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

600VA~5kVA

TAIWAN EXCELLENCE

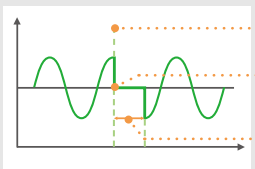
RoHS Compliant

CE

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 0-310V 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)



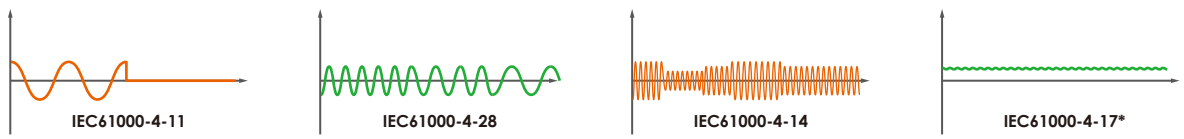
Transient Site:
The transient site can be set from 0° to 359°

Transient Voltage:
The Transient voltage can be set from 0.1V 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



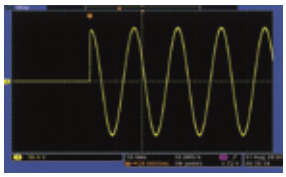
The AFV-P series is a high-performance AC source designed to streamline product development process. With its ability to precisely simulate a wide range of power quality disturbances defined in IEC standards, such as IEC-61000-4-11, IEC-61000-4-14, and IEC-61000-4-28, the AFV-P series ensures products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

*Available at Q2 2025

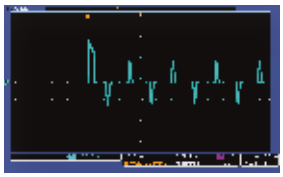
High Inrush Current EUT & Start / End Angle Setting

Switching Power Supply

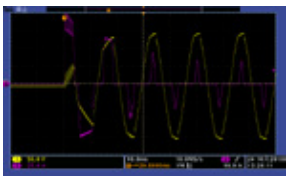
Option



90° Start Angle



Inrush Current for 90° Start Angle

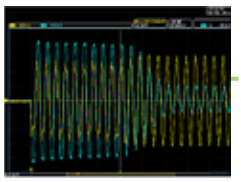


AFV-P-1250
Waveform with 9 times of max. output current

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-1250 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.

Motor Type Testing

Motor



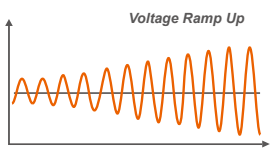
Capable to sustain high start inrush current generated by motor or compressor.

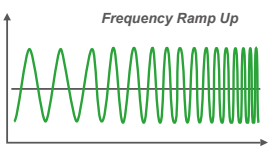
Video

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.

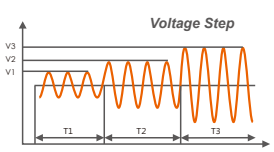
Programmable Simulation Functions: Step & Ramp Features

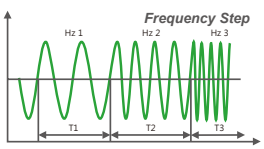
Ramp Feature





Step Feature





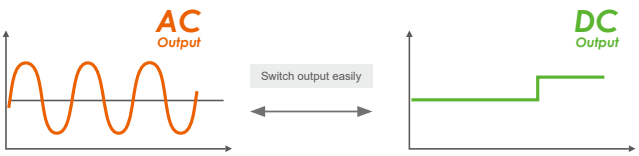
Ramp and Step feature allows users to define slew rate of voltage and frequency at each Step. Users can set the rise/fall time, time unit and voltage/frequency change between Steps to create a wide range of waveform. Additionally, Ramp feature can effectively reduce the inrush current by simulating soft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

Multiple Communication Interfaces & Control Software

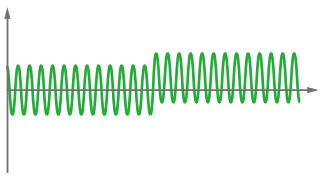
The AFV-P series is equipped with communication interfaces of RS232, RS485, Ethernet and USB, and only GPIB and Analog are optional interfaces. AFV-P series also provides control software with comprehensive programming features and LabView driver, which help users to easily control the AC source without further needs of programming.

