	A : 15-1000Hz B : 40-500Hz	45-500Hz	300-800Hz	45-65Hz 45-500Hz(opt.)	A : 45-500Hz B : 45-120Hz C : 300-840Hz
Total Harmonic Distortion (THD)	≤ 0.3-0.8%	≤ 2%	≤ 2%	≤ 2%	≤ 0.5%
Load Regulation	≤ 0.07%	≤ 1%	≤ 1%	≤ 1%	≤ 0.5%
Efficiency	≥ 77-80%	≥ 85-90%	≥ 85-90%	≥ 85-90%	≥ 85-90%
DC Output	●	-	-	-	-
Step & Gradual (Ramp)	●	○	○	○	○
Transient	●	-	-	-	-
Start & End Angle Setting	○	-	-	-	Start Angle Setting(opt.)
Three Phase Independent Adjustment	-	○	△	△	○
Phase Angle Control	-	○	△	△	△
Sync. Signal	○	-	-	-	-
Soft Start	○	△	△	△	○
Remote Sense	○	-	-	-	△
Interface	RS-232	○	○	○	○
	RS-422	-	-	○	○
	RS-485	○	○	○	○
	USB	○	△	-	-
	Ethernet	○	△	△	△
	GPIO	△	△	△	△
	Analog	△	-	-	-
HMI	Touch Screen	Touch Screen	Touch Screen	Touch Screen	Touch Screen
Other Features	Response time ≤ 300us	With Overload Capability	High Power Models Available	High Power Models Available	New Remote Control Software
	Inrush Current ≥ 4.5 time of max.output current (RMS)				
	The Height is 2U (up to 2.5kVA) / 4U (5kVA) Only				

General Models

Series	AFC	AMF
Output Power	0.5-2000kVA	0.5-300kVA
Output Voltage	5-300V	115V ±10%
Output Frequency	47-63Hz 50Hz/60Hz 45-500Hz(opt.)	350-450Hz 400Hz(Fixed)
Total Harmonic Distortion (THD)	≤ 2-3%	≤ 2-3%
Load Regulation	≤ 1%	≤ 1-1.5%
Efficiency	≥ 85-90%	-
DC Output	-	-
Step & Gradual (Ramp)	-	-
Transient	-	-
Start & End Angle Setting	-	-
Three Phase Independent Adjustment	-	-
Phase Angle Control	-	-
Sync. Signal	-	-
Soft Start	-	-
Remote Sense	-	-
Interface	-	-
HMI	△ (control only)	△ (control only)
Other Features	LED & Knob operation	LED & Knob operation
		With Overload Capability
		Trailer / Stand-Alone

Industry-Specific Models

Series	PAS
Output Phase	3Ø
Output Power	30-2000kVA
Output Voltage	0-300V
Output Frequency	45-65Hz 40-70Hz (opt.)
Total Harmonic Distortion (THD)	≤ 2%
Load Regulation	≤ 1%
Power Factor	0.99
Efficiency	≥ 92%
Step & Gradual (Ramp)	○
Regenerative Function	●
Phase Angle Control	△
Three Phase Independent Adjustment	△
Soft Start	△
Interface	RS-232
	RS-485
	USB
	Ethernet
	GPIO
HMI	Touch Screen Operation
Other Features	With Low Voltage Ride Through (LVRT) Simulation

Series	AMV
Output Phase	3Ø
Output Power	30-180kVA
Output Voltage	115V/200V±10%
Output Frequency	300-500Hz (Stand-Alone) 400Hz (Trailer)
Total Harmonic Distortion (THD)	≤ 2%
Load Regulation	≤ 1% (Less than 30% unbalanced load)
Power Factor	0.94
Efficiency	≥ 92%
Protection Level	IP54
Trailer/ Stand-Alone	○
EF signal	○
Dual output	△
AC + DC in One Unit	△
interface	RS-485
HMI	VFD
Other Features	Overload Capability
	Rugged Design for Harsh Environment
	Universal Design for Trailer and Stand-Alone Models
	Refer to MIL-STD-704F Up to 34 Error Code

Series	BPS
Output Phase	3Ø
Output Power	100-2000kVA
Output Voltage	440V±5%
Output Frequency	47-63Hz / 50Hz / 60Hz
Total Harmonic Distortion (THD)	≤ 3%
Load Regulation	≤ 1%-2.5%
Power Factor	0.85-0.95
Efficiency	≥ 85-95%
Protection Level	IP54
HMI	LED & Knob Operation
Other Features	Overload Capability
	With Outdoor Container

- Standard (For this series only)
- Standard
- △ Optional
- None

Product Applications



The Best Choice for Grid Abnormal Simulation

Not only provide simulation for standard voltage and frequency, Preen's AFV-P series can also simulate sags, surges, dropouts and spike of mains supply, covering various power conditions and verification items. Featured with DC output and outstanding output performance, AFV-P series has been widely used in motor, home appliance, military, aircraft and power module industries.

**Output Voltage
Up to 1240V**

Ideal for all kinds of application

**Output Frequency
Up to 1000Hz**

Suitable for defense and military industries.

THD \leq 0.3%

High output performance

- **Power Line Disturbance simulation (PLD)** for pre-compliance tests of IEC-61000-4-11/14/28 etc.
- **Intuitive Local Operation** providing quick hand-on experience.

**9 Times
Inrush
Capability***



*for 600VA and 1250VA models only

AFV-P Series



Output Power
600VA~5kVA

AFV-P Series High Performance Programmable AC Power Source

Preen's AFV-P Series is a programmable AC power source with DC output and precision measurement. This compact power source provides clean power with THD less than 0.3% at 50/60 Hz and it delivers output voltage of 0-310 V and frequency of 40-500 Hz (opt. 15-1000 Hz). It is ideal for commercial, defense and aerospace test applications from design verification, quality assurance, ATE to mass production.

AFV-P series comprises measurement features of rms voltage, rms current, true power, apparent power, power factor, crest factor, reactive power and etc. Its 5" touch screen with rotary knob allows quick adjustments and configurations of voltage, current and frequency. Total 1200 test steps in 50 built-in memories and transient generation functions allow simulations of voltage variations, surges, drops and frequency disturbances. Users can set up starting and ending phase angle from 0 - 360 degrees and they can also remotely control AFV-P via standard interfaces. Free control software and LabVIEW driver are available for easy programming and remote control.

Interfaces

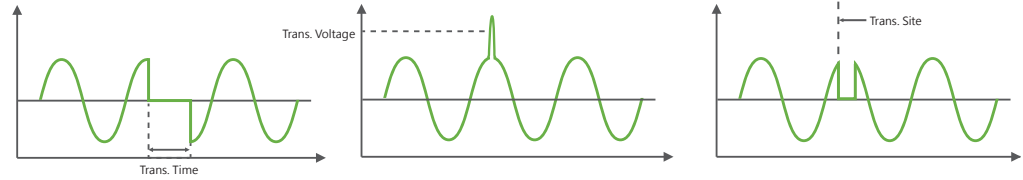
Standard	Option
Ethernet	GPIB
USB	Analog
RS-232	
RS-485	

Applications

- Home Appliance
- Laboratory/Certification Bureau
- Industrial Power Supply
- Electric Vehicles
- Motor & Compressor
- IT / SMT Production Line
- Aerospace & Defense
- Transportation

- Compact and high power density: 600VA to 2500VA is only 2U and 5000VA is 4U.
- AC source with DC output: extend the applications to DC testing.
- Wide output voltage of 0-310V and output frequency of 15-1000Hz.
- THD is only under 0.3 % when output power is under 100 Hz.
- Ideal for inrush current : capable to deliver up to 4.5 times of peak current.
- Start/End phase angle: users can define the start and end phase angle from 0° to 359°.
- Current foldback feature: have output current maintain constant based on the load which output voltage varies.
- STEP and RAMP function: ideal for voltage and frequency variation tests and effectively reduces the inrush current during motor startup.
- TRANSIENT generation provides users an easy setup for power line disturbance (PLD) simulation.
- Users can quickly set and view the parameters via 5 inches touch panel or rotary knob, which provides an easy operation and measurement display.
- Free control software and LabVIEW driver: allow users to easily program and remote control.
- High slew rate: less than 300 μ s from 0~90% output voltage.

Programmable Simulations: Transient Feature

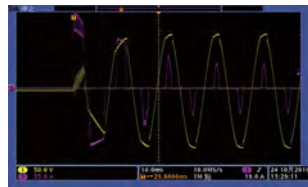


Through the Transient feature, user can have more control over the waveform by inserting disturbance at user-defined locations with user-defined drop/rise range. This is a useful feature to simulate different pre-compliance tests and various types of power line disturbance, such as surge, sag, spike and dropout, for immunity tests.

Ideal for High Inrush Current EUT & Start / End Angle Setting



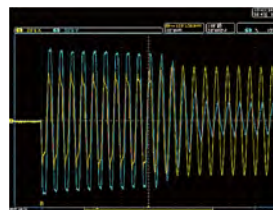
Power Supply Testing



AFV-P-1250
Waveform with 9 times of max. output current



Motor Type Testing



Capable to sustain high start inrush current generated by motor or compressor.

The AFV-P series can provide up to 4.5 times of peak current from its maximum rated current, which is ideal for inrush current test, such as electric motor test. Additionally, the AFV-P series allows user to set the start angle/end angle for the product output, which is suitable for testing switching power supplies.

Intuitive Touch Screen Control



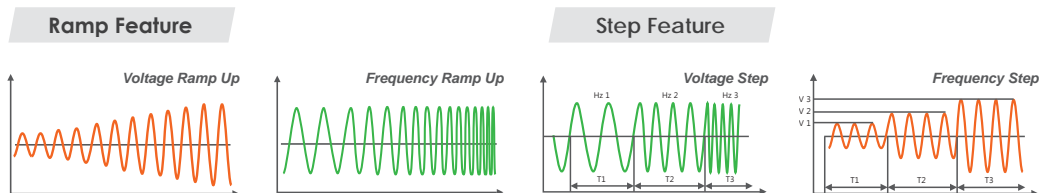
To create a complex sequence on the HMI is no longer a difficult task for AFV-P series. The 5 inches touch screen provides users a clear display and an easy set up. AFV-P is also equipped with a rotary knob for better fine tune adjustments.

Multiple Communication Interfaces & Control Software



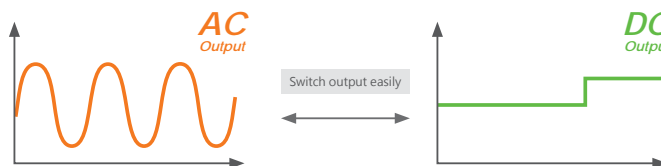
The AFV-P series is equipped with communication interfaces of USB, Ethernet, RS232, and RS485, so users no longer need to spend extra on remote interface card. Only GPIB and analog are optional interfaces. AFV-P also provides control software with comprehensive programming features and LabView driver, which help users to easily control the AC source without further needs of programming.

Programmable Simulation Functions: Step & Ramp Features



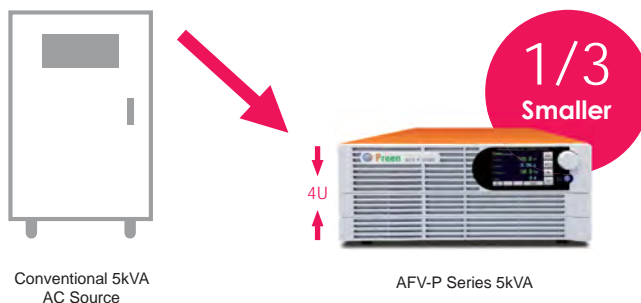
Ramp and Step feature allows users to define slew rate of voltage and frequency at each Step. Users can set the rise/fall time, time unit and voltage/frequency change between Steps to create a wide range of waveform. Additionally, Ramp feature can effectively reduce the inrush current by simulating soft start for motor or compressor startup.

AC Output & DC Output



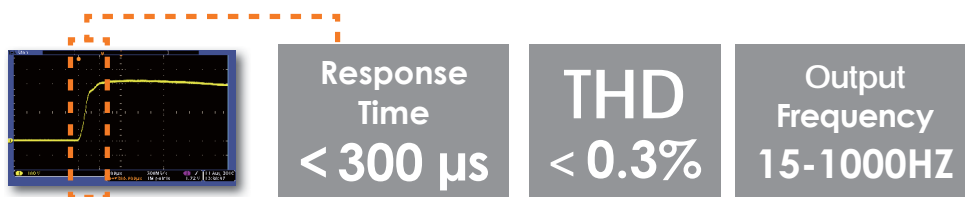
AFV-P series not only provide AC output to simulate real world grid conditions, but also can generate DC output based on user's settings. It is an ideal cost-effective power testing solution for R&D and certification laboratories.

Compact & High Power Density



AFV-P series has the industry-leading power density and rack-mount type design for easy system integration. 2500VA only comes in 2U and 5000VA is only in 4U.

Fast Response & High Stability



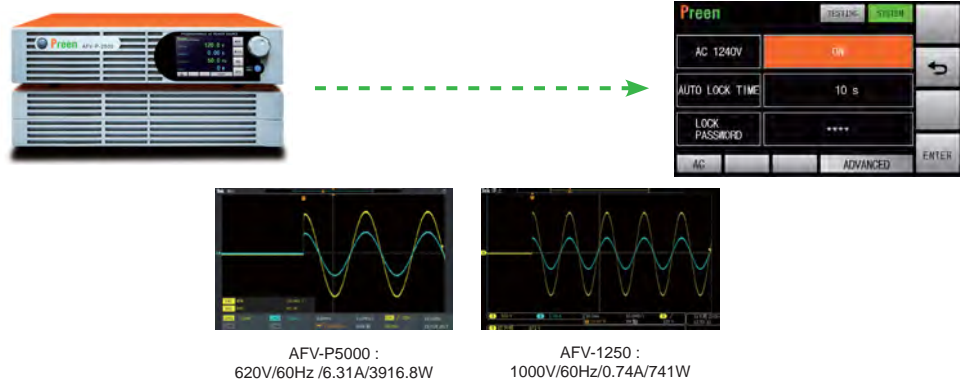
AFV-P series is a high performance AC source with fast response time, low total harmonic distortion and tight voltage regulation. With its technically advanced features, users can easily simulate power line disturbance, such as sags, surges, dropouts and spikes.

Screen Lock Password Function



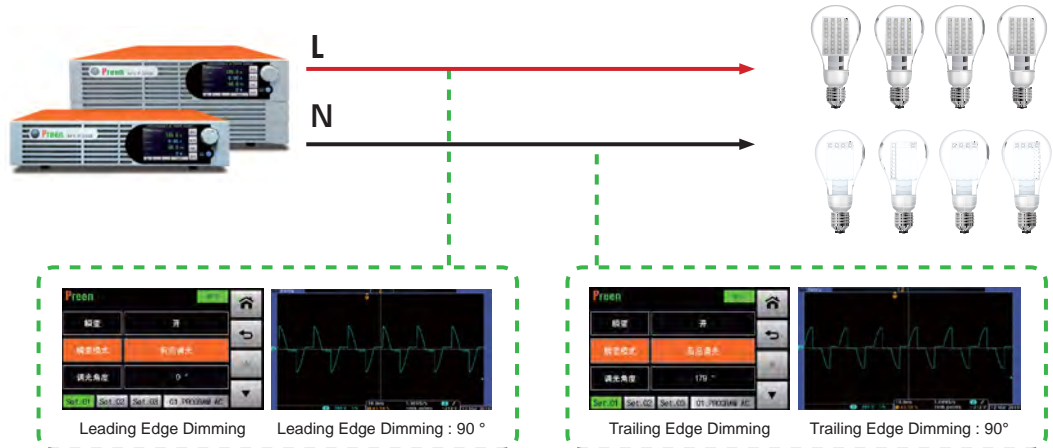
In order to prevent the operator from changing the set parameters by mistake, the new Screen Lock Password function is added on AFV-P series, so that the operator can only perform the output of the device, and only authorized personnel has the password to unlock the screen and edit parameters.

High-Voltage Output 620V/1240V (Opt.)



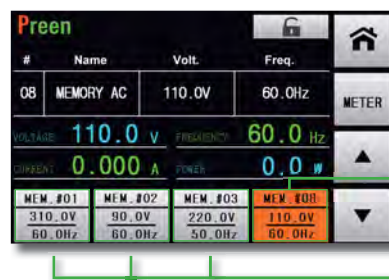
AFV-P series provides optional high-voltage output 620V or 1240V to meet the high voltage requirements on simulations of wide input voltage variations (15%~20%), over-voltage and other extreme conditions. For example, it can simulate US 277V with at least 15% and other wider range of over-voltage testing.

LED TRIAC Dimmer (Opt.)



AFV-P series provides optional LED TRIAC Dimmer function, which can simulate output of TRIAC dimmer. The user can select whether to perform LEADING EDGE DIMMING or TRAILING EDGE DIMMING via HMI. Compared with traditional TRIAC dimming, the output waveform can be controlled more accurately and effectively.

Shortcuts of Output Memory set (BASIC Mode)

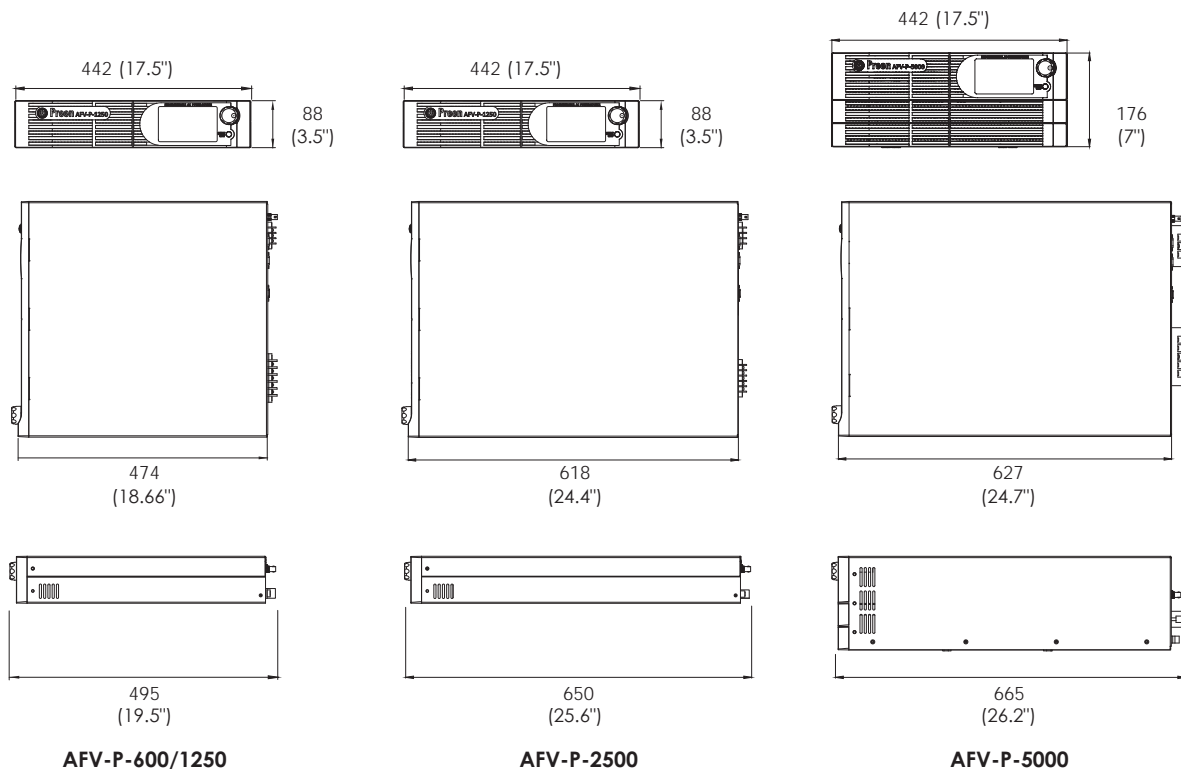


- 1 One user-assigned shortcut from 50 memory sets
- 2 Three fixed shortcuts from first three memory sets

AFV-P series can display 4 shortcuts of Memory Sets in BASIC Mode, and the voltage and frequency setting of each Memory Sets can be clearly read. The user can quickly switch the output by selecting the shortcuts. Also, the Screen Lock function is also provided for preventing operators from accidentally changing shortcuts during output and causing DUT damage.

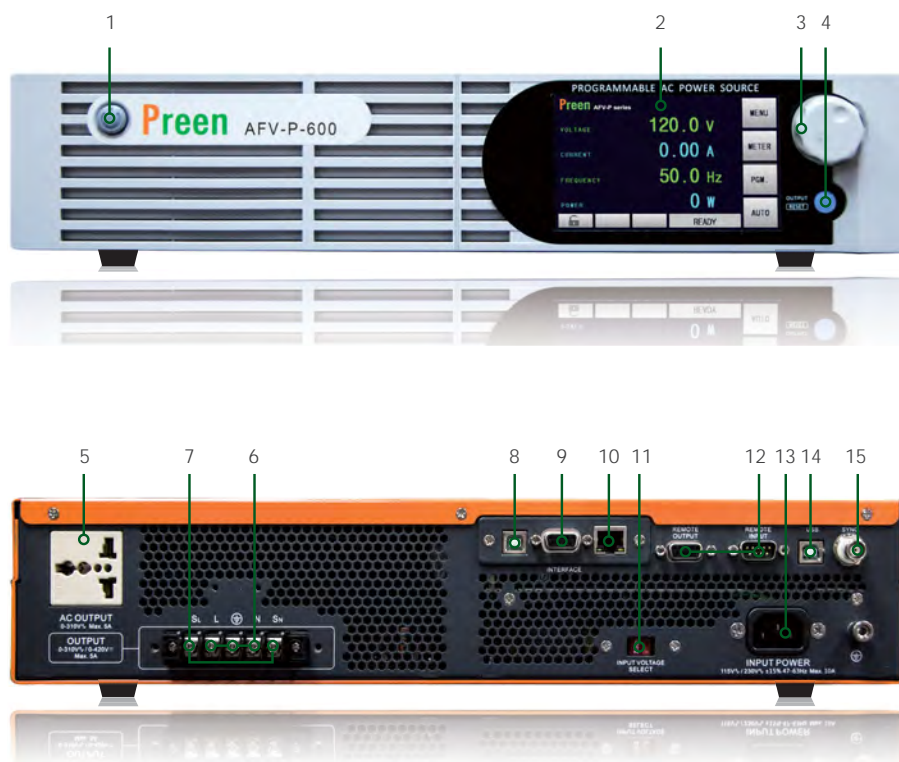
DIMENSIONS

Unit : mm (inch)



PANEL DESCRIPTION

1. Power Switch
2. Touch Screen HMI
3. Rotary Knob
4. Output / Reset
5. AC Output Socket
6. Output Terminals
7. Remote Sense
8. USB Interface
9. RS-232 / RS-485
10. Ethernet Interface
11. Input Voltage Selector
12. PLC Remote In/Out
13. Input Socket *
14. USB Interface (for firmware update)
15. Sync. Signal I/O



* AFV-P-1250, AFV-P-2500, AFV-P-5000 have input terminals.

SPECIFICATIONS

AFV-P Series Single-Phase Output (600VA - 5kVA)

Model	AFV-P-600	AFV-P-1250	AFV-P-2500	AFV-P-5000	
INPUT					
Phase	Single				
Voltage	98-132VAC / 196-264VAC		196-264VAC(opt. 175-235VAC)		
Frequency	47 - 63 Hz (opt. 400Hz)				
Max. Current	10A	20A	20A	40A	
OUTPUT					
Power	VA	600VA	1250VA	2500VA	5000VA
	W	500W	1000W	2000W	4000W
Phase	1Ø / 2 Wire + G				
Voltage Ranges	0 - 155Vrms / 0 - 310Vrms, user selectable				
Voltage Accuracy	± (0.5 % of setting + 0.1% F.S.)				
Voltage Resolution	0.1Vrms				
Frequency	A : 15-1000Hz , B : 40-500Hz				
Frequency Accuracy	±0.02%				
Frequency Resolution	0.1Hz, 1Hz				
Max. Current (RMS)	5A / 2.5A	10A / 5A	20A / 10A	40A / 20A	
Max. Current (Peak)	22.5A / 11.3A	45A / 22.5A	90A / 45A	180A / 90A	
Total Harmonic Distortion (THD)	≤ 0.3% at 40-100Hz, ≤ 0.5% at 101-500Hz, ≤ 0.8% at 501-1000Hz (Resistive Load)				
Line Regulation	± 0.1V				
Load Regulation	≤ 0.07% F.S. (Resistive Load)				
Response Time	≤ 300µs				
Crest Factor	≥ 3				
Inrush Current	≥ 4.5 time of max.output current (R.M.S)				
DC OUTPUT					
Power	300W	600W	1250W	2500W	
Voltage Ranges	0 - 210V / 0 - 420V				
Max. Current	2.5A / 1.25A	5A / 2.5A	10A / 5A	20A / 10A	
Ripple & Noise (RMS)	≤ 0.15%		≤ 0.24%		
MEASUREMENT					
Voltage Range	0 - 420Vrms				
Voltage Accuracy	±(0.2% of reading + 5 counts)				
Voltage Resolution	0.1V				
Frequency Range	15 - 1000Hz				
Frequency Accuracy	±0.1Hz at 40.0 - 500Hz, ±0.2Hz at 501 - 1000Hz				
Frequency Resolution	0.1Hz				
Current Range	Hi: 1 - 12A / Lo: 0.005 - 1.2A		Hi: 2 - 24A / Lo: 0.005 - 2.4A		
Current Accuracy	± (1% of reading + 5 counts) at 40.0 - 500Hz, ± (1% of reading + 10 counts) at 501 - 1000Hz ²				
Current Resolution	Hi: 0.01A / Lo: 0.001A		Hi: 0.01A		
Peak Current Range	0 - 45A		0 - 90A		
Peak Current Accuracy	± (1% of reading + 5 counts) at 40.0 - 500Hz, ± (1% of reading + 10 counts) at 501 - 1000Hz		± (1% F.S.+ 5 counts)		
Peak Current Resolution	0.1A				
Power Range	Hi: 100 - 1200W / Lo: 0 - 120W		Hi: 200 - 2400W / Lo: 0 - 240W		
Power Accuracy	± (2% of reading + 10 counts) @ 40 - 500Hz, ± (2% of reading + 15 counts) @ 501 - 1000Hz				
Power Resolution	Hi: 1W / Lo: 0.1W		Hi: 1W		
GENERAL					
Efficiency	≥ 77% at max. power		≥ 80% at max. power		
Protection	OVP , UVP , OCP, LVP, OPP, OTP, RCP, Fan Fail and AMP Fail				
Remote Interface	Standard: RS232 / RS485 / Ethernet / USB / PLC Remote In&Out, Optional: GPIB / Analog Control				
Over Current Foldback	Output Current maintains constant based on the load while output voltage varies				
Output Sync Signal	ON, Event for Voltage or Frequency Change (Output signal 5V , BNC type)				
Memories	50 Memories & 1200 Steps (24 Steps/Memory)				
Operating Temperature	0°C - 40°C				
Dimensions(HxWxD)	88 x 442 x 495mm		88 x 442 x 650mm		
	3.5 x 17.4 x 19.5inch		3.5 x 17.4 x 25.6inch		
Weight	16kg		31.3kg		
	35.3lbs		69lbs		
	20kg		61.5kg		
	44.1lbs		135.6lbs		

* 1 All specifications are subject to change without notice.

* 2 AFV-P-2500 is ±(1% F.S. + 5 counts)

ORDERING INFORMATION

AFV-P Series Single-Phase Output (600VA - 5kVA)

Model Number	Description
AFV-P-600A	High Performance Programmable AC Power Source(600VA/310VAC/15-1000Hz)
AFV-P-1250A	High Performance Programmable AC Power Source(1250VA/310VAC/15-1000Hz)
AFV-P-2500A	High Performance Programmable AC Power Source(2500VA/310VAC/15-1000Hz)
AFV-P-5000A	High Performance Programmable AC Power Source(5000VA/310VAC/15-1000Hz)
AFV-P-600B	High Performance Programmable AC Power Source(600VA/310VAC/40-500Hz)
AFV-P-1250B	High Performance Programmable AC Power Source(1250VA/310VAC/40-500Hz)
AFV-P-2500B	High Performance Programmable AC Power Source(2500VA/310VAC/40-500Hz)
AFV-P-5000B	High Performance Programmable AC Power Source(5000VA/310VAC/40-500Hz)
AFV-P-T620A	620V Transformer Box(AFV-P-600 & AFV-P-1250)
AFV-P-T620B	620V Transformer Box(AFV-P-2500)
AFV-P-T620C	620V Transformer Box(AFV-P-5000)
AFV-P-T1240A	1240V Transformer Box(AFV-P-600 & AFV-P-1250)
AFV-P-T1240B	1240V Transformer Box(AFV-P-2500)
AFV-P-T1240C	1240V Transformer Box(AFV-P-5000)
AFV-P-001	RS-232/RS-485/USB/Ethernet Interface
AFV-P-002	GPIB Interface
AFV-P-003	Analog Control Interface
AFV-P-004	RS232 Cable (1.8m / Female to Male)
AFV-P-008	Input Power Cable 1.8M (for 600VA)
AFV-P-009	Input Power Cable 3M (for 1.25kVA/2.5kVA)
AFV-P-010	Input Power Cable 5M (for 5kVA)
AFV-P-011	Input 400Hz (at input 110V/220V $\pm 10\%$)
AFV-P-012	Output 320V (at input 110V/220V $\pm 10\%$)
AFV-P-013	LED TRIAC Dimmer Simulation
AFV-P-014	Output 9 times of Inrush Current (AFV-P-600 & AFV-P-1250)

The Ideal AC Source for High Power Testing Applications

NEW AFV⁺ series 10kVA~2000kVA

New Version of High Power Programmable AC Power Source

The AFV⁺ series features low THD (total harmonics distortion), high reliability, multiple programming features, intuitive operations and leading power level. This latest high power programmable AC Power source of Preen can simulate different power line disturbances and record error logs. The new control software for the AFV⁺ series also provides great convenience for remote control and monitoring .

THD ≤ 0.5%

Leading Performance on Harmonic Distortions

Regulation ≤ 0.5%

Precise and Stable Output Performance

Power Line Disturbances

To Simulate Phase Unbalance, Phase Shifting and Phase Loss

- **Intuitive Touch Screen Control** New Version of Easy-to-use Local Operations
- **New Control Software** User-Friendly Control with Comprehensive Functions



AFV⁺ Series

RoHS Compliant CE



Output Power
10kVA~2000kVA

AFV⁺ Series High Performance Programmable AC Power Source

The AFV⁺ series is a high power programmable AC power source utilizing advanced PWM technology to deliver power with THD ≤ 0.5% and up to 2000kVA. The output frequency is 45~65Hz with accuracy of ± 0.02%, and user can select 45~500Hz option to expand the frequency. The AFV⁺ series is ideal to simulate different region's voltage and frequency conditions, and can cover applications for home appliance, motor, medical equipment, lighting and EMC laboratory.

The AFV⁺ series features STEP and RAMP programmable functions to easily simulate single or continuous output changes. Three phase independent adjustment, optional remote sensing and optional phase angle adjustment all provide convenient control to simulate different kinds of line disturbance. These features are ideal for test applications of R&D design verification, quality assurance and production checks. For remote control, the AFV⁺ series has standard RS-232/RS-485/RS-422 interface card and optional GPIB and Ethernet interfaces for easy setup and programming.

Interfaces

Standard	Option
RS-232	GPIB
RS-422	Ethernet
RS-485	

Applications

- Home Appliance
- Laboratory/Certification Bureau
- Industrial Power Supply
- Electric Vehicles
- Motor & Compressor
- IT / SMT Production Line
- Renewable Energy
- Medical Industry
- Transportation

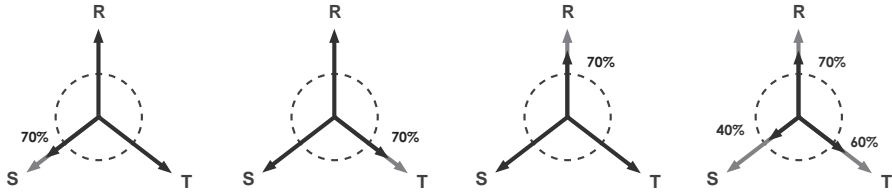
- Wide Output Power Range: 10kVA~2000kVA.
- 0~310V output voltage and 45~65Hz output frequency (opt. 45~500Hz)
- The built-in STEP and RAMP functions are ideal to simulate different types of power line disturbances.
- The SOFT START feature can effectively reduce inrush current caused by motor startup.
- Via the Three Phase Independent Adjustment function, the AFV⁺ series can deliver each phase voltage differently to multiple single-phase DUTs.
- User can simulate phase shift with the optional Phase Angle Control function.
- The 7" touch screen shows parameters of voltage, current, frequency, real power, apparent power and sum of each phase's parameters.
- Complete protections include UVP, OVP, OCP, input UVP/OVP, OTP and other 29 protections. The built-in Error Log can record up to 255 error messages for easier trouble shooting.
- CE & RoHS certified.
- Optional remote sensing feature is available to improve precision.



Intuitive 7" Touch Screen



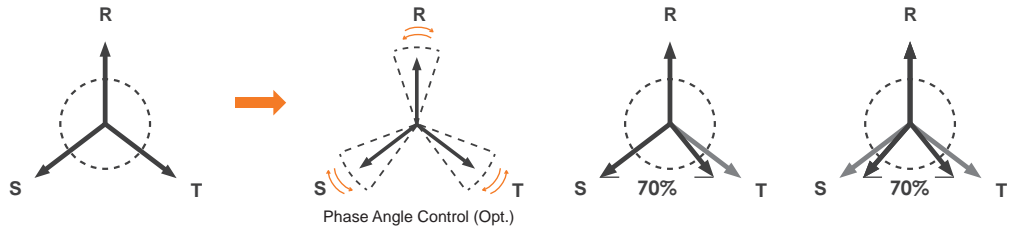
The AFV+ series employs 7" touch screen to provide intuitive and easy-to-use control and display. Users can quickly access output settings and measurements, including voltage, current, frequency, real power, apparent power, PF and sum of each phase's parameters. Complex sequences and system configurations can also be easily done via the touch screen.

