

PS-AFV-P series

Preliminary

Powertek

High Performance Programmable AC Power Source



▼ Output Frequency up to
15-1000Hz

▼ Transient Generation for
Disturbance Tests

▼ Fast Response Time: $\leq 300\mu\text{S}$

▼ AC Source with DC output
AC+DC

▼ 600VA to 5kVA only in 2U or 5U

▼ Low THD: $\leq 0.3\% - 0.8\%$

▼ Multiple Simulation
Functions

▼ Complete Interface Options:
RS232 / RS485 / Ethernet / USB / GPIB

▼ Intuitive Touch Screen HMI

AC + DC
Power Solutions

PS-AFV-P series

- USB
- RS232
- RS485
- Ethernet
- GPIB
- Analog Control

High Performance Programmable AC Power Source

The PS-AFV-P Series is a programmable AC power source with DC output and precision measurements. This compact power source comes in four power levels, 600VA, 1250VA, 2500VA and 5000VA, providing clean power with distortion less than 0.3% at 50/60Hz. The PS-AFV-P series can deliver output voltage from 0 to 310VAC and frequency from 40 to 500Hz (Opt. 15 to 1000Hz). It is ideal for commercial, defense and aerospace test applications from design verification, quality assurance, ATE to mass production.

A total of 1200 test steps in 50 built-in memories and transient generation functions provide simulation of voltage variations, surges, drops and frequency disturbances. With the state-of-the-art PWM technology, the PS-AFV-P series is capable of delivering up to 4.5 times of peak current from its max. rated current that makes it ideal for inrush current testing. Users can also set up the starting and ending phase angle from 0 to 360 degrees.

The PS-AFV-P series comprises measurement features of rms voltage, rms current, true power, apparent power, power factor, crest factor, reactive power and etc. Its 4.3" touch screen with rotary knob allows quick adjustments and configurations of voltage, current, and frequency. Users can also remotely control the AC source via standard interfaces of USB,

RS232/RS485, LAN or optional GPIB and analog control. Free control software and LabVIEW driver are available for easy programming and remote control.

- **Compact & High Power Density**

2U/5U

2U: 600VA / 1250VA / 2500VA
5U: 5000VA

- **Ideal for Inrush Current**

4.5
peak/rms

Capable of delivering up to 4.5 times of peak current

- **Low Distortion (THD)**

≤0.3%

THD is only <0.3% when output is <100Hz

- **AC Source with DC Output**

DC

Extend the applications to DC type testing

- **Wide Output Voltage & Frequency**

0-310V

15-1000Hz

- **Current Foldback Feature**

CC

Current foldback feature will have output current maintain constant based on the load while output voltage varies

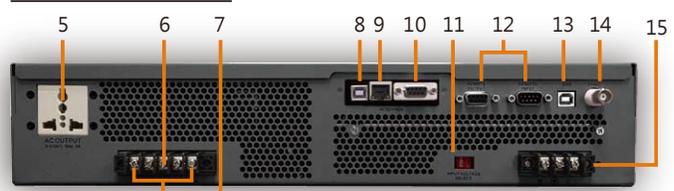
PANEL DESCRIPTION

- | | |
|-----------------------|-------------------------------|
| 1. Power Switch | 10. RS232 / RS485 |
| 2. Touch Screen HMI | 11. Input Range Selector |
| 3. Rotary Knob | 12. PLC Remote In/Out |
| 4. Output / Reset | 13. USB for System (not used) |
| 5. AC Output Terminal | 14. Sync. Singal I/O |
| 6. Output Terminal | 15. Input Terminal |
| 7. Remote Sense | |
| 8. USB Interface | |
| 9. Ethernet Interface | |

Front Panel Overview

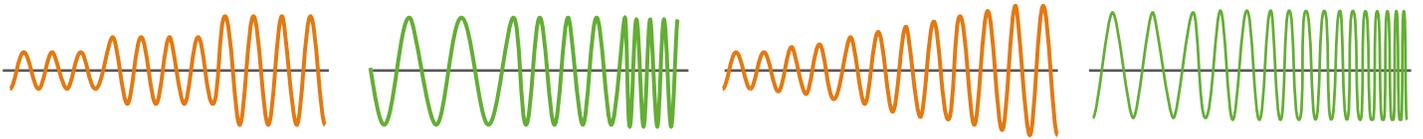


Rear Panel Overview



Key Features of PS-AFV-P Series

Sweep & Ramp Test



The PS-AFV-P series offers an easy and convenient method to execute a single step or continuous output changes. The sweep function is ideal for voltage and frequency variation tests. The response time of voltage and frequency changes are within one cycle. User can also use the ramp function to adjust slew rate of voltage and frequency changes. Ramp function can also effectively reduce the inrush current during motor startup. There are up to 50 memories can be stored and recalled; each memory has 24 steps for user to set up.

