

# AFV-P series

## High Performance Programmable AC Power Source



### Interfaces

Standard **RS-232** **RS-485** **Ethernet** **USB**

Option  **GPIB**   **Analog**

### QR Code



Product Info.



Product Video



Output Power  
**800VA~6kVA**



RoHS Compliant

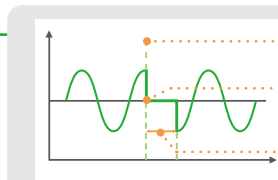


Preen's AFV-P series is a programmable AC power source with DC output and precision measurement. This compact power source provides clean power with THD less than 0.3% at 5-100Hz and it delivers output voltage of 0-350V and frequency of 15-1000Hz (opt. 5-2000Hz). It is ideal for commercial, defense and 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 start and end phase angle among 0-359 degrees, and remotely control AFV-P series via standard interfaces. Free control software and LabVIEW driver are available for easy programming and remote control.

### Power Line Disturbance Simulation (Transient Simulation)

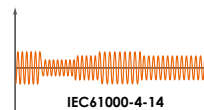
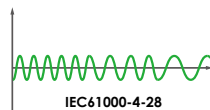
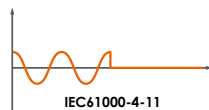


- Transient Site:**  
The transient site can be set from 0° to 359°
- Transient Voltage:**  
The Transient voltage can be set from 0V to 350V
- Transient Time:**  
Transient dwell time options from 0.5ms to 999.9ms

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.

### KEY FEATURE

### AC&DC Power Simulation for IEC-61000 Pre-Compliance Testing

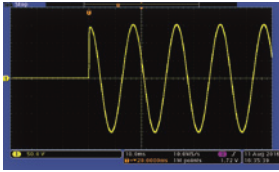


The AFV-P series is a high-performance AC source designed to streamline product development process. With its ability to precisely simulate a wide range of power quality disturbances defined in IEC standards, such as IEC-61000-4-11, IEC-61000-4-14, and IEC-61000-4-28, the AFV-P series ensures products meet regulatory requirements. Its fast response, high accuracy, and low THD make it the ideal choice for pre-compliance testing.

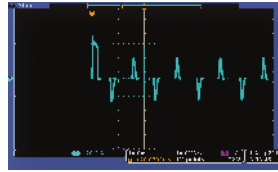
## High Inrush Current EUT & Start / End Angle Setting



Switching Power Supply



90° Start Angle



Inrush Current for 90° Start Angle

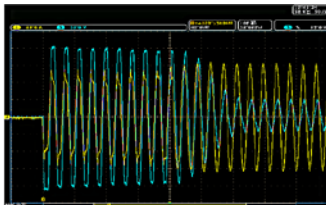
For switching supply (rectified load), AFV-P series provides standard inrush current as 4.5 times of max. output current and the AFV-P-600 and AFV-P-1500 have optional 9 times of max. output current, which makes AFV-P series the lowest capacity in the market that can achieve the highest inrush current. Moreover, the AFV-P series allows users to set the start angle/end angle for the product output, which is suitable for testing switching power supplies.\*

\*Available at Q4 2025

## Motor Type Testing



Motor



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

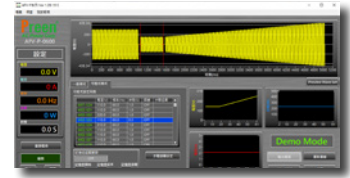
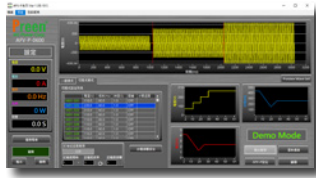


Video

AFV-P series can provide up to 4.5/opt. 9 times\* of peak current from its maximum rated current, which is ideal for inrush current tests, such as electric motor tests. Likewise, AFV-P series is capable to sustain high start inrush current generated by motors or compressors. The user doesn't have to buy high-capacity power supplies just in keeping with the high inrush current characteristic of the loads. Reduce the costs and save the space.

