

Regenerative Grid Simulator ANRGS(F) Series



Product Introduction

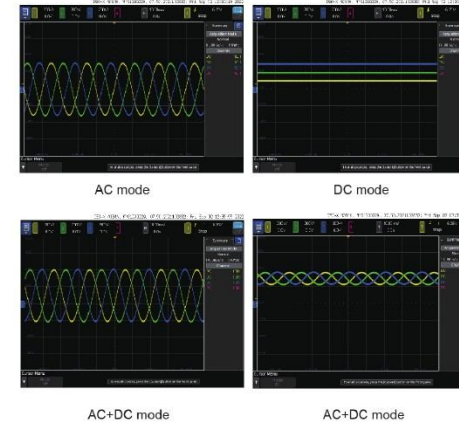
The ANRGS(F) Series Regenerative Grid Simulator adopts advanced SPWM technology, FPGA digital processing technology and high-power switching power supply technology with high power density. It can output AC, DC, and AC+DC power supply, providing precise power input for AC load, DC load, rectifier load, etc. The power supply has the function of 100% rated power 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, stimulate distortion of the mains power waveform and provide accurate and fast measurement of power parameters. The ANRGS 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

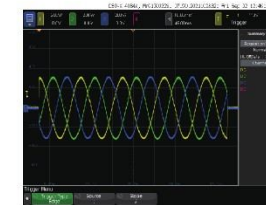
- It has advanced SPWM technology and FPGA digital processing technology and high-power switching power supply technology with high power density.
- It has output modes include AC, DC, and AC+DC.
- It has 100% rated power feedback to the grid, and the power supply can operate in all four quadrants.
- 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 interharmonics 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:** Three output modes: AC, DC, and AC+DC

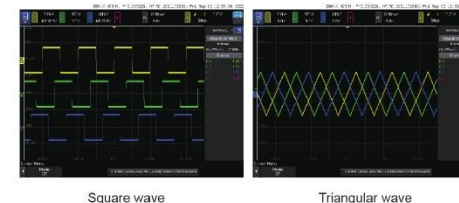


- Start-stop angle:** In the conventional mode, the start-stop angles of the waveform can be set to facilitate surge current tests.



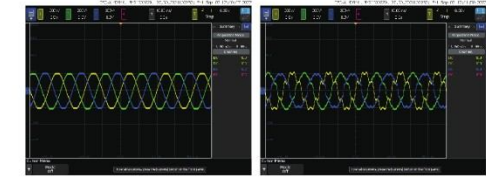
U-phase starts at 90° and stops at 270° waveform

- Output waveform options:** 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.



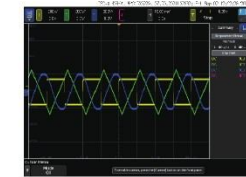
Square wave

Triangular wave



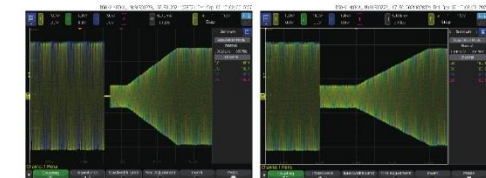
Clipped sine wave

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 loop 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

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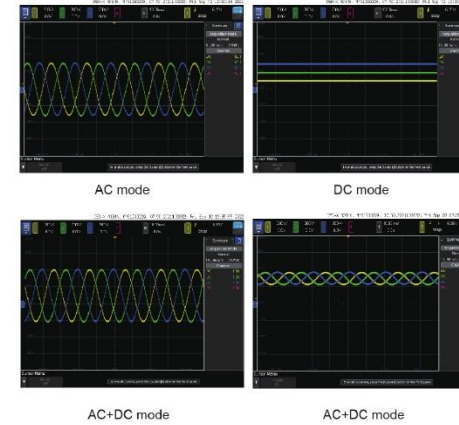
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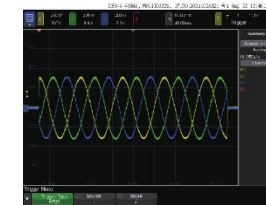
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- AC+DC output mode:** Three output modes: AC, DC, and AC+DC

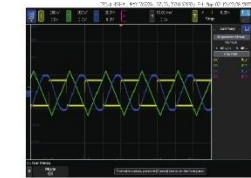
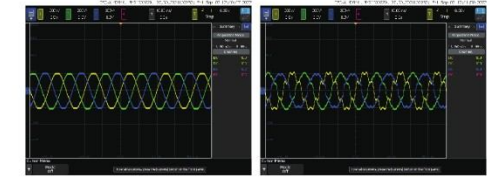
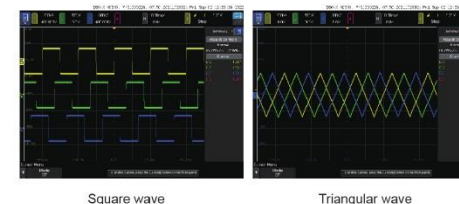


- Start-stop angle:** In the conventional mode, the start-stop angles of the waveform can be set to facilitate surge current tests.