Three Phase Independent Adjustment



The Three Phase Independent Adjustment function of AFV+ series can simulate advanced power line disturbance, such as three-phase voltage unbalanced or lost-phase, which can further meet up with testing standard of IEC61000-4-34 (GB/T 17626-34), by setting output voltage of each phase independently. User can simply press the screen icon to switch between balanced voltage setting  and independent voltage adjustment .

Phase Angle Control (Opt.)

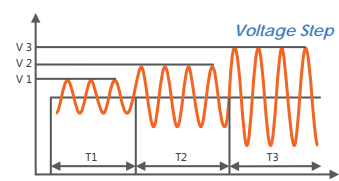
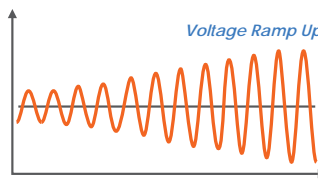


The AFV+ series not only can set three-phase voltage independently, but also can set the phase angle between three phases via the optional Phase Angle Adjustment, for example, user can set phase angle from 120 to 70, to simulate phase shift for different power conditions.

RAMP and STEP programming features



STEP Setting (24 sequences)



The AFV+ series' RAMP feature has up to 12 sequences available with parameters of voltage, frequency and time, and the STEP feature has up to 24 sequences available with parameters of voltage, frequency and time. These features provide an easy method to simulate different kinds of power line disturbance.

Overload capacity (Opt.)

200%	2 sec
150%	5 sec
125%	15 sec

An electric-motor-type UUT (Unit under Test), such as motor, compressor or water pump, generates great activation current when activating. As a result, users need to purchase a power supply with much higher capacity than the UUT itself. AFV+ series has an optional overload capacity that can endure/ achieve 200% overload capacity, easy to activate products of electric motor type that require high activation current.

Remote Interfaces



For easy setup and programming, the AFV+ series has standard RS-232/RS-485/RS-422 interface card. User also can select optional GPIB and Ethernet interfaces for different remote control requirements.

Broader frequency and higher voltage

1

UP TO

840Hz

2

UP TO

400V_(L-N) or 600V_(L-N)



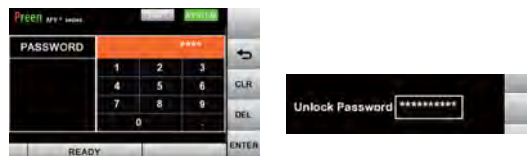
AFV+ series can output optional frequency up to 840Hz to meet the needs of defense and aircraft industries. It can also be used for double frequency test of transformer. Moreover, AFV+ series can output up to 400V(L-N)/690V(L-L) or 600V(L-N)/1039V(L-L) (optional) for motors that need higher input voltage

Remote Control Software: Preen Program



The AFV+ series offers complimentary remote control software, Preen Program. This graphical user interface provides easy settings and user-friendly configurations for users to fully control the unit. The Preen Program includes GENERAL mode or PROGRAMMABLE mode with STEP and RAMP features available. The preview waveform and report functions also greatly enhance convenience for on review parameters and results before or after testing.

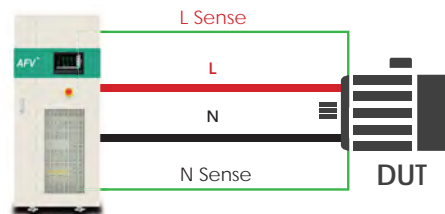
Screen lock password function



Screen lock password setting page

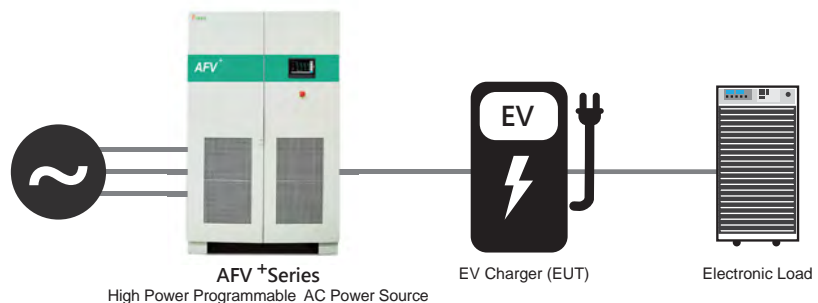
In order to prevent the operator from changing the set parameters by mistake, the new Screen Lock Password function is added on AFV+ series, so that the operator can only perform the output of the device, and only authorized personnel has the password to unlock the screen and edit parameters, which help to increase the security and effectiveness of testing.

Remote Sensing (Opt.)



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

EV charger application case



Before EV charger's ready for installation, it has to do a series of tests to ensure its reliability and safety. For example, input AC characteristic test, control signal test, performance test, safety features etc. are required test items. AFV+ series is the ideal power source to perform high quality and stable EV charger testing.

SPECIFICATIONS

AFV+ Series Single-Phase Output (10kVA - 150kVA)

Model	AFV-PLUS-31010	AFV-PLUS-31015	AFV-PLUS-31020	AFV-PLUS-31030	AFV-PLUS-31045	AFV-PLUS-31060	AFV-PLUS-31075	AFV-PLUS-31100	AFV-PLUS-31120	AFV-PLUS-31150	
INPUT											
Phase	3Ø / 3Wire + G										
Voltage ^{*1}	380 Vac ±15% (option: 200 Vac, 208 Vac, 400 Vac, or 480 Vac)										
Frequency	47 - 63Hz										
Max. Current ^{*2}	18.8A	28.1A	37.5A	56.3A	84.4A	112.5A	140.7A	198.6A	238.3A	297.9A	
Power Factor	≥0.9 (Max. Power)										
OUTPUT											
Power (VA)	10kVA	15kVA	20kVA	30kVA	45kVA	60kVA	75kVA	100kVA	120kVA	150kVA	
Phase	1Ø / 2 Wire + G										
Voltage Ranges	Low (V) 0V-155.0V (L-N)										
	High (V) 0V-310.0V (L-N)										
Voltage Resolution	0.1V										
Voltage Accuracy	0.5% F.S.+ 4 counts										
Frequency Range ^{*3}	A : 45-500Hz ; B : 45-120Hz										
Frequency Resolution	0.1Hz										
Frequency Accuracy	±0.02% F.S.										
Max. Current (RMS)	83.3A	125A	166.7A	250A	375A	500A	625A	833.3A	1000A	1250A	
	41.7A	62.5A	83.3A	125A	187.5A	250A	312.5A	416.7A	500A	625A	
Line Regulation	< 0.5%										
Load Regulation	≤ 0.5% (Resistive Load)										
Total Harmonic Distortion (THD) ^{*4}	≤ 0.5% (Resistive Load)										
Response Time	≤ 1ms										
Crest Factor	≥3										
MEASUREMENT											
Voltage Range	0V-310.0V										
Voltage Resolution	0.1V										
Voltage Accuracy	0.5% F.S.+ 4 counts										
Frequency Range	45.0-500.0Hz										
Frequency Resolution	0.01Hz										
Frequency Accuracy	±0.02% F.S.										
Current Range (RMS)	0 - 83.3A	0 - 125A	0 - 166.7A	0 - 250A	0 - 375A	0 - 500A	0 - 625A	0 - 833.3A	0 - 1000A	0 - 1250A	
Current Resolution (RMS)	0.1A										
Current Accuracy (RMS)	0.5% F.S.+4 counts										
Power Range	0 - 10kW	0 - 15kW	0 - 20kW	0 - 30kW	0 - 45kW	0 - 60kW	0 - 75kW	0 - 100kW	0 - 120kW	0 - 150kW	
Power Resolution	0.1kW										
Power Accuracy	1% F.S.+6 counts										
GENERAL											
Efficiency	≥90% at Max. Power							≥85% at Max. Power			
HMI	Touch Screen, 7" Color TFT LCD										
Program Mode	STEP : 24 sets / 255 cycles. (Volt./Freq./Time) RAMP : 12 sets / 255 cycles. (Volt./Freq./Time)										
Soft Start	Setting : Rated Volt. / Rated Freq. / Start Volt. / Start Freq. / Delay Time / Ramp Time										
Protection	Input : N.F.B, Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Reverse Current, Over Temperature										
Remote Interface	Standard : RS-485 / RS-422 / RS-232 Option : GPIB, Ethernet										
Operational Temperature	0°C~45°C										
Humidity	0~90% (Non condensing)										
Altitude	< 1,500m										
Dimensions (H x W x D) ^{*5}	1045 x 628 x 840 mm (Including wheel)	1440 x 628 x 840 mm (Including wheel)			1645 x 828 x 840 mm (Including wheel)			1900 x 1178x 1200 mm			
	41.1 x 24.7 x 33.1inch (Including wheel)	56.7 x 24.7 x 33.1 inch (Including wheel)			64.8 x 32.6 x 33.1 inch (Including wheel)			74.8 x 46.4 x 47.2 inch			
Weight ^{*5}	230kg	280kg	320kg	450kg	580kg	670kg	710kg	980kg	1135kg	1415kg	
	104.3lbs	127.0lbs	145.1lbs	204.1lbs	263.0lbs	303.9lbs	322.0lbs	444.4lbs	514.7lbs	641.7lbs	

*1 Please contact us for other input voltage specifications. *2 The max. current is based on rated input voltage of 380V. *3 For type A: 45-500Hz, please contact us for output power characteristic curve.

*4 When the output voltage is at Low : 90 - 140V or High 180 - 280V with load power factor of 1. * All specifications are subject to change without notice. The specifications are tested at ambient temperature of 25°C ± 5°C.

*5 Dimensions and weight are for input voltage 380V. Please contact us for dimensions and weight for other input voltage.

SPECIFICATIONS

AFV+ Series Three-Phase Output (10kVA - 120kVA)

Model	AFV-PLUS-33010	AFV-PLUS-33015	AFV-PLUS-33020	AFV-PLUS-33030	AFV-PLUS-33045	AFV-PLUS-33060	AFV-PLUS-33075	AFV-PLUS-33100	AFV-PLUS-33120	
INPUT										
Phase	3Ø / 3Wire + G									
Voltage ^{*1}	380Vac ±15% (option: 200 Vac, 208 Vac, 240Vac, 400Vac, or 480 Vac)									
Frequency	47 - 63Hz									
Max. Current ^{*2}	18.8A	28.1A	37.5A	56.3A	84.4A	112.5A	140.7A	198.6A	238.3A	
Power Factor	≥0.9 (Max. Power)									
OUTPUT										
Power (VA)	10kVA	15kVA	20kVA	30kVA	45kVA	60kVA	75kVA	100kVA	120kVA	
Phase	3Ø / 4 Wire + G									
Voltage Ranges	0V-155.0V (L-N)									
	0V-310.0V (L-N)									
Voltage Resolution	0.1V									
Voltage Accuracy	0.5% F.S.+4 counts									
Frequency Range ^{*3}	A : 45-500Hz ; B : 45-120Hz									
Frequency Resolution	0.1Hz									
Frequency Accuracy	±0.02% F.S.									
Max. Current (RMS)	27.8A	41.7A	55.6A	83.3A	125A	166.7A	208.3A	277.8A	333.3A	
	13.9A	20.8A	27.8A	41.7A	62.5A	83.3A	104.2A	138.9A	166.7A	
Line Regulation	< 0.5%									
Load Regulation	≤ 0.5% (Resistive Load)									
Total Harmonic Distortion (THD) ^{*4}	≤ 0.5% (Resistive Load)									
Response Time	≤ 1ms									
Crest Factor	≥3									
MEASUREMENT										
Voltage Range	0V-310.0V									
Voltage Resolution	0.1V									
Voltage Accuracy	0.5% F.S.+4 counts									
Frequency Range	45.0-500.0Hz									
Frequency Resolution	0.01Hz									
Frequency Accuracy	±0.02% F.S.									
Current Range(RMS)	0 - 27.8A	0 - 41.7A	0 - 55.6A	0 - 83.3A	0 - 125A	0 - 166.7A	0 - 208.3A	0 - 277.8A	0 - 333.3A	
Current Resolution(RMS)	0.1A									
Current Accuracy(RMS)	0.5% F.S.+4 counts									
Power Range	0 - 10kW	0 - 15kW	0 - 20kW	0 - 30kW	0 - 45kW	0 - 60kW	0 - 75kW	0 - 100kW	0 - 120kW	
Power Resolution	0.1kW									
Power Accuracy	1% F.S.+6 counts									
GENERAL										
Efficiency	≥90% at Max. Power							≥85% at Max. Power		
HMI	Touch Screen, 7" Color TFT LCD									
Program Mode	STEP : 24 sets / 255 cycles. (Volt./Freq./Time) RAMP : 12 sets / 255 cycles. (Volt./Freq./Time)									
Soft Start	Setting : Rated Volt. / Rated Freq. / Start Volt. / Start Freq. / Delay Time / Ramp Time									
Three Phase Independent Adjustment	U-N/V-N/W-N, Adjustment 0-310V									
Protection	Input : N.F.B, Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Reverse Current, Over Temperature									
Remote Interface	Standard : RS-485/RS-422/RS-232 Option : GPIB, Ethernet									
Operational Temperature	0°C~45°C									
Humidity	0~90% (Non condensing)									
Altitude	< 1,500m									
Dimensions (H x W x D) ^{*5}	1045 x 628 x 840 mm (Including wheel)	1440 x 628 x 840 mm (Including wheel)			1645 x 828 x 840 mm (Including wheel)		1900 x 1178x 1200 mm			
	41.1 x 24.7 x 33.1inch (Including wheel)	56.7 x 24.7 x 33.1 inch (Including wheel)			64.8 x 32.6 x 33.1 inch (Including wheel)		74.8 x 46.4 x 47.2 inch			
Weight ^{*5}	280kg	305kg	360kg	400kg	560kg	670kg	960kg	1170kg	1450kg	
	617.4lbs	672.5lbs	793.8lbs	882.0lbs	1234.8lbs	1477.4lbs	2116.8lbs	2579.9lbs	3197.3lbs	

*1 Please contact us for other input voltage specifications. *2 The max. current is based on rated input voltage of 380V. *3 For type A: 45-500Hz, please contact us for output power characteristic curve.

*4 When the output voltage is at Low : 90 - 140V or High 180 - 280V with load power factor of 1. * All specifications are subject to change without notice. The specifications are tested at ambient temperature of 25°C ± 5°C

*5 Dimensions and weight are for input voltage 380V. Please contact us for dimensions and weight for other input voltage.

SPECIFICATIONS

AFV+ Series Three-Phase Output (150kVA - 2000kVA)

Model	AFV-PLUS-33150	AFV-PLUS-33200	AFV-PLUS-33300	AFV-PLUS-33400	AFV-PLUS-33500	AFV-PLUS-33600	AFV-PLUS-33800	AFV-PLUS-331000	AFV-PLUS-331200	AFV-PLUS-331500	AFV-PLUS-332000
INPUT											
Phase	3Ø / 3Wire + G										
Voltage ^{*1}	380Vac ±15% (option: 400Vac, 240Vac or 480Vac)										
Frequency	47 - 63Hz										
Max. Current ^{*2}	297.9	397.2	629.1	838.8	1048.5	1258.3	1677.7	2097.1	2516.5	3145.6A	4194.2A
Power Factor	≥0.9 (Max. Power)										
OUTPUT											
Power (VA)	150kVA	200kVA	300kVA	400kVA	500kVA	600kVA	800kVA	1000kVA	1200kVA	1500kVA	2000kVA
Phase	3Ø / 4 Wire + G										
Voltage Ranges	0V-155.0V (L-N)										
	0V-310.0V (L-N)										
Voltage Resolution	0.1V										
Voltage Accuracy	0.5% F.S.+4 counts										
Frequency Range ^{*3}	A : 45-500Hz : B : 45-120Hz										
Frequency Resolution	0.1Hz										
Frequency Accuracy	±0.02% F.S.										
Max. Current (RMS)	416.7A	555.6A	833.3A	1111.1A	1388.9A	1666.7A	2222.2A	2777.8A	3333.3A	4166.7A	5555.6A
	208.3A	277.8A	416.7A	555.6A	694.4A	833.3A	1111.1A	1388.9A	1666.7A	2083.3A	2777.8A
Line Regulation	< 0.5%										
Load Regulation	≤ 0.5% (Resistive Load)										
Total Harmonic Distortion (THD) ^{*4}	≤ 0.5% (Resistive Load)										
Response Time	≤ 1ms										
Crest Factor	≥3										
MEASUREMENT											
Voltage Range	0V-310.0V										
Voltage Resolution	0.1V										
Voltage Accuracy	0.5% F.S.+4 counts										
Frequency Range	45.0-500.0Hz										
Frequency Resolution	0.01Hz										
Frequency Accuracy	±0.02% F.S.										
Current Range (RMS)	0 - 416.7A	0 - 555.6A	0 - 833.3A	0 - 1111.1A	0 - 1388.9A	0 - 1666.7A	0 - 2222.2A	0 - 2777.8A	0 - 3333.3A	0 - 4166.7A	0 - 5555.6A
Current Resolution (RMS)	0.1A										
Current Accuracy (RMS)	0.5% F.S.+4 counts										
Power Range	0 - 150kW	0 - 200kW	0 - 300kW	0 - 400kW	0 - 500kW	0 - 600kW	0 - 800kW	0 - 1000kW	0 - 1200kW	0 - 1500kW	0 - 2000kW
Power Resolution	0.1kW										
Power Accuracy	1% F.S.+6 counts										
GENERAL											
Efficiency	≥85% at Max. Power										
HMI	Touch Screen, 7" Color TFT LCD										
Program Mode	STEP : 24 sets / 255 cycles. (Volt./Freq./Time) RAMP : 12 sets / 255 cycles. (Volt./Freq./Time)										
Soft Start	Setting : Rated Volt. / Rated Freq. / Start Volt. / Start Freq. / Delay Time / Ramp Time										
Three Phase Independent Adjustment	U-N/V-N/W-N, Adjustment 0-310V										
Protection	Input : N.F.B, Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Reverse Current, Over Temperature										
Remote Interface	Standard :RS-485/RS-422/RS-232 Option : GPIB, Ethernet										
Operational Temperature	0°C~45°C										
Humidity	0~90% (Non condensing)										
Altitude	< 1,500m										
Dimensions (H x W x D) ^{*5}	1900 x 1178x 1200 mm			2050x 3881x 1539mm		2050 x 4716 x 1520 mm		2050 x 6003 x 1520 mm		2200 x 10827 x1590 mm	2200 x 12990 x1590 mm
	74.8 x 46.4 x 47.2inch			80.7 x 152.8 x 60.6inch		80.7 x 185.7 x 59.8inch		80.7 x 236.3 x 59.8inch		86.6 x 426.3 x 62.6inch	86.6 x 511.4 x 62.6 inch
Weight ^{*5}	1835kg	2415kg	3620kg	4670kg	5820kg	7720kg	9240kg	11080kg	16800kg	18720kg	19950kg
	832.2lbs	1095.2lbs	1641.7lbs	2117.9lbs	2639.5lbs	3501.1lbs	4190.5lbs	5024.9lbs	7619.0lbs	8489.8lbs	9047.6lbs

*1 Please contact us for other input voltage specifications. *2 The max. current is based on rated input voltage of 380V. *3 For type A: 45-500Hz, please contact us for output power characteristic curve.

*4 When the output voltage is at Low : 90 - 140V or High 180 - 280V with load power factor of 1. * All specifications are subject to change without notice. The specifications are tested at ambient temperature of 25°C ± 5°C.

*5 Dimensions and weight are for input voltage 380V. Please contact us for dimensions and weight for other input voltage.

ORDERING INFORMATION

AFV + Series Single-Phase Output (10kVA - 150kVA)

Model Number	Description
AFV-PLUS-31010	High Power Programmable AC Power Source (10kVA/300V/45-65Hz)
AFV-PLUS-31015	High Power Programmable AC Power Source (15kVA/300V/45-65Hz)
AFV-PLUS-31020	High Power Programmable AC Power Source (20kVA/300V/45-65Hz)
AFV-PLUS-31030	High Power Programmable AC Power Source (30kVA/300V/45-65Hz)
AFV-PLUS-31045	High Power Programmable AC Power Source (45kVA/300V/45-65Hz)
AFV-PLUS-31060	High Power Programmable AC Power Source (60kVA/300V/45-65Hz)
AFV-PLUS-31075	High Power Programmable AC Power Source (75kVA/300V/45-65Hz)
AFV-PLUS-31100	High Power Programmable AC Power Source (100kVA/300V/45-65Hz)
AFV-PLUS-31120	High Power Programmable AC Power Source (120kVA/300V/45-65Hz)
AFV-PLUS-31150	High Power Programmable AC Power Source (150kVA/300V/45-65Hz)
AFV-PLUS-001	Type A: Output Frequency 45-500Hz
AFV-PLUS-002	Type B: Output Frequency 45-120Hz
AFV-PLUS-003	Type C : Output Frequency 300-840Hz
AFV-PLUS-004	Phase Angle 0-360°
AFV-PLUS-005	Overload Capability 200% 2 sec, 150% 5 sec, 125% 15 sec
AFV-PLUS-006	Fast Voltage Response Option (with Time Setting Resolution 0.01S)
AFV-PLUS-007	Analog Control Interface
AFV-PLUS-008	GPIB Interface
AFV-PLUS-009	Ethernet Interface
AFV-PLUS-011	Remote Sensing
AFV-PLUS-012	Input Voltage 200V
AFV-PLUS-013	Input Voltage 208V
AFV-PLUS-014	Input Voltage 240V
AFV-PLUS-015	Input Voltage 400V
AFV-PLUS-016	Input Voltage 480V
AFV-PLUS-017	Output Voltage 0-400V (L-N)
AFV-PLUS-018	Output Voltage 0-600V (L-N)

AFV + Series Three-Phase Output (10kVA - 2000kVA)

Model Number	Description
AFV-PLUS-33010	High Power Programmable AC Power Source (10kVA/300V/45-65Hz)
AFV-PLUS-33015	High Power Programmable AC Power Source (15kVA/300V/45-65Hz)
AFV-PLUS-33020	High Power Programmable AC Power Source (20kVA/300V/45-65Hz)
AFV-PLUS-33030	High Power Programmable AC Power Source (30kVA/300V/45-65Hz)
AFV-PLUS-33045	High Power Programmable AC Power Source (45kVA/300V/45-65Hz)
AFV-PLUS-33060	High Power Programmable AC Power Source (60kVA/300V/45-65Hz)
AFV-PLUS-33075	High Power Programmable AC Power Source (75kVA/300V/45-65Hz)
AFV-PLUS-33100	High Power Programmable AC Power Source (100kVA/300V/45-65Hz)
AFV-PLUS-33120	High Power Programmable AC Power Source (120kVA/300V/45-65Hz)
AFV-PLUS-33150	High Power Programmable AC Power Source (150kVA/300V/45-65Hz)
AFV-PLUS-33200	High Power Programmable AC Power Source (200kVA/300V/45-65Hz)
AFV-PLUS-33300	High Power Programmable AC Power Source (300kVA/300V/45-65Hz)
AFV-PLUS-33400	High Power Programmable AC Power Source (400kVA/300V/45-65Hz)
AFV-PLUS-33500	High Power Programmable AC Power Source (500kVA/300V/45-65Hz)
AFV-PLUS-33600	High Power Programmable AC Power Source (600kVA/300V/45-65Hz)
AFV-PLUS-33800	High Power Programmable AC Power Source (800kVA/300V/45-65Hz)
AFV-PLUS-331000	High Power Programmable AC Power Source (1000kVA/300V/45-65Hz)
AFV-PLUS-331200	High Power Programmable AC Power Source (1200kVA/300V/45-65Hz)
AFV-PLUS-331500	High Power Programmable AC Power Source (1500kVA/300V/45-65Hz)
AFV-PLUS-332000	High Power Programmable AC Power Source (2000kVA/300V/45-65Hz)
AFV-PLUS-001	Type A: Output Frequency 45-500Hz
AFV-PLUS-002	Type B: Output Frequency 45-120Hz
AFV-PLUS-003	Type C : Output Frequency 300-840Hz
AFV-PLUS-004	Phase Angle 0-360 °
AFV-PLUS-005	Overload Capability 200% 2 sec, 150% 5 sec, 125% 15 sec
AFV-PLUS-006	Fast Voltage Response Option (with Time Setting Resolution 0.01S)
AFV-PLUS-007	Analog Control Interface
AFV-PLUS-008	GPIB Interface
AFV-PLUS-009	Ethernet Interface
AFV-PLUS-010	Phase Angle Control
AFV-PLUS-011	Remote Sensing
AFV-PLUS-012	Input Voltage 200V
AFV-PLUS-013	Input Voltage 208V
AFV-PLUS-014	Input Voltage 240V
AFV-PLUS-015	Input Voltage 400V
AFV-PLUS-016	Input Voltage 480V
AFV-PLUS-017	Output Voltage 0-400V (L-N)
AFV-PLUS-018	Output Voltage 0-600V(L-N)

AFV Series

RoHS Compliant CE

UP TO 2MVA



Output Power
10kVA~2000kVA

AFV Series

High Power Programmable AC Power Source

Preen's AFV series is a programmable AC power source that can be remotely controlled and integrated with other systems for automatic testing. AFV series provides precise output voltage and frequency which could reach various types of industrial requirements. For the industrial users, such as home appliances, electrical and electronic, medical equipment and lighting, they are able to quickly and accurately simulate standard or abnormal power status via programmable function.

AFV builds-in standard programmable features, such as STEP and GRADUAL features, which are ideal for laboratories, certification and R&D institution's compliance test.

The user friendly touch screen supports user to operate AFV series intuitive and easily, and the user can remote control the unit via the standard RS-485 or RS232 (Optional for Ethernet, GPIB) interface. The AC source is coupled with output voltage range of 0~300V and output frequency of standard 45~65Hz or optional 45~500Hz. Moreover, the AFV series provides complete product protection, such as OVP, UVP, OCP, OPP, OTP and short circuit protection.

Interfaces

Standard

Option

RS-232

GPIB

RS-485

Ethernet

Applications

- Home Appliance
- Laboratory/Certification Bureau
- Industrial Power Supply
- Motor & Compressor
- IT / SMT Production Line
- Renewable Energy
- Electric Vehicles
- Transportation

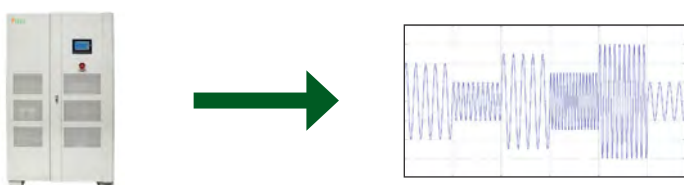
- CE & RoHS certificated.
- Modularized inverter which is compact, smaller, high power density and easy to maintain.
- 7-inch touch screen which can display the phase voltage, current, frequency, active/apparent power, power factor and test information.
- Ability to simulate abnormal power status: STEP and GRADUAL change modes allow users to set sequences of start/end voltage, frequency and running time with ease.
- Comprehensive protections which include output undervoltage / overvoltage, overcurrent, overload, input undervoltage / overvoltage, overheat and other more than twenty fault conditions.
- Three-phase voltage independently adjustable function: each phase voltage can be adjusted independently; therefore AFV can power more than one single-phase loads.
- Phase angle adjustment function: can adjust the phase angle between each phase (for three phase system).

User-friendly Touch Screen and Remote Control



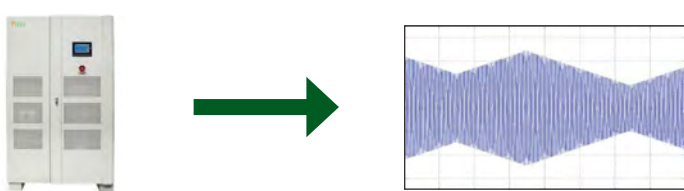
AFV with 7-inch touch screen of intuitive operation, easy to operate, quick setting, easy to use. Through the remote control interface (RS-485 / RS-232 / GPIB / Ethernet), users can set the desired output parameters and monitor the output value.

STEP Mode



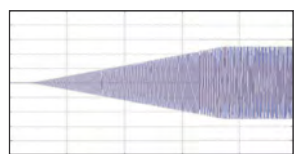
AFV series has the STEP change mode which provides up to 24 sequences and up to 255 cycles. The output voltage, frequency, and running time in each sequence can be set on the touch screen. These functions are widely used in the performance test of electric motor or home appliance load.

GRADUAL Mode

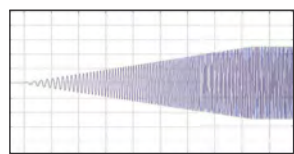


AFV series has the GRADUAL change mode which provides up to 12 sequences and up to 255 cycles. Through this feature, users are allowed to set the product output, such as start/end output voltage, start/end output frequency and dwell time of performing the GRADUAL feature in each of the adjustable sets, and then the product output will change according to the setting slew rate.

Soft Start Features (Opt.)



Variable Voltage Constant Frequency (VVCF)



Variable Voltage Variable Frequency (VVVF)

Soft-start function can effectively reduce the starting current of motor load or inductive load. The users have more flexibility on selection of power capacity and more efficiency on space usage. They can purchase more cost-effective products.

Three Phase Independent Control (Opt.)

Users are allowed to control three-phase output voltage independently. The product can be used as one unit of three-phase power supply or as three units of single-phase power supply.

Wide Variety of Applications



With its high reliability, capability of complex power line simulation and high output power, the AFV series has been widely applied for applications on home appliance, electric vehicle charger, motor, electronics and medical equipment. It is a AC power source suitable from R&D verification to mass production testing.

SPECIFICATIONS

AFV Series Single-Phase Output (10kVA - 120kVA)

Model	AFV-31010	AFV-31015	AFV-31030	AFV-31045	AFV-31060	AFV-31080	AFV-31100	AFV-31120
INPUT								
Phase	3Ø / 4 Wire + G							
Voltage ^{*1}	220/380Vac ±15% (option:120/208Vac,277/480Vac,200Vac or 400Vac)							
Frequency	50Hz ± 3Hz or 60Hz ± 3Hz							
Max. Current ^{*2}	18.7A	28.1A	56.1A	84.2A	112.2A	150A	209.7A	251.7A
Power Factor	≥ 0.9 (Max. Power)						≥ 0.85 (Max. Power)	
OUTPUT								
Power	10kVA	15kVA	30kVA	45kVA	60kVA	80kVA	100kVA	120kVA
Phase	1Ø / 2 Wire + G							
Voltage Ranges	Low(V) 0V-150.0V (L-N)							
	High(V) 0V-300.0V (L-N)							
Voltage Resolution	0.1V							
Voltage Accuracy	0.5% F.S.+ 4 counts							
Frequency Range ^{*3}	Standard : 45 ~ 65Hz Option : 45 ~ 500Hz							
Frequency Resolution	0.1Hz							
Frequency Accuracy	0.5% F.S.+ 4 counts							
Max. Current (RMS)	83.3A	125A	250A	375A	500A	666.7A	833.3A	1000A
	41.7A	62.5A	125A	187.5A	250A	333.3A	416.7A	500A
Line Regulation	≤ 1%							
Load Regulation	≤ 1% (Resistive Load)							
Total Harmonic Distortion (THD) ^{*4}	≤ 2% (Resistive Load)							
Response Time	≤ 2ms							
MEASUREMENT								
Voltage Range	0V-300.0V							
Voltage Resolution	0.1V							
Voltage Accuracy	0.5% F.S.+ 4 counts							
Frequency Range	45.0-500.0Hz							
Frequency Resolution	0.1Hz							
Frequency Accuracy	0.5% F.S.+4 counts							
Current Range (RMS)	0 - 83.3A	0 - 125A	0 - 250A	0 - 375A	0 - 500A	0 - 666.7A	0 - 833.3A	0 - 1000A
Current Resolution (RMS)	0.1A							
Current Accuracy (RMS)	0.5% F.S.+4 counts							
Power Range	0 - 10kW	0 - 15kW	0 - 30kW	0 - 45kW	0 - 60kW	0 - 80kW	0 - 100kW	0 - 120kW
Power Resolution	0.1kW							
Power Accuracy	1% F.S.+6 counts							
GENERAL								
Efficiency	≥90% at Max. Power						≥85% at Max. Power	
HMI	Touch Screen , 7" Color TFT LCD							
Program Mode	STEP : 24 sets / 255 cycles. (Volt./Freq./Time) GRADUAL : 12 sets / 255 cycles. (Volt./Freq./Time)							
Protection	Input : N.F.B, Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Reverse Current, Over Temperature							
Remote Interface	Standard : RS-485/RS-422/RS-232 Option : GPIB, Ethernet							
Operational Temperature	0°C~45°C							
Humidity	0~90% (Non condensing)							
Altitude	< 1,500m							
Dimensions (H x W x D) ^{*5}	1045 x 600 x 840 mm	1440 x 600 x 840 mm	1645 x 800 x 840 mm	1800 x 1050 x 970 mm	1900 x 1150 x 1240 mm			
	41.1 x 23.6 x 33.1lbs	56.7 x 23.6 x 33.1lbs	64.8 x 31.5 x 33.1lbs	70.9 x 41.3 x 38.2lbs	74.8 x 45.3 x 48.8lbs			
Weight ^{*5}	230kg	280kg	450kg	580kg	670kg	750kg	940kg	1100kg
	507.2lbs	617.4lbs	992.3lbs	1278.9lbs	1477.4lbs	1653.8lbs	2072.7lbs	2425.5lbs

*1 200V and 400V input options are 3Ø / 3 Wire + G. Please contact us for other input voltage specifications. *2 The max. current is based on rated input voltage of 220/380V.

*3 For 45-500Hz option, please contact us for output power characteristic curve. *4 When the output voltage is at Low : 90 - 140V or High 180 - 280V with load power factor of 1.

*5 Dimensions and weight are for input voltage 220/380V. Please contact us for dimensions and weight for other input voltage.

* All specifications are subject to change without notice. The specifications are tested at ambient temperature of 25°C ± 5°C.

