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PRODUCT CATALOG 2025

Ainuo

Ainuo Instrument Co., Ltd.

Ainuo

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Jinan Company

Qingdao Company

COMPANY INTRODUCTION

20000+m²
Qingdao Industrial Park

12000+m²
Jinan Industrial Park

620+
Total employees

190+
R&D

1993
Since

Founded in 1993 in the Qilu region, Ainuo Instruments Co., Ltd. operates self-built industrial parks in Jinan and Qingdao. For 30 years, the company has focused on the research, development, and production of electrical measuring instruments, test power supplies, and specialized power systems.Ainuo has focused on scientific research and technological innovation for many years and has won many honors such as National High-tech Enterprise, Shandong "Specialized and Innovative" Small and Medium-sized Enterprise, Qingdao New Economic Potential Enterprise, Qingdao New Economic Emerging Enterprise, Qingdao Young Eagle Enterprise, and Qingdao "One Enterprise, One Technology" R&D Center. Ainuo also actively supports industry development, serving as a governing member of the China Power Supply Society and the Shandong Aerospace Society.

Ainuo's core products include ***electrical safety testers, AC/DC power supplies, ground PSU for aircraft, motor test systems, power analyzers, and AC/DC electronic loads.*** These are widely used in sectors such as new energy, electric vehicles, household appliances, motor manufacturing, and switch-mode power supplies, as well as in aerospace, naval, railway systems, defense, and power utilities. They also serve quality inspection agencies and research institutes. All Ainuo products possess complete independent intellectual property rights, with over 300 proprietary intellectual property items, including more than 90 invention patents, and the company has led or participated in the formulation of multiple national standards, industry standards, and metrology procedures and specifications.

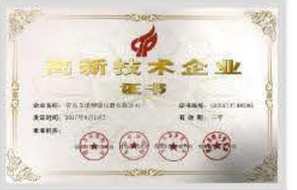
Ainuo Instruments adheres to a customer-centric approach, with core values of integrity, inclusiveness, continuous improvement, and excellence. The company's mission is to provide customers with precise, efficient, and world-class test&measurement technical solutions. It is committed to continuous business improvement, enhancing customer value with quality and innovation, and achieving outstanding performance. Ainuo aspires to follow the path of innovation, build a century-old enterprise, and become a global leader in test&measurement technical solutions.

Ainuo

Company Qualification

Shandong Gazelle Enterprise

Science and Technology Progress Award



High-tech Enterprise Certificate

CE Certificate

Quality Management System Certification -- Shandong Ainuo

Quality Management System Certificate -- Qingdao Ainuo

China Electrical Safety Product Standards That Ainuo Participated In Drafting

No	Electrical Safety Product Standards	Stard No.
1	China eletrical industrial standard - «General specification of leakage current tester»	SJ/T 11383-2008
2	China eletrical industrial standard - «General specification of withstanding voltage tester»	SJ/T 11384-2008
3	China eletrical industrial standard - «General Standard of Insulation Resistance tester»	SJ/T 11385-2008
4	China eletrical industrial standard - «General specification of earth coninuity tester»	SJ/T 11386-2008
5	China national standard - «Earth Continuity tester»	GB/T 28030-2011
6	China national standard - «General specification for DC electronic load»	GB/T 29843-2013
7	China national standard - «Leakage Current tester»	GB/T 32191-2015
8	China national standard - «Withstanding Voltage tester»	GB/T 32192-2015
9	China eletrical industrial standard - «General specification for variable frequency and voltage power supplies»	SJ/T 10691-2022
10	China eletrical industrial standard - «General specification for digital power analyzer»	SJ/T 11821-2022

Ainuo Product Catalogue

Safety Analyzer

AC Power Supply

DC Power Supply

Power Analyzer

Motor Test Scheme

Electronic Load

Efficient Electrical Safety Comprehensive Tester AN9640H(F)/AN9651H(F)/ AN9651H-C(F)

Intelligent Safety Analyzer AN1640H(F)/AN1651H(F)/ AN1651TH(F) Series

Electrical Safety Comprehensive Tester AN9640B(F)/AN9651F(F)

Intelligent Safety Analyzer AN1651H-M(F)/AN1640H-M(F)/ AN1620H-M(F) Series

Comprehensive Electrical Safety Analyzer AN9636HC(F)/AN9637HC(F) /AN9637HC8(F)

Intelligent Safety Analyzer AN1636H(F)/AN1638H(F)/ AN1639H(F) Series

Intelligent Safety Analyzer AN1635H-10kV(F)/AN16310H(F) AN16320A(F)

Intelligent Safety Analyzer AN1633A(F)/AN1633B(F) Series

Comprehensive Electrical Safety Analyzer AN96XXB(F) Series

New Energy Vehicle Safety Analyzer AN166X(F) Series

ACW, IR and GB Analyzer AN96XXB(F) Series

Grounding Resistance Analyzer AN161XH(F) Series

Contact Current analyzer AN1620H(F) Series

Pulse Lithium Battery Cell Short Circuit Tester ANBTS7201(F) Series

Large Capacity Pulse Lithium Battery Cell Short Circuit Tester ANBTS7202(F) Series

Insulation Resistance Tester ANBTS7101(F) Series

High-accuracy Battery Tester ANBTS7501H(F)

7½-digit DC Voltmeter ANBTS7610(F) Series

Battery Tester ANBTS7500(F) Series

Battery Tester ANBTS7520(F) Series

Lithium Battery-Intelligent Safety Regulation Comprehensive Analyzer ANBTS743xH(F)

Lithium Battery Intelligent Safety Regulation Analyzer ANBTS7436H-12kV(F)

Electrical Safety Comprehensive Calibrator AN965-15(F)

Withstand Voltage Calibrator AN16015H(F)

Safety Tester Remote Control Software ESRS

Efficient Electrical Safety Comprehensive Tester
AN9640H(F)/AN9651H(F)/AN9651H-C(F)

Product Overview

Ainuo Instrument Co., Ltd has been dedicated to the research and development of electrical safety analyzers for over 30 years, and has participated in drafting 16 national standards and industry calibration regulations for safety analyzers. The AN9640H(F) series Efficient Electrical Safety Comprehensive Tester features complete functions, high reliability, and high cost-effectiveness, meeting the comprehensive safety performance testing needs for various production lines such as household appliances.

Features

- **Seven-in-one:** ACW/DCW/IR/GB/LC/PW/ST
- **High precision:** 1% accuracy for safety tester, 0.2% accuracy for power
- **High speed:** GB and ACW/DCW/IR in parallel, fast switching, fast test
- **Automation:** RS232/LAN/USB/BARCODE/PLC/ALARM/REMOTE interface
- **Informatization:** Optional industrial PC and ESRS software for data storage and MES integration

Applications

- Safety of household and similar electrical appliances (GB4706.1/IEC60335-1)
- Audio and video, information technology, and communication technology equipment (GB4943.1/ IEC62368-1)
- Safety requirements for electrical equipment for measurement, control, and laboratory use (GB4793.1/IEC61010-1)
- Luminaires (GB/T7000.1/IEC60598-1)
- Electric vehicle conductive charging system (GB/T18487.1)

Specifications

Model	AN9640H(F)	AN9651H(F)	AN9651H-C(F)
AC withstand voltage (ACW)	5kVac/100mA (500VA output capacity, 200mA short-circuit current) (optional dynamic ACW)		
DC withstand voltage (DCW)	6kVdc/20mA		
Insulation resistance (IR)	3kVdc/50GΩ		
Ground resistance (GB)	40Aac/600mΩ		
Leakage current (LC)	20mA leakage current, MD-A network (IEC60990 Fig. 4, up to 8 networks), RMS measurement;		
Power test (PW)	300V/20A/6kW (optional 10kW)		
Starting test (ST)	300V/25A		
DUT power supply	External isolated power supply is required (optional built-in 500VA power supply)	Standard 6kVA variable frequency power supply cabinet	
Parallel test	Parallel GB, IR/ACW/DCW test		
Display operation	LCD display, numeric keypad		PC/ESRS measurement and control system
Control interface	RS232/LAN (optional)/USB (store)/BARCODE/PLC/ALARM/REMOTE interface		
Standard accessories	Test box (3m), test clamp (3m), foot switch (2.5m), alarm lamp (0.8m), auxiliary power cable (1.9m)		
Optional accessories	Tester calibrator, barcode scanner, label printer		
Dimensions (W×H×D mm)	426×177×550	483×1350×600	

Over 30 years of industry experience, meeting the test needs of more segmented industries and complete all tests with just one-click and one wiring.

- Multiple start modes: button on front panel/remote control/barcode scanner/grounding clamp;

Air conditioner/refrigerator/washing machine
AC/DC withstand voltage/insulation/grounding
LC/PW/ST
Continuous test and impact test

Electric fan/rice cooker/energy-saving lamp
AC/DC withstand voltage/insulation/grounding
Multi level power automatic judgment
0.10W low-power measurement

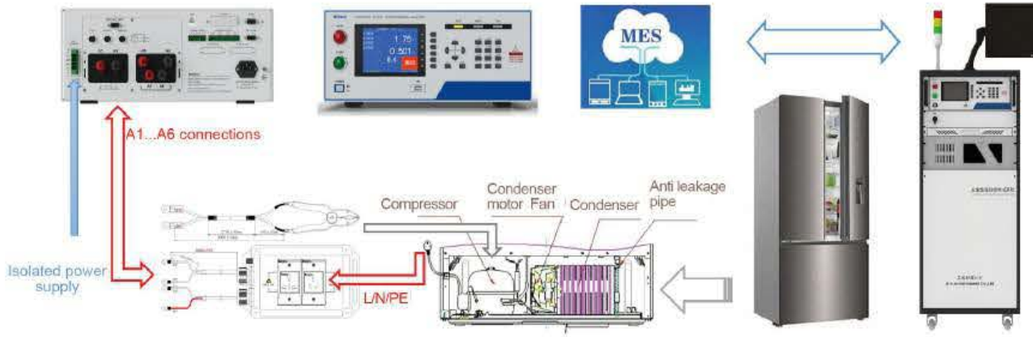
Parallel GB, IR/ACW/DCW test.

- AN9640H(F) Series Efficient Electrical Safety Comprehensive Tester.
- With parallel GB, IR/ACW/DCW test.
- Significantly reducing the testing time, double the production capacity of the production line.

Routine test 4s	GB 2s		IR 1s	ACW 1s
Parallel test 2s	GB 2s			
	IR 1s	ACW 1s		

Build information test platform with industrial PC and ESRS measurement and control software.

- This AN9651H-C(F) Series Efficient Electrical Safety Comprehensive Tester is designed with automation and information test functions:
- (1) Barcode scanning/barcode recognition/calling programs/starting test;
- (2) Local store/filter/export;
- (3) Optional MES connection, active data upload, query upload, and breakpoint continuation; downloading test programs from the server; multiple database connection, including SQL Server,Oracle, MySQL and other database intermediate table connection, Modbus TCP connection, Web API connection, as well as local TXT text and Access database connection.



Exceeding & Trustworthy Safety Analyzer Ainuo

Intelligent Safety Analyzer
AN1640H(F)/AN1651H(F)/AN1651TH(F) Series



Product overview

Ainuo Instrument Co., Ltd has been dedicated to the research and development of electrical safety analyzers for over 30 years, and has participated in drafting 16 national standards and industry calibration regulations for safety analyzers. The AN1640H(F) Series Intelligent Safety Analyzer features complete functions, high precision, high speed, automation, informatization, and intelligent, meeting the comprehensive testing needs of fast cycle, multi variety, and informatization safety performance of single-phase and three-phase household appliances, charging piles, and similar electrical product production lines.

Features

Eight-in-one
- ACW/DCW/IR/GB/LC/PW/ST/Loop

High precision
- 1% accuracy for safety tester, 0.2% accuracy for power

High speed
- GB and ACW/DCW/IR in parallel, LC and PW in parallel

Automation
- RS232/LAN/USB/BARCODE/PLC/ALARM/REMOTE/HDMI interface

Intelligent
- Android platform, 10" touchscreen, scene recognition, intelligent matching, automatic test

Applications

- Safety of household and similar electrical appliances (GB4706.1/IEC60335-1)
- Audio and video, information technology, and communication technology equipment (GB4943.1/ IEC62368-1)
- Safety requirements for electrical equipment for measurement, control, and laboratory use (GB4793.1/IEC61010-1)
- Luminaires (GB/T7000.1/IEC60598-1)
- Electric vehicle conductive charging system (GB/T18487.1)

Specifications

Model	AN1640H(F)	AN1651H(F)	AN1651TH(F)
AC withstand voltage (ACW)	5kVac/100mA (500VA output capacity, 200mA short-circuit current) (optional dynamic ACW)		
DC withstand voltage (DCW)	6kVdc/20mA		
Insulation resistance (IR)	3kVdc/50GΩ		
Ground resistance (GB)	40Aac/600mΩ (optional 64A)		
Leakage current (LC)	20mA leakage current, MD-A/F network (IEC60990 Fig. 4, Fig. 5, up to 8 networks); RMS and peak measurement;		20mA leakage current, MD-A network (IEC60990 Fig. 4, up to 8 networks); RMS and peak measurement;
Power test (PW)	Single-phase 300V/20A/6kW (Optional multiple power levels, low power, and 10kW)		Single-phase 300V/30A/6kW Three-phase 300V/30A/20kW (Optional 60kW, 90kW)
Startup test (ST)	300V/25A		300V/30A
Loop test (LN)	(Optional: Dual mode of low voltage DC and low voltage AC, 1~999Ω)		
DUT power supply	External isolated power supplyis required(Optional built-in 500VA power supply)	Standard 6kVA variable frequency power supply cabinet	Built-in 20kVA isolation transformer, optionalexternal variable frequency power supply;(Optional 60KW or 90kW, standard external isolation transformer chassis)
Parallel test	GB and ACW/DCW/IR in parallel, LC and PW in parallel		GB and ACW/DCW/IR in parallel
HMI	Android platform, 10" touchscreen, RS232/LAN/USB/BARCODE/PLC/ALARM/REMOTE/HDMI (optional) interface		
Standard accessories	Test box (3m), test clamp (3m), foot switch (2.5m), alarm lamp (0.8m), auxiliary power cable (1.9m)		
Optional accessories	Spot check device, barcode scanner, label printer, industrial PC, ESRS software; external HDMI monitor, wireless keyboard/mouse		
Dimensions (W×H×D mm)	426×177×550	520×1365×630	520×1365×630

- Over 30 years of industry experience, meeting the test needs of more segmented industries and complete test of all items with just one-click and one wiring.
- Multiple MDs: up to 8 MD options, covering various industry test standard requirements;
- Multiple start modes: button on front panel/remote control/barcode scanner/grounding clamp;


Air conditioner/refrigerator/washing machine
AC/DC withstand voltage/insulation/grounding
LC/PW/ST
Continuous test and impact test



Electric fan/rice cooker/energy-saving lamp
AC/DC withstand voltage/insulation/grounding
Multi level power automatic judgment
0.10W low-power measurement


GB and IR/ACW/DCW/ in parallel, LC and PW in parallel.

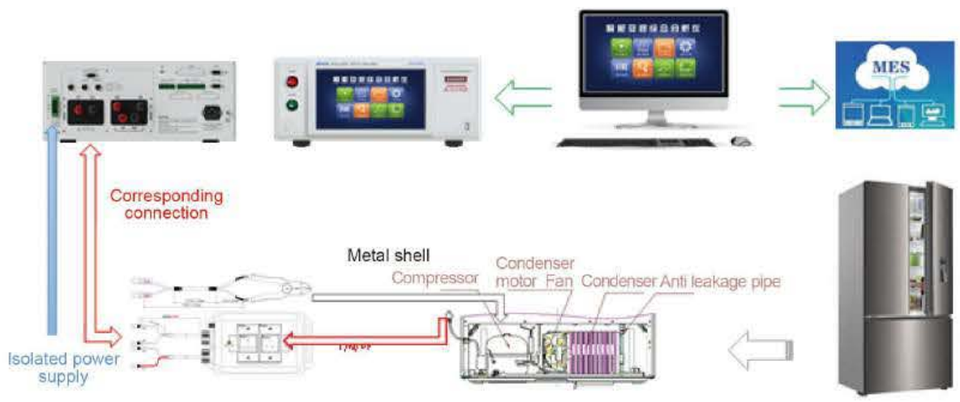
AN1640H(F) series Intelligent Safety Analyzer, with parallel GB, IR, ACW/DCW test, as well as parallel test of dynamic LC and PW parameters,significantly reducing the testing time, double the production capacity of the production line.

Routine test 4s	GB 2s		IR 1s	ACW 1s
Parallel test 2s	GB 2s			
	IR 1s	ACW 1s		

Routine test 8s	LC 4s	PW 4s
Parallel test 4s	LC 4s	
	PW 4s	

The AN1640H(F) Series Intelligent Safety Analyzer can build information test platform and no PC is required:

①Support barcode scanning/barcode recognition/calling programs/startup test;
②Local store, data filter, report generation, data export, and other functions;
③Real-time data upload/download through LAN interface and Manufacturing Information System (MES);
④Support HDMI LCD display and wireless keyboard/mouse, clear display, convenient.



Electrical Safety Comprehensive Tester
AN9640B(F)/AN9651F(F)

Product overview

Ainuo Instrument Co., Ltd has been dedicated to the research and development of electrical safety analyzers for over 30 years, and has participated in drafting 16 national standards and industry calibration regulations for safety analyzers. The AN9640B(F) Series Electrical Safety Comprehensive Tester features complete functions, high reliability, and high cost-effectiveness, meeting the comprehensive safety performance testing needs for various production lines such as household appliances.

Features

- **Six-in-one:** ACW/IR/GB/LC/PW/ST
- **Compliance:** 500VA ACW/DCW capacity, 32A GB/LC test
- **Convenience:** one-click to start and complete all tests after one time wiring
- **Rich interfaces:** RS232/ALARM/REMOTE/PLC etc
- **Informatization:** industrial PC and ESRS software

Applications

- Safety of household and similar electrical appliances (GB4706.1/IEC60335-1)
- Audio and video, information technology, and communication technology equipment (GB4943.1/ IEC62368-1)
- Safety requirements for electrical equipment for measurement, control, and laboratory use (GB4793.1/IEC61010-1)
- Luminaires (GB/T7000.1/IEC60598-1)
- Electric vehicle conductive charging system (GB/T18487.1)

Specifications

Model	AN9640B(F)	AN9651F(F)
AC withstand voltage (ACW)	5kVac/100mA	
Insulation Resistance (IR)	1kVdc/2000MΩ	
Ground resistance (GB)	32Aac/600mΩ	
Leakage current (LC)	300V/20A, MD-A (IEC60990 Fig. 4), RMS measurement	
Power test (PW)	300V/20A/6kW	
Starting test (ST)	300V/25A	
Operation interface	5.5" LCD display, RS232\PLC interface	
Load power supply	External isolated power supply is required	Built-in 6kW variable frequency power supply
Dimensions (W×H×D mm)	426×178×600	483×1355×600

Intelligent Safety Analyzer
AN1651H-M(F)/AN1640H-M(F)/AN1620H-M(F) Series

Product overview

Ainuo Instrument Co., Ltd has been dedicated to the research and development of electrical safety analyzers for over 30 years, and has participated in drafting 16 national standards and industry calibration regulations for safety analyzers. The AN1640H-M series Intelligent Safety Analyzer features complete functions, legal compliance, easy operation, and informatization, suitable for test of medical electrical equipment safety standards.

Features

- **Six-in-one:** ACW/IR/GB/LC/PW/ST
- **Legal:** Meet the safety test requirements of GB9706/IEC60601 Medical electrical equipment
- **Convenience:** automatic programming, multi network and multi-channel switching, automatic test of one-time wiring
- **Informatization:** PC/SRS software, local data management, MES database connection

Applications

- Medical electrical equipment (GB9706.1-2020/IEC60601-1:2012)
- Safety requirements for electrical equipment for measurement, control, and laboratory use (GB4793.1/IEC61010-1)

Specifications

Model	AN1651H-M(F)	AN1640H-M(F)	AN1620H-M(F)
AC withstand voltage (ACW)	5kVac/100mA (500VA output capacity, 200mA short-circuit current) (optional dynamic ACW/DCW)		None
DC withstand voltage (DCW)	6kVdc/20mA		None
Insulation Resistance (IR)	3kVdc/50GΩ		None
Ground resistance (GB)	40Aac/600mΩ (Optional 64A)		None
Leakage current (LC)	20mA Leakage current, MD-C/unweighted C/E network (up to 8 networks); AC/DC RMS and peak measurement;		
Multi-channel switching	(Optional switching unit: 8 for ACW/DCW, 8 for LC, 1 for GB)	(Optional external switching unit: 8 for ACW/DCW, 8 for LC, 1 for GB)	
DUT power supply Auxiliary voltage	Standard 6kVA variable frequency power supply and auxiliary power supply	External isolation power supply is required (optional built-in 500VA variablefrequency power supply)	
HMI	Android platform, 10" touchscreen, RS232/LAN/USB/BARCODE/PLC/ALARM/REMOTE/HDMI (optional) interface		
Standard accessories	Test box (3m), test clamp (3m), foot switch (2.5m), alarm lamp (0.8m), auxiliary power cable (1.9m)		
Optional accessories	(PC, ESRS software, spot check device, barcode scanner, label printer, HDMI monitor, wireless keyboard/mouse)		
Dimensions (W×H×D mm)	520×1365×630	426×177×550	

Specially designed for standard test of safety of medical electrical equipment, simple, one-click completion of all tests after one-time wiring.

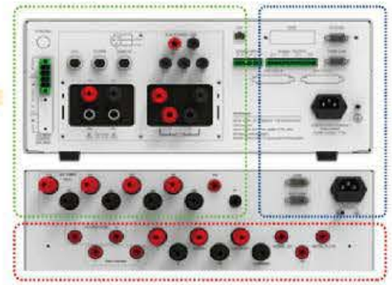
- Multiple MDs: Standard medical electrical equipment (GB9706.1-2020/IEC60601-1:2012) MD network, up to 8 leakage MDs options, meeting various industry test standard requirements;
- Multi-channel switching: Standard 8-channel ACW/DCW/IR switching. Set HV/Off for the network power supply and patient connection. Set On/Off for PE, case, patient connection, signal I/O, display screen, keyboard, etc. Standard 1-channel GB test.
- Leakage contact current: meets the requirements for test of ground leakage current (Fig. 13), contact current (Fig. 14), patient leakage current (Fig. 15, 16, 17, 18), and patient auxiliary current (Fig. 19).
- Two shortcuts: The setting for LC test is complex. This analyzer provides manual/auto settings modes, with unique and quick operation to simplify the complexity and reduce the difficulty of operation for users.

6-step easy operation: 10" touchscreen, manual/auto LC test, illustrated with text.

1. Measuring Device (MD)	2.Type of equipment	3.Type of applications	4.Measurement circuit	5.Combination method	6.Switch settings
• MD C • MD C unweighted • MD E	• Category I • Category II • Internal power supply equipment	• Type B • Type BF • Type CF	• Figure 13 • Figure 14 • Figure 15 • Fig.	• S1 • S7 • Case • Patient	• S1 • S7 • S10 • S13...

Combination of the safety analyzer and the multi-channel switching unit, strong scalability, one-click completion of all tests after one-time wiring.

- The test terminals of the safety analyzer are fixedly connected to the input terminals of the switching unit, without manual connection by operator.



- The safety analyzer and the switching unit are controlled via industrial PC to build the test system.
- The safety analyzer can also be directly connected to the communication control switching unit to build the minimum test system.

- Switching unit outputs multi-channel ACW/DCW, IR, GB, and LC test terminals. The operator just connects the wires one time, and the test system automatically switches the test channel according to the test items, completing all tests with one-click.

Exceeding & Trustworthy Safety Analyzer Ainuo

Comprehensive Electrical Safety Analyzer
AN9636HC(F)/AN9637HC(F)/AN9637HC8(F)

Product Overview

Ainuo Instrument Co., Ltd has been dedicated to the research and development of electrical safety analyzers for over 30 years, and has participated in drafting 16 national standards and industry calibration regulations for safety analyzers.
The AN963XHC(F) Series Comprehensive Electrical Safety Analyzer has the characteristics of complete functions, high performance, automation, and informatization, providing comprehensive safety test solutions for various electrical products.

Features

- **Five-in-one:** ACW/DCW/IR/ACGB/DCGB
- **High performance:** 1% basic accuracy for safety tester, ARC test, GUARD/RETURN mode
- **Automation:** RS232/LAN/USB/BARCODE/IO/ALARM interfaces
- **Informatization:** barcode scanning and automatic recognition, optional ESRS measurement and control software

Applications

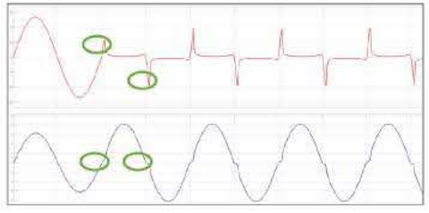
- Audio and video, information technology, and communication technology equipment (GB4943.1/ IEC62368-1)
- Safety requirements for electrical equipment for measurement, control, and laboratory use (GB4793.1/IEC61010-1)
- Safety Requirements of traction battery used by electric vehicles (GB38031-2020)
- Safety requirements of secondary lithium cells and batteries used in electrical energy storage systems (GB44240-2024)
- Technical requirements for power conversion system of electrochemical energy storage system (GBT34120-2023)
- Electric vehicle conductive charging system (GB/T18487.1)
- Terrestrial photovoltaic (PV) modules - Design qualification and type approval (IEC61215-1-2021)
- Technical specifications of junction box for terrestrial solar-photovoltaic modules (GB/T 37410-2019)
- Technical requirements for photovoltaic gird-connected inverter (GB/T37408-2019)
- General principles low voltage switchgear and controlgear Part 1 (GBT14048.1/IEC60947-1)

Specifications

Model Function	AN9636HC(F) ACW/DCW/IR	AN9637HC(F) ACW/DCW/IR/GB	AN9637HC8(F) ACW/DCW/IR/GB
AC withstand voltage (ACW)	5kVac/100mA (optional 200mA)		
DC withstand voltage (DCW)	6kVdc/20mA		
Insulation Resistance (IR)	6kVdc/50GΩ		
AC ground bond resistance (GB)	None	40Aac/600mΩ	
DC ground bond resistance (DCGB)	(Optional 40A, 60A, 100A card)		
Multiple cards	Optional multi-channel ACW/DCW scanning card, multi-channel GB scanning card, and DC low resistance card; (When more than one card is inserted, additional 1U chassis height shall be added for each additional card, and 2U height for 100A DCGB card)		Standard 5W3G card
Operation interface	Color LCD, numeric keypad, RS232\PLC\USB\LAN (optional) interface;		
Informatization	USB storage, barcode recognition and automatic program matching, optional ESRS measurement and control software which can be integrated with MES system		
Dimensions (W×H×D mm)	426×132×520		

Flashover and arc

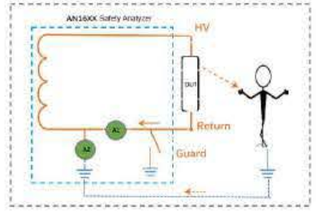
In relevant electrical safety regulations and standards, the general requirement for determining electrical strength test is that under the specified test voltage and test time conditions, the insulator should not experience breakdown or flashover. The destructive discharge along the surface of an insulator is called flashover, while the destructive discharge along the interior of the insulator is called breakdown. Arc is gas discharge phenomenon, where instantaneous spark is generated when current passes through certain insulating media (such as air).
The series analyzer has arc detection function (ARC), arc levels of 0~9 can be set in ACW and DCW, to detect flashover or arc discharge during ACW/DCW test process.



Current and voltage waves of pure resistive arc discharge

Protective design for operator safety

- When the Interlock control is enabled, this signal can be used as a detection signal for personnel entering the safety test area or for open grid gate of the test bench. Once the analyzer detects circuit break in this signal, the output will be stopped and the test cannot be started.
- DUT grounding. This series analyzer has two modes: DUT case grounding (Guard) or floating grounding (Return). When selecting Guard mode, the Return terminal of the analyzer will maintain safe conductive state with PE to prevent operators from accidentally touching the DUT housing and getting electric shock during ACW/DCW test process. In this mode, stray leakage current through the ground will pass through ammeter A1, causing higher leakage current and lower insulation resistance.
- Leakage protection GFI. When the leakage current of high-voltage output HV leaks to the safe PE terminal through the operator or DUT housing, the leakage current will be detected by ammeter A2. When it exceeds the limit, the analyzer will stop the high-voltage output and trigger GFI alarm.



Multiple optional cards

DC low resistance card (0.1-20k Ω)

DCGB resistance card (40/60A/100A)

5-channel high-voltage 3-channel GB scanning card

8-channel high-voltage scanning card

8-channel GB scanning card

Exceeding & Trustworthy Safety Analyzer Ainuo

Intelligent Safety Analyzer
AN1636H(F)\AN1638H(F)\AN1639H(F) Series

Product Overview

Ainuo Instrument Co., Ltd has been dedicated to the research and development of electrical safety analyzers for over 30 years, and has participated in drafting 16 national standards and industry calibration regulations for safety analyzers.
This AN163XH(F) Series Intelligent Safety Analyzer features complete functions, high performance, automation, and informatization, providing comprehensive safety test solutions for various electrical products.

Features

- **Five-in-one:** ACW/DCW/IR/ACGB/DCGB
- **High performance:** 1% basic accuracy for safety tester, parallel ACW/DCW/IR and GB test
- **Automation:** RS232/LAN/USB/BAR-CODE/IO/ALARM/HDMI interfaces
- **Informatization:** Local store, data filter/export, MES database integration
- **Intelligent:** Android platform, 7" touchscreen, barcode recognition, intelligent matching, etc

Applications

- Audio and video, information technology, and communication technology equipment (GB4943.1/ IEC62368-1)
- Safety requirements for electrical equipment for measurement, control, and laboratory use (GB4793.1/IEC61010-1)
- Safety Requirements of traction battery used by electric vehicles (GB38031-2020)
- Safety requirements of secondary lithium cells and batteries used in electrical energy storage systems (GB44240-2024)
- Technical requirements for power conversion system of electrochemical energy storage system (GBT34120-2023)
- Electric vehicle conductive charging system (GB/T18487.1)
- Terrestrial photovoltaic (PV) modules - Design qualification and type approval (IEC61215-1-2021)
- Technical specifications of junction box for terrestrial solar-photovoltaic modules (GB/T 37410-2019)
- Technical requirements for photovoltaic gird-connected inverter (GB/T37408-2019)
- General principles low voltage switchgear and controlgear Part 1 (GBT14048.1/IEC60947-1)

Specifications

Model Function	AN1636H(F) ACW/DCW/IR	AN1638H(F) ACW/DCW/IR/GB	AN1639H(F) ACW/DCW/IR/GB/DCGB
AC withstand voltage (ACW)	5kVac/100mA (optional 200mA)		
DC withstand voltage (DCW)	6kVdc/20mA		
Insulation Resistance (IR)	6kVdc/100GΩ		
AC ground bond resistance (GB)	None	64Aac/600mΩ	
DC ground bond resistance (DCGB)	(Optional 40A, 60A)	None	40A DCGB card (optional 60A, 100A)
Multiple cards	Optional multi-channel ACW/DCW scanning card, multi-channel GB scanning card, and DC low resistance card; (When more than one card is inserted, additional 1U chassis height shall be added for each additional card, and 2U height for 100A DCGB card)		
Parallel	(Optional: Voltage division ratio, parallel ACW/DCW test between input-output-case; parallel GB and ACW/DCW test)		
Operation interface	Android system, 7" touch screen, RS232\LAN\WIFI\PLC\USB interface		
Informatization	Local store, data filter and export; barcode recognition and automatic program matching, MES system integration; optional HDMI interface, supporting external LCD display, keyboard/mouse;		
Dimensions (W×H×D mm)	426×132×520		

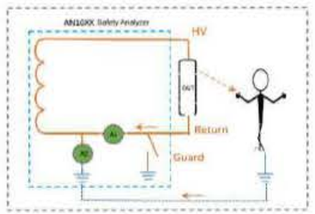
Parallel GB and ACW/DCW/IR test

This series Intelligent Safety Analyzer is designed with parallel GB, IR, ACW/DCW test,
significantly shortening the testing time, double the production capacity of the production line.

Routine test for 4s	GB 2s	IR 1s	ACW 1s
Parallel test for 2s	GB 2s		
	IR 1s	ACW 1s	

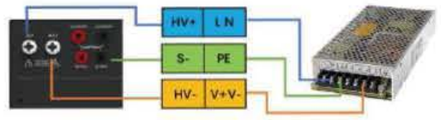
Protective design for operator safety

- When the Interlock control is enabled, this signal can be used as a detection signal for personnel entering the safety test area or for open grid gate of the test bench. Once the analyzer detects circuit break in this signal, the output will be stopped and the test cannot be started.
- DUT grounding. This series analyzer has two modes: DUT case grounding (Guard) or floating grounding (Return). When selecting Guard mode, the Return terminal of the analyzer will maintain safe conductive state with PE to prevent operators from accidentally touching the DUT housing and getting electric shock during ACW/DCW test process. In this mode, stray leakage current through the ground will pass through ammeter A1, causing higher leakage current and lower insulation resistance.
- Leakage protection GFI. When the leakage current of high-voltage output HV leaks to the safe PE terminal through the operator or DUT housing, the leakage current will be detected by ammeter A2. When it exceeds the limit, the analyzer will stop the high-voltage output and trigger GFI alarm.



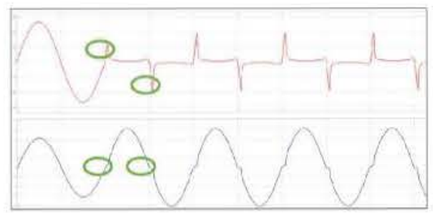
ACW/DCW voltage division ratio setting, parallel test of multiple channels

The series tester can be equipped with optional built-in positive and negative high voltage dual output modules, setting the output voltage ratio of positive and negative voltage, to achieve three parallel tests for power supplies: input terminals (LN) - PE, output terminals (V+V-) - PE, and input terminals (LN) - output terminals (V+V -).



Flashover and arc

In relevant electrical safety regulations and standards, the general requirement for determining electrical strength test is that under the specified test voltage and test time conditions, the insulator should not experience breakdown or flashover. The destructive discharge along the surface of an insulator is called flashover, while the destructive discharge along the interior of the insulator is called breakdown. Arc is gas discharge phenomenon, where instantaneous spark is generated when current passes through certain insulating media (such as air).
The series analyzer has arc detection function (ARC), arc levels of 0~9 can be set in ACW and DCW, to detect flashover or arc discharge during ACW/DCW test process.



Current and voltage waves of pure resistive arc discharge

Multiple optional cards

DC low resistance card
(0.1-20k Ω)

DCGB resistance card
(40/60A/100A)

5-channel high-voltage 3-channel GB scanning card

8-channel high-voltage scanning card

8-channel GB scanning card

Intelligent Safety Analyzer
AN1635H-10kV(F)/AN16310H(F)/AN16320A(F) Series

Product Overview

Ainuo Instrument Co., Ltd has been dedicated to the research and development of electrical safety analyzers for over 30 years, and has participated in drafting 16 national standards and industry calibration regulations for safety analyzers.

The AN1635H-10KV(F) Series Intelligent Safety Analyzer has the characteristics of complete functions, high voltage, automation, and informatization, providing comprehensive safety test solutions for various electrical products.

Features

- **Multi-function:** ACW/DCW/IR/BDV test
- **High voltage:** maximum output 20KV, maximum capacity 5kVA, multi-channel scanning
- **Automation:** RS232/LAN/USB/BARCODE/IO/ALARM/HD-MI interfaces
- **Informatization:** Local store, data filter/export, MES database integration
- **Intelligent:** Android platform, 7" touchscreen, barcode recognition, intelligent matching, etc

Applications

- Safety requirements for electrical equipment for measurement, control, and laboratory use (GB4793.1/IEC61010-1)
- Safety Requirements of traction battery used by electric vehicles (GB38031-2020)
- Safety requirements of secondary lithium cells and batteries used in electrical energy storage systems (GB44240-2024)
- Terrestrial photovoltaic (PV) modules - Design qualification and type approval (IEC61215-1-2021)
- General principles low voltage switchgear and controlgear Part 1 (GBT14048.1/IEC60947-1)
- Insulating materials. Test methods for electric strength. Part 1:Test at power frequencies (GBT1408.1-2016)
- Insulating materials. Test methods for electric strength. Part 2: Additional requirements for tests using direct voltage (GBT1408.2-2016)
- Test and Certification Specification for Automotive Grade Semiconductor Power Devices (T/CASA 011.3-2021)
- Semiconductor Devices Part 5-5: Optoelectronic Devices Optocouplers (GB-T 15651.5-2024 IEC60747-5-5-2020)

Specifications

Model Function	AN1635H-10KV(F) ACW/DCW/IR(CE marking)	AN16310H(F) ACW/DCW/IR	AN16320A(F) ACW
AC withstand voltage (ACW)	10kVac/20mA	10kVac/40mA(optional 100mA 400mA)	20kVac/20mA
DC withstand voltage (DCW)	10kVdc/20mA	10kVdc/20m(optional 100mA)	/
Insulation Resistance (IR)	10kVdc/50GΩ		/
DC ground bond resistance (DCGB)	Optional 40A/60A/100A DCGB card		/
Multiple cards	Optional 6-channel multi-channel scanning card		/
Operation interface	Android system, 7" touch screen, RS232\LAN\WIFI\PLC\USB interface		
Informatization	Local store, data filter and export; barcode recognition and automatic program matching, MES system integration; optional HDMI interface, supporting external LCD display, keyboard/mouse;		
Dimensions (W×H×D mm)	426×132×520	426×177×520 (The high current optional chassis is customized in size)	426×177×550

Intelligent Safety Analyzer
AN1633A(F)/AN1633B(F) Series

AN1633A(F) 5-module
10-channel parallel

AN1633B(F) 5-module
parallel* 3-channel scanning

Product Overview

Ainuo Instrument Co., Ltd has been dedicated to the research and development of electrical safety analyzers for over 30 years, and has participated in drafting 16 national standards and industry calibration regulations for safety analyzers.