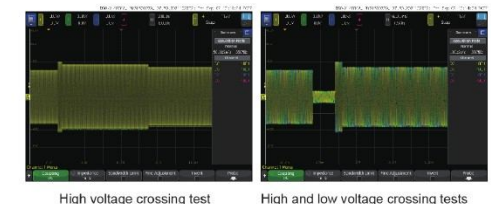
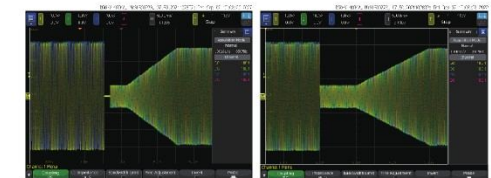
U-phase starts at 90° and stops at 270° waveform

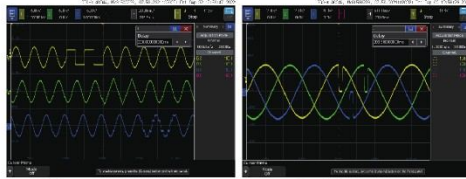
- Output waveform options:** The three-phase output waveform can be independently set to select sine wave, square wave, triangular wave, clipped sine wave, 30 sets of built-in waveforms, and 6 sets of user-defined waveforms.



Different waveforms set for three phases

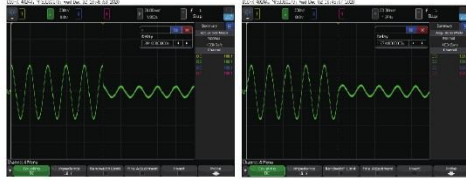
- Sequence mode:** It has universally programmable settings, where each phase of AC voltage, DC voltage, frequency, phase, waveform, and time can be independently set according to single-step settings. Trigger phase and loop count can be set, and parameters of three-phase outputs can be separately configured. 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.





Different waveforms can be selected during testing

Each phase stops within 1ms at 90°



90° crossing

0° crossing

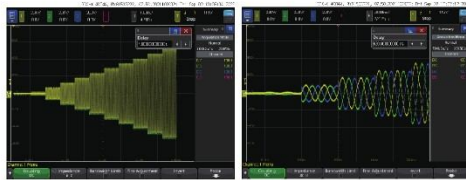
Pulse mode: it periodically changes the output state, where the power output will cyclically vary between regular power supply and pulse voltage. Each phase of AC voltage, DC voltage, frequency, angle, waveform, time, etc. can be independently set.



Pulse output waveform

Pulse output waveform

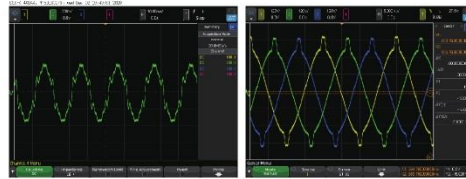
Step mode: also known as staircase mode, where the output voltage gradually increases or decreases according to the set step size from the initial value. Each phase's AC voltage, DC voltage, and frequency can be independently set for initial value and change amount. Angle, waveform, step count, and step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



Step output waveform

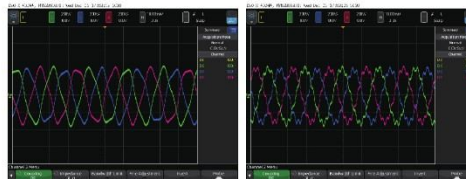
Harmonic synthesis: the power supply has harmonic editing function (2-50 times), and various harmonic components can be added to the standard sine wave.

It has 3 sets of percentage harmonic storage groups and 3 sets of amplitude harmonic storage wave 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 wave voltage.



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 scan time can be set, with an interharmonic frequency range of 16-3,000Hz.



Interharmonic output waveform

Operation: 5-inch color capacitive touch screen and knobs can be used to set the voltage and frequency in the conventional mode, with buttons responsible for starting and stopping the conventional mode.



