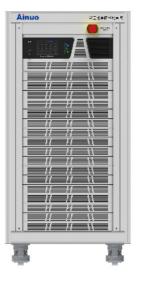
AC Power Supply

Regenerative Grid Simulator ANRGS(F) Series





Product Introduction

The ANRGS(F) Series Regenerative Grid Simulator adopts advanced SPWM technology, FPGA digital processing technology and high-power switching power supply technology, and it can output AC, DC, and AC+DC, providing precise power input for AC load, DC load, rectifier load, etc. The power supply has the function of 100% energy feedback to the grid, enabling four-quadrant operation and significant energy savings to reduce operating costs. It can set waveform switch-on and switch-off angles for testing surge current and output maintenance time. It can also set the rate of change of voltage and frequency to scan the range of power input specifications for the object to be tested. The power supply can simulate abnormal instantaneous rise, drop, short circuit, jitter and other phenomena in the power grid. It can also provide accurate and fast measurement of power parameters. The ANRGS(F) Series Regenerative Grid Simulator adopts advanced SPWM technology with excellent power output quality, widely used in laboratories and production lines in the photovoltaic, new energy vehicle, and other industries.

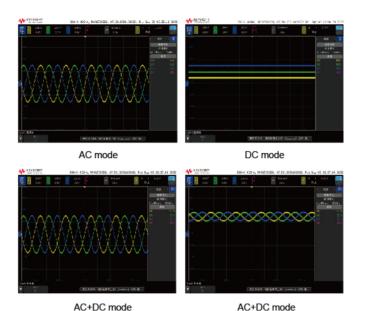
Features

- It has advanced SPWM technology and FPGA digital processing technology and high-power switching power supply technology with high power density.
- It has output modes include AC, DC, and AC+DC.
- It has 100% energy feedback to the grid, and the power supply can operate in all four quadrants.
- It can realize three-phase and single-phase parallel operation, and the single-phase output after parallel connection can reach the maximum capacity of the whole unit.
- It has harmonic synthesis function for 2-50 times harmonics with a synthesis bandwidth of 3,000Hz.
- It has three programming functions: sequence, pulse, and step, which simulate the interference in the actual grid, with a minimum programming step size of 1ms.
- It has a 5-inch LCD, which is small in size, light in weight and 4U in height, meeting the installation requirements of standard cabinets.
- It is equipped with RS485 and Ethernet communication interfaces as standard, with optional RS232 and GPIB communication interfaces.
- It comes with upper computer software, which can import and export arbitrary waveforms and set parameters through the upper computer.

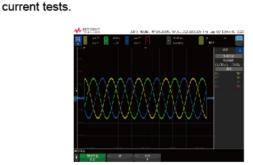
Applications

AC+DC output mode: AC, DC, and AC+DC

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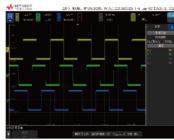


Start-stop angle: in the conventional mode, the start-stop angles of the waveform can be set to facilitate surge

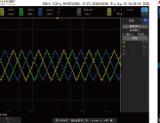


U-phase starts at 90° and stops at 270° waveform

Output waveform can be set: the three-phase output waveform can be independently set to select sine wave, square wave, triangular wave, clipped sine wave, 30 sets of built-in waveforms, and 6 sets of user-defined waveforms



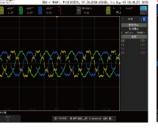
Square wave



Triangular wave



Clipped sine wave CEVROT

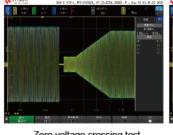


Built-in waveform



Different waveforms set for three phases

Sequence mode: it has universally programmable settings, where each phase of AC voltage, DC voltage, frequency, phase, waveform, and time can be independently set according to single-step settings. Trigger phase and cycle count can be set, and parameters of three phase outputs can be separately configured. Any phase abrupt change/crossing test can be achieved. Rich sequence combinations with high degree of freedom in parameter settings. By setting different combined sequence parameters, high and low voltage crossing tests can be completed. Minimum programming setting time is 1ms, capable of completing a 1ms stop test. Each sequence in each phase can independently set one of the 6 waveforms.



