Bidirectional Programmable DC Power Supply
ANEVH(F) Series

Product Introduction

The ANEVH(F) Series is a programmable DC power supply that integrates DC power and feedback load. It can function as a source, outputting power to the outside world, and as a sink, absorbing power and returning it cleanly to the grid, achieving standard bidirectional operation.

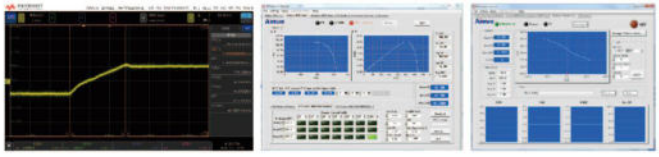
The ANEVH(F) Series of bidirectional programmable DC test power supplies include 7 voltage levels, covering a voltage range from 0V to 2250V, supporting the parallel operation of multiple units, and expandable up to 1MV in maximum power. The energy flows bidirectionally, with automatic seamless switching, high power density, fast dynamic response characteristics, built-in function generators and standard test curves, and the ability to generate multiple waveforms freely. It can be used in laboratories, automotive electronics, new energy battery-motor-electronic control, microgrids, high-power tests, and other testing scenarios.

Features

- Integrates source and load functions in a 3U standard chassis across the entire series.
- Integrates high-frequency PWM rectification and bidirectional DCDC technology, comprehensively eliminating the noise of conventional high-power bidirectional power supplies, rendering it a silent power supply.
- Higher power density, smaller size, and faster speed. Energy flows bidirectionally, with automatic seamless switching in both directions.
- Feedback efficiency up to 95%, with outstanding energy-saving and environmentally friendly advantages.
- Voltage range: covers 7 voltage levels from 0V to 2250V, the highest in the industry, with unique high-voltage series connection technology.
- Has a built-in function generator that supports arbitrary waveform generation.
- Has built-in DIN40839, ISO-16750-2, and ISO21848 standard automotive power grid voltage curves.
- Has the electronic load function, with multiple load modes such as CV, CC, CP, CR, CV+CC, CV+CR, CC+CR, and CV+CC+CP+CR.
- Has the ability to simulate the output characteristics (Fill Factor) of various solar batteries.
- It can test maximum power point tracking (MPPT) capability and efficiency.
- It has the ability of accurate voltage and current measurement.
- Sequence output can be set to test the operating voltage range of photovoltaic inverters.
- It has comprehensive protection functions, including OTP, OVP, OCP, and OPP.
- It has the S-terminal compensation function.
- It has the solar battery I-V curve simulation function.
- It has a standard RS232/RS485/CAN/LAN/USB communication interface.
- It is equipped with the standard graphical upper computer operational software, and can be operated as a single unit.
- It has the battery simulation function, simulating the output characteristic curves of various batteries.
- It can simulate I-V curves under different temperature and illumination conditions.

Application

- Microgrid and micro-inverter tests.
- Automotive motor, controller and power battery tests. Fuel battery test and fuel battery DCDC test.
- Uninterruptible power supply (UPS), on-board charger (OBC), charging station, and bidirectional DC-DC tests. Industrial tests such as electrolysis, electroplating, and welding.
- Communication power supply and LED product tests. Tests of automotive electronics, military electronics, and aviation electronics.
- High-power test and DC feedback load demand scenarios.



The switch time from maximum reverse current to maximum forward current is as low as 1.4ms.