The AN1633A(F) Series Intelligent Safety Analyzer has the characteristics of modular, 10-channel parallel, synchronous/asynchronous control, providing comprehensive and fast safety test solutions for various electronic components such as switching power supplies, inverters, transformers, relays, etc.

Features

- **Three-in-one:** ACW/DCW/IR test
- **Multi-module:** built-in 1~5 independent modules, plug-and-play
- **Multi-channel:** 5 modules with 10 independent channels, 5 modules * 3 channels for scanning
- **Multiple operating conditions:** synchronous/asynchronous, independent parameter settings, common loop test
- **Multi-window:** 10" touchscreen, independent windows for displaying results of each channel

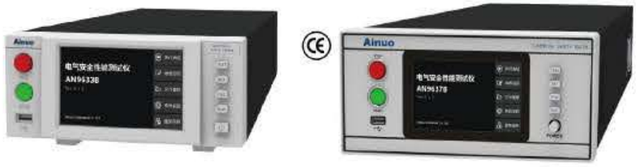
Applications

- Audio/video, information and communication technology equipment (GB4943.1/IEC62368-1)
- Multi-point ACW/DCW and common ground test scenario for a product: It can meet the needs of power supplies, inverters, transformers, new energy vehicle PDUs, and other one-time multi-point ACW/DCW and common case (PE) test applications.
- Test multiple products simultaneously: safety test of electronic components such as chargers, lithium batteries, relays, contactors, connectors, etc., parallel test of up to 10 products one time.

Specifications

Model Function	AN1633A-10(F) The suffix -4\6\8\10 represents the number of channels	AN1633B-5(F) The suffix -2\3\4\5 represents the number of modules
AC withstand voltage (ACW)	5kV/10mA	5kV/20mA
DC withstand voltage (DCW)	6kV/8mA	6kV/10mA
Insulation Resistance (IR)	2.5kV/100GΩ	2.5kV/100GΩ
Module selection	2~5 modules, with 2 independent test units per module	2~5 modules, each module with 3-channel (H/L/X) for scanning
Number of channels	4/6/8/10 independent channels per analyzer	6/9/12/15 scanning channels per analyzer
Start mode	Synchronous/asynchronous test between channels	Synchronous/asynchronous test between modules
Operation interface	10" touch screen, RS232/PLC/LAN interface, 8G memory, MES connection	
Dimensions (W×H×D mm)	426×177×640	

Comprehensive Electrical Safety Analyzer
AN96XXB(F) Series



★ **Four-in-one:** ACW/DCW/IR/GB
★ **High precision:** 1% basic accuracy for safety tester
★ **High efficiency:** fast test, convenient

Product Overview

Ainuo AN96XXB(F) Series electrical safety tester has a multi-function combination including AC withstand voltage, DC withstand voltage, insulation resistance, and AC grounding, as well as auxiliary functions such as arc detection, open and short circuit detection, and low-pass filtering, and has a variety of interfaces including RS232\RS485\ PLC\LAN (optional) \USB (optional). This series of product features compact, light, rich interfaces, and suitable for desktop testing, system integration and other operating conditions.

Features

Functions
- ACW/DCW/IR/GB

Wide range
- ACW 5kV, DCW 6kV, IR 3kV/50GΩ

Rich interfaces
- RS232/IO/INTERLOCK/ALARM/USB/LAN

Auxiliary functions
- slow rise/hold/slow down, comprehension, ARC,OSC,WAIT

Applications

- Safety of household and similar electrical appliances (GB4706.1/IEC60335-1)
- Audio/video, information and communication technology equipment (GB4943.1/IEC62368-1)
- Safety requirements for electrical equipment for measurement, control, and laboratory use (GB4793.1/IEC61010-1)
- Safety test for switching power supply, transformer, low-voltage electrical appliances, electronic components and other electronic products

Specifications

Model Function	AN9637B(F) ACW/DCW/IR/GB	AN9635B(F) ACW/DCW/IR	AN9633B(F) ACW/DCW/IR
AC withstand voltage(ACW)	5kV/40mA		5kV/20mA
DC withstand voltage(DCW)	6kV/10mA		
Insulation resistance (IR)	3kV/50GΩ		
Ground bond resistance (GB)	40Aac/600mΩ	None	
Operation interface	5-inch color LCD touch screen, standard RS232\IO interface, optional RS485\USB\LAN\ALARM interface		
Dimensions (W×H×D mm)	250×118×440		213×88×360

New Energy Vehicle Safety Analyzer
AN166X(F) Series

★ **Regulatory compliance:** GB18384-2020 Electric Vehicles Safety Requirements and GB38032-2020 Electric Buses Safety Requirements
★ **Four in one:** whole vehicle insulation, insulation resistance, insulation monitoring, potential equalization, and multi-channel testing.
★ **Systematic:** professional test accessories, on-site devices, i nformatization system, and MES database connection

Product Overview

The Ainuo AN1662H(F) New Energy Vehicle Safety Analyzer and the AN1662SD(F) New Energy Vehicle Safety Test System comply with GB18384-2020 Electric Vehicles Safety Requirements and GB38032-2020 Electric Buses Safety Requirements. AN1660B(F) New Energy Vehicle Operational Safety Analyzer is designed to meet the requirements of the operational safety performance inspection regulations for new energy vehicles.

The AN1662H(F) Analyzer features whole vehicle insulation, insulation resistance, insulation monitoring, and potential equalization test functions. It can be equipped with additional features such as AC withstand voltage, DC withstand voltage, and DC low resistance. It supports multi-channel withstand voltage and multi-channel potential equalization scanning tests. By using test accessories such as AC charging gun, DC charging gun, platform test clip, high-voltage component test clip, etc., it can complete the test connections in one go and automatically or manually perform each step of the safety regulation test.

The AN1662SD(F) Test System integrates the test functions of AN1662H(F). Through industrial computer/ESRS measurement and control software, on-site device and remote control test, it realizes the automated, informatized, and intelligent test process for new energy vehicle safety regulation.

Features

System digitistics

- Four-in-one safety regulation test for electric vehicles, with excellent system scalability
- One master unit integrating multiple functions for fast testing speed and high accuracy for safety analyzer
- Multi-channel scanning and one-time wiring, capable of completing all safety tests items

Hardware features

- Supports wireless scanning, automatic vehicle model recognition, and automatic retrieval of test programs
- Supports CAN communication and automatically presets vehicle status based on the test item
- Customized dedicated test on-site devices, remote control panels, and testing accessories

Software features

- Workflow setting for electric vehicle safety test items, supporting a mix of automatic and manual tests
- Local storage of test information with no limit on the number of saved records during the product's lifecycle.
- Multiple MES database connections reserved for test condition download and test data upload.
- Software measurement and control system supports data query, filtering, and export, as well as user permission management.

Specifications

Model		AN1662H(F)	AN1660B(F)
whole vehicle insulation	Measurement range	0.1MΩ--999.9MΩ	None
	Measured voltage	200Vdc---1000Vdc	
	Test method	Double voltmeter method; battery DC+/DC- port test and charging port test (optional)	
Insulation monitoring	Resistance switching	5-gear automatic resistance switching detection	None
	Judgment method	Manual judgment and CAN communication (optional)	
Insulation resistance	Output voltage	100Vdc—1,000Vdc	
	Measurement range	0.1MΩ—50GΩ	
	Test channel	Channel 8	Channel 1
Potential equalization	Output current	DC constant current source 1Adc (>200mA) and optional DC constant current source 1-40Adc;	DC constant current source 2-5Adc
	Measurement range	0.1mΩ--600mΩ	0.1mΩ--600mΩ
	Test channel	Channel 10	Channel 1
	Test method	Four-terminal method	Four-terminal method
Optional functions		AC withstand voltage, DC withstand voltage, and DC low resistance	AC withstand voltage and DC withstand voltage

AN1662SD(F) System Allocation

S/N	Component name	Specification	Remarks
1.1	New energy vehicle safety analyzer	AN1662H(F)	Ainuo
1.2	Safety regulation measurement and control software	ESRS	Ainuo
1.3	Industrial computer	Intel-G1620/4G/120G	Advantech
1.4	Display	19-inch	DELL
1.5	UPS	1kW	Shante
1.6	Alarm lamp	Test/qualified/unqualified	Customized
1.7	Printer	Self-adhesive label printing	Zebra
1.8	Wireless scanning gun	1D/2D recognition	Zebra
1.9	Cabinet	White	Customized
1.10	Test accessories	Optional	Customized
1.11	On-site devices	Optional	Customized
1.12	Remote control	Optional	Customized
1.13	Can card	Optional	Customized

ACW, IR and GB Analyzer
AN96XXB(F) Series

Product Overview

The Ainuo AN96XXB(F) Series is designed with ACW, IR, and GB test, as well as auxiliary functions such as arc detection, short circuit detection, low-pass filter, and waiting-for test (for AN9632M(F)), with RS232\RS485\PLC\LAN (optional)\USB (optional) interfaces.
This series of product features compact, light, rich interfaces, and suitable for desktop testing, system integration and other operating conditions.

Features

Main functions

- ACW, IR, GB, ARC

Wide range

- ACW 5kV/200mA/100mA/20mA, IR 3kV/50GΩ, GB 32A/600mΩ

Rich interfaces

- RS232/IO/INTERLOCK/ALARM/USB/LAN

Auxiliary functions

- slow rise/hold/slow down, comprehension, ARC,OSC,WAIT

Applications

- Safety of household and similar electrical appliances (GB4706.1/IEC60335-1)
- Audio and video, information technology, and communication technology equipment (GB4943.1/ IEC62368-1)
- Safety requirements for electrical equipment for measurement, control, and laboratory use (GB4793.1/IEC61010-1)
- General principles low voltage switchgear and controlgear Part 1 (GBT14048.1/1EC60947-1)
- Safety test for switching power supply, transformer, low-voltage electrical appliances, electronic components and other electronic products

Specifications

Model / Function	AN9632M(F) ACW/IR	AN9602B(F) ACW	AN9632B(F) ACW/IR	AN9605B(F) ACW	AN9671B(F) IR	AN9613B(F) GB
AC withstand voltage(ACW)	5kV/200mA	5kV/100mA	5kV/20mA		None	None
Insulation resistance(IR)	1kVdc/2000MΩ	None	3kV/50GΩ	None	3kV/50GΩ	None
AC ground bond resistance(GB)	None					32A/600mΩ
Operation interface	VFD character display RS232\PLC interface	5" color LCD touch screen, standard RS232/IO interface Optional RS485\USB\LAN\ALARM interface				
Dimensions (W×H×D mm)	400×143×505	250×118×440	213×88×360			

Grounding Resistance Analyzer
AN161XH(F) Series

★ **ACGB:** 64A/600mΩ
★ **DCGB:** 100A/600mΩ,60A/600mΩ
★ **Multi-channel:** 8-channel card, supporting channel expansion
★ **Informatization:** Android platform, data store, barcode recognition

Features

Safe and reliable
- Main drafting unit of state standards and verification regulations for safety testing products
- Nearly 30 years of safety testing expertise and follow-up of industry needs
- Complete electromagnetic, environmental, load, operating conditions, fatigue test verification

Rich functions
- Two modes: resistance/voltage mode, meeting industry standards
- Multi-channel card: Optional 8-channel GB switching card, multi-channel expansion
- Auto start: circuit detection; after the GB circuit are built, the test will be automatically started

Intelligent and automatic
- Smart safety tester: Android system, 7" touch screen, self-learning smart keyboard
- Barcode recognition: barcode scanning, program matching, automatic startup, package
- Data management: local storage, network transmission, direct connection with MES system
- Rich interfaces: RS232 (optional RS485), PLC, USB, LAN interfaces

Specifications

Model	AN1610D(F)	AN1616D(F)	AN1616HD(F)	AN1616H(F)
DCGB	100Adc/8V	60Adc/8V	60Adc/8V	None
ACGB	None		64Aac/10V	64Aac /10V
Grounding resistance	MAX 600mΩ			
Operating Interface	Android platform, 7" touchscreen, RS232\LAN\WIFI\PLC\USB interface			
Output terminal	Rear panel output			
Dimensions (W×H×D mm)	426×177×520	426×132×520		

Contact Current Analyzer
AN1620H(F) Series

★ **Multiple body area networks (BANs):** ※up to 8 MD options, applicable to multiple industry safety standards
★ **Multi measurements:**RMS, peak, AC component, DC component
★**Wide frequency measurement:** ※DC, 10Hz ~ 1MHz contact current frequency measurement
★ **Multiple power supply states:** ※Multiple power supply states, standard one-click settings for medical equipment.

Features

Safe and reliable
- Main drafting unit of state standards and verification regulations for safety testing products
- Nearly 30 years of safety testing expertise and follow-up of industry needs
- Complete electromagnetic, environmental, load, operating conditions, fatigue test verification

Compliance with regulations
- Multi network: up to 8 MD, multi state switching, multi industry standards
- Multi parameters: RMS, peak, AC component, DC component
- Wide band: DC, 10Hz ~ 1MHz contact current measurement

Intelligent test
- Intelligent platform: Android system, 10" touch screen
- Data management: barcode recognition, local store, MES integration
- Rich interfaces: RS232, PLC, USB, CAN, WIFI

Specifications

Model	AN1620TH(F)	AN1620H(F)	AN1620H-M(F)
DUT specifications	Single-phase/three-phase 300V/20A	Single-Phase 300V/20A	Single-Phase 300V/20A
Test power supply	Optional external isolated power supply	Optional built-in 500W power supply or external power supply	Auxiliary power supply and DUT power supply (optional external power supply)
Test network	Standard three networks: A/F/H, up to 8 optional networks		Standard C/C unweighted/E medical equipment dedicated network
Current range	0--20mArms, 30mApeak		0~20mArms, 0~20mAac/Adc; 30mApeak; Patient, case, ground leakage current; Built-in S switch state setting; One-click automatic settings following GB9706.1/IEC60601-1 standard.
Impedance and frequency response	DC, 10Hz--1MHz		
Power measurement	Optional: 300V/20A power measurement per phase, with accuracy of 0.5%		
Operation interface	Android system, 10" touchscreen, RS232\LAN\PLC\USB interface		
Dimensions (W×H×D mm)	426×177×550		

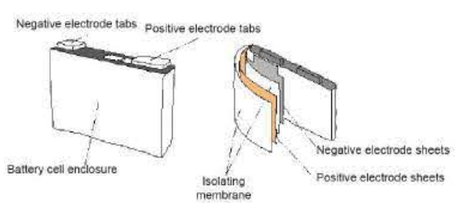
Exceeding & Trustworthy Safety Analyzer \\\ Ainuo

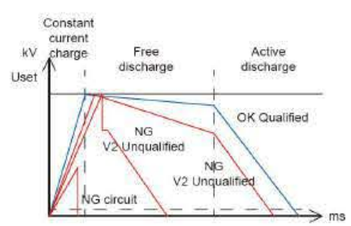
Pulse Lithium Battery Cell Short Circuit Tester
ANBTS7201(F) Series

Product Overview

Based on the first generation Pulse Battery Cell Short Circuit Tester in 2012, the second generation ANBTS7201(F) Series Pulse Lithium Battery Cell Short Circuit Tester from Ainuo Instrument Co., Ltd., by adopting a new generation test method of constant current charge, free discharge, and constant current discharge to monitor the slight voltage drop in real time and throughout the process, can effectively detect insulation short circuits, micro short circuits, low insulation resistance, etc. in unqualified and suspicious Lithium battery cells caused by damage, folds, perforation, foreign objects, burrs, etc., on the isolating membrane.

ANBTS7201(F) Series are widely applied in such processes as stacking, winding, cell assembly and before injection, applicable for insulation performance testing between the positive and negative electrode sheets of lithium battery cells, as well as between the positive and negative electrode tabs and the battery cell shell before injection under 0.1uF-100uF static capacity.





Features

- **Five-in-one:** pulse short circuit test, insulation resistance test,BDV test, capacitance test, weak conductive resistance test
- **Fast:** Maximum 50mA constant adjustable charge mode, maximum 30mA constant adjustable discharge mode, multiple channel test
- **Wide range:** 25V-2000V voltage, 2kΩ-100GΩ insulation resistance test, excellent repeatability in lithium battery cell insulation resistance test
- **Data storage:** local test data and waveform storage, supporting to export to USB
- **Easy to use:** Small in size, with rich interfaces and simple operation, suitable for testing on lithium battery cell automated production lines

Figure 1\2 Test process of qualified and unqualified 5uF batery cell under 100V voltage (voltage rise time 54ms)

Specifications

Model		ANBTS7201-R(F)	ANBTS7201-3R(F)
Functional configuration		Pulse short circuit, insulation resistance, single channel test	Pulse short circuit, insulation resistance, three-channel scanning
Pulse short circuit test	Output voltage	Range: (50~ 1000)VDC,Resolution 1V,Error ±(1% x setting value+5V); [optional 2000V output]	
	Charge and discharge modes	Maximum 50mA constant current charge, maximum 30mA constant current discharge	
	Test time	Charging time TK, discharging time TF; Range: 50ms ~ 3000ms; Resolution: 1ms;Error ±(0.5% setting value +2ms)	
	Judgment parameters	Rise fall V1 (0-100%), hold fall V2 (0-100%), discharge fall V3 (0-100%), resolution 0.1V	
	Cell static capacity	100nF-100,000nF	
Insulation resistance test	Output voltage	Range: (25-1,000)VDC, resolution: 1V, Error ±(1% x setting +2V)	
	Insulation resistance measurement	25V-100V: 0.002MΩ-499.9MΩ: ±(5%×Reading value+2 digits) 101V-499V: 0.010MΩ-199.9MΩ, ±(2%×Reading value+2 digits); 200.0MΩ-2.000GΩ: ±(5%×Reading value+2 digits) 500V-1,000V: 0.020MΩ-999.9MΩ, ±(2%×Reading value+2 digits); 1.000GΩ-9.999GΩ: ±(5%×Reading value+2 digits) 10.00GΩ-49.99GΩ: ±(15%×Reading value); 50.00GΩ-99.99GΩ: ±(20%×Reading value)	
	Test time	Range: 0, (0.5-999.9)s, 0 is infinite, resolution: 0.1s, Error: ±(0.1%×setting value+2 digits)	
	Ramp up time	Range: 0, (0.1-999.9)s, 0 represents ramp-up disabled, resolution: 0.1s, Error: ±(0.1%×setting value+2 digits)	
	Ramp down time	Range: 0, (1-999.9)s, 0 represents ramp-down disabled, resolution: 0.1s, Error: ±(0.1%×setting value+2 digits)	
	Upper/lower limit	Range: 0.002MΩ-99.99GΩ, 0 indicates no upper limit setting	
	Charge and discharge modes	Maximum 50mA constant current charge maximum 30mA constant current discharge	
Other specifications	Power supply	AC220V±10%, 47-63Hz	
	Display operation	LCD, 5 inch color display, touch screen	
	Output interface	RS232C, LAN, PLC USB (data storage via USB flash drive)	
	Dimensions (W×H×D mm)	213×88×360	

Large Capacity Pulse Lithium Battery Cell Short Circuit Tester
ANBTS7202(F) Series

Product Overview

The ANBTS7202(F) Series Large Capacity Pulse Lithium Battery Cell Short Circuit Tester from Ainuo Instrument Co., Ltd., by adopting a step pulse boosting method and monitoring the slight voltage drop in real time and throughout the process, can effectively detect insulation short circuits, micro-short-circuits, etc. in unqualified and suspicious Lithium battery cells caused by damage, folds, perforation, foreign objects, burrs, etc., on the isolating membrane. (The step pulse boosting method meets the requirements of JISC 2110-1, IEC60243-1.ASTMD149-2009 "Test Method for Electrical Strength of Insulation Materials").

ANBTS7202(F) Series are widely applied in such processes as stacking, winding, cell assembly and before injection, applicable for insulation performance testing between the positive and negative electrode sheets of lithium battery cells, as well as between the positive and negative electrode tabs and the battery cell shell before injection under 100nF-100000nF static capacity.

Features

- **Whole-process monitoring:** Monitor the step pulse waveform in real time and throughout the process to effectively recognize the local micro-short-circuit discharges
- **Fast:** Millisecond-level test speed, high detection efficiency.
- **Wide range:** Output voltage 50~1000V adjustable, equivalent capacity 100~100000nF
- **Data storage:** local test data and waveform storage, supporting to export to USB

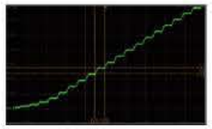


Figure 1 Step boosting method

Figure 2 Test process of 40uF battery cell under 400V voltage (boosting time 122ms)

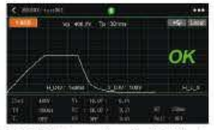


Figure 3 Test process of 100uF battery cell under 400V voltage (boosting time 301ms)

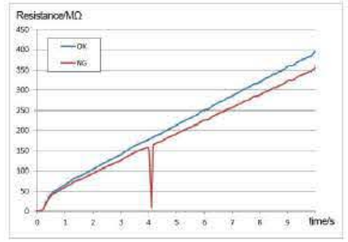
Specifications

Model		ANBTS7202(F)	ANBTS7202X(F)
Functional configuration		Pulse short circuit	Pulse short circuit
Pulse short circuit test (3-channel option)	Output voltage	Range: (50~ 1,000)VDC,Resolution 1V,Error ±(1%xsetting value+5V)	
	Test time	Range: 50ms ~ 3000ms;Resolution: 1ms;Error ±(0.5% setting value +2ms)	
	Judgment parameters	Rise fall V1 (0-100%), hold fall V2 (0-100%), discharge fall V3 (0-100%), resolution 0.1V	
	Cell static capacity	100nF-30,000nF	100nF-100,000nF
Other specifications	Power supply	AC220V±10%,47 ~63Hz	
	Display operation	LCD, 5 inch color display, touch screen	
	Output interface	RS232C,LAN ,PLC,USB(data storage via USB flash drive)	
	Dimensions (W×H×D mm)	213×88×360	

Insulation Resistance Tester
ANBTS7101(F) Series

Product Overview

For the ANBTS7101(F) Series Insulation Resistance Tester, addressing the weaknesses of conventional CV mode insulation resistance testers in the testing process of electrical products with relatively large static capacitance, such as lithium battery cells, including long ramp-up time, slow discharge process, large insulation resistance value fluctuations, and poor repeatability, the ANBTS7101(F) Series Tester uses an innovative mode of CC charging, CV pressure holding, and CC discharging to realize fast, accurate, and safe testing of insulation resistance for electrical products with large capacitance characteristics.
The ANBTS7101(F) Series Tester is suitable for insulation resistance testing of electrical products with relatively large static capacitance, such as power batteries, energy storage batteries, 3C batteries, super capacitors, aluminum electrolytic capacitors etc.



Features

- **Wide range:** Voltage 25V-2,000V and resistance 2kΩ-100GΩ, allowing for accurate testing of a wide voltage range and high insulation resistance values
- **Fast:** 50mA quick CC charging, CV pressure holding test and 30mA quick CC discharge mode, capable of conducting quick insulation test of super capacitor up to 500uF
- **High accuracy:** Support the double judgment of the resulting values and the process values, the automatic upload of the process data
- **Easy to use:** Small in size, with rich interfaces and simple operation, particularly convenient for automated production lines and system integration use

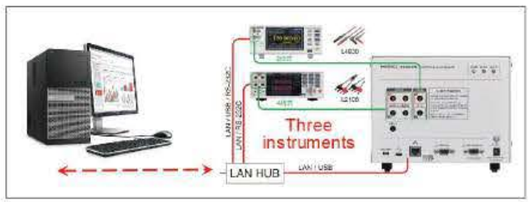
Specifications

Model	ANBTS7101(F)	ANBTS7101-3(F)
Output channel	Single channel (HV1, HV2 (return))	Three channels (HV1/HV2/HV3, configurable as H/L/X)
Output voltage	Range: (25-1,000)VDC, resolution: 1V, Error ±(1%×Set value+2V)); [optional 2000V output]	
Insulation resistance measurement	25V-100V: 0.002MΩ-499.9MΩ, ±(5%×Reading value±2 digits); 101V-499V: 0.010MΩ-199.9MΩ, ±(2%×Reading value±2 digits); 200.0MΩ-2.000GΩ: ±(5%×Reading value±2 digits) 500V-1,000V: 0.020MΩ-999.9MΩ, ±(2%×Reading value±2 digits); 1.000GΩ-9.999GΩ: ±(5%×Reading value±2 digits) 10.00GΩ-49.99GΩ: ±(15%×Reading value); 50.00GΩ-99.99GΩ: ±(20%×Reading value)	
Test time	Range: 0, (0.5-999.9)s, 0 represents infinite duration, resolution: 0.1s, accuracy: ±(0.1%×Set value+2 digits)	
Ramp up time	Range: 0, (0.1-999.9)s, 0 represents ramp-up disabled, resolution: 0.1s, accuracy: ±(0.1%×Set value+2 digits)	
Ramp down time	Range: 0, (1-999.9)s, 0 represents ramp-down disabled, resolution: 0.1s, accuracy: ±(0.1%×Set value+2 digits)	
Resistance upper/lower limit setting	Range: 0.002MΩ-99.99GΩ, 0 indicates no upper limit setting	
Charge and discharge modes	Maximum constant current charge 50mA, maximum constant current discharge 30mA and discharge residual voltage monitoring function.	
Power supply	AC220V±10%, 50Hz/60Hz	
Display and operate	5-inch LCD color display, key and touch screen operation; RS232C, LAN, PLC and USB (storage) interfaces	
Dimensions (W×H×D mm)	213×88×360	

High-accuracy Battery Tester
ANBTS7501H(F)

Product Overview

The ANBTS7501H(F) High-accuracy Battery Tester integrates the functions of a 7½-digit voltmeter, an AC internal resistance tester, and a multi-channel switcher (optional), meeting the comprehensive testing requirements for AC internal resistance, open-circuit voltage, and side voltage in the production processes such as the aging and sorting of lithium batteries, the feeding of battery modules, the off-line of battery modules, and the off-line of battery packs in a one-stop manner.



Features

High accuracy
- Test for internal resistance : 7-range test, maximum resolution 0.1uΩ, 0.5% basic accuracy
- Voltage test: 7½-digit display, 10nV resolution, 20ppm basic accuracy

High speed
- Multiple test speeds: Quick\medium\slow speeds and customized sampling speed, average number of times
- Automatic switching: Automatically complete the internal resistance test, voltage test and channel switching
- One control instruction: The PC can complete all the switching tests with just one instruction

More convenient
- Convenient to use: Human and machine interaction of 5-inch touch screen + key + windowed menu, simple and easy to use
- Good compatibility: LAN, RS232, I/O interfaces, instructions compatible with similar products

Specifications

Model	ANBTS7501H(F)						
Functional Configuration	MAX100V, ACIR						
Internal Resistance Measurement							
Measurement Method	AC four-terminal method						
Current Frequency	1kHz±0.2Hz						
Measuring Current	100mA		10mA	1mA	100mA	10uA	
Resistance Range	3mΩ	30mΩ	300mΩ	3Ω	30Ω	300Ω	3000Ω
Maximum Display Value	3.1000mΩ	31.000mΩ	310.00mΩ	3.1000Ω	31.000Ω	310.00Ω	3100.0Ω
Resistance Resolution	0.1uΩ	1uΩ	10uΩ	100uΩ	1mΩ	10mΩ	100mΩ
Resistance Accuracy	3 mΩ range: ±(0.5% ×Reading value+10 digits); 3 mΩ or more range: ±(0.5%×Reading value+5 digits)						
Voltage Measurement							
U-RANGE	100mV	1000mV	10V	100V			
Maximum Value Display	±120.000 00mV	±1200.000 0mV	±12.000 000V	±120.000 00V			
Voltage Resolution	10nV	100nV	1uV	10uV			
Resistance range	±(0.0030%rd+2uV)	±(0.0020%rd+3uV)	±(0.0020%rd+12uV)	±(0.0030%rd+0.8mV)			
Other Specifications							
Other Functions	Temperature compensation, contact detection, comparator, speed selection, range selection, function selection, storage of 100 sets; Optional multi-channel switching cards						
Instrument Interface	RS232, LAN, USB, I/O						
Operational Environment	Operating environment: 0℃-40℃, below 80%rh (no-condensing); accuracy guaranteed environment: 23℃±5℃, below 80%rh (no-condensing)						
Power specifications	AC220V±10%, 50Hz/60Hz, 100VA						
Dimensions (W×H×D mm)	258×132×336						

7½-digit DC Voltmeter
ANBTS7610(F) Series

Product Overview

ANBTS7610(F) Series DC Voltmeter, through a highly stable reference voltage source, automatic calibration technology and strong anti-interference capability, provides DC voltage measurement with 20PPM basic accuracy and 7½ high resolution; suitable for open circuit voltage measurement (OCV) of lithium battery cells, modules and packs.

Application Scenarios

- Scene 1: K value screening: Cell battery aging, high-accuracy voltage measurement, rapid screening of poor K-value, and improvement of test efficiency.
- Scene 2: consistency screening: For the batteries at the end of the production line and those in module and PACK when they are put into production, voltage consistency sorting is carried out to achieve precise matching.
- Scene 3: battery maintenance: With a wide measurement range from as low as 10 mV to as high as 1000 V and high-accuracy measurement, it can quickly locate the faulty batteries.
- Scene 4: battery R&D: with high accuracy, high resolution, high stability, and being simple and easy to use, it is an excellent tool for R&D, test and analysis.

Features

High precision measurement
- 7½-digit high resolution, 20PPM basic accuracy (10V voltage range).

High-stability reference
- A high-stability reference voltage source with low temperature drift lays the foundation for precise measurement.

Self-calibration function
- Eliminate the influences of circuit offset, noise, and temperature drift to ensure long-term stability.

Temperature compensation
- Through the measurement of ambient temperature, the voltage is automatically corrected to the room temperature voltage.

Simple and easy to use
- Touch screen operation, provided with multiple interfaces including RS232, LAN, USB, I\O.

Specifications

Model	ANBTS7610H(F) (7½-digit)		ANBTS7610B(F) (6½-digit)		Input Impedance	Measurement Accuracy
	Display Range	Resolution	Display Range	Resolution		
100mV	±120.000 00mV	10nV	±120.000 0mV	100nV	>10GΩ/10MΩ	±(0.0030%rd+2uV)
1000mV	±1200.000 0mV	100nV	±1200.000 mV	1uV	>10GΩ/10MΩ	±(0.0020%rd+3uV)
10V	±12.000 000V	1uV	±12.000 00V	10uV	>10GΩ/10MΩ	±(0.0020%rd+12uV)
100V	±120.000 00V	10uV	±120.000 0V	100uV	10MΩ	±(0.0030%rd+0.8mV)
1000V	±1100.000 0V	100uV	±1100.000 V	1mV	10MΩ	±(0.0030%rd+2mV)
Other Functions	Temperature compensation, contact detection, FIR data filtering etc.; RS232, LAN, USB, IIO, PLC and other interfaces, protocol compatibility					
Dimensions (W×H×D mm)	213×88×300					

Battery Tester
ANBTS7500(F) Series

Product Overview

The ANBTS7500(F) Series Battery Tester utilizes a 1kHz AC constant current source and four-terminal method to measure the AC internal resistance (ACIR) and open circuit voltage (OCV) of lithium batteries, providing the resolution of the AC impedance as low as 0.1uΩ and excellent anti-interference ability.

The ANBTS7500(F) Series Battery Tester is widely applied in the processes such as the formation and grading of the cell, the on-line screening of the battery in the module and battery pack, and the off-line detection, etc.

Features

High-accuracy test
- Battery internal resistance ranges from 0.1uΩ to 3.1kΩ, with 0.5% accuracy, and 7 ranges.
- Open circuit voltage ranges from 10uV to 100\300V, with 0.01% accuracy, and multiple ranges.

Comparator function
- The battery internal resistance and open circuit voltage have comparator function switches, which can be used to set upper and lower limits for resistance and voltage respectively, compensating for testing.

Test reliabilty
- AC four-terminal method testing, with 4mm diameter coaxial contact points and interference-resistant testing cables. Contact detection function, with programmable anti-spark design.

Specifications

Model	ANBTS7501(F)			ANBTS7503(F)			
Functional Configuration	MAX100V, ACIR			MAX300V, ACIR			
AC Internal Resistance							
Measurement method	AC four-terminal method						
Current frequency	1kHz±0.2Hz						
Resistance range	3mΩ	30mΩ	300mΩ	3Ω	30Ω	300Ω	3000Ω
Maximum display value	3.1000mΩ	31.000mΩ	310.00mΩ	3.1000Ω	31.000Ω	310.00Ω	3100.0Ω
Resistance resolution	0.1uΩ	1uΩ	10uΩ	100uΩ	1mΩ	10mΩ	100mΩ
Measuring current	100mA		10mA	1mA	100uA	10uA	
Resistance accuracy	3 mΩ range: ±(0.5% ×Reading value+10 digits); 3 mΩ or more range: ±(0.5%×Reading value+5 digits)						
DC Voltage							
U-RANGE	6V	60V		100V		300V	
Voltage resolution	10μV	100μV		1mV		1mV	
Maximum display value	±6.00000V	±60.0000V		±100.000V		±310.000V	
Voltage accuracy	±(0.01% × Reading value +3 digits)						
Panel function	Touch screen operation, storage of 100 sets of test conditions, with the open circuit detection, comparator, speed selection, range selection, function selection, etc.						
Interface function	RS232, LAN, I/O						
Operational environment	Operational environment: 0℃-40℃, below 80%rh (no condensation); Accuracy guarantee environment: 23℃±5℃, below 80%rh ((no-condensing)						
Power supply specifications	AC220V±10%, 50Hz/60Hz, 20VA						
Dimensions (W×H×D mm)	213×88×300						

Exceeding & Trustworthy Safety Analyzer Ainuo

Battery Tester
ANBTS7520(F) Series

Product Overview

The ANBTS7520(F) Series Battery Tester utilizes a 1kHz AC constant current source and four-terminal method to measure the AC internal resistance (ACIR) and open circuit voltage (OCV) of lithium batteries, providing the resolution of the AC impedance as low as 0.1uΩ, excellent anti-interference ability and anti-spark design.

The ANBTS7520(F) Series Battery Tester is widely applied in such processes as the battery offline detection, etc. of the power batteries, the energy storage battery cabinets and other high-voltage large modules\battery packs.

Features

High-accuracy test
- Battery internal resistance ranges from 0.1uΩ to 3.1kΩ, with 0.5% accuracy, and 7 range levels.
- Open circuit voltage ranges from 10uV to 2100V, with 0.01% accuracy, and multiple range levels.

Comparator function
- The battery internal resistance and open circuit voltage have comparator function switches, which can be used to set upper and lower limits for resistance and voltage respectively, compensating for testing.

Test reliabilty
- AC four-terminal method testing, with 4mm diameter coaxial contact points and interference-resistant testing cables. Contact detection function, with programmable anti-spark design.

Specifications

Model	ANBTS7510(F)			ANBTS7520(F)			
Functional Configuration	MAX1000V, ACIR			MAX2100V, ACIR			
AC Internal Resistance							
Measurement method	AC four-terminal method						
Current frequency	1kHz±0.2Hz						
Resistance range	3mΩ	30mΩ	300mΩ	3Ω	30Ω	300Ω	3000Ω
Maximum display value	3.1000mΩ	31.000mΩ	310.00mΩ	3.1000Ω	31.000Ω	310.00Ω	3100.0Ω
Resistance resolution	0.1uΩ	1uΩ	10uΩ	100uΩ	1mΩ	10mΩ	100mΩ
Measuring current	100mA		10mA	1mA	100uA	10uA	
Resistance accuracy	3 mΩ range: ±(0.5% ×Reading value+10 digits); 3 mΩ or more range: ±(0.5%×Reading value+5 digits)						
DC Voltage							
U-RANGE	10V		100V		1000V		2100V
Voltage resolution	10μV		100μV		1mV		10mV
Maximum display value	±10.0000V		±100.000V		±1100.00V		±2100.00V
Voltage accuracy	±(0.01% × Reading value +3 digits)						±(0.05%×Reading value+3 digits)
Panel function	Touch screen operation, storage of 100 sets of test conditions, with the open circuit detection, comparator, speed selection, range selection, function selection, etc.						
Interface function	RS232, LAN, I/O						
Operational environment	Operational environment: 0℃-40℃, below 80%rh (no condensation); Accuracy guarantee environment: 23℃±5℃, below 80%rh ((no-condensing)						
Power supply specifications	AC220V±10%, 50Hz/60Hz, 20VA						
Dimensions (W×H×D mm)	213×89×360						

Exceeding & Trustworthy Safety Analyzer Ainuo

Lithium Battery-Intelligent Safety Regulation Comprehensive Analyzer
ANBTS743xH(F) Series

Front panel output terminals available (default: none)

optional rear panel output
for DC Ground Bond card

Product Overview

The ANBTS743xH(F) Series Intelligent Safety Regulation Comprehensive Analyzer from Ainuo Instrument Co., Ltd. combines functions such as AC withstand voltage, DC withstand voltage, insulation resistance, AC ground bond, DC ground bond, as well as auxiliary functions including voltage ramp-up and ramp-down, arc detection, capacitance test (Y-capacitor, open and short circuit detection).

Addressing the unique product features and test requirements of power batteries and energy storage batteries, the series of products have added special testing functions, including waveform display, grounding/floating ground, low-pass filtering, rapid discharge, residual voltage monitoring, and other special functions.

The series of products offer a wide range of measurement options, including AC withstand voltage 5kV/100mA, DC withstand voltage 6kV/20mA, insulation resistance 6kV/100GΩ, AC ground bond 64A/600mΩ, and DC ground bond 60A/600mΩ (rear panel plug-in card output), with multiple channel switching cards.