Zero voltage crossing test



Low voltage crossing test



High voltage crossing test



High and low voltage crossing tests

AC Power Supply



Different waveforms can be selected during testing

Each phase stops within 1ms at 90°

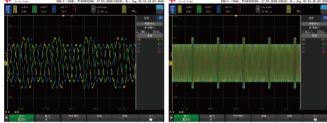




90° crossing

0°crossing

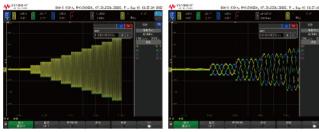
■ Pulse mode: it periodically changes the output state, where the power output will cyclically vary between regular power supply and pulse voltage. Each phase of AC voltage, DC voltage, frequency, angle, waveform, time, etc. can be independently set.



Pulse output waveform

Pulse output waveform

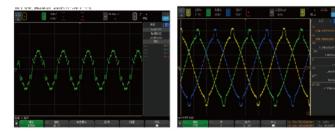
■ Step mode: also known as staircase mode, where the output voltage gradually increases or decreases according to the set step size from the initial value. Each phase's AC voltage, DC voltage, and frequency can be independently set for initial value and change amount. Angle, waveform, step count, and step time for each phase can also be set independently.



Step output waveform

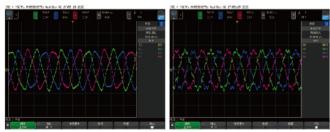
■ Harmonic synthesis: the power supply has harmonic editing function (2-50 times), and various harmonic components can be added to the standard sine wave. It has 3 sets of percentage harmonic storage groups and 3 sets of amplitude harmonic storage groups that can be quickly called. The fundamental voltage, harmonic content, angle, etc., of each phase can be independently set. Under the percentage mode, the content and angle of each harmonic can be set, with a single harmonic up to 30%, no limit on total harmonic content, and no limit on the number of harmonic superimpositions. Under the amplitude mode, specific voltage values can be set for harmonic components, without any percentage relationship with fundamental voltage.

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Harmonic output waveform

Interharmonic synthesis: the power supply has interharmonic editing function, allowing addition of interharmonic components to the standard sine wave. Interharmonic trigger angle, start-stop frequencies, content, and scanning time can be set, with an interharmonic frequency range of 16-3000Hz.



Interharmonic output waveform

Operation: A 5-inch color capacitive touchscreen and knobs can adjust the voltage and frequency in normal mode, while buttons are responsible for starting and stopping the normal mode.



PC control software: Comes with PC control software, featuring a graphical user interface for convenient and efficient operation.



