

APPLICATION & SERVICE

AC Power Corp. offers products widely applied in multi-professional fields and provides the best power solutions to customers. Our mission is to satisfy customers' demand by considering the whole conditions including power environment, loading allocation, module solution alternative, thoughtful design, efficient manufacturing, and complete maintenance.

Application



Microwave oven



Air conditioner



Switching Power Supply



Compressor for Air Conditioner



Motor



Transformer



EMC Testing



Life Testing



Product Research & Development



Ship



Airport Grounding Facilities



Navigation

Industrial Field

Home Electrical Appliances Manufacturers

- Air Conditioner
- Coffee Machine
- Washing Machine
- Fruit juice pressing machine
- Microwave Oven
- Tape Recorder /Audio
- Refrigerator
- DVD
- Vacuum Cleaner
- Blender

Electric & Electronic Manufacturers

- Switching Power Supply Testing
- Ballast (in Bulb, Fluorescent Lamp)
- AC Fan
- Uninterruptible Power Supply
- Charger
- Relay
- Passive Components
- Compressor
- Transformer
- Motor

IT field

- OAEquipment
- Shredder
- Fax machine, Copy machine
- Printer, Scanner, CD burner
- Computer, Monitor
- Other Computer Peripherals

General Lab.

- AC Power Source Testing
- Life & Safety Test
- EMC Test
- QQC (FQC) Test
- Product Test
- Product Researches & Development

400Hz output frequency

- Airport Grounding Facilities
- Airport Terminal, Control Tower, Apron
- Avionics Equipment
- Air Force System Diagnostics
- Military System Diagnostics
- Navy System Diagnostics
- Marine System
- Satellite Navigator
- 400Hz Equipment & Instruments



Programmable AC Power Source Frequency Converter



APF series
500VA~75kVA

Professional Power Solution Provider



Distributed by:
Reliant EMC LLC

3311 Lewis Ave, Signal Hill CA 90755,
408-916-5750, www.reliantemc.com

APF -

3 Input Phase 3	1 Output Phase 1	030 Capacity 30kVA	T Input Voltage 220/380VAC
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[Please refer to Form 1]

Case No. of APF Series

[Unit: mm (Width*Depth*Height)]



APF Series-Single Phase/Single Phase

Model		APF-500V		APF-1KV		APF-11003		APF-11005		APF-11008		APF-11010		APF-11015		APF-11020		APF-11030	
Capacity (kVA)		0.5		1		3kVA		5kVA		8kVA		10kVA		15kVA		20kVA		30kVA	
Circuit Type		Transistor amplifier type				IGBT/PWM type													
Input	Phase	Single phase																	
	Wave	Sine wave																	
	Voltage	220V ①																	
	Voltage range	220V ±15%																	
	Frequency range	50Hz ± 3Hz or 60Hz ± 3Hz																	
	Power factor	0.85																	
Output	Phase	Single phase																	
	Wave	Sine Wave																	
	Voltage	Low	2.5 ~ 150V (L-N)				5V ~ 150V (L-N)												
		High	5 ~ 300V (L-N)				10V ~ 300V (L-N)												
	Frequency	45 ~ 500Hz																	
	Frequency regulation	≤0.01%																	
	Max. Current	High (A)	2.1	4.2	12.5	20.8	33.3	41.7	62.5	83.3	125.0								
		Low (A)	4.2	8.4	25	41.7	66.7	83.3	125.0	166.7	250.0								
	Line regulation	≤0.2%				≤1%													
	Load regulation	≤0.2%				≤1%													
	THD	0.2%				2% (Linear load)													
	Efficiency	≥70%				≥90%													
	Response time	≤50 μ s				≤2ms													
	Wave factor	1.4 : 1				3 : 1													
	Protection device	Input no-fuse breaker, electronic circuit instant trip for over/ low voltage, over current, over load and short circuit protection and alarm system				Input no-fuse breaker, electronic circuit instant trip for over/low voltage, over current, over load, over temperature and short circuit protection and alarm system													
	Indicator	Display	LCD (320×240)																
Voltage		Measure range: 0~300V; analytic degree: (<100V) 0.01V, (≥100V) 0.1V; accurate degree: 0.5%FS+5COUNT																	
Current		Phase power≤5kW measure range: 0~50A; analytic degree: (<10A) 0.001A, (≥10A, <50A) 0.01A; accurate degree: 0.5%FS+5COUNT																	
		Phase power>5kW measure range: 0~700A; analytic degree: 0.01A; accurate degree: 0.5%FS+5COUNT																	
Power		Phase power≤5kW measure range: 0~5kW; analytic degree: (<1KW) 0.1W, (≥1KW, ≤5KW) 0.001kW; accurate degree:0.5%FS+5COUNT																	
		Phase power>5kW measure range: 0~75kW; analytic degree: 0.01kW; accurate degree: 0.5%FS+5COUNT																	
Frequency		Measure range: 45~500Hz; analytic degree: 0.1Hz; accurate degree: 0.01%FS+2COUNT																	
Power factor	Measure range: 0~1; analytic degree: 0.01; accurate degree: 2%																		
Time	Measure range: 1s~99h; analytic degree:1s																		
Default item	Voltage	Fixed range: 0~300V; analytic degree: 0.1V; accurate degree: 1%																	
	Frequency	Fixed range: 45~500Hz; analytic degree: 0.1Hz; accurate degree: 0.01%																	
	Time	Fixed range: 1s~99h; analytic degree: 1s																	
	General program memory	10 sets, for voltage and frequency default value																	
	Step program memory	24 sets, for voltage, frequency and step running time																	
	Gradual program memory	12 sets, for voltage, frequency and gradual running time																	
Revolving operation function	Both step and gradual have revolving function, revolving time can be set 999999 times																		
Control mode	Short range control	Keyboard control																	
	Remote control	RS232 (standard)																	
		RS485 (standard)																	
Environment	Insulation resistance	≥DC500V 10M Ω																	
	Withstand voltage insulation	AC 1800V 10mA / 1Min																	
	Cooling system	Fan cooling																	
	Temperature	0℃ ~ 45℃																	
	Humidity	0~90% (Non-condensing)																	
	Altitude	<1500m																	
Case No.		①		②		③		④											
Weight (kg)		44	89	73	89	200	220	230	290	330									