Transient Generation



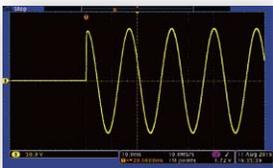
Transient generation is an extended feature that provides the users an easy setup for power line disturbance simulation. Common waveform disturbances such as surge, sag, spikes, and dropouts can be generated for application like immunity test.

Intuitive Touch Panel

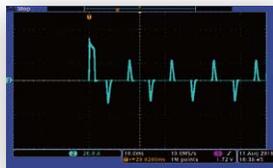


Users can quickly select the parameters via 4.3 inches touch panel or rotary knob, which provides an easy operation and measurement display.

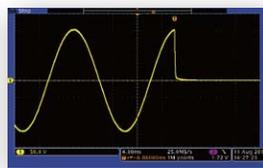
Start/End Angle & High Peak Current for Inrush Current



90° Start Angle



Inrush Current for 90° Start Angle



90° End Angle

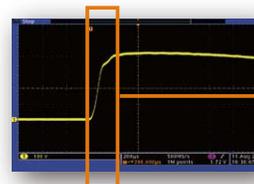
PS-AFV-P Series is capable of providing high output peak current (max. 4.5 peak/rms). This feature makes it ideal for inrush current happened in motor testing. Users can also define the start and end phase angle from 0° to 360°, which is suitable for switching power inrush testing.

Control Software



PS-AFV-P series provides control software and Labview driver that allow users to easily setup the remote control for the power source without further need of programming.

Fast Slew Rate



Measurement
<300 μs

For tests like sags, surges, dropouts, or spikes, slew rate is a critical factor. PS-AFV-P series is a high performance AC source that has a high slew rate of less than 300 μs from 0~90% output voltage. It allows users to do pre-compliance test such as IEC-61000-4-11 or MIL-STD-704F.

SPECIFICATIONS

Preliminary

Model	PS-AFV-P-600		PS-AFV-P-1250		PS-AFV-P-2500		PS-AFV-P-5000		
INPUT									
Phase	Single								
Voltage	98~132VAC / 196~264VAC				196~264VAC or 175~235VAC				
Frequency	47 Hz - 63 Hz								
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 Resolution	0.1Vrms								
Frequency	40-500Hz (opt. 15-1000Hz)								
Frequency Resolution	0.1Hz, 1Hz at >100Hz								
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 times 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		Hi: 0.05A - 48.00A		
Current Accuracy	±(1% of reading + 5 counts) at 40.0 - 500Hz, ±(1% of reading + 10 counts) at 501 - 1000Hz								
Current Resolution	Hi: 0.01A / Lo: 0.001A						Hi: 0.01A		
Peak Current Range	0 - 45A				0 - 90A		0 - 180A		
Peak Current Accuracy	±(1% of reading + 5 counts) at 40.0 - 500Hz, ±(1% of reading + 10 counts) at 501 - 1000Hz								
Peak Current Resolution	0.1A								
Power Range	Hi: 100 - 1200W / Lo: 0 - 120W				Hi: 200 - 2400W / Lo: 0 - 240W		Hi: 0 - 4800W		
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	≥ 80% at max. power								
Protection	OVP, OCP, LVP, OPP, OTP, RCP, Fan Fail								
Remote Interface	Standard: RS232 / RS485 / Ethernet / USB / PLC Remote In&Out, Option: GPIB / Analog Control								
Over Current Foldback	CC Mode (Constant Current)								
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)	89 x 442 x 450 mm				89 x 442 x 600 mm		222.5 x 442 x 600 mm		
Weight	approx. 16 kg		approx. 20 kg		approx. 31.3 kg		approx. 70 kg		

* All specifications are subject to change without notice.

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