AFC Series

0.5kVA to 2000kVA

CE

Manual AC Power Source

INTEPRO SYSTEMS

THE POWER TEST EXPERTS

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AFC Series

0.5kVA to 2000kVA

AFC-33300 pictured above.
See product specification tables for other options and sizes.

Product Overview

The is a complete line of single and three phase AC power sources. With Power levels ranging from 500VA up to 2MVA, the AFC series are ideal cost effective solutions for precise voltage and frequency conversion. Power is supplied by state-of-the-art IBGT pulse-width-modulated power amplifiers resulting in highly efficient power conversion, compact design and maximized performance.

Output is adjustable up to 300VL-N (519VL-L) and 47-63Hz. Three sets of user pre-determined memory allows for convenient, on the fly manual programming. Up to 90% efficient the AFC minimizes heat dissipation so less infrastructure cooling is required.

Featured Benefits

- *Precision frequency and load regulation*
- *Robust design and ability to service reduces downtime*
- *Compact design that minimizes floor space requirements*
- *Low output distortion*
- *Integrated high accuracy measurements*
- *Single phase output up to 800kVA*

Why choose AFC?

Voltage and frequency conversion is traditionally accomplished using low cost rotor frequency converters and motor generators. While the initial cost for these types of conversion technology is lower, they require regular maintenance and upfront infrastructure investment. This traditional technology is also slow to regulate fluctuating loads and generates high harmonic distortion. Utilizing modern engineering design the AFC offers a cost effective replacement to these traditional technologies and the benefits of modern switch mode power technology.

Options

EMI Options

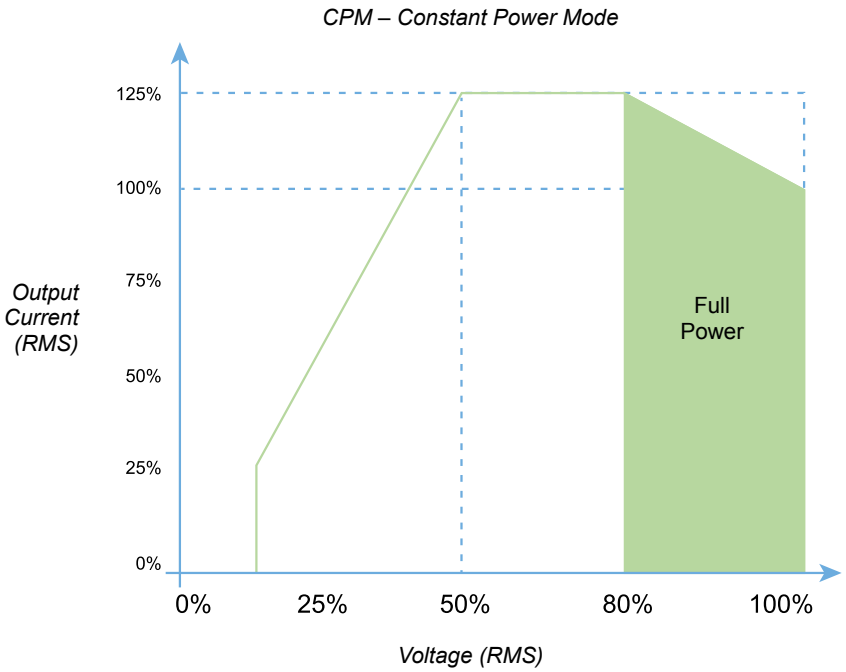
- *Output EMI Filter*

Remote Options

- *RS485 Remote Control for Output Voltage & Frequency (No Measurements)*
- *External Remote Control*
- *Webcomm Ethernet Connection + 485 Preen Interface*
- *RS232 communication port for remote control of output voltage and frequency. Please note standard measurements are not available via remote communication.*