Upper computer: It is equipped with the standard upper computer software, with a graphical user interface for convenient and efficient operation.

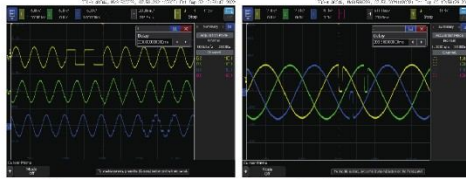


Selection List

Model	Complete machine Power	Output phase number	AC voltage	Frequency	DC voltage	Per-phase current	Overall Dimensions W×H×D(mm)
ANRGS003S-350(F)	3kVA	Single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	35A	432×175×700
ANRGS005S-350(F)	5kVA	Single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	35A	432×175×700
ANRGS006S-350(F)	6kVA	Single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	35A	432×175×700
ANRGS010S-350(F)	10kVA	Single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	60A	432×175×735
ANRGS012S-350(F)	12kVA	Single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	70A	432×175×700
ANRGS015S-350(F)	15kVA	Single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	70A	432×175×700
ANRGS020S-350(F)	20kVA	Single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	120A	432×175×735
ANRGS006A-350(F)	6kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	35A	432×175×700
ANRGS009A-350(F)	9kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	35A	432×175×700
ANRGS012A-350(F)	12kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	35A	432×175×700
ANRGS015A-350(F)	15kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	35A	432×175×700
ANRGS018A-350(F)	18kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	35A	432×175×700
ANRGS020A-350(F)	20kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	60A	432×175×735
ANRGS025A-350(F)	25kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	60A	432×175×735
ANRGS030A-350(F)	30kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	60A	432×175×735
ANRGS050B-350(F)	50kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	120A	600×1230×1000
ANRGS060B-350(F)	60kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	120A	600×1230×1000
ANRGS075B-350(F)	75kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	180A	600×1230×1000
ANRGS090B-350(F)	90kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	180A	600×1230×1000
ANRGS100B-350(F)	100kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	240A	600×1230×1000
ANRGS120B-350(F)	120kVA	Three-phase & single-phase	0~350.00V	30.000~100.000Hz	-495.00~495.00V	240A	600×1230×1000

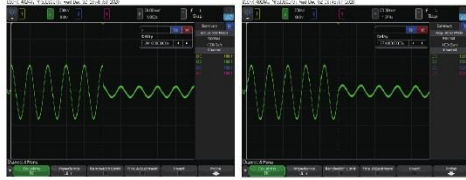
Specifications

Model	ANRGS003S-350(F)	ANRGS005S-350(F)	ANRGS006S-350(F)	ANRGS010S-350(F)	ANRGS012S-350(F)	ANRGS015S-350(F)	ANRGS018A-350(F)
Power supply capacity	3000VA	5000VA	6000VA	10000VA	12000VA	15000VA	20000VA
AC input	Voltage						
	Line voltage: 342V-480V; 3-phase 3-wire+ PE						
	Current (@342V)						
	15A Max	22A Max	25A Max	39A Max	40A Max	50A Max	65A Max
AC output	Frequency						
	47~63Hz						
	Power factor *1						
	≥0.98						
AC output	Phase number						
	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase
	3000VA	5000VA	6000VA	10000VA	12000VA	15000VA	20000VA
	Power						
AC output	Range						
	0.00~350.00V						
	Resolution						
	0.01V						
AC output	Accuracy						
	0.1%F.S.						
	Distortion *2						
	0.3%@50/60Hz; 1%@30-100Hz						
AC output	Source effect *3						
	≤0.02%						
	Load effect *4						
	≤0.02%						
Current /phase	Effective value range						
	35A	35A	35A	60A	70A	120A	120A
	Peak value range						
	105A	105A	105A	180A	210A	360A	360A
Frequency	Range						
	30.000~100.000Hz						
	Resolution						
	0.001Hz						
Power	Accuracy						
	0.01%						
	Range						
	3000W	5000W	6000W	10000W	12000W	15000W	20000W



Different waveforms can be selected during testing

Each phase stops within 1ms at 90°



90° crossing

0° crossing

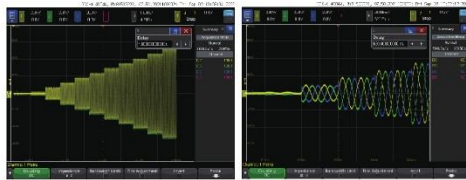
Pulse mode: it periodically changes the output state, where the power output will cyclically vary between regular power supply and pulse voltage. Each phase of AC voltage, DC voltage, frequency, angle, waveform, time, etc. can be independently set.