Specifications

Model		ANEVH100-170(F)	ANEVH100-340(F)	ANEVH100-510(F)	ANEVH300-75(F)	ANEVH300-150(F)	ANEVH300-225(F)
Input	Phase number	Three-phase three-wire+PE					
	Voltage	342V-528VAC					
	Frequency	45-66Hz					
	Power factor	≥0.99					
Output	Voltage	0-100VDC	0-100VDC	0-100VDC	0-300VDC	0-300VDC	0-300VDC
	Current	-170A-170A	-340A-340A	-510A-510A	-75A-75A	-150A-150A	-225A-225A
	Power	-5KW-5KW	-10KW-10KW	-15KW-15KW	-5kW-5kW	-10kW-10kW	-15kW-15kW
Display mode		4.3-inch color LCD					
Voltage resolution		0.01V (>1000V, 0.1V)					
Current resolution		0.01A (>1000A, 0.1A)					
Power resolution		0.001kW (>100kW, 0.01kW)					
Setting error (programming accuracy)	Voltage	≤0.05%F.S.					
	Current	≤0.1%F.S.					
	Power	≤1%FS					
Measurement error (readback accuracy)	Voltage	≤0.05%F.S.					
	Current	≤0.1%F.S.					
	Power	≤1%FS					
Ripple and noise 20Hz-20MHz	Vrms	40mVrms			100mVrms		
	Vpp	250mVpp			650mVpp		
Load effect	Voltage	≤0.01%Umax					
	Current	≤0.05%Imax					
Power effect	Voltage	≤0.01%Umax					
	Current	≤0.01%Imax					
Voltage rise time		≤30ms (10%-90%)					
Transient response time		≤2ms					
Forward and reverse switching time		2ms (+90%-90%)					
Temperature drift	Voltage	0.05% set value					
	Current	0.05% set value					
Noise		≤65dB(A) (Measuring distance≥2m)					
OVP range		110%F.S					
Maximum lead drop compensation		≤5% Umax (6.5V)					
Communication function		Standard: CAN/232/485/LAN/USB, optional: GPIB					
Protection functions		Input undervoltage protection, short-circuit protection, output overvoltage, current-limiting protection and internal overheating protection.					
Analog interface (optional)		Startup, stop, alarm, 0-5V or 0-10V analog control output					
Other external interfaces		Standard equipped parallel port					
Efficiency		~90%					
Feedback parameters	Frequency	45-66Hz					
	Power factor	≥0.99					
	Switching time	≤2ms					
	Feedback function	Full power range feedback					
	Feedback efficiency	~90%					
Working temperature		0-50℃					
Storage temperature		-20-70℃					
Humidity		＜80%, no condensation					
Dimension	Housing dimension	444×133×753mm					
	Overall dimension	482×133×787mm					
Weight		5kw: ≤21kg 10kw: ≤29kg 15kw ≤37kg					
Remarks		1. The test condition of programming accuracy/readback accuracy is (25℃±5℃). 2. The time required for the output voltage to recover to within "rated value±0.75%" when the load changes from 100% to 50% or vice versa.					

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

Specifications

Model		ANEVH500-40(F)	ANEVH500-80(F)	ANEVH500-120(F)	ANEVH750-25(F)	ANEVH750-50(F)	ANEVH750-75(F)
Input	Phase number	Three-phase three-wire+PE					
	Voltage	342V-528VAC					
	Frequency	45-66Hz					
	Power factor	≥0.99					
Output	Voltage	0-500VDC	0-500VDC	0-500VDC	0-750VDC	0-750VDC	0-750VDC
	Current	-40A-40A	-80A-80A	-120A-120A	-25A-25A	-50A-50A	-75A-75A
	Power	-5kW-5kW	-10kW-10kW	-15kW-15kW	-5kW-5kW	-10kW-10kW	-15kW-15kW
Display mode		4.3-inch color LCD					
Voltage resolution		0.01V (>1000V, 0.1V)					
Current resolution		0.01A (>1000A, 0.1A)					
Power resolution		0.001kW (>100kW, 0.01kW)					
Setting error (programming accuracy)	Voltage	≤0.05%F.S.					
	Current	≤0.1%F.S.					
	Power	≤1%FS					
Measurement error (readback accuracy)	Voltage	≤0.05%F.S.					
	Current	≤0.1%F.S.					
	Power	≤1%FS					
Ripple and noise 20Hz-20MHz	Vrms	70mVrms			90mVrms		
	Vpp	500mVpp			800mVpp		
Load effect	Voltage	≤0.01%Umax					
	Current	≤0.05%Imax					
Power effect	Voltage	≤0.01%Umax					
	Current	≤0.01%Imax					
Voltage rise time		≤30ms (10%-90%)					
Transient response time		≤2ms					
Forward and reverse switching time		2ms (+90%-90%)					
Temperature drift	Voltage	0.05% set value					
	Current	0.05% set value					
Noise		≤65dB(A) (Measuring distance≥2m)					
OVP range		110%F.S					
Maximum lead drop compensation		≤5% Umax (6.5V)					
Communication function		Standard: CAN/232/485/LAN/USB, optional: GPIB					
Protection functions		Input undervoltage protection, short-circuit protection, output overvoltage, current-limiting protection and internal overheating protection.					
Analog interface (optional)		Startup, stop, alarm, 0-5V or 0-10V analog control output					
Other external interfaces		Standard equipped parallel port					
Efficiency		~90%					
Feedback parameters	Frequency	45-66Hz					
	Power factor	≥0.99					
	Switching time	≤2ms					
	Feedback function	Full power range feedback					
	Feedback efficiency	~90%					
Working temperature		0-50℃					
Storage temperature		-20-70℃					
Humidity		<80%, no condensation					
Dimension	Housing dimension	444×133×753mm					
	Overall dimension	482×133×787mm					
Weight		5kw: ≤21kg 10kw: ≤29kg 15kw ≤37kg					
Remarks		1. The test condition of programming accuracy/readback accuracy is (25℃±5℃). 2. The time required for the output voltage to recover to within "rated value±0.75%" when the load changes from 100% to 50% or vice versa.					

