

# High Power Programmable AC Power Source

RoHS  
Compliant



NEW Version



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 series has built-in standard programmable features, such as STEP and RAMP features, which are ideal for laboratories, certification and R&D institution's compliance test. The user-friendly touch screen supports users to operate AFV series intuitively and easily, and the users can remote control the unit via the standard RS-232, RS485 or Ethernet (Optional for Analog, GPIB) interface. The AC source is coupled with output voltage range of 0~310V and output frequency of standard 45~120Hz or optional 45~500Hz. Moreover, the AFV series provides complete product protections, such as OVP, UVP, OCP, OPP, OTP and short circuit protection.

## Product Features

- CE & RoHS certificated.
- Modularized inverter which is compact, smaller, high power density and easy to maintain.
- 7" 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 RAMP modes allow users to set sequences of start/end voltage, frequency and running time with ease.
- Comprehensive protections 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).

## Output Power

10kVA~2000kVA

## Interfaces

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

Option **GPIB** **Analog**

## Applications

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

## QR Code



Product  
Info.



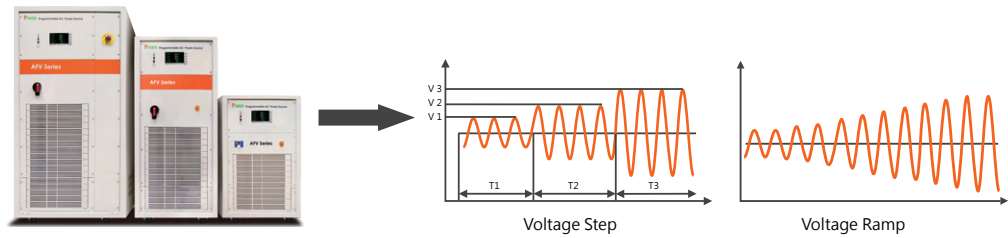
Product  
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## User-friendly Touch Screen and Remote Control



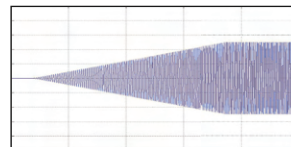
AFV series is equipped with a 7" touch screen. The intuitive and easy-to-use touch screen allows users to set test sequences immediately and precisely. Through the control interfaces (RS-232 / RS-485 / Ethernet / GPIB / Analog), users can set the desired output parameters and monitor the output value remotely.

## STEP / RAMP Mode

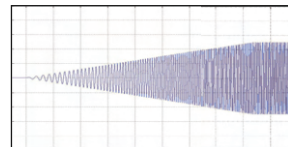


For AFV STEP mode, users can set voltage or frequency steps easily with 24 built-in memory groups and 255 cycles. Because of the widely used in motor or home appliance industry, the output voltage, output frequency, and running time of each step are designed to be easily set in the memory groups. With AFV RAMP mode, 12 built-in memory groups and 255 cycles allows users set voltage or frequency remotely or through the touch screen. Users can set up output voltage, output frequency, the number of start/end groups.

## Soft Start Function ( 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.

## 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	
<b>INPUT</b>									
Phase	3Ø / 3 Wire + G								
Voltage	380VAC ±15% (option:208VAC,220VAC)		380VAC ±15% (option: 480VAC)						
Frequency	50Hz ± 3Hz or 60Hz ± 3Hz								
Max. Current <sup>1</sup>	23A	34A	67A	100A	133A	198A	248A	297A	
Power Factor	≥ 0.9 ( Max. Power )						≥ 0.85 ( Max. Power )		
<b>OUTPUT</b>									
Power ( VA )	10kVA	15kVA	30kVA	45kVA	60kVA	80kVA	100kVA	120kVA	
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 <sup>2</sup>	Standard : 45 ~ 120Hz Option : 45 ~ 500Hz								
Frequency Resolution	0.1Hz								
Frequency Accuracy	± 0.02 % F.S.								
Max. Current (RMS)	Low(A)	83.3A	125A	250A	375A	500A	666.7A	833.3A	1000A
	High(A)	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) <sup>3</sup>	≤ 1% ( Resistive Load )								
Response Time	≤ 2ms								
Crest Factor	≥ 3								
<b>MEASUREMENT</b>									
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	0.1Hz								
Frequency Accuracy	± 0.02 % F.S.								
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								
<b>GENERAL</b>									
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)								
Protection	Input : N.F.B, Over Voltage, Under Voltage / Output : Over Voltage, Over Current, Reverse Current, Over Temperature								
Remote Interface	Standard : RS-232(SCPI)&RS-485(MODBUS) /Ethernet(SCPI) Option : GPIB, Analog Control								
Operational Temperature	0°C~45°C								
Humidity	0~90% ( Non condensing )								
Altitude	< 1,500m								
Dimensions (H x W x D) <sup>4</sup>	1045 x 600 x 800 mm (including wheels)	1440 x 600 x 800 mm (including wheels)		1645 x 800 x 800 mm (including wheels)		1800 x 1050 x 970 mm	1900 x 1150 x 1220 mm		
	41.1 x 23.6 x 31.5 inch (including wheels)	56.7 x 23.6 x 31.5 inch (including wheels)		64.8 x 31.5 x 31.5 inch (including wheels)		70.9 x 41.3 x 38.2 inch	74.8 x 45.3 x 48.0 inch		
Weight <sup>4</sup>	225kg	270kg	440kg	560kg	650kg	750kg	940kg	1100kg	
	496.1lbs	595.4lbs	970.2lbs	1234.8lbs	1433.3lbs	1653.8lbs	2072.7lbs	2425.5lbs	