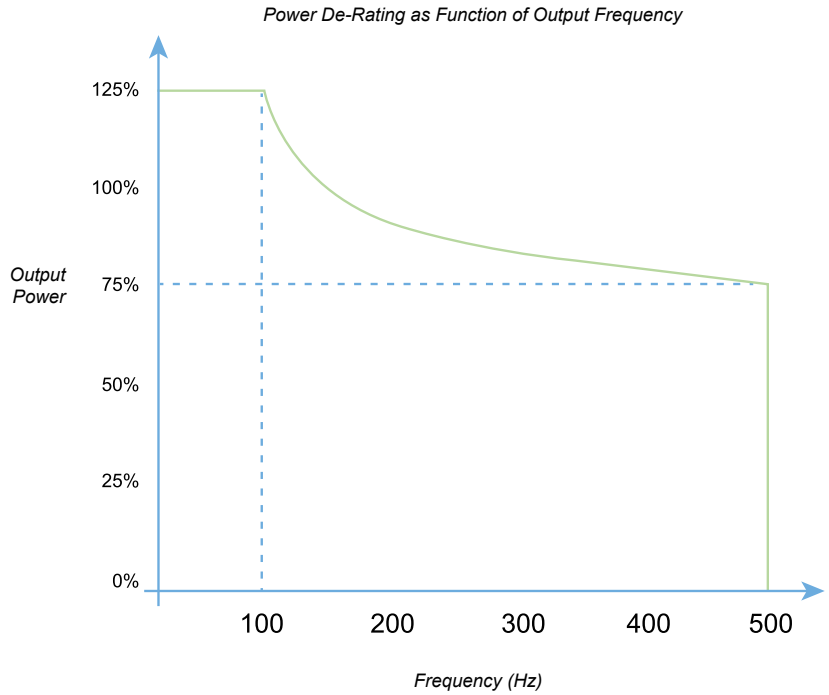
Supplemental Specifications

Constant Power Mode (CMP) maximizes output power at typical operating voltages. As output voltage is reduced from full scale the available output current automatically increases to as much as 125%. Please note this chart details performance against guaranteed specifications. Below 50% of full scale voltage the source delivers full current and some specifications may not be met. Performance degradation such as load regulation and THD at <2% (over 2kva) of full scale voltage could be slightly higher. For questions regarding performance, please contact us for further clarification.



Supplemental Specifications (cont.)

Please ensure sizing the AC source appropriately for higher frequency output. For regarding performance please contact us for further clarification.



Best-in-Class

AFC solutions are easily serviced by Intepro Systems, LP, an ISO 9001 certified company. Intepro prides itself on best-in-class service support by minimizing the pains associated with system failure and maximizing uptime of our products. In the unfortunate and rare event of failure, the standard one year warranty includes ON-SITE repair for sources 15kVA and greater. Returning high power products back to the factory is expensive, impacts development schedules and furthers risk associated with lengthy transit times. Extended service level agreements and yearly calibrations are available for up to five years.

Single Phase In - Single Out (0.5~30kVA)

Model			AFC-11500W	AFC-11001	AFC-11002	AFC-11003	AFC-11005	AFC-11008	AFC-11010	AFC-11015	AFC-11020	AFC-11030
Capacity (kVA)			0.5	1	2	3	5	8	10	15	20	30
Circuit Type			Transistor Amplifier		IGBT/PWM type							
Input	Phase		Single Phase									
	Wave		Sine Wave									
	Voltage		110V,120V,220V OR 277V		120V/208V, 220V/380V, OR 277V/480							
	Voltage Range		110V,120V,220, 277V±15%		120V±15%, 220V±15%, or 277V±15%							
	Frequency Range		50Hz±3Hz or 60Hz±3Hz									
	Power Range		0.85									
Output	Phase		Single Phase									
	Wave		Sine Wave									
	Voltage Range	Low	0~150V (L-N)		5V~150V (L-N)							
		High	0~300V (L-N)		10V~300V (L-N)							
	Frequency		47~63Hz, 50Hz, 60Hz; 2F, 4F, 400Hz (Option)									
	Frequency Regulation		≤0.01%									
	Max Current (A) Per Phase	Low V Range	4.2	8.4	16.7	25	41.7	66.7	83.3	125.0	166.7	250.0
		High V Range	2.1	4.2	8.3	12.5	20.8	33.3	41.7	62.5	83.3	125.0
System	Line Regulation		≤0.5%		<1%							
	Load Regulation		≤±0.5%		<±1% (linear load)							
	Total Harmonic Distortion (THD)		0.5%		<2% (linear load)							
	Efficiency		≥70%		≥90%							
	Response Time		≤50 μ s		≤50ms							
	Crest Factor		1.4 : 1		3 : 1							
	Protection Device		Same as AFC-11002 plus output no fuse breaker		Input no fuse breaker, electronic circuit instant trip for over/low voltage, over current, over load, overtemperature, and short circuit protection and alarm system							
Measurements	Display		LED									
	Voltage		Resolution 0.1V		Display Range: 0~600V, resolution 0.1V, accuracy: 0.15%FS+4Count							
	Current		0.001A	0.01A	Display Range: 0~700A, resolution 0.01A (<100A) / 0.1A (≥100A), accuracy: 0.15%FS+4Count							
	Power		0.1W	1W	Display Range: 3kW~75kW, resolution 0.01kW (<10kW) / 0.1kW (≥10kW), accuracy: 0.3%FS+4Count							
	Frequency		Resolution 0.1Hz		Display Range: 0~999.9Hz, resolution 0.1Hz, accuracy: 0.1%							
Environmental	Insulation Equipment		≥DC500V 10MΩ									
	Withstand Voltage Insulation		AC 1800V 10mA/1 Min									
	Cooling System		Fan Cooling									
	Temperature		0°C ~ 45°C									
	Humidity		0 ~ 90% (Non-condensing)									
	Altitude		≤1500m									
Case No. *(see page 7 for sizes)*			1	2				3			4	
Weight (lb/kg)			97/44	195/89	150/68	160/73	195/89	440/200	460/210	530/240	615/280	725/330