- ① Other required voltage, please kindly refer to Form 1.
② Custom-made specifications are on request.
③ All specifications are subject to change without prior notice.

Form 1: APF Input Voltage Range

A	100V	1 Ø 2W+G
B	110V	
C	115V	
D	120V	
E	200V	1 Ø 2W+G or 3 Ø 3W+G (Δ-connection)
F	208V	
G	220V	
H	230V	
I	240V	3 Ø 3W+G (Δ-connection)
J	380V	
K	400V	
L	415V	
M	440V	
N	480V	

O	110/190V	3 Ø 4W+G or 3 Ø 3W+N+G (Y-connection)
P	115/200V	
Q	120/208V	
R	127/220V	
T	220/380V	
U	230/400V	
V	240/415V	1 Ø 3W+G
W	254/440V	
X	100/200V	
Y	110/220V	
Z	115/230V	

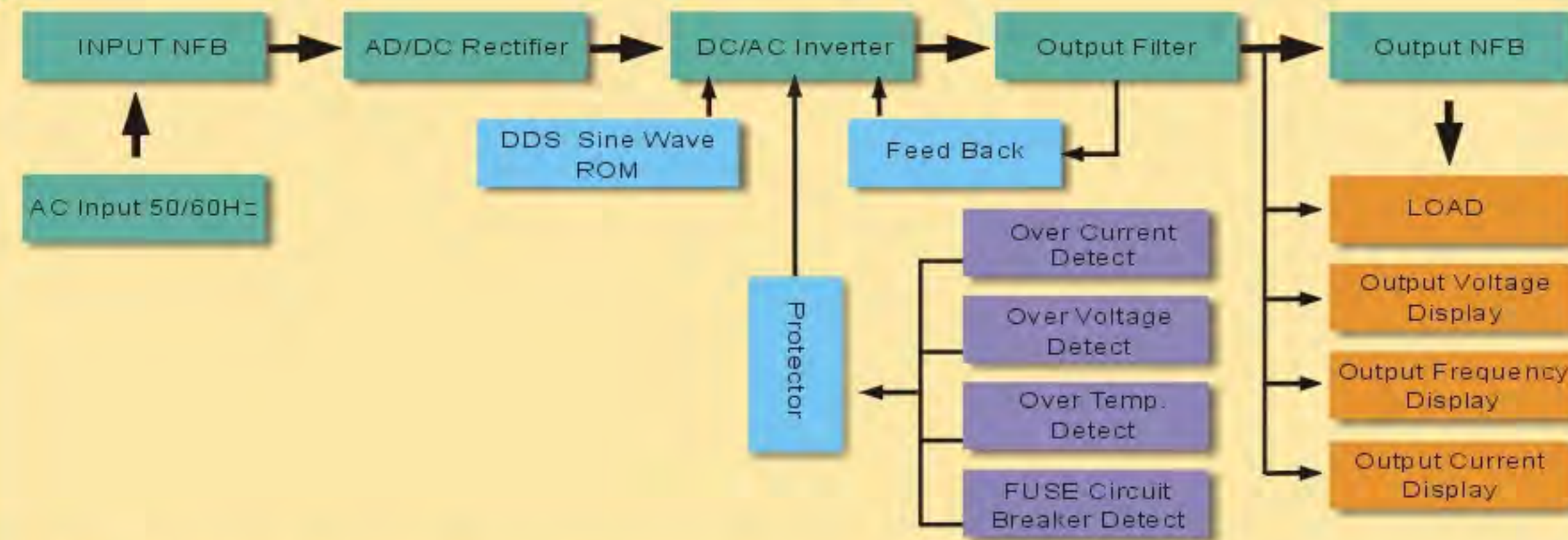
* Other Input Voltages not listed in this form are all S (Special Specification) type.