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Specifications

Model		ANEVH1000-40(F)	ANEVH1000-75(F)	ANEVH1500-40(F)	ANEVH2250-25(F)
Input	Phase number	Three-phase three-wire+PE			
	Voltage	342V-528VAC			
	Frequency	45-66Hz			
	Power factor	≥0.99			
Output	Voltage	0-1,000VDC	0-1,000VDC	0-1,500VDC	0-2,250VDC
	Current	-40A-40A	-75A-75A	-40A-40A	-25A-25A
	Power	-10KW-10KW	-15KW-15KW	-15KW-15KW	-15KW-15KW
Display mode		4.3-inch color LCD			
Voltage resolution		0.01V (>1000V, 0.1V)			
Current resolution		0.01A (>1000A, 0.1A)			
Power resolution		0.001kW (>100kW, 0.01kW)			
Setting error (programming accuracy)	Voltage	≤0.05%F.S.			
	Current	≤0.1%F.S.			
	Power	≤1%FS			
Measurement error (readback accuracy)	Voltage	≤0.05%F.S.			
	Current	≤0.1%F.S.			
	Power	≤1%FS			
Ripple and noise 20Hz-20MHz	Vrms	300mVrms	100mVrms	200mVrms	
	Vpp	1600mVpp	1000mVpp	2000mVpp	
Load effect	Voltage	≤0.01%Umax			
	Current	≤0.05%Imax			
Power effect	Voltage	≤0.01%Umax			
	Current	≤0.01%Imax			
Voltage rise time		≤30ms (10%-90%)			
Transient response time		≤2ms			
Forward and reverse switching time		2ms (+90%-90%)			
Temperature drift	Voltage	0.05% set value			
	Current	0.05% set value			
Noise		≤65dB(A) (Measuring distance≥2m)			
OVP range		110%F.S			
Maximum lead drop compensation		≤5% Umax (6.5V)			
Communication function		Standard: CAN/232/485/LAN/USB, optional: GPIB			
Protection functions		Input undervoltage protection, short-circuit protection, output overvoltage, current-limiting protection and internal overheating protection.			
Analog interface (optional)		Startup, stop, alarm, 0-5V or 0-10V analog control output			
Other external interfaces		Standard equipped parallel port			
Efficiency		~90%			
Feedback parameters	Frequency	45-66Hz			
	Power factor	≥0.99			
	Switching time	≤2ms			
	Feedback function	Full power range feedback			
	Feedback efficiency	~90%			
Working temperature		0-50℃			
Storage temperature		-20-70℃			
Humidity		＜80%, no condensation			
Dimension	Housing dimension	444×133×753mm			
	Overall dimension	482×133×787mm			
Weight		5kw: ≤21kg 10kw: ≤29kg 15kw ≤37kg			
Remarks		1. The test condition of programming accuracy/readback accuracy is (25℃±5℃). 2. The time required for the output voltage to recover to within "rated value±0.75%" when the load changes from 100% to 50% or vice versa.			

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Specifications

Model		ANEVH300-225(F)	ANEVH500-160(F)	ANEVH750-120(F)	ANEVH1000-80(F)	ANEVH1500-70(F)	ANEVH2250-50(F)
Input	Phase number	Three-phase three-wire+PE					
	Voltage	342V-528VAC					
	Frequency	45-66Hz					
	Power factor	≥0.99					
Output	Voltage	0-300VDC	0-500VDC	0-750VDC	0-1,000VDC	0-1,500VDC	0-2,250VDC
	Current	-225A-225A	-160A-160A	-120A-120A	-80A-80A	-70A-70A	-50A-50A
	Power	-21KW-21KW	-21KW-21KW	-21KW-21KW	-21KW-21KW	-21KW-21KW	-21KW-21KW
Display mode		4.3-inch color LCD					
Voltage resolution		0.01V (>1000V, 0.1V)					
Current resolution		0.01A (>1000A, 0.1A)					
Power resolution		0.001kW (>100kW, 0.01kW)					
Setting error (programming accuracy)	Voltage	≤0.05%F.S.					
	Current	≤0.1%F.S.					
	Power	≤1%FS					
Measurement error (readback accuracy)	Voltage	≤0.05%F.S.					
	Current	≤0.1%F.S.					
	Power	≤1%FS					
Ripple and noise 20Hz-20MHz	Vrms	100mVrms	80mVrms	80mVrms	220mVrms	220mVrms	400mVrms
	Vpp	650mVpp	750mVpp	800mVpp	1800mVpp	1800mVpp	2400mVpp
Load effect	Voltage	≤0.01%Umax					
	Current	≤0.05%Imax					
Power effect	Voltage	≤0.01%Umax					
	Current	≤0.01%Imax					
Voltage rise time		≤30ms (10%-90%)					
Transient response time		≤2ms					
Forward and reverse switching time		2ms (+90%-90%)					
Temperature drift	Voltage	0.05% set value					
	Current	0.05% set value					
Noise		≤65dB(A) (Measuring distance≥2m)					
OVP range		110%F.S					
Maximum lead drop compensation		≤5% Umax (6.5V)					
Communication function		Standard: CAN/232/485/LAN/USB, optional: GPIB					
Protection functions		Input undervoltage protection, short-circuit protection, output overvoltage, current-limiting protection and internal overheating protection.					
Analog interface (optional)		Startup, stop, alarm, 0-5V or 0-10V analog control output					
Other external interfaces		Standard equipped parallel port					
Efficiency		~90%					
Feedback parameters	Frequency	45-66Hz					
	Power factor	≥0.99					
	Switching time	≤2ms					
	Feedback function	Full power range feedback					
	Feedback efficiency	~90%					
Working temperature		0-50℃					
Storage temperature		-20-70℃					
Humidity		＜80%, no condensation					
Dimension	Housing dimension	444×133×753mm					
	Overall dimension	482×133×787mm					
Weight		21kw≤39kg					
Remarks		1. The test condition of programming accuracy/readback accuracy is (25℃±5℃). 2. The time required for the output voltage to recover to within "rated value±0.75%" when the load changes from 100% to 50% or vice versa.					