Pulse output waveform

Pulse output waveform

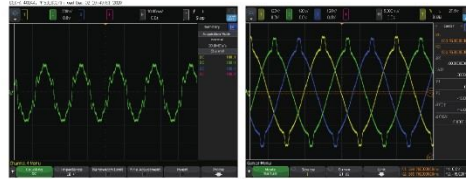
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Step output waveform

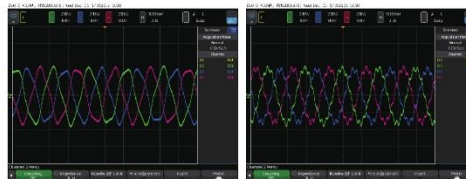
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	Power factor *1						
	≥0.98						
AC output	Phase number						
	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase
	3000VA	5000VA	6000VA	10000VA	12000VA	15000VA	20000VA
	Power						
AC output	Range						
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	Resolution						
	0.01V						
AC output	Accuracy						
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	Distortion *2						
	0.3%@50/60Hz; 1%@30-100Hz						
AC output	Source effect *3						
	≤0.02%						
	Load effect *4						
	≤0.02%						
AC output	Current /phase						
	Effective value range	35A	35A	35A	60A	70A	120A
	Peak value range	105A	105A	105A	180A	210A	360A
	Frequency						
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	30.000~100.000Hz						
	Resolution						
	0.001Hz						
AC output	Accuracy						
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	Power						
	Range	3000W	5000W	6000W	10000W	12000W	15000W
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	Range	3000W	5000W	6000W	10000W	12000W	15000W
	Power						
	Range	3000W	5000W	6000W	10000W	12000W	15000W

Model		ANRGS 003S -350(F)	ANRGS 005S -350(F)	ANRGS 006S -350(F)	ANRGS 010S -350(F)	ANRGS 012S -350(F)	ANRGS 015S -350(F)	ANRGS 018A -350(F)
DC output	Voltage	Range						
		-495.00 ~ 495.00V						
		Resolution						
Measurement accuracy	Current	Accuracy						
		0.1%F.S.						
		Range						
DC output	Voltage	AC: 350.00V; DC: 495.00V						
		Resolution						
		0.01V						
Measurement accuracy	Current	Accuracy *5						
		0.1%F.S.						
		Range						
DC output	Voltage	Effective value						
		35A						
		Peak value						
Measurement accuracy	Current	105A						
		Resolution						
		0.01A						
DC output	Power	Effective value accuracy*6						
		0.2%F.S.						
		Peak value accuracy*6						
Measurement accuracy	Power	0.5%F.S.						
		Resolution						
		0.01W						
DC output	Voltage	Accuracy *7						
		0.3%F.S.						
		Range						
Measurement accuracy	Current	5-inch color touch screen LCD						
		Waveform selection						
		Sine wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in waveforms, and 6 sets of custom waveforms						
DC output	Voltage	Start-stop angle						
		0-359.9°						
		Knob function						
Measurement accuracy	Current	Knob adjustment available for conventional mode voltage and frequency settings						
		Parallel operation function						
		Can achieve parallel operation of multiple units						
DC output	Voltage	Harmonics						
		2-50 times						
		Harmonic and interharmonic simulation bandwidth						
Measurement accuracy	Current	3000Hz						
		Sequence mode						
		200 steps with 9,999 loops. Voltage, frequency, and phase angle can be programmatically outputted						
DC output	Voltage	Pulse mode						
		9,999 loops. Cyclic changes in voltage amplitude, frequency, and angle						
		Step mode						
Measurement accuracy	Current	9,999 loops. Change the voltage frequency according to the set voltage and frequency step values						
		Online regulation function						
		Under the conventional mode, the output voltage and frequency can be adjusted online, and the waveform can be switched online						
DC output	Voltage	Line drop compensation						
		The device has Sense terminals that allow remote sampling compensation						
		Communication interface						
Measurement accuracy	Current	RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)						
		Remote control						
		None						
DC output	Voltage	Temperature						
		0 ~ 40 °C						
		Humidity						
Measurement accuracy	Current	30 ~ 90%RH						
		Efficiency *8						
		≥92%						
DC output	Voltage	Protection						
		Input abnormality, bus overvoltage, output overvoltage and undervoltage, output overcurrent, output overload, and module overheating						
		Height						
Measurement accuracy	Current	4U						
		Dimensions (W×H×D mm)						
		432×175×700						
DC output	Voltage	The width of 432mm is the standard 19-inch chassis size without handles, with handles the width is 480mm.						
		The height of 175mm is without feet, with feet the height is 188mm. The feet are detachable.						
		The depth of 700mm/735mm is the front and rear panel size excluding terminals and protective parts, the depth including terminals is 779mm/814mm.						
Measurement accuracy	Current	Weight (Kg)						
		≤25						
		≤25						
DC output	Voltage	≤25						
		≤26						
		≤35						
Measurement accuracy	Current	≤38						
		≤38						
		≤38						