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Specifications

	Mari	4-1	ANRGS	ANRGS	ANRGS	ANRGS	ANRGS	ANRGS	ANRGS	ANRGS	ANRGS	ANRGS	ANRGS	ANRGS	ANRGS
	Mod	jei	005S	010S	006A	009A	012A	015A	018A	030B	036B	045B	054B	060B	072B
			-350(F)	-350(F)	-350(F)	-350(F)	-350(F)	-350(F)	-350(F)	-350(F)	-350(F)	-350(F)	-350(F)	-350(F)	-350(F)
	Сара	acity	5000VA	10000VA	6000VA	9000VA	12000VA	15000VA	18000VA	30000VA	36000VA	45000VA	54000VA	60000VA	72000VA
			0: 1									Three-	Th	ree-phase	e &
	Numb	er of phase	Single	-phase			i nree-pr	nase & sin	gle-phase			phase	s	ingle-phas	e
		Total power	5000VA	10000VA	6000VA	9000VA	12000VA	15000VA	18000VA	30000VA	36000VA	45000VA	54000VA	60000VA	72000VA
	Power	Power per phase	5000VA	10000VA	2000VA	3000VA	4000VA	5000VA	6000VA	10000VA	12000VA	15000VA	18000VA	20000VA	24000VA
		Range	0.00-350.00V												
	Voltage	Resolution	0.01V												
		RMS range													
		(three-phase	_		35A	35A	35A	35A	35A	70A	70A	105A	105A	140A	140A
		mode/phase)													
AC		RMS range													
output		(single-phase	35A	70A	105A	105A	105A	105A	105A	210A	210A	270A	270A	420A	420A
	Current	mode/phase)													
	Current	Peak range													
		(three-phase	_		105A	105A	105A	105A	105A	210A	210A	270A	270A	420A	420A
		mode/phase)													
		Peak range													
		(single-phase	105A	210A	315A	315A	315A	315A	315A	630A	630A	945A	945A	1260A	1260A
		mode/phase)													
	Frequency	Range	30.000-100.000Hz												
	, , , , , ,	Resolution							0.001Hz						
	Power	Total power	5000W	10000W	6000W	9000W	12000W	15000W	18000W	30000W	36000W	45000W	54000W	60000W	72000W
		Single power	5000W	10000W	2000W	3000W	4000W	5000W	6000W	10000W	12000W	15000W	18000W	20000W	24000W
DC	Voltage	Range						-49	5.00-495.	00V					
output		Resolution							0.01V						
оцра	Current	RMS range (single)	35A	70A	35A	35A	35A	35A	35A	70A	70A	105A	105A	140A	140A
		RMS range (parallel)			105A	105A	105A	105A	105A	210A	210A	270A	270A	420A	420A
Shape Dimensions W×H×D (mm)			432×175×700 600×1230×1000												
	Weight (Kg)	25	35	45	45	45	45	45	320	320	365	365	410	410

Any changes to the above parameter specifications will not be notified separately.