\*Available at Q4 2025

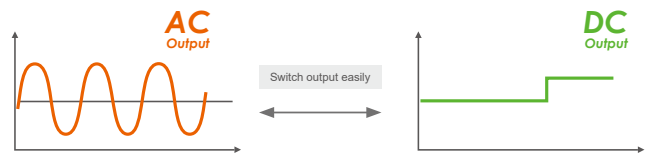
## Multiple Communication Interfaces & Control Software



The AFV-P series is equipped with communication interfaces of RS232, RS485, Ethernet and USB, and only GPIB and Analog are optional interfaces. AFV-P series 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.

## AC + DC Output

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



## High Input Power Factor



The AFV-P series is equipped with an active Power Factor Correction (PFC) circuit, raising the input power factor up to 0.98, which significantly reduces reactive current and harmonic distortion. This minimizes interference to the power grid and other connected equipment.

The PFC function not only improves energy utilization efficiency but also helps maintain a stable and clean power supply, ensuring reliable test results and measurement accuracy.

PF up to 0.98

### Input Power (Apparent Power) Comparison

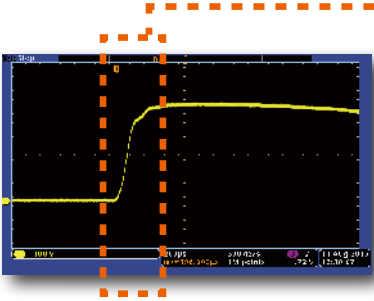
PF= 0.98 vs. PF = 0.7

 <b>Conventional AC Sources</b>	<div style="background-color: green; color: white; padding: 5px; margin-bottom: 5px;"><b>10.7kVA 46.5A</b></div> <p>PF = 0.7, <math>\eta</math> = 0.8</p>
 <b>NEW AFV-P</b>	<div style="display: flex; align-items: center;"> <div style="background-color: green; color: white; padding: 5px; margin-right: 10px;"><b>7.2kVA 31.3A</b></div> <div style="border: 1px dashed green; padding: 5px; background-color: white; color: green; margin-right: 10px;"><b>3.5kVA</b></div> </div> <p>PF = 0.98, <math>\eta</math> = 0.85</p>

SAVE 32.7% Apparent power

For a 6 kVA AFV-P model (single-phase + neutral + ground, 230 V input), when the power factor (PF) improves from 0.7 to 0.98 and efficiency rises from 0.8 to 0.85, the input power demand can be reduced by up to 32.7%, achieving substantial energy-saving benefits.

**Fast Response & High Stability**



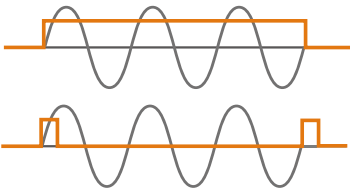
Response Time  
**< 300  $\mu$ s**

THD  
**< 0.3%**

Output Frequency  
**5-2000HZ**

AFV-P series is a high performance AC power 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.

**Synchronized Signal**

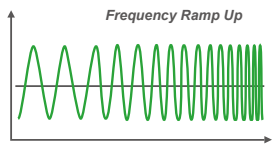
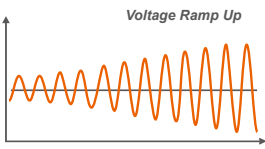


5V DC Synchronized Signal

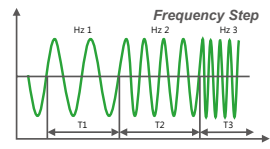
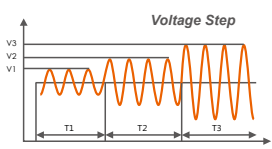
AFV-P series provides two types of synchronized signal. It can either deliver a 5V DC signal continuously when the product output is on or deliver a 5V DC pulse signal every time there is a change on the product output. This feature makes AFV-P series an ideal AC source when applying with automatic test systems.