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

Model			ANRGS 006A -350(F)	ANRGS 009A -350(F)	ANRGS 012A -350(F)	ANRGS 015A -350(F)	ANRGS 018A -350(F)	ANRGS 020A -350(F)	ANRGS 025A -350(F)	ANRGS 030A -350(F)	
Power supply capacity			6000VA	9000VA	12000VA	15000VA	18000VA	20000VA	25000VA	30000VA	
AC input	Voltage		Line voltage: 342V-480V; 3-phase 3-wire+ PE								
	Current (@342V)		20A Max	25A Max	30A Max	35A Max	40A Max	45A Max	55A Max	65A Max	
	Frequency		47 ~ 63Hz								
	Power factor *1		≥0.98								
AC output	Phase number		Three-phase & single-phase								
	Power	Total Power	6000VA	9000VA	12000VA	15000VA	18000VA	20000VA	25000VA	30000VA	
		Power per phase	2000VA	3000VA	4000VA	5000VA	6000VA	6667VA	8333VA	10000VA	
	Voltage	RRange	0.00 ~ 350.00V								
		Resolution	0.01V								
		Accuracy	0.1%F.S.								
		Distortion *2	0.3%@50/60Hz; 1%@30-100Hz								
	Voltage	Source effect *3	≤0.02%								
		Load effect *4	≤0.02%								
	Current /phase	Effective value range	Three-phase mode	35A	35A	35A	35A	35A	60A	60A	60A
		Effective value range	Single-phase mode	105A	105A	105A	105A	105A	180A	180A	180A
		Peak value range	Three-phase mode	105A	105A	105A	105A	105A	180A	180A	180A
		Peak value range	Single-phase mode	315A	315A	315A	315A	315A	540A	540A	540A
	Frequency	Range	30.000 ~ 100.000Hz								
		Resolution	0.001Hz								
		Accuracy	0.01%								
Power	Total Power	6000W	9000W	12000W	15000W	18000W	20000W	25000W	30000W		
	Power per channel	2000W	3000W	4000W	5000W	6000W	6667W	8333W	10000W		
DC output	Voltage	Range	-495.00 ~ -495.00V								
		Resolution	0.01V								
	Voltage	Accuracy	0.1%F.S.								
		Current	Range	Single channel	35A	35A	35A	35A	35A	60A	60A
	Range		Parallel connection	105A	105A	105A	105A	105A	180A	180A	180A
	Measure ment accuracy	Voltage	Range	AC: 350.00V; DC: 495.00V							
Resolution			0.01V								
Current		Range	Effective value	105A	105A	105A	105A	105A	180A	180A	180A
			Peak value	315A	315A	315A	315A	315A	540A	540A	540A
		Power	Resolution	0.01A							
			Accuracy *6	0.2%F.S.							
Function		Display	Resolution	0.5%F.S.							
			Accuracy *7	0.01W							
	Working environment	Resolution	0.3%F.S.								
		Efficiency *8	30 ~ 90%RH								
Shape	Protection	Temperature	None								
		Humidity	0 ~ 40 °C								
	Height	Efficiency *8	≥92%								
		Protection	Input abnormality, bus overvoltage, output overvoltage and undervoltage, output overcurrent, output overload, and module overheating								
	Dimensions W×H×D(mm)	Height	4U								
		Dimensions	432×175×700 432×175×700 432×175×700 432×175×700 432×175×735 432×175×735 432×175×735 432×175×735								
	The width of 432mm is the standard 19-inch chassis size without handles, with handles the width is 480mm.										