Specifications

Ainuo /// AC Power Supply

			ANRGS	ANRGS	ANRGS	ANRGS	ANRGS	ANRGS	ANRGS			
	ľv	Model	005S-350(F)	010S-350(F)	006A-350(F)	009A-350(F)	012A-350(F)	015A-350(F)	018A-350(F)			
	Ca	pacity	5000VA	10000VA	6000VA	9000VA	12000VA	15000VA	18000VA			
		Voltage				342V-480V: 3-pha						
AC	Cı	irrent (@342V)	20A Max	35A Max	20A Max	25A Max	30A Max	35A Max	40A Max			
input		Frequency		47-63Hz								
		ower factor *1	≥0.98									
	Nu	ımber of phase	Single-phase	Single-phase	00001/4		-phase & single-p		4000014			
	Power	Total power	5000VA	10000VA	6000VA	9000VA	12000VA	15000VA	18000VA			
		Power per phase Range	5000VA	10000VA	2000VA	3000VA 0.00-350.00V	4000VA	5000VA	6000VA			
		Resolution				0.00-350.00V						
		Accuracy				0.01V 0.1%F.S.						
	Voltage	Distortion *2			ი 3%/6	050/60Hz:1%@30-	-100Hz					
		Source effect *3			5.5700	≤0.02%	100112					
		Load effect *4				≤0.02%						
		RMS range			054		054	054	054			
		(three-phase mode)			35A	35A	35A	35A	35A			
AC	Current/	RMS range	35A	70A	105A	105A	105A	105A	105A			
output	phase	single-phase mode)	35A	TUA	IUDA	IUDA	IUDA	AGUI	AGUI			
	priase	Peak range			105A	105A	105A	105A	105A			
		(three-phase mode)			TOOR	IUUA	100A	100/4	100A			
		Peak range	105A	210A	315A	315A	315A	315A	315A			
		single-phase mode)	100/4	210/4	OTOA			010/4	OTOA			
	Frequ-		30.000-100.000Hz									
	ency					0.001Hz						
		Accuracy	5000 4	40000014	00001/4	0.01%	40000014	4500014	400000 /4			
	Power	Total power	5000VA	10000VA	6000VA	9000VA	12000VA	15000VA	18000VA			
		Single power Range	5000VA	10000VA	2000VA	3000VA	4000VA	5000VA	6000VA			
DC	Voltage	Range	-495.00V									
output	voltage	Accuracy				0.01V 0.1%F.S.						
	Current	Single	35A	70A	35A	35A	35A	35A	35A			
	range	Parallel	JJA	TUA	105A	105A	105A	105A	105A			
	range	Range						100A	100A			
		Resolution	AC: 350V: DC: 495.00V 0.01V									
		Accuracy *5				0.1%F.S.						
Measu-	Voltage	RMS	35A	70A	105A	105A	105A	105A	105A			
rement		Peak	105A	210A	315A	315A	315A	315A	315A			
accu-		Resolution				0.01A						
racy		RMS accuracy *6				0.2%F.S.						
		Peak accuracy *6				0.5%F.S.						
	Power	Resolution				0.01W						
	Accuracy *7		0.3%F.S.									
	Display		5-inch color touch screen LCD									
		reform selection	Sine wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in waveforms, and 6 sets of custom waveforms									
		art-stop angle	0-359.9°									
		nob function		Knob adjustment available for conventional mode voltage and frequency settings								
	Parallel operation function		Can achieve parallel operation of multiple units									
	Harmonics Harmonic and interharmonic		2-50 times									
Fun-	Harmonic and interharmonic simulation bandwidth		3000Hz									
ction	Sequence mode		200 steps with 9999 loops. Voltage, frequency, and phase angle can be programmatically outputted									
		Pulse mode	20						icu			
		Step mode	9999 loops. Cyclic changes in voltage amplitude, frequency, and angle 9999 loops. Change the voltage frequency according to the set voltage and frequency step values									
	Online adjustment function											
	Unline adjustment function Line drop compensation		Under the conventional mode, the output voltage and frequency can be adjusted online, and the waveform can be switched online The device has Sense terminals that allow remote sampling compensation									
	Communication interface		RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)									
		emote control	Simulation control port (optional)									
Working	Temperature		0~40°C									
environment	-		30~90%RH									
	Efficiency *8			≥92%								
Protection			Input abnormality,	bus overvoltage, ou	utput overvoltage an	d undervoltage, out	put overcurrent, out	put overload, and m	odule overheating			
		High				4U						
						432×175×700						
Shape		Dimensions	The width of 432mm is the standard 19-inch chassis size without handles, with handles the width is 480mm.									
	W×H×D (mm)		The height of 175mm is without feet, with feet the height is 188mm. The feet are detachable. The depth of 700mm is the front and rear panel size excluding terminals and protective parts, including terminals the depth is 779mm.									
							· · · · ·		_			
Weight (Kg)			25	35	45	45	45	45	45			

Any changes to the above parameter specifications will not be notified separately.