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

Specifications

Model		ANEVH500-240(F)	ANEVH750-180(F)	ANEVH1500-80(F)	ANEVH2250-60(F)	ANEVH80-1020(F)
Input	Phase number	Three-phase three-wire+PE				
	Voltage	342V-528VAC				
	Frequency	45-66Hz				
	Power factor	≥0.99				
Output	Voltage	0-500VDC	0-750VDC	0-1,500VDC	0-2,250VDC	0-80VDC
	Current	-240A-240A	-180A-180A	-80A-80A	-60A-60A	-1,020A-1,020A
	Power	-30KW-30KW	-30KW-30KW	-30KW-30KW	-30KW-30KW	-30KW-30KW
Display mode		4.3-inch color LCD				
Voltage resolution		0.01V (>1000V, 0.1V)				
Current resolution		0.01A (>1000A, 0.1A)				
Power resolution		0.001kW (>100kW, 0.01kW)				
Setting error (programming accuracy)	Voltage	≤0.05%F.S.				
	Current	≤0.1%F.S.				
	Power	≤1%FS				
Measurement error (readback accuracy)	Voltage	≤0.05%F.S.				
	Current	≤0.1%F.S.				
	Power	≤1%FS				
Ripple and noise 20Hz-20MHz	Vrms	80mVrms	80mVrms	220mVrms	400mVrms	25mVrms
	Vpp	750mVpp	800mVpp	750mVpp	2400mVpp	400mVpp
Load effect	Voltage	≤0.01%Umax				≤0.02%Umax
	Current	≤0.05%Imax				≤0.05%Imax
Power effect	Voltage	≤0.01%Umax				≤0.02%Umax
	Current	≤0.01%Imax				≤0.05%Imax
Voltage rise time		≤30ms (10%-90%)				
Transient response time		≤2ms				
Forward and reverse switching time		2ms (+90%-90%)				
Temperature drift	Voltage	0.05% set value				
	Current	0.05% set value				
Noise		≤65dB(A) (Measuring distance≥2m)				
OVP range		110%F.S				
Maximum lead drop compensation		≤5% Umax (6.5V)				
Communication function		Standard: CAN/232/485/LAN/USB, optional: GPIB				
Protection functions		Input undervoltage protection, short-circuit protection, output overvoltage, current-limiting protection and internal overheating protection.				
Analog interface (optional)		Startup, stop, alarm, 0-5V or 0-10V analog control output				
Other external interfaces		Standard equipped parallel port				
Efficiency		~90%				~94%
Feedback parameters	Frequency	45-66Hz				
	Power factor	≥0.99				
	Switching time	≤2ms				
	Feedback function	Full power range feedback				
	Feedback efficiency	~90%				~94%
Working temperature		0-40℃				
Storage temperature		-20-70℃				
Humidity		＜80%, no condensation				
Dimension	Housing dimension	444×133×753mm				444×177×696.5mm
	Overall dimension	482×133×787mm				444×177×765mm
Weight		30kw:≤40kg				30kw:≤50kg
Remarks		1.The test condition of programming accuracy/readback accuracy is (25℃±5℃). 2. The time required for the output voltage to recover to within "rated value±0.75%" when the load changes from 100% to 50% or vice versa.				

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