**Programmable Simulation Functions: Step & Ramp Features**

**Ramp Feature**

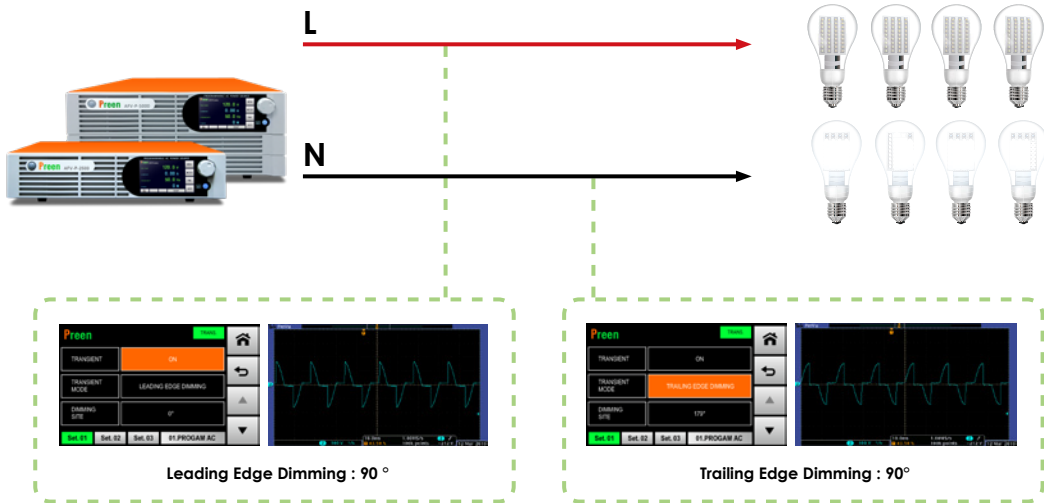


**Step Feature**



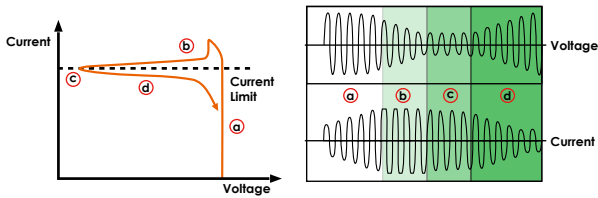
Ramp and Step feature allows users to define slew rate of voltage and frequency at each Step. Users can set the rise/fall time, time unit and voltage/frequency change between Steps to create a wide range of waveform. Additionally, Ramp feature can effectively reduce the inrush current by simulating soft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

## LED TRIAC Dimmer (Opt.)



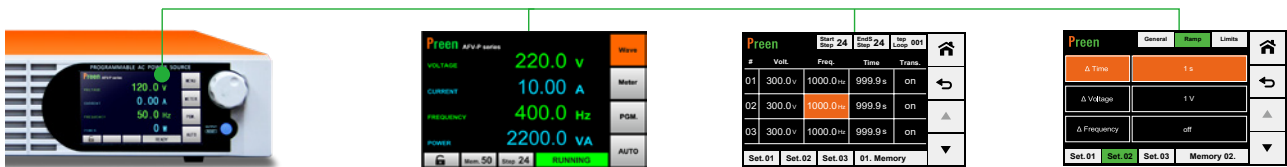
AFV-P series provides optional LED TRIAC Dimmer function, which can simulate output of TRIAC dimmer. The user can select whether to perform LEADING EDGE DIMMING or TRAILING EDGE DIMMING via HMI. Compared with traditional TRIAC dimming, the output waveform can be controlled more accurately and effectively.

## Over Current Foldback



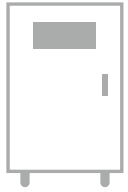
When it comes to over current, AFV-P series offers more than just shutdown protection. Over current foldback enables AFV-P series to maintain the output current at the rated current and correspondingly decrease the output voltage as the load impedance increases. It is an extended protection or an alternative to provide constant current for EUT.

## Intuitive Touch Screen Control



To create a complex sequence on the HMI is not 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.

## Light Weight Design



Conventional 6kVA  
AC Source



AFV-P Series 6kVA

1/3  
Smaller

Lighter  
50%

The new generation of AFV-P features a lightweight design, reducing its weight significantly from 61.5 kg to just 31.3 kg. And industry-leading power density and rack-mount type design for easy system integration. 3000VA only comes in 2U and 6000VA is only in 4U.