APF Series-Three Phase/Single Phase

Model	APF-31010		APF-31015	APF-31020	APF-31030	APF-31045	APF-31060	APF-31075	
Capacity (kVA)	10kVA		15kVA	20kVA	30kVA	45kVA	60kVA	75kVA	
Input	Circuit Type		IGBT/PWM type						
	Phase		Three phase						
	Wave		Sine wave						
	Voltage		220V/380V ①						
	Voltage range		220V/380V ± 15%						
	Frequency range		50Hz ± 3Hz or 60Hz ± 3Hz						
	Power factor		0.85						
	Phase		Single phase						
Output	Wave		Sine Wave						
	Voltage	Low	5V ~ 150V (L-N)						
		High	10V ~ 300V (L-N)						
	Frequency		45 ~ 500Hz						
	Frequency regulation		≤ 0.01%						
	Max. Current	High (A)	41.7	62.5	83.3	125.0	187.5	250.0	312.5
		Low (A)	83.3	125.0	166.7	250.0	375.0	500.0	625.0
	Line regulation		≤ 1%						
	Load regulation		≤ 1%						
	THD		2% (Linear load)						
	Efficiency		≥ 90%						
	Response time		≤ 2ms						
Wave factor		3 : 1							
Protection device		Input no-fuse breaker, electronic circuit instant trip for over/low voltage, over current, over load, over temperature and short circuit protection and alarm system							
Indicator	Display		LCD (320×240)						
	Voltage		Measure range: 0~300V; analytic degree: (<100V) 0.01V, (≥ 100V) 0.1V; accurate degree: 0.5%FS+5COUNT						
	Current	Phase power≤5kW measure range: 0~50A; analytic degree:(<10A) 0.001A, (≥10A,<50A) 0.01A; accurate degree: 0.5%FS+5COUNT							
		Phase power>5kW measure range: 0~700A; analytic degree: 0.01A; accurate degree: 0.5%FS+5COUNT							
	Power	Phase power≤5kW measure range: 0~5kW; analytic degree: (<1kW) 0.1W, (≥1kW,≤5kW) 0.001kW; accurate degree:0.5%FS+5COUNT							
		Phase power>5kW measure range: 0~75kW; analytic degree: 0.01kW; accurate degree: 0.5%FS+5COUNT							
Default item	Frequency		Measure range: 45~500Hz; analytic degree: 0.1Hz; accurate degree: 0.01%FS+2COUNT						
	Power factor		Measure range: 0~1; analytic degree: 0.01; accurate degree: 2%						
	Time		Measure range: 1s~99h; analytic degree:1s						
	Voltage		Fixed range: 0~300V; analytic degree: 0.1V; accurate degree: 1%						
	Frequency		Fixed range: 45~500Hz; analytic degree: 0.1Hz; accurate degree: 0.01%						
	Time		Fixed range: 1s~99h; analytic degree:1s						
	General program memory		10 sets, for voltage and frequency default value						
Control mode	Step program memory		24 sets, for voltage, frequency and step running time						
	Gradual program memory		12 sets, for voltage, frequency and gradual running time						
	Revolving operationg function		Both step and gradual have revolving function, revolving time can be set 999999 times						
	Short range control		Keyboard control						
Environment	Remote control		RS232 (standard)						
			RS485 (standard)						
	Insulation resistance		≥DC500V 10M Ω						
	Withstand voltage insulation		AC 1800V 10mA / 1Min						
	Cooling system		Fan cooling						
	Temperature		0℃ ~ 45℃						
	Humidity		0~90% (Non-condensing)						
Altitude		<1500m							
Case No.		③		④		⑤			
Weight (kg)		230	280	305	359	540	620	670	