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Three Phase In – Single Phase Out (100-800kVA)

Model			AFC-31100	AFC-31120	AFC-31150
Power (kVA)			100	120	150
Circuit Type			IGBT/PWM		
Input	Phase		Three Phase		
	Wave		Sine		
	Voltage		120V/208V, 220V/380V, OR 277V/480V		
	Voltage Range		120V/208V±15%, 220V/380V±15%, or 277V/480V±15%		
	Frequency Range		50Hz±3Hz or 60Hz±3Hz		
	Power Factor		0.80		
Output	Phase		Single		
	Wave		Sine		
	Voltage Range	Low	5V~150V (L-N)		
		High	10V~300V (L-N)		
	Frequency		47~63Hz, 50Hz, 60Hz; 2F, 4F, 400Hz (Option)		
	Frequency Regulation		≤0.01%		
	Max Current	Low V Range	833.3	1000.0	1250.0
		High V Range	416.7	500.0	625.0
System	Line Regulation		<2%		
	Load Regulation		±1% (linear load)		
	Total Harmonic Distortion (THD)		3% (linear load)		
	Efficiency		≥85%		
	Response Time		≤2ms		
	Crest Factor		3:1		
	Protection Device		Electronic circuit trip for over/low voltage, over current, over load, over temperature, and short circuit protection and alarm system		
Measurements	Display		LED		
	Voltage		Display Range: 0~600V, resolution 0.1V, accuracy: 0.2%FS+1Count		
	Current		Display Range: 0~9999A, resolution 0.01A (<100A) / 0.1A (≥100A), accuracy: 0.2%FS+1Count		
	Frequency		Display Range: 40~600Hz, resolution 0.1Hz (<100Hz) / 0.1Hz (≥100Hz), accuracy: ±0.02% / 0.2Hz		
Environmental	Insulation Resistance		≥DC500V 10MΩ		
	Voltage Insulation		AC 1800V 10mA/1 Min		
	Cooling System		Fan Cooling, Front to Rear		
	Temperature		0°C ~ 45°C		
	Humidity		0 ~ 90% (Non-condensing)		
	Altitude		≤1500m		
Case No.			6	7	
Weight (lb/kg)			1980/900	2540/1154	2970/1350
Consult factory for power levels above 800kVA					

Three Phase In - Single Phase Out (10~75kVA)