## Shortcuts of Output Memory Set (BASIC Mode)

#	Name	Volt.	Freq.
08	MEMORY AC	110.0V	60.0Hz

VOLTAGE 110.0 V FREQUENCY 60.0 Hz  
CURRENT 0.000 A POWER 0.0 W

MEM.#01	MEM.#02	MEM.#03	MEM.#08
310.0V 60.0Hz	90.0V 60.0Hz	220.0V 50.0Hz	110.0V 60.0Hz

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

AFV-P series can display 3 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 provided for preventing operators from accidentally changing shortcuts during output and causing DUT damage.

# SPECIFICATIONS

## AFV-P Series Single-Phase Output (800VA-6kVA)

Model	AFV-P-800	AFV-P-1500	AFV-P-3000	AFV-P-6000
<b>INPUT</b>				
Phase	1Ø / 2 Wire + G			
Voltage	90-264VAC		180-264VAC	
Frequency	47-63 Hz			
Max. Current	12A	20A	20A	40A
Power Factor	≥ 0.98 (Max. Power)			
<b>OUTPUT</b>				
Power	800W	1500W	3000W	6000W
Phase	1Ø / 2 Wire + G			
Voltage Ranges	0-175Vrms / 0-350Vrms, user selectable			
Voltage Accuracy	± ( 0.5 % of setting + 0.1% F.S.)			
Voltage Resolution	0.1Vrms			
Frequency <sup>*1</sup>	A : 5-2000Hz , B : 15-1000Hz			
Frequency Accuracy	±0.02%			
Frequency Resolution	0.1Hz, 1Hz			
Max. Current (RMS) <sup>*3</sup>	6.4A/3.2A	12A/6A	24A/12A	48A/24A
Max. Current (Peak)	28.8A/14.4A	54A/27A	108A/54A	216A/108A
Total Harmonic Distortion (THD)	≤ 0.3% at 5-500Hz , ≤ 0.6% at 501-1000Hz ≤ 1.5% at 1001-1500Hz, ≤ 2% at 1501-2000Hz (Resistive Load)		≤ 0.3% at 5-100Hz , ≤ 0.5% at 101-500Hz , ≤ 0.6% at 501-1000Hz ≤ 1.5% at 1001-1500Hz, ≤ 2% at 1501-2000Hz (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 of max.output current ( RMS )			
<b>DC OUTPUT</b>				
Power	768W	1440W	2880W	5760W
Voltage Ranges	0 - 240V / 0 – 480V			
Max. Current	3.2A/1.6A	6A/3A	12A/6A	24A/12A
Ripple & Noise (RMS)	≤ 0.15%		≤ 0.24%	
<b>MEASUREMENT</b>				
Voltage Range	0-480Vrms			
Voltage Accuracy	±(0.2% of reading + 5 counts)			
Voltage Resolution	0.1V			
Frequency Range	5-2000Hz			
Frequency Accuracy	±0.1Hz at 5.0-500Hz, ±0.2Hz at 501-2000Hz			
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 <sup>*2</sup>	±(1% of reading + 5 counts) at 5.0-500Hz, ±(1% of reading + 10 counts) at 501-2000Hz			
Current Resolution	Hi: 0.01A / Lo: 0.001A		Hi: 0.01A	
Peak Current Range	0-54A	0-108A	0-216A	
Peak Current Accuracy	±(1% of reading + 5 counts) at 5.0-500Hz, ±(1% of reading + 10 counts) at 501-2000Hz		± ( 1% F.S.+ 5 counts )	
Peak Current Resolution	0.1A			
Power Range	Hi: 100-1500W / Lo: 0-120W	Hi: 200-3000W/ Lo: 0-240W	Hi: 0-6000W	
Power Accuracy	±(2% of reading + 10 counts) @ 5-500Hz, ±(2% of reading + 15 counts) @ 501-2000Hz			
Power Resolution	Hi: 1W / Lo: 0.1W		Hi: 1W	
<b>GENERAL</b>				
Efficiency	≥ 80% at max. power	≥ 82% at max. power	≥ 85% at max. power	
Protection	OVP, OCP, LVP, OPP, OTP, RCP, Fan Fail and AMP Fail, VIN error, PFC error, DCB error, PWR OTP			
Remote Interface	Standard: RS232 / RS485 / Ethernet / USB / PLC Remote In&Out, Option: GPIB / Analog			
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) 50 Memories, 4 Shortcuts (BASIC Mode)			
Operating Temperature	0°C~40°C			
Dimensions(HxWxD)	89 x 442 x 495mm 3.5 x 17.4 x 19.5inch	89 x 442 x 650mm 3.5 x 17.4 x 25.6inch	176 x 442 x 665mm 6.9 x 17.4 x 26.2inch	
Weight	approx. 12.9kg approx. 28.44lbs	approx. 13.2kg approx. 29.1lbs	approx. 17.2kg approx. 37.92lbs	approx. 31.3kg approx. 69lbs