Model		ANRGS 003S -350(F)	ANRGS 005S -350(F)	ANRGS 006S -350(F)	ANRGS 010S -350(F)	ANRGS 012S -350(F)	ANRGS 015S -350(F)	ANRGS 018A -350(F)
DC output	Voltage	Range						
		-495.00 ~ 495.00V						
		Resolution						
Measurement accuracy	Current	Accuracy						
		0.1%F.S.						
		Range						
DC output	Voltage	AC: 350.00V; DC: 495.00V						
		Resolution						
		0.01V						
Measurement accuracy	Current	Accuracy *5						
		0.1%F.S.						
		Range						
DC output	Voltage	Effective value						
		35A						
		105A						
Measurement accuracy	Current	Resolution						
		0.01A						
		Effective value accuracy*6						
DC output	Voltage	0.2%F.S.						
		Peak value accuracy*6						
		0.5%F.S.						
Measurement accuracy	Power	Resolution						
		0.01W						
		Accuracy *7						
DC output	Voltage	0.3%F.S.						
		Display						
		5-inch color touch screen LCD						
Measurement accuracy	Current	Waveform selection						
		Sine wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in waveforms, and 6 sets of custom waveforms						
		Start-stop angle						
DC output	Voltage	0-359.9°						
		Knob function						
		Knob adjustment available for conventional mode voltage and frequency settings						
Measurement accuracy	Current	Parallel operation function						
		Can achieve parallel operation of multiple units						
		Harmonics						
DC output	Voltage	2-50 times						
		Harmonic and interharmonic simulation bandwidth						
		3000Hz						
Measurement accuracy	Current	Sequence mode						
		200 steps with 9,999 loops. Voltage, frequency, and phase angle can be programmatically outputted						
		Pulse mode						
DC output	Voltage	9,999 loops. Cyclic changes in voltage amplitude, frequency, and angle						
		Step mode						
		9,999 loops. Change the voltage frequency according to the set voltage and frequency step values						
Measurement accuracy	Current	Online regulation function						
		Under the conventional mode, the output voltage and frequency can be adjusted online, and the waveform can be switched online						
		Line drop compensation						
DC output	Voltage	The device has Sense terminals that allow remote sampling compensation						
		Communication interface						
		RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)						
Measurement accuracy	Current	Remote control						
		None						
		Temperature						
DC output	Voltage	0 ~ 40 °C						
		Humidity						
		30 ~ 90%RH						
Measurement accuracy	Current	Efficiency *8						
		≥92%						
		Protection						
DC output	Voltage	Input abnormality, bus overvoltage, output overvoltage and undervoltage, output overcurrent, output overload, and module overheating						
		Height						
		4U						
Measurement accuracy	Current	Dimensions (W×H×D mm)						
		432×175×700						
		The width of 432mm is the standard 19-inch chassis size without handles, with handles the width is 480mm.						
DC output	Voltage	The height of 175mm is without feet, with feet the height is 188mm. The feet are detachable.						
		The depth of 700mm/735mm is the front and rear panel size excluding terminals and protective parts, the depth including terminals is 779mm/814mm.						
		Weight (Kg)						
Measurement accuracy	Current	≤25						
		≤25						
		≤25						
DC output	Voltage	≤26						
		≤35						
		≤38						
Measurement accuracy	Current	≤38						
		Any changes to the above parameter specifications will not be notified separately.						