AC + DC Output

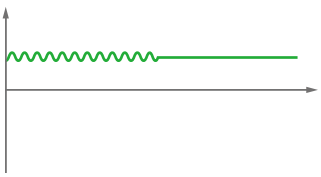
AFV-P series not only provide AC output to simulate real grid conditions, but can also generate DC output based on user's settings. It is an ideal cost-effective power testing solution for R&D and certification laboratories.



AC+DC Features*



AC+DC: 220V/50Hz superimposed with 100V DC, triggered at 0°

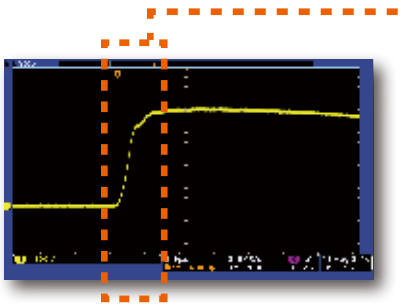


DC+AC: 270V DC superimposed with 20V AC

AFV-P series for the programming of a DC component, enabling the simulation of AC voltages with DC offsets or DC sources with AC ripple. This feature is invaluable for comprehensive power system analysis and testing.

*Available at Q2 2025

Fast Response & High Stability



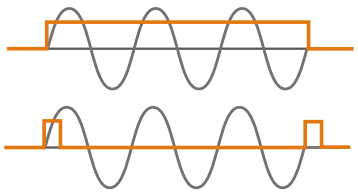
Response Time
< 300 µs

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

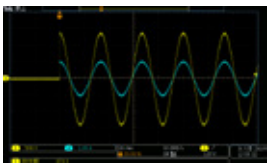


5V DC Synchronized Signal

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.

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

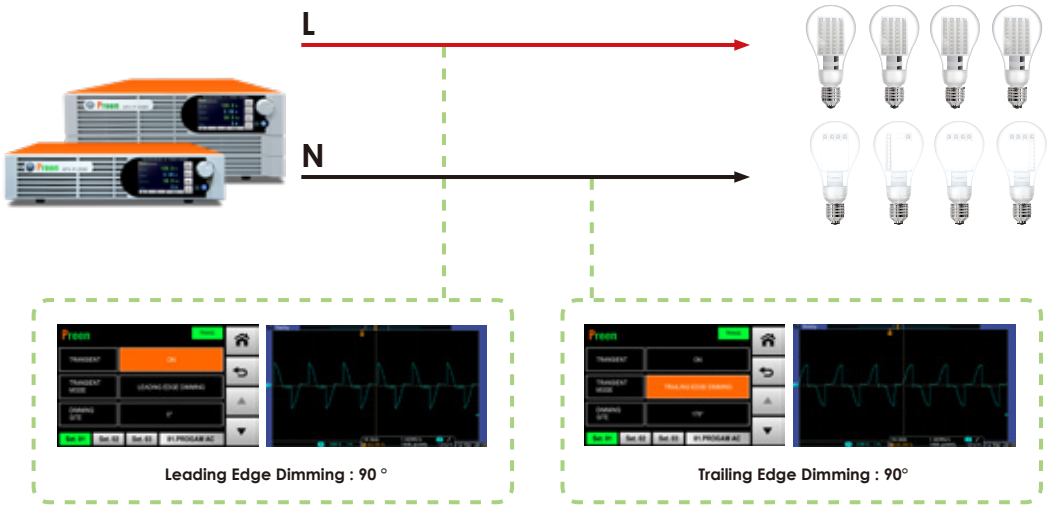
AFV-P-5000 :
620V/60Hz /6.31A/3916.8W



AFV-P-1250 :
1000V/60Hz/0.74A/741W

AFV-P series offers optional high-voltage 620V or 1240V outputs, designed to simulate wide input voltage variations (15%-20%), over-voltage, and other extreme conditions. For example, it can simulate US 277V±15% and other wider range of over-voltage testing. Furthermore, AFV-P series could automatically bypass the transformer box according to the user setting and it allows seamless switching from 0-620V without the need to remove the transformer box.

LED TRIAC Dimmer (Opt.)



