

AFV Series

15kVA to 2000kVA

CE



Programmable
AC Source

INTEPRO
SYSTEMS

THE POWER TEST EXPERTS

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Preen[®]

AFV Series

15kVA to 2000kVA



AFV-331500 pictured above.
See product specification tables for
other options and sizes.

Product Overview

The AFV Series is a broad line of programmable three phase AC power sources. With Power levels ranging from 15kVA up to 2MVA, the series powerful FPGA+ARM based controller offers precise voltage and frequency conversion with power disturbance generation capability. The AFV is programmable from the VFD 7" touch screen, RS232, RS485, GPIB, or USB remote interfaces. Power is supplied by state-of-the-art IGBT pulse-width-modulated power amplifiers resulting in highly efficient power conversion, compact design and maximized performance.

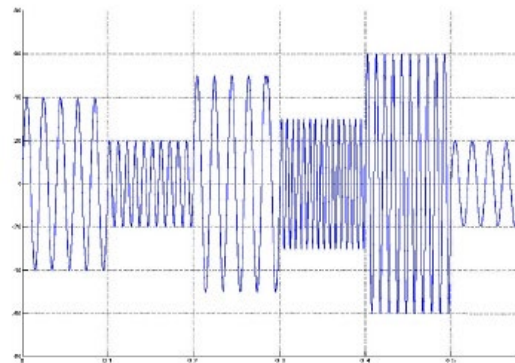
Standard output is adjustable up to 300VL-N (519VL-L) and 47-63Hz. The AFV also offers an optional 600VL-N (1,038L-L) range. The embedded high accuracy measurement system provides instant feedback on load characteristics with 0.01A current resolution. Creating voltage and frequency disturbances such as steps and gradual changes with XXXmsec resolution gives users a powerful instrument for design validation test. The IPC option allows independent phase angle and voltage control for testing against phase unbalance for three phase products.

Product Features

Step Change Mode



Voltage and Frequency Setting Interface at Step Change Mode



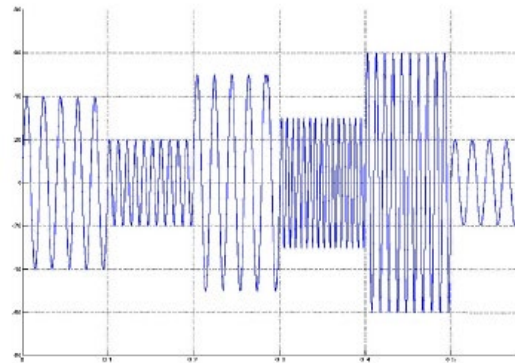
Voltage and Frequency Change Schematic Diagram

Product Features (cont.)

Gradual Change Mode



Voltage and Frequency Setting Interface at Gradual Change Mode



Voltage and Frequency Change Schematic Diagram

Using the touch screen or remote interface, voltage and frequency transients are easily programmed. Windows® based graphical users interface (GUI) provides quick access to remotely control the AFV.

Featured Benefits

- 7" VFD touch screen
- Voltage and Frequency Transient generation
- Independent phase angle control
- Up to 600VL-N (1,038VL-L)
- Compact design that minimizes floor space requirements
- Low output distortion
- Integrated high accuracy measurements

Why choose AFV?

With the ability to simulate and abundance of power disturbance simulation possibilities the AVF is a flexible source for both R&D and ATE production environments. Over 90% efficient results in lower operating costs and heat generation. The AFV is able to provide precise voltage and frequency control to the demanding loads.

Options

Phase Control Options

- *3 Phase Independent Phase Control and Transient Generation*

Remote Options

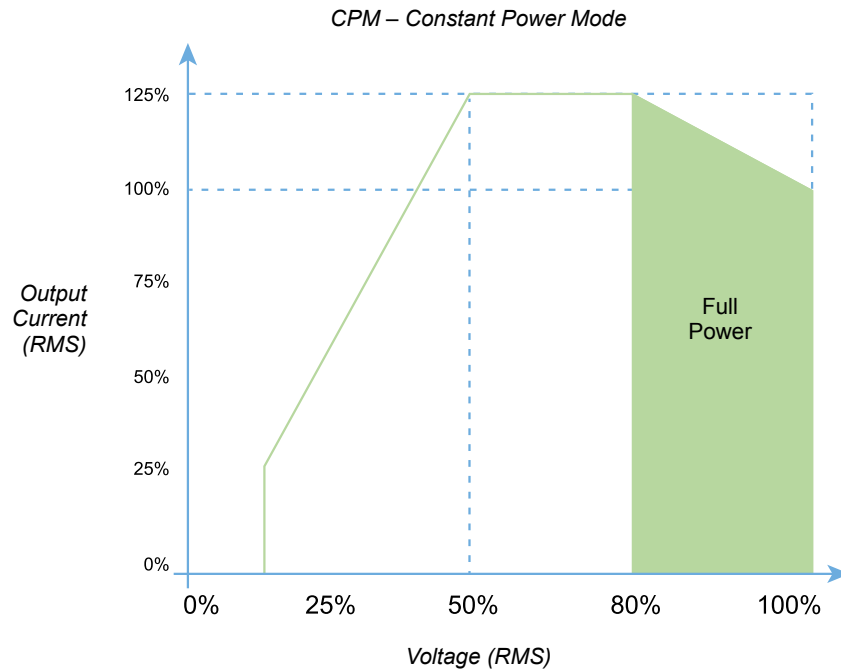
- *RS232 Remote Control & Monitoring (Standard: RS485)*
- *GPIB Remote Control & Monitoring*
- *External 0-5Vdc or 4~20mA Remote Control Voltage (V) / Frequency (F)*
- *Webcomm Ethernet Connection*

