

## Programmable High Power AC Power Supply ANFP(F) Series



### Product Introduction

The ANFP(F) series programmable AC power supply adopts FPGA digital control, instantaneous waveform control and high-frequency pulse width modulation (SPWM) technologies. It has the advantages of fast response speed, high output accuracy, and superior waveform quality; it can withstand 3 times the rating Current impact capability, strong load adaptability; with multiple output modes and complex programmable functions, which can achieve test requirements such as ladder, step, gradual change, etc.; with three-phase unbalanced output mode, to achieve relevant regulatory tests or simulate special power grids And so on. It can be widely used in laboratories, quality inspection units, scientific research institutes and certification centers.

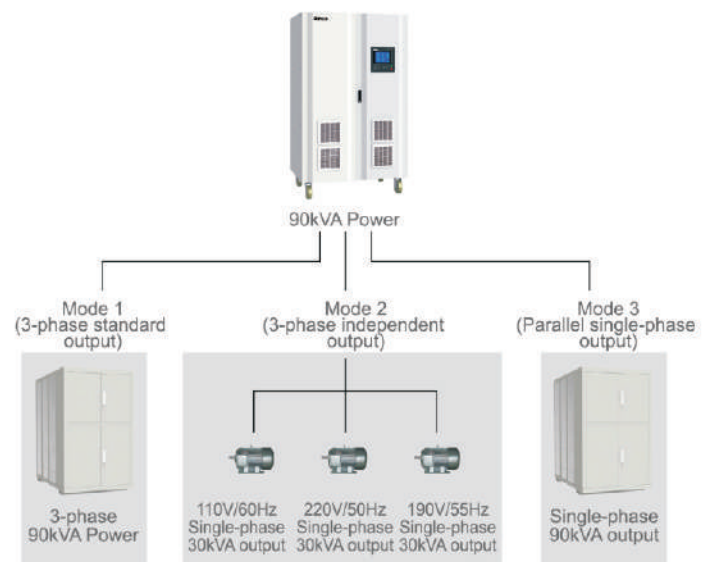
### Features

- Adopt FPGA digital technology, realize accuracy control and high quality sine wave output;
- Advanced power management mode: three-phase standard mode, three-phase unbalanced mode (three-phase voltage can be adjusted independently, phase difference 0~359.9° adjustable), three-phase independent mode (three-phase voltage, frequency, can be adjusted independently) Parallel single-phase mode (three-phase parallel, single-phase output);
- Programmable step, stage, variations function, can realize relevant regulations;
- Harmonic function, 2~40 times superposition;
- Operating in over current shock (up to 3 times of rated current) within 2s, start the impact load of 1/3 capacity of power supply directly;
- Adjustable voltage and frequency during output status, frequency change without transit time;

- Measurement: voltage, current, current peak, frequency, active power, apparent power, power factor, voltage peak factor;
- Online monitoring: monitor IGBT temperature, transformer temperature, fan speed, input voltage and other parameters during output status;
- Operating data recorders: keep the record of power supply status and alarm code automatically during alarming, save the maintenance time;
- Fan speed will be adjustable automatically with the temperature of power supply to reduce the noise;
- Lock key, user-friendly design, automatically locking without operation for 5 minutes to prevent from operation mistakes;
- Combination cabinet, 8" large-screen color LCD;
- Standard RS232, optional RS485, GPIB, Ethernet, analog control and other remote communication/control.

### Applications

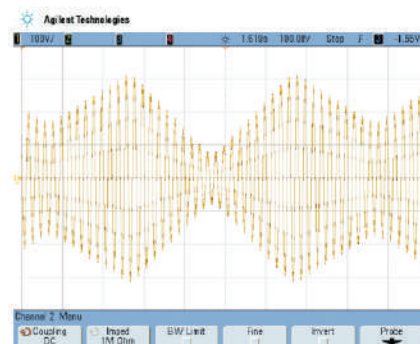
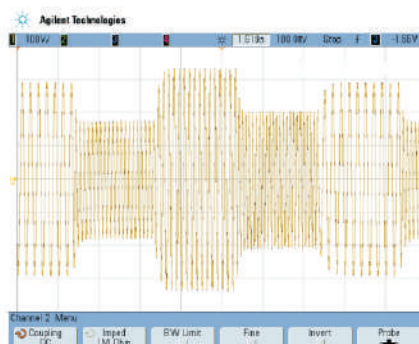
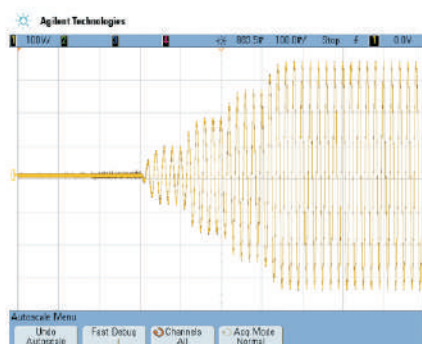
- Output mode management  
(standard three-phase output, separated three-phase output, parallel single-phase output)