\* 1 For type A: 5-2000Hz, please contact us for output power characteristic curve. \* 2 AFV-P-3000 is ±(1% F.S. + 5 counts)

\* 3 Reference voltage 125Vac/250Vdc. For output higher than 125Vac/250Vdc, output current is calculated by P=VI.

\* 4 Reference voltage 240Vdc/480Vdc. \*All specifications are subject to change without notice.

## SPECIFICATIONS

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

Model	AFV-P-600		AFV-P-1250		AFV-P-2500		AFV-P-5000		
<b>INPUT</b>									
Phase	1Ø / 2 Wire + G								
Voltage	98-132VAC / 196-264VAC				196-264VAC( opt. 175-235VAC )				
Frequency	47-63 Hz (opt. 400Hz <sup>3</sup> )								
Max. Current	10A		20A		20A		40A		
<b>OUTPUT</b>									
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 <sup>1</sup>	A : 5-2000Hz , B : 15-1000Hz								
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 5-100Hz , ≤ 0.5% at 101-500Hz , ≤ 0.8% at 501-1000Hz , ≤ 1.5% at 1001-1500Hz , ≤ 2% at 1501-2000Hz (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 of max.output current ( RMS )								
<b>DC OUTPUT</b>									
Power	500W		1000W		2000W		4000W		
Voltage Ranges	0-210V / 0 – 420V								
Max. Current	2.5A / 1.25A		5A / 2.5A		10A / 5A		20A / 10A		
Ripple & Noise (RMS)	≤ 0.15%								
<b>MEASUREMENT</b>									
Voltage Range	0-420Vrms								
Voltage Accuracy	±(0.2% of reading + 5 counts)								
Voltage Resolution	0.1V								
Frequency Range	5-2000Hz								
Frequency Accuracy	±0.1Hz at 5.0-500Hz, ±0.2Hz at 501-2000Hz								
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 <sup>2</sup>	±(1% of reading + 5 counts) at 5.0-500Hz, ±(1% of reading + 10 counts) at 501-2000Hz								
Current Resolution	Hi: 0.01A / Lo: 0.001A								
Peak Current Range	0-45A		0-90A		Hi: 0.01A 0-180A				
Peak Current Accuracy	±(1% of reading + 5 counts) at 5.0-500Hz, ±(1% of reading + 10 counts) at 501-2000Hz						± ( 1% F.S. + 5 counts )		
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) @ 5-500Hz, ±(2% of reading + 15 counts) @ 501-2000Hz								
Power Resolution	Hi: 1W / Lo: 0.1W						Hi: 1W		
<b>GENERAL</b>									
Efficiency	≥ 77% at max. power				≥ 80% at max. power				
Protection	OVP, OCP, LVP, OPP, OTP, RCP, Fan Fail and AMP Fail								
Remote Interface	Standard: RS232 / RS485 / Ethernet / USB / PLC Remote In&Out, Option: GPIB / Analog								
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) 50 Memories, 4 Shortcuts (BASIC Mode)								
Operating Temperature	0°C~40°C								
Dimensions(HxWxD)	89 x 442 x 495mm				89 x 442 x 650mm		176 x 442 x 665mm		
	3.5 x 17.4 x 19.5inch				3.5 x 17.4 x 25.6inch		6.9 x 17.4 x 26.2inch		
Weight	16kg		20kg		31.3kg		61.5kg		
	35.3lbs		44.1lbs		69lbs		135.6lbs		

\* 1 For type A: 5-2000Hz, please contact us for output power characteristic curve. \* 2 AFV-P-2500 is ±(1% F.S. + 5 counts) \* 3 Please contact us for specifications.