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

Model			ANRGS 006A -350(F)	ANRGS 009A -350(F)	ANRGS 012A -350(F)	ANRGS 015A -350(F)	ANRGS 018A -350(F)	ANRGS 020A -350(F)	ANRGS 025A -350(F)	ANRGS 030A -350(F)	
Power supply capacity			6000VA	9000VA	12000VA	15000VA	18000VA	20000VA	25000VA	30000VA	
AC input	Voltage		Line voltage: 342V-480V; 3-phase 3-wire+ PE								
	Current (@342V)		20A Max	25A Max	30A Max	35A Max	40A Max	45A Max	55A Max	65A Max	
	Frequency		47 ~ 63Hz								
	Power factor *1		≥0.98								
AC output	Phase number		Three-phase & single-phase								
	Power	Total Power	6000VA	9000VA	12000VA	15000VA	18000VA	20000VA	25000VA	30000VA	
		Power per phase	2000VA	3000VA	4000VA	5000VA	6000VA	6667VA	8333VA	10000VA	
	Voltage	RRange	0.00 ~ 350.00V								
		Resolution	0.01V								
		Accuracy	0.1%F.S.								
		Distortion *2	0.3%@50/60Hz; 1%@30-100Hz								
		Source effect *3	≤0.02%								
	Current /phase	Load effect *4	≤0.02%								
		Effective value range	Three-phase mode	35A	35A	35A	35A	35A	60A	60A	60A
		Effective value range	Single-phase mode	105A	105A	105A	105A	105A	180A	180A	180A
		Peak value range	Three-phase mode	105A	105A	105A	105A	105A	180A	180A	180A
		Peak value range	Single-phase mode	315A	315A	315A	315A	315A	540A	540A	540A
	Frequency	Range	30.000 ~ 100.000Hz								
Resolution		0.001Hz									
Accuracy		0.01%									
Power	Total Power	6000W	9000W	12000W	15000W	18000W	20000W	25000W	30000W		
	Power per channel	2000W	3000W	4000W	5000W	6000W	6667W	8333W	10000W		
DC output	Voltage	Range	-495.00 ~ 495.00V								
		Resolution	0.01V								
	Accuracy	0.1%F.S.									
		Current	Range	Single channel	35A	35A	35A	35A	35A	60A	60A
	Parallel connection		105A	105A	105A	105A	105A	105A	180A	180A	180A
	Measure ment accuracy	Voltage	Range	AC: 350.00V; DC: 495.00V							
Resolution			0.01V								
Accuracy		0.1%F.S.									
		Current	Range	Effective value	105A	105A	105A	105A	105A	180A	180A
Peak value			315A	315A	315A	315A	315A	315A	540A	540A	540A
Power		Resolution	0.01A								
	Effective value accuracy*6	0.2%F.S.									
Function	Display	Peak value accuracy*6	0.5%F.S.								
		Resolution	0.01W								
	Accuracy *7	Resolution	0.3%F.S.								
		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 waveforms, and 6 sets of custom waveforms									
	Start-stop angle	0-359.9°									
	Knob function	Knob adjustment available for conventional mode voltage and frequency settings									
	Parallel operation function	Can achieve parallel operation of multiple units									
	Harmonics	2-50 times									
Working environment	Harmonic and interharmonic simulation bandwidth	3000Hz									
		200 steps with 9 999 loops, Voltage, frequency, and phase angle can be programmatically outputted									
	Sequence mode	9 999 loops, Cyclic changes in voltage amplitude, frequency, and angle									
	Pulse mode	9 999 loops, Change the voltage frequency according to the set voltage and frequency step values									
	Step mode	Under the conventional mode, the output voltage and frequency can be adjusted online, and the waveform can be switched online									
	Online regulation function	The device has Sense terminals that allow remote sampling compensation									
	Line drop compensation	RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)									
	Communication interface	Remote control									
	Remote control	None									
	Temperature	0 ~ 40 °C									
Humidity	30 ~ 90%RH										
Protection	Efficiency *8	≥92%									
	Protection	Input abnormality, bus overvoltage, output overvoltage and undervoltage, output overcurrent, output overload, and module overheating									
Shape	Height	4U									
	Dimensions W×H×D(mm)	432×175×700	432×175×700	432×175×700	432×175×700	432×175×735	432×175×735	432×175×735	432×175×735		

The width of 432mm is the standard 19-inch chassis size without handles, with handles the width is 480mm.