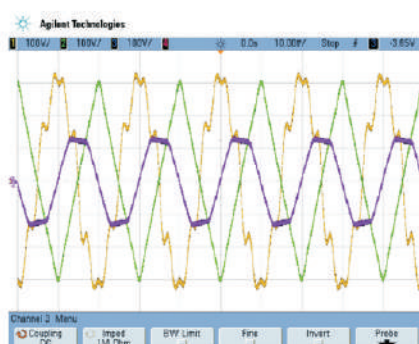
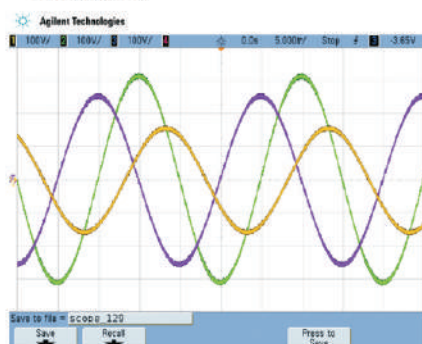
- Over shock capacity: impact load of 1/3 capacity of power supply directly without soft start;



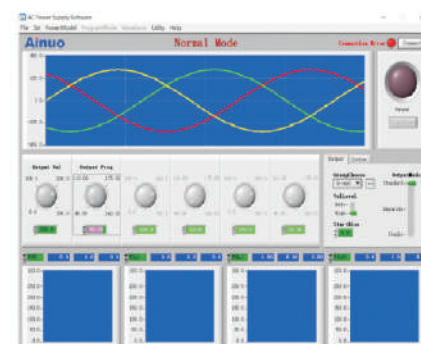
### Programmable Output(Step,Stage,Varations)



### Three-phase unbalanced output (amplitude unbalance + angle unbalance)



### PC control software



### Large-size color LCD, digital key input, knob operation



List					00-99	Start/Stop
No.	Vol	Freq	Time	Wave		
00	220.0V	50.00Hz	00.00.00.00	Sine		
01	220.0V	50.00Hz	00.00.00.00	Sine		
02	220.0V	50.00Hz	00.00.00.00	Sine		
03	220.0V	50.00Hz	00.00.00.00	Sine		
04	220.0V	50.00Hz	00.00.00.00	Sine		
05	220.0V	50.00Hz	00.00.00.00	Sine		
06	220.0V	50.00Hz	00.00.00.00	Sine		
07	220.0V	50.00Hz	00.00.00.00	Sine		
08	220.0V	50.00Hz	00.00.00.00	Sine		
09	220.0V	50.00Hz	00.00.00.00	Sine		
10	220.0V	50.00Hz	00.00.00.00	Sine		
11	220.0V	50.00Hz	00.00.00.00	Sine		
12	220.0V	50.00Hz	00.00.00.00	Sine		
13	220.0V	50.00Hz	00.00.00.00	Sine		
14	220.0V	50.00Hz	00.00.00.00	Sine		
15	220.0V	50.00Hz	00.00.00.00	Sine		
16	220.0V	50.00Hz	00.00.00.00	Sine		
17	220.0V	50.00Hz	00.00.00.00	Sine		

Ramp					00-99	Start/Stop
No.	Vol	Freq	Time	Wave		
00	220.0V	50.00Hz	00.00.00.00	Sine		
01	220.0V	50.00Hz	00.00.00.00	Sine		
02	220.0V	50.00Hz	00.00.00.00	Sine		
03	220.0V	50.00Hz	00.00.00.00	Sine		
04	220.0V	50.00Hz	00.00.00.00	Sine		
05	220.0V	50.00Hz	00.00.00.00	Sine		
06	220.0V	50.00Hz	00.00.00.00	Sine		
07	220.0V	50.00Hz	00.00.00.00	Sine		
08	220.0V	50.00Hz	00.00.00.00	Sine		
09	220.0V	50.00Hz	00.00.00.00	Sine		
10	220.0V	50.00Hz	00.00.00.00	Sine		
11	220.0V	50.00Hz	00.00.00.00	Sine		
12	220.0V	50.00Hz	00.00.00.00	Sine		
13	220.0V	50.00Hz	00.00.00.00	Sine		
14	220.0V	50.00Hz	00.00.00.00	Sine		
15	220.0V	50.00Hz	00.00.00.00	Sine		
16	220.0V	50.00Hz	00.00.00.00	Sine		
17	220.0V	50.00Hz	00.00.00.00	Sine		