Specifications

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Start-stop angle Knob function Knob adjustment available for conventional mode voltage at Parallel operation function Harmonics Harmonics Harmonic and interharmonic simulation bandwidth Sequence mode Pulse mode Step mode Step mode Online adjustment function Under the conventional mode, the output voltage and frequency can be adjusted or Line drop compensation Knob adjustment available for conventional mode voltage at Sense terminals that allow remote sample car sens	ANRGS	ANRGS									
Voltage	060B-350(F)	072B-350(F)									
Current (g)42V)	60000VA	72000VA									
Frequency	140A Max	160A Max									
Power lactor *1	140A Max	TOUATVIAX									
Number of phase											
Power											
Power Power per phase	60000VA	72000VA									
Voltage	20000VA	24000VA									
Voltage											
Voltage											
Distribution 2											
Load effect "4 RMS range T0A T0A T05A T											
RMS range											
AC current											
Current prace Current prace Current prace Power Current prace Curr	140A	140A									
Current Phase Peak range	7.671	11071									
Pass Single-phase mode Peak range (three-phase mode) Peak range (three-phase mode) Peak range single-phase mode) Peak range single-phase mode) Range 30.000-100.000Hz 0.001Hz 0.001V 0	420A	420A									
Current raccuracy											
Peak range 630A 630A 945A 9	420A	420A									
Single-phase mode 630A 630A 945A 945A 945A											
Frequency	1,260A	1,260A									
Prequency											
Power											
Power Total power 30000VA 36000VA 45000VA 54000VA 18000VA 18											
Single power 10000VA 12000VA 15000VA 18000VA 18000VA 18000VA Range	60000VA	72000VA									
Voltage	20000VA	24000VA									
Noting National Nati											
Current Single 70A 70A 105A 105A 105A 315A 315A 315A Range Parallel 210A 210A 315A 315A 315A 315A Range Voltage Resolution 0.01V Accuracy *5 0.1%F.S. Reasultant Resolution Accuracy *5 0.1%F.S. Resolution Peak 630A 630A 945A 945A 945A 945A 945A 945A 945A 945	0.01V										
range Parallel 210A 210A 315A 315A 315A Range Resolution 0.011V Accuracy *5 0.196F.S. RMS 210A 210A 315A 315A 315A Peak 630A 630A 945A 945A 945A Peak 630A 630A 945A 945A 945A RMS accuracy *6 0.296F.S. Power Resolution Accuracy *7 0.396F.S. Display 5-inch color touch screen LCD Waveform selection Sine wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in w. Start-stop angle Knob function Parallel operation function Harmonics Harmonic and interharmonic simulation bandwidth Sequence mode 200 steps with 9999 loops. Voltage, frequency, and phase angle car Pulse mode 9999 loops. Cyclic changes in voltage amplitude, freq Step mode 9999 loops. Change the voltage frequency according to the set volt Under the conventional mode, the output voltage and frequency can be adjusted or RS485 (standard), Ethernet (standard), synchronous signal (standard), Femerature/Pulser accuracy *7 Simulation control port (optional) Working wiromet 1 Numidity 30-90%RH											
Range Voltage Resolution 0.01V Accuracy *5 Resolution 0.1%F.S. RMS 210A 210A 315A 315A 945A Peak 630A 630A 945A 945A 945A Current Resolution RMS accuracy *6 Peak accuracy *6 Peak accuracy *6 Resolution 0.01W(<10kW): 0.1W(<10kW) Peak accuracy *7 Display 5-inch color touch screen LCD Waveform selection Sine wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in w. Start-stop angle Knob function Parallel operation function Harmonics 1.550 times Harmonic and interharmonic simulation bandwidth Sequence mode 200 steps with 9999 loops. Voltage, frequency, and phase angle car Pulse mode 9999 loops. Cyclic changes in voltage amplitude, freq Step mode 9999 loops. Change the voltage amplitude, freq Step mode 9999 loops. Cyclic changes in voltage amplitude, freq Step mode 1.1 me drop compensation 1.2 me drop compensation 1.2 me drop compensation 1.2 me drop compensation 1.2 me drop compensation 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me drop compensation 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense terminals that allow remote samp Remote control 1.3 me device has Sense ter	140A	140A									
Voltage Resolution 0.01V Accuracy *5 0.1%F.S. RMS 210A 210A 315A 315A Peak 630A 630A 945A 945A Peak 630A 630A 945A 0.01A RMS accuracy *6 Peak accuracy *6 Peak accuracy *6 Peak accuracy *7 Resolution 0.01W(<10kW): 0.1W(≥10kW) Accuracy *7 Display 5-inch color touch screen LCD Waveform selection Sine wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in w. Start-stop angle 0.359.9 Knob function Knob adjustment available for conventional mode voltage at the simulation bandwidth Sequence mode Pulse mode 9999 loops. Voltage, frequency, and phase angle car simulation bandwidth Sequence mode 9999 loops. Change the voltage frequency according to the set volt Online adjustment function Line drop compensation Communication interface Remote control Resolution Simulation control port (optional) Woking Temperature/ Notice 100 No	420A	420A									