Specifications

Model		ANRGS 050B-350(F)	ANRGS 060B-350(F)	ANRGS 075B-350(F)	ANRGS 090B-350(F)	ANRGS 100B-350(F)	ANRGS 120B-350(F)	
Power supply capacity		50kVA	60kVA	75kVA	90kVA	100kVA	120kVA	
AC input	Voltage	Line voltage: 342V-480V: 3-phase 3-wire+PE						
	Current (@342V)	110A Max	130A Max	165A Max	195A Max	220A Max	260A Max	
	Frequency	47-63Hz						
	Power factor *1	≥0.98						
AC output	Number of phase		Three-phase & single-phase					
	Power	Total power	50kVA	60kVA	75kVA	90kVA	100kVA	120kVA
		Power per phase	16.66kVA	20kVA	25kVA	30kVA	33.33kVA	40kVA
	Voltage	Range	0.00-350.00V					
		Resolution	0.01V					
		Accuracy	0.1%F.S.					
		Distortion *2	0.3%@50/60Hz: 1%③30-100Hz					
		Source effect *3	≤0.02%					
		Load effect *4	≤0.02%					
	Current	Effective value range (three-phase mode)	120A	120A	180A	180A	240A	240A
		Effective value range (single-phase mode)	360A	360A	540A	540A	720A	720A
		Peak value range (three-phase mode)	360A	360A	540A	540A	720A	720A
		Peak value range (single-phase mode)	1080A	1080A	1620A	1620A	2160A	2160A
	Frequency	Range	30.000-100.000Hz					
		Resolution	0.001Hz					
		Accuracy	0.01%					
DC output	Power	Total Power	50kW	60kW	75kW	90kW	100kW	120kW
		Power per channel	16.66kW	20kW	25kW	30kW	33.33kW	40kW
	Voltage	Range	-495.00-495.00V					
		Resolution	0.01V					
		Accuracy	0.1%F.S.					
	Current range	Single channel	120A	120A	180A	180A	240A	240A
Parallel connection		360A	360A	540A	540A	720A	720A	
Measurement accuracy	Voltage	Range	AC: 350V; DC: 495.00V					
		Resolution	0.01V					
		Accuracy *5	0.1%F.S.					
	Current	Effective value	360A	360A	540A	540A	720A	720A
		Peak value	1080A	1080A	1620A	1620A	2160A	2160A
		Resolution	0.01A					
		Effective value accuracy*6	0.2%F.S.					
	Power	Peak value accuracy*6	0.5%F.S.					
		Resolution	0.01W					
		Accuracy *7	0.3%F.S..					
Function	Display	5-inch color touch screen LCD						
	Waveform selection	Sine wave, triangle wave, square wave, clipped sine wave, 30 sets of built-in waveforms, and 6 sets of custom waveforms						
	Start-stop angle	0-359.9						
	Knob function	Knob adjustment available for conventional mode voltage and frequency settings						
	Parallel operation function	None						
	Harmonics	2-50 times						
	Harmonic and interharmonic simulation bandwidth	3000Hz						
	Sequence mode	200 steps with 9999 loops. Voltage, frequency, and phase angle can be programmatically outputted						
	Pulse mode	9999 loops. Cyclic changes in voltage amplitude, frequency, and angle						
	Step mode	9999 loops. Change the voltage frequency according to the set voltage and frequency step values						
	Online adjustment function	Under the conventional mode, the output voltage and frequency can be adjusted online, and the waveform can be switched online						
	Line drop compensation	The device has Sense terminals that allow remote sampling compensation						
Working environment	Communication interface	RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)						
	Remote control	None						
	Temperature/ humidity	0-40 C 30-90%RH						
	Efficiency *8	≥92%						
Protection		Input abnormality, bus overvoltage, output overvoltage and undervoltage, output overcurrent, output overload, and module overheating						
Shape	Dimensions(W×H×D mm)	600×1230 (the height with casters is 118)×1000						
	Weight (Kg)	≤330	≤330	≤380	≤380	≤440	≤440	

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

Bidirectional Grid Simulator
ANBGS(F) Series


Product Introduction

The ANBGS(F) series Regenerative AC Power Supply is specially developed for new energy industries such as photovoltaic and wind energy, suitable for inverter testing and verification. The power supply has the function of energy regenerative type grid and can operate in four quadrants, saving energy consumption with low operating costs; FPGA digital control technology is adopted for smart inverter test process; with sine wave output and multi harmonic superposition output, single-phase, two-phase or three-phase High/Low (zero) Voltage Ride-Through (H/LVRT), which can simulate various abnormal conditions of power grid, and cooperate to achieve test of over/under-voltage, over/under-frequency, unbalance and anti-islanding protection, meeting test requirements in relevant regulations.

Features

- FPGA digital control, intelligent inverter test process;
- With function of energy regenerative type grid, operating in four quadrants
- Input power factor correction.

- High-performance High/Low (zero) Voltage Ride-Through (H/LVRT), step, sag, flicker and other test functions, ride-through test within 1ms;
- Complex programming for voltage/frequency setting, easy over/under-voltage and over/under-frequency test;
- Three-phase unbalanced, adjustable three-phase voltage and phase difference separately, or direct setting of three-phase unbalance;
- 2-50th harmonic and inter-harmonic output;
- Test complying with NBT 32004-2018, IEC 61000-4-11/13/14/28 and other standard and regulations;
- Complete measurements: voltage, current, current peak, frequency, active power, apparent power, power factor, voltage crest factor;
- Online monitoring: monitor IGBT temperature, transformer temperature, fan speed, input voltage and other parameters in output state;
- Operating data recorders: keep the record of power supply status and alarm code automatically during alarming, save the maintenance time.
- Lock key, user-friendly design, automatically locking without operation for 5 minutes to prevent from operation mistakes.
- Combined cabinet for chassis, 8" large-screen color LCD; Standard RS485, Ethernet interface, synchronous signal interface, optional RS232/GPIB interface.