Features

Safe and reliable

- Main drafting unit of state standards and verification regulations for safety testing products
- Nearly 30 years of safety testing expertise and follow-up of industry needs
- Complete EMC, environmental, load, working conditions, and fatigue test verification

Convenient and efficient

- Waveform Display: parameter waveform display, supporting cursors, zoom, and playback
- Auxiliary functions: Floating ground/grounding mode, low-pass filtering and residual voltage monitoring
- Quick measurement and control: Quick test, quick switching and quick discharge

Intelligent test

- Barcode Recognition: Barcode scanning, program matching, automatic startup, package
- Data management: local storage, network transmission, direct connection with MES system
- Rich ports: RS232,LAN, WIFI, USB, PLC and I/O control interfaces

Specifications

Model	ANBTS7436H(F) ACW/DCW/IR	ANBTS7438H(F) ACW/DCW/IR/GB
AC withstand voltage (ACW)	5kVac/100mA	
DC withstand voltage (DCW)	6kVdc/20mA	
Insulation resistance (IR)	6kVdc/100GΩ	
Ground bond resistance (GB)	None	64Aac/600mΩ
DC ground bond resistance (DCGB)	Optional 60Adc/600mΩ DC grounding card	
Capacitance test (C)	Optional: 10nF-300nF capacitance measurement	
Parallel function	Optional: Parallel functions including grounding, insulation withstand voltage	
Multi-channel switching	Optional multi-channel high voltage and multi-channel grounding scanning card;	
Operation interface	when selecting the DC ground bond card at the same time, the height needs to be increased by 1U Android system, 7-inch touch screen, and RS232\LAN\WIFI\PLC\USB interfaces	
Dimensions (W×H×D mm)	426×132×520	

Lithium Battery Intelligent Safety Regulation Analyzer
ANBTS7436H-12kV(F) Series

★ **Function:** Multiple function combination including ACW/DCW/IR/DCGB/ multiple channel switching cards
★ **High Precision:** 1% accuracy
★ **Informatization:** Android platform, data storage, barcode recognition, MES connection

Product Overview

The 12kV High Voltage Series Intelligent Safety Regulation Comprehensive Analyzer from Ainuo Instrument Co., Ltd. possesses the features such as 12kV DC high voltage output, high accuracy and informatization, combines the functions such as AC withstand voltage, DC withstand voltage, insulation resistance, DC grounding, as well as arc detection, open and short circuit detection, low-pass filtering, waveform display etc.
The product features an intelligent platform, informatization functions and automated interfaces, which can better meet the needs of high-quality development, intelligent manufacturing and industrial upgrading.
The series of products can meet the safety regulation testing requirements of various electrical products, including energy storage battery cabinets, high-voltage relays, high-voltage plugs, wires and cables, insulation materials, and insulation films for electrical applications.

Optional rear panel output for DC grounding card

optional rear panel output for 6-channel card

Features

High reliability
- Main drafting unit of state standards and verification regulations for safety testing products
- Nearly 30 years of safety testing expertise and follow-up of industry needs
- Strict electromagnetic, environmental, load, working conditions simulation test platform

High speed
- Quick measurement and control: Quick test, quick switching and quick discharge
- Configure Flexible: multi-channel switching card, DC grounding card, plug and play

Intelligent
- Intelligent Safety Regulation: Android system, 7" touch screen, self-learning smart keyboard
- Automation: Barcode scanning and automatic recognition, PLC interface and I/O interface
- Informatization: Data storage, directly connect to MES system, RS232/WIFI/LAN interfaces

Specifications

Model	ANBTS7435H-10KV(F)	ANBTS7436H-12KV(F)
AC withstand voltage (ACW)	10kV/20mA	10kV/40mA
DC withstand voltage (DCW)	10kV/20mA	12kV/20mA
Insulation resistance (IR)	10kV/100GΩ	12kV/100GΩ
DC ground bond (DCGB)	Optional 60A or 40A/600mΩ	Optional 100A/600mΩ
Multiple channel switching	Optional 6-channel high voltage switching card (when selecting the DC ground bond card at the same time, the height needs to be increased by 1U)	
Operation interface	Android platform, 7-inch color touch screen, RS232\PLC\USB\LAN	
Dimensions (W×H×D mm)	426×132×520	426×177×520

Electrical Safety Comprehensive Calibrator
AN965-15(F)

★ **Four-in-one point inspection:** withstand voltage, insulation resistance, grounding, and leakage.
★ **Automatic switching:** cooperate with the safety comprehensive inspection group to automatically switch items and complete spot inspection at one time.
★ **Convenient to use:** years of customer experience and site adaptable, easy to use, error-proof.

Features

Four in one: combination of withstand voltage current, insulation resistance, grounding resistance, and leakage current calibration functions.
Dual-gear spot inspection: two-level spot inspection for each spot inspection, complete confirmation for pass/fail.
Automatic identification: detects and switches between withstand voltage, insulation resistance, grounding, and leakage tests, automatically adapting to safety comprehensive inspection requirements.

Specifications

	Stage	Input current	Grounding resistance	Duration	Test terminal
Ground bond resistance test spot inspection specifications	Stage 0	≤25A	150mΩ±15mΩ	Less than 5 seconds	Ground bond stage 0+loop
	Stage 1	≤25A	75mΩ±8mΩ	Less than 5 seconds	Ground bond stage 1+loop

	Stage	Input voltage	Insulation resistance	Measuring terminal
Insulation resistance test spot inspection specifications	Stage 0	≤1400V	120±12MΩ	High voltage+loop
	Stage 1	≤1400V	60±6MΩ	High voltage+loop

	Stage	Input voltage	Current-limiting resistor	Reference current point input voltage 1,650V	Reference current point input voltage 1,800V	Test terminal
Withstand voltage current test spot inspection specifications	Stage 0	≤2000V	600kΩ±12kΩ	2.75mA	3.00mA	High voltage+loop
	Stage 1	≤2000V	200kΩ±4kΩ	8.25mA	9.00mA	High voltage+loop

	Stage	Input voltage	Load resistance	Reference current point input voltage 233V	Reference current point input voltage 244V	Test terminal
Leakage current test spot inspection specifications	Stage 0	≤290V	460kΩ±23kΩ	507μA	530μA	High voltage+loop
	Stage 1	≤290V	230kΩ±11.5kΩ	1013μA	1061μA	High voltage+loop

Withstand Voltage Calibrator
AN16015H(F)

★ **Various specifications:** AC/DC withstand voltage and current verification and insulation resistance test voltage verification.
★ **Convenient usage:** the company has accumulated years of on-site experience with the calibration instrument, making this product user-friendly, error-proof, and efficient.

Features

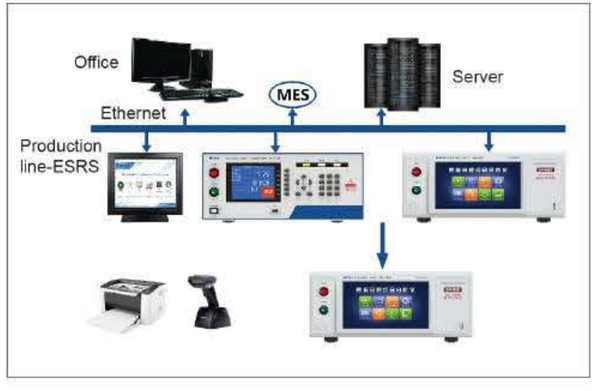
- **Regulatory compliance:** compliant with the JJG795-2016 Withstanding Voltage Testers
- **Usability:** multiple gear knobs with color-coded rings, easy to operate, error-free, and user-friendly
- **Portability:** optional professional protective trolley case is available, and the calibration device can be used horizontally or vertically

Specifications

Model / Function	AN16015H(F) AC/DC Withstand Voltage Tester				
	Integrated with high voltage meter, current meter, and withstand voltage load resistance, it can meet the measurement and calibration requirements for AC/DC withstand voltage and insulation resistance.				
Voltage measurement	(0.1000-9.9999)kV; (10.000-15.000)kV; 0.0001kV/0.001kV; ±(0.5%×Reading value+2 digits)				
Current measurement	(0.1000-9.9999--10.000-99.999--100.00-240.00mA; 0.0001mA/0.001mA/0.01mA; ±(0.5%×Reading value+0.002mA)				
Frequency measurement	Measurement range	(45.00-65.00) Hz	Error range		±0.5%×Reading value
Harmonic measurement	50 times of harmonics	Range	0.50%-10.00%	Error range	Less than 1% (absolute error)
Ripple measurement	Measurement range	0.50%-10.00%	Error range	Less than 1% (absolute error)	
Time indicator	1.00s-999.99s, 0.01s, 0.5%±2 digits (0.2% for over 10s)				
Built-in load	When using rough or fine load adjustment, the voltage does not exceed 1.5kV, and the continuous loading time does not exceed 30s.				
	0.5mA(1944.77KΩ); 1mA(944.77K); 2mA(444.77kΩ); 5mA(194.77kΩ); 10mA(94.77k); 20mA(44.77k); 50mA (19.77kΩ); 100mA (9.77kΩ); 200mA (4.77kΩ);				

Safety Tester Remote Control Software
ESRS

★ **Industrial control platform:** industrial computer running on Windows environment, equipped with professional electrical safety regulation remote measurement and control software ESRS.
★ **Intelligent test:** supports barcode recognition, automatic program matching and automatic startup test, with automatic storage of test data.
★ **Program editing:** open-ended test program editing, supporting storage on local or server, and invocation of test programs from them.
★ **Data traceability:** synchronizes test data storage with local end, server end, or MES end, providing local test data management.
★ **MES connection:** supports multiple MES connection functions, including intermediate table connection methods for databases such as Sql Server, Oracle and Mysql, Modbus TCP connection method, Web Api interface connection method, as well as local TXT text, Access database and other connection methods.



AC Power Supply
ANFH(F) Series

AC Power Supply
ANFC(F) / ANFS(F) Series

Regenerative Grid Simulator
ANRGS(F) Series

Programmable High Power AC Power Supply
ANFP(F) Series

Programmalbe Grid Simulator
ANGS(F) Series

Bidirectional Grid Simulator
ANBGS(F) Series

Programmalbe AC Test Power Supply
AN61(F) Series

Constant Current AC Power Supply
ANCC(F) Series

AC Power Supply
ANFH(F) Series

Features

- 19" standard chassis, compact, can be installed in standard cabinet
- Withstand 3 times the rated current lasting for 2S, directly start impact load equivalent to 1/3 of the power
- Adjustment of voltage/frequency in output state
- Startup ramp-up and online ramp-up, and the ramp-up time can be set
- Measurements: voltage, current, frequency, active power
- Voltage level: 1.0~150.0V, 150.1~300.0V automatically adjustable or locked within 1.0~300.0V
- Line voltage drop compensation
- Multi shortcut groups, power-down memory and shortcut keys
  4.3" color touch screen, convenient and intuitive
- Key lock and humanized design to avoid misoperation
- Operating data recorders: automatically record the power state when alarming and alarm code etc
- Standard RS232 port, optional RS485/GPIB/Ethernet port or analog control

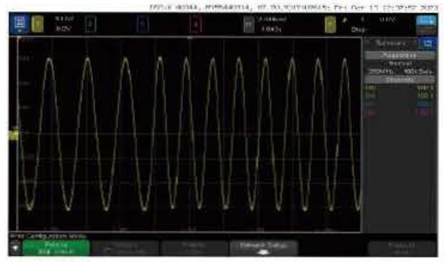
Product Introduction

ANFH(F) series AC power supply adopts digital technologies including digital control, instantaneous waveform control, and high-frequency pulse width modulation (SPWM). The power supply has the ability to withstand impact of 3 times the rated current, featuring strong load adaptability, mainly for applications such as home appliances, motors, and production lines, power solutions meeting the essential needs of traditional industries as well as equipment replacement and updates. The power supply is designed suitable for 19" standardchassis, small size and rich interfaces, and can be directly installed in a standard cabinet for various applications such as testing, systemintegration, production line, etc.; as well as 4.3" color LCD touch screen + plastic shell panel, aesthetic and high-end appearance, and easy-to-use and intuitive operation.

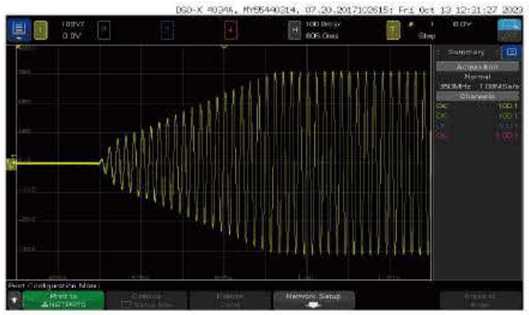
Applications

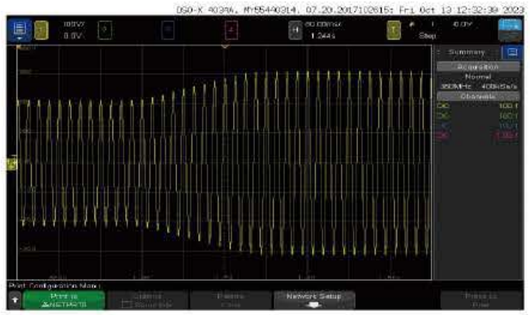
- Over shock capacity: impact loads with 1/3 power can be directly started without soft start

- Adjustment of voltage/frequency in output state



Start ramp up and online ramp up





4.3" color touch screen, convenient and intuitive

Online monitoring function

PC control software

Specifications

Model			ANFH000S(F)	ANFH001S(F)	ANFH002S(F)	ANFH003S(F)	ANFH005S(F)	ANFH010S(F)	ANFH010TS(F)
Capacity			500 VA	1 KVA	2 KVA	3 KVA	5KVA	10KVA	10KVA
Input	Number of phases		Single-phase two-wire+PE						3-phase 4-wire+PE
	Voltage		Phase voltage: 220V±10%						Line Voltage:380V±10%
	Frequency		50/60Hz±3 Hz						
Output	Number of phases		Single-phase two-wire						
	Voltage		Phase voltage: 1.0~300.0V; Automatic state: (low-grade)1.0-150.0V,(high-grade)150.1-300V High-grade lock: 1.0 ~ 300.0V						
	Frequency		45.0Hz ~ 65.0Hz, 100Hz, 120Hz, 200Hz, 240Hz, 400Hz						
	Rated current	110 V	4.6A	9.2A	18.2A	27.4A	45.6A	91.0A	91.0A
		220 V	2.3A	4.6A	9.1A	13.7A	22.8A	45.5A	45.5A
	Setting accuracy	Voltage	Resolution: 0.1V, Precision: 0.2% × reading value+0.1% × full scale value (110/220 ± 10%) 0.2% × reading value + 0.2% × full scale value (Other ranges)						
		Frequency	Resolution: 0.1 Hz Precision: 0.05%						
	Testing accuracy	Voltage	Resolution: 0.1V, Precision: 0.2% × reading value+0.1% × full scale value (110/220 ± 10%) 0.2% × reading value + 0.2% × full scale value (Other ranges)						
		Frequency	Resolution: 0.1 Hz Precision: 0.05%						
		Current	Resolution: 0.001A/0.01A/0.1A Precision: 0.3% × reading value+0.3% ×full scale value						
		Power	Resolution: 0.001 kW /0.01kW Precision: 0.45% × reading value+0.45% × full scale value						
	Frequency stability		≤0.02%						
	Voltage distortion		Linear load: THD<1%						
	Transient recovery time		20 ms						
	Voltage crest factor		1.41±0.1						
	Source voltage effect		≤1%						
	Load effect		≤1%						
	Overload capacity		105% < output ≤ 110% , turn off the output within 15 seconds; 110%< output ≤ 200%, turn off the output within 5 seconds; 200% < output ≤ 300%, turn off the output within 2 seconds; 300% < output, turn off the output immediately.						
	Shock resistance		Withstand 3 times rated current for 2S						
	Protection mode		Overheat protection, over-current protection, output overload protection, output short-circuit protection						
	Efficiency		>70%			>80%			
Func-tion	Display mode		4.3" color LCD touch screen						
	Soft-start time		0.0~99.9Sec.						
	Online adjustment function		The output voltage and output frequency can be adjusted online (45.0~65.0Hz); Online switching ramp-up time can be set: 0.0~99.9s						
	Memory function		Power down memory function, memorizing last output mode and parameters						
	Shortcut group		8 groups						
	Line voltage crop compensation		0.000 ~ 0.500 Ω						
	Communication		Standard RS232, optional RS485/GPIB/Ethernet						
	Remote control		Optional analog control port						
Working Enviro-nment	Temperature		0～40℃						
	Humidity		20%～90%RH						
Dimensions (W×H×D mm)			3U		3U	4U	11U	13U	
			432×133(148)×420		432×133(148)×570	432×177(192)×570	432×488(563)×420	432×577(652)×420	
			The (*) means the height including machine foot, the feet can be removed				The (*) means the height including machine caster, the casters can be removed		
			Width is 432mm(handle excluded), 19" standard chassis; 483mm (handle included), handle is optional						
Weight (kg)			17	20	26	35	59	82	82

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

AC Power Supply
ANFC(F) Series

Product Introduction

The ANFC(F) series AC power supply adopts FPGA digital control, instantaneous waveform control and high-frequency pulse width modulation (SPWM) technologies. It has the advantages of fast response speed, high output accuracy, and superior waveform quality; it can withstand 3 times the rated current impact, high capacity and strong load adaptability; adopts modular design concept, small volume and weight, convenient operation and high cost performance. Mainly used in applications such as home appliances, motors and production lines, it is one solution that meets the basic needs of traditional industries and a power supply alternative for equipment upgrades.

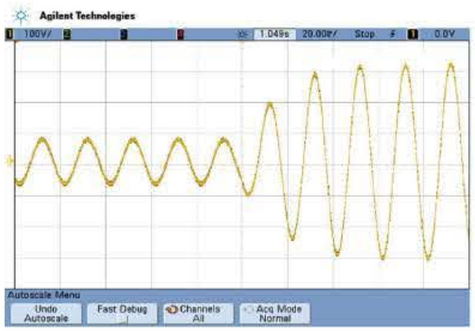
Features

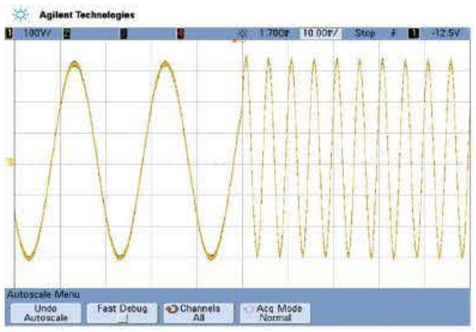
- Adopt FPGA digital technology, realize accuracy control and high quality sine wave output;
- Operating in over current shock (up to 3 times of rated current)within 2s, start the impact load of 1/3 capacity of power supply directly;
- Adjustable voltage and frequency during output status;
- Three-phase loading separately, start single phase output by U/V/W fast settings;（Only suitable for three-phase output power supply）;
- Measurement: voltage, current, frequency, active power;
- Online monitoring: monitor IGBT temperature, transformer temperature, fan speed, input voltage and other parameters during output status;
- Operating data recorders: keep the record of power supply status and alarm code automatically during alarming;
- Voltage range: 1.0-150.0V or 150.1-300.0 V automatic adjustment, or locked at 1.0-300.0V;
- Shortcuts groups, power-off memory, shortcuts key and knobs operation;
- Fan speed will be adjustable automatically with the temperature of power supply to reduce the noise;
- Lock key, user-friendly design, automatically locking without operation for 5 minutes to prevent from operation mistakes;
- Standard RS232, optional RS485, GPIB, Ethernet, analog control and other remote communication/control.

Applications

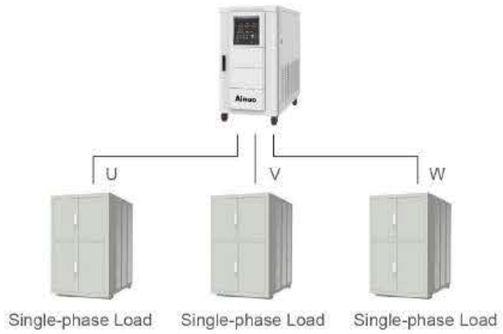
- **Over shock capacity:** Can withstand 3 times the rated current shock for 2 seconds, impact load of 1/3 capacity of the power supply directly without soft start (below 1000KVA)

- Adjustable voltage and frequency during output

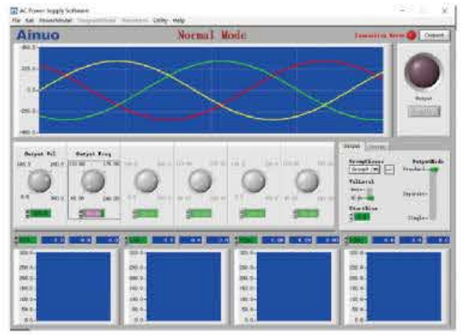




- Three-phase loading separately(Only suitable for three-phase output power supply)



- PC control software



Specifications

Model			ANFC015S(F)	ANFC020S(F)	ANFC030S(F)	ANFC045S(F)	ANFC060S(F)	ANFC090S(F)	ANFC120S(F)
Capacity			15kVA	20kVA	30kVA	45kVA	60kVA	90kVA	120kVA
Input	Voltage，Frequency		3-phase 4-wire + PE，Phase voltage: 220V±33V, line voltage: 380V±57V，50/60Hz±3Hz						
	Voltage		single-phase two-wire，Automatic state: (low-grade) 1.0 ~ 150.0V, (high-grade) 150.1~300V； high-grade lock:1.0 ~ 300.0V						
	Frequency		40.00 ~70.00Hz，100Hz、120Hz、200Hz、240Hz						
	Rated current	110V	136.3A	181.8A	272.7A	409.1A	545.4A	818.2A	1090.9A
		220V	68.2A	90.9A	136.3A	204.5A	272.7A	409.1A	545.4A
	Setting accuracy	Voltage	Resolution：0.1V；accuracy: 0.2%xreading value +0.2%xfull scale value						
		Frequency	Resolution：0.1Hz；accuracy：0.05%						
	Testing accuracy	Voltage	Resolution：0.1V；accuracy: 0.2%xreading value +0.2%xfull scale value						
		Frequency	Resolution：0.1Hz；accuracy：0.05%						
		Current	Resolution：0.1A/1A，accuracy：0.3%×reading value+0.3%×full scale value						
		Power	Resolution：0.1kW/0.01kW/0.001kW，accuracy：0.45%×reading value+0.45%×full scale value						
Output	Frequency stability		≤0.02%						
	Voltage distortion		Linear load：THD＜1%						
	Transient recovery time		20ms						
	Crest factor		1.41±0.1						
	Source voltage effect		≤1%						
	Load effect		≤1%						
	Overload capacity		105%＜output≤110% the output will be stopped within 15s ; 110%＜outputs≤200% the output will be stopped within 5s; 200%＜outputs≤300% the output will be stopped within 2s ; 300%＜output the output will be stopped immediately;						
	Protection mode		IGBT overheat、IGBT over current、Transformer overheat、Intput under voltage、Input over voltage、Output under voltage、Output over voltage、Output over load、Output short cirluit、output over current						
Function	Online adjustment function		The output voltage and frequency （45~65Hz）can be adjusted online under status						
	Memory function		Power down memory function, memory last output mode and parameters； Shortcut group 7 groups						
	Line voltage drop compensation		0.000～0.500Ω						
	Communication control interface		Standard：RS232；Optional：RS485、GPIB、Ethernet、Analog control port						
Environment	Temperature and humidity		0～40℃；20～90%RH						
Dimensions (W×H×D mm)			600×1130×1018			700×1330×1218			800×1768×1418
Weight (Kg)			175	190	250	370	500	560	970

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

Specifications

Model			ANFC015T(F)	ANFC030T(F)	ANFC045T(F)	ANFC060T(F)	ANFC090T(F)	ANFC120T(F)	ANFC180T(F)	ANFC240T(F)
Capacity			15kVA	30kVA	45kVA	60kVA	90kVA	120kVA	180kVA	240kVA
Input	Voltage，Frequency		3-phase 4-wire + PE，Phase voltage: 220V±33V, line voltage: 380V±57V，50/60Hz±3Hz							
Output	Voltage		3-phase 4-wire，Automatic state: (low-grade)1.0 ~ 150.0V, (high-grade) 150.1~300V； high-grade lock:1.0~300.0V							
	Frequency		40.0 ~ 70.0Hz，100Hz、120Hz、200Hz、240Hz							
	Rated current	110V	45.4A	90.9A	136.3A	181.8A	272.7A	363.6A	545.4A	727.2A
		220V	22.7A	45.4A	68.2A	90.9A	136.3A	181.8A	272.7A	363.6A
	Setting accuracy	Voltage	Resolution：0.1V，accuracy：0.2%×reading value +0.2%×full scale value							
		Frequency	Resolution：0.1Hz，accuracy：0.05%							
	Testing accuracy	Voltage	Resolution：0.1V，accuracy：0.2%×reading value +0.2%×full scale value							
		Frequency	Resolution：0.1Hz，accuracy：0.05%							
		Current	Resolution：0.1A/1A，accuracy：0.3%×reading value +0.3%×full scale value							
		Power	Resolution：0.1kW/0.01kW/0.001kW，accuracy：0.45%×reading value +0.45%×full scale value							
	Frequency stability		≤0.02%							
	Voltage distortion		Linear load：THD＜1%							
	Transient recovery time		20ms							
	3 phase phase difference		120°±2°							
	Crest factor		1.41±0.1							
	Source voltage effect		≤1%							
	Load effect		≤1%							
	Overload capacity		105%＜outputs≤110% the output will be stopped within 15s；110%＜outputs≤200% the output will be stopped within 5s；200%＜outputs≤300% the output will be stopped within 2s；300%＜output the output will be stopped immediately							
	Protection Mode		IGBT overheat、IGBT over current、Transformer overheat、Input under voltage、Input over voltage、Output under voltage、Output over voltage、Output over load、Output short cirluit、output over current							
Func-tion	Online adjustment function		The output voltage and frequency（45~65Hz）can be adjusted online under status							
	Memory function		Power down memory function, memory last output mode and parameters； Shortcut group 7 groups							
	Line voltage drop compensation		0.000～0.500Ω							
	Communication control interface		Standard：RS232；Optional：RS485、GPIB、Ethernet、Analog control port							
Environ-ment	Temperature and humidity		0～40℃；20～90%RH							
Dimensions (W×H×D mm)			600×1130×1018		700×1330×1218			800×1768×1418		
Weight (Kg)			260	300	430	540	730	970	1240	1390

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

Specifications

Model			ANFC350T(F)	ANFC450T(F)	ANFC550T(F)	ANFC650T(F)	ANFC1000T(F)	ANFC1500T(F)	ANFC2000T(F)
Capacity			350kVA	450kVA	550kVA	650kVA	1000kVA	1500kVA	2000kVA
Input	Voltage，Frequency		3-phase 4-wire + PE，Phase voltage: 220V±33V, line voltage: 380V±57V，50/60Hz±3Hz						
Output	Voltage		3-phase 4-wire，Automatic state: (low-grade) 1.0 ~ 150.0V, (high-grade) 150.1~300V； high-grade lock:1.0 ～ 300.0V						
	Frequency		40.0 ~ 70.0Hz，100Hz、120Hz、200Hz、240Hz				40.0 ~ 70.0Hz		
	Rated current	110V	1060A	1363A	1666A	1970A	3030A	---	---
		220V	530.3A	681.8A	833.3A	984.8A	1515A	2272A	3030A
	Setting accuracy	Voltage	Resolution：0.1V，accuracy：0.2%×reading value +0.2%×full scale value						
		Frequency	Resolution：0.1Hz，accuracy：0.05%						
	Testing accuracy	Voltage	Resolution：0.1V，accuracy：0.2%×reading value +0.2%×full scale value						
		Frequency	Resolution：0.1Hz，accuracy：0.05%						
		Current	Resolution：0.1A/1A，accuracy：0.3%×reading value +0.3%×full scale value						
		Power	Resolution：0.1kW/0.01kW/0.001kW，accuracy：0.45%×reading value +0.45%×full scale value						
	Frequency stability		≤0.02%						
	Voltage distortion		Linear load：THD＜1%						
	Transient recovery time		20ms						
	3 phase phase difference		120°±2°						
	Crest factor		1.41±0.1						
	Source voltage effect		≤1%						
	Load effect		≤1%						
	Overload capacity		105%＜outputs≤110% the output will be stopped within 15s；110%＜outputs≤200% the output will be stopped within 5s；200%＜outputs≤300% the output will be stopped within 2s；300%＜output the output will be stopped immediately					105% < Output ≤ 110% the output will be stopped within 15s; 110% < Output ≤ 150% the output will be stopped within 5s 150% < Output ≤ 200% the output will be stopped within 2s; 200% < Output the output will be stopped immediately;	
	Protection mode		IGBT overheat、IGBT over current、Transformer overheat、Input under voltage、Input over voltage、Output under voltage、Output over voltage、Output over load、Output short cirluit、output over current						
Func-tion	Online adjustment function		The output voltage and frequency（45~65Hz）can be adjusted online under status						
	Memory function		Power down memory function, memory last output mode and parameters； Shortcut group 7 groups						
	Line voltage drop compensation		0.000～0.500Ω						
	Communication control interface		Standard：RS232，Optional：RS485、GPIB、Ethernet						
	Remote control		Analog control port (optional)						
Environ-ment	Temperature and humidity		0～40℃;20～90%RH						
Dimensions (W×H×D mm)			1800×2000×1400	2400×2000×1400	3000（1400+1600）×1900×1400		4200×2100×1400	-	-
Weight (Kg)			2730	3150	4270	4660	8000	-	-

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

AC Power Supply
ANFS(F) Series

Product Introduction

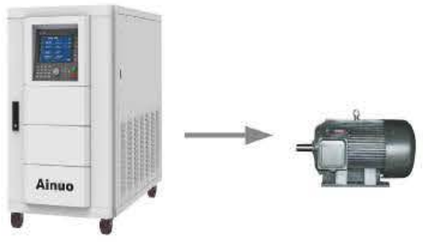
The ANFS(F) series AC power supply adopts FPGA digital control, instantaneous waveform control and high-frequency pulse width modulation (SPWM) technologies. It has the advantages of fast response speed, high output accuracy, and superior waveform quality; it can withstand 3 times the rated current impact , a variety of output modes, which can achieve "one machine with multiple functions" to meet the needs of customers for flexible use; it adopts 8-inch color LCD with exquisite and high-grade appearance, and digital keys make the operation more convenient. Mainly used in applications such as home appliances, motors and production lines. It is one solution that meets the basic needs of traditional industries and a power supply alternative for equipment upgrades. It also provides laboratories, quality inspection units, scientific research institutes and other applications more flexible power configuration scheme.

Features

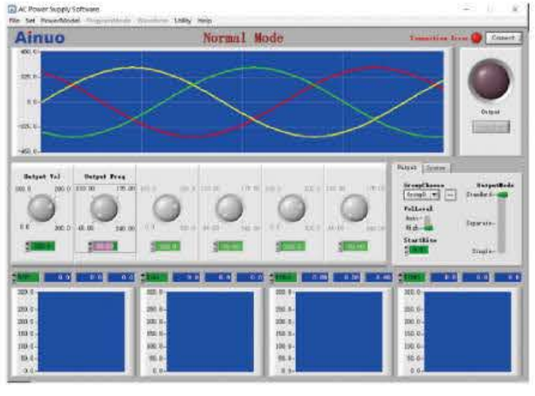
- Adopt FPGA digital technology, realize accuracy control and high quality sine wave output;
- Advanced power output mode management: standard three-phase output, separated three-phase output (three-phase voltage and frequency adjusted independently), parallel single-phase output (three phase parallel, single-phase output) to achieve multi-function;
- Operating in over current shock (up to 3 times of rated current)within 2s, start the impact load of 1/3 capacity of power supply directly;
- Adjustable voltage and frequency during output status, frequency change without transit time;
- Measurement: voltage, current, current peak, frequency, active power, apparent power, power factor, voltage peak factor;
- Online monitoring: monitor IGBT temperature, transformer temperature, fan speed, input voltage and other parameters during output status;
- Operating data recorders: keep the record of power supply status and alarm code automatically during alarming, save the maintenance time;
- Fan speed will be adjustable automatically with the temperature of power supply to reduce the noise;
- Lock key, user-friendly design, automatically locking without operation for 5 minutes to prevent from operation mistakes;
- 8-inch large-screen color LCD display, digital key operation;
- Standard RS232, optional RS485, GPIB, Ethernet, analog control and other remote communication/control.

Applications

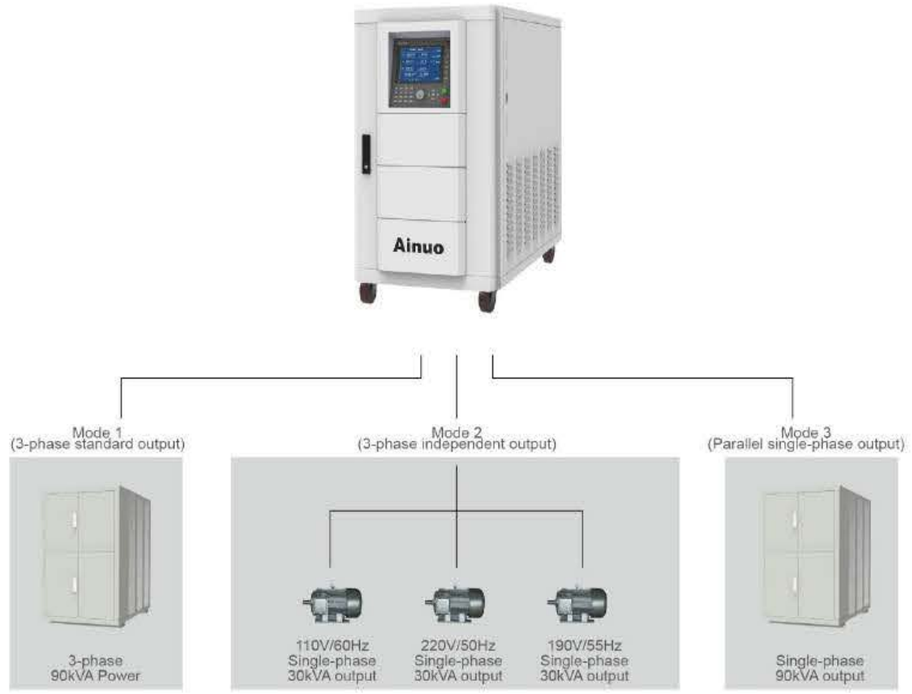
- Over shock capacity: impact load of 1/3 capacity of power supply directly without soft start.