<sup>1</sup> The max. current is based on rated input voltage of 380V. <sup>2</sup> For 45-500Hz option, please contact us for output power characteristic curve.

<sup>3</sup> When the output voltage is at Low : 90 - 140V or High 180 - 280V with load power factor of 1.

<sup>4</sup> 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		
<b>INPUT</b>										
Phase	3Ø / 3 Wire + G									
Voltage	380VAC ±15% (option: 208VAC, 220VAC)		380VAC ±15% (option: 480VAC)							
Frequency	50Hz±3Hz or 60Hz±3Hz									
Max. Current <sup>1</sup>	23A	34A	67A	100A	133A	198A	248A	297A		
Power Factor	≥ 0.9 ( Max. Power )					≥0.85 ( Max. Power )				
<b>OUTPUT</b>										
Power (VA)	10kVA	15kVA	30kVA	45kVA	60kVA	80kVA	100kVA	120kVA		
Phase	3Ø / 4 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 <sup>2</sup>	Standard : 45~120Hz Option : 45-500Hz									
Frequency Resolution	0.1Hz									
Frequency Accuracy	± 0.02% F.S.									
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) <sup>3</sup>	≤ 1% ( Resistive Load )									
Response Time	≤ 2ms									
Crest Factor	≥3									
<b>MEASUREMENT</b>										
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	0.1Hz									
Frequency Accuracy	± 0.02% F.S.									
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									
<b>GENERAL</b>										
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) RAMP : 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-232(SCPI)&RS-485(MODBUS) /Ethernet(SCPI) Option : GPIB, Analog Control									
Operational Temperature	0°C~45°C									
Humidity	0~90% ( Non condensing )									
Altitude	< 1,500m									
Dimensions (H x W x D) <sup>4</sup>	1045 x 600 x 800 mm (including wheel)	1440 x 600 x 800 mm (including wheel)		1645 x 800 x 800 mm (including wheel)		1800 x 1050 x 970 mm		1900 x 1150 x 1220 mm		
	41.1 x 23.6 x 31.5 inch (including wheel)	56.7 x 23.6 x 31.5 inch (including wheel)		64.8 x 31.5 x 31.5 inch (including wheel)		"70.9 x 41.3 x 38.2 inch"		74.8 x 45.3 x 48.0 inch		
Weight <sup>4</sup>	255kg	295kg	390kg	540kg	650kg	1000kg	1170kg	1450kg		
	562.3lbs	650.5lbs	860lbs	1190.7lbs	1433.3lbs	2205lbs	2579.85lbs	3197.3lbs		

<sup>1</sup> The max. current is based on rated input voltage of 380V. <sup>2</sup> For 45-500Hz option, please contact us for output power characteristic curve.

<sup>3</sup> When the output voltage is at Low : 90 - 140V or High 180 - 280V with load power factor of 1.