- ① Other required voltage, please kindly refer to Form 1.
② Custom-made specifications are on request.
③ All specifications are subject to change without prior notice.

APF Block Diagram



APF Series-Three Phase/Three Phase

Model	APF-33006	APF-33010	APF-33015	APF-33020	APF-33030	APF-33045	APF-33060	APF-33075		
Capacity (kVA)		6kVA	10kVA	15kVA	20kVA	30kVA	45kVA	60kVA	75kVA	
Input	Circuit Type		IGBT/PWM type							
	Phase		Three phase							
	Wave		Sine wave							
	Voltage		220V/380V ①							
	Voltage range		220V/380V ±15%							
	Frequency range		50Hz ± 3Hz or 60Hz ± 3Hz							
	Power factor		0.9							
	Phase		Three phase							
	Wave		Sine Wave							
	Voltage	Low	5V ~ 150V (L-N)							
	High	10V ~ 300V (L-N)								
Output	Frequency		45 ~ 500Hz							
	Frequency regulation		≤0.01%							
	Max. Current	High (A)	8.3	13.9	20.8	27.8	41.7	65.5	83.3	104.2
		Low (A)	16.7	27.8	41.7	55.6	83.3	125.0	166.7	208.3
	Line regulation		≤1%							
	Load regulation		≤1%							
	THD		2% (Linear load)							
	Efficiency		≥90%							
	Response time		≤2ms							
	Wave factor		3: 1							
Protection device		Input no-fuse breaker, electronic circuit instant trip for over/low voltage, over current, over load, over temperature and short circuit protection and alarm system								
Indicator	Display		LCD (320×240)							
	Voltage		Measure range: 0~300V; analytic degree: (<100V) 0.01V, (≥100V) 0.1V; accurate degree: 0.5%FS+5COUNT							
	Current		Phase power≤5kW measure range: 0~50A; analytic degree: (<10A) 0.001A, (≥10A,<50A) 0.01A; accurate degree: 0.5%FS+5COUNT Phase power>5kW measure range: 0~700A; analytic degree: 0.01A; accurate degree: 0.5%FS+5COUNT							
	Power		Phase power≤5kW measure range: 0~5kW; analytic degree: (<1kW) 0.1W, (≥1kW,≤5kW) 0.001kW; accurate degree:0.5%FS+5COUNT Phase power>5kW measure range: 0~75kW; analytic degree: 0.01kW; accurate degree: 0.5%FS+5COUNT							
	Frequency		Measure range: 45~500Hz; analytic degree: 0.1Hz; accurate degree: 0.01%FS+2COUNT							
	Power factor		Measure range: 0~1; analytic degree: 0.01; accurate degree: 2%							
	Time		Measure range: 1s~99h; analytic degree:1s							
Default item	Voltage		Fixed range: 0~300V; analytic degree: 0.1V; accurate degree: 1%							
	Frequency		Fixed range: 45~500Hz; analytic degree: 0.1Hz; accurate degree: 0.01%							
	Time		Fixed range: 1s~99h; analytic degree:1s							
	General program memory		10 sets, for voltage and frequency default value							
	Step program memory		24 sets, for voltage, frequency and step running time							
	Gradual program memory		12 sets, for voltage, frequency and gradual running time							
Revolving operation function		Both step and gradual have revolving function, revolving time can be set 999999 times								
Control mode	Short range control		Keyboard control							
	Remote control		RS232 (standard) RS485 (standard)							
Environment	Insulation resistance		≥DC500V 10MΩ							
	Withstand voltage insulation		AC 1800V 10mA / 1Min							
	Cooling system		Fan cooling							
	Temperature		0℃ ~ 45℃							
	Humidity		0~90% (Non-condensing)							
Altitude		<1500m								
Case No.		③		④			⑤			
Weight (kg)		220	244	300	381	424	580	647	760	

- ① Other required voltage, please kindly refer to Form 1.
② Custom-made specifications are on request.
③ All specifications are subject to change without prior notice.