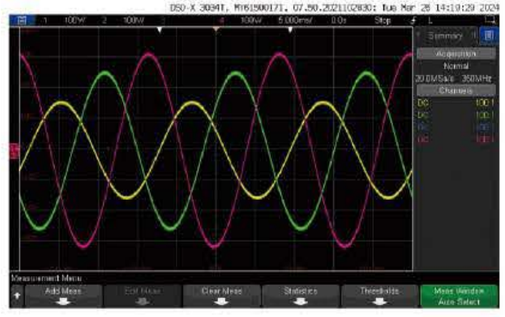
- PC control software



- Output mode management
(standard three-phase output, separated three-phase output, parallel single-phase output)



- Large-size color LCD, digital key input, knob operation



Three-phase unbalanced output
(amplitude unbalance + Angle unbalance)

Specifications

Model			ANFS015A(F)	ANFS030A(F)	ANFS045A(F)	ANFS060A(F)	ANFS090A(F)	ANFS120A(F)	ANFS180A(F)	ANFS240A(F)
Capacity			15kVA	30kVA	45kVA	60kVA	90kVA	120kVA	180kVA	240kVA
Input	Voltage，Frequency		3-phase 4-wire + PE，Phase voltage: 220V±33V, line voltage: 380V±57V，50/60Hz±3Hz							
Output	Mode		3 phase standard mode，3 phase independent mode，parallel single phase mode, 3 phase unbalanced mode							
	Voltage		Phase voltage: 0.0 ～ 300.0V，Automatic state: (low-grade) 0.0 ~ 150.0V, (high-grade) 150.1~300V； high-grade lock:0.0 ～ 300.0V							
	Frequency		40.00 ~240.00 Hz							
	3 phase standard mode rated current	110V	45.4A	90.9A	136.3A	181.8A	272.7A	363.6A	545.4A	727.2A
		220V	22.7A	45.4A	68.2A	90.9A	136.3A	181.8A	272.7A	363.6A
	3 phase independent mode rated current	110V	45.4A	90.9A	136.3A	181.8A	272.7A	363.6A	545.4A	727.2A
		220V	22.7A	45.4A	68.2A	90.9A	136.3A	181.8A	272.7A	363.6A
	parallel single phase mode rated current	110V	136.3A	272.7A	409.1A	545.4A	818.2A	1090.9A	1636.4A	2181.8A
		220V	68.2A	136.3A	204.5A	272.7A	409.1A	545.4A	818.2A	1090.9A
	Setting accuracy	Voltage	Resolution：0.1V，accuracy：0.2%×reading value+0.2%×full scale value							
		Frequency	Resolution：0.01Hz，accuracy：0.05%							
	Testing accuracy	Voltage	Resolution：0.1V，accuracy：0.2%×reading value+0.2%×full scale value							
		Frequency	Resolution：0.01Hz，accuracy：0.05%							
		Current	Resolution：0.1A/1A，accuracy：0.3%×reading value +0.3%×full scale value							
		Power	Resolution：0.1kW/0.01kW/0.001kW，accuracy：0.45%×reading value+0.45%×full scale value							
	Frequency stability		≤0.02%							
	Voltage distortion		Linear load：THD＜1%							
	Transient recovery time		20ms							
	Three phase phase difference		Three phase standard mode：120°±2°；Three-phase unbalanced mode: 0.0°~359.9°, 0.1° adjustable							
	Crest factor		1.41±0.1							
	Source voltage effect		≤1%							
	Load effect		≤1%							
	Overload capacity		105%＜output≤110% the output will be stopped within 15s；110%＜output≤200% the output will be stopped within 5s；200%＜output≤300% the output will be stopped within 2s；300%＜output the output will be stopped immediately							
	Protection mode		IGBT overheat、IGBT over current、Transformer overheat、Input under voltage、Input over voltage、Output under voltage、Output over voltage、Output over load、Output short cirluit、output over current							
Function	Display mode;Start		8 inch LCD display，resolution：800*600；Soft-start time:0.0～99.9s							
	Online adjustment function		In the normal mode, the output voltage and frequency can be adjusted online							
	Memory function		Power down memory function, memory last output mode and parameters; shortcut group:10 groups							
	Line voltage crop compensation		0.000～0.500Ω							
	Communication		Standard：RS232；Optional：RS485、GPIB、Ethernet、Analog control port							
Environment	Temperature and humidity		0～40℃；20～90%RH							
Dimensions (W×H×D mm)			600×1130×1018		700×1330×1218			800×1768×1418		
Weight(Kg)			280	330	470	590	780	1030	1320	1490

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

Specifications

Model			ANFS350A(F)	ANFS450A(F)	ANFS550A(F)	ANFS650A(F)
Capacity			350kVA	450kVA	550kVA	650kVA
Input	Voltage，Frequency		3-phase 4-wire + PE，Phase voltage: 220V±33V, line voltage: 380V±57V，50/60Hz±3Hz			
Output	Mode		3 phase standard mode，3 phase independent mode, 3 phase unbalanced mode			
	Voltage		Automatic state: (low-grade) 0.0 ~ 150.0V, (high-grade) 150.1~300V； high-grade lock:0.0 ～ 300.0V			
	Frequency		40.00 ~240.00 Hz			
	3 phase standard mode rated current	110V	1060A	1363A	1666A	1970A
		220V	530.3A	681.8A	833.3A	984.8A
	3 phase independent mode rated current	110V	1060A	1363A	1666A	1970A
		220V	530.3A	681.8A	833.3A	984.8A
	Setting accuracy	Voltage	Resolution：0.1V，accuracy：0.2%×reading value +0.2%×full scale value			
		Frequency	Resolution：0.01Hz，accuracy：0.05%			
	Testing accuracy	Voltage	Resolution：0.1V，accuracy：0.2%×reading value +0.2%×full scale value			
		Frequency	Resolution：0.01Hz，accuracy：0.05%			
		Current	Resolution：0.1A/1A，accuracy：0.3%×reading value +0.3%×full scale value			
		Power	Resolution：0.1kW/0.01kW/0.001kW，accuracy：0.45%×reading value +0.45%×full scale value			
	Frequency stability		≤0.02%			
	Voltage distortion		Linear load：THD＜1%			
	Transient recovery time		20ms			
	Three phase phase difference		Three phase standard mode：120°±2°；Three-phase unbalanced mode: 0.0°~359.9°, 0.1° adjustable			
	Crest factor		1.41±0.1			
	Source voltage effect		≤1%			
	Load effect		≤1%			
	Overload capacity		105%＜output≤110% the output will be stopped within 15s；110%＜output≤200% the output will be stopped within 5s；200%＜output≤300% the output will be stopped within 2s；300%＜output the output will be stopped immediately			
	Protection mode		IGBT overheat、IGBT over current、Transformer overheat、Input under voltage、Input over voltage、Output under voltage、Output over voltage、Output over load、Output short cirluit、output over current			
Function	Display mode;Start		8 inch LCD display，resolution：800*600；Soft-start time:0.0～99.9s			
	Online adjustment function		In the normal mode, the output voltage and frequency can be adjusted online			
	Memory function		Power down memory function, memory last output mode and parameters; shortcut group:10 groups			
	Line voltage crop compensation		0.000～0.500Ω			
	Communication		Standard：RS232；Optional：RS485、GPIB、Ethernet、Analog control port			
Environment	Temperature and humidity		0～40℃；20～90%RH			
Dimensions (W×H×D mm)			1800×2000×1400	2400×2000×1400	3000（1400+1600）×1900×1400	
Weight (Kg)			2730	3150	4270	4660

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

Programmable High Power AC Power Supply
ANFP(F) Series

Product Introduction

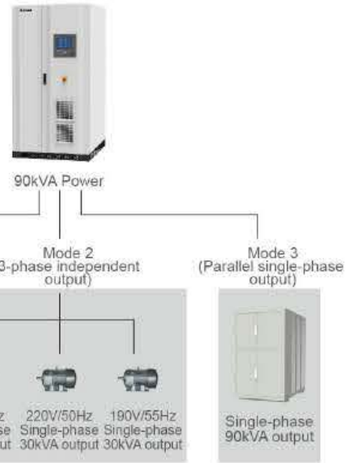
The ANFP(F) series Programmable High Power AC Power Supply adopts FPGA digital control, instantaneous waveform control and high-frequency pulse width modulation (SPWM) technologies. It has the advantages of fast response speed, high output accuracy, and superior waveform quality; it can withstand 3 times the rating Current impact capability, strong load adaptability; with multiple output modes and complex programmable functions, which can achieve test requirements such as ladder, step, gradual change, etc.; with three-phase unbalanced output mode, to achieve relevant regulatory tests or simulate special power grids And so on. It can be widely used in laboratories, quality inspection units, scientific research institutes and certification centers.

Features

- Adopt FPGA digital technology, realize accuracy control and high quality sine wave output;
- Advanced power management mode: three-phase standard mode, three-phase unbalanced mode (three-phase voltage can be adjusted independently, phase difference 0~359.9° adjustable), three-phase independent mode (three-phase voltage, frequency, can be adjusted independently) Parallel single-phase mode (three-phase parallel, single-phase output);
- Programmable step, stage, varations function, can realize relevant regulations;
- Harmonic function,2-40 times superposition;
- Operating in over current shock (up to 3 times of rated current)within 2s, start the impact load of 1/3 capacity of power supply directly;
- Adjustable voltage and frequency during output status, frequency change without transit time;
- Measurement: voltage, current, current peak, frequency, active power, apparent power, power factor, voltage peak factor;
- Online monitoring: monitor IGBT temperature, transformer temperature, fan speed, input voltage and other parameters during output status;
- Operating data recorders: keep the record of power supply status and alarm code automatically during alarming, save the maintenance time;
- Fan speed will be adjustable automatically with the temperature of power supply to reduce the noise;
- Lock key, user-friendly design, automatically locking without operation for 5 minutes to prevent from operation mistakes;
- Combination cabinet, 8" large-screen color LCD;
- Standard RS232, optional RS485, GPIB, Ethernet, analog control and other remote communication/control.

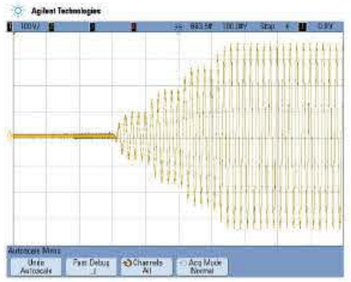
Applications

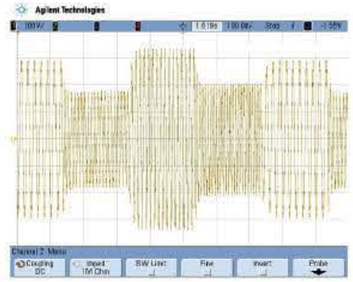
- Output mode management
  (standard three-phase output, separated three-phase output, parallel single-phase output)

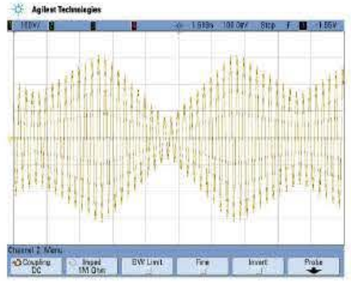


- Over shock capacity: impact load of 1/3 capacity of power supply directly without soft start;

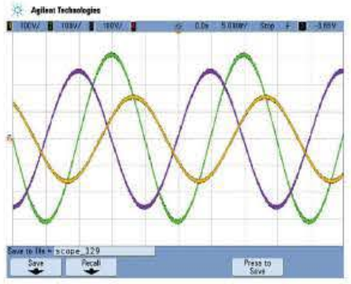
- Programmable Output(Step,Stage,Varations)



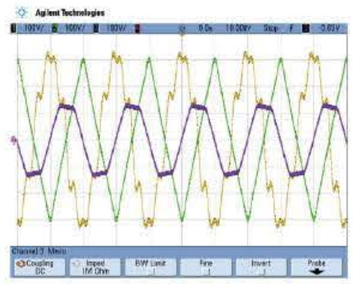




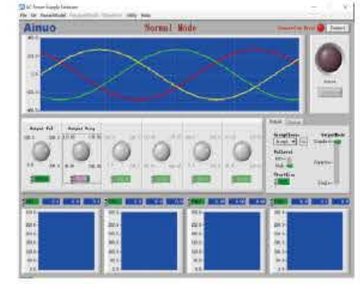
- Three-phase unbalanced output (amplitude unbalance + angle unbalance)



- Harmonic



- PC control software



- Large-size color LCD, digital key input, knob operation

Specifications

Model			ANFP015A(F)	ANFP030A(F)	ANFP045A(F)	ANFP060A(F)	ANFP090A(F)	ANFP120A(F)	ANFP180A(F)	ANFP240A(F)
Capacity			15kVA	30kVA	45kVA	60kVA	90kVA	120kVA	180kVA	240kVA
Input	Voltage, Frequency		3-phase 4-wire + PE, Phase voltage: 220V±33V, line voltage: 380V±57V, 50/60Hz±3Hz							
Output	Model		3 phase standard mode, 3 phase unbalanced mode, 3 phase independent mode, parallel single phase mode							
	Voltage		Phase voltage: 0.0 ~ 300.0V, Automatic state: (low-grade) 0.0 ~ 150.0V, (high-grade) 150.1~300V; high-grade lock:0.0 ~ 300.0V							
	Frequency		40.00 ~240.00 Hz							
	3 phase standard / 3 phase unbalanced mode rated current	110V	45.4A	90.9A	136.3A	181.8A	272.7A	363.6A	545.4A	727.2A
		220V	22.7A	45.4A	68.2A	90.9A	136.3A	181.8A	272.7A	363.6A
	3 phase independent mode rated current	110V	45.4A	90.9A	136.3A	181.8A	272.7A	363.6A	545.4A	727.2A
		220V	22.7A	45.4A	68.2A	90.9A	136.3A	181.8A	272.7A	363.6A
	Parallel single-phase mode rated current	110V	136.3A	272.7A	409.1A	545.4A	818.2A	1090.9A	1636.4A	2181.8A
		220V	68.2A	136.3A	204.5A	272.7A	409.1A	545.4A	818.2A	1090.9A
	Setting accuracy	Voltage	Resolution: 0.1V, accuracy: 0.2%×reading value+0.2%×full scale value							
		Frequency	Resolution: 0.01Hz, accuracy: 0.05%							
	Testing accuracy	Voltage	Resolution: 0.1V, accuracy: 0.2%×reading value+0.2%×full scale value							
		Frequency	Resolution: 0.01Hz, accuracy: 0.05%							
		Current	Resolution: 0.1A/1A, accuracy: 0.3%×reading value+0.3%×full scale value							
		Power	Resolution: 0.1kW/0.01kW/0.001kW, accuracy: 0.45%×reading value+0.45%×full scale value							
	Frequency stability		≤0.02%							
	Voltage distortion		Linear load: THD < 1%							
	Transient recovery time		20ms							
	3 phase phase difference		3 phase standard mode: 120°±2° 3 phase unbalanced mode: 0.0°~359.9°, 0.1°adjustable							
	Crest factor		1.41±0.1							
	Source voltage effect		≤1%							
	Load effect		≤1%							
	Overload capacity		105% < Output≤110% the output will be stopped within 15 Sec;110% < Output≤200% the output will be stopped within 5 Sec 200% < Output≤300% the output will be stopped within 2 Sec;300% < Output the output will be stopped immediately							
Function	Protection mode		IGBT overheat、IGBT over current、Transformer overheat、Input under voltage、Input over voltage、 Output under voltage、Output over voltage、Output over load、Output short cirluit、output over current							
	Display mode		8 inch LCD display, resolution: 800*600; Soft-start:0.0 ~ 99.9s							
	Output waveform		Sine wave, harmonic (superposition 2~40 second harmonic)							
	Programming function	Step mode	9999 step							
		Stage mode	100 stage 999999 cycle							
		Varations mode	100 stage999999 cycle							
	Online adjustment function		Under normal mode, the output voltage and output frequency can be adjusted online, which can be switched on line.							
	Memory function/ Shortcut group		Power down memory function, memory last output mode and parameters; 10 groups							
	Line voltage crop compensation		0.000 ~ 0.500Ω							
	Communication		RS232 (standard)、RS485 (options)、GPIB (options)、Ethernet (options) 、Analog control port (options)							
Environment	Temperature/ Humidity		0 ~ 40℃; 20 ~ 90%RH							
Dimensions (W×H×D mm)			1000×1990×800			1200×1990×800		1200×1990×1000		
Weight (Kg)			310	360	500	620	810	1060	1280	1380

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

Specifications

Model			ANFP350A(F)	ANFP450A(F)	ANFP550A(F)	ANFP650A(F)
Capacity			350kVA	450kVA	550kVA	650kVA
Input	Voltage, Frequency		3-phase 4-wire + PE, Phase voltage: 220V±33V, line voltage: 380V±57V, 50/60Hz±3Hz			
Output	Mode		3 phase standard mode, 3 phase unbalanced mode, 3 phase independent mode			
	Voltage		Phase voltage: 0.0 ~ 300.0V, Automatic state: (low-grade) 0.0 ~ 150.0V, (high-grade) 150.1~300V; high-grade lock:0.0 ~ 300.0V			
	Frequency		40.00 ~240.00 Hz			
	3 phase standard / 3 phase unbalanced mode rated current	110V	1060A	1363A	1666A	1970A
		220V	530.3A	681.8A	833.3A	984.8A
	3 phase independent mode rated current	110V	1060A	1363A	1666A	1970A
		220V	530.3A	681.8A	833.3A	984.8A
	Setting accuracy	Voltage	Resolution: 0.1V, accuracy: 0.2%×reading value +0.2%×full scale value			
		Frequency	Resolution: 0.01Hz, accuracy: 0.05%			
	Testing accuracy	Voltage	Resolution: 0.1V, accuracy: 0.2%×reading value +0.2%×full scale value			
		Frequency	Resolution: 0.01Hz, accuracy: 0.05%			
		Current	Resolution: 0.1A/1A, accuracy: 0.3%×reading value +0.3%×full scale value			
		Power	Resolution: 0.1kW/0.01kW/0.001kW, accuracy: 0.45%×reading value+0.45%×full scale value			
	Frequency stability		≤0.02%			
	Voltage distortion		Linear load: THD < 1%			
	Transient recovery time		20ms			
	3 phase phase difference		3 phase standard mode: 120°±2° 3 phase unbalanced mode: 0.0°~359.9°, 0.1°adjustable			
	Crest factor		1.41±0.1			
	Source voltage effect		≤1%			
	Load effect		≤1%			
	Overload capacity		105% < Output≤110% the output will be stopped within 15s ; 110% < Output≤200% the output will be stopped within 5s; 200% < Output≤300% the output will be stopped within 2s ; 300% < Output the output will be stopped immediately			
Function	Protection mode		IGBT overheat、IGBT over current、Transformer overheat、Input under voltage、Input over voltage、 Output under voltage、Output over voltage、Lack output phase、Output over load、Output short cirluit、Output over current			
	Display mode		8 inch LCD display, resolution: 800*600			
	Programming function	Step mode	9999 set			
		Stage mode	100 stage 999999 cycle			
		Varations mode	100 stage999999 cycle			
	Online adjustment function		Under normal mode, the output voltage and output frequency can be adjusted online, which can be switched on line.			
	Memory function/ Shortcut group		Power down memory function, memory last output mode and parameters; 10 groups			
	Line voltage crop compensation		0.000 ~ 0.500Ω			
	Communication		RS232 (standard)、RS485 (options)、GPIB (options)、Ethernet (options) 、Analog control port (options)			
Environment	Temperature/Humidity		0 ~ 40℃; 20 ~ 90%RH			
Dimensions (W×H×D mm)			1800×2000×1400	2400×2000×1400	3000 (1400+1600) ×1900 ×1400	
Weight (Kg)			2730	3150	4270	4660

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

Programmalbe AC Test Power Supply
AN61(F) Series

Product Introduction

The AN61(F) Series Programmable AC Test Power Supply adopts SPWM technology, digital processing technology and high-power switching power supply technology, and it can output AC, DC, and AC+DC power supply, providing precise power input for AC load, DC load, rectifier load, etc. With the ability to provide 3-4 times peak current, it is the best test instrument for measuring surge current and 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, and simulate distortion of the mains power waveform through harmonic or interharmonic overlay functions. It can also provide accurate and fast measurement of power parameters and harmonics. The AN61(F) Series Programmable AC Test Power Supply has excellent power output quality and is widely us. ed in power electronics, military, aviation electronics, IEC standard tests and other industry laboratories and production lines

The AN61(F) Series Programmable AC Test Power Supply has powerful programmable functions and can complete IEC61000-4-11 (pre-certification test)/-4-13/-4-14/-4-28 regulatory immunity tests. In addition, with programmable output impedance, it can be combined with a power analyzer to achieve IEC 61000-3-2/-3-3 harmonic current limitation and flicker regulatory tests, making it the best choice for IEC regulatory tests.

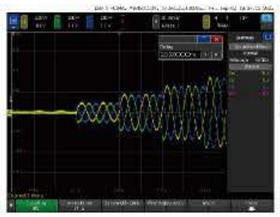
Features

- It has advanced SPWM technology, DSP and FPGA digital processing technology and high-power switching power
- It has output modes include AC, DC, and AC+DC;
- It provides programmable output impedance for IEC61000-3-3 tests;
- It provides voltage and frequency variation tests for IEC61000-4-11, IEC61000-4-14, and IEC61000-4-28;
- It provides harmonic and sub-harmonic waveform synthesis tests for IEC61000-4-13;
- It provides high output peak current for ideal surge current testing;
- It has the pulse output function for voltage dip tests and simulating interference in actual grids;
- It has a step output function, and the step test mode provides a simple automatic switching function to change the output voltage, which changes in a step-like manner instead of gradually;
- It has the sequence output function and the output waveform in the sequence test mode is a combination of all configured serial numbers. Users can edit the required output voltage sequence based on their needs;
- It provides external analog signal input interface for power amplification of external input signals; (available in 615 and 618 Series only)
- It features an LCD, small size, and lightweight, meeting the requirements for standard cabinet installation;
- The 615 and 618 Series is equipped with RS232 communication interface as standard, with optional RS485, GPIB, and Ethernet communication interfaces;
- The AN619(F) Series is equipped with RS485 and Ethernet communication interfaces as standard, with optional RS232 and GPIB communication interfaces.

Applications

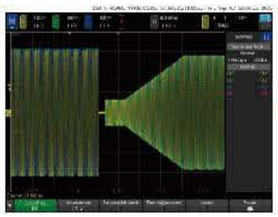
Analog power supply input interference

Through pulse, step, sequence, and other output modes, it can simulate arbitrary output waveforms in single-step or continuous mode, simulating grid fluctuations and interference for testing the DUT (device under test).

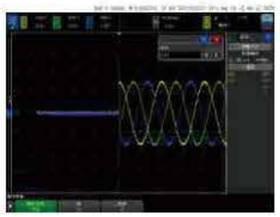


Step output waveform

Step output waveform



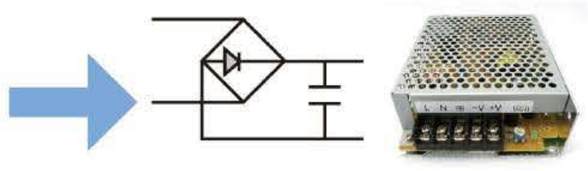
Sequence voltage variation test



Sequence Test Angle Trigger

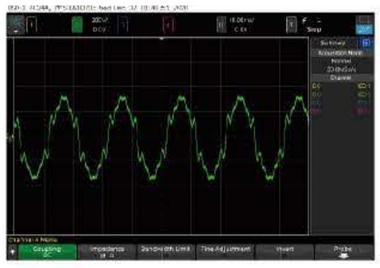
Switching power supply surge current test

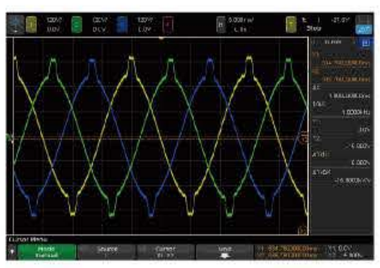
By setting startup and stop angles and providing up to 3-6 times peak current output capability through the output waveform, the AN61 Series Power Supply is an ideal device for testing switching power supply surge currents.



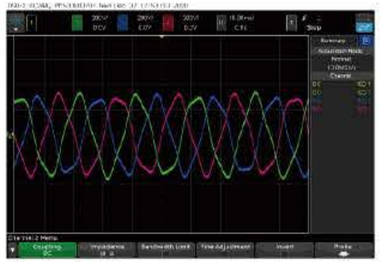
Harmonic and interharmonic synthesis (available in 615 and 619 Series only)

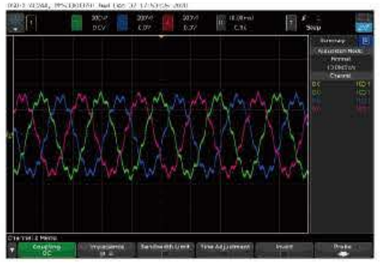
Can superimpose 2-40 harmonics and interharmonics for more comprehensive harmonic simulation tests.





Harmonic output waveform

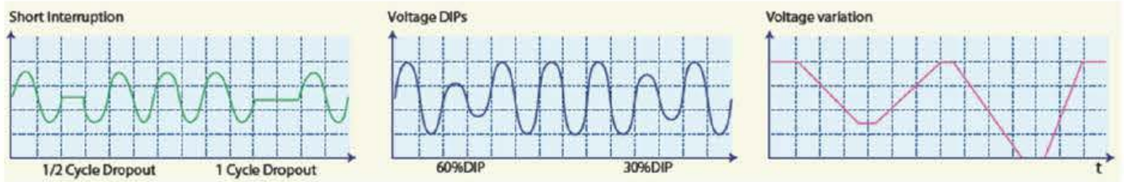




Interharmonic output waveform

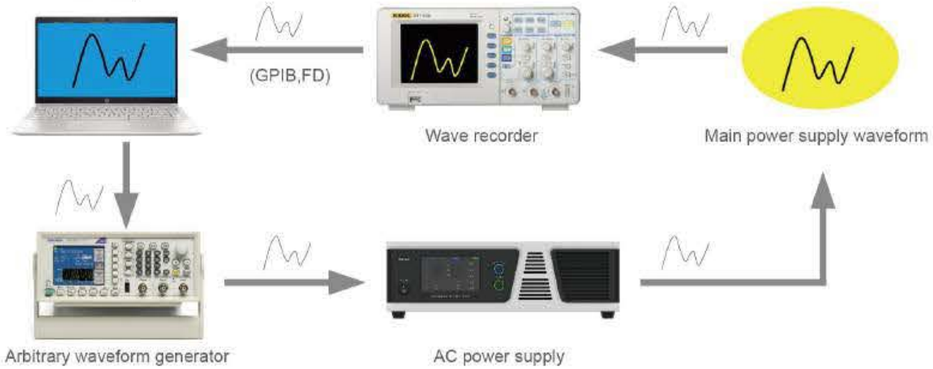
IEC regulatory test

The power supply can output test voltages that meet IEC test conditions. The upper computer software also includes the test process for relevant IEC regulations, making it convenient for customers to quickly set up and use.

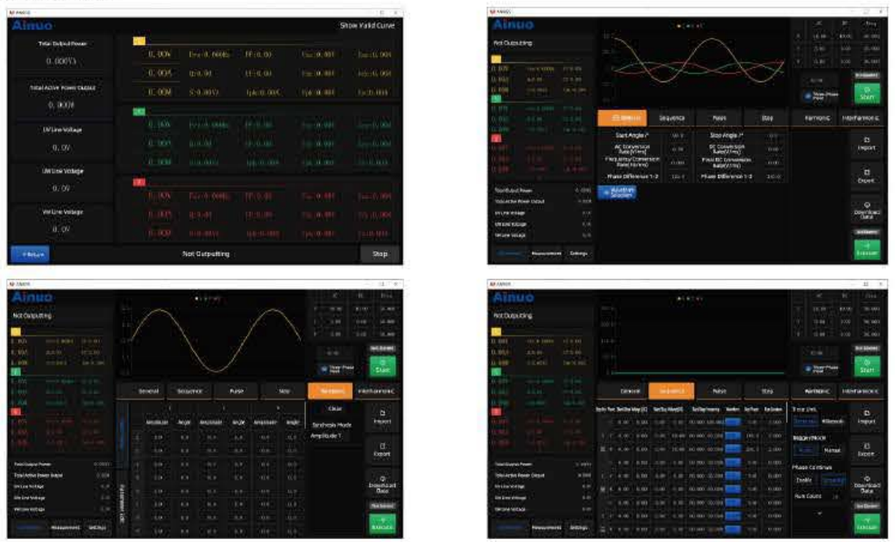


Arbitrary waveform amplification (available in 615 and 618 Series only)

The AN61(F) Series Programmable AC Test Power Supply can amplify any waveform through an external port. Customers can record the actual waveform on-site using a waveform recorder; send it to the external port of the AN61 power supply for amplification using a waveform generator, thereby achieving a realistic simulation of using the actual on-site waveform to test the DUT (device under test).



Computer control software



Specifications

Model			AN615 00S-350(F)	AN615 01S-350(F)	AN615 02S-350(F)	AN615 04S-350(F)	AN615 06S-350(F)	AN618 00S-350(F)	AN618 01S-350(F)	AN618 02S-350(F)	AN618 04S-350(F)	AN618 06S-350(F)
AC Input	Power supply capacity		500VA	1000VA	2000VA	4000VA	6000VA	500VA	1000VA	2000VA	4000VA	6000VA
	Voltage		90～250V single-phase two-wire +PE			Phase Voltage: 198~250V 3-phase 4-wire +PE		90～250V single-phase two-wire +PE			Phase Voltage: 198~250V 3-phase 4-wire +PE	
	Current		8A Max @90V	16A Max @90V	28A Max @90V	18A Max @198V	25A Max @198V	8A Max @90V	16A Max @90V	28A Max @90V	18A Max @198V	25A Max @198V
	Frequency		47～63Hz									
	Power factor #1		≥0.97			≥0.98		≥0.97			≥0.98	
AC Output	Phase number		Single-phase									
	Total Power		500VA	1000VA	2000VA	4000VA	6000VA	500VA	1000VA	2000VA	4000VA	6000VA
	Voltage	Gear range	Low grade: 0.0～175.0V, High grade: 0.0～350.0V; Low gear/high gear/automatic gear									
		Resolution	0.01V									
		Accuracy	0.2%+0.2%F.S.									
		Distortion #2	0.3%@50/60Hz; 1%@15～1000Hz									
		Source voltage effect #3	≤0.1%									
		Load effect #4	≤0.2%									
	Current /phase Effective value range	0-175V	5A	10A	20A	40A	60A	5A	10A	20A	40A	60A
		0-350V	2.5A	5A	10A	20A	30A	2.5A	5A	10A	20A	30A
	Current /phase Peak value range	0-175V	20A	40A	80A	160A	240A	20A	40A	80A	160A	240A
		0-350V	10A	20A	40A	80A	120A	10A	20A	40A	80A	120A
	Frequency	Range/Resolution /Accuracy	15～1000Hz, 0.001Hz, 0.15%									
DC Output	Power		250W	500W	1000W	2000W	3000W	250W	500W	1000W	2000W	3000W
	Voltage	Gear range/Resolution/Accuracy	-247.5V~247.5V, high gear: -495.00V～495.00V; Low gear/high gear/automatic gear/0.01V/0.1%F.S.									
	Current	-247.5~247.5V	2.5A	5A	10A	20A	30A	2.5A	5A	10A	20A	30A
		-495.0~495.0V	1.25A	2.5A	5A	10A	15A	1.25A	2.5A	5A	10A	15A
Measure-ment accuracy	Voltage	Range/Resolution /Accuracy *5	AC: 350.00V, DC: 495.00V; 0.01V; 0.2%+0.2%F.S.									
	Current	Range	24A	48A	96A	160A	240A	24A	48A	96A	160A	240A
		Resolution	0.01A									
		Effective value accuracy*6	0.4%+0.6%F.S.									
		Peak value accuracy*6	0.4%+0.6%F.S.									
	Power	Resolution/Accuracy *7	0.01W; 0.4%+0.6%F.S.									
Fun-ction	Display/Waveform selection		5-inch color touch screen LCD/Sine wave, square wave, clipped sine wave, 30 sets of built-in waveforms									
	Start-stop angle/Knob function/ Programmable output impedance		0-359.9°/Knob adjustment available for conventional mode voltage and frequency settings /0Ω+0μH～1Ω+1mH									
	Harmonics		2~40 times					None				
	Harmonic and interharmonic simulation bandwidth		2400Hz					None				
	Sequence mode		100 steps with 9,999 loops. Voltage, frequency, and phase angle can be programmatically outputted									
	Pulse mode		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									
	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/Communication interface		The device has Sense terminals that allow remote sampling compensation/RS232 (standard), RS485 (optional), GPIB (optional), and Ethernet (optional)									
	Remote control		Analog control port (standard)									
Work-ing environment	Temperature/Humidity		0～40℃/30～90%RH									
	Efficiency *8 /Protection		≥92%/Input abnormality, bus overvoltage, output overvoltage and undervoltage, output overcurrent, output overload, and module overheating									
Shape	Height		3U		5U			3U			5U	
	Dimensions (W×H×D mm)		432×134×630		432×222×640			432×134×630			432×222×640	
			The width does not include the suspension ear, and the width of suspension ear is 24mm; The height does not include the feet, the feet are detachable and 15mm in height; The depth does not include the handle, and the depth of the handle is 50 mm.									
Weight (Kg)			≤21		≤40			≤21			≤40	

Specifications

Model			AN61903S -350(F)	AN61905S -350(F)	AN61906S -350(F)	AN61910S -350(F)	AN61912S -350(F)	AN61915S -350(F)	AN61920S -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
	Frequency		47~63Hz						
	Power factor #1		≥0.98						
AC Output	NPhase number		Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase	Single-phase
	Power		3000VA	5000VA	6000VA	10000VA	12000VA	15000VA	20000VA
	Voltage	Range	0.00~350.00V						
		Resolution	0.01V						
		Precision	0.1%F.S.						
		Distortion #2	0.3%@50/60Hz; 1%@30-100Hz						
		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						
		Accuracy	0.01%						
	Power	Range	3000W	5000W	6000W	10000W	12000W	15000W	20000W
DC output	Voltage	Range	-495.00~495.00V						
		Resolution	0.01V						
		Accuracy	0.1%F.S.						
	Current	Range	35A	35A	35A	60A	70A	120A	120A
Measur -ement acc -uracy	Voltage	Range	AC: 350V; DC: 495.00V						
		Resolution	0.01V						
		Accuracy *5	0.1%F.S.						
	Current	Range (Effective value/Peak)	35A	35A	35A	60A	70A	120A	120A
		Peak value	105A	105A	105A	180A	210A	360A	360A
		Resolution	0.01A						
		Effective value accuracy*6	0.2%F.S.						
		Peak value accuracy*6	0.5%F.S.						
	Power	Resolution	0.01W						
		Accuracy *7	0.3%F.S.						
Fun- ction	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		2-50th						
	Harmonic and interharmonic simulation bandwidth		3000Hz						
	Sequence mode		200 steps with 9,999 loops. Voltage, frequency, and phase angle can be programmatically outputted						
	Pulse mode		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						
	Online regulation		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						
	Communication interface		RS485 (standard), Ethernet (standard), synchronization signal (standard), RS232 (optional), GPIB (optional)						
	Remote control		None						
Working environmen	Temperature		0~40℃						
	Humidity		30~90%RH						
Efficiency #8			≥92%						
Shape	Protection		Input abnormality, bus overvoltage, output overvoltage and undervoltage, output overcurrent, output overload, and module overheating						
	Height								
	Dimensions (W×H×D mm)		432×175×700	432×175×700	432×175×700	432×175×735	432×175×700	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. 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)			≤25	≤25	≤25	≤26	≤35	≤38	≤38

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

Specifications

Model				AN61906A -350(F)	AN61909A -350(F)	AN61912A -350(F)	AN61915A 350(F)	AN61918A -350(F)	AN61920A -350(F)	AN61925A -350(F)	AN61930A 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
		Per phase power		2000VA	3000VA	4000VA	5000VA	6000VA	6667VA	8333VA	10000VA
	Voltage	Range		0.00~350.00V							
		Resolution		0.01V							
		Precision		0.1%F.S.							
		Distortion #2		0.3%@50/60Hz; 1%@30-100Hz							
		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%							
DC output	Power	Total power		6000W	9000W	12000W	15000W	18000W	20000W	25000W	30000W
		Power per channel		2000W	3000W	4000W	5000W	6000W	6667W	8333W	10000W
	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	60A
			Parallel connection	105A	105A	105A	105A	105A	180A	180A	180A
Measur -ement acc -uracy	Voltage	Range		AC: 350V; DC: 495.00V							
		Resolution		0.01V							
		Accuracy #5		0.1%F.S.							
	Current	Range	Effective value	105A	105A	105A	105A	105A	180A	180A	180A
			Peak value	315A	315A	315A	315A	315A	540A	540A	540A
		Resolution		0.01A							
		Effective value accuracy #6		0.2%F.S.							
		Peak value accuracy #6		0.5%F.S.							
	Power	Resolution		0.01W							
		Accuracy #7		0.3%F.S.							
Fun- ction	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							
	Harmonic and interharmonic simulation bandwidth			3000Hz							
	Sequence mode			200 steps with 9,999 loops. Voltage, frequency, and phase angle can be programmatically outputted							
	Pulse mode			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							
	Online regulation function			In Common mode, the output voltage/frequency can be adjusted online, and waveforms can be switched online							
	Line drop compensation			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), RS232 (optional) and GPIB (optional)							
	Remote control			None							
Working environment	Temperature			0~40℃							
	Humidity			30~90%RH							
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	432×175×700	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. 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)				≤45	≤45	≤45	≤45	≤45	≤52	≤52	≤52

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

Exceeding & Trustworthy AC Power Supply Ainuo

Specifications

Model				AN61950B-350(F)	AN61960B-350(F)	AN61975B-350(F)	AN61990B-350(F)	AN619100B-350(F)	AN619120B-350(F)
Power supply capacity				50kVA	60kVA	75kVA	90kVA	100kVA	120kVA
AC input	Voltage			Lin 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	Phase number			Three-phase& Single-Phase					
	Power	Total power		50kVA	60kVA	75kVA	90kVA	100kVA	120kVA
		Per phase power		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%@30-100Hz					
		Source effect #3		≤0.02%					
		Load effect #4		≤0.02%					
	Current	Effective value range	Three-phase mode	120A	120A	180A	180A	240A	240A
			Single-phase mode	360A	360A	540A	540A	720A	720A
		Peak value range	Three-phase mode	360A	360A	540A	540A	720A	720A
			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
Measur-ement acc-uracy	Voltage	Range		AC：350V；DC：495.00V					
		Resolution		0.01V					
		Accuracy #5		0.1%F.S.					
	Current	Range	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.					
		Peak value accuracy #6		0.5%F.S.					
	Power	Resolution		0.01W					
		Accuracy #7		0.3%F.S.					
Fun-ction	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			2-50th					
	Harmonic and interharmonic simulation bandwidth			3000Hz					
	Sequence mode			200 steps with 9,999 loops. Voltage, frequency, and phase angle can be programmatically outputted					
	Pulse mode			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					
	Online regulation function			Under the conventional mode, the output voltage and frequency can be adjusted online, and the waveform can be switched online					
	Lead drop compensation			The device has Sense terminals that allow remote sampling compensation					
	Communication interface			RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)					
	Remote control			None					
Working environment	Temperature			0～40℃					
	Humidity			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)			600x1,230 (the height with casters is 118)x 1,000					
Weight (Kg)				≤330	≤330	≤380	≤380	≤440	≤440

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 voltage and DC voltage 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;
Any changes to the above parameter specifications will not be notified separately. The power supply parameters at the time of shipment shall prevail.

Programmalbe Grid Simulator
ANGS(F) Series

Product Introduction

The ANGS(F) Series Programmalbe Grid Simulator is specially developed for the new energy industries such as photovoltaic and wind power, applicable to inverter testing and verification. The power supply adopts FPGA digital control technology, able to completely realize the intelligent test process of inverters; With sine wave output mode and a variety of harmonic superposition output mode, single-phase, two-phase or three-phase low (zero) voltage ride-through, it is capable of fully simulating various abnormal grid conditions, able to assist in completing the overvoltage/undervoltage, overfrequency/underfrequency, unbalance and anti-islanding protection function tests, meeting the testing requirements of the relevant laws and regulations.