Model			AFC-31010	AFC-31015	AFC-31020	AFC-31030	AFC-31045	AFC-31060	AFC-31075
Capacity			10	15	20	30	45	60	75
Circuit Type			IGBT/PWM type						
Input	Phase		Three Phase						
	Wave		Sine Wave						
	Voltage		120V/208V, 220V/380V, OR 277V/480V						
	Voltage Range		120V/208V±15%, 220V/380V±15%, or 277V/480V±15%						
	Frequency Range		50Hz±3Hz or 60Hz±3Hz						
	Power Factor		0.85						
Output Range	Phase		Single Phase						
	Wave		Sine						
	Voltage Range	Low	5V~150V (L-N)						
		High	10V~300V (L-N)						
	Frequency		47~63Hz, 50Hz, 60Hz; 2F, 4F, 400Hz (Option)						
	Frequency Regulation		0.01%						
	Max Current (A) Per Phase	Low V Range	83.3	125.0	166.7	250.0	375.0	500.0	650.0
		High V Range	47.1	62.5	83.3	125.0	187.5	250.0	312.5
System	Line Regulation		<1%						
	Load Regulation		<±1% (linear load)						
	Total Harmonic Distortion (THD)		<2% (linear load)						
	Efficiency		≥90%						
	Response Time		≤50ms						
	Crest 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						
Measurements	Display		LED						
	Voltage		Display Range: 0~600V, resolution 0.1V, accuracy: 0.15%FS+4Count						
	Current		Display Range: 0~700A, resolution 0.01A (<100A) / 0.1A (≥100A), accuracy: 0.15%FS+4Count						
	Power		Display Range: 3kW~75kW, resolution 0.01kW (<10kW) / 0.1kW (≥10kW), accuracy: 0.3%FS+4Count						
	Frequency		Display Range: 0~999.9Hz, resolution 0.1Hz, accuracy: 0.1%						
Environmental	Insulation Resistance		≥DC500V 10MΩ						
	Withstand Voltage Insulation		AC 1800V 10mA/1 Min						
	Cooling System		Fan Cooling						
	Temperature		0°C ~ 45°C						
	Humidity		0 ~ 90% (Non-condensing)						
	Altitude		≤1500m						
Case No. *(see page 7 for sizes)*			3		4		5		
Weight (lb/kg)			460/210	530/240	640/290	750/340	1190/540	1340/610	1470/670

Three Phase In – Three Phase Out (6-75kVA)

Model			AFC-33006	AFC-33010	AFC-33015	AFC-33020	AFC-33030	AFC-33045	AFC-33060	AFC-33075
Power (kVA)			6	10	15	20	30	45	60	75
Circuit Type			IGBT/PWM type							
Input	Phase		Three phase							
	Wave		Sine Wave							
	Voltage		120V/208V, 220V/380V, OR 277V/480V							
	Voltage Range		120V/208V±15%, 220V/380V±15%, or 277V/480V±15%							
	Frequency Range		50Hz±3Hz or 60Hz±3Hz							
	Power Factor		0.9							
Output	Phase		Three phase							
	Wave		Sine Wave							
	Voltage Range	Low	5V~150V (L-N)							
		High	10V~300V (L-N)							
	Frequency		47~63Hz, 50Hz, 60Hz; 2F, 4F, 400Hz (Option)							
	Frequency Regulation		≤0.01%							
	Max Current (A) Per Phase	Low V Range	8.3	13.9	20.8	27.8	41.7	62.5	83.3	104.2
		High V Range	16.7	27.8	41.7	55.6	83.3	125.0	166.7	208.3
System	Line Regulation		<1%							
	Load Regulation		±1% (linear load)							
	Total Harmonic Distortion (THD)		2% (linear load)							
	Efficiency		≥90%							
	Response Time		≤2ms							
	Crest Factor		3 : 1							
	Protection Device		Electronic circuit trip for over/low voltage, over current, over load, over temperature, and short circuit protection and alarm system							
Measurements	Display		LED							
	Voltage		Display Range: 0~600V, resolution 0.1V, accuracy: 0.15%FS+4Count							
	Current		Display Range: 0~700A, resolution 0.01A (<100A) / 0.1A (≥100A), accuracy: 0.2%FS+4Count							
	Power		Display Range: 3kW~75kW, resolution 0.01kW (<10kW) / 0.1kW (≥10kW), accuracy: 0.3%FS+4Count							
	Frequency		Display Range: 0~999.9Hz, resolution 0.1Hz, accuracy: 0.1%							
Environmental	Insulation Resistance		≥DC500V 10MΩ							
	Voltage Insulation		AC 1800V 10mA/1 Min							
	Cooling System		Fan Cooling, Front to Rear							
	Temperature		0°C ~ 45°C							
	Humidity		0 ~ 90% (Non-condensing)							
	Altitude		≤1500m							
Case No. *(see page 7 for sizes)*			3		4			5		
Weight (lb/kg)			440/200	500/230	660/300	680/310	860/390	1210/550	1270/580	1470/670
Consult factory for power levels above 800kVA										

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Three Phase In – Three Phase Out (100-800kVA)