SPECIFICATIONS

AFV Series Three-Phase Output (10kVA - 120kVA)

Model	AFV-33010	AFV-33015	AFV-33030	AFV-33045	AFV-33060	AFV-33080	AFV-33100	AFV-33120	
INPUT									
Phase	3Ø / 4 Wire + G (option: 3Ø / 3 Wire + G)								
Voltage ^{*1}	220/380Vac ±15% (option : 120/208Vac, 277/480Vac,240Vac,200Vac or 400Vac)								
Frequency	50Hz±3Hz or 60Hz±3Hz								
Max. Current ^{*2}	18.7A	28.1A	56.1A	84.2A	112.2A	150A	209.7A	251.7A	
Power Factor	≥ 0.9 (Max. Power)					≥0.85 (Max. Power)			
OUTPUT									
Power (VA)	10kVA	15kVA	30kVA	45kVA	60kVA	80kVA	100kVA	120kVA	
Phase	3Ø / 4 Wire + G								
Voltage Ranges	Low(V) 0V-150.0V (L-N)								
	High(V) 0V-300.0V (L-N)								
Voltage Resolution	0.1V								
Voltage Accuracy	0.5% F.S.+4 counts								
Frequency Range ^{*3}	Standard : 45-65Hz Option : 45-500Hz								
Frequency Resolution	0.1Hz								
Frequency Accuracy	0.5% F.S.+4counts								
Max. Current (RMS)	Low(A)	27.8A	41.7A	83.3A	125A	166.7A	222.2A	277.8A	333.3A
	High(A)	13.9A	20.8A	41.7A	62.5A	83.3A	111.1A	138.9A	166.7A
Line Regulation	≤ 1%								
Load Regulation	≤ 1% (Resistive Load)								
Total Harmonic Distortion(THD) ^{*4}	≤ 2% (Resistive Load)								
Response Time	≤ 2ms								
MEASUREMENT									
Voltage Range	0V-300.0V								
Voltage Resolution	0.1V								
Voltage Accuracy	0.5% F.S.+4 counts								
Frequency Range	45.0-500.0Hz								
Frequency Resolution	0.1Hz								
Frequency Accuracy	0.5% F.S.+4 counts								
Current Range(RMS)	0 - 27.8A	0 - 41.7A	0 - 83.3A	0 - 125A	0 - 166.7A	0 - 222.2A	0 - 277.8A	0 - 333.3A	
Current Resolution(RMS)	0.1A								
Current Accuracy(RMS)	0.5% F.S.+4 counts								
Power Range	0 - 10kW	0 - 15kW	0 - 30kW	0 - 45kW	0 - 60kW	0 - 80kW	0 - 100kW	0 - 120kW	
Power Resolution	0.1kW								
Power Accuracy	1% F.S.+6 counts								
GENERAL									
Efficiency	≥90% at Max. Power					≥0.85 at Max. Power			
HMI	Touch Screen , 7" Color TFT LCD								
Program Mode	STEP : 24 sets / 255 cycles. (Volt./Freq./Time) GRADUAL : 12 sets / 255 cycles. (Volt./Freq./Time)								
Protection	Input : N.F.B, Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Reverse Current, Over Temperature								
Remote Interface	Standard : RS-485/RS-422/RS-232 Option : GPIB, Ethernet								
Operational Temperature	0°C~45°C								
Humidity	0~90% (Non condensing)								
Altitude	< 1,500m								
Dimensions (H x W x D) ^{*5}	1045 x 600 x 840 mm	1440 x 600 x 840 mm		1645 x 800 x 840 mm		1800 x 1050 x 970 mm		1900 x 1150 x 1240 mm	
	41.1 x 23.6 x 33.1lbs	56.7 x 23.6 x 33.1lbs		64.8 x 31.5 x 33.1lbs		70.9 x 41.3 x 38.2lbs		74.8 x 45.3 x 48.8lbs	
Weight ^{*5}	280kg	305kg	400kg	560kg	670kg	1000kg	1170kg	1450kg	
	617.4lbs	672.53lbs	882lbs	1234.8lbs	1477.4lbs	2205lbs	2579.85lbs	3197.3lbs	

*1 200V and 400V input options are 3Ø / 3 Wire + G. Please contact us for other input voltage specifications. *2 The max. current is based on rated input voltage of 220/380V.

*3 For 45-500Hz option, please contact us for output power characteristic curve. *4 When the output voltage is at Low : 90 - 140V or High 180 - 280V with load power factor of 1.

*5 Dimensions and weight are for input voltage 220/380V(3Ø/4W+G). Please contact us for dimensions and weight for other input voltage. For AFV+ series over 400kVA, please contact us for details.

* All specifications are subject to change without notice. The specifications are tested at ambient temperature of 25°C ± 5°C.

SPECIFICATIONS

AFV Series Three-Phase Output (160kVA - 1600kVA)

Model	AFV-33160	AFV-33240	AFV-33300	AFV-33400	AFV-33500	AFV-33640	AFV-33800	AFV-331000	AFV-331200	AFV-331600
INPUT										
Phase	3Ø / 4 Wire + G (option: 3Ø / 3 Wire + G)									
Voltage* ¹	220/380Vac ±15% (option : 277/480Vac, 240Vac or 400Vac)									
Frequency	50Hz±3Hz or 60Hz±3Hz									
Max. Current* ²	336A	504A	629.1A	838.8A	1048.5A	1343A	1677.7A	2097.1A	2516.5A	3356A
Power Factor	≥ 0.85 (Max. Power)									
OUTPUT										
Power (VA)	160kVA	240kVA	300kVA	400kVA	500kVA	640kVA	800kVA	1000kVA	1200kVA	1600kVA
Phase	3Ø / 4 Wire + G									
Voltage Ranges	Low(V) 0V-150.0V (L-N)									
	High(V) 0V-300.0V (L-N)									
Voltage Resolution	0.1V									
Voltage Accuracy	0.5% F.S.+4 counts									
Frequency Range* ³	Standard : 45~65Hz Option : 45-500Hz									
Frequency Resolution	0.1Hz									
Frequency Accuracy	0.5% F.S.+4 counts									
Max. Current (RMS)	Low(A) 444.4A 666.7A 833.3A 1111.1A 1388.9A 1777.8A 2222.2A 2777.8A 3333.3A 4444.4A									
	High(A) 222.2A 333.3A 416.7A 555.6A 694.4A 888.9A 1111.1A 1388.9A 1666.7A 2222.2A									
Line Regulation	≤ 1%									
Load Regulation	≤ 1% (Resistive Load)									
Total Harmonic Distortion(THD)* ⁴	≤ 2% (Resistive Load)									
Response Time	≤ 2ms									
MEASUREMENT										
Voltage Range	0V-300.0V									
Voltage Resolution	0.1V									
Voltage Accuracy	0.5% F.S.+4 counts									
Frequency Range	45.0-500.0Hz									
Frequency Resolution	0.1Hz									
Frequency Accuracy	0.5% F.S.+4 counts									
Current Range (RMS)	0 - 444.4A	0 - 666.7A	0 - 833.3A	0 - 1111.1A	0 - 1388.9A	0 - 1777.8A	0 - 2222.2A	0 - 2777.8A	0 - 3333.3A	0 - 4444.4A
Current Resolution (RMS)	0.1A									
Current Accuracy (RMS)	0.5% F.S.+4 counts									
Power Range	0-160kW	0-240kW	0 - 300kW	0 - 400kW	0 - 500kW	0 - 640kW	0 - 800kW	0 - 1000kW	0 - 1200kW	0 - 1600kW
Power Resolution	0.1kW									
Power Accuracy	1% F.S.+6 counts									
GENERAL										
Efficiency	≥ 0.85 at Max. Power									
HMI	Touch Screen , 7" Color TFT LCD									
Program Mode	STEP : 24 sets / 255 cycles. (Volt./Freq./Time) GRADUAL : 12 sets / 255 cycles. (Volt./Freq./Time)									
Protection	Input : N.F.B, Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Reverse Current, Over Temperature.									
Remote Interface	Standard : RS-485/RS-422/RS-232 Option : GPIB, Ethernet									
Operational Temperature	0°C~45°C									
Humidity	0~90% (Non condensing)									
Altitude	< 1,500m									
Dimensions (H x W x D)* ⁵	1900 x 1150 x 1240 mm		2050 x 3880 x 1539 mm			2050 x 4716 x 1520 mm		2050 x 6003 x 1520 mm	2200 x 10827 x 1590 mm	
	74.8 x 45.3 x 48.8lbs		80.7 x 152.8 x 60.6lbs			80.7 x 185.7 x 59.8lbs		80.7 x 236.3 x 59.8lbs	86.6 x 426.3 x 62.6lbs	
Weight* ⁵	1850kg	2800kg	3450kg	4450kg	5550kg	7800kg	8800kg	10550kg	16000kg	17600kg
	4079.3lbs	6174lbs	7607.3lbs	9812.3lbs	12237.8lbs	17199lbs	19404lbs	23262.8lbs	35280lbs	38808lbs

*1 200V and 400V input options are 3Ø / 3 Wire + G. Please contact us for other input voltage specifications. *2 The max. current is based on rated input voltage of 220/380V.

*3 For 45-500Hz option, please contact us for output power characteristic curve. *4 When the output voltage is at Low : 90 - 140V or High 180 - 280V with load power factor of 1.

*5 Dimensions and weight are for input voltage 220/380V(3Ø/4W+G) . Please contact us for dimensions and weight for other input voltage.

* All specifications are subject to change without notice. The specifications are tested at ambient temperature of 25°C ± 5°C.

ORDERING INFORMATION :

AFV Series Single-Phase Output (10kVA - 150kVA)

Model Number	Description
AFV-31010	High Power Programmable AC Power Source (10kVA/300V/45-65Hz)
AFV-31015	High Power Programmable AC Power Source (15kVA/300V/45-65Hz)
AFV-31030	High Power Programmable AC Power Source (30kVA/300V/45-65Hz)
AFV-31045	High Power Programmable AC Power Source(45kVA/300V/45-65Hz)
AFV-31060	High Power Programmable AC Power Source(60kVA/300V/45-65Hz)
AFV-31080	High Power Programmable AC Power Source(80kVA/300V/45-65Hz)
AFV-31100	High Power Programmable AC Power Source(100kVA/300V/45-65Hz)
AFV-31120	High Power Programmable AC Power Source (120kVA/300V/45-65Hz)
AFV-001	Output Frequency 45Hz-500Hz
AFV-002	Soft Start Mode
AFV-005	GPIB Interface
AFV-006	Ethernet Interface
AFV-007	Overload Capability 200% 2 sec, 150% 5 sec, 125% 15 sec

AFV Series Three-Phase Output (10kVA - 2000kVA)

Model Number	Description
AFV-33010	High Power Programmable AC Power Source (three-Phase Input) (10kVA/300V/45-65Hz)
AFV-33015	High Power Programmable AC Power Source (three-Phase Input) (15kVA/300V/45-65Hz)
AFV-33030	High Power Programmable AC Power Source (three-Phase Input) (30kVA/300V/45-65Hz)
AFV-33045	High Power Programmable AC Power Source (three-Phase Input) (45kVA/300V/45-65Hz)
AFV-33060	High Power Programmable AC Power Source (three-Phase Input) (60kVA/300V/45-65Hz)
AFV-33080	High Power Programmable AC Power Source (three-Phase Input) (80kVA/300V/45-65Hz)
AFV-33100	High Power Programmable AC Power Source (three-Phase Input) (100kVA/300V/45-65Hz)
AFV-33120	High Power Programmable AC Power Source (three-Phase Input) (120kVA/300V/45-65Hz)
AFV-33160	High Power Programmable AC Power Source (three-Phase Input) (160kVA/300V/45-65Hz)
AFV-33240	High Power Programmable AC Power Source (three-Phase Input) (240kVA/300V/45-65Hz)
AFV-33300	High Power Programmable AC Power Source (three-Phase Input) (300kVA/300V/45-65Hz)
AFV-33400	High Power Programmable AC Power Source (three-Phase Input) (400kVA/300V/45-65Hz)
AFV-33500	High Power Programmable AC Power Source (three-Phase Input) (500kVA/300V/45-65Hz)
AFV-33640	High Power Programmable AC Power Source (three-Phase Input) (640kVA/300V/45-65Hz)
AFV-33800	High Power Programmable AC Power Source (three-Phase Input) (800kVA/300V/45-65Hz)
AFV-331000	High Power Programmable AC Power Source (three-Phase Input) (1000kVA/300V/45-65Hz)
AFV-331200	High Power Programmable AC Power Source (three-Phase Input) (1200kVA/300V/45-65Hz)
AFV-331600	High Power Programmable AC Power Source (three-Phase Input) (1600kVA/300V/45-65Hz)
AFV-001	Output Frequency 45Hz-500Hz
AFV-002	Soft Start Mode
AFV-003	Three Phase Independent Adjustment
AFV-004	Three Phase Angle Adjustment
AFV-005	GPIB Interface
AFV-006	Ethernet Interface
AFV-007	Overload Capability 200% 2 sec, 150% 5 sec, 125% 15 sec

PAS/ PFV Series

RoHS
Compliant



Output Power
30kVA~2000kVA

Interfaces

Standard

RS-232

RS-485

Option

GPIB

Ethernet

USB

Applications

- Laboratory/Certification Bureau
- Electric Vehicles
- Renewable Energy
- Motor & Compressor

PAS/PFV Series Regenerative Grid Simulator

PAS Series product is developed for renewable energy related applications. It can simulate the various grid conditions and related test standards. Especially the voltage or frequency transient simulation test feature, it is very suitable for production, quality verification, research and development. It also builds in with Low Voltage Ride Through Test (LVRT) test function, step mode and gradual mode programmable capability.

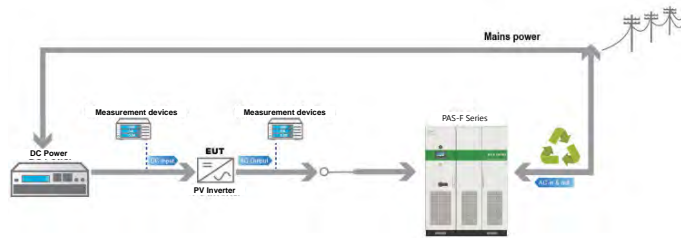
PFV Series is a new generation of programmable AC power supply, with four quadrant energy feedback function.

This unit not only provides power to the EUT, but also sinks the power back to the grid system which is very useful for grid tie devices testing applications.

The maximum output power for PAS series is up to 2000kVA, and the PFV series is up to 200kVA. The output voltage range is 0~300V-L-N and the standard output frequency is 45~65Hz continuously adjustable (optional 40~70Hz).

- PAS has built-in low voltage ride through (LVRT) mode, which can be easily used for simulating the voltage drop test according to different test standards.
- PAS/PFV equip with energy feedback feature that feeds energy back into the grid system for saving energy and sinking the power from grid tie devices.
- PAS series is suitable for standard verification. For example: UL1741, IEEE 1547, BDEW, and CE10-16 etc.
- Three phase independent voltage adjustment is suitable for three phase unbalance testing or multiple single phase test units. It also equips with phase angle adjustment.
- Standard RS-232, RS-485 communication interface, optional GPIB, Ethernet and USB.
- With 7 inch LCD touch screen display, it can display output voltage, current, frequency, active/apparent power, power factor, test information at the same time.
- More protection mechanism, detect output undervoltage overvoltage, over-current, over load, input undervoltage/overvoltage, over temperature... etc 20 fault conditions and record 255 operation and alarm information for troubleshooting and analysis.
- Step or gradual mode programmable memories can be used for simulate abnormal power condition and run in automatically sequences, which allows you to setup different voltage and frequency in each steps for your power simulation requirements.

Regenerative Function



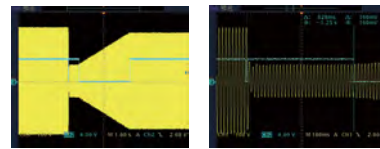
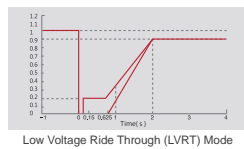
PAS series is a four-quadrant AC power source which is capable of being a power source or sink the power from the EUT back to the grid system with 90% efficiency. It is suitable for PV Inverter test, EV charger test or other grid tie devices test.

Build in with Low Voltage Ride Through (LVRT) test graph and it is very suitable for IEEE-1547 or BDEW related standards compliance test.

Product Features

- 1. Excellent Regulation Rate** Load regulation rate is less than 1%
- 2. High Efficiency** Efficiency up to 92%
- 3. High Output Power quality** Clean output sinewave and low impact to the input grid system.
 - THD (Harmonic distortion) $\leq 2\%$
 - ITHD (input current harmonic) $\leq 5\%$
 - PF (input power factor) 0.99
- 4. Built-in Features** LVRT/HVRT simulations
- 5. Four Quadrant AC Source** Capable to regenerate and recycle the power

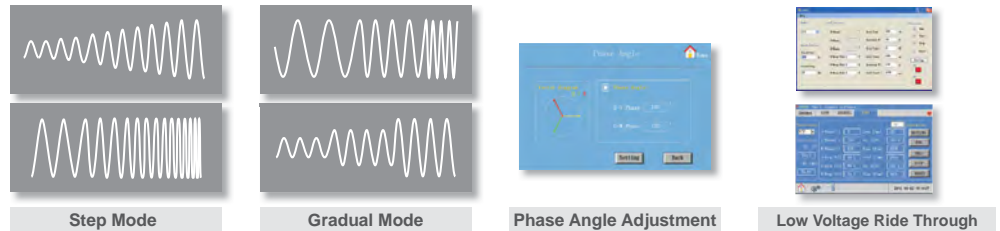
Low Voltage Ride Through (LVRT)



Built-in Low Voltage Ride Through (LVRT) mode can simulate the grid in abnormal conditions.

The settings include rated voltage, frequency, drop voltage, recovery voltage, rise time and drop time to simulate various grid conditions.

A Variety of Built-in Programmable Features



PAS/PFV series has a number of programmable features that can effectively and accurately simulate a variety of power abnormal conditions or disturbance. Through the built-in step and gradual mode, users can simulate voltage and frequency single-step or continuously changes, such as voltage and frequency ramp up/ ramp down, instantaneous changes, and so on. Phase angle and three phase independent adjustment function can be used for simulating three phase imbalance and further test the reliability of the EUT. With low voltage ride through and regenerative function, PAS series is suitable for PV Inverter, Bi-directional EV charger, Energy Storage System as an all purpose grid system simulator.

Model Comparison

Model series	PAS	PFV	AFV
General Mode	○	○	○
Step Mode	○	○	○
Gradual Mode	○	○	○
Soft Start Function	△	△	△
Three-phase independent adjustment	○	○	△
Phase Angle Setting	○	○	△
Low Voltage Ride Through (LVRT)	○	-	-
Regenerative Function	○	○	-

○ Standard △ Optional - N/A

SPECIFICATIONS

PFV Series & PAS-F Series Three-Phase Output (45kVA - 200kVA)

Model	PFV-33030	PFV-33045	PFV-33060	PFV-33075	PFV-33100	PFV-33120	PFV-33150	PFV-33200	PFV-33300	PFV-33400	
	PAS-F-33030	PAS-F-33045	PAS-F-33060	PAS-F-33075	PAS-F-33100	PAS-F-33120	PAS-F-33150	PAS-F-33200	PAS-F-33300	PAS-F-33400	
INPUT											
Phase	3Ø / 3 Wire + G										
Voltage ¹	380V±15%										
Frequency	47 - 63Hz										
Max. Current ²	50A	86A	115A	150A	200A	240A	300A	400A	500A	665A	
Power Factor	≥ 0.99 (Max. Power)										
OUTPUT											
Power	VA	30kVA	45kVA	60kVA	75kVA	100kVA	120kVA	150kVA	200kVA	300kVA	400kVA
Phase	3Ø / 4 Wire + G										
Voltage Ranges	Low(V)	0V~150.0V (L-N)									
PFV Series	High(V)	0V~300.0V (L-N)									
Voltage Ranges PAS-F Series		0V~300.0V (L-N)									
Voltage Resolution		0.1V									
Voltage Accuracy		0.15% F.S.+4 counts									
Frequency Range		Standard : 45 ~ 65Hz Option : 40-70Hz									
Frequency Resolution		0.1Hz									
Frequency Accuracy		±0.1% F.S									
Max. Current(RMS)	Low(A)	83.3A	125A	166.7A	208.3A	277.8A	333.3A	416.7A	555.6A	833.3A	1111.1A
PFV Series	High(A)	41.6A	62.5A	83.3A	104.1A	138.9A	166.6A	208.3A	277.8A	416.7A	555.6A
Max. Current(RMS) PAS-F Series		41.6A	62.5A	83.3A	104.1A	138.9A	166.6A	208.3A	277.8A	416.7A	555.6A
Line Regulation		< 1%									
Load Regulation		< 1% (Resistive Load)									
Total Harmonic Distortion (THD)		≤ 2% (Resistive Load)									
Response Time		≤ 2ms									
MEASUREMENT											
Voltage Range		0V~300.0V									
Voltage Resolution		0.1V									
Voltage Accuracy		0.1%F.S.+2 counts									
Frequency Range		Standard : 45 ~ 65Hz Option : 40-70Hz									
Frequency Resolution		0.01Hz									
Frequency Accuracy		±0.01% F.S.									
Current Range (RMS)		0 ~ 9999A									
Current Resolution (RMS)		0.1A									
Current Accuracy (RMS)		0.1% F.S.+2 counts									
Power Range		0-400kW									
Power Resolution		0.1kW									
Power Accuracy		0.2% F.S.+2 counts									
GENERAL											
Regenerative Function		YES									
Low Voltage Ride Through (LVRT)		PAS Series : YES , PFV Series : NO									
Three-phase independent adjustment		YES									
Phase Angle Setting		YES									
Efficiency		≥ 92% at Max. Power									
HMI		Touch Screen, 7" Color TFT LCD									
Protection		Input : Input N.F.B, Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Reverse Current, Over Temperature									
Remote Interface		Standard : RS-485, RS-232 Option : GPIB , USB , Ethernet									
Operational Temperature		0°C ~45°C									
Humidity		0~90% (Non condensing)									
Altitude		< 1,500 m									
Dimensions (H x W x D)		1900 x 1200 x 800 mm	2100 x 1200 x 800mm	2100 x 1600 x 800mm				2100 x 3300 x 1250mm			
		74.8 x 47.24 x 31.49 inch	82.67 x 47.24 x 31.49inch	82.67 x 62.99 x 31.49inch				82.67 x 129.92 x 49.21 inch			
Weight		942kg	1050kg	1185kg	1485kg	1919kg	2300kg	2700kg	3400kg	4500kg	5600kg
		2076.8lbs	2314.9lbs	2612.5lbs	3273.9lbs	4230.7lbs	5070.6lbs	5952.5lbs	7495.7lbs	9920.8lbs	12345.8lbs

*1 Please contact for other voltage specification.

*2 The rated input voltage is 380V.

* all specifications are subject to change without notice.

ORDERING INFORMATION :

PAS-F Series Three-Phase Output (45kVA - 200kVA)

Model Number	Description
PAS-F 33030	Regenerative Grid Simulator (30kVA/300V/45-65Hz, Including LVRT Testing)
PAS-F 33045	Regenerative Grid Simulator (45kVA/300V/45-65Hz, Including LVRT Testing)
PAS-F 33060	Regenerative Grid Simulator (60kVA/300V/45-65Hz, Including LVRT Testing)
PAS-F 33075	Regenerative Grid Simulator (75kVA/300V/45-65Hz, Including LVRT Testing)
PAS-F 33100	Regenerative Grid Simulator (100kVA/300V/45-65H, Including LVRT Testing)
PAS-F 33120	Regenerative Grid Simulator (120kVA/300V/45-65Hz, Including LVRT Testing)
PAS-F 33150	Regenerative Grid Simulator (150kVA/300V/45-65Hz, Including LVRT Testing)
PAS-F 33200	Regenerative Grid Simulator (200kVA/300V/45-65Hz, Including LVRT Testing)
PAS-F 33300	Regenerative Grid Simulator (300kVA/300V/45-65Hz, Including LVRT Testing)
PAS-F 33400	Regenerative Grid Simulator (400kVA/300V/45-65Hz, Including LVRT Testing)
PAS-F 001	Soft Start Function
PAS-F 002	GPIB Interface
PAS-F 003	Ethernet Interface
PAS-F 004	USB Interface
PAS-F 005	Output Frequency 40-70Hz

PFV Series Three-Phase Output (45kVA - 200kVA)

Model Number	Description
PFV-33030	High Power Programmable AC Power Source (30kVA/300V/45-65Hz, Including Regenerative Function)
PFV-33045	High Power Programmable AC Power Source (45kVA/300V/45-65Hz, Including Regenerative Function)
PFV-33060	High Power Programmable AC Power Source (60kVA/300V/45-65Hz, Including Regenerative Function)
PFV-33075	High Power Programmable AC Power Source (75kVA/300V/45-65Hz, Including Regenerative Function)
PFV-33100	High Power Programmable AC Power Source (100kVA/300V/45-65Hz, Including Regenerative Function)
PFV-33120	High Power Programmable AC Power Source (120kVA/300V/45-65Hz, Including Regenerative Function)
PFV-33150	High Power Programmable AC Power Source (150kVA/300V/45-65Hz, Including Regenerative Function)
PFV-33200	High Power Programmable AC Power Source (200kVA/300V/45-65Hz, Including Regenerative Function)
PFV-33300	High Power Programmable AC Power Source (300kVA/300V/45-65Hz, Including Regenerative Function)
PFV-33400	High Power Programmable AC Power Source (400kVA/300V/45-65Hz, Including Regenerative Function)
PFV-001	Soft Start Function
PFV-002	GPIB Interface
PFV-003	Ethernet Interface
PFV-004	USB Interface

AFC Series

RoHS
Compliant



Output Power
3kVA~2000kVA

AFC Series AC Power Source/ Frequency Converter

AFC series is a general AC power supply which can simulate standard or abnormal voltage and frequency status. It is suitable for the Certified Bureau, the production and R&D of various industries including home appliances, electrical electronics, medical equipment and lighting.

PWM high-frequency switching technology designed to provide pure sine wave output, with single-phase and three-phase output models. Unlike other power supplies in the market, AFC's maximum output power is up to 2000kVA in one unit instead of parallel. The output voltage range of 5-300V with three-section voltage switch; Output frequency is switchable: 47-63Hz continuously adjustable, 50Hz fixed output, 60Hz fixed output, and optional 45-500Hz(Type A) and 350-450Hz & 400Hz fixed(Type B)

Applications

- Home Appliance
- Laboratory/Certification Bureau
- Industrial Power Supply
- Electric Vehicles
- IT / SMT Production Line
- Renewable Energy
- Medical Industry
- Motor & Compressor
- Shore Power & Shipbuilding

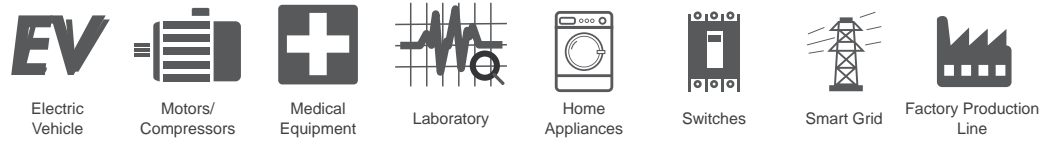
- Single-phase output models has the capacity range of 3-120kVA, three-phase output models has the capacity range of 6-2000kVA.
- CE & RoHS certification, with excellent performance in the safety ,electromagnetic compatibility.
- High input power factor, high efficiency of up to 92% at full load.
- 4 groups of LED display which display the output voltage, current, frequency,etc. and user can switch the reading of the phase voltage and line voltage; test information is at a glance.
- Modularized inverter which is compact, smaller, high power density and easy to maintain.
- Comprehensive protections which include overvoltage, overcurrent, overload, input under-voltage, overheat; the corresponding fault code will show and the buzzer will alarm, when protection is activated.
- Emergency stop button to enable stop the output quickly.

High Power Output



With output power ranging from 3 to 800kVA, the AFC series offers a complete line of AC power source and is suitable for production line testing or quality assurance. The unit is easy to operate and equipped with fast voltage switch, phase current measurement and emergency stop for high power unit to enhance safety protection.

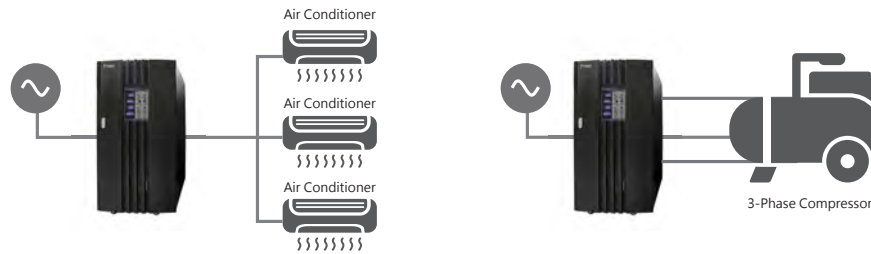
Ideal Power Source for Various Industries



The AFC series AC power source is highly reliable and easy to operate, and it has been widely applied in production line, quality assurance and design verification. The multiple levels of frequency and wide range of output voltage is ideal for applications requiring voltage and frequency conversions. The unit can also be applied as isolation between DUT and the grid to reduce the interference from each side. These features make the AFC series ideal for home appliance, EMC chamber, motor and electronic industries.



Application Example



For production line and laboratory of motor, compressor and appliance, the AFC series can simulate different countries' voltage and frequency to help the users to verify DUT's reliability under different input power. The AFC series can also sustain unbalanced load conditions, which means it can power up to three single phase DUT or one three phase DUT. It can also be used as a power supply with isolation feature for power conditioning purpose. The AFC series is a versatile unit that can be applied into many applications.

Patent Module Design & CE Certified

The AFC series uses AC Power Corp.'s patent power module to greatly enhance its reliability and performance for high power model. It is CE certified and fulfill EMC and LVD requirements to ensure low interference to the DUT and the environment.

Complete Protections

The AFC series' protection circuitry has fast response to detect error, alarm and shut down output if necessary. The protections include OVP, OCP, OPP, input OVP, OTP and short circuit. Each error has a corresponding error code to help diagnose the issues and shorten the repair time.

ORDERING INFORMATION :

Model Number	Description
AFC-001	Type A: Output Frequency 45-500Hz
AFC-002	Type B: Output Frequency 350~450Hz, 400Hz
AFC-003	Type C : Output Frequency 50/60Hz
AFC-004	0~5V Analog Control (Control only)
AFC-005	4~20mA Analog Control (Control only)
AFC-006	Overload Capability 200% 2 sec, 150% 5 sec, 125% 15 sec

SPECIFICATIONS

AFC Series Single-Phase Output (500VA - 30kVA)

Model	AFC-11003	AFC-11005	AFC-11010	AFC-11015	AFC-11030
INPUT					
Phase	1Ø / 2 Wire + G				
Voltage ^{*1}	220V±15% (option: 100Vac or 120Vac)				
Frequency	50Hz ± 3Hz or 60Hz ± 3Hz				
Max. Current ^{*2}	21A	35A	69A	105A	210A
Power Factor	≥0.8 (Max. Power)		≥0.9 (Max. Power)		
OUTPUT					
Power (VA)	3kVA	5kVA	10kVA	15kVA	30kVA
Phase	1Ø / 2 Wire + G				
Voltage Ranges	5V-150.0V (L-N)				
	10V-300.0V (L-N)				
Voltage Resolution	0.1V				
Voltage Accuracy	0.2% F.S.+ 4 counts				
Frequency Range ^{*3}	Standard: 47-63Hz, 50Hz, 60Hz Option: 45-500Hz (Type A)				
Frequency Resolution	0.1Hz				
Frequency Accuracy	±0.1% F.S				
Max. Current (RMS)	25A	41.7A	83.3A	125A	250A
	12.5A	20.8A	41.7A	62.5A	125A
Line Regulation	≤ 1%				
Load Regulation	≤ 1% (Resistive Load)				
Total Harmonic Distortion(THD)	≤ 2% (Resistive Load)				
Response Time	≤ 2ms				
MEASUREMENT					
Voltage Range	0V-600.0V				
Voltage Resolution	0.1V				
Voltage Accuracy	0.2% F.S.+ 4 counts				
Frequency Range	0~999.9Hz				
Frequency Resolution	0.1Hz				
Frequency Accuracy	±0.1% F.S				
Current Range(RMS)	0-700A				
Current Resolution(RMS)	0.01A(< 100A) / 0.1A(≥ 100A)				
Current Accuracy(RMS)	0.2% F.S.+ 4 counts				
Power Range	-	0-75kW			
Power Resolution	-	0.01kW(< 10kW) / 0.1kW(≥ 10kW)			
Power Accuracy	-	0.3% F.S.+4 counts			
GENERAL					
Efficiency	≥ 80% at Max. Power		≥ 90% at Max. Power		
HMI	Digital LED Display				
Protection	Input : N.F.B, Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Over Temperature				
Operational Temperature	0°C ~45°C				
Humidity	0~90% (Non condensing)				
Altitude	< 1,500m				
Dimensions (H x W x D) ^{*4}	720 x 430 x 520 mm		1045 x 600 x 850 mm	1440 x 600 x 850 mm	
	28.4 x 16.9 x 20.5 inch		41.1 x 23.6 x 33.5 inch	56.7 x 23.6 x 33.5 inch	
Weight ^{*4}	73kg	89kg	210kg	240kg	330kg
	161lbs	196.2lbs	463.1lbs	529.2lbs	727.7lbs

*1 Please contact us for other input voltage specifications. *2 The max. current is based on rated input voltage of 220V.

*3 For type A: 45-500Hz, please contact us for output power characteristic curve.

*4 Dimensions and weight are for input voltage 220V. Please contact us for dimensions and weight for other input voltage.

* All specifications are subject to change without notice. The specifications are tested at ambient temperature of 25°C ± 5°C.