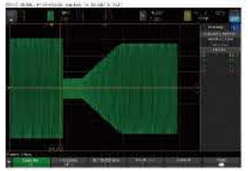
Features

- It adopts FPGA digital control technology, able to completely realize the intelligent test process of inverters.
- It has high-performance high and low (zero) voltage ride-through, step, dip, flicker and other test functions, capable of performing 1ms ride-through test.
- It can set complex programming modes for voltage and frequency, able to easily realize the overvoltage/undervoltage, overfrequency/underfrequency tests.
- It has the function of 2-50 harmonic outputs and interharmonic outputs.
- It has the three-phase unbalance mode, capable of adjusting three-phase voltage and three-phase phase difference, realizing the three-phase unbalance test.
- It is able to withstand 2S for 3 times the rated current impact, with strong load capacity.
- It has complete measurement functions: voltage, current, current peak value, frequency, active power, apparent power, power factor, and voltage peak factor.
- It has the online monitoring function: monitor parameters such as IGBT temperature, transformer temperature, fan speed and input voltage under output state.
- It has the "black box" function: automatically record power supply status, alarm codes, etc. to greatly reduce maintenance time.
- The fan speed is automatically adjusted according to the power supply temperature, reducing noise.
- It provides a Lock key, with a user-friendly design that automatically locks after 5 minutes of inactivity to prevent misoperation.
- The chassis is in the form of a combination cabinet, with an 8-inch large-screen color LCD display.
- It is equipped with a standard RS232 communication interface and can be optionally equipped with RS485, GPIB, Ethernet communication interfaces or analog control mode.

Applications

- **High and low voltage ride-through:** The programmed output mode set for the photovoltaic industry is used to simulate the process of grid fall and recovery, and is capable of simulating a variety of modes such as zero voltage ride-through, low voltage ride-through, high voltage ride-through, and a combination of high and low voltage ride-through, and arbitrarily setting the voltage, maintenance time, ride-through angle, recovery voltage, etc.

Zero voltage ride-through

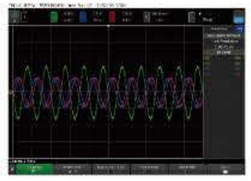


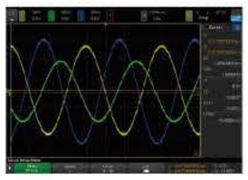
Low voltage ride-through

High voltage ride-through

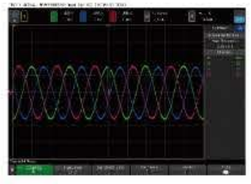
Combination of high and low voltage ride-through

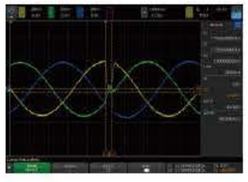
- **Unbalance:** U, V and W phases and voltages can be set separately, or the degree of unbalance can be set directly.





- **Transient change:** An output method that simulates transient change in voltage, able to perform 1ms zero voltage ride-through.

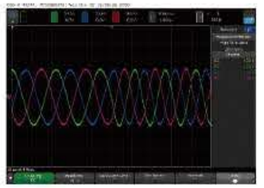




1ms ride-through

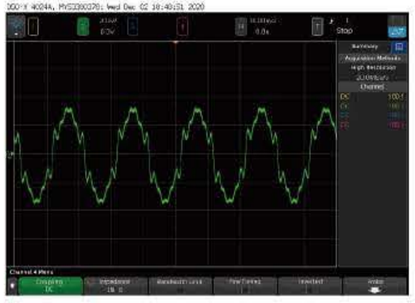
- **Programming:** It has universally programmable settings, where voltage, frequency and phase can be changed according to single-step settings. Trigger phase and loop count can be set, and parameters of three-phase outputs can be separately configured. Any phase jump/ride-through test can be achieved.

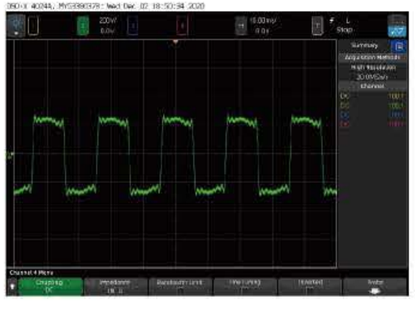
Gradual change in voltage + sudden change in voltage + sudden change in frequency



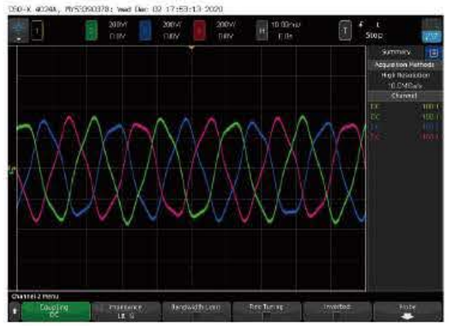
Sudden change in frequency at 0°

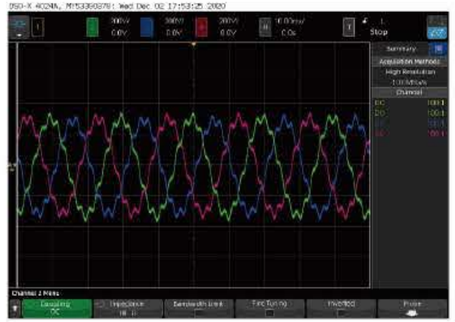
- **Harmonics:** The power supply has the harmonic editing function (2 - 50 times), able to add harmonics based on the standard sine wave, and set the harmonic content and angle, with single harmonic up to 30%, and the total harmonic content and number of harmonic superpositions unlimited. Moreover, it has 50 harmonic storage groups for quick call.





Interharmonics: The power supply has the interharmonic editing function, allowing addition of interharmonics based on the standard sine wave. Interharmonic trigger angle, frequency, content, and scan time can be set, with an interharmonic frequency range of 16 - 2,400Hz.

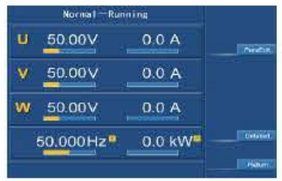




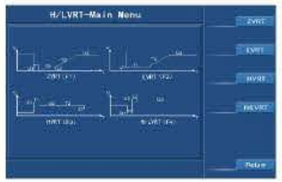
Flicker: The power supply can simulate the flicker characteristics of the power grid and test the flicker adaptation of the DUT.

Large-size color LCD: numeric key input, knob operation.

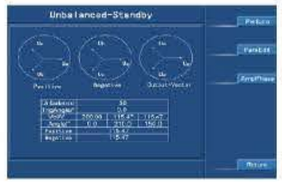
Harmonic output waveform



Conventional Mode - Operation State



High and Low Voltage Ride-through - Main Menu

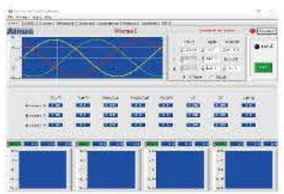


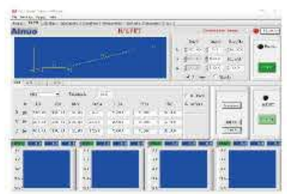
Unbalance Mode - Standby State

Transient Mode - Standby State

Flicker Mode - Standby State

Computer control software





Specifications

Model			ANGS015T(F)	ANGS030T(F)	ANGS045T(F)	ANGS060T(F)	ANGS090T(F)	ANGS120T(F)	ANGS180T(F)	ANGS240T(F)
Power Supply Capacity			15kVA	30kVA	45kVA	60kVA	90kVA	120kVA	180kVA	240kVA
Input	Voltage, Frequency		Three-phase four-wire +PE; Phase voltage: 220V±33V, line voltage: 380V±57V, and frequency: 50/60Hz±3Hz							
output	Output Mode		Three-phase four-wire standard mode, three-phase unbalance mode							
	Voltage, Frequency		Phase voltage: 0.0 ~ 300.0V, frequency: 40.00 ~ 70.00Hz							
	Rated Current	220V	22.7A	45.4A	68.2A	90.9A	136.3A	181.8A	272.7A	363.6A
	Setting Accuracy	Voltage	Resolution: 0.1V, accuracy: 0.2% × reading value + 0.2% × full range value							
		Frequency	Resolution: 0.01Hz, accuracy: 0.05%							
	Measure-ment Accuracy	Voltage	Resolution: 0.1V, accuracy: 0.2% × reading value + 0.2% × full range value							
		Frequency	Resolution: 0.01Hz, accuracy: 0.05%							
		Current	Resolution: 0.1A/1A, accuracy: 0.3% × reading value + 0.3% × full range value							
		Power	Resolution: 0.1kW/0.01kW/0.001kW, accuracy: 0.45% × reading value + 0.45% × full range value							
	Frequency Stability		≤ 0.02%							
	Voltage Distortion Degree		Linear load: THD < 1%							
	Response Time		1ms							
	Three-phase Phase Difference		Three-phase standard mode: 120°±2°							
			Three-phase unbalance mode: 0.0° ~ 359.9°, adjustable by 0.1°							
	Phase Voltage Wave Peak Facto		1.41±0.1							
	Source Voltage Effect		≤ 1%							
	Load Effect		≤ 1%							
	Overload Capacity		When 105% < Output ≤ 110%, the output will be shut off after 15s; When 110% < Output ≤ 200%, the output will be shut off after 5s; When 200% < Output ≤ 300%, the output will be shut off after 2s; When 300% < Output, the output will be shut off immediately.							
	Protection Device		IGBT overheating, IGBT overcurrent, transformer overheating, input overvoltage, input undervoltage, output overvoltage, output undervoltage, output phase loss, output overcurrent, output overload, output short circuit, bus recharge prevention							
Fun-ctions	Display Mode		8-inch LCD display, resolution: 800*600							
	Output Waveform		Sine wave, harmonic (2 ~ 50 harmonic superpositions)							
	Online Regulation Function		Under the conventional mode, the output voltage and frequency can be adjusted online							
	Transient Mode		Available. Capable of achieving voltage step (voltage dip) from high voltage to low voltage or from low voltage to high voltage							
	Flicker Mode		Available. Capable of calling any one set of flicker parameters from 1 to 39 groups							
	High/Low (Zero) Voltage Ride-through Mode		Available. Users need to make personalized adjustments							
	Unbalance Mode		Available. Capable of adjusting three-phase voltage and three-phase phase difference separately or directly set three-phase unbalance degree							
	Programming Mode		200 steps with 999,999 loops. Voltage, frequency, and phase angle can be programmatically outputted							
	Startup Slow Rising Time		0.0 ~ 99.9s							
	Memory Function		Power-off memory function capable of remembering the last output mode and parameters							
	Line Drop Compensation		0.000 ~ 0.500Ω							
	Communication Interface		RS232 (standard), RS485 (optional), GPIB (optional), Ethernet (optional)							
Environ-ment	Temperature, Humidity		0 ~ 40℃, 20 ~ 90%RH							
Dimensions (W×H×D mm)			1,000×1,990×800			1,200×1,990×800		1,200×1,990×1,000		
Weight (Kg)			310	360	500	620	810	1,060	1,350	1,520

The above specifications are subject to change without notice.

Exceeding & Trustworthy AC Power Supply Ainuo

Regenerative Grid Simulator
ANRGS(F) Series

Product Introduction

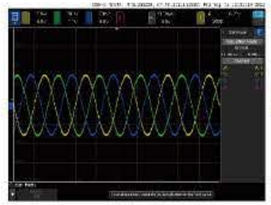
The ANRGS(F) Series Regenerative Grid Simulator adopts advanced SPWM technology, FPGA digital processing technology and high-power switching power supply technology, and it can output AC, DC, and AC+DC power supply, providing precise power input for AC load, DC load, rectifier load, etc. The power supply 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

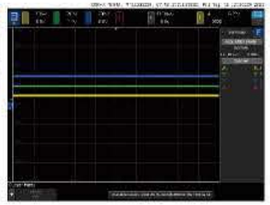
- It has advanced SPWM technology and FPGA digital processing technology and high-power switching power supply technology with high power density.
- It has output modes include AC, DC, and AC+DC.
- It has 100% rated power feedback to the grid, and the power supply can operate in all four quadrants.
-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

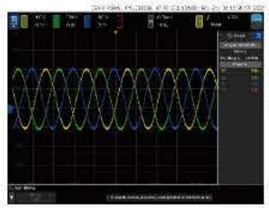
- **AC+DC output mode:** Three output modes: AC, DC, and AC+DC



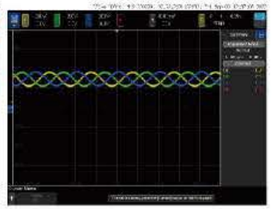
AC mode



DC mode

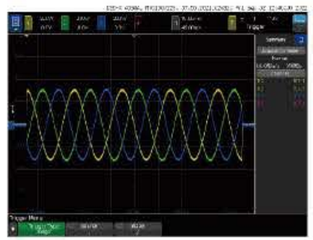


AC+DC mode



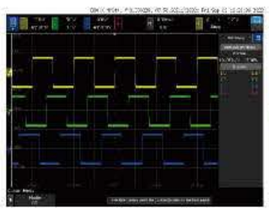
AC+DC mode

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

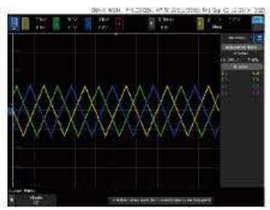


U-phase starts at 90° and stops at 270° waveform

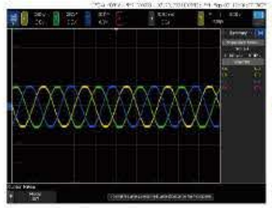
- **Output waveform options:** The three-phase output waveform can be independently set to select sine wave, square wave, triangular wave, clipped sine wave, 30 sets of built-in waveforms, and 6 sets of user-defined waveforms.



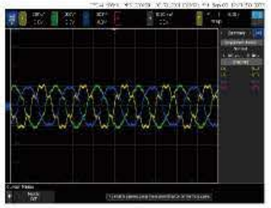
Square wave



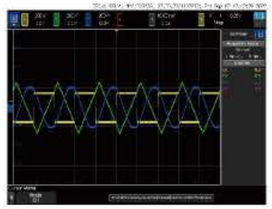
Triangular wave



Clipped sine wave

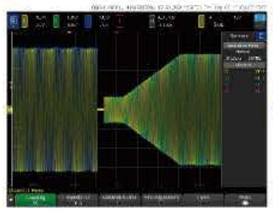


Built-in waveform

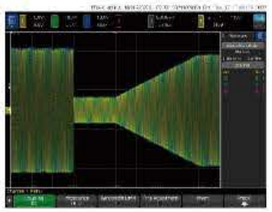


Different waveforms set for three phases

- **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.

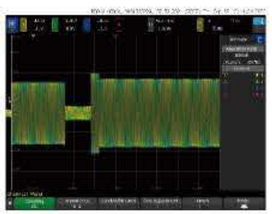


Zero voltage crossing test



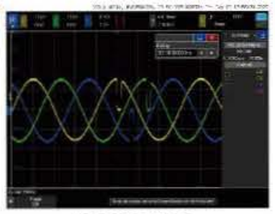
Low voltage crossing test

High voltage crossing test

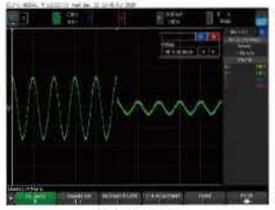


High and low voltage crossing tests

Different waveforms can be selected during testing



Each phase stops within 1ms at 90°



90° crossing

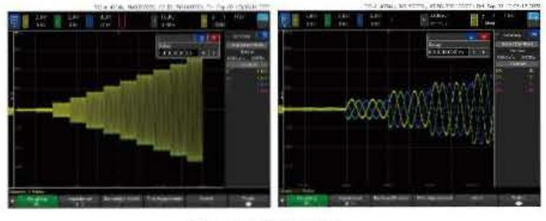
0°crossing

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.



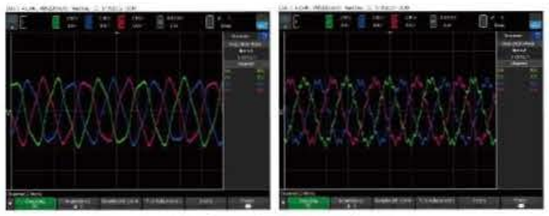
Step output waveform

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 thenumber 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			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)
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
	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
	Power		3000VA	5000VA	6000VA	10000VA	12000VA	15000VA	20000VA
	Voltage	Range	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%						
		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						
		Accuracy	0.01%						
	Power	Range	3000W	5000W	6000W	10000W	12000W	15000W	20000W

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	0.01V						
		Accuracy	0.1%F.S.						
	Current	Range	35A	35A	35A	60A	70A	120A	120A
Measurement accuracy	Voltage	Range	AC: 350.00V; DC: 495.00V						
		Resolution	0.01V						
		Accuracy *5	0.1%F.S.						
	Current	Range Effective value	35A	35A	35A	60A	70A	120A	120A
		Range Peak value	105A	105A	105A	180A	210A	360A	360A
		Resolution	0.01A						
		Effective value accuracy*6	0.2%F.S.						
		Peak value accuracy*6	0.5%F.S.						
	Power	Resolution	0.01W						
		Accuracy *7	0.3%F.S.						
Measurement accuracy	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						
	Harmonic and interharmonic simulation bandwidth		3000Hz						
	Sequence mode		200 steps with 9,999 loops. Voltage, frequency, and phase angle can be programmatically outputted						
	Pulse mode		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						
	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		The device has Sense terminals that allow remote sampling compensation						
	Communication interface		RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)						
	Remote control		None						
Working environment	Temperature		0～40℃						
	Humidity		30～90%RH						
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	432×175×735	432×175×700	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. 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)			≤25	≤25	≤25	≤26	≤35	≤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							
	Phase number			Three-phase & single-phase							
AC output	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%							
		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							
		Accuracy		0.1%F.S.							
	Current	Range	Single channel	35A	35A	35A	35A	35A	60A	60A	60A
			Parallel connection	105A	105A	105A	105A	105A	180A	180A	180A
Measurement accuracy	Voltage	Range		AC: 350.00V; DC: 495.00V							
		Resolution		0.01V							
		Accuracy *5		0.1%F.S.							
	Current	Range	Effective value	105A	105A	105A	105A	105A	180A	180A	180A
			Peak value	315A	315A	315A	315A	315A	540A	540A	540A
		Resolution		0.01A							
		Effective value accuracy*6		0.2%F.S.							
		Peak value accuracy*6		0.5%F.S.							
	Power	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			Can achieve parallel operation of multiple units							
	Harmonics			2-50 times							
	Harmonic and interharmonic simulation bandwidth			3000Hz							
	Sequence mode			200 steps with 9,999 loops. Voltage, frequency, and phase angle can be programmatically outputted							
	Pulse mode			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							
	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			The device has Sense terminals that allow remote sampling compensation							
	Communication interface			RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)							
	Remote control			None							
Working environment	Temperature			0～40℃							
	Humidity			30～90%RH							
Efficiency *8				≥92%							
Protection				nput 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	432×175×700	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%@30-100Hz					
		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
	Frequ-ency	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 channe	120A	120A	180A	180A	240A	240A
		Parallel connection	360A	360A	540A	540A	720A	720A
Measu-rement accu-racy	Voltage	Range	AC: 350V; DC: 495.00V					
		Resolution	0.01V					
		Accuracy *5	0.1%F.S.					
	Current	Range Effective value	360A	360A	540A	540A	720A	720A
		Range Peak value	1080A	1080A	1620A	1620A	2160A	2160A
		Resolution	0.01A					
		Effective value accuracy*6	0.2%F.S.					
		Peak value accuracy*6	0.5%F.S.					
	Power	Resolution	0.01W					
		Accuracy *7	0.3%F.S..					
Fun-ction	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					
	Communication interface		RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)					
	Remote control		None					
Working environment	Temperature/		0-40℃					
	humidity		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.

Applications

HVRT/LVRT: Programmed output mode for photovoltaic industries, to simulate the process of grid voltage sags and recovery and can simulate multiple modes such as zero voltage ride through (ZVRT), low voltage ride through (LVRT), high voltage ride through (HVRT), and Combined HVRT/LVRT etc., and the voltage, holding time, ride through angle, recovery voltage etc. can be set.

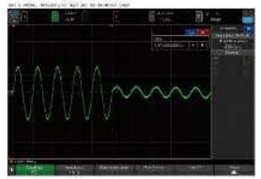
Zero Voltage Ride-Through (ZVRT)

Low Voltage Ride-Through (LVRT)

High Voltage Ride-Through (HVRT)

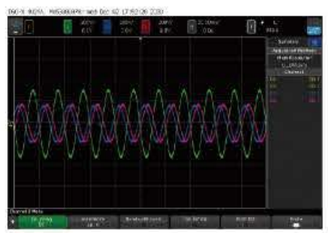
High/Low Voltage Ride-Through (H/LVRT)

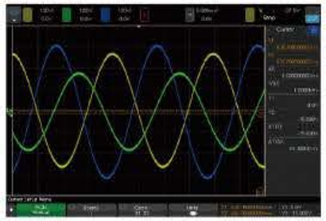
90° Ride-Through



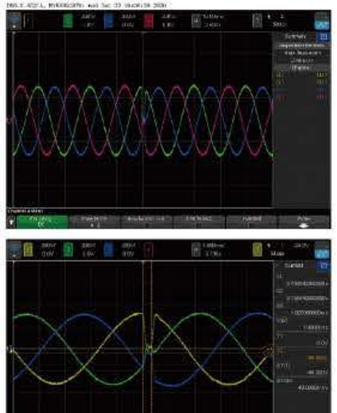
0° Ride-Through

Unbalance: setting of U/V/W phase and voltage individually, direct setting of unbalance.



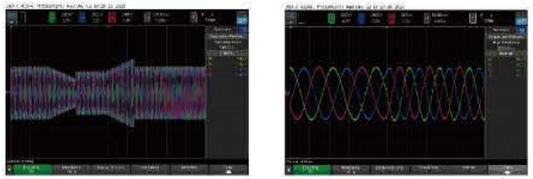


Sag: An output mode simulating short-time changes to voltage, 1ms Zero Voltage Ride-Through test.

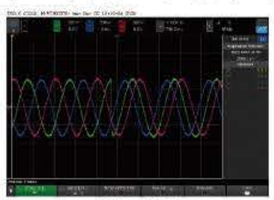


1ms Ride-Through

Programming: General programmable settings, voltage/-frequency/phase are transformed by single-step setting, setting of trigger phase and cycle times, setting of parameters separately for three-phase output, sag/ride-through test in any phase.

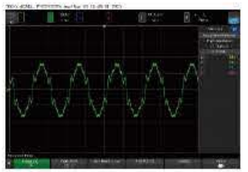


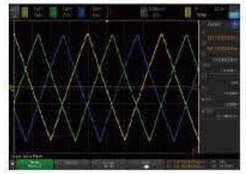
Voltage Ramp + voltage jump + frequency jump Frequency 0° jump



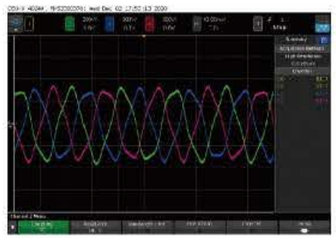
90° to 270°

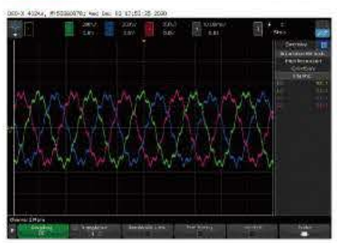
Harmonic: Harmonic editing (2-50th), various harmonics of various orders superposed on standard sine wave, setting of component and angle of each harmonic. The single harmonic can reach 30%, unlimited total harmonic content and harmonic superposition times. 50 sets of harmonic storage groups for fast calling.





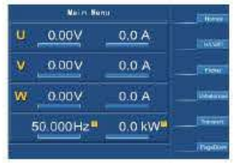
Interharmonics: Interharmonic editing, interharmonics superposed on standard sine waves, setting of interharmonic trigger angle, frequency, component and scanning time; frequency of interharmonic: 16-2500Hz.

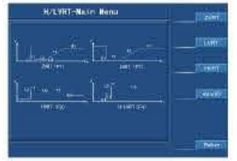


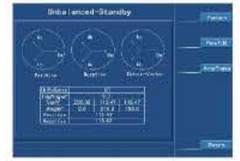


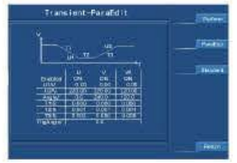
Flicker: Simulate the flicker characteristics of power grid to conduct the flicker adaptability test of DUT.

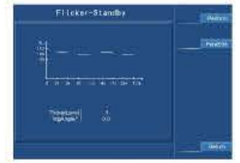
Large-size color LCD, numeric key input, knob operation.



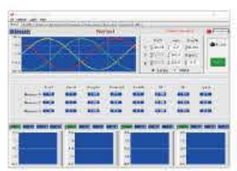








PC control software



Specifications

Model			ANBGS 015TL(F)	ANBGS 030TL(F)	ANBGS 045TL(F)	ANBGS 060TL(F)	ANBGS 090TL(F)	ANBGS 120TL(F)	ANBGS 150TL(F) ANBGS 150TH(F)	ANBGS 200TL(F) ANBGS 200TH(F)	ANBGS 300TL(F) ANBGS 300TH(F)	ANBGS 400TL(F) ANBGS 400TH(F)
Capacity			15kVA	30kVA	45kVA	60kVA	90kVA	120kVA	150kVA	200kVA	300kVA	400kVA
Input	Voltage		3-phase 4-wires + PE, Phase voltage: 220V±33V, line voltage: 380V±57V, frequency 50/60Hz±3Hz									
	Feedback function		With energy feedback grid function									
	Input power factor		>0.99(input rated voltage and input 50%-100% of rated current)									
	Input current distortion		<3% (at rated condition)									
Output	Output mode		Three-phase standard mode, three-phase unbalanced mode									
	Voltage, frequency	L version	Phase voltage: 0.0～350.0V; frequency: 40.00～70.00Hz									
		H version	Phase voltage: 0.0～700.0V; frequency: 40.00～70.00Hz									
	Rated current	L version 220V	22.7A	45.4A	68.1A	90.9A	136.4A	181.8A	227.2A	303.0A	454.5A	606.0A
		H version 440V	-	-	-	-	-	-	113.6A	151.5A	227.2A	303.0A
	Setting accuracy	Voltage	Resolution: 0.01V, Accuracy: 0.1%×full scale value									
		Frequency	Resolution: 0.001Hz, Accuracy: 0.01%									
	Testing accuracy	Voltage	Resolution: 0.01V, Accuracy: 0.1%×full scale value									
		Frequency	Resolution: 0.001Hz, Accuracy: 0.01%									
		Current	Resolution: 0.1A/1A, Accuracy: 0.2%×full scale value									
		Power	Resolution: 0.1kW/0.01kW/0.001kW, Accuracy: 0.3%×full scale value									
	Frequency stability		≤0.01%									
	Voltage distortion		Linear load<1%									
	Transient recovery time		1ms									
	3 phase phase difference		3-phase standard mode: 120°±2°; 3 phase unbalanced mode: 0.0°～359.9°, 0.1°Adjusted									
	Crest factor		1.41±0.1									
	Source voltage effect		≤0.02%									
	Load effect		≤0.02%									
	Overload capacity		105%<Output≤110% the output will be stopped within 600s; 110%<Output≤150% the output will be stopped within 60s; 150%<Output≤200% the output will be stopped within 2s; 200%<Output the output will be stopped immediately									
	Protection mode		IGBT overheat, IGBT over current, Transformer overheat, Input under voltage, Input over voltage, bus anti-recharge, Output under voltage, Output over voltage, Output lack phase, Output over current, Output over load, Output short circuit									
Function	Display		8" LCD, resolution: 800*600									
	Output waveform		Sine wave, harmonic (superimposed 2~50th harmonic), interharmonic									
	Transient mode		Yes, Voltage steps (sag) from high voltage to low voltage or low voltage to high voltage									
	Flicker mode		Yes, call of any group of flicker parameters from Group 1~39.									
	HVRT/LVRT mode		Yes, the standard curve can be called or customized as required for the user									
	Unbalanced mode		Yes, adjustable three-phase voltage/phase difference separately, or direct setting of three-phase unbalance;									
	Programming mode		200 steps of 999999 cycles, voltage/frequency/phase angle programmed freely for output									
	Soft-start time		0.0~99.9Sec.									
	Online adjustment function		Online adjusting of output voltage/frequency and switch of wave in normal mode									
	Memory		Power down memory function, memory last output mode and parameters.									
	Communication		RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional), GPIB (optional)									
Environment	Temp./Humidity		0～40℃, 20～90%RH									
Dimensions(W×H×D mm)			800×1790 (including caster height 190)×800 800×1700 (including base height 100)×800		1000×1900 (including caster height 190)×1000 1000×1900 (including base height 100)×1000				1500×1900 (including base height 100)×1000		2000×1900 (including base height 100)×1150	

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

Specifications

Model			ANBGS 500TL(F) ANBGS 500TH(F)	ANBGS 600TL(F) ANBGS 600TH(F)	ANBGS 800TL(F) ANBGS 800TH(F)	ANBGS 1000TL(F) ANBGS 1000TH(F)	ANBGS 1200TL(F) ANBGS 1200TH(F)	ANBGS 1500TL(F) ANBGS 1500TH(F)	ANBGS 2000TL(F) ANBGS 2000TH(F)
Capacity			500kVA	600kVA	800kVA	1000kVA	1200kVA	1500kVA	2000kVA
Input	Voltage		3-phase 4-wires + PE, Phase voltage: 220V±33V, line voltage: 380V±57V, frequency 50/60Hz±3Hz						
	Feedback function		With energy feedback grid function						
	Input power factor		>0.99(input rated voltage and input 50%-100% of rated current)						
	Input current distortion		<3% (at rated condition)						
Output	Output mode		Three-phase standard mode, three-phase unbalanced mode						
	Voltage, frequency	L version	Phase voltage: 0.0～350.0V; frequency: 40.00～70.00Hz						
		H version	Phase voltage: 0.0～700.0V; frequency: 40.00～70.00Hz						
	Rated current	L version 220V	757.5A	909.0A	1212A	1515A	1818A	2272A	3030A
		H version 440V	378.7A	454.5A	606.0A	757.5A	909.0A	1136A	1515A
	Setting accuracy	Voltage	Resolution: 0.01V, Accuracy: 0.1%×full scale value						
		Frequency	Resolution: 0.001Hz, Accuracy: 0.01%						
	Testing accuracy	Voltage	Resolution: 0.01V, Accuracy: 0.1%×full scale value						
		Frequency	Resolution: 0.001Hz, Accuracy: 0.01%						
		Current	Resolution: 0.1A/1A, Accuracy: 0.2%×full scale value						
		Power	Resolution: 0.1kW/0.01kW/0.001kW, Accuracy: 0.3%×full scale value						
	Frequency stability		≤0.01%						
	Voltage distortion		Linear load: THD<1%						
	Transient recovery time		1ms						
	3 phase phase difference		3-phase standard mode: 120°±2°; 3 phase unbalanced mode: 0.0°～359.9°, 0.1°Adjusted						
	Crest factor		1.41±0.1						
	Source voltage effect		≤0.02%						
	Load effect		≤0.02%						
	Overload capacity		105%<Output≤110% the output will be stopped within 600s; 110%<Output≤150% the output will be stopped within 60s; 150%<Output≤200% the output will be stopped within 2s; 200%<Output the output will be stopped immediately						
	Protection mode		IGBT overheat, IGBT over current, Transformer overheat, Input under voltage, Input over voltage, bus anti-recharge, Output under voltage, Output over voltage, Output lack phase, Output over current, Output over load, Output short circuit						
Function	Display		8" LCD, resolution: 800*600						
	Output waveform		Sine wave, harmonic (superimposed 2~50th harmonic), interharmonic						
	Transient mode		Yes, Voltage steps (sag) from high voltage to low voltage or low voltage to high voltage						
	Flicker mode		Yes, call of any group of flicker parameters from Group 1~39.						
	HVRT/LVRT mode		Yes, the standard curve can be called or customized as required for the user						
	Unbalanced mode		Yes, adjustable three-phase voltage/phase difference separately, or direct setting of three-phase unbalance;						
	Programming mode		200 steps of 999999 cycles, voltage/frequency/phase angle programmed freely for output						
	Soft-start time		0.0~99.9Sec.						
	Online adjustment function		Online adjusting of output voltage/frequency and switch of wave in normal mode						
	Memory		Power down memory function, memory last output mode and parameters.						
	Communication		RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional), GPIB (optional)						
Environment	Temp./Humidity		0～40℃, 20～90%RH						
Dimensions(W×H×D mm)			3000×1900 (including the base height 100)×1200		4000×1900 (including the base height 100)×1200		5000×2100 (including the base height 100)×1400	7500×2100 (including the base height 100)×1400	5000×2100 (including the base height 100)×1400× 2 parallel machines

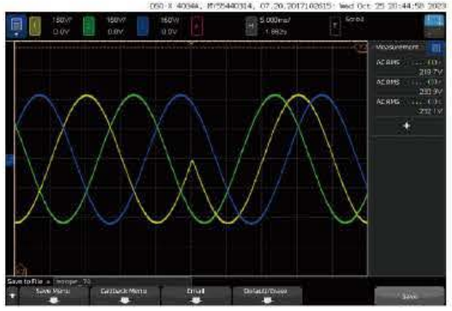
Any changes to the above parameter specifications will not be notified separately.

Exceeding & Trustworthy AC Power Supply Ainuo

Bidirectional Grid Simulator (Pro)
ANBGS(F) Series (Pro)

Features

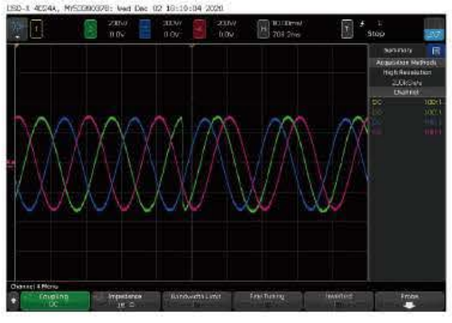
- Support for arbitrary angle abrupt change/crossing test.
- 10.1-inch large color LCD with touch control operation support.



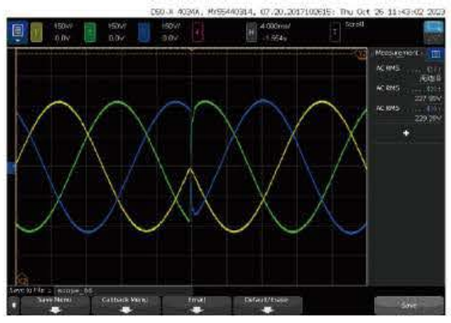
180° abrupt change of three phase's

Applications

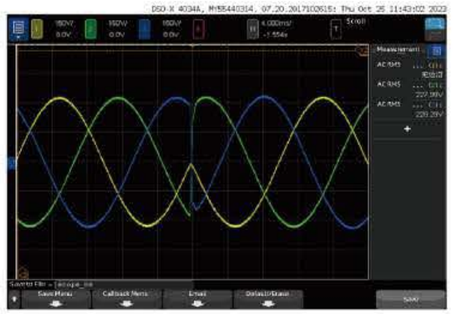
- **Programming:** it has universally programmable settings, where voltage, frequency and phase can be changed according to single-step settings. Trigger phase and cycle count can be set, and parameters of three phase outputs can be separately configured. Any phase shift/crossing test can be achieved.