Accuracy *5 RMS Peak RMS Peak RMS Peak Resolution RMS accuracy *6 Power Resolution Resolution Accuracy *7 Display Display Siart-stop angle Knob function Harmonics Harmonic and interharmonic simulation bandwidth Sequence mode Pulse mode Pulse mode Step mode Online adjustment function Line drop compensation Communication interface Resolution RMS 210A 210A 210A 315A 315A 315A 945A 945A 0.014K SinSA 0.014W(<10kW) 0.014											
Resolution Size wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in with start-stop angle Resolution Reso											
ement accuracy Peak 630A 630A 945A 945A	420A	420A									
Current Resolution RMS accuracy *6 Peak accuracy *6 Power Resolution Accuracy *7 Resolution Accuracy *6 Resolution Accuracy *6 Resolution Accuracy *6 Resolution Accuracy *6 Resolution Accuracy *7 Resolution Accuracy *7 Resolution Accuracy *6 Resolution Accuracy *7 Resolution Accuracy *8 Resolution Accuracy *6 Resolution Accuracy *8 Resolution Accuracy *8 Resolution Accuracy *8 Resolution Accuracy *7 Resolution Accuracy *8 Resolutio	1260A	1260A									
RMS accuracy *6 Peak accuracy *6 Peak accuracy *7 Resolution Accuracy *7 Display Waveform selection Start-stop angle Function Function Function Function Communication interface Remote control Working	1200A	1200A									
Peak accuracy *6 Power Resolution Accuracy *7 Display Display Display Naveform selection Start-stop angle Function Function Function Communication interface Communication interface Remote control Working Working Working Working Working Working Power Resolution Accuracy *7 D.39F.S. D.39F.S. Display S-inch color touch screen LCD Sine wave, square wave, clipped sine wave, 30 sets of built-in wave, 30 set of built-											
Power Resolution 0.01W(<10kW): 0.1W(≥10kW): 0.1W(≥10kW) Accuracy *7 0.3%F.S. Display 5-inch color touch screen LCD Waveform selection Sine wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in w. Start-stop angle 0-359.9 Knob function Knob adjustment available for conventional mode voltage at None Harmonics 2-50 times Harmonic and interharmonic simulation bandwidth Sequence mode 200 steps with 9999 loops. Voltage, frequency, and phase angle car Pulse mode 9999 loops. Cyclic changes in voltage amplitude, freq Step mode 9999 loops. Change the voltage frequency according to the set volt Online adjustment function Under the conventional mode, the output voltage and frequency can be adjusted or Line drop compensation The device has Sense terminals that allow remote samp Communication interface RS485 (standard), Ethernet (standard), synchronous signal (standard), Fence Remote control Simulation control port (optional) Working Working 0-40 ℃ humidity 30-90%RH											
Power Accuracy *7 0.3%F.S. Display 5-inch color touch screen LCD Waveform selection Sine wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in w. Start-stop angle 0.359.9 Knob function Knob adjustment available for conventional mode voltage and parallel operation function Harmonics 2-50 times Harmonic and interharmonic simulation bandwidth Sequence mode 200 steps with 9999 loops. Voltage, frequency, and phase angle car 9999 loops. Cyclic changes in voltage amplitude, frequency and parallel on the set voltage and interharmonic simulation bandwidth Sequence mode 9999 loops. Change the voltage frequency according to the set volt Online adjustment function Under the conventional mode, the output voltage and frequency can be adjusted or The device has Sense terminals that allow remote samp Communication interface RS485 (standard), Ethernet (standard), synchronous signal (standard), Remote control Simulation control port (optional) Working Working humidity 30-90%RH											