System-Wave Set					02	Value
THD	Percent	Angle	THD	Percent	Angle	
01	0.0	0.0	0.0	0.0	0.0	
02	0.0	0.0	0.0	0.0	0.0	
03	0.0	0.0	0.0	0.0	0.0	
04	0.0	0.0	0.0	0.0	0.0	
05	0.0	0.0	0.0	0.0	0.0	
06	0.0	0.0	0.0	0.0	0.0	
07	0.0	0.0	0.0	0.0	0.0	
08	0.0	0.0	0.0	0.0	0.0	
09	0.0	0.0	0.0	0.0	0.0	
10	0.0	0.0	0.0	0.0	0.0	
11	0.0	0.0	0.0	0.0	0.0	
12	0.0	0.0	0.0	0.0	0.0	
13	0.0	0.0	0.0	0.0	0.0	
14	0.0	0.0	0.0	0.0	0.0	
15	0.0	0.0	0.0	0.0	0.0	
16	0.0	0.0	0.0	0.0	0.0	
17	0.0	0.0	0.0	0.0	0.0	
18	0.0	0.0	0.0	0.0	0.0	
19	0.0	0.0	0.0	0.0	0.0	



## Specifications

Model		ANFP015A(F)	ANFP030A(F)	ANFP045A(F)	ANFP060A(F)	ANFP090A(F)	ANFP120A(F)	ANFP180A(F)	ANFP240A(F)	
Capacity		15kVA	30kVA	45kVA	60kVA	90kVA	120kVA	180kVA	240kVA	
Input	Voltage, Frequency	3-phase 4-wires + PE, Phase voltage: 220V±33V, line voltage: 380V±57V, 50/60Hz±3Hz								
Output	Model	3 phase standard mode, 3 phase unbalanced mode, 3 phase independent mode, parallel single phase mode								
	Voltage	Phase voltage: 0.0 ~ 300.0V, Automatic files: (low-grade) 0.0 ~ 150.0V, (high-grade) 150.1~300V; high-grade lock:0.0 ~ 300.0V								
	Frequency	45.00 ~ 240.00Hz								
	3 phase standard / 3 phase unbalanced mode rated current	110V	45.4A	90.9A	136.3A	181.8A	272.7A	363.6A	545.4A	727.2A
		220V	22.7A	45.4A	68.2A	90.9A	136.3A	181.8A	272.7A	363.6A
	3 phase independent mode rated current	110V	45.4A	90.9A	136.3A	181.8A	272.7A	363.6A	545.4A	727.2A
		220V	22.7A	45.4A	68.2A	90.9A	136.3A	181.8A	272.7A	363.6A
	Parallel single-phase mode rated current	110V	136.3A	272.7A	409.1A	545.4A	818.2A	1090.9A	1636.4A	2181.8A
		220V	68.2A	136.3A	204.5A	272.7A	409.1A	545.4A	818.2A	1090.9A
	Setting accuracy	Voltage	Resolution: 0.1V, accuracy: 0.2%×reading value+0.2%×full scale value							
		Frequency	Resolution: 0.01Hz, accuracy: 0.05%							
	Testing accuracy	Voltage	Resolution: 0.1V, accuracy: 0.2%×reading value+0.2%×full scale value							
		Frequency	Resolution: 0.01Hz, accuracy: 0.05%							
		Current	Resolution: 0.1A/1A, accuracy: 0.3%×reading value+0.3%×full scale value							
		Power	Resolution: 0.1kW/0.01kW/0.001kW, accuracy: 0.45%×reading value+0.45%×full scale value							
	Frequency stability		≤0.02%							
	Voltage distortion		Linear load: THD < 1%							
	Transient recovery time		20ms							
	3 phase phase difference		3 phase standard mode: 120°±2° 3 phase unbalanced mode: 0.0° ~ 359.9°, 0.1°adjustable							
	Crest factor		1.41±0.1							
	Source voltage effect		≤1%							
	Load effect		≤1%							
	Overload capacity		105% < Output≤110% the output will be stopped within 15 Sec;110% < Output≤200% the output will be stopped within 5 Sec 200% < Output≤300% the output will be stopped within 2 Sec;300% < Output the output will be stopped immediately							
Function	Protection mode		IGBT overheat、IGBT over current、Transformer overheat、Input under voltage、Input over voltage、 Output under voltage、Output over voltage、Output over load、Output short circuit、output over current							
	Display mode		8 inch LCD display, resolution: 800*600; Soft-start:0.0 ~ 99.9s							
	Output waveform		Sine wave, harmonic (superposition 2~40 second harmonic)							
	Programming function	Step mode	9999 step							
		Stage mode	100 stage 999999 cycle							
		Varations mode	100 stage999999 cycle							
	Online adjustment function		Under normal mode, the output voltage and output frequency can be adjusted online, which can be switched on line.							
	Memory function/ Shortcut group		Power down memory function, memory last output mode and parameters; 10 groups							
	Line voltage crop compensation		0.000 ~ 0.500Ω							
Environ- ment	Communication		RS232 ( standard)、RS485 ( options)、GPIB ( options)、Ethernet ( options ) 、Analog control port ( options )							
	Temperature/ Humidity		0 ~ 40℃; 20 ~ 90%RH							
	Dimension W×H×D(mm)		1000×1990×800			1200×1990×800		1200×1990×1000		
Weight (Kg)		310	360	500	620	810	1060	1280	1380	