Abrupt change from 90° to 270°



U-phase undergoes an abrupt change from 0° to 180°



90° abrupt change of U-phase and W-phase

- 10.1-inch large color LCD with touch control operation support

Main interface

Measurement interface data display

Normal waveform preview regular

Select three-phase input for conventional parameters

Programming mode

High and low voltage crossing mode

Harmonic mode

Black box recording

- PC control software

Specifications

Model			ANBGS100T-450(F)	ANBGS150T-450(F)	ANBGS200T-450(F)	ANBGS300T-450(F)
Capacity			100kVA	150kVA	200KVA	300kVA
Input parameter	Voltage		3-phase 3-wire+PE Phase voltage 220V±33V, line voltage 380V±57V, and frequency 50/60Hz±3Hz			
	Feedback function		Has the function of energy feedback to the grid			
	Input power factor		>0.99 (rated voltage input and 50%-100% rated current input)			
	Input current distortion		<3% (under rated conditions)			
AC output	Output mode		Three-phase standard mode and three-phase unbalanced mode			
	Voltage and frequency		Phase voltage: 0.0-450.0V: frequency: 40.00-70.00Hz			
	Rated current	166V	200.8A	301.2A	401.6A	602.4A
	Setting accuracy	Voltage	Resolution: 0.01V, accuracy: 0.1%×Full range value			
		Frequency	Resolution: 0.001Hz, accuracy: 0.01%			
	Measurement accuracy	Voltage	Resolution: 0.01V, accuracy: 0.1%×Full range value			
		Frequency	Resolution: 0.001HZ, accuracy: 0.01%			
		Current	Resolution: 0.1A/1A, accuracy: 0.2%×Full range value			
		Power	Resolution: 0.1kW/0.01kW/0.001kW, accuracy: 0.3%×Full range value			
	Frequency stability		≤0.01%			
	Voltage distortion degree		Linear load THD＜1%			
	Response time		1ms			
	Three-phase phase difference		Three-phase standard mode: 120°±2° Three-phase unbalanced mode: 0.0°-359.9°, adjustable by 0.1°			
	Phase voltage peak factor		1.41±0.1			
	Source voltage effect		≤0.02%			
	Load effect		≤0.02%			
	Overload capability		100%<Outputs≤110% the output will be stopped within 600s; 110%<Outputs≤120% the output will be stopped within 60s; 120%<Outputs≤150% the output will be stopped within 2s; 150%<Output the output will be stopped immediately			
	Protection device		IGBT overheat, IGBT over current, Transformer overheat, Input under voltage, Input over voltage, bus anti-recharge, Output under voltage, Output over voltage, Output lack phase, Output over current, Output over load, Output short circuit			
Function	Display mode		10.1-inch large color LCD with touch control operation support			
	Output waveform		Sine wave, harmonics (superimposed with 2-50 times harmonics), and interharmonics			
	Transient mode		Yes, Voltage steps (sag) from high voltage to low voltage or low voltage to high voltage			
	Flicker mode		Yes, call of any group of flicker parameters from Group 1~39.			
	High/low (zero) voltage crossing mode		Yes, the standard curve can be called or customized as required for the user			
	Unbalanced mode		Yes, adjustable three-phase voltage/phase difference separately, or direct setting of three-phase unbalance			
	Programming mode		200 steps of g99999 cycles, voltage/frequency/phase angle programmed freely for output			
	Startup ramp-up time		0.0-99.9s			
	Online adjustment function		Online adjusting of output voltage/frequency and switch of wave in normal mode			
	Memory function		Power down memory function, memory last output mode and parameters.			
	Communication interface		RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)			
Environment	Temperature and humidity		0-40℃, 20-90%RH			
Dimensions(W×H×D mm)			1200 × 1900 (including a base height of 100) × 1000	1500 × 1900 (including a base height of 100) × 1000		2000 × 1900 (including a base height of 100) × 1400

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

Specifications

Model			ANBGS400T-900(F)	ANBGS500T-900(F)	ANBGS600T-900(F)	ANBGS750T-900(F)	ANBGS1000T-900(F)	ANBGS1200T-900(F)
Capacity			400KVA	500KVA	600KVA	750KVA	1,000KVA	1,200KVA
Input parameter	Voltage		3-phase 3-wire; Phase voltage 220V±33V, line voltage 380V±57V, and frequency 50/60Hz±3Hz					
	Feedback function		Has the function of energy feedback to the grid					
	Input power factor		>0.99 (rated voltage input and 50%-100% rated current input)					
	Input current distortion		<3% (under rated conditions)					
AC output	Output mode		Three-phase standard mode and three-phase unbalanced mode					
	Voltage and frequency		Phase voltage: 0.0-900.0V: frequency: 40.00-70.00Hz					
	Rated current	333V	400.4A	500.5A	600.6A	750.7A	1,001.0A	1,201.2A
	Setting accuracy	Voltage	Resolution: 0.01V, accuracy: 0.1%×Full range value					
		Frequency	Resolution: 0.001HZ, accuracy: 0.01%					
	Measurement accuracy	Voltage	Resolution: 0.01V, accuracy: 0.1%×Full range value					
		Frequency	Resolution: 0.001HZ, accuracy: 0.01%					
		Current	Resolution: 0.1A/1A, accuracy: 0.2%×Full range value					
		Power	Resolution: 0.1kW/0.01kW/0.001kW, accuracy: 0.3%×Full range value					
	Frequency stability		≤0.01%					
	Voltage distortion degree		Linear load THD＜1%					
	Response time		1ms					
	Three-phase phase difference		Three-phase standard mode: 120°±2° Three-phase unbalanced mode: 0.0°-359.9°, adjustable by 0.1°					
	Phase voltage peak factor		1.41±0.1					
	Source voltage effect		≤0.02%					
	Load effect		≤0.02%					
	Overload capability		100%<Outputs≤110% the output will be stopped within 600s; 110%<Outputs≤120% the output will be stopped within 60s; 120%<Outputs≤150% the output will be stopped within 2s; 150%<Output the output will be stopped immediately					
	Protection device		IGBT overheat, IGBT over current, Transformer overheat, Input under voltage, Input over voltage, bus anti-recharge, Output under voltage, Output over voltage, Output lack phase, Output over current, Output over load, Output short circuit					
Function	Display mode		10.1-inch large color LCD with touch control operation support					
	Output waveform		Sine wave, harmonics (superimposed with 2-50 times harmonics), and interharmonics					
	Transient mode		Yes, Voltage steps (sag) from high voltage to low voltage or low voltage to high voltage					
	Flicker mode		Yes, call of any group of flicker parameters from Group 1~39.					
	High/low (zero) voltage crossing mode		Yes, the standard curve can be called or customized as required for the user					
	Unbalanced mode		Yes, adjustable three-phase voltage/phase difference separately, or direct setting of three-phase unbalance					
	Programming mode		200 steps of g99999 cycles, voltage/frequency/phase angle programmed freely for output					
	Startup ramp-up time		0.0-99.9s					
	Online adjustment function		Online adjusting of output voltage/frequency and switch of wave in normal mode					
	Memory function		Power down memory function, memory last output mode and parameters.					
	Communication interface		RS485 (standard), Ethernet (standard), synchronous signal (standard), RS232 (optional) and GPIB (optional)					
Environment	Temperature and humidity		0-40℃, 20-90%RH					
Dimensions(W×H×D mm)			2000 × 1900 (including a base height of 100) × 1400		3500 × 1900 (including a base height of 100) × 1400		4000 × 2100 (including a base height of 100) × 1400	

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

Constant Current AC Power Supply
ANCC(F) Series

Product Introduction

The ANCC(F) Series Constant Current AC Power Supply adopts FPGA digital control, instantaneous waveform control, high-frequency pulse width modulation (SPWM) technology, etc. It has the advantages of fast response speed, high output accuracy, superior waveform quality, strong load adaptability, etc. The power supply is capable of outputting a constant current alternating waveform with strong load adaptability.

Featuring an 8-inch color LCD, the product has an exquisite and high-end appearance, coupled with number keys for more convenient operation. Under the condition of low voltage, it can output a constant large current, meeting the low-voltage distribution device inspection such as air switches, contactors, and transformers, and the design and production verification of transformers and inductors. It is ideal testing equipment for device manufacturers, quality inspection centers, and certification centers, which can reduce energy waste caused by load consumption under large current test conditions.

Features

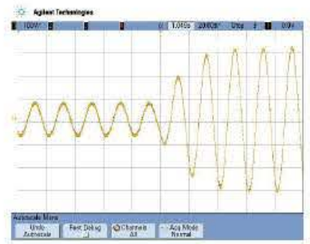
- It adopts FPGA digital technology for precise control and high-quality sine wave output.
- It provides low voltage and large current AC output, meeting the test requirements of relevant regulations.
- It has the "Black box" function: automatically record power supply status, alarm codes, etc., and other information to greatly reduce maintenance time.
- The fan speed is automatically adjusted according to the power supply temperature, reducing noise.
- It adjusts voltage and frequency under output state with immediate frequency change without transition time.
- Its output frequency ranges from 45 to 65Hz, adapting to the test requirements of different grids and devices.
- It has complete measurement functions: voltage, current, current peak value, frequency, active power, apparent power, power factor, and voltage peak factor.
- It has the online monitoring function: monitor parameters such as IGBT temperature, transformer temperature, fan speed, and input voltage under output state.
- It provides a Lock key, with a user-friendly design that automatically locks after 5 minutes of inactivity to prevent misoperation.
- It features an 8-inch large screen color LCD display and number key operation.
- It is equipped with a standard RS232 communication interface and can be optionally equipped with RS485, GPIB, Ethernet communication interfaces or analog control mode.
- It can be customized to adopt current sources of any voltage level and current range.

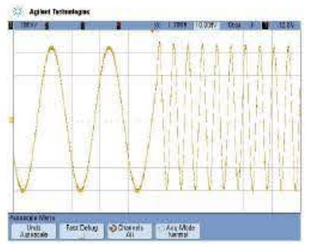
Applications

- It replaces traditional voltage and current regulation methods, with precise control and simple operation.

Constant current source　　Object under test

- Adjusting current and frequency in output state.





- Large screen, number key input and knob operation.

Specifications

Model			ANCC1000-15S(F)	ANCC2000-15S(F)	ANCC4000-7.5S(F)	ANCC4000-15S(F)
Capacity			15 kVA	30 kVA	30 kVA	60 kVA
Input	Phase		3-phase 4-wire+PE			
	Voltage		Phase voltage: 220V±33V, line voltage: 380V±57V			
	Frequency		50/60Hz±3Hz			
	Phase		Single-phase and two-wire			
Output	Current		10-1000A	20-2000A	40-4000A	40-4000A
	Voltage		15V	15V	7.5V	15V
	Frequency		45.0-65.0Hz			
	Testing accuracy	Current	Resolution: 0.1A, accuracy: 0.3%×Reading value+0.3%×Full range value			
		Frequency	Resolution: 0.1Hz, accuracy: 0.1%			
		Voltage	Resolution: 0.01V, accuracy: 0.3%×Reading value+0.3%×Full range value			
		Power	Resolution: 0.1kW/0.01kW/0.001kW, accuracy: 0.45%×Reading value+0.45%×Full range value			
	Frequency stability		≤0.02%			
	Voltage distortion		Linear load THD＜2%			
	Voltage crest factor		1.41±0.1			
	Protection mode		IGBT overheat, IGBT overcurrent, transformer overheat, input overvoltage, input undervoltage, output overvoltage, output overcurrent, and output overload			
Fun-ction	Display		8-inch LCD			
	Online adjustment function		Output current and frequency can be adjusted online			
	Memory		Power-off memory function. Capable of remembering the last output mode and parameters			
	Communication		RS232 (standard) and RS485 (optional)			
Ope-rating envi-ro-nment	Temperature		0-40℃			
	Humidity		20-90%RH			
Dimensions(W×H×D mm)			600×1130×1018			700×1330×1218

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

DC Voltage-stabilized Power Supply
AN50(F) Low Power Series

Programmable DC Power Supply
AN51(F) Series

Wide Range Programmable DC Power Supply
AN53(F) Series

Programmable Bidirectional DC Power Supply
ANEVH(F) Series

High Power Bidirectional DC Power Supply
ANEVT(F) Series

Dual-channel Bidirectional DC Power Supply
ANEVT DA(F) Series

Battery Simulator
ANEVS(F) Series

Dual-channel Battery Simulator
ANEVS DA(F) Series

Exceeding & Trustworthy DC Power Supply Ainuo

DC Voltage-stabilized Power Supply
AN50(F) Low Power Series

Product Overview

AN50(F) small power series DC power supply adopts high-frequency PWM control and full-bridge converter technology to be featured by fast dynamic response, strong overcurrent capability, and low output ripple. It has the advantages of small size, low weight, low noise, high efficiency and simple operation, making it a cost-effective power supply. It can be used for the manufacturing, testing, and maintenance of military electronic equipment such as motors, power tools, automotive electronics, breaking-closing coils, DC switches, aircraft and airborne equipment, radar and navigation, while being used in industrial and mining enterprises, college laboratories, research institutes, among others.

Features

- The full range of standard chassis, with a depth of only 350mm, is suitable for system integration and portable applications.
- The adopted high-frequency PWM and full-bridge converter technology makes the whole machine become more efficient.
- It supports up to 110% current/power overload.
- It also has excellent output stability.
- The lead voltage drop compensation terminal enables output lead voltage drop compensation for high-current operation.
- The complete protection function can ensure the normal operation of the power supply equipment and the safety of the load.
- The Nixie tube display is available. It is simple, intuitive and user-friendly.
- It supports SCPI, MODBUS-RTU standard communication protocols.

Ordering and function expansion

- AN5010-100(F): 10V/100A/1000W
- AN5035-30(F): 35V/30A/1000W
- AN5035-50(F): 35V/50A/1500W
- AN5035-100(F): 35V/100A/3000W
- AN5060-25(F): 60V/25A/1500W
- AN5060-50(F): 60V/50A/3000W
- AN50120-12(F): 120V/12.5A/1500W
- AN50120-25(F): 120V/25A/3000W
- AN50300-5(F): 300V/5A/1500W
- AN50300-10(F): 300V/10A/3000W
- AN5035-170(F): 35V/172A/6000W
- AN5035-285(F): 35V/286A/10000W
- AN5035-570(F): 35V/572A/20000W
- AN5080-75(F): 80V/75A/6000W
- AN5080-125(F): 80V/125/10000W
- AN5080-250(F): 80V/250A/20000W
- AN50120-50(F): 120V/50A/6000W
- AN50120-80(F): 120V/84A/10000W
- AN50120-165(F): 120V/167A/20000W
- AN50300-20(F): 300V/20A/6000W
- AN50300-30(F): 300V/34A/10000W
- AN50300-65(F): 300V/67A/20000W
- AN50600-10(F): 600V/10A/6000W
- AN50600-17(F): 600V/17A/10000W
- AN50600-30(F): 600V/34A/20000W
- AN50700-9(F): 700V/9A/6000W
- AN50700-14(F): 700V/14.5A/10000W
- AN50700-29(F): 700V/29A/20000W
- AN501200-17(F): 1200V/17A/20000W
- AN501400-14(F): 1400V/14A/20000W

Specifications

Model		AN5010-100(F)	AN5035-30(F)	AN5035-50(F)	AN5035-100(F)	AN5060-25(F)	AN5060-50(F)
Input Power Supply		Single phase，220V±22V，47-63Hz					
Output	Voltage	0～10V	0～35V			0～60V	
	Current	0～100A	0～30A	0～50A	0～100A	0～25A	0～50A
	Power	0～1000W	0～1000W	0～1500W	0～3000W	0～1500W	0～3000W
Resolution and accuracy	Voltage	Resolution 0.001V (0.01V when ≥ 10V), accuracy ≤ 0.4%Umax					
	Current	Resolution 0.001A (0.01A when ≥ 10A), accuracy ≤ 0.5%Imax					
Ripple and Noise 20Hz~20MHz	Vrms	30mV				60mV	
	Vpp	200mV				300mV	
Effect	Voltage	Load effect ≤0.1%Umax, source effect ≤0.05%Umax					
	Current	Load effect ≤0.2%Imax, source effect ≤0.1%Imax					
Transient response time		≤5ms					
Maximum lead voltage drop compensation		2V					
Communication function		RS-232 (standard)/RS485 (optional)					
Protection function		Output short-circuit protection, output overvoltage, internal overheating protection, S-terminal over-compensation protection, S-terminal reversal protection					
Analog interface(optional)		Start, stop, alarm, 0-5V/0-10V or 4-20mA analog control output					
Working Environment		Temperature：0～40℃; Humidity：20～90%RH					
Volume W×H×D(mm)		210×133×325		440×133×350			
Weight		6kg		9kg	12kg	9kg	12kg

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

Specifications

Model		AN50120-12(F)	AN50120-25(F)	AN50300-5(F)	AN50300-10(F)
Input Power Supply		Single phase，220V±22V，47-63Hz			
Output	Voltage	0～120V		0～300V	
	Current	0～12.5A	0～25A	0～5A	0～10A
	Power	0～1500W	0～3000W	0～1500W	0～3000W
Resolution/ Accuracy	Voltage	Resolution 0.001V/0.01V/0.1V, accuracy ≤ 0.4%Umax			
	Current	Resolution 0.001A/0.01A, accuracy ≤ 0.5%Imax			
Ripple and Noise 20Hz~20MHz	Vrms	80mV		100mV	
	Vpp	400mV		500mV	
Load effect	Voltage	Load effect ≤0.1%Umax, source effect ≤0.05%Umax			
	Current	Load effect ≤0.2%Imax, source effect ≤0.1%Imax			
Transient response time		≤5ms			
Maximum lead voltage drop compensation		10V			
Communication function		RS-232 (standard)/RS485 (optional)			
Protection		Output short-circuit protection, output overvoltage, internal overheating protection, S-terminal over-compensation protection, S-terminal reversal protection			
Analog interface(optional)		Start, stop, alarm, 0-5V/0-10V or 4-20mA analog control output			
Working Environment		Temperature：0～40℃；Humidity：20～90%RH			
Volume W×H×D(mm)		440×133×350			
Weight		9kg	12kg	9kg	12kg

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

Specifications

Model		AN5035-170(F)	AN5035-285(F)	AN5035-570(F)	AN5080-75(F)	AN5080-125(F)	AN5080-250(F)
Input	Phase number	Three-phase					
	Voltage	380V±38V					
	Frequency	47-63HZ					
Output	Voltage	0～35V			0～80V		
	Current	0～172A	0～286A	0～572A	0～75A	0～125A	0～250A
	Power	0～6KW	0～10KW	0～20KW	0～6KW	0～10KW	0～20KW
Display mode		5-bit Nixie tube display					
Voltage resolution		0.01V (0.1V when ≥ 100V)					
Current resolution		0.01A (0.1A when ≥ 100A)					
Setting error (programming accuracy)	Voltage	≤0.2%Umax					
	Current	≤0.2%Imax					
Measurement error (readback accuracy)	Voltage	≤0.2%Umax					
	Current	≤0.2%Imax					
Ripple and noise 20Hz-20MHz	Vrms	60mV					
	Vpp	500mV					
Load effect	Voltage	≤0.1%Umax					
	Current	≤0.2%Imax					
Source effect	Voltage	≤0.05%Umax					
	Current	≤0.1%Imax					
Transient response time		≤2ms (50%-100%, or 100%-50%, error returns to 0.75% of stable value)					
Temperature drift	Voltage	0.05% setting value					
	Current	0.05% setting value					
Noise		≤68dB (A)					
Scope of OVP		110%F.S					
Maximum lead drop compensation		2V					
Communication function		RS-232 (standard)/485 (standard)/LAN (standard)					
Protection functions		Short-circuit protection, reverse protection, output overvoltage, current-limiting protection, internal overheating protection, S-terminal over-compensation protection					
Analog interface (optional)		Start, stop, alarm, 0-5V or 0-10V analog control output					
Efficiency		≥85%					
Operating temperature		0~40℃					
Storage temperature		-20~70℃					
Humidity		<80%, without condensation					
Volume		444*132.5*641mm					
Weight		24kg	24kg	34kg	23.5kg	23.5kg	33kg
Remarks		1. Programming accuracy/read-back accuracy test condition (25℃±5℃); 2. Time required for the load to change from 100% to 50% or in reverse, and for the output voltage to return to within "rated value±100mV"					

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

Specifications

Model		AN50120-50(F)	AN50120-80(F)	AN50120-165(F)	AN50300-20(F)	AN50300-30(F)	AN50300-65(F)
Input	Phase number	Three-phase					
	Voltage	380V±38V					
	Frequency	47-63HZ					
Output	Voltage	0～120V			0～700V		
	Current	0～50A	0～84A	0～167A	0～20A	0～34A	0～67A
	Power	0～6KW	0～10KW	0～20KW	0～6KW	0～10KW	0～20KW
Display mode		5-bit Nixie tube display					
Voltage resolution		0.01V (0.1V when ≥ 100V)					
Current resolution		0.01A (0.1A when ≥ 100A)					
Setting error (programming accuracy)	Voltage	≤0.2%Umax					
	Current	≤0.2%Imax					
Measurement error (readback accuracy)	Voltage	≤0.2%Umax					
	Current	≤0.2%Imax					
Ripple and noise 20Hz-20MHz	Vrms	80mV					
	Vpp	500mV					
Load effect	Voltage	≤0.1%Umax					
	Current	≤0.2%Imax					
Source effect	Voltage	≤0.05%Umax					
	Current	≤0.1%Imax					
Transient response time [2]		≤2ms (50%-100%, or 100%-50%, error returns to 0.75% of stable value)					
Temperature drift	Voltage	0.05% setting value					
	Current	0.05% setting value					
Noise		≤68dB (A)					
Scope of OVP		110%F.S					
Maximum lead drop compensation		10V					
Communication function		RS-232 (standard)/485 (standard)/LAN (standard)					
Protection functions		Short-circuit protection, reverse protection, output overvoltage, current-limiting protection, internal overheating protection, S-terminal over-compensation protection					
Analog interface (optional)		Start, stop, alarm, 0-5V or 0-10V analog control output					
Efficiency		≥85%					
Operating temperature		0~40℃					
Storage temperature		-20~70℃					
Humidity		<80%, without condensation					
Volume		444*132.5*641mm					
Weight		22kg	22kg	30kg	22kg	22kg	30kg
Remarks		1.Programming accuracy/read-back accuracy test condition (25℃±5℃); 2.Time required for the load to change from 100% to 50% or in reverse, and for the output voltage to return to within "rated value±100mV"					

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

Specifications

Model		AN50600-10(F)	AN50600-17(F)	AN50600-30(F)	AN50700-9(F)	AN50700-14(F)	AN50700-29(F)
Input	Phase number	Three-phase					
	Voltage	380V±38V					
	Frequency	47-63HZ					
Output	Voltage	0～600V			0～700V		
	Current	0～10A	0～17A	0～34A	0～9A	0～14.5A	0～29A
	Power	0～6KW	0～10KW	0～20KW	0～6KW	0～10KW	0～20KW
Display mode		5-bit Nixie tube display					
Voltage resolution		0.01V (0.1V when ≥ 100V)					
Current resolution		0.01A (0.1A when ≥ 100A)					
Setting error (programming accuracy)	Voltage	≤0.2%Umax					
	Current	≤0.2%Imax					
Measurement error (readback accuracy)	Voltage	≤0.2%Umax					
	Current	≤0.2%Imax					
Ripple and noise 20Hz-20MHz	Vrms	200mV					
	Vpp	1000mV					
Load effect	Voltage	≤0.1%Umax					
	Current	≤0.2%Imax					
Source effect	Voltage	≤0.05%Umax					
	Current	≤0.1%Imax					
Transient response time [2]		≤2ms (50%-100%, or 100%-50%, error returns to 0.75% of stable value)					
Temperature drift	Voltage	0.05% setting value					
	Current	0.05% setting value					
Noise		≤68dB (A)					
Scope of OVP		110%F.S					
Maximum lead drop compensation		10V					
Communication function		RS-232 (standard)/485 (standard)/LAN (standard)					
Protection functions		Short-circuit protection, reverse protection, output overvoltage, current-limiting protection, internal overheating protection, S-terminal over-compensation protection					
Analog interface (optional)		Start, stop, alarm, 0-5V or 0-10V analog control output					
Efficiency		≥85%					
Operating temperature		0~40℃					
Storage temperature		-20~70℃					
Humidity		<80%, without condensation					
Volume		444*132.5*641mm					
Weight		21kg	21kg	28.5kg	21kg	21kg	28.5kg
Remarks		1.Programming accuracy/read-back accuracy test condition (25℃±5℃); 2.Time required for the load to change from 100% to 50% or in reverse, and for the output voltage to return to within "rated value±100mV"					

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

Specifications

Model		AN501200-17(F)	AN501400-14(F)
Input	Phase number	Three-phase	
	Voltage	380V±38V	
	Frequency	47-63HZ	
Output	Voltage	0～1200V	0～1400V
	Current	17A	14.5A
	Power	0～20KW	0～20KW
Display mode		5-bit Nixie tube display	
Voltage resolution		0.01V (0.1V when ≥ 100V)	
Current resolution		0.01A (0.1A when ≥ 100A)	
Setting error (programming accuracy)	Voltage	≤0.2%Umax	
	Current	≤0.2%Imax	
Measurement error (readback accuracy)	Voltage	≤0.2%Umax	
	Current	≤0.2%Imax	
Ripple and noise 20Hz-20MHz	Vrms	400mV	
	Vpp	2000mV	
Load effect	Voltage	≤0.1%Umax	
	Current	≤0.2%Imax	
Source effect	Voltage	≤0.05%Umax	
	Current	≤0.1%Imax	
Transient response time		≤2ms (50%-100%, or 100%-50%, error returns to 0.75% of stable value)	
Temperature drift	Voltage	0.05% setting value	
	Current	0.05% setting value	
Noise		≤68dB (A)	
Scope of OVP		110%F.S	
Maximum lead drop compensation		28.5V	
Communication function		RS-232 (standard)/485 (standard)/LAN (standard)	
Protection functions		Short-circuit protection, reverse protection, output overvoltage, current-limiting protection, internal overheating protection, S-terminal over-compensation protection	
Analog interface (optional)		Start, stop, alarm, 0-5V or 0-10V analog control output	
Efficiency		≥85%	
Operating temperature		0~40℃	
Storage temperature		-20~70℃	
Humidity		<80%, without condensation	
Dimensions(W×H×D mm)		444*132.5*641	
Weight		28.5kg	28.5kg
Remarks		1. Programming accuracy/read-back accuracy test condition (25℃±5℃); 2. Time required for the load to change from 100% to 50% or in reverse, and for the output voltage to return to within "rated value±100mV"	

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

Programmable DC Power Supply
AN51(F) Series

Product Introduction

The AN51(F) low-power series DC power supply adopts high-frequency PWM control and phase-shifted full-bridge conversion, fast dynamic response, strong over-current capability, low output ripple, featuring compact, light, quiet, high efficiency, simple operation and cost-effective. It can be used for manufacturing, testing and maintenance of military electronic equipment such as motors, power tools, automotive electronics, chips and electronic components, switching coils and DC switches, aircraft and airborne equipment, radar, navigation, etc., as well as industrial and mining enterprises, colleges and universities laboratories, research institute, etc.

Features

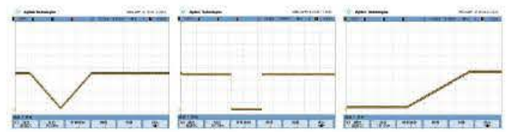
- Colorful LCD display, digital keys， Convenient and easy for operation.
- 350mm deep full range of standard chassis, suitable for system integration and portable applications.
- High frequency PWM and full-bridge conversion technology, with high efficiency.
- Strong current/power overload capacity, up to 110%.
- Exceptional output stability.
- Voltage drop compensation terminal for large current output.
- Complete protection to ensure normal operation of power supply unit and load security.

Order and extensions

- AN5135-50(F)：35V/50A/1.5kW
- AN5135-100(F)：35V/100A/3kW
- AN5160-25(F)：60V/25A/1.5kW
- AN5160-50(F)：60V/50A/3kW
- AN51120-12(F)：120V/12.5A/1.5kW
- AN51120-25(F)：120V/25A/3kW
- AN51300-5(F)：300V/5A/1.5kW
- AN51300-10(F)：300V/10A/3kW

- Powerful programming features to customize the output waveform.

Simulation battery supply voltage transient drop test | ISO 16750-2 Voltage drop reset test curve | ISO 16750-2 Voltage start test curve



Simulation battery slow drop and slow rise voltage supply test | Communication power input transient drop test | Output voltage climb slope control

Specifications

Model		AN5135-50(F)	AN5135-100(F)	AN5160-25(F)	AN5160-50(F)
Input		Single phase，220V±22V，47-63Hz			
Output	Voltage	0～35V		0～60V	
	Current	0～50A	0～100A	0～25A	0～50A
	Power	0～1500W	0～3000W	0～1500W	0～3000W
Resolution/ Accuracy	Voltage	Resolution 0.01V，Accuracy≤0.2%Umax			
	Current	Resolution 0.01A，Accuracy≤0.35%Imax			
Ripple and Noise 20Hz~20MHz	Vrms	30mV		60mV	
	Vpp	200mV		300mV	
Effect	Voltage	Load effect≤0.1%Umax，Source effect≤0.05%Umax			
	Current	Load effect≤0.2%Imax，Source effect≤0.1%Imax			
Transient response time		≤5ms（50%-100%，or 100%-50%，error returns to 0.75% of stable value）			
Rise time 100%		On line voltage adjustment：50ms（10%-90%）；Start slow rise time：1S			
Communication		RS-232（Standard）/485(Optional) / Analog interface（Optional）			
Protection		Output short circuit protection ,output overvoltage, overheat, S-terminal over compensation protection, S-terminal reversal protection			
List test function (Optional)		Capable of storing 50 sequences, each sequence contains 20 steps, each step of the function can be set independently, a total of 13 independent functions.			
Environment		Temperature：0～40℃；Humidity：20～90%RH			
Dimension W×H×D(mm)		440×133×350			
Weight		9kg	13.5kg	9kg	13.5kg

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

Model		AN51120-12(F)	AN51120-25(F)	AN51300-5(F)	AN51300-10(F)
Input		Single phase，220V±22V，47-63Hz			
Output	Voltage	0～120V		0～300V	
	Current	0～12.5A	0～25A	0～5A	0～10A
	Power	0～1500W	0～3000W	0～1500W	0～3000W
Resolution/ Accuracy	Voltage	Resolution：0.1V/0.01V，Accuracy≤0.2%Umax			
	Current	Resolution：0.01A，Accuracy≤0.35%Imax		Resolution：0.001A，Accuracy≤0.35%Imax	
Ripple and Noise 20Hz~20MHz	Vrms	80mV		100mV	
	Vpp	400mV		500mV	
Effect	Voltage	Load effect≤0.1%Umax，Source effect≤0.05%Umax			
	Current	Load effect≤0.2%Imax，Source effect≤0.1%Imax			
Transient response time		≤5ms（50%-100%，or 100%-50%，error returns to 0.75% of stable value）			
Rise time 100%		On line voltage adjustment：50ms（10%-90%）；Start slow rise time：1S			
Communication		RS-232（Standard）/485(Optional) / Analog interface（Optional）			
Protection		Output short circuit protection ,output overvoltage, overheat, S-terminal over compensation protection, S-terminal reversal protection			
List test function (Optional)		Capable of storing 50 sequences, each sequence contains 20 steps, each step of the function can be set independently, a total of 13 independent functions.			
Environment		Temperature：0～40℃；Humidity：20～90%RH			
Dimensions(W×H×D mm)		440×133×350			
Weight		9kg	13.5kg	9kg	13.5kg

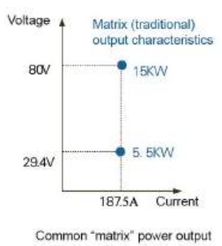
Any changes to the above parameter specifications will not be notified separately.

Wide Range Programmable DC Power Supply
AN53(F) Series

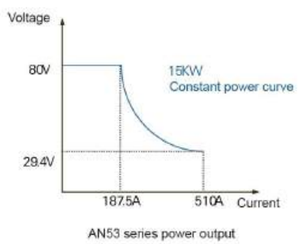
Product Introduction

The AN53(F) Series Wide Range Programmable DC Power Supply adopts active power factor correction technology and high-frequency LLC multi-resonant soft switching inverter technology. It features high power factor, fast dynamic response, low output ripple, and high power density. It has the characteristic performance of constant power wide-range output, as well as advantages such as small size, light weight, low noise, high efficiency, and simple operation.

The AN53(F) Series expands the power output curve, providing users with a wider range of voltage and current combinations, making it more flexible than traditional "matrix" output range power supplies. The output range of a single constant power DC power supply may be several times that of a conventional rectangular power supply. For example, the AN53(F) Series 1500V/40A/5kW model can provide an output of 1500V 10A at 15kW power, or 375V 40A output. In comparison, for a traditional "matrix" output power supply, the output specification is 1500V/10A/15kW, and when the output voltage is 375V, the maximum current is still 10A, with a power of only 3.75kW.



Common "matrix" power output



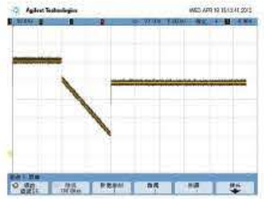
AN53 series power output

The AN53(F) Series simulates the output characteristics of solar batteries, with fast response, stable and accurate I-V curve simulation capability. It comes with built-in standard models such as SAS, EN50530, and Sandia lab for single unit operation, allowing precise simulation of photovoltaic I-V curves. Additionally, users can edit the parameters of solar battery panels through upper computer software or download a set of 1024-point V&I data into the power supply for operation, supporting dynamic, shading, and other operation modes.

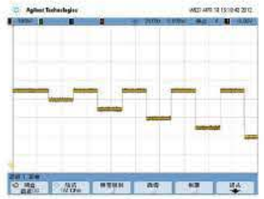
As a programmable power supply, the AN53(F) Series supports multiple communication interfaces and complies with the SCPI standard protocol, making it easy to understand and program control.

Features

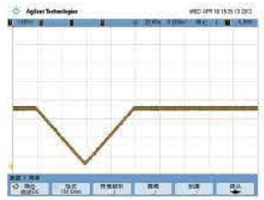
- It has the wide-range output capability, expanding the output range to 3 times that of "matrix" power supplies at the same power level.
- It utilizes active power factor correction technology, with full load power factor exceeding 0.99.
- It uses high-frequency LLC multi-resonant inversion, achieving a high overall efficiency of up to 0.95.
- It boasts the industry's best transient response speed.
- It features three working modes: constant voltage, constant current, and constant power, meeting a wide range of test requirements.
- It has powerful programmable functions and flexible settings.



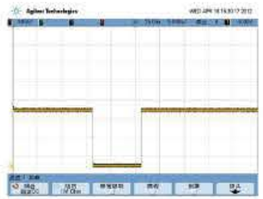
Simulation Battery Supply Voltage Sudden Drop Test



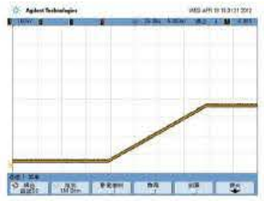
ISO16750-2 Voltage Reduction Reset Test Curve



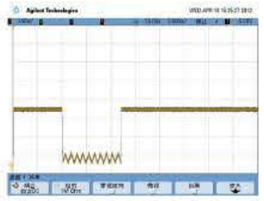
Simulation Battery Slow Drop and Slow Rise Supply Voltage Test



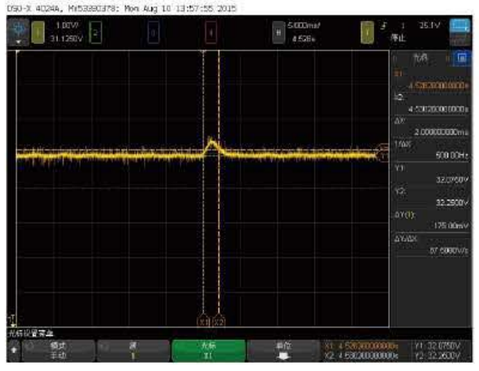
Communication Power Supply Input Sudden Drop Test



Output Voltage Rise Rate Test



ISO16750-2 Startup Voltage Curve Test



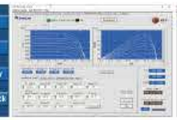
Photovoltaic Simulation Function

SAS Model Interface

Photovoltaic SAS Simulation Function

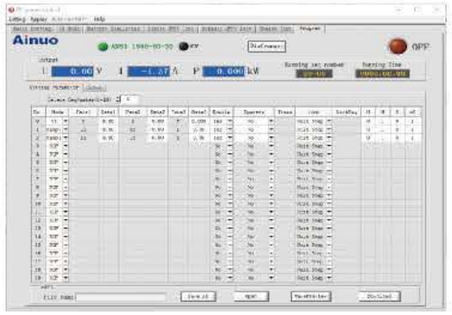
SandiaLab Model

EN50530 Model Interface

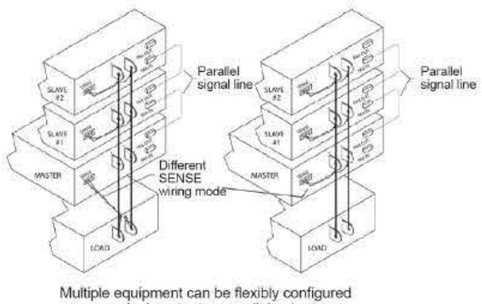


Dynamic MPPT

EN50530 Dynamic Simulation



- Built-in precise voltage and current measurement, excellent output stability.
- Lead drop compensation terminal to compensate for lead drop compensation during high current operation.
- Comprehensive protection functions to ensure the normal operation of power supply equipment and the safety of loads.
- High-brightness color LCD with exquisite appearance and simple and intuitive operation.
- It supports multiple units for parallel output to expand power/current range.