SPECIFICATIONS

AFC Series Single-Phase Output (10kVA - 150kVA)

Model	AFC-31010	AFC-31015	AFC-31030	AFC-31045	AFC-31060	AFC-31080	AFC-31100	AFC-31120
INPUT								
Phase	3 Ø / 4 Wire + G							
Voltage ¹	220/380Vac ±15% (option: 120/208Vac, 277/480Vac, 200Vac or 400Vac)							
Frequency	50Hz ± 3Hz or 60Hz ± 3Hz							
Max. Current ²	23A	32A	65A	97A	129A	198	247A	296A
Power Factor	≥ 0.9 (Max. Power)				≥ 0.85 (Max. Power)			
OUTPUT								
Power (VA)	10kVA	15kVA	30kVA	45kVA	60kVA	80kVA	100kVA	120kVA
Phase	1Ø / 2 Wire + G							
Voltage Ranges	Low(V)							
	High(V)							
Voltage Resolution	0.1V							
Voltage Accuracy	0.2% F.S.+4 counts							
Frequency Range ³	Standard: 47-63Hz, 50Hz, 60Hz Option: 45-500Hz (Type A)							
Frequency Resolution	0.1Hz							
Frequency Accuracy	±0.1% F.S							
Max. Current (RMS)	Low(A)							
	High(A)							
Line Regulation	≤ 1%							
Load Regulation	≤ 1% (Resistive Load)							
Total HarmonicDistortion(THD)	≤ 2% (Resistive Load)							
Response Time	≤ 2ms							
MEASUREMENT								
Voltage Range	0V-600.0V							
Voltage Resolution	0.1V							
Voltage Accuracy	0.2% F.S.+4 counts							
Frequency Range	0-999.9Hz							
Frequency Resolution	0.1Hz							
Frequency Accuracy	±0.1% F.S.							
Current Range(RMS)	0-9999A							
Current Resolution(RMS)	0.01A(< 100A) / 0.1A(≥ 100A)							
Current Accuracy(RMS)	0.2% F.S.+4 counts							
Power Range	0-75kW				-			
Power Resolution	0.01kW(< 10kW) / 0.1kW(≥ 10kW)				-			
Power Accuracy	0.3% F.S.+4 counts				-			
GENERAL								
Efficiency	≥ 90% at Max. Power				≥ 85% at Max. Power			
HMI	Digital LED Display							
Protection ⁴	Input : N.F.B, Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Over Temperature							
Operational Temperature	0°C~45°C							
Humidity	0~90% (Non condensing)							
Altitude	< 1,500m							
Dimensions (H x W x D) ⁴	1045 x 600 x 850 mm	1440 x 600 x 850 mm		1645 x 800 x 860 mm		1800 x 1050 x 970 mm	1900 x 1150 x 1240 mm	
	41.1 x 23.6 x 33.5 inch	56.7 x 23.6 x 33.5 inch		64.8 x 31.5 x 33.9 inch		70.9 x 41.3 x 38.2 inch	74.8 x 45.3 x 48.8 inch	
Weight ⁴	230kg	280kg	450kg	580kg	670kg	830kg	940kg	1100kg
	507.2lbs	617.4lbs	992.3lbs	1278.9lbs	1477.4lbs	1830.2lbs	2072.7lbs	2425.5lbs

*1 Please contact us for other input voltage specifications. *2 The max. current is based on rated input voltage of 220V.

*3 For type A: 45-500Hz, please contact us for output power characteristic curve.

*4 Dimensions and weight are for input voltage 220V. Please contact us for dimensions and weight for other input voltage.

* All specifications are subject to change without notice. The specifications are tested at ambient temperature of 25°C ± 5°C.

SPECIFICATIONS

AFC Series Three-Phase Output (5kVA - 120kVA)

Model	AFC-33005	AFC-33010	AFC-33015	AFC-33030	AFC-33045	AFC-33060	AFC-33080	AFC-33100	AFC-33120	
INPUT										
Phase	3Ø / 4 Wire + G (option: 3Ø / 3 Wire + G)									
Voltage ^{*1}	220/380Vac ±15% (option: 120/208Vac, 277/480Vac, 240Vac, 200Vac or 400Vac)									
Frequency	50Hz ± 3Hz or 60Hz ± 3Hz									
Max. Current ^{*2}	11A	23A	32A	65A	97A	129A	198A	247A	296A	
Power Factor	≥0.9 (Max. Power)						≥0.85 (Max. Power)			
OUTPUT										
Power (VA)	5kVA	10kVA	15kVA	30kVA	45kVA	60kVA	80kVA	100kVA	120kVA	
Phase	3Ø / 4 Wire + G									
Voltage Ranges	Low(V) 5V-150.0V (L-N)									
	High(V) 10V-300.0V (L-N)									
Voltage Resolution	0.1V									
Voltage Accuracy	0.2% F.S.+4 counts									
Frequency Range ^{*3}	Standard: 47-63Hz, 50Hz, 60Hz Option: 45-500Hz (Type A)									
Frequency Resolution	0.1Hz									
Frequency Accuracy	±0.1% F.S.									
Max. Current (RMS)	Low(A) 13.9A, 27.8A, 41.7A, 83.3A, 125A, 166.7A, 222.2A, 277.8A, 333.3A									
	High(A) 6.9A, 13.9A, 20.8A, 41.7A, 62.5A, 83.3A, 111.1A, 138.9A, 166.7A									
Line Regulation	≤ 1%									
Load Regulation	≤ 1% (Resistive Load)									
Total Harmonic Distortion(THD)	≤ 2% (Resistive Load)									
Response Time	≤ 2ms									
MEASUREMENT										
Voltage Range	0V-600.0V									
Voltage Resolution	0.1V									
Voltage Accuracy	0.2% F.S.+4 counts									
Frequency Range	0~999.9Hz									
Frequency Resolution	0.1Hz									
Frequency Accuracy	±0.1% F.S.									
Current Range(RMS)	0-9999A									
Current Resolution(RMS)	0.01A(< 100A) / 0.1A(≥ 100A)									
Current Accuracy(RMS)	0.2% F.S.+4 counts									
Power Range	0-75kW						-			
Power Resolution	0.01kW(< 10kW) / 0.1kW(≥ 10kW)						-			
Power Accuracy	0.3% F.S.+4 counts						-			
GENERAL										
Efficiency	≥ 90% at Max. Power						≥ 85% at Max. Power			
HMI	Digital LED Display									
Protection ^{*4}	Input : N.F.B, Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Over Temperature									
Operational Temperature	0°C~45°C									
Humidity	0~90% (Non condensing)									
Altitude	< 1,500m									
Dimensions (H x W x D) ^{*4}	1045 x 600 x 850 mm	1440 x 600 x 850 mm			1645 x 800 x 860 mm		1800 x 1050 x 970 mm		1900 x 1150 x 1240 mm	
	41.1 x 23.6 x 33.5 inch	56.7 x 23.6 x 33.5 inch			64.8 x 31.5 x 33.9 inch		70.9 x 41.3 x 38.2 inch		74.8 x 45.3 x 48.8 inch	
Weight ^{*4}	200kg	280kg	305kg	400kg	560kg	670kg	1000kg	1120kg	1240kg	
	441lbs	617.4lbs	672.53lbs	882lbs	1234.8lbs	1477.35lbs	2205lbs	2469.6lbs	2734.2lbs	

*1 200V and 400V input options are 3Ø / 3 Wire + G. Please contact us for other input voltage specifications. *2 The max. current is based on rated input voltage of 380V.

*3 For type A: 45-500Hz, please contact us for output power characteristic curve. *4 Dimensions and weight are for input voltage 220/380V(3Ø/4W+G). Please contact us for dimensions and weight for other input voltage.

* All specifications are subject to change without notice. The specifications are tested at ambient temperature of 25°C ± 5°C.

SPECIFICATIONS

AFC Series Three-Phase Output (160kVA - 800kVA)

Model	AFC-33160	AFC-33200	AFC-33240	AFC-33300	AFC-33400	AFC-33500	AFC-33640
INPUT							
Phase	3Ø / 4 Wire + G (option: 3Ø / 3 Wire + G)						
Voltage ¹	220/380Vac ±15% (option: 120/208Vac, 277/480Vac, 240Vac, 200Vac or 400Vac)						
Frequency	50Hz ± 3Hz or 60Hz ± 3Hz						
Max. Current ²	395A	493A	593A	769A	1025A	1282A	1579A
Power Factor	≥0.85 (Max. Power)						
OUTPUT							
Power (VA)	160kVA	200kVA	240kVA	300kVA	400kVA	500kVA	640kVA
Phase	3Ø / 4 Wire + G						
Voltage Ranges	Low(V)						
	High(V)						
Voltage Resolution	0.1V						
Voltage Accuracy	0.2% F.S.+ 4counts						
Frequency Range ³	Standard: 47-63Hz, 50Hz, 60Hz Option: 45-500Hz (Type A)						
Frequency Resolution	0.1Hz						
Frequency Accuracy	±0.1% F.S.						
Max. Current (RMS)	Low(A)						
	High(A)						
Line Regulation	≤ 1%						
Load Regulation	≤ 1% (Resistive Load)						
Total Harmonic Distortion(THD)	≤ 2% (Resistive Load)						
Response Time	≤ 2ms						
MEASUREMENT							
Voltage Range	0V-600.0V						
Voltage Resolution	0.1V						
Voltage Accuracy	0.2% F.S.+4 counts						
Frequency Range	0-999.9Hz						
Frequency Resolution	0.1Hz						
Frequency Accuracy	±0.1% F.S.						
Current Range(RMS)	0-9999A						
Current Resolution(RMS)	0.01A(< 100A) / 0.1A(≥ 100A)						
Current Accuracy(RMS)	0.2% F.S.+4 counts						
Power Range	-						
Power Resolution	-						
Power Accuracy	-						
GENERAL							
Efficiency	≥ 85% at Max. Power						
HMI	Digital LED Display						
Protection	Input : N.F.B, Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Over Temperature						
Operational Temperature	0°C~45°C						
Humidity	0~90% (Non condensing)						
Altitude	< 1,500m						
Dimensions (H x W x D) ⁴	1900 x 1150 x 1240 mm			2050 x 3880x 1539 mm			2050 x 4716 x 1520 mm
	74.8 x 45.3 x 48.8 inch			80.7 x 152.8 x 60.6 inch			80.7 x 185.7 x 59.8 inch
Weight ⁴	1850kg	2300kg	2800kg	3450kg	4450kg	5550kg	7800kg
	4079.3lbs	5071.5lbs	6174lbs	7607.25lbs	9812.25lbs	12237.8lbs	17199lbs

¹ 200V and 400V input options are 3Ø / 3 Wire + G. Please contact us for other input voltage specifications. ² The max. current is based on rated input voltage of 380V.

³ For type A: 45-500Hz, please contact us for output power characteristic curve.

⁴ Dimensions and weight are for input voltage 220/380V(3Ø/4W+G). Please contact us for dimensions and weight for other input voltage.

* All specifications are subject to change without notice. The specifications are tested at ambient temperature of 25°C ± 5°C.

PWF Series



Output Power
20kVA~120kVA

PWF Series

Programmable Wide Frequency AC Power Source

The PWF series is a programmable AC power source with wide range of adjustable frequency, developed for aerospace or military's 400Hz and 800Hz test applications, such as laboratory use, compliance test, and quality assurance.

The PWF series consists of L series and M series, which have different output frequency range. L series provides 45~500Hz and 0~300V output, and M series provides 300~800Hz and 0-150V output. Users can select communication interfaces of RS-485, RS-232, and optional GPIB. The PWF series has installed programming sequence functions of STEP and GRADUAL modes and optional three phase independent control, phase angle control, and disturbance function.

Interfaces

Standard

RS-232

RS-485

Option

GPIB

Applications

- Aerospace & Defense
- Laboratory/Certification Bureau
- Motor & Compressor
- Electronic Component
- Magnetic Resonance Testing

- Wide range output frequency up to 800Hz for aerospace and military applications.
- Three phase independent control to set voltage of each phase .
- Phase angle control to set angle between each phase.
- Programming Sequence Function: STEP and GRADUAL modes allow users to easily set sequences of start/ end voltage, frequency and run time for testing purposes.
- Optional soft start function to reduce inrush current from motor type EUT.
- Touch screen display for easy operation.
- Comprehensive protection includes over voltage, over current, over load, input under voltage and over temperature with over 20 corresponding error codes and event log for easier trouble shooting.
- Standard RS-232 and RS-485 interfaces and optional GPIB interface available.
- Latest patented power module with high power density and swappable design for better reliability and serviceability.
- Disturbance function to better simulate grid abnormality.

L series & M series

PWF-L Series 45-500Hz

PWF-M Series 300-800Hz

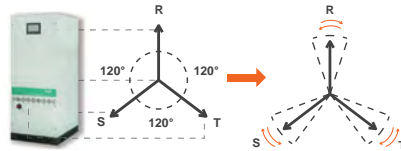
The PWF has two different series with two different output frequencies. The L series (PWF-L) has output frequency of 45~500Hz, which is ideal for industrial 50 and 60 Hz applications or 400Hz avionics and defense applications. The M series (PWF-M) has output frequency up to 800Hz, which is suitable to simulate the latest standard for defense and aerospace.

Overload Capability



The PWF series AC source has 200%, 150% and 125% overload capability. This is suitable for powering inductive load, such as motor or compressor, which has high inrush current during startup. With the overload capability, user can select an AC source to start up a DUT with high inrush current, and do not need to scale up power supply to cover the peak current of inrush current.

Phase Angle Control



User can set up the angle of each phase via the touch panel. This function could easily simulate the three phase angle unbalance situation.

SPECIFICATIONS

PWF Series Three-Phase Output (20kVA - 120kVA)

Model	PWF-L-33020	PWF-L-33030	PWF-L-33045	PWF-L-33060	PWF-L-33075	PWF-L-33090	PWF-L-33120	
	PWF-M-33020	PWF-M-33030	PWF-M-33045	PWF-M-33060	PWF-M-33075	-	-	
INPUT								
Phase & Voltage ^{*1}	3Ø / 4 Wire + G & 220V/380V±15%							
Frequency	47 - 63Hz							
Max. Current ^{*2}	37.9A	56.9A	85.3A	113.8A	142.2A	170.7A	227.6A	
Power Factor	≥0.94 (Max. Power)							
OUTPUT								
Power (VA)	20kVA	30kVA	45kVA	60kVA	75kVA	100kVA	120kVA	
Phase	3Ø / 4 Wire + G							
Voltage Ranges	PWF-M Series		0V-150.0V (L-N)					
	PWF-L Series		0V-300.0V (L-N)					
Voltage Resolution	0.1V							
Voltage Accuracy	0.5% F.S.+4 counts							
Frequency Range	PWF-M Series		300-800Hz					
	PWF-L Series		45-500Hz					
Frequency Resolution	0.1Hz							
Frequency Accuracy	±0.02% F.S.							
Max. Current (RMS)	PWF-M Series		44.4A	66.7A	100A	133.3A	166.7A	-
	PWF-L Series		27.7A	41.6A	62.5A	83.3A	104.1A	125A
Line Regulation	≤ 0.5%							
Load Regulation	≤ 1% (Resistive Load)							
Total Harmonic Distortion(THD)	≤ 2% (Resistive Load)							
Response Time	≤ 1ms							
MEASUREMENT								
Voltage	Range : 0V-300.0V Resolution : 0.1V Accuracy :0.5% F.S.+ 4 counts							
Frequency	Range : 45.0-800.0Hz Resolution : ≤ 100Hz : 0.01Hz / > 100Hz : 0.1Hz Accuracy : ±0.02% F.S							
Current	Range (RMS) : 0 ~ 9999A Resolution (RMS) : 0.1A Accuracy(RMS) : 0.5% F.S.+4 counts							
Power	Range : 0 - 120kW Resolution : 0.1kW Accuracy : 1% F.S.+ 6 counts							
GENERAL								
Efficiency	≥ 85-90 % at Max. Power							
HMI	Touch Screen, 7" Color TFT LCD							
Overload Capacity	125% / 30 min · 150% / 10 min · 200% / 1 min							
Program Mode	STEP : 24 sets / 255 cycles, It can set Voltage / Frequency / Time. GRADUAL : 12 sets / 255 cycles, It can set Voltage / Frequency / Time.							
Protection	Input : Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Over Temperature							
Remote Interface	Standard : RS-485 / RS-232 Option : GPIB, Ethernet							
Environment	Operational Temperature: 0°C ~45°C Humidity: 0~90% (Non condensing)							
Altitude	<1,500m							
Dimensions (H x W x D)	1715 x 685 x 795 mm			1765 x 835 x 1040 mm				
	67.51 x 26.96 x 31.29 inch			69.5 x 33.46 x 40.94 inch				

*1 Please contact us for other voltage specification.

*2 The rated input voltage is 380V.

* all specifications are subject to change without notice.

AMV Series



AMV Series

400Hz Power Supply / Ground Power Unit

AMV series is a new generation of ground power unit which designed for aviation and military industry. It is compact size and light weight which is suitable for airport, test flight station, aircraft maintenance station, hangar, product assembly line and other places. It provides a stable 400Hz power (800Hz available), with good environmental proof design and outdoor capability.

The output voltage of AMV series are 115 / 200V or $115 / 200V \pm 15\%$ which is easy for voltage adjustment.

AMV series comes with two kinds of output frequency, 400Hz fixed or 300-500Hz adjustable.

Robust overload capacity can handle the inrush current of military or aviation equipment. Enclosure protection level is up to IP54 and it has stand-alone or trailer model available for different applications.

Output Power
30kVA~180kVA

Interfaces

Standard

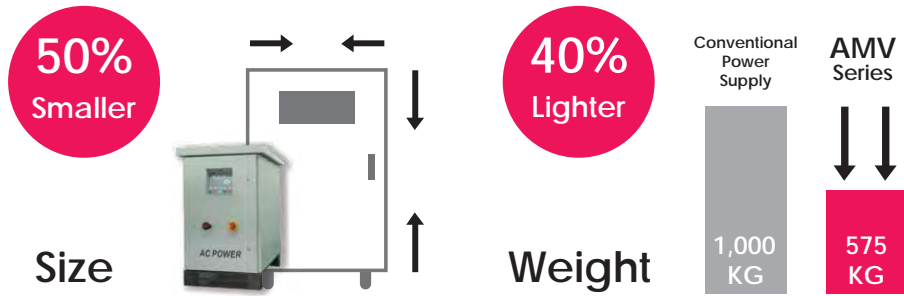
RS-485

Applications

- Aerospace & Defense
- Repair Station
- Hangar
- Avionic Laboratory

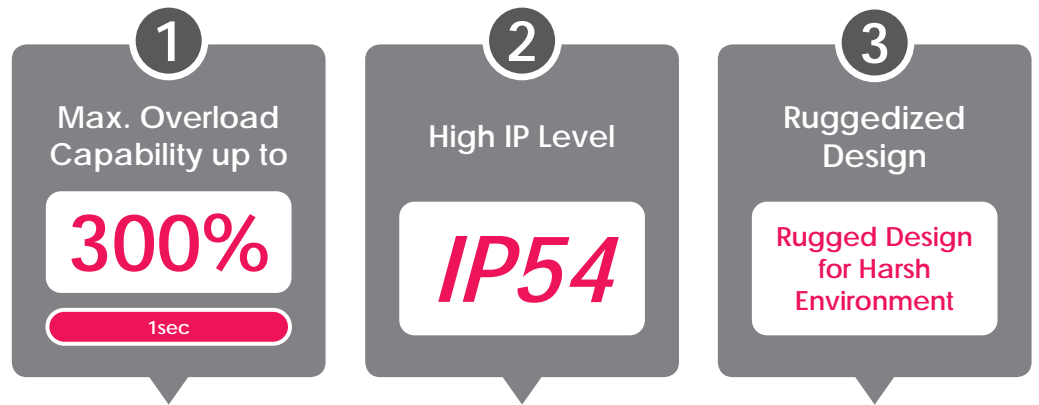
- VFD operation interface: intuitive, easy to use and high protection level and phase angle adjustment.
- Robust overload ability: 125% for 600secs, 150% for 30secs, 200% for 10secs, and extended overload is optional.
- EF signal chain function.
- Enclosure protection rating is up to IP54; all parts are treated with salt corrosion-resisting, damp-resisting and mold-resisting coat; the working temperature can be up to $-40^{\circ}\text{C} \sim 55^{\circ}\text{C}$.
- Compliant with MIL-STD-704.
- Optional dual outputs for multiple load applications.
- Emergency stop button to stop the output quickly.
- Comprehensive protections which include output undervoltage / overvoltage, overcurrent, overload, input undervoltage / overvoltage, overheat and other more than twenty fault conditions.
- Optional RS-485 communication interface.
- Modularized inverter which is compact, smaller, high power density and easy to maintain.

Compact & Lighter



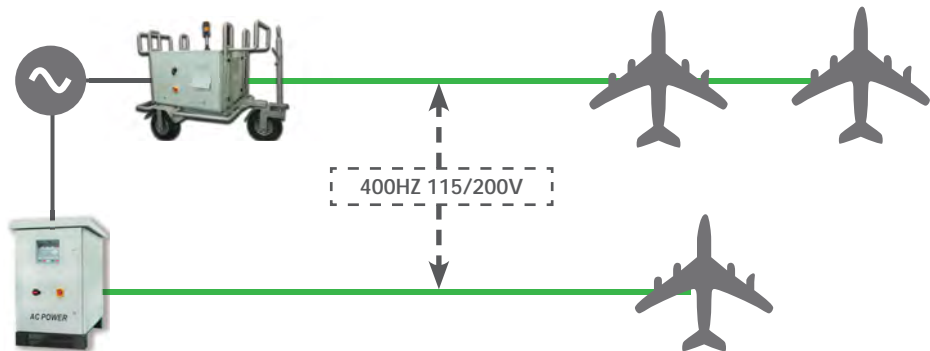
Preen's latest ground power unit, the AMV series, has been greatly improved on size and weight. Compared to the previous version ground power unit, the AMV series can be up to 50% smaller and 40% lighter. This leading power density makes it easier on installation and relocation, providing a great flexibility.

High Over Load Capability & Ruggedized Design



With the protection level up to IP 54, the AMV series is a ground power unit designed for outdoor usage. The overall design and main components have been ruggedized for harsh environments. For inductive type of DUT, such as motor or compressor, the AMV series has standard overload capability of 125%, 150% and 200%, and it is extensible up to 300%, which makes it suitable for DUT with high startup inrush current and can further reduce the cost on scaling up the power unit.

Ground Power Applications



The AMV series has been widely installed at hangars, airports, aircraft repair stations and factories to deliver stable 400Hz or up to 800Hz power to aircraft or components. User can also select dual outputs to power up multiple units with one AMV series. The AMV series can be installed on a trailer for easy relocation and to provide user with great convenience.

SPECIFICATIONS

AMV Series Three-Phase Output (30kVA - 180kVA)

Model	AMV-33030	AMV-33045	AMV-33060	AMV-33090	AMV-33120	AMV-33150	AMV-33180
INPUT							
Phase	3Ø / 3 Wire + G						
Voltage ^{*1}	380V±15%						
Frequency	50 Hz ± 3Hz · 60Hz ± 3Hz						
Max. Current ^{*2}	66.2A	99.3A	132.4A	198.6A	264.8A	331.0A	397.2A
Power Factor	≥ 0.94 (Max. Power)						
OUTPUT							
Power	30kVA	45kVA	60kVA	90kVA	120kVA	150kVA	180kVA
Phase	3Ø / 4 Wire + G						
Voltage Ranges	115 / 200V ±10%						
Voltage Resolution	0.1V						
Voltage Accuracy	0.5% F.S.+4 counts						
Frequency Range	AMV-T : 400Hz (Trailer) & AMV-F : 300-500 Hz (Stand-Alone)						
Frequency Resolution	0.1Hz						
Frequency Accuracy	±0.02% F.S.						
Max. Current (RMS)	87A	130.4A	173.9A	260.9A	347.8A	434.8A	521.7A
Power Factor	0.7 lagging to 0.95 leading						
Line Regulation	≤ 1%						
Load Regulation	< 1% (Resistive Load)						
Total Harmonic Distortion(THD)	≤ 2% (Resistive Load)						
Response Time	≤ 2ms						
Phase Angle	For Balanced Load: 120°±1° ; For 30% Unbalanced Load: 120°±1.5° ; For 100% Unbalanced Load: 120°±2°						
MEASUREMENT							
Voltage Range	0V-300.0V						
Voltage Resolution	0.1V						
Voltage Accuracy	0.5% F.S.+4 counts						
Frequency Range	300.0-500.0Hz						
Frequency Resolution	0.1 Hz						
Frequency Accuracy	±0.1% F.S.						
Current Range(RMS)	0-9999A						
Current Resolution(RMS)	0.1A						
Current Accuracy(RMS)	0.5% F.S.+4 counts						
GENERAL							
Efficiency	≥ 92% at Max. Power						
HMI	VFD HMI						
Overload Capacity	Standard : 125%(600s) / 150% (30s) / 200% (10s) Option : 150%(60s) / 200% (30s) / 250% (10s) / 300% (1s)						
Protection	Class D Lighting Protection, Input LVP, Input Phase Loss, OVP, LVP, OCP, OPP, Short Circuit, OTP, OFP						
Remote Interface	Standard : RS-485						
Operational Temperature	-40°C ~ +55°C						
Storage Temperature	-45°C ~ +65°C						
Humidity	0~90% (Non condensing)						
IP Level	IP54						
EF Signal	Standard						
STAND-ALONE							
Dimensions (H x W x D)	1205 x 780 x 1045 mm			1555 x 780 x 1095 mm		1600 x 820 x 1195 mm	
	47.44 x 30.7 x 41.14 inch			61.22 x 30.7 x 43.11 inch		62.99 x 32.28 x 47.04 inch	
Weight	330kg	410kg	493kg	575kg	780kg	850kg	980kg
	727.5lbs	903.9lbs	1086.9lbs	1267.7lbs	1719.6lbs	1873.9lbs	2160.5lbs
TRAILER							
Dimensions (H x W x D)	1460 x 2013 x 1358 mm			1460 x 2945 x 1430 mm		1510 x 3045 x 1530 mm	
	57.48 x 79.25 x 53.46 inch			57.48 x 115.94 x 56.29 inch		59.44 x 119.88 x 60.23 inch	
Weight	480kg	560kg	643kg	725kg	850kg	1020kg	1170kg
	1058.2lbs	1234.6lbs	1417.6lbs	1598.4lbs	1873.9lbs	2248.7lbs	2579.4lbs

*1 Please contact for other voltage specification.

*2 The rated input voltage is 380V.

* all specifications are subject to change without notice.

ORDERING INFORMATION :

AMV-T Series Three-Phase Output (30kVA - 180kVA)

Model Number	Description
AMV-T-33030	Ground Power Unit(30kVA/115V/400Hz)-Trailer
AMV-T-33045	Ground Power Unit(45kVA/115V/400Hz)-Trailer
AMV-T-33060	Ground Power Unit(60kVA/115V/400Hz)-Trailer
AMV-T-33090	Ground Power Unit(90kVA/115V/400Hz)-Trailer
AMV-T-33120	Ground Power Unit(120kVA/115V/400Hz)-Trailer
AMV-T-33150	Ground Power Unit(150kVA/115V/400Hz)-Trailer
AMV-T-33180	Ground Power Unit(180kVA/115V/400Hz)-Trailer

AMV-F Series Three-Phase Output (30kVA - 180kVA)

Model Number	Description
AMV-F-33030	Ground Power Unit(30kVA/115V/400Hz)-Stand-Alone
AMV-F-33045	Ground Power Unit(45kVA/115V/400Hz)-Stand-Alone
AMV-F-33060	Ground Power Unit(60kVA/115V/400Hz)-Stand-Alone
AMV-F-33090	Ground Power Unit(90kVA/115V/400Hz)-Stand-Alone
AMV-F-33120	Ground Power Unit(120kVA/115V/400Hz)-Stand-Alone
AMV-F-33150	Ground Power Unit(150kVA/115V/400Hz)-Stand-Alone
AMV-F-33180	Ground Power Unit(180kVA/115V/400Hz)-Stand-Alone

AMF Series

AMF Series 400Hz Power Supply / Ground Power Unit

The AMF series power supply is designed for 400Hz aerospace and military applications, including laboratory use, ground power for hangar and repair station, airport and factory. Stable 400Hz power input helps users on inspections, aging tests, and supplying power to aircraft.

Output voltage of the AMF series is 115/200V with an adjustable range of 10%. Users can switch between output frequency 400Hz fixed and 350~450Hz adjustable. With overload drive capability and reverse energy protection, the AMF series is ideal for motor, aerospace and military types of application.



Output Power
500VA~400kVA

Interfaces

Option

RS-485

Applications

- Aerospace & Defense
- Component Verification
- Repair Stations
- Hangars

- Output voltage 115/200V with an adjustable range of 10% and two types of output frequency 400Hz fixed and 350~450Hz djustable.
- Optional overload function: 120% for 60mins, 150% for 60secs,and 200% for 15secs.
- Follows standards of MIL-STD-704 F.
- 4 LED displays shows measurements of voltage, current, frequency and power.
- Compact size for easier maintenance and high power density.
- Comprehensive protection with corresponding error codes.
- Able to operate under unbalanced load conditions.
- Able to handle reverse energy generated by motor type EUT.

SPECIFICATIONS

AMF Series Single-Phase Output (500VA - 100kVA)

Model	AMF-500W	AMF-11001	AMF-11003	AMF-11005	AMF-11010	AMF-11020	AMF-31030	AMF-31045	AMF-31060	AMF-31100	
INPUT											
Phase	1 Ø / 2 Wire +G						3Ø / 4 Wire (Y) +G (Option : 3Ø / 3 Wire (Δ) +G)				
Voltage ^{*1}	220V±15%						220V/380V±15% (Option : 220V±15%)				
Frequency	50Hz ± 3Hz or 60Hz ± 3Hz										
Max. Current ^{*2}	7.4A	14.9A	21.7A	36.2A	72.3A	145A	72A	109A	145A	241A	
Power Factor	≥0.8 (Max. Power)					≥0.85 (Max. Power)					
OUTPUT											
Power	VA	500VA	1kVA	3kVA	5kVA	10kVA	20kVA	30kVA	45kVA	60kVA	100kVA
Phase	1 Ø / 2 Wire + G										
Voltage Ranges	Standard : 115V±10% Option : 220V±10% or 230V±10%										
Voltage Resolution	0.1V										
Voltage Accuracy	0.5% F.S.+4 counts										
Frequency Range	400Hz fixed and 350Hz ~ 450Hz variable (contact us for other frequency range)										
Frequency Resolution	0.1Hz										
Frequency Accuracy	±0.5% F.S.										
Max. Current (RMS) at 115V	4.3A	8.7A	26.1A	43.5A	87A	173.9A	260.9A	391.3A	521.7A	869.6A	
Max. Current (RMS) at 220V (Opt.)	2.3A	4.5A	13.6A	22.7A	45.5A	90.9A	136.4A	204.5A	272.7A	454.5A	
Max. Current (RMS) at 230V (Opt.)	2.2A	4.3A	13.0A	21.7A	43.5A	87.0A	130.4A	195.7A	260.9A	434.8A	
Line Regulation	≤ 0.5%		< 1%				< 1.5%				
Load Regulation	≤ 0.5% (Resistive Load)		≤ 1% (Resistive Load)				≤ 1.5% (Resistive Load)				
Total Harmonic Distortion (THD)	≤ 0.5% (Resistive Load)		≤ 2% (Resistive Load)				≤ 3% (Resistive Load)				
Response Time	≤ 2ms										
MEASUREMENT											
Voltage Range	0V-300.0V										
Voltage Resolution	0.1V										
Voltage Accuracy	0.5% F.S.+4 counts										
Frequency Range	0~999.9Hz										
Frequency Resolution	0.1Hz										
Frequency Accuracy	±0.5% F.S.										
Current Range (RMS)	0-999A										
Current Resolution (RMS)	0.001A / 0.01A	4 Digits Meter / Resolution : 0.1A				4.5 Digits Meter / Resolution : 0.1A					
Current Accuracy (RMS)	0.2% F.S.+4 counts										
GENERAL											
Efficiency	≥ 45% at Max. Power					≥ 87% at Max. Power					
HMI	Digital LED Meters										
Overload Capacity	- 120%/1 hour, 150%/1 minute, 200%/15 seconds ^{*3}										
Protection	Input / Ouput Circuit Breakers and Protection Circuitry for OVP, OCP, OPP, OTP and Short Circuit										
Opertional Temperature	-20°C ~ 45°C										
Humidity	0~90% (Non condensing)										
Altitude	< 1,500m										
Dimensions (H x W x D)	200 x 430 x 520 mm	720 x 430 x 520 mm			990 x 430 x 750 mm	1240 x 600 x 970 mm	1600 x 800 x 1090 mm		1800 x 1050 x 970 mm		
	7.87 x 16.92 x 20.47 inch	28.34 x 16.92 x 20.47 inch			38.97 x 16.92 x 29.52 inch	48.81 x 23.62 x 38.18 inch	62.99 x 31.49 x 42.91 inch		70.86 x 41.33 x 38.18 inch		
Weight	44kg	60kg	73kg	89kg	150kg	280kg	333kg	418kg	571kg	898kg	
	97lbs	132.3lbs	160.9lbs	196.2lbs	330.7lbs	617.3lbs	734.1lbs	921.5lbs	1258.8lbs	1979.8lbs	

*1 Please contact us for other voltage specification.

*2 The rated input voltage is 220V or 220V/380V.

* all specifications are subject to change without notice.

*3 The unit needs a interval of at least 3 times of overload time for the next overload operation. For example, for every 1-hour of 120% overload operation, the unit needs at least 3 hours (1 hour*3) of interval for the next overload operation.