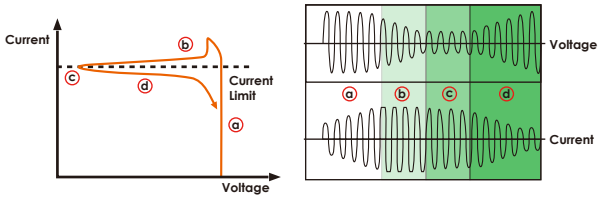
Leading Edge Dimming : 90 °

Trailing Edge Dimming : 90°

Video

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

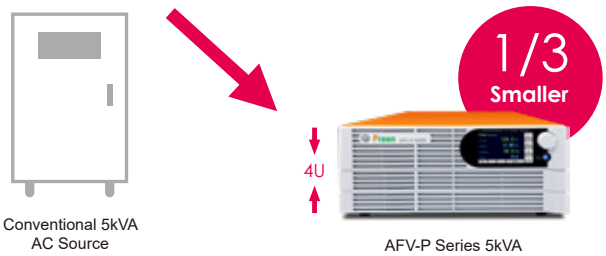


When it comes to over current, AFV-P series offers more than just shutdown protection. Over current foldback enables AFV-P series to maintain the output current at the rated current and correspondingly decrease the output voltage as the load impedance increases. It is an extended protection or an alternative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

Compact & High Power Density

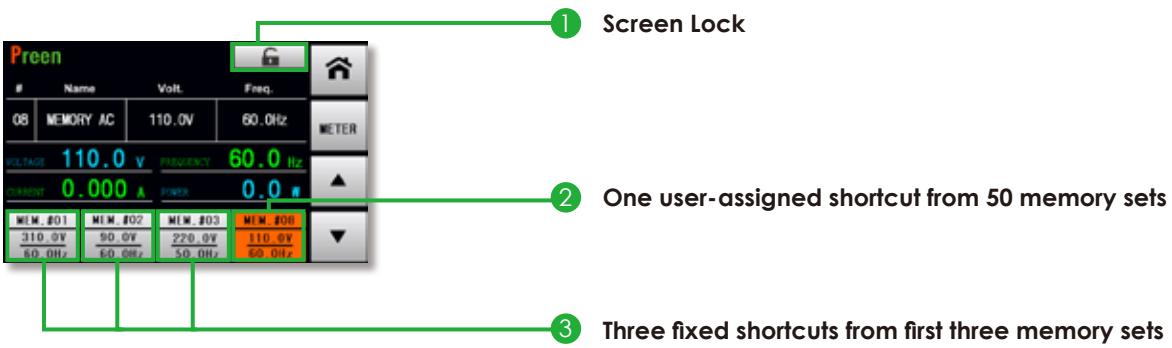


Conventional 5kVA AC Source

AFV-P Series 5kVA

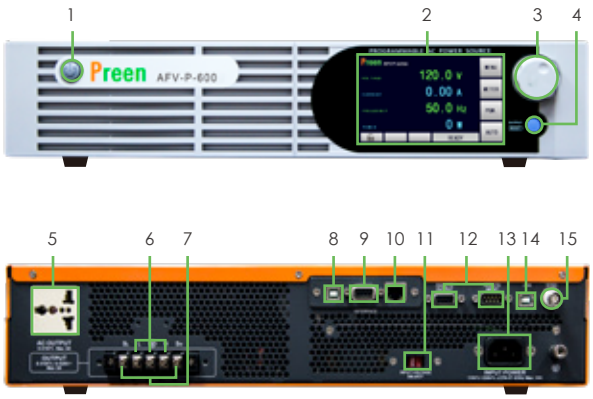
AFV-P series has the industry-leading power density and rack-mount type design for easy system integration. 2500VA only comes in 2U and 5000VA is only in 4U.

Shortcuts of Output Memory Set (BASIC Mode)



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 provided for preventing operators from accidentally changing shortcuts during output and causing DUT damage.