Multiple equipment can be flexibly configured as single output or parallel output

Specifications

Model		AN5380-120S(F)	AN5380-170S(F)	AN5380-170(F)	AN5380-340(F)	AN5380-510(F)
Input	Voltage	Single phase+PE, 198V-242VAC		Three-phase three-wire+PE, 340V-420VAC		
	Frequency	47-63Hz				
Output	Voltage	0-80V				
	Current	0-120A	0-170A	0-170A	0-340A	0-510A
	Power	0-1.8KW	0-3KW	0-5KW	0-10KW	0-15KW
Display mode		4.3-inch color LCD				
Measurement error (readback accuracy)	Voltage	≤0.05%Umax, resolution 0.01V				
	Current	≤0.1%Imax, resolution 0.01A (>1000A, 0.1A)				
	Power	≤1%Pmax, resolution 0.001kW (>100kW, 0.01kW)				
Ripple and Noise 20Hz-20MHz	Vrms	30mV		40mV		
	Vpp	200mV		250mV		
Load effect		Voltage≤0.01%Umax, current≤0.05%Imax				
Power effect		Voltage≤0.01%Umax, current≤0.01%Imax				
Transient response time		≤2ms				
Maximum lead drop compensation		6.5V				
Communication control interface		Standard: RS232, RS485, CAN, and LAN, optional: GPIB, analog port, and USB				
Protection functions		Input undervoltage protection, short-circuit protection, reverse connection protection, output overvoltage and current-limiting protection, overheating protection, and S-terminal compensation function				
Parallel connection function		It supports multiple units for parallel output to expand power/current range.				
Working environment		Temperature 0-40℃; Humidity 20-90%RH				
Dimensions(W×H×D mm)		440×133×350		440×133×600		
Weight		16kg		17kg	27kg	37kg

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

Model		AN53300-15S(F)	AN53300-30S(F)	AN53300-50(F)	AN53300-100(F)	AN53300-150(F)
Input	Voltage	Single phase+PE, 198V-242VAC		Three-phase three-wire+PE, 340V-420VAC		
	Frequency	47-63Hz				
Output	Voltage	0-300V				
	Current	0-15A	0-30A	0-50A	0-100A	0-150A
	Power	0-1.8kW	0-3kW	0-5kW	0-10kW	0-15KW
Display mode		4.3-inch color LCD				
Measurement error (readback accuracy)	Voltage	≤0.05%Umax, resolution 0.01V				
	Current	≤0.1%Imax, resolution 0.01A (>1000A, 0.1A)				
	Power	≤1%Pmax, resolution 0.001kW (>100kW, 0.01kW)				
Ripple and Noise 20Hz-20MHz	Vrms	60mV				
	Vpp	450mV				
Load effect		Voltage≤0.01%Umax, current≤0.05%Imax				
Power effect		Voltage≤0.01%Umax, current≤0.01%Imax				
Transient response time		≤2ms				
Maximum lead drop compensation		6.5V				
Communication control interface		Standard: RS232, RS485, CAN, and LAN, optional: GPIB, analog port, and USB				
Protection functions		Input undervoltage protection, short-circuit protection, reverse connection protection, output overvoltage and current-limiting protection, overheating protection, and S-terminal compensation function.				
Parallel connection function		It supports multiple units for parallel output to expand power/current range.				
Working environment		Temperature 0-40℃; Humidity 20-90%RH				
Dimensions(W×H×D mm)		440×133×350		440×133×600		
Weight		16kg		17kg	27kg	37kg

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

Specifications

Model		AN53500-40(F)	AN53500-80(F)	AN53500-120(F)
Input	Voltage	Three-phase three-wire+PE, 340V-420VAC		
	Frequency	47-63Hz		
Output	Voltage	0-500V		
	Current	0-40A	0-80A	0-120A
	Power	0-5kW	0-10kW	0-15kW
Display mode		4.3-inch color LCD		
Measurement error (readback accuracy)	Voltage	≤0.05%Umax, resolution 0.01V		
	Current	≤0.1%Imax, resolution 0.01A (>1000A, 0.1A)		
	Power	≤1%Pmax, resolution 0.001kW (>100kW, 0.01kW)		
Ripple and Noise 20Hz-20MHz	Vrms	80mV		
	Vpp	700mV		
Load effect		Voltage≤0.01%Umax, current≤0.05%Imax		
Power effect		Voltage≤0.01%Umax, current≤0.01%Imax		
Transient response time		≤2ms		
Maximum lead drop compensation		25V		
Communication control interface		Standard: RS232, RS485, CAN, and LAN, optional: GPIB, analog port, and USB		
Protection functions		Input undervoltage protection, short-circuit protection, reverse connection protection, output overvoltage and current-limiting protection, overheating protection, and S-terminal compensation function.		
Parallel connection function		It supports multiple units for parallel output to expand power/current range.		
Working environment		Temperature 0-40℃; Humidity 20-90%RH		
Dimensions(W×H×D mm)		440×133×600		
Weight		17kg	27kg	37kg

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

Model		AN53750-20(F)	AN53750-40(F)	AN53750-60(F)
Input	Voltage	Three-phase three-wire+PE, 340V-420VAC		
	Frequency	47-63Hz		
Output	Voltage	0-750V		
	Current	0-20A	0-40A	0-60A
	Power	0-5kW	0-10kW	0-15kW
Display mode		4.3-inch color LCD		
Measurement error (readback accuracy)	Voltage	≤0.05%Umax, resolution 0.01V		
	Current	≤0.1%Imax, resolution 0.01A (>1000A, 0.1A)		
	Power	≤1%Pmax, resolution 0.001kW(>100kW, 0.01kW)		
Ripple and Noise 20Hz-20MHz	Vrms	200mV		
	Vpp	800mV		
Load effect		Voltage≤0.01%Umax, current≤0.05%Imax		
Power effect		Voltage≤0.01%Umax, current≤0.01%Imax		
Transient response time		≤2ms		
Maximum lead drop compensation		25V		
Communication control interface		Standard: RS232, RS485, CAN, and LAN, optional: GPIB, analog port, and USB		
Protection functions		Input undervoltage protection, short-circuit protection, reverse connection protection, output overvoltage and current-limiting protection, overheating protection, and S-terminal compensation function.		
Parallel connection function		It supports multiple units for parallel output to expand power/current range.		
Working environment		Temperature: 0-40℃; Humidity: 20%-90%RH		
Dimensions(W×H×D mm)		440×133×595		
Weight		17kg	27kg	37kg

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

Specifications

Model		AN531000-40(F)	AN531500-40(F)	AN532250-20(F)
Input	Voltage	Three-phase three-wire+PE, 340V-420VAC		
	Frequency	47-63Hz		
Output	Voltage	0-1,000V	0-1,500V	0-2,250V
	Current	0-40A		0-20A
	Power	0-10kW	0-15kW	0-15kW
Measurement error (readback accuracy)	Voltage	≤0.05%Umax, resolution 0.01V		
	Current	≤0.1%Imax, resolution 0.01A (>1000A, 0.1A)		
	Power	≤1%Pmax, resolution 0.001kW (>100kW, 0.01kW)		≤3%Pmax, resolution 0.001kW(>100kW, 0.01kW)
Ripple and Noise 20Hz-20MHz	Vrms	350mV	400mV	500mV
	Vpp	1600mV	2400mV	2800mV
Load effect		Voltage≤0.01%Umax, current≤0.05%Imax		
Power effect		Voltage≤0.01%Umax, current≤0.01%Imax		
Transient response time		≤2ms		
Maximum lead drop compensation		25V		28.5V
Communication control interface		Standard: RS232, RS485, CAN, and LAN, optional: GPIB, analog port, and USB		
Protection functions		Input undervoltage protection, short-circuit protection, reverse connection protection, output overvoltage and current-limiting protection, overheating protection, and S-terminal compensation function.		
Parallel connection function		It supports multiple units for parallel output to expand power/current range.		
Working environment		Temperature 0-40℃; Humidity 20-90%RH		
Dimensions(W×H×D mm)		440×133×600		
Weight		27kg	37kg	

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

Ordering and function expansion

- AN5380-120S(F): 80V/120A/1800W
- AN5380-170S(F): 80V/170A/3000W
- AN5380-170(F): 80V/170A/5000W
- AN5380-340(F): 80V/340A/10000W
- AN5380-510(F): 80V/510A/15000W
- AN53300-15S(F): 300V/15A/1800W
- AN53300-30S(F): 300V/30A/3000W
- AN53300-50(F): 300V/50A/5000W
- AN53300-100(F): 300V/100A/10000W
- AN53300-150(F): 300V/150A/15000W
- AN53500-40(F): 500V/40A/5000W
- AN53500-80(F): 500V/80A/10000W
- AN53500-120(F): 500V/120A/15000W
- AN53750-20(F): 750V/20A/5000W
- AN53750-40(F): 750V/40A/10000W
- AN53750-60(F): 750V/60A/15000W
- AN531000-40(F): 1000V/40A/10000W
- AN531500-40(F): 1500V/40A/15000W
- AN532250-20(F): 2250V/20A/15000W

- It supports multiple units for parallel output to expand power/current range.

Programmable Bidirectional DC Power Supply
ANEVH(F) Series

3U

4U

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.

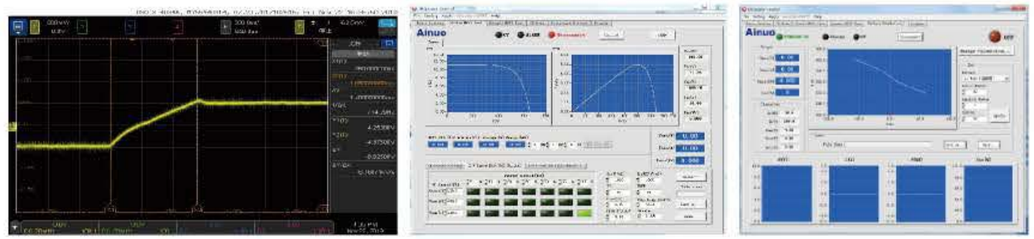
The ANEVH(F) Series of bidirectional programmable DC test power supplies include 7 voltage levels, covering a voltage range from 0V to 2250V, supporting the parallel operation of multiple units, and expandable up to 1MV in maximum power. The energy flows bidirectionally, with automatic seamless switching, 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（optional）.
- 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.

Ordering and function expansion

3U Model

- ANEVH100-170(F) 100V/170A/5kW
- ANEVH100-340(F) 100V/340A/10kW
- ANEVH100-510(F) 100V/510A/15kW
- ANEVH300-75(F) 300V/75A/5kW
- ANEVH300-150(F) 300V/150A/10kW
- ANEVH300-225(F) 300V/225A/15kW
- ANEVH300-225(F) 300V/225A/21kW
- ANEVH300-300(F) 300V/300A/30kW
- ANEVH500-40(F) 500V/40A/5kW
- ANEVH500-80(F) 500V/80A/10kW
- ANEVH500-120(F) 500V/120A/15kW
- ANEVH500-160(F) 500V/160A/21kW
- ANEVH500-240(F) 500V/240A/30kW
- ANEVH750-25(F) 750V/25A/5kW
- ANEVH750-50(F) 750V/50A/10kW
- ANEVH750-75(F) 750V/75A/15kW
- ANEVH750-120(F) 750V/120A/21kW
- ANEVH750-180(F) 750V/180A/30kW
- ANEVH1000-40(F) 1000V/40A/10kW
- ANEVH1000-80(F) 1000V/80A/21kW
- ANEVH1000-100(F) 1000V/100A/30kW

3U Model

- ANEVH1500-40(F) 1500V/40A/15kW
- ANEVH1500-60(F) 1500V/60A/21kW
- ANEVH1500-80(F) 1500V/80A/30kW
- ANEVH2250-25(F) 2250V/25A/15kW
- ANEVH2250-50(F) 2250V/50A/21kW
- ANEVH2250-60(F) 2250V/60A/30kW

4U Model

- ANEVH80-680(F) 80V/680A/20kW
- ANEVH80-1020(F) 80V/1020A/30kW
- ANEVH300-450(F) 300V/450A/50kW
- ANEVH500-390(F) 500V/390A/50kW
- ANEVH750-300(F) 750V/300A/50kW
- ANEVH1000-150(F) 1000V/150A/50kW
- ANEVH1500-130(F) 1500V/130A/50kW
- ANEVH2250-100(F) 2250V/100A/50kW

- Support multiple parallel outputs to extend power/current range

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 (0.1V when >1000V)					
Current resolution		0.01A (0.1A when >1000A)					
Power resolution		0.001kW (0.01kW when >100kW)					
Set up error (programming accuracy)	Voltage	≤0.05%F.S.					
	Current	≤0.1%F.S.					
	Power	≤1%FS					
Measurement error (Read-back accuracy)	Voltage	≤0.05%F.S.					
	Current	≤0.1%F.S.					
	Power	≤1%FS					
Ripple and noise 20Hz-20MHz	Vrms	40mvrms(100V)			100mvrms		
	Vpp	250mvPP(100V)			650mvPP		
Load effect	Voltage	≤0.01%Umax					
	Current	≤0.05%Imax					
Source effect	Voltage	≤0.01%Umax					
	Current	≤0.01%Imax					
Transient response time		≤2ms					
Forward and reverse switching speed		2ms (+90%-90%)					
Temperature drift	Voltage	0.05% setting value					
	Current	0.05% setting value					
Noise		≤65dB(A) (Measuring distance≥2m)					
OVP range		110%F.S					
Maximum lead voltage drop compensation		≤5% Umax(300V 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)		Start, stop, alarm, 0-5V or 0-10V analog control output					
Other external interfaces		Standard configuration for parallel ports					
Efficiency		~90%					
Feedback parameters	Frequency	45-66Hz					
	Power factor	≥0.99					
	Switching time	≤2ms					
	Feedback function	Full power range feedback					
	Feedback efficiency	~90%					
Operating temperature		0~40℃					
Storage temperature		-20-70℃					
Humidity		＜80%, without condensation					
Volume	Enclosure size	444×132.5×705.5mm					
	Overall dimensions	444×132.5×768mm					
Weight		5kw≤23kg 10kw≤31kg 15kw≤38kg					
Remarks		1. Programming accuracy/read-back accuracy test condition (25℃±5℃); 2. Time required for the load to change from 100% to 50% or in reverse, and for the output voltage to return to within "rated value±0.75%"					

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 (0.1V when >1000V)					
Current resolution		0.01A (0.1A when >1000A)					
Power resolution		0.001kW (0.01kW when >100kW)					
Setting error (programming accuracy)	Voltage	≤0.05%F.S					
	Current	≤0.1%F.S					
	Power	≤1%FS					
Measurement error (Read-back accuracy)	Voltage	≤0.05%F.S					
	Current	≤0.1%F.S					
	Power	≤1%FS					
Ripple and noise 20Hz-20MHz	Vrms	70mvrms			90mvrms(750V)		
	Vpp	500mvPP			800mvPP(750V)		
Load effect	Voltage	≤0.01%Umax					
	Current	≤0.05%Imax					
Source effect	Voltage	≤0.01%Umax					
	Current	≤0.01%Imax					
Transient response time [2]		≤2ms					
Forward and reverse switching speed		2ms (+90%-90%)					
Temperature drift	Voltage	0.05% setting value					
	Current	0.05% setting value					
Noise		≤65dB(A) (Measuring distance≥2m)					
Scope of OVP		110%F.S					
Maximum lead voltage drop compensation		≤5% Umax (300V 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, internal overheating protection.					
Analog interface (optional)		Startup, stop, alarm, 0-5V or 0-10V analog control output					
Other external interfaces		Standard configuration for parallel ports					
Efficiency		~90%					
Feedback parameters	Frequency	45-66Hz					
	Power factor	≥0.99					
	Switching time	≤2ms					
	Feedback function	Full power range feedback					
	Feedback efficiency	~90%					
Operating temperature		0~40℃					
Storage temperature		-20-70℃					
Humidity		＜80%, without condensation					
Volume	Enclosure size	444×132.5×705.5mm					
	Overall dimension	444×132.5×768mm					
Weight		5kw≤23kg 10kw≤31kg 15kw≤38kg					
Remarks		1. Programming accuracy/read-back accuracy test condition (25℃±5℃); 2. Time required for the load to change from 100% to 50% or in reverse, and for the output voltage to return to within "rated value±0.75%"					

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

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	0-1000VDC	0-1000VDC	0-1500VDC	0-2250VDC
	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 (0.1V when >1000V)			
Current resolution		0.01A (0.1A when >1000A)			
Power resolution		0.001kW (0.01kW when >100kW)			
Set up error (programming accuracy)	Voltage	≤0.05%F.S.			
	Current	≤0.1%F.S.			
	Power	≤1%FS			
Measurement error (Read-back 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			
Source effect	Voltage	≤0.01%Umax			
	Current	≤0.01%Imax			
Transient response time		≤2ms			
Forward and reverse switching speed		2ms (+90%-90%)			
Temperature drift	Voltage	0.05% setting value			
	Current	0.05% setting value			
Noise		≤65dB(A) (measuring distance≥2m)			
OVP range		110%F.S			
Maximum lead drop compensation		≤5% Umax (300V 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%			
Operating temperature		0~40℃			
Storage temperature		-20-70℃			
Humidity		<80%, without condensation			
Volume	Enclosure size	444×132.5×705.5mm			
	Overall dimensions	444×132.5×768mm			
Weight		5kw: ≤23kg 10kw: ≤32kg 15kw≤38kg			5kw: ≤23kg 10kw: ≤31kg 15kw≤38kg
Remarks		1. Programming accuracy/read-back accuracy test condition (25℃±5℃); 2. Time required for the load to change from 100% to 50% or in reverse, and for the output voltage to return to within "rated value±0.75%"			

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

Specifications

Model		ANEVH300-225P(F)	ANEVH500-160(F)	ANEVH750-120(F)	ANEVH1000-80(F)	ANEVH1500-60(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	0-1000VDC	0-1500VDC	0-2250VDC
	Current	-225A-225A	-160A-160A	-120A-120A	-80A-80A	-60A~60A	-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 (0.1V when >1000V)					
Current resolution		0.01A (0.1A when >1000A)					
Power resolution		0.001kW (0.01kW when >100kW)					
Set up error (programming accuracy)	Voltage	≤0.05%F.S.					
	Current	≤0.1%F.S.					
	Power	≤1%FS					
Measurement error (Read-back 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	1600mvPP	1800mvPP	2400mvPP
Load effect	Voltage	≤0.01%Umax					
	Current	≤0.05%Imax					
Source effect	Voltage	≤0.01%Umax					
	Current	≤0.01%Imax					
Transient response time		≤2ms					
Forward and reverse switching speed		2ms (+90%-90%)					
Temperature drift	Voltage	0.05% setting value					
	Current	0.05% setting value					
Noise		≤65dB(A) (Measuring distance≥2m)					
Scope of OVP		110%F.S					
Maximum lead drop compensation		≤5% Umax (300V 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%					
Operating temperature		0~40℃					
Storage temperature		-20-70℃					
Humidity		<80%, without condensation					
Volume	Enclosure size	444×132.5×705.5mm					
	Overall dimension	444×132.5×768mm					
Weight		21kw≤39kg					
Remarks		1. Programming accuracy/read-back accuracy test condition (25℃±5℃); 2. Time required for the load to change from 100% to 50% or in reverse, and for the output voltage to return to within "rated value±0.75%"					

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

Specifications

Model		ANEVH80-680(F)	ANEVH80-1020(F)	ANEVH500-240(F)	ANEVH750-180(F)
Input	Phase number	Three-phase three-wire+PE			
	Voltage	342V-528VAC			
	Frequency	45-66Hz			
	Power factor	≥0.99			
Output	Voltage	0~80VDC	0~80VDC	0~500VDC	0~750VDC
	Current	-680A～680A	-1020A～1020A	-240A～240A	-180A～180A
	Power	-20kW～20kW	-30kW～30kW	-30kW～30kW	-30kW～30kW
Display mode		4.3-inch color LCD			
Voltage resolution		0.01V (0.1V when >1000V)			
Current resolution		0.01A (0.1A when >1000A)			
Power resolution		0.001kW (0.01kW when >100kW)			
Set up error (programming accuracy)	Voltage	≤0.05%F.S.			
	Current	≤0.1%F.S.			
	Power	≤1%FS			
Measurement error (Read-back accuracy)	Voltage	≤0.05%F.S.			
	Current	≤0.1%F.S.			
	Power	≤1%FS			
Ripple and noise 20Hz-20MHz	Vrms	25mvrms		80mvrms	80mvrms
	Vpp	400mvPP		750mvPP	800mvPP
Load effect	Voltage	≤0.02%Umax		≤0.01%Umax	
	Current	≤0.05%Imax		≤0.05%Imax	
Source effect	Voltage	≤0.02%Umax		≤0.01%Umax	
	Current	≤0.05%Imax		≤0.01%Imax	
Transient response time		≤2ms			
Forward and reverse switching speed		2ms (+90%-90%)			
Temperature drift	Voltage	0.05% setting value			
	Current	0.05% setting value			
Noise		≤65dB(A) (Measuring distance≥2m)			
Scope of OVP		110%F.S			
Maximum lead drop compensation		≤5% Umax (300V 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 configuration for parallel ports			
Efficiency		≤93.5%		~90%	
Feedback parameters	Frequency	45-66Hz			
	Power factor	≥0.99			
	Switching time	≤2ms			
	Feedback function	Full power range feedback			
	Feedback efficiency	≤93.5%		~90%	
Operating temperature		0~40℃			
Storage temperature		-20-70℃			
Humidity		＜80%, without condensation			
Volume	Enclosure size	444*177*696.5mm	444×177×696.5mm	444×132.5×705.5mm	444×132.5×705.5mm
	Overall dimension	444*177*768mm	444×177×768mm	444×132.5×768mm	444×132.5×768mm
Weight		20kw≤41kg	30kw≤53.5kg	30kw≤40kg	30kw≤40kg
Remarks		1. Programming accuracy/read-back accuracy test condition (25℃±5℃); 2. Time required for the load to change from 100% to 50% or in reverse, and for the output voltage to return to within "rated value±0.75%"			

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

Specifications

Model		ANEVH1000-100(F)	ANEVH1500-80(F)	ANEVH2250-60(F)
Input	Phase number	Three-phase three-wire+PE		
	Voltage	342V-528VAC		
	Frequency	45-66Hz		
	Power factor	≥0.99		
Output	Voltage	0-1000VDC	0~1500VDC	0~2250VDC
	Current	-100A-100A	-80A～80A	-60A～60A
	Power	-30KW-30KW	-30kW～30kW	-30kW～30kW
Display mode		4.3-inch color LCD		
Voltage resolution		0.01V (0.1V when >1000V)		
Current resolution		0.01A (0.1A when >1000A)		
Power resolution		0.001kW (0.01kW when >100kW)		
Set up error (programming accuracy)	Voltage	≤0.05%F.S.		
	Current	≤0.1%F.S.		
	Power	≤1%FS		
Measurement error (Read-back accuracy)	Voltage	≤0.05%F.S.		
	Current	≤0.1%F.S.		
	Power	≤1%FS		
Ripple and noise 20Hz-20MHz	Vrms	200mvrms	220mvrms	400mvrms
	Vpp	1600mvPP	1800mvPP	2400mvPP
Load effect	Voltage	≤0.01%Umax		
	Current	≤0.05%Imax		
Source effect	Voltage	≤0.01%Umax		
	Current	≤0.01%Imax		
Transient response time		≤2ms		
Forward and reverse switching speed		2ms (+90%-90%)		
Temperature drift	Voltage	0.05% setting value		
	Current	0.05% setting value		
Noise		≤65dB(A) (Measuring distance≥2m)		
Scope of OVP		110%F.S		
Maximum lead drop compensation		≤5% Umax (300V 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 configuration for parallel ports		
Efficiency		~90%		≤95%
Feedback parameters	Frequency	45-66Hz		
	Power factor	≥0.99		
	Switching time	≤2ms		
	Feedback function	Full power range feedback		
	Feedback efficiency	~90%		≤95%
Operating temperature		0~40℃		
Storage temperature		-20-70℃		
Humidity		＜80%, without condensation		
Volume	Enclosure size	444×132.5×705.5mm		444×132.5×705.5mm
	Overall dimension	444×132.5×768mm		444×132.5×768mm
Weight		30kw≤40kg		30kw≤40kg
Remarks		1. Programming accuracy/read-back accuracy test condition (25℃±5℃); 2. Time required for the load to change from 100% to 50% or in reverse, and for the output voltage to return to within "rated value±0.75%"		

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

Specifications

Model		ANEVH300-450(F)	ANEVH500-390(F)	ANEVH1000-150(F)	ANEVH1500-130(F)	ANEVH750-300(F)	ANEVH2250-100(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	0~1000VDC	0~1500VDC	0-750VDC(expandable to 800V)	0~2250VDC
	Current	-450A~450A	-390A~390A	-150A~150A	-130A~130A	-300A~300A	-100A~100A
	Power	-50kW～50kW	-50kW～50kW	-50kW～50kW	-50kW～50kW	-50kW～50kW	-50kW～50kW
	Internal resistance	0.033~150Ω	0.051~500Ω	0.226~1000Ω	0.384~1500Ω	0.1~750Ω	0.6~2250Ω
Display mode		4.3-inch color LCD					
Voltage resolution		0.01V (0.1V when >1000V)					
Current resolution		0.01A (0.1A when >1000A)					
Power resolution		0.001kW (0.01kW when >100kW)					
Internal resistance resolution		0.001Ω (0.01Ω when >100Ω, 0.1Ω when>1000Ω)					
Set up error (programming accuracy)1	Voltage	≤0.05%F.S.					
	Current	≤0.1%F.S.					
	Power	≤1%FS					
	Internal resistance	≤0.3% of maximum resistance ± 0.1% of maximum current (note: applicable to feedback current above 2A)					
Measurement error (Read-back accuracy)	Voltage	≤0.05%F.S.					
	Current	≤0.1%F.S.					
	Power	≤1%FS					
	Internal resistance	≤0.3% of maximum resistance ± 0.1% of maximum current (note: applicable to feedback current above 2A)					
Ripple and noise 20Hz-20MHz	Vrms	≤80mVrms	≤100mVrms	≤170mVrms	≤200mVrms	≤120mVrms	≤240mVrms
	Vpp	≤800mVpp	≤1000mVpp	≤1800mVpp	≤2200mVpp	≤1200mVpp	≤2400mVpp
Load effect	Voltage	≤≤0.02%Umax					
	Current	≤0.05%Imax					
Source effect	Voltage	≤0.02%Umax					
	Current	≤0.02%Imax					
Transient response time [2]		≤2ms					
Forward and reverse switching speed		2ms (+90%-90%)					
Temperature drift	Voltage	0.05% setting value					
	Current	0.05% setting value					
Scope of OVP		110%F.S					
Maximum lead drop compensation		≤5% Umax					
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.					
Waveform editing (sequence)		Conventional waveform editing function and integrated testing standards, which can be graphical				Conventional waveform editing function and integrated testing standards, which can be graphical	
Analog interface (optional)		Startup, stop, alarm, 0-5V or 0-10V analog control output					
Other external interfaces		Standard equipped parallel port					
Efficiency		≤93.5%					
Feedback parameters	Frequency	45-66Hz					
	Power factor	≥0.99					
	Switching time	≤2ms					
	Feedback function	Full power range feedback					
	Feedback efficiency	≤94%					
Operating temperature		0~40℃					
Storage temperature		-20-70℃					
Humidity		＜80%, without condensation					
Volume	Enclosure size	444×177×705.5mm					
	Overall dimension	444×177×805mm					
Weight		≤53kg				50kW≤53kg	
Remarks		1. Programming accuracy/read-back accuracy test condition (25℃±5℃); 2. Time required for the load to change from 100% to 50% or in reverse,and for the output voltage to return to within "rated value±0.75%"					

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

High Power Bidirectional DC Power Supply
ANEVT(F) Series

Product Introduction

The ANEVT(F) Series High Precision bidirectional DC test power supply is a high-tech product integrated with high-frequency PWM rectification technology, bidirectional DC conversion technology, and FPGA digital control technology. It has adaptive grid feedback capability and can meet the continuous energy feedback requirements in the full power range. It also offers seamless switching between forward and reverse outputs, enabling seamless connection of energy transfer. With dual-loop control technology, it achieves ultra-high control precision, rapid response to customer device applications, ensuring equipment test stability and data precision. With its wide range of voltage and current output capabilities and rich output programming test functions, it better meets the diverse testing needs of customers' products. The device also includes multiple protection programming functions to better protect the safety of customer equipment during testing. Additionally, numerous additional product features enhance the stability and reliability of equipment operation.

Features

- It is a battery simulation, bidirectional output multifunctional integrated machine.
- It provides the source load integral mode with adjustable parameters.
- It has high voltage, large current, and wide range output capabilities.
- It features adaptive grid feedback function for full power continuous energy feedback.
- It supports CV, CC, CP, and CR working modes. Voltage 0.05%FS and current 0.1%FS.
- Response time≤3ms; forward and reverse switching time≤ 4ms.
- Power factor≥0.99, current harmonic distortion≤3%.
- It simulates 7 types of batteries such as lithium, nickel-hydrogen, lead-acid, etc.
- It has 1st, 2nd, and 3rd order battery simulation functions, supporting import and export of data in mat and csv data formats.
- It provides 900-step programming function with a minimum programming time of 1mS.
- It features independent air duct heat dissipation design, supporting long-term continuous operation of the equipment.
- It is equipped with standard CAN, RS232/RS485, LAN and other communication interfaces.
- It offers a three-in-one operation mode of buttons, knobs, and touch operation.
- It provides a high-brightness large-screen LCD display.

Specifications

Product series	Product model	Rated current	Rated power	Peak current	Peak power	Voltage range	Dimension /mm (W×D×H)
500V Series	ANEVT500-200C(F)	200A	60kW	300A	90KW	24V-500V	1000×1000×2100
	ANEVT500-300C(F)	300A	90kW	450A	135KW	24V-500V	1000×1000×2100
	ANEVT500-400C(F)	400A	120kW	500A	150KW	24V-500V	1000×1000×2100
800V Series	ANEVT800-200C(F)	200A	60kW	300A	90KW	24V-800V	1000×1000×2100
	ANEVT800-300C(F)	300A	90kW	450A	135KW	24V-800V	1000×1000×2100
	ANEVT800-400C(F)	400A	120kW	500A	150KW	24V-800V	1000×1000×2100
	ANEVT800-500C(F)	500A	160kW	625A	200KW	24V-800V	1500×1000×2100
	ANEVT800-600C(F)	600A	200kW	750A	250KW	24V-800V	1500×1000×2100
	ANEVT800-800C(F)	800A	300kW	1000A	375KW	24V-800V	1500×1200×2200
	ANEVT800-900C(F)	900A	400kW	1125A	500KW	24V-800V	2000×1200×2200
	ANEVT800-1000C(F)	1000A	500kW	1250A	625KW	24V-800V	2000×1200×2200
	ANEVT800-1200C(F)	1200A	600kW	1500A	750KW	24V-800V	2000×1200×2200
	ANEVT800-2000C(F)	2000A	1000kW	2500A	1300kW	24V-800V	4000×1200×2200
1000V Series	ANEVT1000-150C(F)	150A	60kW	225A	90kW	24V-1000V	1000×1000×2100
	ANEVT1000-200C(F)	200A	90KW	300A	135KW	24V-1000V	1000×1000×2100
	ANEVT1000-300C(F)	300A	120kW	375A	150KW	24V-1000V	1000×1000×2100
	ANEVT1000-500C(F)	500A	160kW	625A	200KW	24V-1000V	1500×1000×2100
	ANEVT1000-600C(F)	600A	200kW	750A	250KW	24V-1000V	1500×1000×2100
	ANEVT1000-800C(F)	800A	300kW	1000A	375KW	24V-1000V	1500×1200×2200
	ANEVT1000-900C(F)	900A	400kW	1125A	500KW	24V-1000V	2000×1200×2200
	ANEVT1000-1000C(F)	1000A	500kW	1250A	625KW	24V-1000V	2000×1200×2200
	ANEVT1000-1200C(F)	1200A	600kW	1500A	750KW	24V-1000V	2000×1200×2200
	ANEVT1000-2000C(F)	2000A	1000kW	2500A	1300KW	24V-1000V	4000×1200×2200
1200V Series	ANEVT1200-150C(F)	150A	60kW	225A	90kW	24V-1200V	1000×1000×2100
	ANEVT1200-200C(F)	200A	90kW	300A	135KW	24V-1200V	1000×1000×2100
	ANEVT1200-300C(F)	300A	120kW	375A	150KW	24V-1200V	1000×1000×2100
	ANEVT1200-500C(F)	500A	160kW	625A	200KW	24V-1200V	1500×1000×2100
	ANEVT1200-600C(F)	600A	200kW	750A	250KW	24V-1200V	1500×1000×2100
	ANEVT1200-800C(F)	800A	300kW	1000A	375KW	24V-1200V	1500×1200×2200
	ANEVT1200-900C(F)	900A	400kW	1125A	500KW	24V-1200V	2000×1200×2200
	ANEVT1200-1000C(F)	1000A	500kW	1250A	625KW	24V-1200V	2000×1200×2200
	ANEVT1200-1200C(F)	1200A	600kW	1500A	750KW	24V-1200V	2000×1200×2200
	ANEVT1200-2000C(F)	2000A	1000kW	2500A	1300KW	24V-1200V	4000×1200×2200

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

Application

- Testing of electric vehicle motors and controllers.
- Tests of electric vehicle transmission systems and power-train systems.
- Tests of special electric vehicle motors, controllers, electric vehicle transmission systems, and powertrain systems.
- Fuel battery test.
- New energy motor system test.
- Tests of vessel electric transmission and electric drive systems.
- Charger and charging station tests.
- Battery packs charging and discharging tests.
- Capacitor and super capacitor charging and discharging tests.
- Energy storage system inverter test.
- UPS and EPS system tests.
- Hybrid power test.
- It has simulated batteries for alternative real battery power supply testing scenarios.
- Suitable for high power DC test power supply applications.

Specifications

Product name			High Power Bidirectional DC Power Supply
Input parameter	Input method		Three-phase four-wire+PE
	Input voltage		Line voltage: 380V±15%
	Input frequency		50/60Hz±5Hz
	Input power factor		0.99
	Input electric harmony		3% (under rated conditions)
Output parameter	Voltage accuracy		0.05%F.S
	Current accuracy		0.1%F.S
	Power accuracy		0.2%F.S
	Power effect		0.1%F.S
	Load effect		0.1%F.S
	Ripple (Vpp)		0.2%F.S
	Transient recovery time		≤3ms (10%-90% rated resistive load switching)
	Current rise time		≤3ms (loading test after starting output)
Feedback parameter	Feedback voltage		323-437V
	Feedback frequency		Grid frequency (45Hz-65Hz)
	Power factor		≥0.99
	Total harmonic content		≤3% (tested under conditions of standard AC power input with distortion within 1.5%)
	Forward and reverse output switching time		≤4ms
	Feedback function		Full power continuous energy feedback
Product feature	Working mode		CV, CC, CP and CR
	Output programming		It provides programmable output voltage waveform, including voltage and current slope, step, cyclic control, and jump control; 900-step programming function, with the minimum programming time of 1ms.
	Emergency stop		With emergency stop button, it can quickly disconnect the connection with the load equipment
	Battery simulation		It can simulate functions of 7 types of batteries including ternary lithium, lithium manganese oxide, lithium titanium oxide, lithium cobalt oxide, lithium iron phosphate, lead-acid, and nickel-metal hydride. It has customizable battery cell capacity, series and parallel connection quantities, SOC, and temperature parameters with 1st, 2nd, and 3rd order battery simulation functions, supporting import and export of data in mat and csv data formats.
	Output ramp-up function		Programmable output voltage ramp-up
	Self-discharge function		It has a built-in discharge unit, which automatically discharges upon shutdown.
	Protection function		It has multiple protection devices, input protection devices, OCP, OVP, OPP, OTP, bus overvoltage protection, output short circuit protection, etc.
	Voltage drop compensation		It features automatic voltage drop compensation terminals, automatically compensating for cable voltage drop
Display and operation	Display resolution	Voltage	0.001V
		Current	0.001A
		Power	0.001kW
	Display mode		LCD
	Operation mode		Number key, knob and touch screen three-in-one
Communication interface	Serial interface		Standard RS232/RS485 (select one)
	CAN interface		Supports CAN2.0 protocol (AORB). Communication data update frequency ≥50Hz
	Ethernet		Supports Ethernet communication (standard)
Analog interface			Supports external analog emergency stop switch quantity input control
Safety performance	Insulation resistance		≥2MΩ (tested at 1,000V insulation voltage)
	Compressive strength		2000VDC 5mA/min
	Grounding resistance		≤100mΩ
Working environment	Working temperature		0℃-40℃
	Working humidity		20-90%RH (no condensation)
	Altitude		≤2,000m
	Storage temperature		-10℃-70℃
Noise			≤75dB
Cooling method			Temperature-controlled air cooling. It has a built-in temperature-controlled variable speed fan.
Protection level			IP21

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

Exceeding & Trustworthy DC Power Supply Ainuo

Dual-channel Bidirectional DC Power Supply
ANEVT DA(F) Series

Product Introduction

The ANEVT DA(F) Series Bidirectional Dual-channel Bidirectional DC Power Supply is a dedicated test power supply developed for the new energy vehicle industry. It is a high-tech product integrating high-frequency PWM rectification technology, bidirectional DC conversion technology, and FPGA digital control technology. It has adaptive grid feedback capability and can meet the continuous energy feedback requirements in the full power range. It also offers seamless switching between forward and reverse outputs, enabling seamless connection of energy transfer. With dual-loop control technology, it achieves ultra-high control precision, rapid response to customer device applications, ensuring equipment test stability and data precision. It provides independent dual-channel outputs, each of which is controllable, offering a concise and reliable test scheme for different tests such as tests of motors, electronic controls, hybrids, etc.

Features

- It provides dual-channel outputs, with power freely allocated to each channel.
- Each channel has independent control and protection functions that do not interfere with each other.
- It is a battery simulation, bidirectional output multifunctional integrated machine.
- It provides the source load integral mode with adjustable parameters.
- It has high voltage, large current, and wide range output capabilities.
- It features adaptive grid feedback function for full power continuous energy feedback.
- It supports CV, CC, CP, CR working modes. Voltage 0.05%FS and current 0.1%FS.
- Response time≤3ms; forward and reverse switching time≤ 4ms.
- Power factor≥0.99, current harmonic distortion≤3%.
- It simulates 7 types of batteries such as lithium, nickel-hydrogen, lead-acid, etc.
- It has 1st, 2nd, and 3rd order battery simulation functions, supporting import and export of data in mat and csv data formats.
- It provides 900-step programming function with a minimum programming time of 1mS.
- It features independent air duct heat dissipation design, supporting long-term continuous operation of the equipment.
- It is equipped with standard CAN, RS232/RS485, LAN and other communication interfaces.
- It offers a three-in-one operation mode of buttons, knobs, and touch operation.

Specifications

Product series	Product model	Single channel rated current	Single channel rated power	Single channel peak current	Single channel peak power	Single channel voltage range	Dimension /mm (W×D×H)
800V Series	ANEVT800-300DA(F)	300A	90kW	450A	135KW	24V-800V	1500×1000×2100
	ANEVT800-400DA(F)	400A	120kW	500A	150KW	24V-800V	1500×1000×2100
	ANEVT800-500DA(F)	500A	160kW	625A	200KW	24V-800V	2000×1000×2100
	ANEVT800-600DA(F)	600A	200kW	750A	250KW	24V-800V	2000×1000×2100
	ANEVT800-800DA(F)	800A	300kW	1000A	375KW	24V-800V	2000×1200×2200
	ANEVT800-900DA(F)	900A	400kW	1125A	500KW	24V-800v	2500×1200×2200
	ANEVT800-1000DA(F)	1000A	500kW	1250A	625KW	24V-800v	2500×1200×2200
	ANEVT800-1200DA(F)	1200A	600kW	1500A	750KW	24V-800V	2500×1200×2200
1000V Series	ANEVT1000-200DA(F)	200A	90kW	300A	135KW	24V-1000V	1500×1000×2100
	ANEVT1000-300DA(F)	300A	120kW	375A	150KW	24V-1000V	1500×1000×2100
	ANEVT1000-500DA(F)	500A	160kW	625A	200KW	24V-1000V	2000×1000×2100
	ANEVT1000-600DA(F)	600A	200kW	750A	250KW	24V-1000V	2000×1000×2100
	ANEVT1000-800DA(F)	800A	300kW	1000A	375KW	24V-1000V	2000×1200×2200
	ANEVT1000-900DA(F)	900A	400kW	1125A	500KW	24V-1000V	2500×1200×2200
	ANEVT1000-1000DA(F)	1000A	500kW	1250A	625KW	24V-1000V	2500×1200×2200
	ANEVT1000-1200DA(F)	1200A	600kW	1500A	750KW	24V-1000V	2500×1200×2200
1200V Series	ANEVT1200-200DA(F)	200A	90kW	300A	135KW	24V-1200V	1500×1000×2100
	ANEVT1200-300DA(F)	300A	120kW	375A	150KW	24V-1200V	1500×1000×2100
	ANEVT1200-500DA(F)	500A	160kW	625A	200KW	24V-1200V	2000×1000×2100
	ANEVT1200-600DA(F)	600A	200kW	750A	250KW	24V-1200V	2000×1000×2100
	ANEVT1200-800DA(F)	800A	300kW	1000A	375KW	24V-1200V	2000×1200×2200
	ANEVT1200-900DA(F)	900A	400kW	1125A	500KW	24V-1200V	2500×1200×2200
	ANEVT1200-1000DA(F)	1000A	500kW	1250A	625KW	24V-1200V	2500×1200×2200
	ANEVT1200-1200DA(F)	1200A	600kW	1500A	750KW	24V-1200V	2500×1200×2200
Remarks		Two channels can freely allocate power within the overall power range of the whole unit.					