High Voltage Option

- *600VL-N (1,038VL-L) Output Voltage Option*

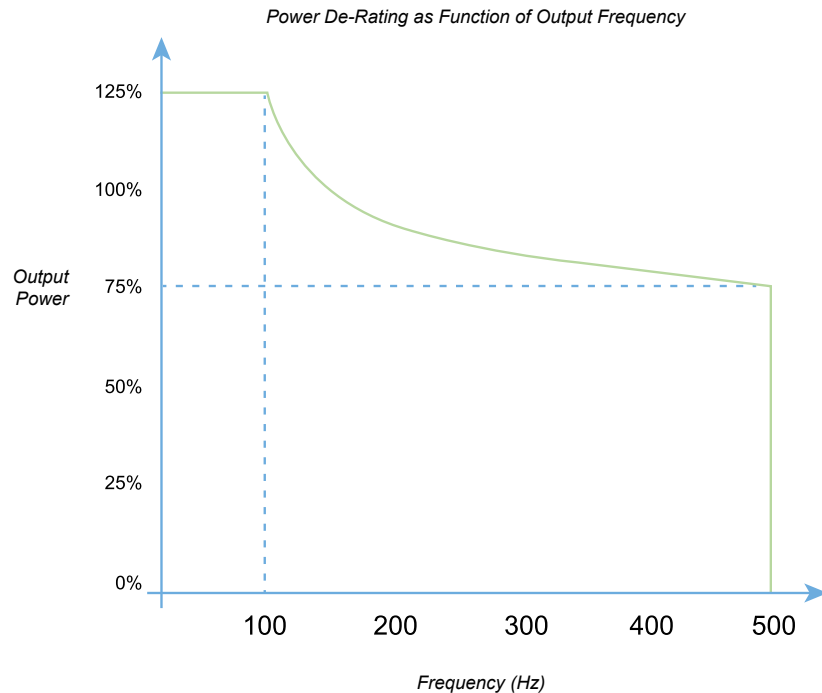
Supplemental Specifications

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% 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

AFV 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.

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



Model	AFV-33015	AFV-33020	AFV-33030	AFV-33045	AFV-33060	AFV-33075	
Capacity (kVA)	15	20	30	45	60	75	
Circuit Type	IBGT/PWM						
Input	Phase	Three					
	Voltage	120V/208V, 220V/380V, OR 277V/480V					
	Voltage Range	220V/380V±15%					
	Frequency Range	47-63 Hz					
	Power	0.9					
	Max Current (A) w/ Full Load	28.1	37.4	56.1	84.2	112.2	140.3
Output Range	Phase	Three					
	Wave	Sine					
	Voltage Range	Low	0V-150.0V (L-N)				
		High	0V-300.0V (L-N)				
	Frequency Range	45-500Hz See Supplemental Specifications for greater than 65Hz					
	Frequency Regulation	≤0.01%					
	Max Current (A) Per Phase	Low V Range	41.7	55.6	83.3	125.0	166.7
High V Range		20.8	27.8	41.7	62.5	83.3	104.2
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	Electronic circuit trip for over/low voltage, over current, over load, over temperature, and short circuit protection and alarm system					
Measurements	Display	VFD (Touch Screen Optional)					
	Voltage	Res.: 0.1V, Accuracy: 0.5%FS+4Counts					
	Current	Res.: 0.1A, Accuracy: 0.5%FS+4Counts					
	Frequency	Res.: 0.1Hz, Accuracy: 0.5%FS+4Counts					
Remote Control	RS-232	Standard					
	RS-485	Standard					
	GPIB	Optional					
	ERC	Optional					
Safety	Insulation Resistance	10M ohm (Tested w/ DC 500V)					
	Voltage Resistance	1800V 10mA for 1 min (Tested w/ AC)					
Environment	Cooling System	Fan Cooling, Front to Rear					
	Temperature	0°C ~ 45°C					
	Humidity	0 ~ 90% (Non-condensing)					
	Altitude	≤1500m					
Case No. (see page 8 for sizes)	1		2				
Weight (lb/kg)	882/400	915/415	937/425	959/435	1081/490	1158/525	
Consult factory for power levels above 800kVA							

Three Phase In - Three Phase Out (100~400kVA)