PANEL DESCRIPTION

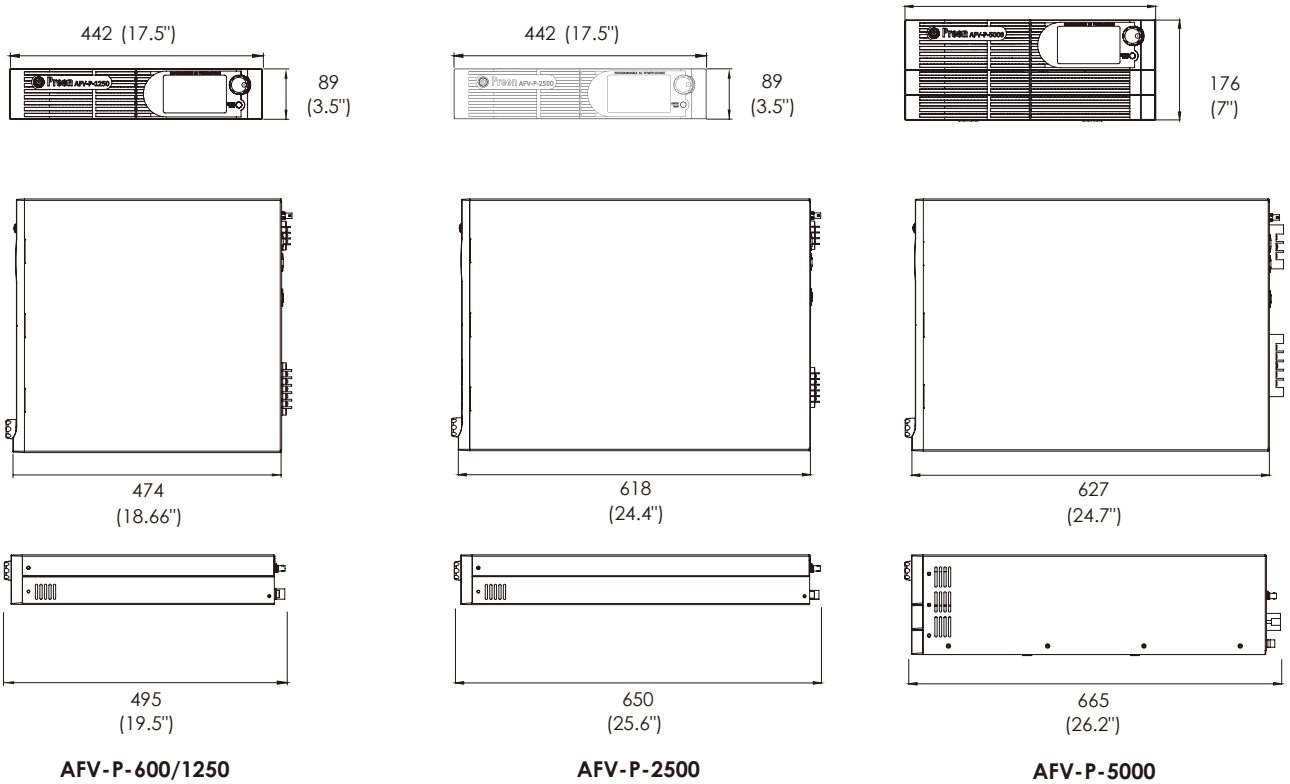


1. Power Switch
2. Touch Screen HMI
3. Rotary Knob
4 Output / Reset Button
5. AC Output Socket
6. Output Terminals
7. Remote Sense Terminal
8. USB Interface
9. RS-232 / RS-485
10. Ethernet Interface
11. Input Voltage Selector
12. PLC Remote In/Out
13 Input Socket *
14. USB Interface (for firmware update)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

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

DIMENSIONS

Unit : mm (inch)



AFV-P-600/1250 **AFV-P-2500** **AFV-P-5000**

SPECIFICATIONS

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

Model		AFV-P-600	AFV-P-1250	AFV-P-2500	AFV-P-5000
INPUT					
Phase		1Ø / 2 Wire + G			
Voltage		98-132VAC / 196-264VAC		196-264VAC(opt. 175-235VAC)	
Frequency		47-63 Hz (opt. 400Hz[*3])			
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[*1]		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)			
DC OUTPUT					
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%			≤ 0.24%
MEASUREMENT					
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[*2]		±(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		0-45A		0-90A	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
GENERAL					
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 (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/310V15-1000Hz)
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 ±10%)
AFV-P-012	Output 320V (at input 115V/230V ±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.