Waveform selection Start-stop angle Knob function Parallel operation function Harmonics Harmonic and interharmonic simulation bandwidth Sequence mode Pulse mode Online adjustment function Line drop compensation Communication interface Remote control Working wiroment Working Working Waveform selection Sine wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in w. 0-359.9 Knob function Knob adjustment available for conventional mode voltage at 2-50 times Harmonics 3000Hz 3000Hz 3000Hz Step mode 9999 loops. Voltage, frequency, and phase angle car 9999 loops. Cyclic changes in voltage amplitude, freq 9999 loops. Cyclic changes in voltage amplitude, freq 9999 loops. Change the voltage frequency according to the set volt online adjustment function Line drop compensation Communication interface RS485 (standard), Ethernet (standard), synchronous signal (standard), Fremperature/ Noting Working Working Waveform selection None 1-359.9 Knob adjustment available for conventional mode voltage and frequency, and phase angle car 9999 loops. Cyclic changes in voltage amplitude, freq 9999 loops. Cyclic changes in voltage amplitude, freq 9999 loops. Cyclic changes in voltage amplitude, freq 9999 loops. Synchronous signal (standard), Frequency according to the set volt online adjustment function Line drop compensation RS485 (standard), Ethernet (standard), synchronous signal (standard), Frequency according to the set volt online adjustment function Simulation control port (optional) Temperature/ Noting											
Waveform selection Start-stop angle Knob function Parallel operation function Harmonics Harmonic and interharmonic simulation bandwidth Sequence mode Pulse mode Step mode Online adjustment function Line drop compensation Communication interface Remote control Working Working Wiroment Wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in w. 0-359.9 Knob function Knob adjustment available for conventional mode voltage at Sense terminal mode voltage and processor. 8 2-50 times 8 3000Hz 3000Hz Sequence mode Pulse mode 9999 loops. Voltage, frequency, and phase angle car 9999 loops. Cyclic changes in voltage amplitude, frequency according to the set volt on the device has Sense terminals that allow remote sample for the device has Sense terminals that allow rem											
Knob function Parallel operation function Harmonics Harmonic and interharmonic simulation bandwidth Sequence mode Pulse mode Online adjustment function Line drop compensation Communication interface Remote control Working Working Wirming Knob adjustment available for conventional mode voltage at None None 1 None 2-50 times 1 3000Hz 200 steps with 9999 loops. Voltage, frequency, and phase angle car 9999 loops. Cyclic changes in voltage amplitude, freq 9999 loops. Change the voltage frequency according to the set volt Under the conventional mode, the output voltage and frequency can be adjusted or Communication interface RS485 (standard), Ethemet (standard), synchronous signal (standard), Remote control Simulation control port (optional) Temperature/ humidity 30-90%RH	Sine wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in waveforms, and 6 sets of custom waveforms										
Parallel operation function Harmonics 2-50 times Harmonic and interharmonic simulation bandwidth Sequence mode Pulse mode Step mode Online adjustment function Line drop compensation Communication interface Remote control Working Working Winding Parallel operation function Harmonics 2-50 times 3000Hz 3000Hz 200 steps with 9999 loops. Voltage, frequency, and phase angle car 9999 loops. Cyclic changes in voltage amplitude, freq 9999 loops. Change the voltage frequency according to the set volt Online adjustment function Line drop compensation Communication interface RS485 (standard), Ethemet (standard), synchronous signal (standard), Remote control Simulation control port (optional) Temperature/ humidity 30-90%RH											
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Line drop compensation Communication interface RS485 (standard), Ethernet (standard), synchronous signal (standard), Femote control Simulation control port (optional) Working Temperature/ humidity 30-90%RH	Under the conventional mode, the output voltage and frequency can be adjusted online, and the waveform can be switched online										
Communication interface RS485 (standard), Ethernet (standard), synchronous signal (standard), Remote control Simulation control port (optional) Working Temperature/ 0-40°C wiroment humidity 30-90%RH	The device has Sense terminals that allow remote sampling compensation										
Remote control Simulation control port (optional) Working Temperature/ 0-40°C vironment humidity 30-90%RH	RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)										
Working vironment Temperature/ 0.40 °C whoment humidity 30-90%RH											
,											
Ffficiency *8 >02%											
Protection Input abnormality, bus overvoltage, output overvoltage											
output overcurrent, output overload, and module											
Shape Dimensions W×H×D (mm) 600×1230 (the height with casters is 118) Weight (Kg) 320 320 365 365	×1000 410	410									