Model			AFC-33100	AFC-33120	AFC-33150	AFC-33200	AFC-33250	AFC-33300	AFC-33400	AFC-33450	AFC-33500	AFC-33600	AFC-33800
Power (kVA)			100	120	150	200	250	300	400	450	500	600	800
Circuit Type			IGBT/PWM type										
Input	Phase		Three phase										
	Wave		Sine										
	Voltage		120V/208V, 220V/380V, OR 277V/480V										
	Voltage Range		120V/208V±15%, 220V/380V±15%, or 277V/480V±15%										
	Frequency Range		50Hz±3Hz or 60Hz±3Hz										
	Power Factor		0.85										
Output	Phase		Three phase										
	Wave		Sine										
	Voltage Range	Low	5V~150V (L-N)										
		High	10V~300V (L-N)										
	Frequency		47~63Hz, 50Hz, 60Hz; 2F, 4F, 400Hz (Option)										
	Frequency Regulation		≤0.01%										
	Max Current (A) Per Phase	Low V Range	277.8	333.3	416.7	555.6	694.4	833.3	1111.1	1250.0	1388.9	1666.7	2222.2
		High V Range	138.9	166.7	208.3	277.8	347.2	416.7	555.6	625.0	694.4	833.3	1111.1
System	Line Regulation		<2%										
	Load Regulation		±1% (linear load)										
	Total Harmonic Distortion (THD)		3% (linear load)										
	Efficiency		≥85%										
	Response Time		≤2ms										
	Crest Factor		3 : 1										
	Protection Device		Electronic circuit trip for over/low voltage, over current, over load, over temperature, and short circuit protection and alarm system										
Measure-ments	Display		LED										
	Voltage		Display Range: 0~600V, resolution 0.1V, accuracy: 0.2%FS+1Count										
	Current		Display Range: 0~9999A, resolution 0.01A (<100A) / 0.1A (≥100A), accuracy: 0.2%FS+1Count										
	Frequency		Display Range: 40~600Hz, resolution 0.1Hz (<100Hz) / 0.1Hz (≥100Hz), accuracy: ±0.02% / 0.2Hz										
Environ-mental	Insulation Resistance		≥DC500V 10MΩ										
	Voltage Insulation		AC 1800V 10mA/1 Min										
	Cooling System		Fan Cooling, Front to Rear										
	Temperature		0°C ~ 45°C										
	Humidity		0 ~ 90% (Non-condensing)										
	Altitude		≤1500m										
Case No. *(see page 7 for sizes)*			6		7			8		9			
Weight (lb/kg)			1880/ 856	2270/ 1031	3010/ 1365	3330/ 1514	5000/ 2273	6040/ 2741	6700/ 3039	8798/ 3990	9080/ 4118	9795/ 4442	10760/ 4880
Consult factory for power levels above 800kVA													

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Case Dimensions

(width x depth x height)

1. 17 x 21 x 8 (in) / 430 x 520 x 200 (mm)
2. 17 x 21 x 28 (in) / 430 x 520 x 720 (mm)
3. 24 x 34 x 38 (in) / 600 x 850 x 945 (mm)
4. 24 x 34 x 53 (in) / 600 x 850 x 1340 (mm)
5. 32 x 34 x 61 (in) / 800 x 860 x 1545 (mm)
6. 42 x 38 x 71 (in) / 1050 x 970 x 1800 (mm)
7. 46 x 49 x 75 (in) / 1150 x 1240 x 1900 (mm)
8. 88 x 49 x 79 (in) / 2240 x 1280 x 2000 (mm)
9. 136 x 49 x 87 (in) / 3450 x 1240 x 2200 (mm)

Input Voltage Range			
100V	1Ø2W+G	110/190 V	3Ø4W+G or 3Ø4W+N+G (Y-Connection)
110V		115/200 V	
115V		120/208 V	
120V		127/220 V	
200V	1Ø2W+G or 3Ø3W+G (Δ-Connection)	220/380 V	
208V		230/400 V	
220V		240/415 V	
230V		254/440 V	
240V		100/200 V	1Ø3W+G
380V	3Ø3W+G (Δ-Connection)	110/220 V	
400V		115/230 V	
415V		Consult Intepro System for other Input Voltages	
440V			
480V			

Contact Us

United States

Intepro Systems America, LP
14712-A Franklin Ave
Tustin, CA 92780
Tel: 1 714 953 2686
sales@inteproate.com
www.inteproate.com

United Kingdom

Intepro UK Ltd.
9 Lakeside Business Park
Swan Lane, Sandhurst Berkshire
GU47 9DN / UK
Tel: 44 012 5287 5600

China

Intepro Power Electronics
(Shenzhen) Co., Ltd
No. 828, Block 7,
Fourth Industrial Area
Nanyou, Nashan District
Shenzhen, China 518052
Tel: 0086 755 86500020