\* All specifications are subject to change without notice.

## ORDERING INFORMATION

### AFV-P Series Single-Phase Output (800VA-6kVA)

Model Number	Description
AFV-P-800A	High Performance Programmable AC Power Source( 800VA/350VAC/ 5-2000Hz )
AFV-P-1500A	High Performance Programmable AC Power Source( 1500VA/350VAC/5-2000Hz )
AFV-P-3000A	High Performance Programmable AC Power Source( 3000VA/350VAC/5-2000Hz )
AFV-P-6000A	High Performance Programmable AC Power Source( 6000VA/350VAC/5-2000Hz )
AFV-P-800B	High Performance Programmable AC Power Source( 800VA/350VAC/15-1000Hz)
AFV-P-1500B	High Performance Programmable AC Power Source( 1500VA/350VAC/15-1000Hz)
AFV-P-3000B	High Performance Programmable AC Power Source( 3000VA/350VAC/15-1000Hz)
AFV-P-6000B	High Performance Programmable AC Power Source( 6000VA/350VAC/15-1000Hz)

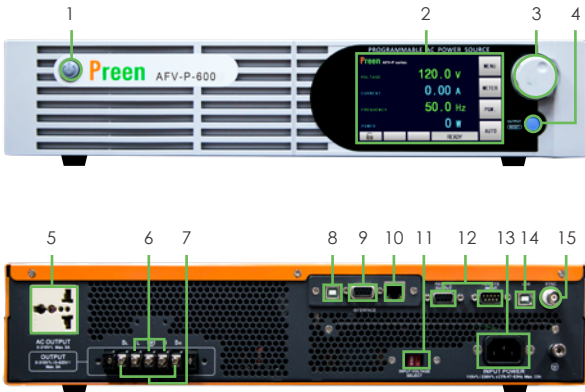
\* Please contact us for specifications.

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

Model Number	Description
AFV-P-600A	High Performance Programmable AC Power Source( 600VA/310V/5-2000Hz )
AFV-P-1250A	High Performance Programmable AC Power Source( 1.25kVA/310V/5-2000Hz )
AFV-P-2500A	High Performance Programmable AC Power Source( 2.5kVA/310V/5-2000Hz )
AFV-P-5000A	High Performance Programmable AC Power Source( 5kVA/310V/5-2000Hz )
AFV-P-600B	High Performance Programmable AC Power Source( 600VA/310V/15-1000Hz )
AFV-P-1250B	High Performance Programmable AC Power Source( 1.25kVA/310V/15-1000Hz )
AFV-P-2500B	High Performance Programmable AC Power Source( 2.5kVA/310V/15-1000Hz )
AFV-P-5000B	High Performance Programmable AC Power Source( 5kVA/310V/15-1000Hz )
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	Interface Card (Ethernet/RS-232&RS-485/USB)
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 115V/230V $\pm 10\%$ )
AFV-P-012	Output 320V (at input 115V/230V $\pm 10\%$ )*
AFV-P-013	LED TRIAC Dimmer Simulation
AFV-P-014	Output 9 Times of Inrush Current (AFV-P-600 & AFV-P-1250)
AFV-P-015	IEC-61000-4-11 Simulation
AFV-P-016	Remote Control Box
ACCS-001	USB to RS-485 converter +RS-232/RS-485 Cable M-F type (2M)
ACCS-003	RS-232/RS-485 Cable M-F type (2M)

\* Please contact us for specifications.

## PANEL DESCRIPTION



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

\* AFV-P-1250, AFV-P-1500, AFV-P-2500, AFV-P-3000, AFV-P-5000, AFV-P-6000 have input terminals.

## DIMENSIONS

Unit : mm ( inch )