SPECIFICATIONS

AMF Series Three-Phase Output (6kVA - 75kVA)

Model	AMF-33006	AMF-33010	AMF-33015	AMF-33020	AMF-33030	AMF-33045	AMF-33060	AMF-33075
INPUT								
Phase	3Ø / 4 Wire (Y)+G (Option : 3Ø / 3 Wire (Δ) +G)							
Voltage ^{*1}	220V/380V±15% (Option : 220V±15%)							
Frequency	50Hz ± 3Hz or 60Hz ± 3Hz							
Max. Current ^{*2}	14.5A	24.1A	36.2A	48.2A	72.3A	108.5A	144.6A	180.8A
Power Factor	≥ 0.85 (Max. Power)							
OUTPUT								
Power	6kVA	10kVA	15kVA	20kVA	30kVA	45kVA	60kVA	75kVA
Phase	3Ø / 4 Wire + G							
Voltage Ranges	115V/200V±10%							
Voltage Resolution	0.1V							
Voltage Accuracy	0.5% F.S.+4 counts							
Frequency Range	400Hz fixed and 350Hz ~ 450Hz variable (contact us for other frequency range)							
Frequency Resolution	0.1Hz							
Frequency Accuracy	±0.5% F.S.							
Max. Current (RMS)	17.4A	29A	43.5A	58A	87A	130.4A	173.9A	217.4A
Line Regulation	≤ 0.5%						≤ 1%	
Load Regulation	≤ 1%						≤ 1.5%	
Total Harmonic Distortion (THD)	≤ 2%						≤ 3%	
Response Time	≤ 2ms							
MEASUREMENT								
Voltage Range	0V-300.0V							
Voltage Resolution	0.1V							
Voltage Accuracy	0.5% F.S.+4 counts							
Frequency Range	0~999.9Hz							
Frequency Resolution	0.1Hz							
Frequency Accuracy	±0.5% F.S.							
Current Range(RMS)	0-999A							
Current Resolution(RMS)	4 Digits Meter / Resolution : 0.1A						4.5 Digits Meter / Resolution : 0.1A	
Current Accuracy(RMS)	0.2% F.S.+4 counts							
GENERAL								
Efficiency	≥ 87% at Max. Power							
HMI	Digital LED Meters							
Phase Angle	For Balanced Load: ≤ ± 2° ; For 100% Unbalanced Load: ≤ ± 4°							
Overload Capacity	120%/1 hour, 150%/1 minute, 200%/15 seconds ^{*3}							
Protection	Input / Ouput Circuit Breakers and Protection Circuitry for OVP, OCP, OPP, OTP and Short Circuit							
Operational Temperature	-20°C ~ 45°C							
Humidity	0~90% (Non condensing)							
Altitude	< 1,500m							
Dimensions (H x W x D)	990 x 430 x 750 mm		1240 x 600 x 970 mm			1600 x 800 x 1090 mm		
	38.97 x 16.92 x 29.52 inch		48.81 x 23.62 x 38.18 inch			62.99 x 31.49 x 42.91 inch		
Weight	150kg	175kg	265kg	345kg	385kg	528kg	635kg	700kg
	330.7lbs	385.8lbs	584.2lbs	760.6lbs	848.8lbs	1164lbs	1399.9lbs	1543.2lbs

*1 Please contact for other voltage specification.

*2 The rated input voltage is 220V/380V.

* all specifications are subject to change without notice.

*3 The unit needs a interval of at least 3 times of overload time for the next overload operation. For example, for every 1-hour of 120% overload operation, the unit needs at least 3 hours (1 hour*3) of interval for the next overload operation.

SPECIFICATIONS

AMF Series Three-Phase Output (100kVA - 400kVA)

Model	AMF-33100	AMF-33120	AMF-33150	AMF-33180	AMF-33200	AMF-33250	AMF-33300	AMF-33400	
INPUT									
Phase	3Ø / 4 Wire (Y)+G (Option : 3Ø / 3 Wire (Δ) +G)								
Voltage ^{*1}	220V/380V±15% (Option : 220V±15%)								
Frequency	50Hz ± 3Hz or 60Hz ± 3Hz								
Max. Current ^{*2}	241A	289.3A	361.6A	433.9A	482.1A	602.6A	723.1A	964.2A	
Power Factor	≥ 0.85 (Max. Power)								
OUTPUT									
Power	VA	100kVA	120kVA	150kVA	180kVA	200kVA	250kVA	300kVA	400kVA
Phase	3Ø / 4 Wire + G								
Voltage Ranges	115V/200V±10%								
Voltage Resolution	0.1V								
Voltage Accuracy	0.5% F.S.+4 counts								
Frequency Range	400Hz fixed and 350Hz ~ 450Hz variable (contact us for other frequency range)								
Frequency Resolution	0.1Hz								
Frequency Accuracy	±0.5% F.S.								
Max. Current (RMS)	289.9A	347.8A	434.8A	521.7A	579.7A	724.6A	869.6A	1159.4A	
Line Regulation	≤ 1%								
Load Regulation	≤ 1.5%								
Total Harmonic Distortion(THD)	≤ 3 %								
Response Time	≤ 2ms								
MEASUREMENT									
Voltage Range	0V-300.0V								
Voltage Resolution	0.1V								
Voltage Accuracy	0.5% F.S.+4 counts								
Frequency Range	0~999.9Hz								
Frequency Resolution	0.1Hz								
Frequency Accuracy	±0.5% F.S.								
Current Range(RMS)	0-999A								
Current Resolution(RMS)	4.5 Digits Meter / Resolution : 0.1A								
Current Accuracy(RMS)	0.2% F.S.+4 counts								
GENERAL									
Efficiency	≥ 87% at Max. Power								
HMI	Digital LED Meters								
Phase Angle	For Balanced Load: ≤ ± 2° ; For 100% Unbalanced Load: ≤ ± 4°								
Overload Capacity	120%/1 hour, 150%/1 minute, 200%/15 seconds ^{*3}								
Protection	Input / Ouput Circuit Breakers and Protection Circuitry for OVP, OCP, OPP, OTP and Short Circuit								
Operational Temperature	-20°C ~ 45°C								
Humidity	0~90% (Non condensing)								
Altitude	< 1,500m								
Dimensions (H x W x D)	1800 x 1050 x 970 mm		1900 x 1150 x 1240 mm			2000 x 2240 x 1240 mm			
	70.86 x 41.33 x 38.18 inch		74.8 x 45.27 x 48.81 inch			78.7 x 88.18 x 48.81 inch			
Weight	1000kg	1200kg	1350kg	1800kg	2000kg	2270kg	2740kg	3030kg	
	2204.62lbs	2645.54lbs	2976.24lbs	3968.32lbs	4409.24lbs	5004.49lbs	6040.66lbs	6680lbs	

*1 Please contact for other voltage specification.

*2 The rated input voltage is 220V/380V.

* all specifications are subject to change without notice.

*3 The unit needs a interval of at least 3 times of overload time for the next overload operation. For example, for every 1-hour of 120% overload operation, the unit needs at least 3 hours (1 hour*3) of interval for the next overload operation.

BPS

Series



Output Power
300kVA~2000kVA

Applications

- Aerospace & Defense
- Shore Power
- Ship Building
- Repair Station

BPS Series

Shore Power Supply

The BPS series is a family of high performance Shore Power Supply developed according to needs for shipbuilding, berths and ships. It can operate under environment with high level of humidity, heat and corrosion, and provide pure 50Hz and 60Hz power to abusive loads.

With output power up to 2000kVA, the BPS series has output voltage of 440V (L-L) and output frequency of 47~63Hz continuously adjustable and 50/60Hz fixed. Installed in a customized container, it has protection level up to IP54 and overload capability for harsh conditions.

- Overload Capability: 110% for 1 hour and 150% for 1 minute.
- Equipped with outdoor level container to increase protection level up to IP54 for harsh conditions.
- High input power factory and high efficiency up to 92%.
- Patented power module design with compact size for easier maintenance and high power density.
- Comprehensive protection includes over voltage, over current, over load, input under voltage and over temperature with corresponding error codes.
- Emergency stop button to shut down output immediately.

SPECIFICATIONS

BPS-F Series Three-Phase Output (300kVA - 1200kVA)

Model	BPS-F-33300	BPS-F-33400	BPS-F-33500	BPS-F-33600	BPS-F-33800	BPS-F-331000	BPS-F-331200
INPUT							
Phase	3Ø / 4 Wire + G						
Voltage ^{*1}	220V/380V±15%						
Frequency	50 Hz ± 3Hz · 60Hz ± 3Hz						
Max. Current ^{*2}	629A	839A	1049A	1258A	1678A	2097A	2517A
Power Factor	≥ 0.85 (Max. Power)						
OUTPUT							
Power	300kVA	400kVA	500kVA	600kVA	800kVA	1000kVA	1200kVA
Phase	3Ø / 3 Wire + G						
Voltage Range	440V ±5V (L-L)						
Voltage Resolution	0.1V						
Voltage Accuracy	0.5% F.S.+4 counts						
Frequency Range	47-63 Hz, 50 Hz, 60 Hz						
Frequency Resolution	0.1Hz						
Frequency Accuracy	±0.02% F.S.						
Max. Current (RMS)	394A	525A	656A	787A	1050A	1312A	1575A
Line Regulation	≤ 1%						
Load Regulation	≤ 1% (Resistive Load)						
Total Harmonic Distortion(THD)	≤ 3% (Resistive Load)						
Response Time	≤ 2ms						
Crest Factor	≥ 3						
MEASUREMENT							
Voltage Range	0-600.0V						
Voltage Resolution	0.1V						
Voltage Accuracy	0.5% F.S.+4 counts						
Frequency Range	40.0-70.0Hz						
Frequency Resolution	0.01Hz						
Frequency Accuracy	±0.02% F.S.						
Current Range(RMS)	0-9999A						
Current Resolution(RMS)	0.1A						
Current Accuracy(RMS)	0.5% F.S.+4 counts						
Power Range	0-1200kW						
Power Resolution	0.1kW						
Power Accuracy	1% F.S.+6 counts						
GENERAL							
Efficiency	≥ 85% at Max. Power						
HMI	Digital LED Meters						
Overload Capacity	150% of rated current for 1 minute ^{*4} Inrush current capability: 250% of rated current for 2 seconds ^{*5} Output over current protection: 400% of rated current						
Protection	Input Circuit Breakers and Protection Circuitry for OVP, OCP, LVP and OTP						
Operational Temperature	-10°C ~ 45°C						
Humidity	0~90% (Non condensing)						
Altitude	< 1,500m						
IP Level	Outdoor Model: IP54 Indoor Model: IP22						
Dimensions (H x W x D)	1900 x 1240 x 1150 mm	2000 x 2240 x 1240 mm			2000 x 3450 x 1240 mm		
	74.8 x 48.81 x 45.27 inch	78.74 x 88.18 x 48.81 inch			78.74 x 135.82 x 48.81 inch		
Weight ^{*3}	2800kg	3500kg	4300kg	5200kg	6800kg	8500kg	10500kg
	6172.9lbs	7716.2lbs	9479.9lbs	11464lbs	14991.4lbs	18739.3lbs	23148.5lbs

*1 Please contact us for other voltage specification. *2 The rated input voltage is 220V/380V. *3 The size listed excludes container's size *4 For every 1-minute of 150% overload operation, the unit needs at least 10-minute interval for the next 150% overload operation. *5 For every 2-second of 250% overload operation, the unit needs at least 20-second interval for the next 250% overload operation. * all specifications are subject to change without notice.

SPECIFICATIONS

BPS-V Series Three-Phase Output (300kVA - 2000kVA)

Model	BPS-V-33300	BPS-V-33400	BPS-V-33500	BPS-V-33600	BPS-V-33800	BPS-V-331000	BPS-V-331200	BPS-V-331500	BPS-V-332000	
INPUT										
Phase	3Ø / 4 Wire + G									
Voltage ¹	220V/380V±15%									
Frequency	45-65 Hz									
Max. Current ²	520A	693A	866A	1040A	1387A	1734A	2080A	2600A	3467A	
Power Factor	≥ 0.95 (Max. Power)									
OUTPUT										
Power	VA	300kVA	400kVA	500kVA	600kVA	800kVA	1000kVA	1200kVA	1500kVA	2000kVA
Phase	3Ø / 4 Wire + G									
Voltage Ranges	440V ±5V (L-L)									
Voltage Resolution	0.1V									
Voltage Accuracy	0.5% F.S.+4 counts									
Frequency Range	50 Hz, 60 Hz									
Frequency Resolution	0.1Hz									
Frequency Accuracy	±0.02% F.S.									
Max. Current (RMS)	394A	525A	656A	787A	1050A	1312A	1575A	1968A	2624A	
Line Regulation	≤ 1%									
Load Regulation	≤ 1% (Resistive Load)									
Total Harmonic Distortion(THD)	≤ 3% (Resistive Load)									
Response Time	≤ 2ms									
Crest Factor	≥ 3									
MEASUREMENT										
Voltage Range	0-600.0V									
Voltage Resolution	0.1V									
Voltage Accuracy	0.5% F.S.+4 counts									
Frequency Range	40.0-70.0Hz									
Frequency Resolution	0.01Hz									
Frequency Accuracy	±0.02% F.S.									
Current Range(RMS)	0-9999A									
Current Resolution(RMS)	0.1A									
Current Accuracy(RMS)	0.5% F.S.+4 counts									
Power Range	0-2000kW									
Power Resolution	0.1kW									
Power Accuracy	1% F.S.+6 counts									
GENERAL										
Efficiency	≥ 92% at Max. Power									
HMI	Pointer Meter									
Overload Capacity	150% of rated current for 1 minute ⁴ Inrush current capability: 250% of rated current for 2 seconds ⁵ Output over current protection: 400% of rated current									
Protection	Input Circuit Breakers and Protection Circuitry for Input OVP/LVP, OVP, OCP, RCP and OTP									
Remote Interface	Standard : RS-485									
Operational Temperature	-20°C ~ 45°C									
Humidity	0~90% (Non condensing)									
Altitude	< 1,000m									
IP Level	Outdoor Model: IP54 Indoor Model: IP22									
Dimensions (H x W x D)	2280 x 4000 x 850 mm			2280 x 4000 x 1000 mm	2280 x 4800 x 1000 mm			2280 x 6000 x 1200 mm		
	89.76 x 157.48 x 33.46 inch			89.76 x 57.48 x 39.37 inch	89.76 x 188.97 x 39.37 inch			89.76 x 236.22 x 47.24 inch		
Weight ³	1550kg	2050kg	2500kg	2950kg	3900kg	4900kg	6000kg	7200kg	9600kg	
	3417.2lbs	4519.5lbs	5511.6lbs	6503.6lbs	8598lbs	10802.7lbs	13227.7lbs	15873.3lbs	21164.4lbs	

¹ Please contact us for other voltage specification.

² The rated input voltage is 220V/380V.

³ The size listed excludes container's size

⁴ all specifications are subject to change without notice.

⁴ For every 1-minute of 150% overload operation, the unit needs at least 10-minute interval for the next 150% overload operation.

⁵ For every 2-second of 250% overload operation, the unit needs at least 20-second interval for the next 250% overload operation.

ORDERING INFORMATION :

BPS-F Series Three-Phase Output (300kVA - 1200kVA)

Model Number	Description
BPS-F-33300	Shore Power Supply (300kVA/440V L-L/47-63Hz Variable, 50Hz, 60Hz)
BPS-F-33400	Shore Power Supply (400kVA/440V L-L/47-63Hz Variable, 50Hz, 60Hz)
BPS-F-33500	Shore Power Supply (500kVA/440V L-L/47-63Hz Variable, 50Hz, 60Hz)
BPS-F-33600	Shore Power Supply (400kVA/440V L-L/47-63Hz Variable, 50Hz, 60Hz)
BPS-F-33800	Shore Power Supply (800kVA/440V L-L/47-63Hz Variable, 50Hz, 60Hz)
BPS-F-331000	Shore Power Supply (1000kVA/440V L-L/47-63Hz Variable, 50Hz, 60Hz)
BPS-F-331200	Shore Power Supply (1200kVA/440V L-L/47-63Hz Variable, 50Hz, 60Hz)

BPS-V Series Three-Phase Output (300kVA - 2000kVA)

Model Number	Description
BPS-V-33300	Shore Power Supply (300kVA/440VL-L/50Hz, 60Hz)
BPS-V-33400	Shore Power Supply (400kVA/440VL-L/50Hz, 60Hz)
BPS-V-33500	Shore Power Supply (500kVA/440VL-L/50Hz, 60Hz)
BPS-V-33600	Shore Power Supply (400kVA/440VL-L/50Hz, 60Hz)
BPS-V-33800	Shore Power Supply (800kVA/440VL-L/50Hz, 60Hz)
BPS-V-331000	Shore Power Supply (1000kVA/440VL-L/50Hz, 60Hz)
BPS-V-331200	Shore Power Supply (1200kVA/440VL-L/50Hz, 60Hz)
BPS-V-331500	Shore Power Supply (1500kVA/440VL-L/50Hz, 60Hz)
BPS-V-332000	Shore Power Supply (2000kVA/440VL-L/50Hz, 60Hz)

Programmable Models General Model Industry Specific



Series	ADG-L	ADG-P	ADC
Output Power	4-60kW	30-500kW	2-8kW
Output Voltage	0-160V to 0-1000V	0-40V to 0-2000V	0-30V to 0-600V
Ripple	down to <0.05%		<0.15%
Line Regulation	≤ 0.08%	≤ 0.1%	<0.05%
Load Regulation	≤ 0.3%		<0.05%
Efficiency	≥ 87-90%		≥ 85-89%
Output Mode	CV / CC / CP	CV / CC	CV / CC
Step & Gradual	○	○	-
Parallel	○	○	○
Auto Range	△	-	-
Transient Response	≤ 4ms	≤ 4-20ms	≤ 1ms
Error Log	○	○	-
OVP/ OCP Protection	○	○	-
Remote Sense	○	△	-
Control Software	○	○	-
Interface	RS-232	△	-
	RS-485	○	-
	USB	△	-
	Ethernet	△	-
	GPIB	△	-
	Analog	○	△
HMI	Touch screen	Touch screen	LED display & Knob
Other Features	12 kW only 3U	single unit up to 100kW	-
	Power Factor ≥ 0.99	Power Factor ≥ 0.90	-
	-	Voltage Slew Rate : ≤ 60ms	-
Applications	-	Output Current up to 2500A	-
	Renewable Energy	□	-
	EV	□	-
	Motor	■	■
	Laboratory	□	□
	Aerospace & Military	■	■
	Industrial Power Supply	■	■
	Public Transportation	■	■
Communication Industry	□	□	

Series	ADS
Specific Industry	Aerospace & Military
Output Current	Up to 4500A
Circuit Design	SCR
Output Voltage	28V±10%
Ripple	≤ 1%
Line Regulation	≤ 0.5%
Load Regulation	≤ 0.5%
Efficiency	≥ 85%
Overload Capability	3 Times Overload
HMI	LED display & knob
Other Features	Trailer / Stand-Alone
	Analog Control (opt.)

- Standard
- △ Optional
- Specially Designed for the applications
- Suitable for the applications
- None

Product Applications



Electric Vehicles



Renewable Energy



Transport System



Electronics



Motor / Engine

NEW

Programmable DC Power Supplies

High Output Voltage and High Power Density for Renewable Energy Applications

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 fourteen models with 4kW, 8kW and 12kW maximum output powers and Auto Range models available to provide a higher output current at lower output voltage.

Up to 1000V Output

Wide Range of Output Voltage for Renewable Applications

Auto Range Available

Deliver Higher Current at Lower Output Voltage

Intuitive Local & Remote Control

Easy-to-Use Touch Screen and User-Friendly Remote Control Software

ADG-L series 4~60kW
Parallel Connection up to 5units



ADG-L Series

RoHS Compliant CE



Output Power
4kW/8kW/12kW

Interfaces

Standard	Option
Analog	GPIB
RS-232	Ethernet
RS-485	USB

Applications

- Laboratory/Certification Bureau
- Industrial Power Supply
- Electric Vehicles
- Renewable Energy
- IT / SMT Production Line
- Transportation
- Motor & Compressor
- Power Tool
- Home Appliance
- Medical Industry
- Aerospace & Defense
- Communication Industry

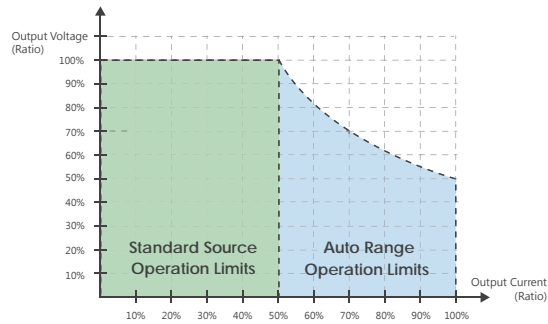
ADG-L Series Programmable DC Power Supply

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 fourteen models with 4kW, 8kW and 12kW 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.

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 and Analog remote interfaces or through optional Ethernet, USB, or GPIB interfaces. The built-in simulation function allows devices to be tested to voltage dropouts, spikes and other repetitive testing for voltage and current.

- Output Power: 4kW, 8kW and 12kW.
- Output Current: 0~75A or 0~150A (with parallel operation).
- Output Voltage: up to 2000V(with series operation).
- 5" touch screen and rotary knob control.
- Wide range of input voltage: 187~264Vac (1 or 3 phase) or 340~460V (3 phase 4 wires Y connection)
- High power density with only 3U for 12kW.
- Easy master/slave parallel operation.
- CV / CC / CP modes.
- Remote sensing feature for line drop compensation.
- Built-in programmable feature with total 5 groups and 99 sequences to set up voltage, current and time.
- Complimentary remote control software available.
- CE and RoHS certified.
- Complete protection features including OVP, OCP, OPP, input OVP/ UVP and OTP.

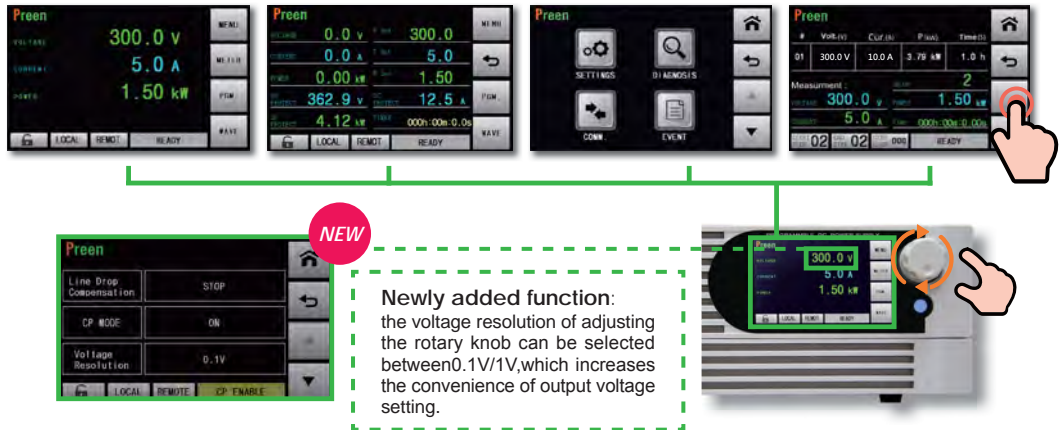
Auto Range Models



Comparing to conventional DC power supplies that provide the same rated current at all output voltage, the ADG-L's auto range models offer a wide operation region.

It 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.

Intuitive Touch Screen and Rotary Knob



NEW

Newly added function:
the voltage resolution of adjusting the rotary knob can be selected between 0.1V/1V, which increases the convenience of output voltage setting.

The ADG-L series equips 5" touch screen and rotary knob to provide intuitive and easy-to-use control and display. 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 but also easily from the touch screen.

Complimentary Control Software and Various Complimentary Interfaces

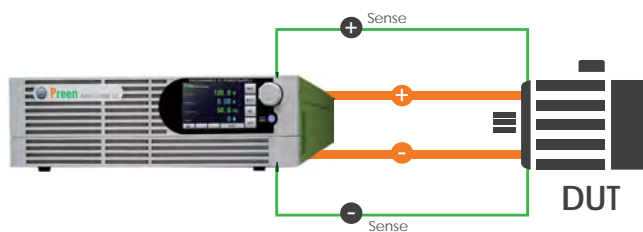


The ADG-L series can be controlled via the Preen Program to configure sophisticated sequences, save/recall STEPs, and generate test result reports. This intuitive control software makes remote programming no longer a difficult task.

- RS-232
- RS-485
- Analog
- Standard
- Ethernet
- GPIB
- USB
- Optional

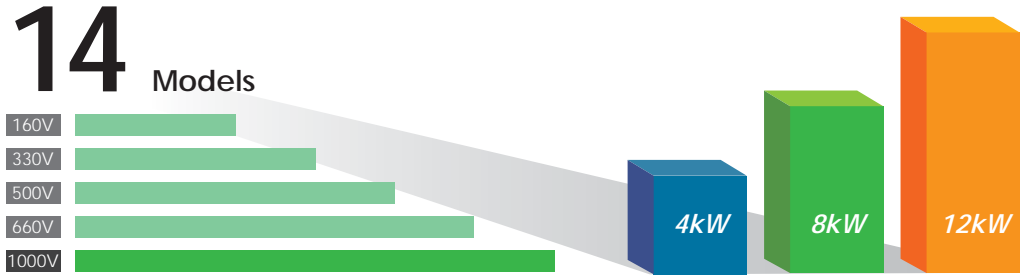
The DC power supply is equipped with RS-232/RS-485 (MODBUS) for standard interfaces. Optional Ethernet, USB, GPIB and RS-232/RS-485 (SCPI) are also available for better integrations with automatic test systems and the needs of industry 4.0.

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's remote sensing function is able to compensate voltage drops and provide a stable output voltage.

Wide Voltage and Current Range



Preen's ADG-L series has 14 different models with three output power levels , 4kW , 8kW and 12kW. 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

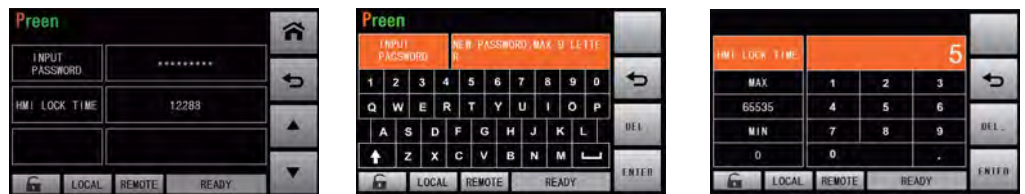


Through a simple and fast setup, the ADG-L series can generate higher power by connecting identical models in a master/slave parallel operation. Users only need to control the master unit for multiple units' setup and readbacks. The master unit automatically calculates the parameters and downloads data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

Device Protection

The ADG-L series has multiple levels of protection to safeguard you device. These include over-voltage, over-current, over-power, over-temperature, and input under/over-voltage to shut down the power supply output to prevent fault conditions and further damages.

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.

Multiple Ways of AC Input Connection

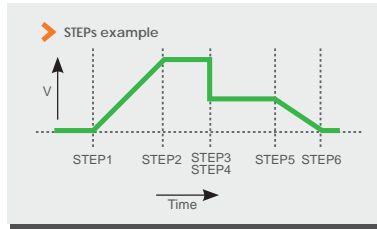
Conventional DC power supplies have only one type of AC input range and one way of input wirings. Different from most of high power DC power supply, the ADG-L series' 8kW and 12kW models offer more than two ways of input connections. For example, the 8kW models can have single phase or three phase input without factory modifications. This feature provides flexibility and convenience for users to operate the unit in different environments.

Error Log for Easy Analysis



The EVENT function of the ADG-L series provides an error log to record critical errors up to 999 items. The log includes date, time and error types to help users better analyze fault conditions.

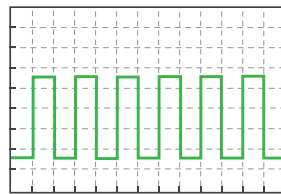
Programming Sequences and Simulations



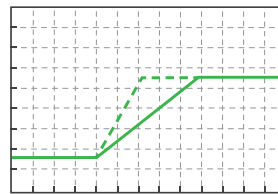
Program Setting Page



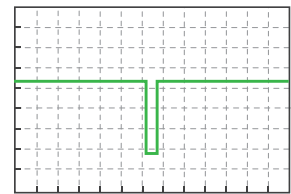
Wave Page



DC Pulse



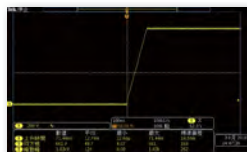
Slew Rate Control



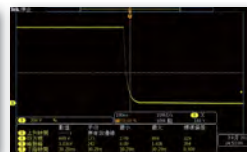
Voltage Sag

The built-in programming function of the ADG-L series has 99 STEPS for each of the 5 GROUPS. 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's control software allow users to create complex DC waveform with sophisticated coding. Making programming the DC power supply an easy task.

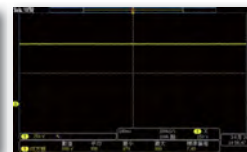
Industry-leading Performance



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 DC sources are ideal to test DUT behavior to voltage sags, dropouts, ON/OFF tests and complex DC waveforms.

High Power Density: 12kW in 3U



12kW

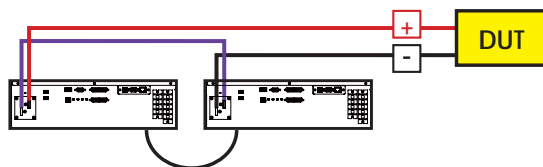


24kW

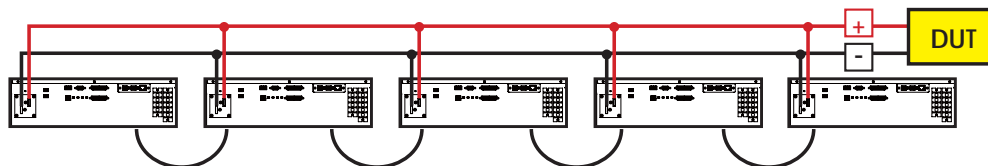
Employing PWM technology and DSP-based control, Preen's ADG-L series DC power supply has 12kW available only in 3U package, and with parallel configuration, 24kW only has 6U height. The rack-mount enclosure is designed to accommodate a wide range of applications, especially for automatic test systems and integrations.

Multiple Connections

Series connection (Max. 2 units)

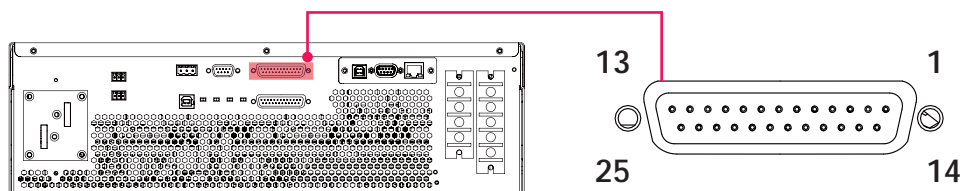


Parallel connection (Max. 5 units)



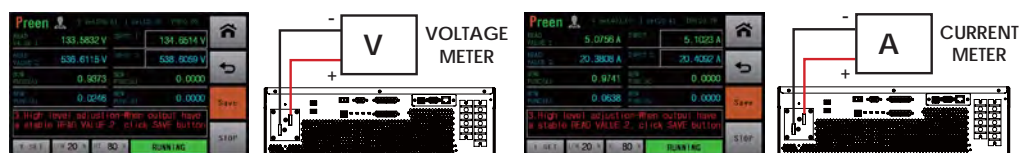
The single unit power of ADG-L series can reach up to 12kW, and can be expanded to 60kW through parallel connection, or can output up to 2000V through series connection. Each unit can be set as Master or Slave. The user can freely combine ADG-L series according to the load test requirements, thereby increasing flexibility of the application.

Analog Control (V/I)



Pin	Name	Description
1	Vset-OVP	Analog control input: 0-5 Vdc= 0-110% of full-scale output voltage
6	Vset	Analog control input: 0-5Vdc= 0-100% of full-scale output voltage.
7	Vo-FB	Analog output for voltage measurement.
14	Iset-OCP	Analog control input: 0-5 Vdc= 0-110% of full-scale output current.
15	PS-ON	Control signal for the device ON/OFF: a logic-high state (5V) is to turn ON the device; a logic-low state (0V) is to turn OFF the device.
20	Iset	Analog control input: 0-5Vdc= 0-100% of full-scale output current.
21	Io-FB	Analog output for current measurement.

HMI Output Calibration Function



Voltage calibration: open circuit

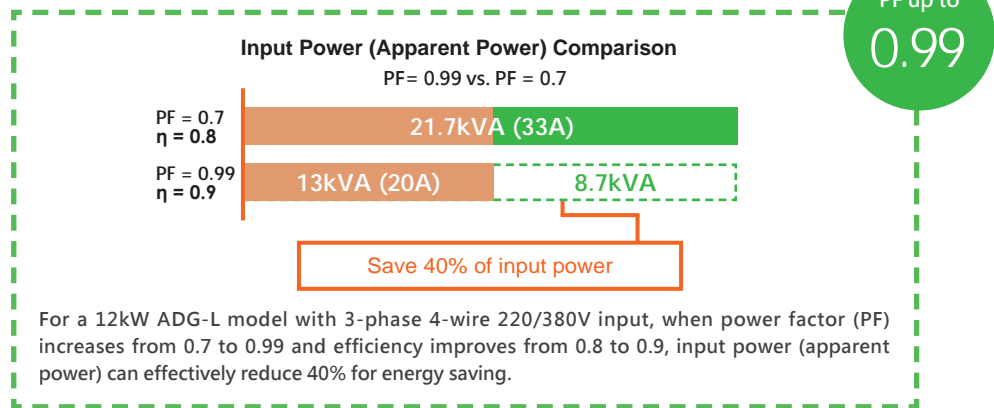
Current calibration: short circuit

ADG-L series can perform output calibration via HMI, simple connection of voltmeter / current meter and instructions on the screen, thus improving the convenience of calibration.

0.99 Input Power Factor

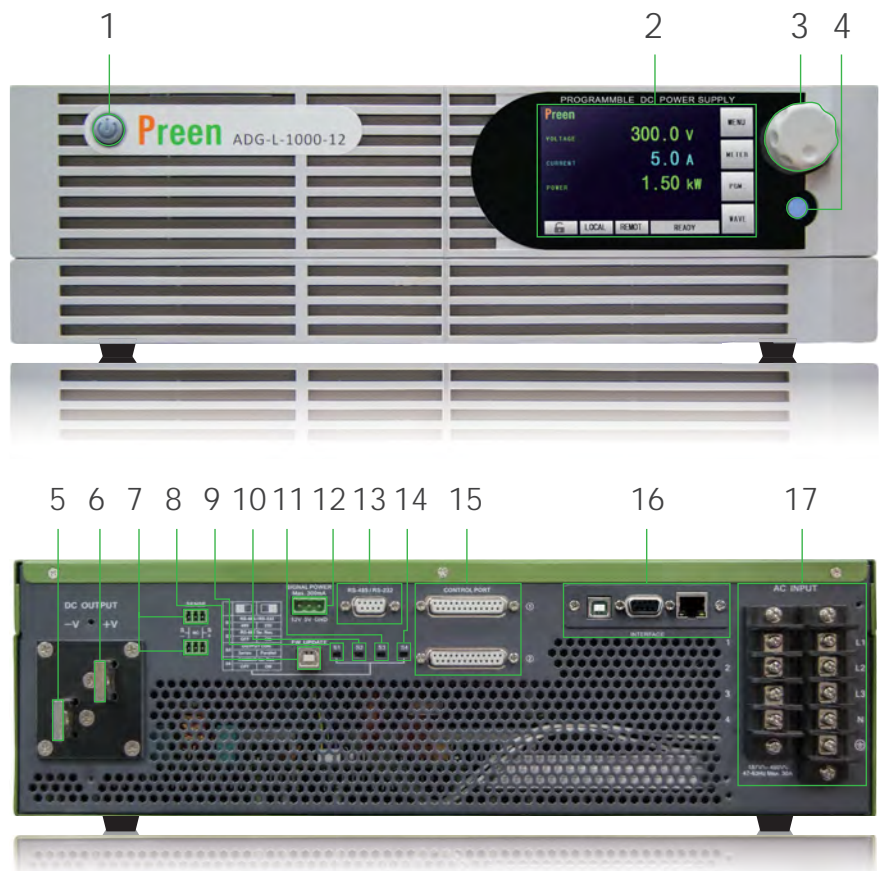
The ADG-L series is equipped with active Power Factor Corrector (PFC) to enhance input PF up to industry-leading 0.99, which helps reduce the interference on the grid.