### Specifications

Model		ANFP350A(F)	ANFP450A(F)	ANFP550A(F)	ANFP650A(F)	
Capacity		350kVA	450kVA	550kVA	650kVA	
Input	Voltage, Frequency	3-phase 4-wires + PE, Phase voltage: 220V±33V, line voltage: 380V±57V, 50/60Hz±3Hz				
Output	Mode	3 phase standard mode, 3 phase unbalanced mode, 3 phase independent mode				
	Voltage	Phase voltage: 0.0 ~ 300.0V, Automatic files: (low-grade) 0.0 ~ 150.0V, (high-grade) 150.1~300V; high-grade lock:0.0 ~ 300.0V				
	Frequency	45.00 ~ 240.00Hz				
	3 phase standard / 3 phase unbalanced mode rated current	110V	1060A	1363A	1666A	1970A
		220V	530.3A	681.8A	833.3A	984.8A
	3 phase independent mode rated current	110V	1060A	1363A	1666A	1970A
		220V	530.3A	681.8A	833.3A	984.8A
	Setting	Voltage	Resolution: 0.1V, accuracy: 0.2%×reading value +0.2%×full scale value			
	accuracy	Frequency	Resolution: 0.01Hz, accuracy: 0.05%			
	Testing	Voltage	Resolution: 0.1V, accuracy: 0.2%×reading value +0.2%×full scale value			
		Frequency	Resolution: 0.01Hz, accuracy: 0.05%			
		Current	Resolution: 0.1A/1A, accuracy: 0.3%×reading value +0.3%×full scale value			
		Power	Resolution: 0.1kW/0.01kW/0.001kW, accuracy: 0.45%×reading value+0.45%×full scale value			
	Frequency stability	≤0.02%				
	Voltage distortion	Linear load: THD < 3%				
	Transient recovery time	20ms				
	3 phase phase difference	3 phase standard mode: 120°±2° 3 phase unbalanced mode: 0.0° ~ 359.9°, 0.1°adjustable				
	Crest factor	1.41±0.1				
	Source voltage effect	≤1%				
	Load effect	≤1%				
Overload capacity	105% < Outputs≤110% the output will be stopped within 15s ; 110% < Outputs≤200% the output will be stopped within 5s; 200% < Outputs≤300% the output will be stopped within 2s ; 300% < Output the output will be stopped immediately					
Function	Protection mode	IGBT overheat、IGBT over current、Transformer overheat、Input under voltage、Input over voltage、 Output under voltage、Output over voltage、Lack output phase、Output over load、Output short circuit、Output over current				
	Display mode	8 inch LCD display, resolution: 800*600				
	Programming function	Step mode	9999 set			
		Stage mode	100 stage 999999 cycle			
		Varations mode	100 stage999999 cycle			
	Online adjustment function	Under normal mode, the output voltage and output frequency can be adjusted online, which can be switched on line.				
	Memory function/ Shortcut group	Power down memory function, memory last output mode and parameters; 10 groups				
	Line voltage crop compensation	0.000 ~ 0.500Ω				
Communication	RS232 ( standard)、RS485 ( options)、GPIB ( options)、Ethernet ( options)、Analog control port ( options )					
Environ- ment	Temperature/Humidity	0 ~ 40℃; 20 ~ 90%RH				
Dimension W×H×D(mm)		1800×2000×1400	2400×2000×1400	4800 (1200×4) ×2000×1200		
Weight (Kg)		2730	3150	4270	4660	