Any changes to the above parameter specifications will not be notified separately.

Notes:

- 1. Power factor is the measurement result of resistive load at rated power with input rated voltage of 380VLL and output usage.
- 2. Distortion is the measurement result of resistive load at rated power with an output voltage of 250V.
- 3. Source effect is calculated by the measured output voltage under two conditions: input rated voltages of 380VLL and 420VLL during no-load.
- 4. Load effect is calculated by the measured output voltage under no-load and the output measurement at rated power using a resistive load with an output voltage of 250V.
- 5. The FS appearing in parameters related to AC and DC voltages in the parameter table refers to the corresponding AC and DC maximum output voltage values of the voltage measurement range of the corresponding model machine.
- 6. The FS appearing in parameters related to current in the parameter table refers to the maximum measured current effective value and peak value of the current measurement range of the corresponding model machine.
- 7. The FS appearing in parameters related to power in the parameter table refers to the maximum measured power value of the corresponding model machine.
- 8. The efficiency is the measurement result of resistive load measured at rated power with input voltage set at the input rated voltage of 380VLL and output voltage at 250V.

Regenerative Grid Load ANRGL(F) Series



Product Introduction

The ANRGL(F) Series Regenerative Grid Load adopts advanced SPWM technology, FPGA digital processing technology and high-power switching power supply technology, and it can output AC, DC, and AC+DC, providing precise power input for AC load, DC load, rectifier load, etc. The product has the function of 100% energy feedback to the grid, enabling four-quadrant operation and significant energy savings to reduce operating costs. It can set waveform switch-on and switch-off angles for testing surge current and output maintenance time. It can also set the rate of change of voltage and frequency to scan the range of power input specifications for the object to be tested. The power supply mode can simulate abnormal instantaneous rise, drop, short circuit, jitter and other phenomena in the power grid. It can also provide accurate and fast measurement of power parameters. The load mode features a full four-quadrant feedback AC/DC electronic load, capable of absorbing full capacity energy and providing high-efficiency grid feedback to reduce power consumption. It also has functions such as constant current, constant resistance, constant power, and RLC analog circuit load. The ANRGL(F) Series Regenerative Grid Load adopts advanced SPWM technology with excellent power output quality, widely used in laboratories and production lines in the photovoltaic, new energy vehicle, and other industries.

Features

- It has advanced SPWM technology and FPGA digital processing technology and high-power switching power supply technology with high power density.
- It has output modes include AC, DC, and AC+DC.
- It has 100% energy feedback to the grid, and the power supply can operate in all four quadrants.
- It can realize three-phase and single-phase parallel operation, and the single-phase output after parallel connection can reach the maximum capacity of the whole unit. It has harmonic synthesis function for 2-50 times harmonics with a synthesis bandwidth of 3,000Hz.
- It has three programming functions: sequence, pulse, and step, which simulate the interference in the actual grid, with a minimum programming step size of 1ms.
- It has a 5-inch LCD, which is small in size, light in weight and 4U in height, meeting the installation requirements of standard cabinets.
- It is equipped with RS485 and Ethernet communication interfaces as standard, with optional RS232 and GPIB communication interfaces.
- It comes with upper computer software, which can import and export arbitrary waveforms and set parameters through the upper computer.