- 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.
- 03 Reduce input current to have compact and high power density DC sources.
- 04 Save more energy and lower carbon footprint for better environment.
- 05 The ADG-L series (with PFC) v.s. Conventional DC Sources (no PFC)



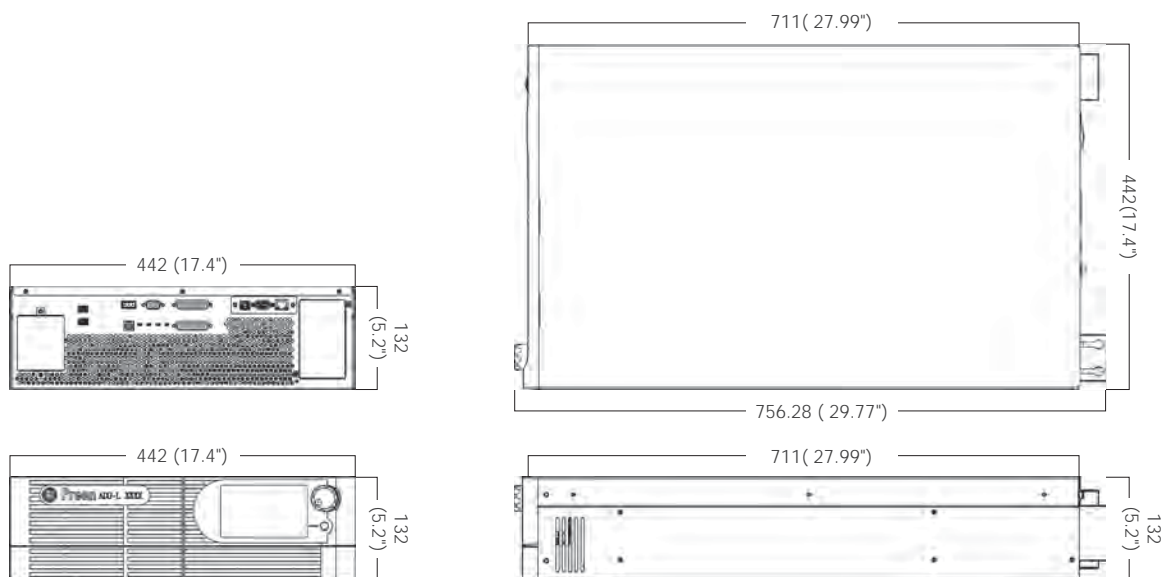
PANEL DESCRIPTION

1. Power Switch
2. Touch Screen
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. CANBUS terminal resister switch
10. Serial and parallel switch
11. RS-485 terminal resister switch
12. Accessory power outlet
13. RS232/RS485 Interface (standard)
14. RS232/RS485 Interface switch
15. Analog interface
16. Optional communication interface :
USB/RS-232/RS-485(SCP)/
Ethernet/GPIB
17. Input terminals



Dimensions

Unit : mm (inch)



PANEL DESCRIPTION

ADG-L Series Single-Phase Output (4kW - 12kW)

Model Number	Description
ADG-L-160-25	Programmable DC Power Supply (4kW/160V/25A)
ADG-L-160-50	Programmable DC Power Supply (8kW/160V/50A)
ADG-L-160-75	Programmable DC Power Supply (12kW/160V/75A)
ADG-L-330-12	Programmable DC Power Supply (4kW/330V/12A)
ADG-L-330-24	Programmable DC Power Supply (8kW/330V/24A)
ADG-L-330-36	Programmable DC Power Supply (12kW/330V/36A)
ADG-L-500-24	Programmable DC Power Supply (12kW/500V/24A)
ADG-L-660-12	Programmable DC Power Supply (8kW/660V/12A)
ADG-L-1000-12	Programmable DC Power Supply (12kW/1000V/12A)
ADG-L-330-25-4	Programmable DC Power Supply (4kW/330V/25A) (Auto Range Model)
ADG-L-330-50-8	Programmable DC Power Supply (8kW/330V/50A) (Auto Range Model)
ADG-L-330-75-12	Programmable DC Power Supply (12kW/330V/75A) (Auto Range Model)
ADG-L-660-25-8	Programmable DC Power Supply (8kW/660V/25A) (Auto Range Model)
ADG-L-1000-25-12	Programmable DC Power Supply (12kW/1000V/25A) (Auto Range Model)
ADG-L-001	Single-Phase Input Power Cord 3m (for 4kW/8kW)
ADG-L-002	Single-Phase Input Power Cord 5m (for 4kW/8kW)
ADG-L-003	Three-Phase Input Y Connection Power Cord 3m
ADG-L-004	Three-Phase Input Y Connection Power Cord 5m
ADG-L-005	Three-Phase Input Δ Connection Power Cord 3m
ADG-L-006	Three-Phase Input Δ Connection Power Cord 5m
ADG-L-007	RS-232/RS-485/USB/Ethernet (SCPI) Interface Board
ADG-L-008	Multiple Units Connection Cord DB25(Male * 2) 50 cm
ADG-L-013	GPIB Interface Board

SPECIFICATIONS

ADG-L Series DC Output (4kW - 8kW)

Model	ADG-L-160-25	ADG-L-330-12	ADG-L-330-25-4	ADG-L-160-50	ADG-L-330-24	ADG-L-330-50-8	ADG-L-660-12	
Output Power	4kW	4kW	4kW	8kW	8kW	8kW	8kW	
INPUT								
Input Voltage	1Ø 2W+G 187-264 Vac			1Ø2W+G 187-264 Vac 3Ø3W+G 187-264 Vac 3Ø4W+G 340-460 Vac				
Input Current	24A			1Ø : 48A 3Ø : 42A				
Input Frequency	47 Hz - 63 Hz							
Power Factor	≥ 0.99 at max. power							
OUTPUT								
Voltage	0~160V	0~330V	0~330V	0~160V	0~330V	0~330V	0~660V	
Current	0~25A	0~12A	0~25A	0~50A	0~24A	0~50A	0~12A	
Voltage Ripple (RMS)	≤ 0.3% F.S.	≤ 0.15% F.S.	≤ 0.15% F.S.	≤ 0.3% F.S.	≤ 0.15% F.S.	≤ 0.15% F.S.	≤ 0.08% F.S.	
Voltage Ripple (peak to peak)	≤ 1.6% F.S.	≤ 0.8% F.S.	≤ 0.8% F.S.	≤ 2.5% F.S.	≤ 1.6% F.S.	≤ 1.6% F.S.	≤ 0.8% F.S.	
Voltage Line Regulation	≤ 0.1% F.S.			≤ 0.15% F.S.			≤ 0.03% F.S.	
Voltage Load Regulation ¹	≤ 0.3% F.S.	≤ 0.1% F.S.	≤ 0.3% F.S.	≤ 0.4% F.S.	≤ 0.2% F.S.	≤ 0.4% F.S.	≤ 0.05% F.S.	
Current Ripple (RMS)	≤ 0.2% F.S.	≤ 0.3% F.S.	≤ 0.2% F.S.	≤ 0.2% F.S.	≤ 0.3% F.S.	≤ 0.2% F.S.	≤ 0.5% F.S.	
Current Line Regulation	≤ 0.1% F.S.	≤ 0.1% F.S.	≤ 0.1% F.S.	≤ 0.1% F.S.	≤ 0.2% F.S.	≤ 0.1% F.S.	≤ 0.05% F.S. +50mA	
Current Load Regulation	≤ 0.3% F.S.	≤ 0.5% F.S.	≤ 0.3% F.S.	≤ 0.2% F.S.	≤ 0.3% F.S.	≤ 0.2% F.S.	≤ 0.25% F.S.	
Transient Response ²	≤ 5ms	≤ 5ms	≤ 5ms	≤ 5ms	≤ 5ms	≤ 5ms	≤ 5ms	
Efficiency	≥ 90% at max. power							
Slew Rate ³	Rise Time	≤ 25ms	≤ 35ms	≤ 35ms	≤ 25ms	≤ 40ms	≤ 40ms	≤ 60ms
	Fall Time (Full Load)	≤ 30ms	≤ 40ms	≤ 40ms	≤ 35ms	≤ 45ms	≤ 45ms	≤ 45ms
	Fall Time (No Load)	≤ 10s						
Programming & Measurement								
Voltage Programming Accuracy	≤ 0.08%F.S.+100mV							
Voltage Measurement Accuracy	≤ 0.08%F.S.+100mV			≤ 0.08%F.S.+100mV			≤ 0.08%F.S. +100 mV	
Voltage Resolution	100mV							
Current Programming Accuracy	≤ 0.4%F.S.+60mA							
Current Measurement Accuracy	≤ 0.3%F.S.+60mA			≤ 0.3%F.S.+60mA			≤ 0.4%F.S. +60 mA	
Current Resolution	10mA							
General Specs.								
Interfaces	Standard: RS-485/RS-232 (Modbus) & Analog Optional: Ethernet/USB/RS-485/RS-232 (SCPI) or GPIB							
Remote sense compensation	≤ 5V							
Operating Temperature	0°C ~ 40°C							
Storage Temperature	-20°C ~ 70°C							
Protections	OVP.OCP.OPP.OTP.Vin OV.Vin UV. Vin LV.Phase Fail.Fan Fail							
OVP Range	0~110% F.S.							
OCP Range	0~110% F.S.							
Dimension (HxWxD)	132 x 442 x 756 mm / 5.20 x 17.40 x 29.76 inches							
Weight	4kW: approx. 21kg / 46.31lbs			8kW: approx. 28kg / 61.71lbs				

*1. Load changes from 0% to 100% under nominal AC input

*2. Under nominal AC input, recovers to ±1% of full-scale output voltage for a 50% to 100% or 100% to 50% load change

*3. Measured from 10% to 90% of the output voltage change - resistive load, typical

* All specifications are subject to change without notice.

** Above specifications are under output voltage over 1% FS

SPECIFICATIONS

ADG-L Series DC Output (8kW - 12kW)

Model	ADG-L-660-25-8	ADG-L-160-75	ADG-L-330-36	ADG-L-330-75-12	ADG-L-500-25	ADG-L-1000-12	ADG-L-1000-25-12
Output Power	8kW	12kW	12kW	12kW	12kW	12kW	12kW
INPUT							
Input Voltage	1Ø 2W+G 187-264 Vac 3Ø3W+G 187-264 Vac 3Ø4W+G 340-460 Vac	1Ø 2W+G 187-264 Vac 3Ø3W+G 187-264 Vac 3Ø4W+G 340-460 Vac					
Input Current	1Ø : 48A 3Ø : 42A	3Ø : 42A					
Input Frequency	47 Hz - 63 Hz						
Power Factor	≤ 0.99 at max. power						
OUTPUT							
Voltage	0~660V	0~160V	0~330V	0~330V	0~500V	0~1000V	0~1000V
Current	0~25A	0~75A	0~36A	0~75A	0~24A	0~12A	0~25A
Voltage Ripple (rms)	≤ 0.08% F.S.	≤ 0.3% 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)	≤ 0.8% F.S.	≤ 1.6% F.S.	≤ 1% F.S.	≤ 1% F.S.	≤ 0.8% F.S.	≤ 0.5% F.S.	≤ 0.5% F.S.
Voltage Line Regulation	≤ 0.03% F.S.	≤ 0.1% F.S.	≤ 0.25% F.S.	≤ 0.25% F.S.	≤ 0.1% F.S.	≤ 0.2% F.S.	≤ 0.2% F.S.
Voltage Load Regulation ¹	≤ 0.05% F.S.	≤ 0.4% F.S.	≤ 0.2% F.S.	≤ 0.4% F.S.	≤ 0.2% F.S.	≤ 0.1% F.S.	≤ 0.2% F.S.
Current Ripple (rms)	≤ 0.25% F.S.	≤ 0.1% F.S.	≤ 0.15% F.S.	≤ 0.1% F.S.	≤ 0.25% F.S.	≤ 0.5% F.S.	≤ 0.25% F.S.
Current Line Regulation	≤ 0.05% F.S. +50mA						
Current Load Regulation	≤ 0.25% F.S.	≤ 0.1% F.S.	≤ 0.2% F.S.	≤ 0.2% F.S.	≤ 0.3% F.S.	≤ 0.6% F.S.	≤ 0.6% F.S.
Transient Response ²	≤ 5ms	≤ 5ms	≤ 5ms	≤ 5ms	≤ 5ms	≤ 5ms	≤ 5ms
Efficiency	≤ 90% at max. power						
Slew Rate ³	Rise Time	≤ 60ms	≤ 25ms	≤ 35ms	≤ 35ms	≤ 45ms	≤ 90ms
	Fall Time (Full Load)	≤ 45ms	≤ 35ms	≤ 45ms	≤ 45ms	≤ 30ms	≤ 40ms
	Fall Time (No Load)	≤ 10s					≤ 30s
Programming & Measurement							
Voltage Programming Accuracy	≤ 0.08% F.S.+100mV						
Voltage Measurement Accuracy	≤ 0.08% F.S.+100mV	≤ 0.08% F.S.+100mV			≤ 0.08% F.S.+150mV		
Voltage Resolution	100mV						
Current Programming Accuracy	≤ 0.4%F.S.+60mA						
Current Measurement Accuracy	≤ 0.4%F.S.+60mA	≤ 0.4% F.S.+60mA			≤ 1% F.S.+150mA		
Current Resolution	10mA						
General Specs.							
Interfaces	Standard: RS-485/RS-232 (Modbus) & Analog Option : Ethernet/USB/RS-485/RS-232 (SCPI) or GPIB						
Remote sense compensation	≤ 5V						
Operating Temperature	0° C ~ 40° C						
Storage Temperature	-20° C ~ 70° C						
Protections	OVP/OCP/OPP/OTP/Vin OV/Vin UV/LDC OV Vin LV/Phase Fail/Fan Fail						
OVP Range	0~110% F.S.						
OCP Range	0~110% F.S.						
Dimension (HxWxD)	132 x 442 x 756 mm / 5.20 x 17.40 x 29.76 inches						
Weight	8kW: approx. 28kg / 61.7lbs 12kW: approx. 35kg / 77.2lbs						

¹1. Load changes from 0% to 100% under nominal AC input

²2. Under nominal AC input, recovers to ±1% of full-scale output voltage for a 50% to 100% or 100% to 50% load change

³3. Measured from 10% to 90% of the output voltage change - resistive load, typical

* All specifications are subject to change without notice.

** Above specifications are under output voltage over 1% FS

DC Power Featuring High Power, High Voltage and Programmable Features

ADG-P series High Power Programmable DC Power Supply

ADG-P series is a programmable DC power supply with high power density. Using Preen's patented module design, ADG-P series features fast response, high precision and low ripples. Output voltage is up to 2000V. The single unit capacity is up to 100kW and the capacity can be further extended by parallel connection. It is suitable for various industry applications.

Up to 100kW In Single-Unit

Higher output power by parallel connection

Output Voltage Up to 2000V

More than 16 voltage segments for selection.

Ideal for EV Testing

Meet high voltage requirement for renewable energy.

ADG-P Series



RoHS Compliant



Output Power
30kW~500kW

Interfaces

Standard

Option

RS-485

GPIB

RS-232

Analog

Applications

- Home Appliance
- Laboratory/Certification Bureau
- Industrial Power Supply
- Electric Vehicles
- IT / SMT Production Line
- Renewable Energy
- Transportation
- Motor & Compressor
- Medical Industry
- Aerospace & Defense
- Communication Industry

ADG-P Series

High Power Programmable DC Power Supply

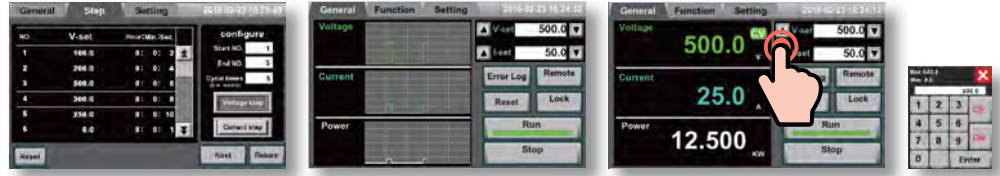
Preen's ADG series is a programmable DC power supply with high power density and high output power, offering great response time, high accuracy and many output voltage and current combinations. Designed for the increasing demand of high power DC, ADG is ideal for testing EV's motor/compressor, server power supply, fuse/circuit breaker/contactors, and PV inverter or can be used as a facility power or EMC chamber power.

With output power up to 100kW per unit, the ADG series offers output voltage up to 1600V and output current up to 2500A.

Users can select standard RS-485 interface or optional RS-232 and GPIB. The STEP and GRADUAL modes allow easy setup on test sequence and depending on CV/CC settings and load conditions, ADG series can operate as a current or voltage source. Its remote sensing feature can effectively reduce voltage drop caused by cable length and provides more flexibility on installation.

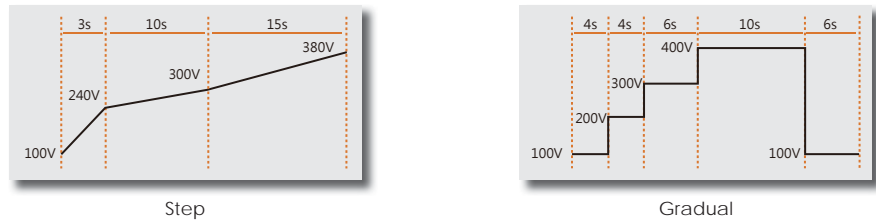
- Wide output voltage range: with maximum voltage up to 1600V, ideal for renewable energy, smart grid, and Electric Vehicle (EV) related applications.
- High Efficiency and Power Factor: up to 90% efficiency and power factor.
- High Output Power: up to 100kW in one chassis with high power density.
- Fast Transient Response Time: <4~12ms.
- Standard RS485 interface with Modbus compatibility and optional RS-232 and GPIB interfaces.
- Programming Sequence Function: STEP and GRADUAL modes allow users to easily set sequences of start/ end voltage, run time and current for testing purposes.
- CV and CC Modes.
- 7" Touch Screen Display for Easy Operation.
- Remote Sense for Line Drop Compensation.
- Comprehensive Protection: Input OVP/UVP, output OVP/OCP, OTP.
- 12 Different Output Voltage Ranges & 41 Models.

User-Friendly HMI



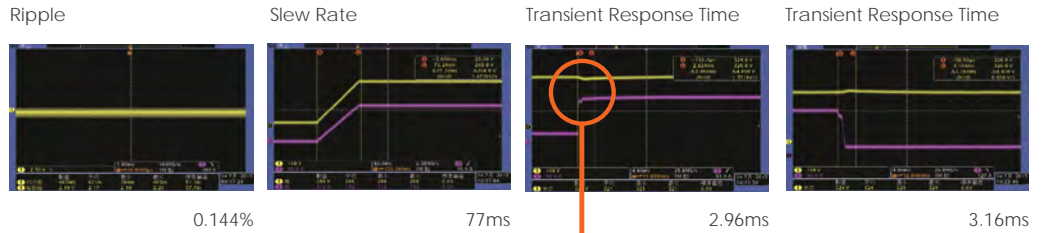
ADG-P series has an intuitive touch screen HMI for easy operation and data display. Users also can easily set up voltage or current variation simulations through the built-in programmable functions in the touch screen.

Built-in Voltage/Current Programmable Function



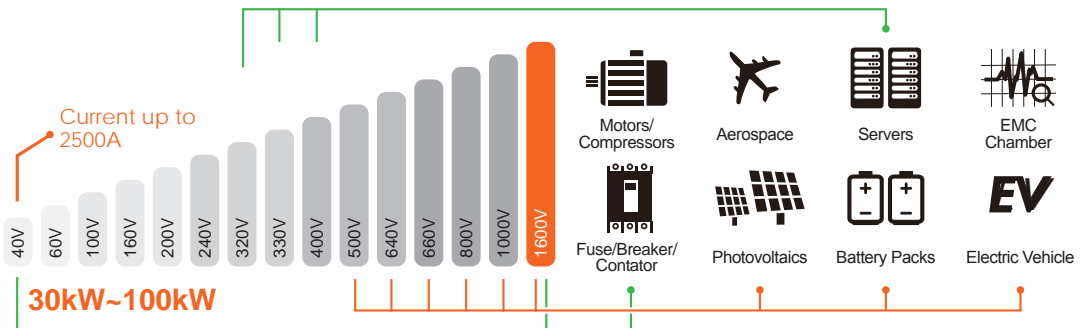
Users can not only realize remote programming through the remote interface, but can also set the voltage / current stepwise or continuously through the built-in STEP and Gradual modes of the ADG-P series. Simulation of various power conditions can be achieved without further programming. It is ideal for performance testing like voltage variation test, ON/OFF test, aging test etc. More customized power curve simulations are also available.

Technically Advanced Performance



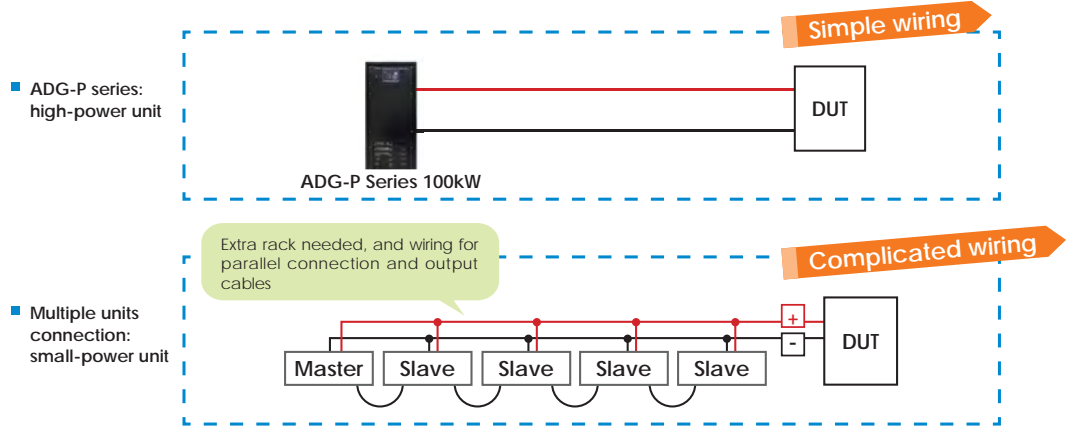
ADG-P series has the industry leading performance on ripple, response time, and voltage regulation, which make it an ideal DC power supply for all kinds of testing.

Variety of Applications



ADG-P series has many output voltage ranges suitable for different market applications. Models over 640V 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 2000A or 1600V 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.

High Stability and Simple Wiring

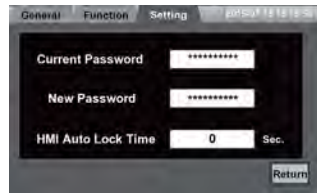


Compared with the DC power supplies which attain high power by parallel connection, the single unit of the ADG-P series is up to 100kW. Without communication between multi-units, users can reduce the risk of interference from parallel connection signals. Moreover, single unit operation features in simple wiring and easy mobility, bringing high stability and easy maintenance.

Easy Remote Control Set Up

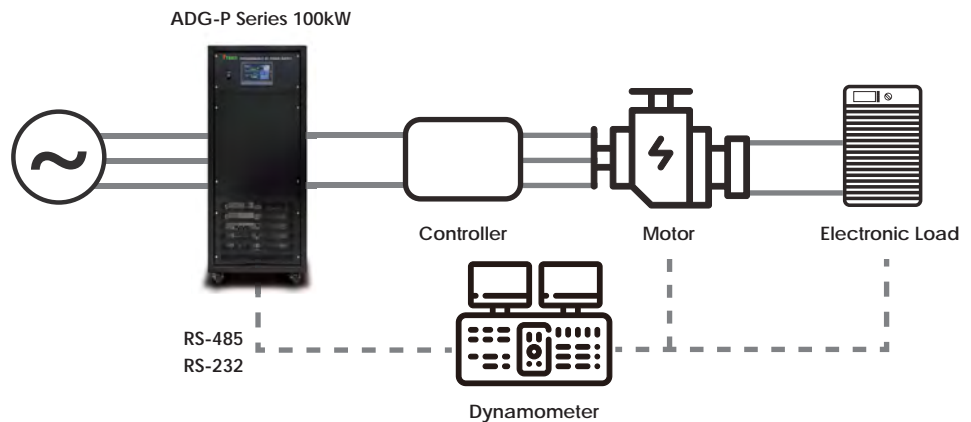


Screen Lock Password Function



In order to prevent the operator from changing the set parameters by mistake, the new Screen Lock Password function is added on ADG-P 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.

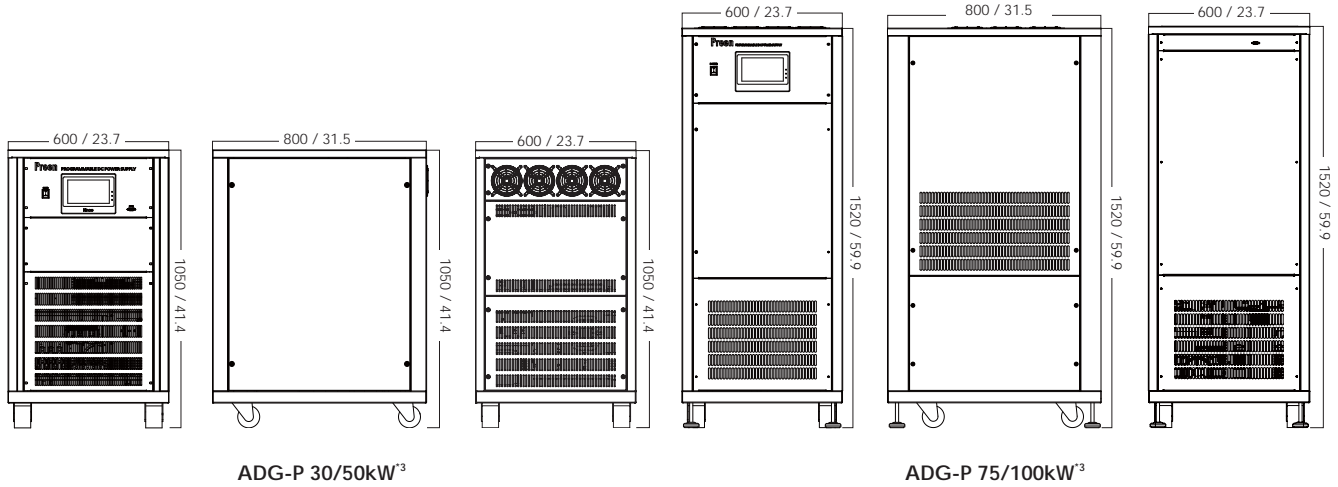
EV Motor Testing Application Case



Alternative fuel vehicle industries have grow rapidly in recent years. The unique technical structure of alternative fuel vehicles makes them very different from traditional vehicle tests. Electric motors become the power engines of EV and HEV in replacement of traditional engine. Therefore, testing and verification for motor system becomes significant. The driving of motor and motor controlling requires accurate programmable DC supply to simulate output voltage of different batteries, and also require high-power DC supply. Preen's ADG-P series is the ideal DC power supply for the testing system.

Dimensions

Unit : mm / inch



ADG-P 30/50kW³

ADG-P 75/100kW³

³ The diagrams and dimensions are for 380V input models.

ORDERING INFORMATION

ADG-P Series DC Output (30kW - 100kW)

Model Number	Description
ADG-P-40-1250	High Power Programmable DC Power Supply (50kW/40V/1250A)
ADG-P-60-834	High Power Programmable DC Power Supply (50kW/60V/834A)
ADG-P-100-500	High Power Programmable DC Power Supply (50kW/100V/500A)
ADG-P-200-250	High Power Programmable DC Power Supply (50kW/200V/250A)
ADG-P-240-208	High Power Programmable DC Power Supply (50kW/240V/208A)
ADG-P-320-156	High Power Programmable DC Power Supply (50kW/320V/156A)
ADG-P-400-125	High Power Programmable DC Power Supply (50kW/400V/125A)
ADG-P-500-100	High Power Programmable DC Power Supply (50kW/500V/100A)
ADG-P-640-78	High Power Programmable DC Power Supply (50kW/640V/78A)
ADG-P-800-63	High Power Programmable DC Power Supply (50kW/800V/63A)
ADG-P-1000-50	High Power Programmable DC Power Supply (50kW/1000V/50A)
ADG-P-1600-31	High Power Programmable DC Power Supply (50kW/1600V/31A)
ADG-P-40-750	High Power Programmable DC Power Supply (30kW/40V/750A)
ADG-P-60-500	High Power Programmable DC Power Supply (30kW/60V/500A)
ADG-P-100-300	High Power Programmable DC Power Supply (30kW/100V/300A)
ADG-P-200-150	High Power Programmable DC Power Supply (30kW/200V/150A)
ADG-P-240-125	High Power Programmable DC Power Supply (30kW/240V/125A)
ADG-P-320-94	High Power Programmable DC Power Supply (30kW/320V/94A)
ADG-P-400-75	High Power Programmable DC Power Supply (30kW/400V/75A)
ADG-P-500-60	High Power Programmable DC Power Supply (30kW/500V/60A)
ADG-P-640-47	High Power Programmable DC Power Supply (30kW/640V/47A)
ADG-P-800-38	High Power Programmable DC Power Supply (30kW/800V/38A)
ADG-P-1000-30	High Power Programmable DC Power Supply (30kW/1000V/30A)
ADG-P-1600-18	High Power Programmable DC Power Supply (30kW/1600V/18A)

Model Number	Description
ADG-P-40-1875	High Power Programmable DC Power Supply (75kW/40V/1875A)
ADG-P-60-1250	High Power Programmable DC Power Supply (75kW/60V/1250A)
ADG-P-100-750	High Power Programmable DC Power Supply (75kW/100V/750A)
ADG-P-320-234	High Power Programmable DC Power Supply (75kW/320V/234A)
ADG-P-640-117	High Power Programmable DC Power Supply (75kW/640V/117A)
ADG-P-1000-75	High Power Programmable DC Power Supply (75kW/1000V/75A)
ADG-P-1600-47	High Power Programmable DC Power Supply (75kW/1600V/47A)
ADG-P-40-2500	High Power Programmable DC Power Supply (100kW/40V/2500A)
ADG-P-60-1666	High Power Programmable DC Power Supply (100kW/60V/1666A)
ADG-P-100-1000	High Power Programmable DC Power Supply (100kW/100V/1000A)
ADG-P-320-312	High Power Programmable DC Power Supply (100kW/320V/312A)
ADG-P-640-156	High Power Programmable DC Power Supply (100kW/640V/156A)
ADG-P-1000-100	High Power Programmable DC Power Supply (100kW/1000V/100A)
ADG-P-1600-63	High Power Programmable DC Power Supply (100kW/1600V/63A)
ADG-P-001	GPIB Interface Converter
ADG-P-002	Cable for RS-485 (10m)
ADG-P-004	RS-232 Interface Converter
ADG-P-005	Analog Control (4~20mA)
ADG-P-006	Analog Control (0~5V)
ADG-P-007	200V/208 Input Voltage (30~50kW)
ADG-P-008	480V Input Voltage (30~50kW)
ADG-P-009	200V/208 Input Voltage (100kW)
ADG-P-010	480V Input Voltage (100kW)

ADG-P SPECIFICATIONS

ADG-P Series (30kW - 100kW)

30kW	Output Voltage	Output Current	Voltage Ripple (RMS)	Voltage Noise (Peak)	Voltage Slew Rate ^{*1}
ADG-P-40-750	0~40V	0~750A	≤ 0.5%	≤ 3.7%	≤ 65ms
ADG-P-60-500	0~60V	0~500A			
ADG-P-100-300	0~100V	0~300A			
ADG-P-200-150	0~200V	0~150A	≤ 0.26%	≤ 2%	≤ 60ms
ADG-P-240-125	0~240V	0~125A	≤ 0.19%		≤ 85ms
ADG-P-320-94	0~320V	0~94A	≤ 0.16%	≤ 0.88%	≤ 115ms
ADG-P-400-75	0~400V	0~75A	≤ 0.13%		
ADG-P-500-60	0~500V	0~60A	≤ 0.109%		
ADG-P-640-47	0~640V	0~47A	≤ 0.109%	≤ 0.77%	≤ 280ms
ADG-P-800-38	0~800V	0~38A	≤ 0.07%	≤ 0.29%	
ADG-P-1000-30	0~1000V	0~30A	≤ 0.05%	≤ 0.27%	
ADG-P-1600-18	0~1600V	0~18A	≤ 0.08%	≤ 0.4%	

50kW	Output Voltage	Output Current	Voltage Ripple (RMS)	Voltage Noise (Peak)	Voltage Slew Rate ^{*1}
ADG-P-40-1250	0~40V	0~1250A	≤ 0.5%	≤ 3.7%	≤ 65ms
ADG-P-60-834	0~60V	0~834A			
ADG-P-100-500	0~100V	0~500A			
ADG-P-200-250	0~200V	0~250A	≤ 0.26%	≤ 2%	≤ 60ms
ADG-P-240-208	0~240V	0~208A	≤ 0.19%		≤ 85ms
ADG-P-320-156	0~320V	0~156A	≤ 0.16%	≤ 0.88%	≤ 115ms
ADG-P-400-125	0~400V	0~125A	≤ 0.13%		
ADG-P-500-100	0~500V	0~100A	≤ 0.109%		
ADG-P-640-78	0~640V	0~78A	≤ 0.109%	≤ 0.77%	≤ 280ms
ADG-P-800-63	0~800V	0~63A	≤ 0.07%	≤ 0.29%	
ADG-P-1000-50	0~1000V	0~50A	≤ 0.05%	≤ 0.27%	
ADG-P-1600-31	0~1600V	0~31A	≤ 0.08%	≤ 0.4%	

75kW	Output Voltage	Output Current	Voltage Ripple (RMS)	Voltage Noise (Peak)	Voltage Slew Rate ^{*1}
ADG-P-40-1875	0~40V	0~1875A	≤ 1.3%	≤ 7%	≤ 120ms
ADG-P-60-1250	0~60V	0~1250A	≤ 1.5%	≤ 5%	
ADG-P-100-750	0~100V	0~750A	≤ 1.5%	≤ 5%	
ADG-P-320-234	0~320V	0~234A	< 0.1%	< 0.65%	≤ 90ms
ADG-P-640-117	0~640V	0~117A	≤ 0.1%	≤ 0.35%	≤ 120ms
ADG-P-1000-75	0~1000V	0~75A	≤ 0.2%	≤ 0.8%	≤ 130ms
ADG-P-1600-47	0~1600V	0~47A	≤ 0.1%	≤ 0.5%	≤ 300ms

100kW	Output Voltage	Output Current	Voltage Ripple (RMS)	Voltage Noise (Peak)	Voltage Slew Rate ^{*1}
ADG-P-40-2500	0~40V	0~2500A	≤ 1.3%	≤ 7%	≤ 120ms
ADG-P-60-1666	0~60V	0~1666A	≤ 1.5%	≤ 5%	
ADG-P-100-1000	0~100V	0~1 000A	≤ 1.5%	≤ 5%	
ADG-P-320-312	0~320V	0~312A	< 0.1%	< 0.65%	≤ 90ms
ADG-P-640-156	0~640V	0~156A	≤ 0.1%	≤ 0.35%	≤ 120ms
ADG-P-1000-100	0~1000V	0~100A	≤ 0.2%	≤ 0.8%	≤ 130ms
ADG-P-1600-63	0~1600V	0~63A	≤ 0.1%	≤ 0.5%	≤ 300ms

*1 For output voltage change from 5% to 90% at maximum power after output softstart.