Model	AFV-33100	AFV-33120	AFV-33150	AFV-33200	AFV-33300	AFV-33400	
Capacity (kVA)	100	120	150	200	300	400	
Circuit Type	IGBT/PWM						
Input	Phase	Three					
	Voltage	120V/208V, 220V/380V, OR 277V/480V					
	Voltage Range	220V/380V±15%					
	Frequency Range	47-63 Hz					
	Power	0.9					
	Max Current (A) w/ Full Load	187.1	224.5	280.6	374.1	561.2	748.2
Output Range	Phase	Three					
	Wave	Sine					
	Voltage Range	Low	0V-150.0V (L-N)				
		High	0V-300.0V (L-N)				
	Frequency Range	45-500Hz See supplemental specifications for greater than 65Hz					
	Frequency Regulation	0.01%					
	Max Current (A) Per Phase	Low V Range	277.8	333.3	416.7	555.6	833.3
High V Range		138.9	166.7	208.3	277.8	416.7	555.6
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	Electronic circuit trip for over/low voltage, over current, over load, over temperature, and short circuit protection and alarm system					
Measurements	Display	VFD (Touch Screen Optional)					
	Voltage	Res.: 0.1V, Accuracy: 0.5%FS+4Counts					
	Current	Res.: 0.1A, Accuracy: 0.5%FS+4Counts					
	Frequency	Res.: 0.1Hz, Accuracy: 0.5%FS+4Counts					
Remote Control	RS-232	Standard					
	RS-485	Standard					
	GPIB	Optional					
	ERC	Optional					
Safety	Insulation Resistance	10M ohm (Tested w/ DC 500V)					
	Voltage Resistance	1800V 10mA for 1 min (Tested w/ AC)					
Environment	Cooling System	Fan Cooling, Front to Rear					
	Temperature	0°C ~ 45°C					
	Humidity	0 ~ 90% (Non-condensing)					
	Altitude	≤1500m					
Case No. (see page 8 for sizes)	3		4		5		
Weight (lb/kg)	1579/716	1713/777	2866/1300	3087/1400	4851/2200	5512/2500	
Consult factory for power levels above 800kVA							

Three Phase In - Three Phase Out (500~2000kVA)



Model		AFV-33500	AFV-33600	AFV-33800	AFV-331000	AFV-331200	AFV-331500	AFV-332000	
Capacity (kVA)		500	600	800	1000	1200	1500	2000	
Circuit Type		IGBT/PWM							
Input	Phase	Three							
	Voltage	120V/208V, 220V/380V, OR 277V/480V							
	Voltage Range	220V/380V±15%							
	Frequency Range	47-63 Hz							
	Power	0.85							
	Max Current (A) w/ Full Load	990.3	1188.4	1584.5	1980.6	2376.7	2970.9	3961.2	
Output	Phase	Three							
	Wave	Sine							
	Voltage Range	Low	0V-150.0V (L-N)						
		High	0V-300.0V (L-N)						
	Frequency Range	45-500Hz See supplemental specifications for greater than 65Hz							
	Frequency Regulation	≤0.01%							
	Max Current (A) Per Phase	Low V Range	1388.9	1666.7	2222.2	2777.8	3333.3	4166.7	5555.6
High V Range		694.4	833.3	1111.1	1388.9	1666.7	2083.3	2777.8	
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	Electronic circuit trip for over/low voltage, over current, over load, over temperature, and short circuit protection and alarm system							
Measurements	Display	Touch Screen							
	Voltage	Res.: 0.1V, Accuracy: 0.5%FS+4Counts							
	Current	Res.: 0.1A, Accuracy: 0.5%FS+4Counts							
	Frequency	Res.: 0.1Hz, Accuracy: 0.5%FS+4Counts							
Remote Control	RS-232	Optional							
	RS-485	Standard							
	GPIB	Optional							
	ERC	Optional							
Safety	Insulation Resistance	10M ohm (Tested w/ DC 500V)							
	Voltage Resistance	1800V 10mA for 1 min (Tested w/ AC)							
Environment	Cooling System	Fan Cooling, Front to Rear							
	Temperature	0°C ~ 45°C							
	Humidity	0 ~ 90% (Non-condensing)							
	Altitude	≤1500m							
Case No. (see page 8 for sizes)		6			7		-		
Weight (lb/kg)		9921/4500	11464/5200	15433/7000	18740/8500	20283/9200	-		
Consult factory for power levels above 800kVA									

Case Dimensions

(width x depth x height)

- 1 25.60 x 36.22 x 49.13 (in) / 650 x 920 x 1248 (mm)
- 2 27.56 x 31.50 x 63.78 (in) / 700 x 800 x 1620 (mm)
- 3 37.00 x 32.28 x 66.93 (in) / 940 x 820 x 1700 (mm)
- 4 43.31 x 37.00 x 72.83 (in) / 1100 x 940 x 1850 (mm)
- 5 55.12 x 40.94 x 78.74 (in) / 1400 x 1040 x 2000 (mm)
- 6 192.91 x 55.12 x 80.71 (in) / 4900 x 1400 x 2050 (mm)
- 7 248.31 x 59.06 x 80.71 (in) / 6300 x 1500 x 2050 (mm)

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

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