<sup>4</sup> Dimensions and weight are for input voltage 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 (160kVA - 1600kVA)

Model	AFV-33160	AFV-33240	AFV-33300	AFV-33400	AFV-33500	AFV-33640	AFV-33800	AFV-331000	AFV-331200	AFV-331600
<b>INPUT</b>										
Phase	3Ø / 4 Wire + G (option: 3Ø / 3 Wire + G)									
Voltage* <sup>1</sup>	220/380Vac ±15% (option : 277/480Vac, 240Vac or 400Vac)									
Frequency	50Hz±3Hz or 60Hz±3Hz									
Max. Current* <sup>2</sup>	336A	504A	629.1A	838.8A	1048.5A	1343A	1677.7A	2097.1A	2516.5A	3356A
Power Factor	≥ 0.85 ( Max. Power )									
<b>OUTPUT</b>										
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* <sup>3</sup>	Standard : 45~65Hz Option : 45-500Hz									
Frequency Resolution	0.1Hz									
Frequency Accuracy	± 0.02 % F.S.									
Max. Current (RMS)	444.4A	666.7A	833.3A	1111.1A	1388.9A	1777.8A	2222.2A	2777.8A	3333.3A	4444.4A
	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)* <sup>4</sup>	≤ 2% ( Resistive Load )									
Response Time	≤ 2ms									
<b>MEASUREMENT</b>										
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	± 0.02 % F.S.									
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									
<b>GENERAL</b>										
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-232 Option : GPIB, Ethernet									
Operational Temperature	0°C~45°C									
Humidity	0~90% ( Non condensing )									
Altitude	< 1,500m									
Dimensions (H x W x D)* <sup>5</sup>	1900 x 1150 x 1240 mm/ 74.8 x 45.3 x 48.8 inch		2050 x 3880 x 1539 mm/ 80.7 x 152.8 x 60.6 inch			2050 x 4716 x 1520 mm / 80.7 x 185.7 x 59.8 inch		2050 x 6003 x 1520 mm/ 80.7 x 236.3 x 59.8 inch	2200 x 10827 x 1590 mm / 86.6 x 426.3 x 62.6 inch	
Weight* <sup>5</sup>	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 output frequency is at 45-65Hz and output voltage is 90V-140V(Low Range) or 180V-280V(High Range) and with resistive load.

\*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/310V/45-120Hz)
AFV-31015	High Power Programmable AC Power Source (15kVA/310V/45-120Hz)
AFV-31030	High Power Programmable AC Power Source (30kVA/310V/45-120Hz)
AFV-31045	High Power Programmable AC Power Source (45kVA/310V/45-120Hz)
AFV-31060	High Power Programmable AC Power Source (60kVA/310V/45-120Hz)
AFV-31080	High Power Programmable AC Power Source (80kVA/310V/45-120Hz)
AFV-31100	High Power Programmable AC Power Source (100kVA/310V/45-120Hz)
AFV-31120	High Power Programmable AC Power Source (120kVA/310V/45-120Hz)
AFV-001	Output Frequency 45Hz-500Hz
AFV-002	Soft Start Mode
AFV-005	GPIB 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 (10kVA/310V/45-120Hz)
AFV-33015	High Power Programmable AC Power Source (15kVA/310V/45-120Hz)
AFV-33030	High Power Programmable AC Power Source (30kVA/310V/45-120Hz)
AFV-33045	High Power Programmable AC Power Source (45kVA/310V/45-120Hz)
AFV-33060	High Power Programmable AC Power Source (60kVA/310V/45-120Hz)
AFV-33080	High Power Programmable AC Power Source (80kVA/310V/45-120Hz)
AFV-33100	High Power Programmable AC Power Source (100kVA/310V/45-120Hz)
AFV-33120	High Power Programmable AC Power Source (120kVA/310V/45-120Hz)
AFV-33160	High Power Programmable AC Power Source (160kVA/310V/45-120Hz)
AFV-33240	High Power Programmable AC Power Source (240kVA/310V/45-120Hz)
AFV-33300	High Power Programmable AC Power Source (300kVA/310V/45-120Hz)
AFV-33400	High Power Programmable AC Power Source (400kVA/310V/45-120Hz)
AFV-33500	High Power Programmable AC Power Source (500kVA/310V/45-120Hz)
AFV-33640	High Power Programmable AC Power Source (640kVA/310V/45-120Hz)
AFV-33800	High Power Programmable AC Power Source (800kVA/310V/45-120Hz)
AFV-331000	High Power Programmable AC Power Source (1000kVA/310V/45-120Hz)
AFV-331200	High Power Programmable AC Power Source (1200kVA/310V/45-120Hz)
AFV-331600	High Power Programmable AC Power Source (1600kVA/310V/45-120Hz)
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-007	Overload Capability 200% 2 sec, 150% 5 sec, 125% 15 sec