* Voltage ripple and noise specs are under full scale.

SPECIFICATIONS

30kW		ADG-P-40-750	ADG-P-60-500	ADG-P-100-300	ADG-P-200-150	ADG-P-240-125	ADG-P-320-94
50kW		ADG-P-40-1250	ADG-P-60-834	ADG-P-100-500	ADG-P-200-250	ADG-P-240-208	ADG-P-320-156
AC Input	Voltage	3Ø3W + G 380Vac ± 15% (Option : 200V/208V/480V)					
	Frequency	47-63Hz					
	Power factor	≥ 0.9 at maximum power					
DC Output	Output Voltage	40V	60V	100V	200V	240V	320V
	Output Current (30kW)	750A	500A	300A	150A	125A	94A
	Output Current (50kW)	1250A	834A	500A	250A	208A	156A
	Line Regulation	< 0.3%			< 0.1%		
	Load Regulation	< 0.3%			< 0.065%	< 0.104%	< 0.14%
	Transient Response ²	≤ 4-12ms					
Measurement	Voltage Accuracy	0.5% F.S.					
	Voltage Resolution	0.1V					
	Current Accuracy	0.5% F.S.					
	Current Resolution	0.1A					
Protection	Type	Vin OVP, Vin UVP, OVP, OCP, OTP					
	OVP Range	5% - 115% from front panel					
	OCP Range	5% - 115% from front panel					
General	Efficiency	≥ 87% at maximum power			≥ 90% at maximum power		
	Remote Interface	RS-485 (Opt. GPIB / RS-232/Analog)					
	Operational Temperature	0°C - 40°C					
	Storage Temperature	-20°C - 70°C					
	Isolation	Input to Enclosure: 2000VAC					
	Dimension (H×W×D)	380V Input : 1050 x 600 x 800 (mm) / 41.4 x 23.7 x 31.5(inch) 200V/208V/480V Input : 1385 x 600 x 800 (mm) 54.5 x 23.7 x 31.5(inch)					
	Weight	380V Input : approx. 225 kg / 497 lbs			380V Input : approx. 187 kg / 413 lbs		
		200V/208V/480V Input : approx. 412 kg / 909 lbs			200V/208V/480V Input : approx. 367 kg / 810 lbs		

30kW		ADG-P-400-75	ADG-P-500-60	ADG-P-640-47	ADG-P-800-38	ADG-P-1000-30	ADG-P-1600-18
50kW		ADG-P-400-125	ADG-P-500-100	ADG-P-640-78	ADG-P-800-63	ADG-P-1000-50	ADG-P-1600-31
AC Input	Voltage	3Ø3W + G 380Vac ± 15% (Option : 200V/208V/480V)					
	Frequency	47-63Hz					
	Power factor	≥ 0.9 at maximum power					
DC Output	Output Voltage	400V	500V	640V	800V	1000V	1600V
	Output Current (30kW)	75A	60A	47A	38A	30A	18A
	Output Current (50kW)	125A	100A	78A	63A	50A	31A
	Line Regulation	< 0.1%					
	Load Regulation	< 0.032%	< 0.14%	< 0.132%	< 0.034%	< 0.02%	< 0.05%
	Transient Response ²	≤ 4-12ms					
Measurement	Voltage Accuracy	0.5% F.S.					
	Voltage Resolution	0.1V					
	Current Accuracy	0.5% F.S.					
	Current Resolution	0.1A					
Protection	Type	Vin OVP, Vin UVP, OVP, OCP, OTP					
	OVP Range	5% - 115% from front panel					
	OCP Range	5% - 115% from front panel					
General	Efficiency	≥ 90% at maximum power					
	Remote Interface	RS-485 (Opt. GPIB / RS-232/Analog)					
	Operational Temperature	0°C - 40°C					
	Storage Temperature	-20°C - 70°C					
	Isolation	Input to Enclosure: 2000VAC					
	Dimension (H×W×D)	380V Input : 1050 x 600 x 800 (mm) / 41.4 x 23.7 x 31.5(inch) 200V/208V/480V Input : 1385 x 600 x 800 (mm) 54.5 x 23.7 x 31.5(inch)					
	Weight	380V Input : approx. 187 kg / 413 lbs			380V Input : approx. 187 kg / 413 lbs		
		200V/208V/480V Input : approx. 367 kg / 810 lbs			200V/208V/480V Input : approx. 367 kg / 810 lbs		

SPECIFICATIONS

75kW		ADG-P-40-1875	ADG-P-60-1250	ADG-P-100-750	ADG-P-320-234	ADG-P-640-117	ADG-P-1000-75	ADG-P-1600-47
100kW		ADG-P-40-2500	ADG-P-60-1666	ADG-P-100-1000	ADG-P-320-312	ADG-P-640-156	ADG-P-1000-100	ADG-P-1600-63
AC Input	Voltage	3Ø3W + G 380Vac ± 15% (Option : 200V/208V/480V)						
	Frequency	47 - 63Hz						
	Power factor	≥ 90% at maximum power						
DC Output	Output Voltage	40V	60V	100V	320V	640V	1000V	1600V
	Output Current (75kW)	1875A	1250A	750A	234A	117A	75A	47A
	Output Current (100kW)	2500A	1666A	1000A	312A	156A	100A	63A
	Line Regulation	< 0.1%						
	Load Regulation	< 0.1%	< 0.15%	< 0.15%	< 0.08%	< 0.08%	< 0.1%	< 0.08%
	Transient Response ²	≤ 10-20ms						
Measurement	Voltage Accuracy	0.5% F.S.						
	Voltage Resolution	0.1V						
	Current Accuracy	0.5% F.S.						
	Current Resolution	0.1A						
Protection	Type	Vin OVP, Vin UVP, OVP, OCP, OTP						
	OVP Range	5% - 115% from front panel						
	OCP Range	5% - 115% from front panel						
General	Efficiency	≥ 87% at maximum power			≥ 90% at maximum power			
	Remote Interface	RS-485 (Opt. GPIB / RS-232/Analog)						
	Operational Temperature	0°C - 40°C						
	Storage Temperature	-20°C - 70°C						
	Isolation	Input to Enclosure: 2000VAC						
	Dimension (HxWxD)	380V Input : 1520 x 600 x 800 (mm) / 59.9 x 23.7 x 31.5 (inch) 200V/208V/480V Input : 2020 x 600 x 800 (mm) / 79.6 x 23.7 x 31.5 (inch)						
	Weight	380V Input : approx. 294kg / 648.3 lbs 200V/208V/480V Input : approx. 574kg / 1265.7 lbs						

² Recover to ±0.1% of regulated output with a 50% to 100% or 100% to 50% step load change.

* All specifications are subject to change without notice.

** Above specifications are for output voltage over 1% F.S.

***all specifications are subject to change without notice.

ADC Series

CE



Output Power
2kW~8kW

Applications

- Industrial Power Supply
- Electric Vehicles
- IT / SMT Production Line
- Medical Industry
- Aerospace & Defense
- Communication Industry
- Motor & Compressor
- Power Tool

ADC Series

Rack Mount DC Power Supply

The ADC series is Preen's classic DC power supply which has high power density, fast response time, high accuracy and wellaround protection. It has been widely adopted in production line, burn-in test, laboratories and integrated system.

With compact size and light weight, ADC series starts from 2 kW to 8kW with 19 inches cabinet It's flexible configuration design can satisfy the needs of various applications with high price-performance ratio.

- Modular Design : 4kW in 2U, 8kW in 4U only.
- Two Operational Modes: constant-voltage and constant-current.
- Protections: overvoltage, over current, over load, input under voltage and over temperature.
- Remote sense for line drop compensation of 0~3V.
- Standard 19 inches model with high flexibility in different environments.
- CE mark with high electromagnetic compatibility performance.

High Power Density

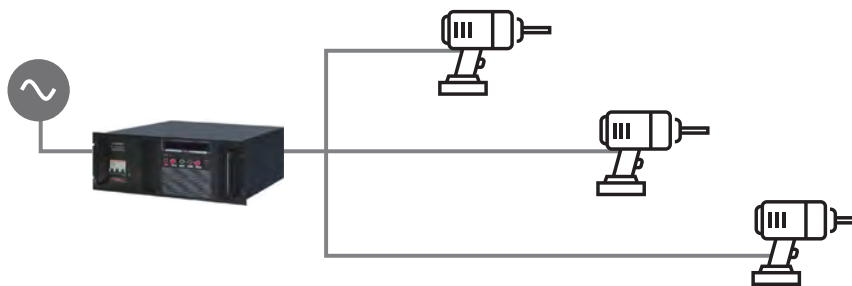
2U / 2-4kW

4U / 8kW



ADC series is 19 inches rack mount type DC power supply with high power density. 2U is up to 4 kW and 4U is up to 8 kW which gives user the flexibility to arrange it's working space and easy to maintain the unit.

Applications



For electric power tools, in order to enhance product reliability and consistency, aging test or accelerated life testing is usually a necessary procedure during R&D or quality assurance stage. The ADC series can be used to simulate the battery of power tools, and provides clean and low ripple DC power for a variety of voltage levels.

SPECIFICATIONS

2 kW Model	Max. Voltage	Max. Current	Size (HxWxD)	Weight
ADC-0300067	30V	67A	88 x 430 x 500 mm	14 kg
ADC-0400050	40V	50A		
ADC-0600033	60V	33A		
ADC-0800025	80V	25A		
ADC-1000020	100V	20A		
ADC-1200017	120V	17A		
ADC-1600013	160V	13A		
ADC-2400008	240V	8A		
ADC-3300006	330V	6A		
ADC-6000003	600V	3A		
4 kW Model	Max. Voltage	Max. Current	Size (HxWxD)	Weight
ADC-0300133	30V	133A	88 x 430 x 500 mm	17kg
ADC-0400100	40V	100A		
ADC-0600067	60V	67A		
ADC-0800050	80V	50A		
ADC-1000040	100V	40A		
ADC-1200033	120V	33A		
ADC-1600025	160V	25A		
ADC-2400017	240V	17A		
ADC-3300012	330V	12A		
ADC-6000007	600V	7A		
8 kW Model	Max. Voltage	Max. Current	Size (HxWxD)	Weight
ADC-0300267	30V	267A	176 x 430 x 500 mm	30kg
ADC-0400200	40V	200A		
ADC-0600133	60V	133A		
ADC-0800100	80V	100A		
ADC-1000080	100V	80A		
ADC-1200060	120V	67A		
ADC-1600050	160V	50A		
ADC-2400033	240V	33A		
ADC-3300024	330V	24A		
ADC-6000013	600V	13A		

* all specifications are subject to change without notice.

SPECIFICATIONS

ADC Series (2kW - 8kW)

Capacity		2kW	4kW	4kW	8kW
INPUT					
Rated voltage ^{*1}		187~253 Vac 1 Ø 2W+G		187~253Vac 1 Ø 2W+G or 187~253Vac 3 Ø 3W+G or 323~437Vac 3 Ø 3W+G	
current	Single-Phase 220VAC	17A	34A	-	68A ^{*2}
	three-Phase 220VAC	-	-	15A	30A
	three-Phase 380VAC	-	-	9A	18A
Frequency		47~63Hz			
OUTPUT					
Voltage		Please refer to the Specifications on page 88			
current		Please refer to the Specifications on page 88			
Ripple		<0.15%			
Voltage Adjustment		0~100% adjustable			
Current limit adjustment		10~100% adjustable			
Over-voltage adjustment		10% given value~110% given value adjustable			
Power adjustment rate		< 0.05% full scale			
Load adjustment rate		< 0.05% full scale			
Transient response time ^{*3}		< 1ms (load changes from 50% to 100% or from 100% to 50%)			
OTHER SPECIFICATION					
Efficiency (at rated input, max load)		>0.85		>0.89	
Circuit type		Switching power supply			
Protection function		Over voltage, over current, short circuit, over temperature			
Local control	Voltage meter	3 1/2digital meter (Option 4 1/2digital meter)			
	Current meter	3 1/2digital meter (Option 4 1/2digital meter)			
	Indicator light	Abnormal, external control, constant voltage, constant current			
	Pre-set	Output voltage, output current, output over current, reset			
Remote control	Compensation	0~3V			
	Control	Output voltage, output current 0~100% adjustable through external 0~5Vdc Voltage External control and reset			
	Monitor	Remote control to output voltage, output current from 0 to 100% through external 0~5Vdc voltage			
Environment	Operation temperature	0 ~ 50 °C			
	Storage temperature	-26 ~ 65 °C			
	Humidity	0~90% (non-condensing)			
	Cooling mode	Wind enter from the front and out in the back. Can be installed with rack from top to bottom.			
	Noise	< 55dB / 1m (fan speed control)			
Withstand voltage		Input to crust 2200Vdc/1min without arc /4mA			
Insulation Resistance		Input to crust 100M (500Vdc)			
Electromagnetic Compatibility(EMC)		Input EMI filter			
MECHANICAL SPECIFICATION					
Input mode		Terminal strips			
Output mode		Copper busbar			
Structure		19" 483 mm , xU rack type			
Dimension (HxWxD) (WxDxH)		88 x 430 x 500 mm	176 x 430 x 500mm	88 x 430 x 500 mm	176 x 430 x 500mm
		3.5 x16.9 x 19.7 inch	7.0 x 16.9 x 19.7 inch	3.5 x16.9 x 19.7 inch	7.0 x 16.9 x 19.7 inch
Weight		14kg	22kg	17kg	30kg
		30.86lbs	48.49lbs	37.47lbs	66.13lbs

*1 Please contact for other voltage specification.

*2 Height is 6U and weight is 50kg

*3 Load changes from 50% to 100% or from 100% to 50%

* Specifications for line regulation and load regulation are under full scales.

ORDERING INFORMATION :

ADC Series (2kW - 8kW)

Model Number	Description
ADC-0300067	Rack Mount DC Power Supply (2kW/30V/67A)
ADC-0400050	Rack Mount DC Power Supply (2kW/40V/50A)
ADC-0600033	Rack Mount DC Power Supply (2kW/60V/33A)
ADC-0800025	Rack Mount DC Power Supply (2kW/80V/25A)
ADC-1000020	Rack Mount DC Power Supply (2kW/100V/20A)
ADC-1200017	Rack Mount DC Power Supply (2kW/120V/17A)
ADC-1600013	Rack Mount DC Power Supply (2kW/160V/13A)
ADC-2400008	Rack Mount DC Power Supply (2kW/240V/8A)
ADC-3300006	Rack Mount DC Power Supply (2kW/330V/6A)
ADC-6000003	Rack Mount DC Power Supply (2kW/600V/3A)
ADC-0300133	Rack Mount DC Power Supply (4kW/30V/133A)
ADC-0400100	Rack Mount DC Power Supply (4kW/40V/100A)
ADC-0600067	Rack Mount DC Power Supply (4kW/60V/67A)
ADC-0800050	Rack Mount DC Power Supply (4kW/80V/50A)
ADC-1000040	Rack Mount DC Power Supply (4kW/100V/40A)
ADC-1200033	Rack Mount DC Power Supply (4kW/120V/33A)
ADC-1600025	Rack Mount DC Power Supply (4kW/160V/25A)
ADC-2400025	Rack Mount DC Power Supply (4kW/240V/25A)
ADC-3300012	Rack Mount DC Power Supply (4kW/330V/12A)
ADC-6000007	Rack Mount DC Power Supply (4kW/600V/7A)
ADC-0300267	Rack Mount DC Power Supply (8kW/30V/267A)
ADC-0400200	Rack Mount DC Power Supply (8kW/40V/200A)
ADC-0600133	Rack Mount DC Power Supply (8kW/60V/133A)
ADC-0800100	Rack Mount DC Power Supply (8kW/80V/100A)
ADC-1000080	Rack Mount DC Power Supply (8kW/100V/80A)
ADC-1200060	Rack Mount DC Power Supply (8kW/120V/60A)
ADC-1600050	Rack Mount DC Power Supply (8kW/160V/50A)
ADC-2400033	Rack Mount DC Power Supply (8kW/240V/33A)
ADC-3300024	Rack Mount DC Power Supply (8kW/330V/24A)
ADC-6000013	Rack Mount DC Power Supply (8kW/600V/13A)

ADS Series

ADS Series

Military/Aerospace DC Power Supply



Trailer Type

The ADS Series is a Military/Aerospace DC Power Supply with robust circuit design and high stability. It is suitable for inductive type loads and aerospace or military applications, such as motor equipment, production testing, maintenance & repair, generators, aircraft engines, laboratories and etc.

ADS series has overload capability up to 300% and users can select between two output voltage: $28V \pm 10\%$ or $270V \pm 10\%$ (opt.). Its output power is up to 180kW and can deliver up to 1500A. There are two models of ADS series, trailer and stand-alone.

Output Current
50A~4500A

Interfaces

Option

RS-232

RS-485

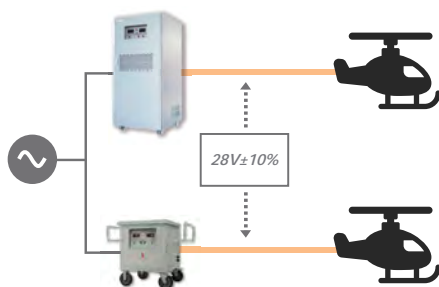
GPIB

Applications

- Aerospace & Defense
- Aircraft
- Helicopter
- Aircraft Factory
- Hangar
- Repair Stations
- Transportation
- Industrial Power Supply

- Output voltage of $28V \pm 10\%$ or $270V \pm 10\%$ (opt.) for aerospace or military usage.
- Output current ranges from 50A to 1500A with maximum overload to 4500A.
- Capable to sustain abusive loads with inrush current and reverse current, such as aircraft engine or generators.
- Constant voltage and current limitation functions.
- Comprehensive protection includes over voltage, over current, over load, input under voltage and over temperature.

Ground Power Unit for Aircraft



ADS provides stable DC power and has 300% overload capability, which is an ideal ground power solution for the aircraft production and maintenance related industries.

Overload Capability



The ADS Series has robust circuit design and high stability. It is suitable for start up, repair and the production line of the inductive type loads, such as aircraft engine and compressor.

Highly Reliable

The ADS series is a SCR type of DC power supply. Utilizing industrial frequency transformer and advanced 6-pulse or 12-pulse rectifier topology, the ADS series offer clean and reliable DC power with full protections including OVP, OCP, OTP and short circuit protection. It is a DC power supply with features of high output power output, easy maintenance, high reliability and robust.

ORDERING INFORMATION :

ADS Series (1.5kW - 45kW)

Model Number	Description
ADS-28-50	Military/Aerospace DC Power Supply(1.5kW/28V/50A)
ADS-28-100	Military/Aerospace DC Power Supply(3kW/28V/100A)
ADS-28-200	Military/Aerospace DC Power Supply(6kW/28V/200A)
ADS-28-300	Military/Aerospace DC Power Supply(9kW/28V/300A)
ADS-28-400	Military/Aerospace DC Power Supply(12kW/28V/400A)
ADS-28-500	Military/Aerospace DC Power Supply(15kW/28V/500A)
ADS-28-600	Military/Aerospace DC Power Supply(18kW/28V/600A)
ADS-28-800	Military/Aerospace DC Power Supply(24kW/28V/800A)
ADS-28-1000	Military/Aerospace DC Power Supply(30kW/28V/1000A)
ADS-28-1500	Military/Aerospace DC Power Supply(45kW/28V/1500A)
ADS-001	300% Overload
ADS-002	RS-232 Interface
ADS-003	RS-485 Interface
ADS-004	GPIB Interface
ADS-005	Dry Contact Control

SPECIFICATIONS

ADS Series (1.5kW - 12kW)

Model	ADS-28-50		ADS-28-100		ADS-28-200		ADS-28-300		ADS-28-400		
Capacity	1.5kVA	4.5kVA	3kVA	9kVA	6kVA	18kVA	9kVA	27kVA	12kVA	36kVA	
Circuit Type	SCR										
INPUT											
Phase	3 Phase 3W+G (Δ) 3 Phase 4W+G (Y)										
Voltage	220V/380V ^{*1}										
Voltage Range	$\pm 10\%$										
Frequency	60Hz ± 3 Hz or 50Hz ± 3 Hz										
OUTPUT											
Voltage	28VDC $\pm 10\%$ Adjustable (25.2VDC ~ 30.8VDC)										
Rate Current	0~50A		0~100A		0~200A		0~300A		0~400A		
Overload Capacity	None	150A	None	300A	None	600A	None	900A	None	1200A	
Current-limiting adjustable	5~50A	15~150A	10~100A	30~300A	20~200A	60~600A	30~300A	90~900A	40~400A	120~1200A	
Line Regulation	$\leq 0.5\%$										
Load Regulation	$\leq 0.5\%$										
Ripple(Vrms)	$\leq 1\%$										
INDICATOR											
Digital Voltmeter	28.0 V										
Digital Ammeter	50.0 A	150.0 A	100.0 A	300.0 A	200.0 A	600.0 A	300.0 A	900.0 A	400.0 A	1200.0 A	
Protection	Over-Voltage; Over-Current; Over-temperature; Short-circuit protection										
Cooling System	Air Forced Fan										
Environment	-20°C ~ +45 / 500meter(Altitude) / Prevent against dust and dust from carbon bush										
Humidity	0~90% (Non-condensing) Continuous working										
Resistance	$\geq 10M\Omega$ (500Vdc)										
Withstand voltage	1500Vac 10mA/1min										
Noise	< 65dB										
Remote Monitoring	Adjust output voltage range from 0~100% via 0~5Vdc external control. (option)										
DIMENSION											
Trailer	H x W x D (mm/ inch)	880 x 1198 x 760 / 34.64 x 47.16 x 29.92									
Stand-Alone	H x W x D (mm/ inch)	1605 x 750 x 835 / 63.18 x 29.52 x 32.87									
WEIGHT											
Trailer	(lbs / kg)	507/230	660/300	570/260	728/330	660/300	815/370	728/330	882/400	794/360	948/430
Stand-Alone	(lbs / kg)	330/150	400/180	375/170	441/200	441/200	530/240	507/230	661/300	595/270	728/330

*1 Other required voltage, please kindly refer to Form 1.

*No compensating function.

*Custom-made specifications are on request.

*Outlook: F-Free standing type, T-Trailer type, B-Bridge mounted type, W-Wall mounted type.

*One year warranty:

*All specifications are subject to change without prior notice.

SPECIFICATIONS

ADS Series (15 kW - 45 kW)

Model	ADS-28-500		ADS-28-600		ADS-28-800		ADS-28-1000		ADS-28-1500		
Capacity	15kVA	45kVA	18kVA	54kVA	24kVA	72kVA	30kVA	90kVA	45kVA	135kVA	
Circuit Type	SCR										
INPUT											
Phase	3 Phase 3W+G (Δ) 3 Phase 4W+G (Y)										
Voltage	220V/380V ^{*1}										
Voltage Range	$\pm 10\%$										
Frequency	60Hz ± 3 Hz or 50Hz ± 3 Hz										
OUTPUT											
Voltage	28VDC $\pm 10\%$ Adjustable (25.2VDC ~ 30.8VDC)										
Rate Current	0~500A		0~600A		0~800A		0~1000A		0~1500A		
Overload Capacity	None	1500A	None	1800A	None	2400A	None	3000A	None	4500A	
Current-limiting adjustable	50~500A	150~1500A	60~600A	180~1800A	80~800A	240~2400A	100~1000A	300~3000A	150~1500A	450~4500A	
Line Regulation	$\leq 0.5\%$										
Load Regulation	$\leq 0.5\%$										
Ripple(Vrms)	$\leq 1\%$										
INDICATOR											
Digital Voltmeter	28.0 V										
Digital Ammeter	500.0 A	1500.0 A	600.0 A	1800.0 A	800.0 A	2400 A	1000.0 A	3000 A	1500.0 A	4500 A	
Protection	Over-Voltage; Over-Current; Over-temperature; Short-circuit protection										
Cooling System	Air Forced Fan										
Environment	-20°C ~ +45 / 500meter(Altitude) / Prevent against dust and dust from carbon bush										
Humidity	0~90% (Non-condensing) Continuous working										
Resistance	$\geq 10M\Omega$ (500Vdc)										
Withstand voltage	1500Vac 10mA/1min										
Noise	< 65dB										
Remote Monitoring	Adjust output voltage range from 0~100% via 0~5Vdc external control. (option)										
DIMENSION											
Trailer	H x W x D (mm / inch)	970 x 1355 x 930 / 38.18 x 53.34 x 36.61							-		
Stand-Alone	H x W x D (mm / inch)	1355 x 600 x 980 / 53.34 x 23.62 x 38.58					2060 x 1180 x 1060 / 81.1 x 46.45 x 41.73				
WEIGHT											
Trailer	(lbs / kg)	882/400	1036/470	926/420	1080/490	992/450	1168/530	1080/490	1280/580	1213/550	1433/650
Stand-Alone	(lbs / kg)	640/290	772/350	728/330	838/380	816/370	1058/480	992/450	1102/500	1124/510	1390/630

*1 Other required voltage, please kindly refer to Form 1.

*No compensating function.

*Custom-made specifications are on request.

*Outlook: F-Free standing type, T-Trailer type, B-Bridge mounted type, W-Wall mounted type.

*One year warranty.

*All specifications are subject to change without prior notice.

Power Conditioner / AVR



Product Series	APS	APH
Circuit Design	Solid state	Inductive
Output Phase	1Ø / 3Ø	3Ø
Output Power	1-300kVA	10-600kVA
Efficiency	≥ 98%	≥ 97%
Load Regulation / Accuracy	±2% - 4%	±2% - 5%
Input Voltage Range	±18%	-13% - 17%
CE certified	○	○
Up to 2000V Surge Absorbers (opt.)	○	-
Precision Instruments & Equipment Applications	○	-
Factory and Facility Applications	-	○
Overload Capabiity	-	125% - 40mins 150% - 20mins 175% - 10mins 200% - 5mins
Other Features	Optional Surge Protection	
	Input PF ≥ 95%	Event Function

○ Standard - None

Product Applications



APS Series

CE



Output Power
1kVA~300kVA

Applications

- Home Appliance
- Laboratory/Certification Bureau
- Industrial Power Supply
- IT / SMT Production Line
- Medical Industry
- Transportation
- Communication Industry

APS Series

Solid State Power Conditioner

Preen's APS series is a solid state power conditioner with high precision and fast response time. Applying electronic compensation design topology, the APS series can detect fluctuation on input voltage and compensate to provide pure and stable voltage.

Applications include mobile / laptop SMT production lines, medical equipment, communication equipment, telecom stations, EMC test and laboratory.

The APS series has single-phase and three-phase models with power level up to 300kVA and input voltage range of $\pm 18\%$ or $\pm 25\%$ (option). The 2% voltage regulation makes it ideal for applications requiring accurate and stable input.

- Wide input voltage range : rated voltage $\pm 18\% \sim \pm 25\%$.
- Optional EMI filter for better power quality.
- CE mark with high electromagnetic compatibility performance.
- High input power factor: ≥ 0.95 .
- High efficiency: up to 98% at full load.
- Customized outdoor cabinet available to increase protection class to IP54.
- Comprehensive protection includes over voltage, over current, over load, input under voltage and over temperature.
- Optional surge protection with different levels.

SPECIFICATIONS

APS Series Single-Phase Output (1kVA - 15kVA)

Model	APS-11001	APS-11002	APS-11003	APS-11005	APS-11007	APS-11010	APS-11015
Capacity	1kVA	2kVA	3kVA	5kVA	7.5kVA	10kVA	15kVA
AC INPUT							
Phase	Single Phase						
Voltage ^{*1}	220V						
Voltage Range	Standard : ±18%			Standard : ±18 % Option : ± 25 %			
Frequency	47Hz ~ 63Hz						
Power Factor	0.95 ~ 1						
AC OUTPUT							
Phase	Single Phase						
Voltage ^{*2}	220V (G)						
Frequency	Same as input frequency.						
Power Factor	±0.7~1						
METER & INDICATOR							
Voltage Meter	Yes						
Current Meter	-			Yes			
LED Indicator	Power abnormal, output over/under voltage , auto bypass						
PROTECTION							
Over Range	Auto Shutdown & LED Indicator			LED Indicator			
Over Load	Circuit Breaker			150% for 15 Sec.; 130% for 30 Sec.; 110% for 300 Sec.			
Over/Under Voltage	Alarm & Auto Shutdown			Alarm & Auto Shutdown (option)			
Auto Bypass	LED Indicator & Alarm						
Noise Filter	Surge Absorber, LC Filter, EMI Filter (option)			Surge Absorber, LC Filter (option), EMI Filter (option)			
GENERAL							
VA Efficiency	≥ 98% at Full load / No load energy power consumption ≤ 2%.						
Line Regulation	±2%~ ±4%			±2%			
Load Regulation	±2%~ ±4%			±2%			
Total Harmonic Distortion(THD)	≤ 1%(Additional waveform distortion)						
Audible Noise (1 meter)	≤ 45 dB			≤ 50 dB			
Cooling System	Natural cooling			Fan cooling			
Connections	Socket or Terminal			Terminal			
ENVIRONMENT							
Operational Temperature	0° C~ 40° C						
Humidity	0~95% (Non-condensing)						
Dimension(H x W x D)	220 x 120 x 360mm		310 x 170 x 400mm		380 x 200 x 550mm		
	8.66 x 4.72 x 14.17inch		12.20 x 6.69 x 15.74inch		14.96 x 7.87 x 21.65inch		
Weight	10kg	15kg	20kg	25kg	35kg	40kg	45kg
	22.04lbs	33.06lbs	44.09lbs	55.11lbs	77.16lbs	88.18lbs	99.2lbs

*1 Weight and size vary with input and output voltage, please contact us.

*2 Custom-made specifications are on request.

*All specifications are subject to change without prior notice.

SPECIFICATIONS

APS Series Single-Phase Output (20kVA - 100kVA)

Model	APS-11020	APS-11030	APS-11040	APS-11050	APS-11060	APS-11080	APS-11100
Capacity	20kVA	30kVA	40kVA	50kVA	60kVA	80kVA	100kVA
AC INPUT							
Phase	Single Phase						
Voltage ^{*1}	220V ^{*1}						
Voltage Range	Standard : ±18 % Option : ± 25 %						
Frequency	47Hz ~ 63Hz						
Power Factor	0.95 ~ 1						
AC OUTPUT							
Phase	Single Phase						
Voltage ^{*2}	220V (G) ^{*1}						
Frequency	Same as input frequency.						
Power Factor	±0.7~1						
METER & INDICATOR							
Voltage Meter	Yes						
Current Meter	Yes						
LED Indicator	Power abnormal, output over/under voltage , auto bypass						
PROTECTION							
Over Range	LED Indicator						
Over Load	150% for 15Sec.; 130% for 30Sec.; 110% for 300Sec.						
Over/Under Voltage	Alarm and Auto Shutdown (option)						
Auto Bypass	LED Indicator & Alarm						
Noise Filter	Surge Absorber, LC Filter (option), EMI Filter (option)						
GENERAL							
Efficiency	≥ 98% at Full load / energy power consumption ≤ 2% under no load						
Line Regulation	±2%						
Load Regulation	±2%						
Total Harmonic Distortion(THD)	≤ 1%(Additional waveform distortion)						
Audible Noise (1 meter)	≤ 50 dB			≤ 55 dB			
Cooling System	Fan cooling						
Connections	Terminal				Busbar		
ENVIRONMENT							
Operational Temperature	0 ° C ~ 40° C						
Humidity	0~95% (Non-condensing)						
Dimension(H x W x D)	605 x 330 x 550mm		860 x 450 x 800mm		960 x 600 x 900mm		
	23.81 x 12.99 x 21.65inch		33.85 x 17.71 x 31.49 inch		37.79 x 23.62 x 35.43inch		
Weight	75kg	120kg	230kg	270kg	350kg	390kg	430kg
	165.34lbs	264.55lbs	507.06lbs	595.24lbs	771.61lbs	859.80lbs	947.98lbs

*1 Weight and size vary with input and output voltage, please contact us.

*2 Custom-made specifications are on request.

*All specifications are subject to change without prior notice.