APF General Features

- **DDS Technology:** Applied with the advanced Direct Digital Synthesis (DDS) technology, frequency stability is excellent.
- **Desirable Output Voltage and Frequency:** You can set your desirable output voltage and frequency. Output voltage is 5~300V; Output frequency is 45~500Hz.
- **General Program Memory Function:** With up to 10 memory programs, you can just save the values you used before, and use them again for the next time very easily.
- **Step Program Memory Function:** With 24 setting and operating programs, you can set and save the voltage, frequency, and operating time of each program. The setting time frame is from 1 sec to 99 hours, and revolving time can be set 999999 times.
- **Gradual Program Memory Function (First factory supplies):** You can set the frequency, operating time, start voltage, and end voltage of each group. The system can automatically distinguish the outputs, and slowly increase or decrease the outputs to reach the different setting values within the setting period of time. The setting time frame is from 1 sec to 99 hours, and revolving time can be set 999999 times.
- **Complete Measurement Function:** Comprehensive measurement capability including three phase voltage, three phase current, P, VAR, VA, total power of three phase, PF, Ipk, crest factor, etc.
- **Correction Function:** Automatically detect and correct the wrong input data.
- **Complete Communication Interface:** Easy to operate with RS-232, RS-485.
- **Full Protection:** Over voltage, Over current, Overload, Over temperature, Short circuit, etc.
- **LCD Display:** Easy-use LCD (320*240) display for operation.
- **Safety Key Lock Function.**

APF Application Purpose

- **Manufacturers of Electric / Electronic / Electric Machinery Products for Export.** Such as (Home) Electrical products, Ballast, Computer & Peripherals, UPS, etc. To be used as worldwide voltage and frequency simulation for:
 - ① Product Research & Development.
 - ② Manufacturing.
 - ③ QA/QC Test.
 - ④ Product Characteristics Test: Will product characteristics vary with input (utility power) frequency, 50 or 60Hz ±5% typically?
 - ⑤ Life Test.
- **Switching Power Supply Test / Transformer Test.** Most of the electric products has transformer or switching power supply at the input, frequency converter is to be used as:
 - ① Voltage Simulation. Input voltage range test, ±10% ~ ±20% typically.
 - ② Frequency Simulation. Will product characteristics vary with input (utility power) frequency 50 Hz or 60 Hz ±5% typically.
 - ③ The unit size, power consumption, efficiency, initial current and heat dissipation are related to frequency.
 - ④ Meet light, Thin, Short & Small request. The higher of working frequency, the smaller of the unit size.
 - ⑤ 400Hz power source for Military, Avionics and Shipboard application.
- **Compressor / Motor, any coils-made products.** Such as vacuum cleaner, washing machine, air conditioning equipment, air conditioner, refrigerator, laser printer, CNC machine, etc. To be used as worldwide voltage and frequency simulation in Product Research & Development, Manufacturing, QA/QC Test, Life Test, because of:
 - ① Pure sinewave output: Operation won't be affected and caused irreparable damage.
 - ② Precise working frequency: Rotation won't be effected.
 - ③ Changeable frequency: Meet new tendency of Inverter type home electric appliances, like air conditioner, refrigerator, etc.
 - ④ 2F or 4F output frequency for Layer Short test.
 - ⑤ Sustain transient starting current lash. (not applicable in frequency converter without output isolation transformer)
- **Laboratory / Commodities Inspection Bureau / Testing Service Bureau.** To provide arbitrate product inspection:
 - ① Standard AC Power Source. Constant voltage constant frequency, low harmonic distortion, pure sinewave output.
 - ② EMC Test.
 - ③ Voltage and Frequency Simulation Test.
- **400Hz Special Power Unit.**
 - ① Such as military system, avionics equipment, marine system, switching power supply of super computer, etc.
 - ② Market demands, because of a) Small size & light weight, b) Better efficiency, c) Low harmonic distortion, if compare to 50/60Hz unit.
 - ③ For detailed specifications, please refer to our AMF series Ground Power Unit.