SPECIFICATIONS

APS Series Three-Phase Output (10kVA-100kVA)

Model	APS-33010	APS-33015	APS-33022	APS-33030	APS-33045	APS-33060	APS-33075	APS-33100
Capacity	10kVA	15kVA	22kVA	30kVA	45kVA	60kVA	75kVA	100kVA
AC INPUT								
Phase	Three Phase							
Voltage ^{*1}	220V / 380 (T)							
Voltage Range	Standard : ±18 %		Standard : ±18 % Option : ± 25 %					
Frequency	47Hz ~ 63Hz							
Power Factor	0.95 ~ 1							
AC OUTPUT								
Phase	Three Phase							
Voltage ^{*2}	220V / 380 (G)							
Frequency	Same as input frequency.							
Power Factor	±0.7~1							
METER & INDICATOR								
Voltage Meter	Yes, range: 0~300 VAC for each phase							
Current Meter	Yes, with R/S/T phase current							
LED Indicator	Power abnormal, output over/under voltage , auto bypass							
PROTECTION								
Over Range	Power auto shutdown (option) & LED indicator							
Over Load	Circuit Breaker	150% for 15Sec; 130% for 30Sec; 110% for 300Sec.						
Over/Under Voltage	Alarm & Auto Shutdown (option)							
Auto Bypass	LED Indicator & Alarm							
R.S.T. Phase Failure	LED Indicator (option) & Alarm (option) & Auto Shutdown (option)							
Noise Filter	Surge Absorber, LC Filter(option), EMI Filter (option)							
GENERAL								
Efficiency	≥ 98% at Full load / energy power consumption ≤ 2% under no load							
Line Regulation	±2%~ ±4%		±2%					
Load Regulation	±2%~ ±4%		±2%					
Total Harmonic Distortion(THD)	≤ 1%(Additional waveform distortion)							
Audible Noise (1 meter)	≤ 50 dB				≤ 55 dB			
Cooling System	Natural cooling			Fan cooling				
Connections	Terminal							
ENVIRONMENT								
Operational Temperature	0 ° C~ 40° C							
Humidity	0~95% (Non-condensing)							
Dimension(H x W x D)	770 x 355 x 650mm				860 x 450 x 800mm			
	30.31 x 13.97 x 25.59inch				33.85 x 17.71 x 31.49inch			
Weight	80kg	85kg	100kg	150kg	190kg	230kg	270kg	360kg
	176.3lbs	187.3lbs	220.4lbs	330.6lbs	418.8lbs	507lbs	595.2lbs	792lbs

*1 Weight and size vary with input and output voltage, please contact us.

*2 Custom-made specifications are on request.

*All specifications are subject to change without prior notice.

SPECIFICATIONS

APS Series Three-Phase Output (120kVA-300kVA)

Model	APS-33120	APS-33150	APS-33180	APS-33240	APS-33300
Capacity	120kVA	150kVA	180kVA	240kVA	300kVA
AC INPUT					
Phase	Three Phase				
Voltage ^{*1}	220V / 380 (G)				
Voltage Range	Standard : ±18 % Option : ± 25 %				
Frequency	47Hz ~ 63Hz				
Power Factor	0.95 ~ 1				
AC OUTPUT					
Phase	Three Phase				
Voltage ^{*2}	220V / 380 (G)				
Frequency	Same as input frequency.				
Power Factor	±0.7~1				
METER & INDICATOR					
Voltage Meter	Yes, range: 0~300 VAC for each phase				
Current Meter	Yes, with R/S/T phase current				
LED Indicator	Power abnormal, output over/under voltage , auto bypass				
PROTECTION					
Over Range	Power auto shut off (option) & LED indicator				
Over Load	150% for 15Sec.; 130% for 30Sec.; 110% for 300Sec.				
Over/Under Voltage	Alarm & Auto shutdown (option)				
Auto Bypass	LED Indicator & Alarm				
R.S.T. Phase Failure	Alarm & Auto shutdown (option)				
Noise Filter	Surge Absorber, LC Filter, EMI Filter (option)				
GENERAL					
Efficiency	≥ 98% at Full load / energy power consumption ≤ 2% under no load				
Line Regulation	±2%				
Load Regulation	±2%				
Total Harmonic Distortion(THD)	≤ 1%(Additional waveform distortion)				
Audible Noise (1 meter)	≤ 55 dB				
Cooling System	Fan cooling				
Connections	Terminal		Busbar		
ENVIRONMENT					
Operational Temperature	0 ° C ~ 40° C				
Humidity	0~95% (Non-condensing)				
Dimension(H x W x D)	1500 x 600 x 1200mm		1700 x 800 x 1200mm		
	59.05 x 23.62 x 47.24inch		66.92 x 31.49 x 47.24 inch		
Weight	550kg	630kg	660kg	700kg	750kg
	1210lbs	1386lbs	1452lbs	1540lbs	1650lbs

*1 Weight and size vary with input and output voltage, please contact us.

*2 Custom-made specifications are on request.

*All specifications are subject to change without prior notice.

SPECIFICATIONS

APS Series Single-Phase Output (1kVA - 100kVA)

Model Number	Discription
APS-11001	Solid State Power Conditioner (1 kVA)
APS-11002	Solid State Power Conditioner (2 kVA)
APS-11003	Solid State Power Conditioner (3 kVA)
APS-11005	Solid State Power Conditioner (5 kVA)
APS-11007	Solid State Power Conditioner (7 kVA)
APS-11010	Solid State Power Conditioner (10 kVA)
APS-11015	Solid State Power Conditioner (15 kVA)
APS-11020	Solid State Power Conditioner (20 kVA)
APS-11030	Solid State Power Conditioner (30 kVA)
APS-11040	Solid State Power Conditioner (40 kVA)
APS-11050	Solid State Power Conditioner (50 kVA)
APS-11060	Solid State Power Conditioner (60 kVA)
APS-11080	Solid State Power Conditioner (80 kVA)
APS-11100	Solid State Power Conditioner (100 kVA)

APS Series Three-Phase Output (10kVA - 300kVA)

Model Number	Discription
APS-33010	Solid State Power Conditioner (10 kVA)
APS-33015	Solid State Power Conditioner (15 kVA)
APS-33022	Solid State Power Conditioner (22 kVA)
APS-33030	Solid State Power Conditioner (30 kVA)
APS-33045	Solid State Power Conditioner (45 kVA)
APS-33060	Solid State Power Conditioner (60 kVA)
APS-33075	Solid State Power Conditioner (75 kVA)
APS-33100	Solid State Power Conditioner (100 kVA)
APS-33120	Solid State Power Conditioner (120 kVA)
APS-33150	Solid State Power Conditioner (150 kVA)
APS-33180	Solid State Power Conditioner (180 kVA)
APS-33240	Solid State Power Conditioner (240 kVA)
APS-33300	Solid State Power Conditioner (300 kVA)

APH Series

CE



Output Power
10kVA~600kVA

Applications

- Aerospace & Defense
- Industrial Power Supply
- IT / SMT Production Line
- Medical Industry
- Transportation
- Communication Industry

APH Series

Inductive Automatic Voltage Regulator

APH series is a cost-effective inductive type automatic voltage regulator with output power up to 600kVA and strong overload capability to sustain impulse loads. These features make it widely applied in motor industries, CNC machines, transportation system, production equipment, and factory for power conditioning purpose.

Applying electromagnetic inductive design, APH is different from conventional voltage regulators that it does not have carbon brush, which makes it easier to maintain. As the grid's voltage fluctuates, APH uses the internal rotation of the motor to adjust the angle of compensation transformer to step up or step down the output voltage and stabilize the voltage to the load.

APH series are three-phase voltage regulators with output power range from 10kVA to 1000kVA, input voltage range of -13% to +18% (or optional -22% to +30%), and voltage regulation of $\pm 2\%$. The APH units have strong overload capability for different types of loads.

- Inductive type voltage regulator without carbon brush for easy maintenance.
- High output power range: three-phase 10-600kVA.
- High overload capability: 125% for 40minutes, 150% for 20 minutes, 175% for 10minutes and 200% for 5 minutes.
- Sustainable for impulse load, capable to sustain surge, non-linear load.
- Comprehensive protection includes over voltage, over current, over load, input under voltage and over temperature.
- High cost-effective for high power conditioning.
- Optional surge protection with different levels.

SPECIFICATIONS

APH Series Three-Phase Output (10kVA - 75kVA)

Model	APH-330010	APH-330015	APH-330020	APH-330030	APH-330045	APH-330060	APH-330075
Capacity	10kVA	15kVA	20kVA	30kVA	45kVA	60kVA	75kVA
AC INPUT							
Phase	Standard: 3 Ø 4W+G(γ) Optional: 3 Ø 4W+G(Δ)						
Voltage ^{*1}	220V / 380V						
Voltage Range	Standard: Voltage -13% ~ +17% Optional: -22% ~ +30%						
Frequency	47Hz ~ 63Hz						
AC OUTPUT							
Phase	Standard: 3 Ø 4W+G(γ) Optional: 3 Ø 4W+G(Δ)						
Voltage ^{*2}	Standard : 220V / 380V, 230V / 400V , 240V , Optional : 415V						
Accuracy	± 2% (± 2% ~ ± 5% adjustable)						
Frequency	47 -63Hz						
Power Factor	± 0.7 ~ 1						
METER & INDICATOR							
Voltmeter	LED digital meter for voltage of each phase; Accuracy ≤ 1%						
Ammeter	LED digital meter for voltage of each phase; Accuracy ≤ 1%						
Error	Error code and message available when a abnormal condition occurs						
LED Indicator	NORMAL.ABNORMAL.OVER VOLTAGE.UNDER VOLTAGE.OVER LOAD.AUTO / MANUAL Mode						
PROTECTION							
Over/Under Voltage	Sound-light alarm with output shutdown						
Missing Phase	Sound-light alarm with output shutdown						
Incorrect Phase Sequence	Sound-light alarm with output shutdown						
Bypass Swich	Manual bypass switch (opt.)						
Over Load	Sound-light alarm						
GENERAL							
Efficiency	≥ 97% (Full load)						
Voltage Modulation	≥ 4V/S						
Total Harmonic Distortion(THD)	Additional distortion ≤ 1%						
HMI	LED display for meter and auto/manual voltage adjustment						
Overload Capacity	125%- 4min · 150%- 20min · 175% - 10min · 200% - 5min						
Audible Noise (1 meter)	≤ 55dB						
Cooling System	Fan cooling						
Connections	Terminal						
Environment	Operational Temperature : -5°C ~ 40°C · Humidity : < 95% (Non-condensing) · Altitude : 1000m						
Dimension (H x W x D)	750 x 400 x 550 mm			950 x 450 x 600 mm			
	29.52 x 15.74 x 21.65 inch			37.4 x 17.71 x 23.62 inch			
Weight	150kg	160kg	165kg	240kg	260kg	280kg	295kg
	330.6lbs	352.7lbs	363.7lbs	529.1lbs	573.2lbs	617.2lbs	650.3lbs

*1 Please contact for other voltage specification.

*2 The rated input voltage is 380V.

* all specifications are subject to change without notice.

SPECIFICATIONS

APH Series Three-Phase Output (100kVA - 600kVA)

Model	APH-330100	APH-330125	APH-330150	APH-330200	APH-330250	APH-330300	APH-330350	APH-330400	APH-330500	APH-330600	
Capacity	100kVA	125kVA	150kVA	200kVA	250kVA	300kVA	350kVA	400kVA	500kVA	600kVA	
AC INPUT											
Phase	Standard: 3 Ø 4W+G(Y) Optional: 3 Ø 4W+G(Δ)										
Voltage ^{*1}	220V / 380V										
Voltage Range	Standard : Voltage -13% ~ +17% Optional : -22% ~ +30%										
Frequency	47Hz ~ 63Hz										
Power Factor	0.95 ~ 1										
AC OUTPUT											
Phase	Standard: 3 Ø 4W+G(Y) Optional: 3 Ø 4W+G(Δ)										
Voltage ^{*2}	Standard : 220V / 380V, 230V / 400V , 240V , Optional : 415V										
Accuracy	± 2% (±2% ~ ±5% Adjustable)										
Frequency	47 -63Hz										
Power Factor	± 0.7 ~ 1										
METER & INDICATOR											
Voltmeter	LED digital meter for voltage of each phase; Accuracy ≤ 1%										
Ammeter	LED digital meter for voltage of each phase; Accuracy ≤ 1%										
Error	Error code and message available when a abnormal condition occurs										
LED Indicator	NORMAL.ABNORMAL.OVER VOLTAGE.UNDER VOLTAGE.OVER LOAD.AUTO / MANUAL Mode										
PROTECTION											
Over/Under Voltage	Sound-light alarm with output shutdown										
Missing Phase	Sound-light alarm with output shutdown										
Incorrect Phase Sequence	Sound-light alarm with output shutdown										
Bypass Switch	Manual bypass switch (opt.)										
Over Load	Sound-light alarm										
GENERAL											
Efficiency	≥ 97% (Full load)										
Voltage Modulation	≥ 4V/S										
Total Harmonic Distortion(THD)	Additional distortion ≤ 1%										
HMI	LED display for meter and auto/manual voltage adjustment										
Overload Capacity	125%- 4min · 150%- 20min · 175% - 10min · 200% - 5min										
Audible Noise (1meter)	≤ 55dB										
Cooling System	Fan cooling										
Connections	Terminal					Copper bar					
Dimension (H x W x D)	600 x 900 x 1500 mm					600 x 1100 x 1800 mm					-
	23.6 x 35.4 x 59 inch					23.6 x 43.3 x 70.9 inch					-

*1 Please contact for other voltage specification.

*2 The rated input voltage is 380V.

* all specifications are subject to change without notice.

SPECIFICATIONS

APH Series Three-Phase Output (100kVA - 600kVA)

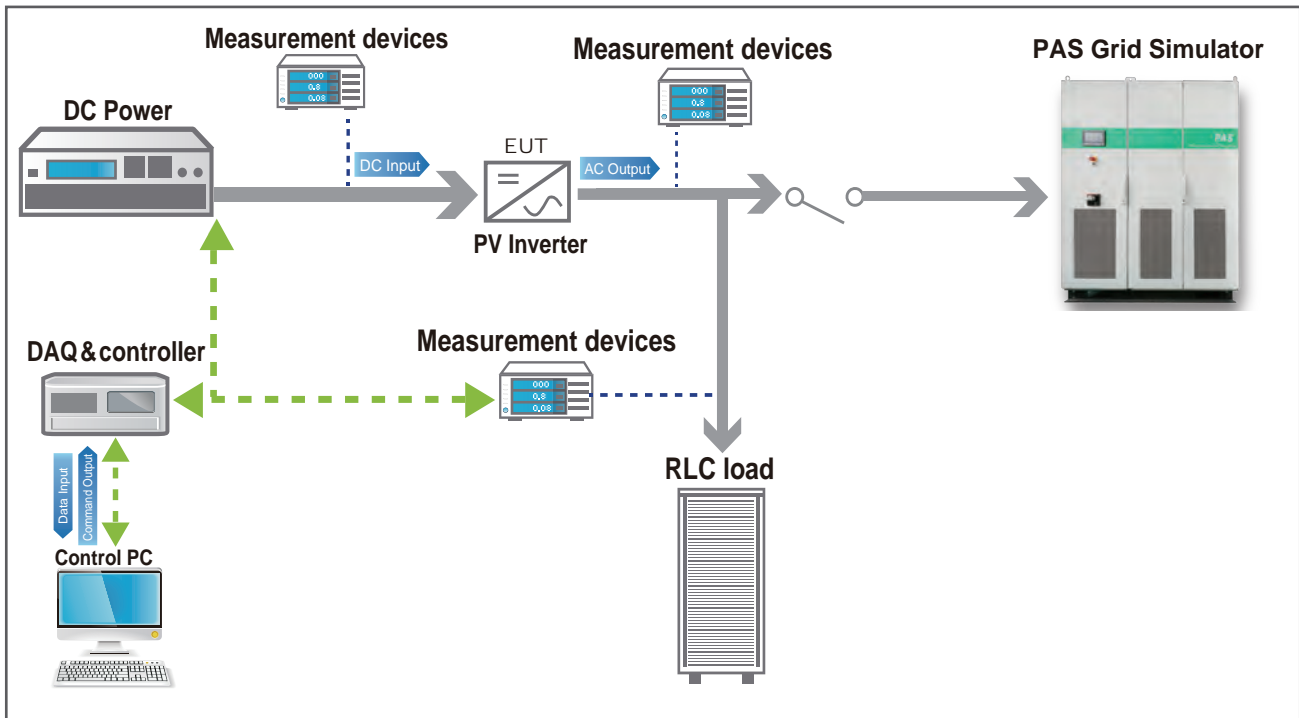
Model	APH-330100	APH-330125	APH-330150	APH-330200	APH-330250	APH-330300	APH-330350	APH-330400	APH-330500	APH-330600	
Capacity	100kVA	125kVA	150kVA	200kVA	250kVA	300kVA	350kVA	400kVA	500kVA	600kVA	
AC INPUT											
Phase	3Ø 4W+G										
Voltage ^{*1}	220V / 380V										
Voltage Range	Standard: -13% - +17% Optional: -22% - 30%										
Frequency	47Hz ~ 63Hz										
AC OUTPUT											
Phase	3Ø 4W+G										
Voltage ^{*2}	220V / 380V, 230V / 400V , 240V / 415V(opt.)										
Accuracy	± 2% (±2% ~ ±5% adjustable)										
Power Factor	± 0.7 ~ 1										
Incorrect Phase Sequence	≥ 4V/S										
Overload Capacity	125% - 40min , 150% - 20min · 175% - 10min · 200% - 5min										
THD	Additional distortion ≤ 1%										
Efficiency	≥ 97%(Full load)										
USER INTERFACE											
HMI	LCD & Light,button										
Alarm	Sound-light alarm										
Communication	ISO RS-485										
Monitor	For monitoring only										
GENERAL											
PROTECTION	Missing Phase / Incorrect Phase Sequence · Sound-light alarm										
	Over/Under Voltage · Sound-light alarm										
	Over Load · Sound-light alarm										
	Over Heating · Sound-light alarm										
	Redundant Circuit Control										
	Event History Inside Memory for up to 200 events										
Measurement	Input line Voltage,Input Frequency,Line Voltage,Phase Voltage,Current,Frequency,VA,W,PF,Load% and Internal Temperature										
Environment	Operational Temperature : -5°C ~ 40°C · Humidity : < 95% (Non-condensing) · Altitude : 1000 m										
Cooling System	Fan cooling										
Audible Noise(1 meter)	≤ 50dB	≤ 55dB				≤ 50dB			≤ 60dB		
Optional	Autotransformer or Isolation Transformer										
	Surge Protection										
Dimension (HxWxD)	600 x 900 x 1500 mm				600 x 1100 x 1800 mm				-		
	23.6 x 35.4 x 59 inch				23.6 x 43.3 x 70.9 inch				-		

*1 Please contact for other voltage specification.

*2 The rated input voltage is 380V.

* all specifications are subject to change without notice.

PV Inverter Test Solution



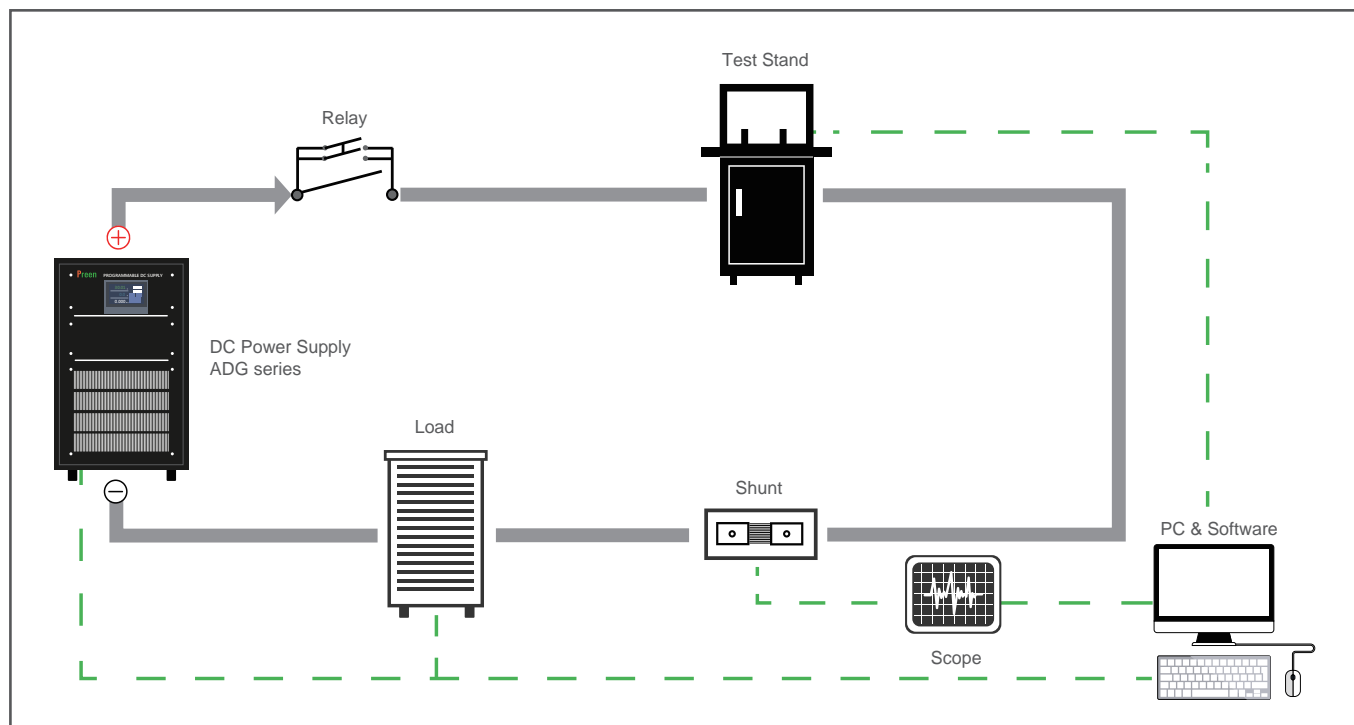
With the rapid development of smart grid, solar power has becoming a major source for renewable energy. A PV system is a device that converts DC power from sunlight into AC power, and PV inverter is a key component of the system. While connected to the grid, there are regulations for PV inverter need to be strictly followed so that no hazards could happen and no interference could result from

Preen's PV inverter test solution is used to simulate various grid and solar panel conditions, and it can be used for compliance test for UL 1741, BDEW and other related test standards. All requirements and evaluation (type or design) tests stated in IEEE-1547 and IEEE-1547.1 can be executed fully automatically by the system software. The PV inverter test solution is able to simulate the dynamic waveform required by LVRT (Low Voltage Ride Through), anti-islanding test, abnormal voltage and frequency test.

Test items list

- Abnormal voltage test (IEEE 1547.1-5.2)
- Abnormal frequency test (IEEE 1547.1-5.3)
- Synchronization test (IEEE 1547.1-5.4)
- DC injection test (IEEE 1547.1-5.6)
- Unintentional islanding test (IEEE 1547.1-5.7)
- Open phase test (IEEE 1547.1-5.9)
- Reconnection test (IEEE 1547.1-5.10)
- Dielectric voltage-withstand test (from UL-1741 standard instead of IEEE-1547.1)

Fuse Test System



During development and production process, protection devices like fuse or circuit breaker that are specified to withstand specific current levels need to be verified by a series of related test to ensure the quality of a product. Preen's fuse test solution is designed to meet the requirements of fuse breaking or duration test, with the capability to deliver up to 2000A in fast response time and to generate precision measurement data for further analysis.



Preen's fuse test system comprises of high power programmable DC power supply, ADG series, which has fast current response time, precision measurement, and high current output. ADG series can deliver up to rated current in few milliseconds, which can fulfill the requirements in ISO-8820. With Preen's fuse test system software, user can easily set up the parameters and generate test report and waveform for analysis.

Features

1. **Breaking Capacity Test:** able to measure fuse breaking time and capture the waveform.
2. **Duration Test:** the test time can be set up to 100 hours.
3. **Designed for production line and laboratory.**
4. **Fast current response time to fulfill the regulation requirements.**

Test Items

- **Operation Time Test**
- **Current Step Test**
- **Breaking Capacity Test**
- **Transient Current Cycling Test**

EVSE ATS

Series

EVSE ATS Series

Electric Vehicle Supply Equipment ATS

Preen's EVSE ATS is designed for verification of AC and DC EV chargers, which comply to regulation of SAE-J1772 and CNS15511; NB/T33001, NB/T33002, NB/T33008.1 and NB/T33008.2; GB/T 18487.1 and GB/T 27930; and Interoperability test specifications of electric vehicle conductive charging.

This system mainly provides electric performance test and communication protocol test for AC and DC charger, integrating the testing items of related standards to optimize testing efficiency. It can simulate the output and communication operation of the charger to test whether the magnetic field generated by the high-capacity transmission will interfere with the communication. And it also can simulate the corresponding protection of the charger when the signal of control pilot changes during the charging process.

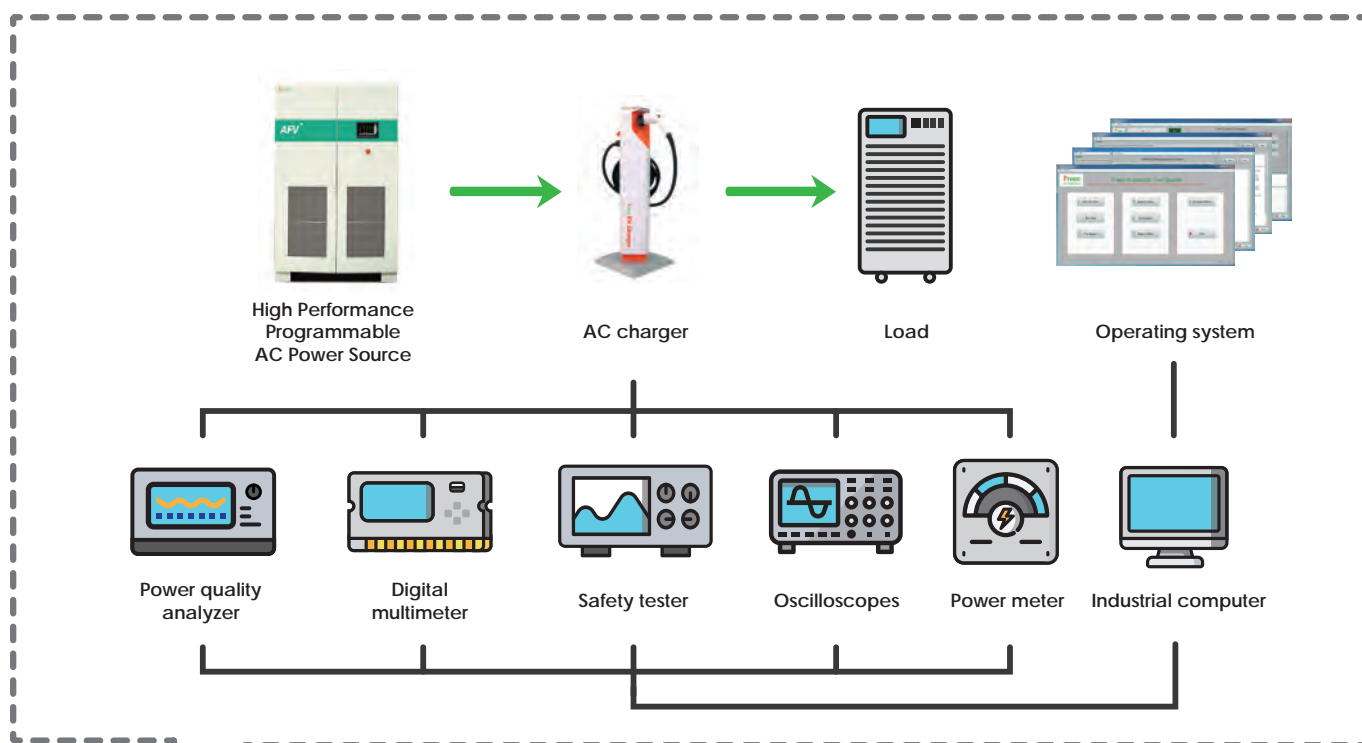


Applications

- EV Charger
- Onboard Charger
- DC/DC Converter
- Motor Drive

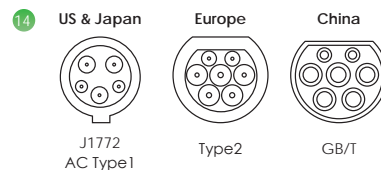
- Complied with relevant national regulations: NB/T 33001, NB/T33002, NB/T33008.1, NB/T33008.2, GB/T 18487.1 and GB/T 27930.
- Ideal for high-power charger testing : equipped with Preen's high power AC sources and loads, featuring various models and power levels
- Flexible system structure: can be customized for customer's need.
- Suitable for various EV charger sockets.
- Simulate the corresponding protection of the charger when the signal of control pilot changes according to each working conditions.
- Capable to perform touch current insulation testing.
- Intuitive control software, easy to use.

Structure of EVSE ATS



Instrument and Equipment Overview

- 1 AC power supply
- 2 Industrial computer
- 3 Digital Storage Oscilloscopes
- 4 Display Screen (Operation software)
- 5 Tri Color Signal Light
- 6 High power load
- 7 Start/Stop button
- 8 Bar Code Scanner
- 9 Signal Control Box
- 10 Digital multimeter
- 11 Safety tester
- 12 Voltage & Current meter of input/output
- 13 Input connector of charger (single-phase / three-phase)
- 14 Charger sockets for different countries



Key Advantages

Preen's EVSE ATS is designed based on the type and regulations of EV charger in various countries. Not only meeting multiple testing standard of EV charger, EVSE ATS also provides flexibility in system design. It can be configured according to customer's requirement or existing instruments, and automatically generates test results and reports. EVSE ATS is equipped with Preen's high power AC sources and loads, featuring various models and power levels, providing a cost-effective and reliable testing solution.

Flexible system Configuration

System structure uses flexible open platform, depending on customer's need, equipment/instruments, meter setting, test result recording and report generation.

Self-developed product

System programming complies with related regulations such as power, communication, safety and touch current test.



Compatible with various types of EV charger

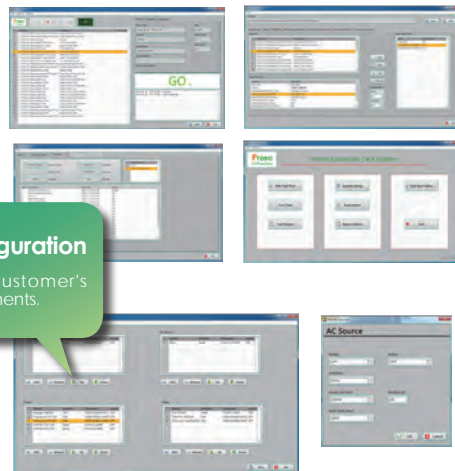
Applicable for EV charger types in various countries.

High cost performance

Self-developed control software, high power AC source and load effectively reduce the system cost.

Intuitive Software Platform

Preen's EVSE ATS testing software platform is designed as an open and flexible structure, the user can set different criteria to each testing item and make adjustments according to different instruments. It can also interpret PASS/FAIL automatically and generate test results in the form of reports. The user can set Security Level, Full System Access, Edit Setups and Recall Setups in system setting page.



Flexible Software Configuration

Configured according to customer's requirement and existing instruments.

○ Friendly environment :

Intuitive operation and various functions for testing condition

○ Editable testing project :

Testing project can be organized according to user's need

○ Security Level setting :

Avoid miss-setting and facilitate internal management for corporation.

○ Report editing and automatic generation :

Advanced settings for test item editing with flexibility to adjust test complexity.

○ Automated generation of reports and editing :

Easily record test results and increase productivity.

Preen's High-Power Power Supply

Preen's EVSE ATS can combine with AFV+ series High Power Programmable Power Supply (10kVA~2000kVA) or PAS series Regenerative Grid Simulator (10kVA~2000kVA) for powering single-phase/three-phase input of charger. These two products can provide voltage / frequency / current testing for EV charger from various countries, and simulate overvoltage, undervoltage and related protection testing.



- Output power : 10kVA~2000kVA
- Output voltage : 0~155V/0~310VAC
- Output frequency : up to 45~500Hz (optional)
- Programmable voltage and frequency



- Output power : 10kVA~2000kVA
- Output voltage : 0~300VAC
- Output frequency : 45~65Hz
- Feature with four-quadrant regenerative function

Standard Testing Items

EVSE ATS is an automatic testing system aimed for AC and DC charger regulation, which comply to regulation of SAE-J1772 and CNS15511, China National Energy Administration standard NB/T 33001, NB/T33002, NB/T33008.1 and NB/T33008.2, China National standard GB/T 18487.1 and GB/T 27930, and Interoperability test specifications of electric vehicle conductive charging. It helps to shorten the product testing process for product line, quality assurance and R&D.

■ **Test Function - For Type 1 (SAE J1772 1-Phase)**

1. Hi-pot test function (for UL2594)
2. GND continuously test (for UL2594)
3. Control Pilot Signal Test State A
4. Control Pilot Signal Test State B2
5. Control Pilot Signal Test State C
6. Current Capacity Test
7. Disconnect Switch S2 Test
8. Coupler Disconnection Test
9. Over Current Protection Test
10. CCID Test (for UL2231)

■ **Test Function- For Type 2 (IEC 62196-2 3-Phase)**

1. Hi-pot test function (for UL2594)
2. GND continuously test (for UL2594)
3. Control Pilot Signal Test State A
4. Control Pilot Signal Test State B2
5. Control Pilot Signal Test State C
6. Current Capacity Test
7. Disconnect Switch S2 Test
8. Coupler Disconnection Test
9. Over Current Protection Test
10. CCID Test (for UL2231)

Advantages of Preen's EVSE ATS

Comparing to other EV charger testing systems on the market, Preen's testing system not only comply with international regulations, it also provide automation-testing for insulation, voltage-withstand and leakage current, greatly improved the efficiency of product line and quality assurance process.

EV Charger Testing Items	Preen	Brand A	Brand B
Insulation Test	V	-	-
Ground Continuity Test	V	-	-
Hipot Test	V	-	-
Touch Current Test	V	-	-
Current Capacity Test	V	V	-
Disconnect Input / Output Switch Test	V	V	V
Coupler Disconnection Test	V	V	V
Input Characteristics Test	V	V	V
Output Characteristics Test	V	V	V
Control Pilot Test (State A to F)	V	V	V
Over Current Protection Test	V	V	V
Charging Circuit Interrupting Device (CCID) Test	V	V	V
Emergency Stop Test	V	V	V
Data Record and Export Data	V	V	V

V Yes - NO

AC
+ DC

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