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

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Specifications

Product name			Dual-channel Bidirectional DC Power Supply
Input parameter	Input method		Three-phase four-wire+PE
	Input voltage		Line voltage: 380V±15%
	Input frequency		50/60Hz±5Hz
	Input power factor		0.99
	Current harmonics		3% (under rated conditions)
Output parameter	Voltage accuracy		0.05%F.S
	Current accuracy		0.1%F.S
	Power accuracy		0.2%F.S
	Power effect		0.1%F.S
	Load effect		0.1%F.S
	Ripple (Vpp)		0.2%F.S
	Transient recovery time		≤3ms (10%-90% rated resistive load switching)
	Current rise time		≤3ms (loading test after starting output)
Feedback parameter	Feedback voltage		323-437V
	Feedback frequency		Grid frequency (45Hz-65Hz)
	Power factor		≥0.99
	Total harmonic content		≤3% (tested under conditions of standard AC power input with distortion within 1.5%)
	Forward and reverse output switching time		≤4ms
	Feedback function		Full power continuous energy feedback
Product feature	Working mode		CV, CC, CP, and CR
	Output programming		It provides programmable output voltage waveform, including voltage and current slope, step, cyclic control, and jump control; 900-step programming function, with the minimum programming time of 1ms.
	Emergency stop		With emergency stop button, it can quickly disconnect the connection with the load equipment
	Battery simulation		It can simulate functions of 7 types of batteries including ternary lithium, lithium manganese oxide, lithium titanium oxide, lithium cobalt oxide, lithium iron phosphate, lead-acid, and nickel-metal hydride batteries. It has customizable battery cell capacity, series and parallel connection quantities, SOC, and temperature parameters with 1st, 2nd, and 3rd order battery simulation functions, supporting import and export of data in mat and csv data formats.
	Output ramp-up function		Programmable output voltage ramp-up
	Self-discharge function		It has a built-in discharge unit, which automatically discharges upon shutdown.
	Protection function		It has multiple protection devices, input protection devices, OCP, OVP, OPP, OTP, bus overvoltage protection, output short circuit protection, etc.
	Voltage drop compensation		It features automatic voltage drop compensation terminals, automatically compensating for cable voltage drop
Display and operation	Display resolution	Voltage	0.001V
		Current	0.001A
		Power	0.001kW
	Display mode		LCD
	Operation mode		Number key, knob and touch screen three-in-one
Communication interface	Serial interface		Standard RS232/RS485 (select one)
	CAN interface		Supports CAN2.0 protocol (AORB). Communication data update frequency ≥50Hz
	Ethernet		Supports Ethernet communication (standard)
Analog interface			Supports external analog emergency stop switch quantity input control
Safety performance	Insulation resistance		≥2MΩ (tested at 1,000V insulation voltage)
	Compressive strength		2,000VDC 5mA/min
	Grounding resistance		≤100mΩ
Working environment	Working temperature and working humidity		0℃-40℃
			20-90%RH (no condensation)
	Altitude and storage temperature		≤2000m
			-10℃-70℃
Noise			≤75dB
Cooling method			Temperature-controlled air cooling. It has a built-in temperature-controlled variable speed fan.
Protection level			IP21

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

Battery Simulator
ANEVS(F) Series

Product Introduction

The ANEVS(F) Series Battery Simulator has both battery simulation and photovoltaic simulation functions. It can simulate the charging and discharging characteristics of power lithium batteries, meeting the test requirements of new energy vehicle motors, electric drive systems, whole vehicle systems, energy storage inverters, and other devices or systems. It can also simulate the characteristics of photovoltaic cell panels, meeting the test requirements of photovoltaic inverters and photovoltaic energy storage inverter integrated machines.

It adopts high-frequency PWM rectification technology, bidirectional DC conversion technology, and FPGA digital control technology. It features bidirectional energy flow, seamless switching between forward and reverse directions, and adaptive grid capabilities. It also has programmable protection parameter settings and output parameter limit settings, ensuring better safety for the device under test.

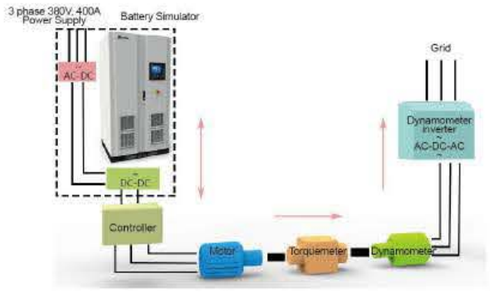
Features

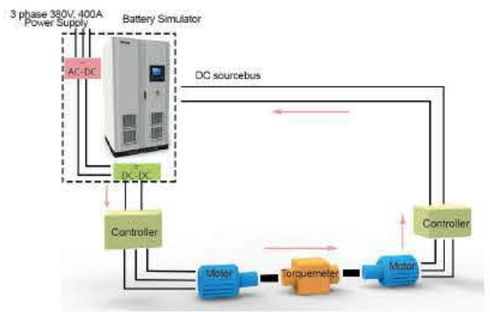
- It is a photovoltaic simulation and battery simulation integrated machine. It supports CV, CC, CP and CR working modes.
- Voltage 0.05%FS and current 0.1%FS.
- Response time≤3ms; switching time≤4ms.
- Power factor≥0.99, current harmonic distortion≤3%.
- It supports simulation of 7 types of batteries including ternary lithium, lithium iron phosphate, lithium titanium oxide, lithium cobalt oxide, lithium manganese oxide, nickel-metal hydride, and lead-acid batteries.
- It supports custom battery modes, with 1st, 2nd, and 3rd order battery models and internal resistance models, and allows for import and export of data in CSV and mat formats.
- It features photovoltaic characteristic V curve simulation function, supporting various types of solar battery panels and realistic simulation under different environmental conditions, with built-in standard curves such as Sandia and EN50530. It supports static and dynamic photovoltaic simulation.
- It provides 900-step programming function with a minimum programming time of 1ms.
- It supports standard CAN, RS232/RS485, LAN and other communication interfaces.

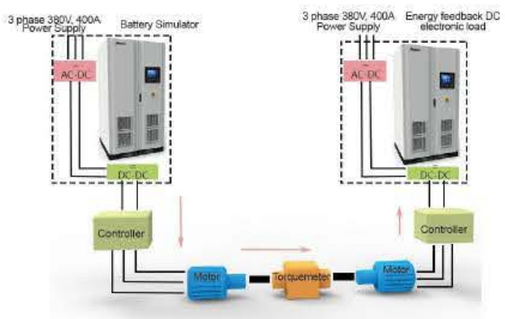
Exceeding & Trustworthy
DC Power Supply Ainuo

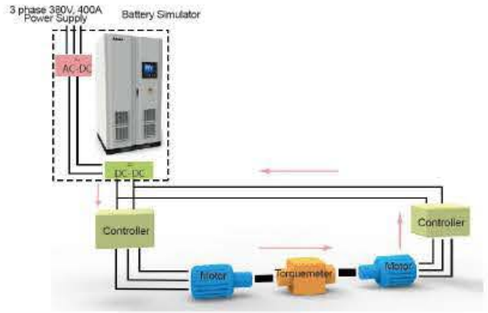
Application

- Testing of electric vehicle motors and controllers.
- Tests of electric vehicle transmission systems and power-train systems.
- Tests of special electric vehicle motors, controllers, electric vehicle transmission systems, and powertrain systems.
- New energy motor system test.
- Tests of vessel electric transmission and electric drive systems.
- Charger and charging pile tests.
- Capacitor and super capacitor charging and discharging tests.
- Energy storage system inverter test.
- UPS and EPS system tests.
- Hybrid power test.
- Suitable for high power DC test power supply applications.
- Battery pack charging and discharging tests.
- It has simulated batteries for alternative real battery power supply testing scenarios.



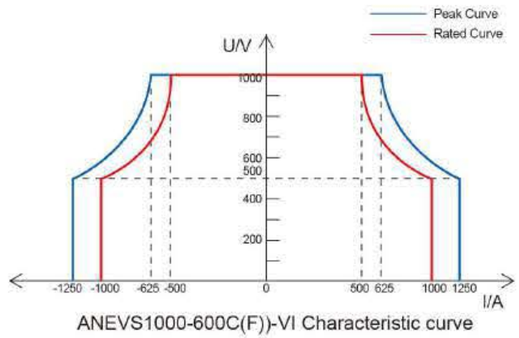






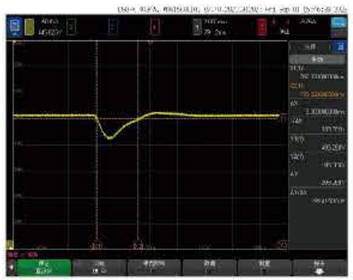
Output VI characteristic curve

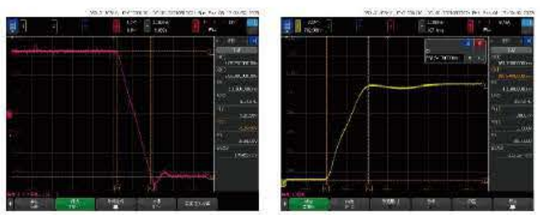
It features advanced IGBT parallel connection technology, delivering higher peak power and peak current output, as demonstrated by ANEVS1000-600C(F) and ANEVS1000-600C(F).



ANEVS1000-600C(F))-VI Characteristic curve

Fast dynamic response characteristics





Specifications

Product series	Product model	Rated current	Rated power	Peak current	Peak power	Voltage range	Dimension /mm (W×D×H)
800V Series	ANEVS800-200C(F)	200A	60KW	300A	90KW	24V-800V	1000×1000×2100
	ANEVS800-300C(F)	300A	90KW	450A	135KW	24V-800V	1000×1000×2100
	ANEVS800-400C(F)	400A	120KW	500A	150KW	24V-800V	1000×1000×2100
	ANEVS800-500C(F)	500A	160KW	600A	200KW	24V-800V	1500×1000×2100
	ANEVS800-600C(F)	600A	200KW	750A	250KW	24V-800V	1500×1000×2100
	ANEVS800-800C(F)	800A	300KW	1000A	375KW	24V-800V	1500×1200×2200
	ANEVS800-900C(F)	900A	400KW	1125A	500KW	24V-800V	2000×1200×2200
	ANEVS800-1000C(F)	1000A	500KW	1250A	625KW	24V-800V	2000×1200×2200
	ANEVS800-1200C(F)	1200A	600KW	1500A	750KW	24V-800V	2000×1200×2200
	ANEVS800-2000C(F)	2000A	1000KW	2500A	1250KW	24V-800V	4000×1200×2200
1000V Series	ANEVS1000-150C(F)	150A	60KW	225A	90KW	24V-1000V	1000×1000×2100
	ANEVS1000-200C(F)	200A	90KW	300A	135KW	24V-1000V	1000×1000×2100
	ANEVS1000-300C(F)	300A	120KW	375A	150KW	24V-1000V	1000×1000×2100
	ANEVS1000-500C(F)	500A	160KW	625A	200KW	24V-1000V	1500×1000×2100
	ANEVS1000-600C(F)	600A	200KW	750A	250KW	24V-1000V	1500×1000×2100
	ANEVS1000-800C(F)	800A	300KW	1000A	375KW	24V-1000V	1500×1200×2200
	ANEVS1000-900C(F)	900A	400KW	1125A	500KW	24V-1000V	2000×1200×2200
	ANEVS1000-1000C(F)	1000A	500KW	1250A	625KW	24V-1000V	2000×1200×2200
	ANEVS1000-1200C(F)	1200A	600KW	1500A	750KW	24V-1000V	2000×1200×2200
	ANEVS1000-2000C(F)	2000A	1000KW	2500A	1250KW	24V-1000V	4000×1200×2200
1200V Series	ANEVS1200-150C(F)	150A	60KW	225A	90KW	24V-1200V	1000×1000×2100
	ANEVS1200-200C(F)	200A	90KW	300A	135KW	24V-1200V	1000×1000×2100
	ANEVS1200-300C(F)	300A	120KW	375A	150KW	24V-1200V	1000×1000×2100
	ANEVS1200-500C(F)	500A	160KW	625A	200KW	24V-1200V	1500×1000×2100
	ANEVS1200-600C(F)	600A	200KW	750A	250KW	24V-1200V	1500×1000×2100
	ANEVS1200-800C(F)	800A	300KW	1000A	375KW	24V-1200V	1500×1200×2200
	ANEVS1200-900C(F)	900A	400KW	1125A	500KW	24V-1200V	2000×1200×2200
	ANEVS1200-1000C(F)	1000A	500KW	1250A	625KW	24V-1200V	2000×1200×2200
	ANEVS1200-1200C(F)	1200A	600KW	1500A	750KW	24V-1200V	2000×1200×2200
	ANEVS1200-2000C(F)	2000A	1000KW	2500A	1250KW	24V-1200V	4000×1200×2200
1500V Series	ANEVS1500-160C(F)	160A	90KW	240A	135KW	48V-1500V	1200×1200×2100
	ANEVS1500-300C(F)	300A	200KW	375A	250KW	48V-1500V	2000×1000×2100
	ANEVS1500-500C(F)	500A	300KW	625A	375KW	48V-1500V	3000×1000×2100
	ANEVS1500-600C(F)	600A	400KW	750A	500KW	48V-1500V	3000×1000×2100
	ANEVS1500-800C(F)	800A	600KW	1000A	750KW	48V-1500V	3000×1200×2200
	ANEVS1500-1000C(F)	1000A	1000KW	1250A	1250KW	48V-1500V	4000×1200×2200
2000V Series	ANEVS2000-160C(F)	160A	90KW	240A	135KW	48V-2000V	1200×1200×2100
	ANEVS2000-200C(F)	200A	200KW	250A	250KW	48V-2000V	2000×1000×2100
	ANEVS2000-500C(F)	500A	300KW	625A	375KW	48V-2000V	3000×1000×2100
	ANEVS2000-600C(F)	600A	400KW	750A	500KW	48V-2000V	3000×1000×2100
	ANEVS2000-800C(F)	800A	600KW	1000A	750KW	48V-2000V	3000×1200×2200
	ANEVS2000-1000C(F)	1000A	1000KW	1250A	1250KW	48V-2000V	4000×1200×2200

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

Specifications

Product name			Battery simulator
Input parameter	Input method		Three-phase four-wire+PE
	Input voltage		Line voltage: 380V±15%
	Input frequency		50/60Hz+5Hz
	Input power factor		0.99
	Input electric harmony		3% (under rated conditions)
Output parameter	Voltage accuracy		0.05%F.S
	Current accuracy		0.1%F.S
	Power accuracy		0.2%F.S
	Power effect		0.1%F.S
	Load effect		0.1%F.S
	Ripple (Vpp)		0.2%F.S
	Transient recovery time		≤3ms (10%-90% rated resistive load switching)
	Current rise time		≤3ms (loading test after starting output)
Feedback parameter	Feedback voltage		323-437V
	Feedback frequency		Grid frequency (45Hz-65Hz)
	Power factor		≥0.99
	Total harmonic content		≤3% (tested under conditions of standard AC power input with distortion within 1.5%)
	Forward and reverse output switching		≤4ms
	Feedback function		Full power continuous energy feedback
Product feature	Working mode		CV, CC, CP and CR
	Output programming		It allows programmable output voltage waveforms, including voltage and current slopes, steps, cyclic control, and jump control.
	Emergency stop		With emergency stop button, it can quickly disconnect the connection with the load equipment
	Battery simulation		It can simulate models of 7 types of batteries including ternary lithium, lithium manganese oxide, lithium titanium oxide, lithium cobalt oxide, lithium iron phosphate, lead-acid, and nickel-metal hydride. It has customizable battery cell capacity, series and parallel connection quantities, SOC, and temperature parameters with 1st, 2nd, and 3rd order battery models and internal resistance models, supporting import and export of data in mat and CSV data formats.
	Photovoltaic simulation		It can set parameters such as VOC, ISC, VMP, IMP, FF, etc., with built-in standard curves such as Sandia and EN50530. It supports static and dynamic photovoltaic curves, as well as settings for temperature, shading, and other environmental parameters.
	Output ramp-up function		Programmable output voltage ramp-up
	Self-discharge function		It has a built-in discharge unit, which automatically discharges upon shutdown.
	Protection function		It has input undervoltage protection, input overcurrent protection, input phase loss protection, output overcurrent protection, output short-circuit protection, bus overvoltage protection, internal overheating protection, programmable OVP LVP OCP LVP OPP protection parameter values, and enable protection functions.
	Line drop compensation		It features automatic voltage drop compensation terminals, automatically compensating for cable voltage drop
Display and operation	Display resolution	Voltage	0.001V
		Current	0.001A
		Power	0.001kW
	Display mode		LCD
	Operation mode		Number key, knob and touch screen three-in-one
Communication interface	Serial interface		Standard RS232/RS485 (select one)
	CAN interface		Supports CAN2.0 protocol. Communication data update frequency ≥50Hz
	Ethernet		Supports the Ethernet communications
Analog interface			Supports external analog emergency stop switch quantity input control
Safety performance working environment	Insulation resistance		≥2MΩ (tested at 1,000V insulation voltage)
	Compressive strength		2,000VDC 5mA/min
	Grounding resistance		≤100mΩ
	Working temperature		0℃-40℃
	Working humidity		20-90%RH (no condensation)
	Altitude		≤2,000m
	Storage temperature		-10℃-70℃
Noise			≤75dB
Cooling method			Temperature-controlled air cooling. It has a built-in temperature-controlled variable speed fan.
Protection level			IP21

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

Dual-channel Battery Simulator
ANEVS DA(F) Series

Product Introduction

The ANEVS DA(F) Series Battery Simulator has both battery simulation and photovoltaic simulation functions. It can simulate the charging and discharging characteristics of power lithium batteries, meeting the test requirements of new energy vehicle motors, electric drive systems, whole vehicle systems, energy storage inverters, and other devices or systems. It can also simulate the characteristics of photovoltaic cell panels, meeting the test requirements of photovoltaic inverters and photovoltaic energy storage inverter integrated machines.

It adopts high-frequency PWM rectification technology, bidirectional DC conversion technology, and FPGA digital control technology. It features bidirectional energy flow, seamless switching between forward and reverse directions, and adaptive grid capabilities. It also has programmable protection parameter settings and output parameter limit settings, ensuring better safety for the device under test.

Features

- It provides dual-channel outputs, with power freely allocated to each channel.
- Each channel has independent control and protection functions that do not interfere with each other.
- It is a multifunctional integrated machine for photovoltaic simulation, battery simulation, and bidirectional output.
- It provides the source load integral mode with adjustable parameters.
- It has high voltage, large current, and wide range output capabilities.
- It features adaptive grid feedback function for full power continuous energy feedback.
- It supports CV, CC, CP, CR working modes.
- Voltage 0.05%FS and current 0.1%FS.
- Response time≤3ms; forward and reverse switching time≤ 4ms.
- Power factor≥0.99, current harmonic distortion≤3%.
- It simulates 7 types of batteries such as lithium, nickel-hydrogen, lead-acid, etc.
- It has 1st, 2nd, and 3rd order battery simulation functions, supporting import and export of data in mat and csv data formats.
- It provides 900-step programming function with a minimum programming time of 1ms.
- It features independent air duct heat dissipation design, supporting long-term continuous operation of the equipment.
- It is equipped with standard CAN, RS232/RS485, LAN and other communication interfaces.
- It offers a three-in-one operation mode of buttons, knobs, and touch operation.

Specifications

Product series	Product model	Single channel rated current	Single channel rated power	Single channel peak current	Single channel peak power	Single channel voltage range	Dimension /mm (W×D×H)
800V Series	ANEVS800-300DA(F)	300A	90KW	450A	135KW	24V-800V	1500×1000×2100
	ANEVS800-400DA(F)	400A	120KW	500A	150KW	24V-800V	1500×1000×2100
	ANEVS800-500DA(F)	500A	160KW	625A	200KW	24V-800V	2000×1000×2100
	ANEVS800-600DA(F)	600A	200KW	750A	250KW	24V-800V	2000×1000×2100
	ANEVS800-800DA(F)	800A	300KW	1000A	375KW	24V-800V	2000×1200×2100
	ANEVS800-900DA(F)	900A	400KW	1125A	500KW	24V-800V	2500×1200×2200
	ANEVS800-1000DA(F)	1000A	500KW	1250A	625KW	24V-800V	2500×1200×2200
	ANEVS800-1200DA(F)	1200A	600KW	1500A	750KW	24V-800V	2500×1200×2200
1000V Series	ANEVS1000-200DA(F)	200A	90KW	300A	135KW	24V-1000V	1500×1000×2100
	ANEVS1000-300DA(F)	300A	120KW	375A	150KW	24V-1000V	1500×1000×2100
	ANEVS1000-500DA(F)	500A	160KW	625A	200KW	24V-1000V	2000×1000×2100
	ANEVS1000-600DA(F)	600A	200KW	750A	250KW	24V-1000V	2000×1000×2100
	ANEVS1000-800DA(F)	800A	300KW	1000A	375KW	24V-1000V	2000×1200×2100
	ANEVS1000-900DA(F)	900A	400KW	1125A	500KW	24V-1000V	2500×1200×2200
	ANEVS1000-1000DA(F)	1000A	500KW	1250A	625KW	24V-1000V	2500×1200×2200
	ANEVS1000-1200DA(F)	1200A	600KW	1500A	750KW	24V-1000V	2500×1200×2200
1200V Series	ANEVS1200-200DA(F)	200A	90KW	300A	135KW	24V-1200V	1500×1000×2100
	ANEVS1200-300DA(F)	300A	120KW	375A	150KW	24V-1200V	1500×1000×2100
	ANEVS1200-500DA(F)	500A	160KW	625A	200KW	24V-1200V	2000×1000×2100
	ANEVS1200-600DA(F)	600A	200KW	750A	250KW	24V-1200V	2000×1000×2100
	ANEVS1200-800DA(F)	800A	300KW	1000A	375KW	24V-1200V	2000×1200×2100
	ANEVS1200-900DA(F)	900A	400KW	1125A	500KW	24V-1200V	2500×1200×2200
	ANEVS1200-1000DA(F)	1000A	500KW	1250A	625KW	24V-1200V	2500×1200×2200
	ANEVS1200-1200DA(F)	1200A	600KW	1500A	750KW	24V-1200V	2500×1200×2200
Remarks		Two channels can freely allocate power within the overall power range of the whole unit.					

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

Specifications

Product name			Dual-channel Battery Simulator
Input parameter	Input method		Three-phase four-wire+PE
	Input voltage		Line voltage: 380V±15%
	Input frequency		50/60Hz+5Hz
	Input power factor		0.99
	Input electric harmony		3% (under rated conditions)
Output parameter	Voltage accuracy		0.05%F.S
	Current accuracy		0.1%F.S
	Power accuracy		0.2%F.S
	Power effect		0.1%F.S
	Load effect		0.1%F.S
	Ripple (Vpp)		0.2%F.S
	Transient recovery time		≤3ms (10%-90% rated resistive load switching)
	Current rise time		≤3ms (loading test after starting output)
Feedback parameter	Feedback voltage		323-437V
	Feedback frequency		Grid frequency (45Hz-65Hz)
	Power factor		≥0.99
	Total harmonic content		≤3% (tested under conditions of standard AC power input with distortion within 1.5%)
	Forward and reverse output switching		≤4ms
	Feedback function		Full power continuous energy feedback
Product feature	Working mode		CV, CC, CP and CR
	Output programming		It allows programmable output voltage waveforms, including voltage and current slopes, steps, cyclic control, and jump control.
	Emergency stop		With emergency stop button, it can quickly disconnect the connection with the load equipment
	Battery simulation		It can simulate models of 7 types of batteries including ternary lithium, lithium manganese oxide, lithium titanium oxide, lithium cobalt oxide, lithium iron phosphate, lead-acid, and nickel-metal hydride. It has customizable battery cell capacity, series and parallel connection quantities, SOC, and temperature parameters with 1st, 2nd, and 3rd order battery models and internal resistance models, supporting import and export of data in mat and CSV data formats.
	Photovoltaic simulation		It can set parameters such as VOC, ISC, VMP, IMP, FF, etc., with built-in standard curves such as Sandia and EN50530. It supports static and dynamic photovoltaic curves, as well as settings for temperature, shading, and other environmental parameters.
	Output ramp-up function		Programmable output voltage ramp-up
	Self-discharge function		It has a built-in discharge unit, which automatically discharges upon shutdown.
	Protection function		It has input undervoltage protection, input overcurrent protection, input phase loss protection, output overcurrent protection, output short-circuit protection, bus overvoltage protection, internal overheating protection, programmable OVP LVP OCP LVP OPP protection parameter values, and enable protection functions.
	Line drop compensation		It features automatic voltage drop compensation terminals, automatically compensating for cable voltage drop
Display and operation	Display resolution	Voltage	0.001V
		Current	0.001A
		Power	0.001kW
	Display mode		LCD
	Operation mode		Number key, knob and touch screen three-in-one
Communication interface	Serial interface		Standard RS232/RS485 (select one)
	CAN interface		Supports CAN2.0 protocol. Communication data update frequency ≥50Hz
	Ethernet		Supports the Ethernet communications
Analog interface			Supports external analog emergency stop switch quantity input control
Safety performance working environment	Insulation resistance		≥2MΩ (tested at 1,000V insulation voltage)
	Compressive strength		2,000VDC 5mA/min
	Grounding resistance		≤100mΩ
	Working temperature		0℃-40℃
	Working humidity		20-90%RH (no condensation)
	Altitude		≤2,000m
	Storage temperature		-10℃-70℃
Noise			≤75dB
Cooling method			Temperature-controlled air cooling. It has a built-in temperature-controlled variable speed fan.
Protection level			IP21

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

Multi-channel High Precision Power Analyzer
ANPA4000(F)

Multi-channel High Precision Power Analyzer
AN87660(F)

Compact Multi-channel Power Analyzer
AN87400(F)

Three-phase Power Analyzer
AN87330(F)

Single Phase Power Analyzer
AN87310(F)

Multi-channel High Precision Power Analyzer
ANPA4000(F)

- 8-channel synchronous power analysis
- Accuracy:0.03% x display + 0.05% x range)
- Sampling rate: 2MS/s
- Maximum voltage 1000V (DC1500V)
- Rich specifications: 30A (standard)/5A, standard BNC interface, optional sensor
- Motor measurement: optional motor measurement channel
- LCD display: full touch screen experience, custom display interface entries, multiple wave displays
- Data storage: custom data storage items, CSV format export, local storage/screenshot saving
- Perfect size Standard 4U height, suitable for integration

Display interface

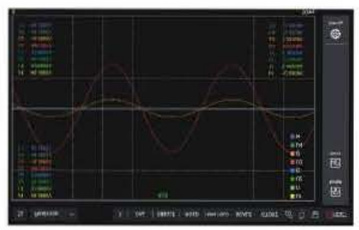
4-item display

8-item display

18-item display

Full value display

List display



Waveform Display Instantaneous Graph

Waveform Display Trend Graph

Waveform Display Vector Graph

Split screen display

Application

- Motor frame, variable frequency motor power consumption and mechanical efficiency test
- Measurement of electrical performance of electric vehicles, OBC, charging stations
- Renewable energy power, efficiency, and harmonic analysis
- Switching power supply power/harmonic/inrush current analysis.
- Harmonic analysis of power electronics and transformers



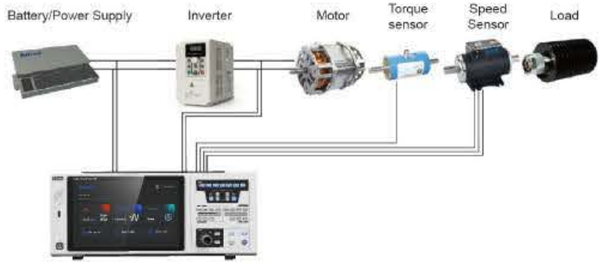



Channel configuration

Wiring	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6	Channel 7	Channel 8
Single-phase photovoltaic inverter	1P2W DC	1P2W AC	1P2W DC	1P2W AC	1P2W	1P2W	1P2W	1P2W
Three-phase photovoltaic inverter	3P3W/3V3A/3P4W AC			1P2W DC	3P3W/3V3A/3P4W AC			1P2W DC
Electric vehicle	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W
Inverter	3P3W/3V3A/3P4W			1P2W	1P2W	1P2W	Torque/speed	
UPS	1P2W Mains input	1P2W Battery	3P3W/3V3A/3P4W Three-phase input			3P3W/3V3A/3P4W Three-phase input		

The above specifications are subject to change without prior notice.

Application

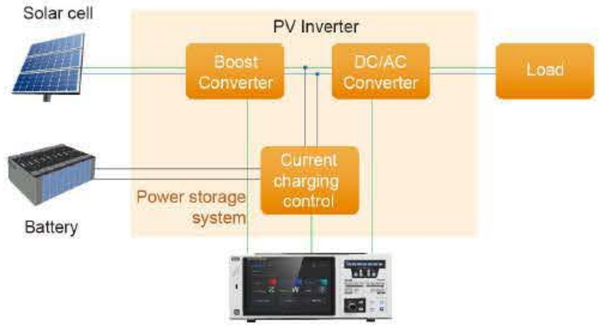


Photovoltaic inverter power measurement

- Comply with GB/T 18488-2024 Drive Motor System for Electric Vehicles
- Up to 4 motors can be measured simultaneously, supporting 500th harmonic and distortion analysis
- Pulse signal and analog signal speed/torque sensors (optional)
- Torque, speed, mechanical power, efficiency, electric phase angle measurement (optional)

Electric vehicle electrical performance measurement

- Up to 8 channels can be measured simultaneously, and multiple parameters can be detected: OBC, charging stations efficiency test, battery charging/discharging performance, power supply conversion performance, motor performance, etc.
- Support high voltage/current measurement, maximum voltage 1000V (DC1500V), maximum current 30A, expandable for larger current sensors
- Accuracy: 0.03% x display + 0.05% x range, power resolution 0.1mW
- Measure signal ripple ratio, three-phase imbalance ratio, power factor, fundamental reactive power etc.



Renewable energy measurement

- GB/T 37409-2019 Testing specifications for photovoltaic grid-connected inverter
- Comply with GB/T 34133-2023 Testing Code for Power Conversion System of Energy Storage System
- Support high voltage/current measurement, maximum voltage 1000V (DC1500V), maximum current 30A, expandable for larger current sensors
- Harmonic measurement and flicker measurement based on standard IEC
- Up to 500th harmonic and distortion analysis
- Simultaneous measurement of bidirectional power for buying and selling electricity

Power supply/UPS power measurement/

- Current: 0~30A/5A.
- Power bandwidth DC, 0.5Hz~1MHz
- Simultaneous measuring input/output (single-phase, three-phase) power, monitoring battery charge/discharge.
- Automatic efficiency calculation

Specifications

Model	ANPA4000(F)	
Current specifications	30A (optional 50A 5A)	
Wiring method	1P3W (single-phase 3-wire), 3P3W (3-phase 3-wire, 2 voltage 2 current). 3V3A (3-phase 3-wire, 3 voltage 3 current), 3P4W (3-phase 4-wire)	
Input impedance of each phase	Voltage: About 10MΩ Direct input of current: 30A： About 10mΩ 5A: About 100mΩ Current sensor input: About 1MΩ	
Sampling rate	2MS/s	
Full scale crest factor	3 or 6	
Rated voltage range(Direct input)	15/30/60/100/150/300/600/1000*[V] (peak factor 3) 7.5/15/30/50/75/150/300/500*[V] (peak factor 6) *The crest factor of 1000V full scale is 1.5	
Rated current range(Direct input)	30A: 1/2/5/10/20/30*[A](peak factor 3) 5A: 100m/200m/500m/1/2/5*[A](peak factor 3) 30A: 500m/1/2.5/5/10/15*[A](peak factor 6) 5A： 50m/100m/250m/0.5/1/2.5*[A](peak factor 6)	
Rated current range(Sensor input)	200m/500m/1/2/5/10 [V] (peak factor 3) 100m/250m/500m/1/2.5/5 [V] (peak factor 6)	
Voltage/Current Precision scope	(1%～110%) × range	
Power factor Range	±(0.0001-1.0000)	
Voltage measurement accuracy	DC 0.5Hz≤f＜45Hz 45Hz≤f≤66Hz 66Hz＜f≤1kHz 1kHz＜f≤50kHz 50kHz＜f≤100kHz 100kHz＜f≤500kHz 500kH＜f≤1MHz	±(0.05% × display + 0.05% × range) ± (0.03% × display+0.05% × range) ± (0.03% × display+0.05% × range) ±(0.1% × display + 0.1% × range) ±(0.3% × display + 0.1% × range) ±(0.6% × display + 0.2% × range) ±[(0.006 × f)% × display + 0.5% × range] ±[(0.022 × f - 8)% × display + 1% × range]
Current precision	DC 0.5Hz≤f＜45Hz 45Hz≤f≤66Hz 66Hz＜f≤1kHz 1kHz＜f≤50kHz 50kHz＜f≤100kHz 100kHz＜f≤500kHz 500kHz＜f≤1MHz	±(0.05% × display + 0.05% × range) ±[(0.03% × display + 0.05% × range)+ (2μA*)] ±[(0.03% × display + 0.05% × range)+ (2μA*)] ±(0.1% × display + 0.1% × range) ±(0.3% × display + 0.1% × range) ±(0.6% × display + 0.2% × range) ±[(0.006 × f)% × display + 0.5% × range] ±[(0.022 × f - 8)% × display + 1% × range]
Active power measurement accuracy	DC 0.5Hz≤f＜45Hz 45Hz≤f≤66Hz 66Hz＜f≤1kHz 1kHz＜f≤50kHz 50kHz＜f≤100kHz 100kHz＜f≤500kHz 500kHz＜f≤1MHz	±(0.05% × display + 0.05% × range) ±(0.08% × display + 0.1% × range) ±(0.05% × display + 0.05% × range) ±(0.2% × display + 0.1% × range) ±(0.3% × display + 0.2% × range) ±(0.7% × display + 0.3% × range) ±[(0.02 × f)% × display + 1% × range] ±[(0.04 × f)% × display + 3% × range]

Specifications

Model	ANPA4000(F)
Active power measurement accuracy	0.02W-6.6kW/phase @ 220V, PF=0.01-1 (30A board card)
Active power resolution	30A/50A: 1mW; 5A:0.1mW
Frequency range	DC, 0.5Hz -1MHz
Frequency measurement accuracy	±0.06% x display
Harmonic measurement	110Hz ~ 2.6kHz, up to 500th harmonic content, total distortion
Electric energy measurement range	0-99999MWh (resolution: 1mWh/0.01mAh)
Electric energy measurement accuracy	±0.2% * display
Power meter	9999 hours 59 minutes 59 seconds
Filter function	Frequency filtering is available in 500Hz, 10kHz, 100kHz, and 1MHz options.Line filtering 100~10kHz (step 100Hz), 50kHz, 100kHz optional
Voltage/current ratio	1.00～50000.00
External input ratio	0.10~100.00
Data update cycle	10m / 20m / 50m / 100m / 200m / 500m / 1/ 2 / 5 / 10[s]
Control interface	Test cycle synchronization interface (compatible with trigger lock), standard: RS-232, LAN; Optional RS-485
Protocol	MODBUS\TCP MODBUS\SCPI
Outline dimension	426（W）x 175（H）x 462（D）mm
Size of the opening	426（W）x 175（H）
Foot height	17.5 mm
Machine weight	About 20kg
Power consumption of whole machine	66W

Type	Motor board	
Input Interface	Insulation BNC	
Input resistance	About 1MΩ	
Input channel	**Single motor(speed: Pulse)**	
	ChA(Torque)	Analog/pulse input
	ChB(SpeedA)	Pulse phase-A (rotation speed)
	ChC(SpeedB)	Pulse phase-B (steering)
	ChD(SpeedZ)	Pulse phase-Z (electrical angle reference)
	Single motor(speed: analog)	
	ChA(Torque)	Analog/pulse input
	ChB()	
	ChC(Speed)	Analog/pulse input
	ChD()	
	Dual-motor	
	ChA(Torque)	Analog/pulse input
	ChB(Speed)	Pulse input
	ChC(Torque)	Analog/pulse input
	ChD(Speed)	Pulse input
Input type	**Analog input**	
	Rated range	1/2/5/10/20*[V]
	Range	(1%～110%) * range
	Maximum allowable input	22V
	Sampling rate	About 200KS/s
	measurement accuracy	±(0.05% * display + 0.05% * range)
	Pulse input	
	Rated range	10V
	Amplitude range	±12Vpeak
	Detection level - H	≥2V
	Detection level - L	≤0.8V
	Pulse width	≥500ns
	Frequency range	2 Hz ～ 1 MHz
	measurement accuracy	±(0.05% * display + 0.001Hz)

The above specifications are subject to change without prior notice.

[Conditions]
Temperature: 23±5℃, humidity: 30%~75%RH, input wave: Sine wave, common-mode voltage: 0V, Line filter: OFF, Frequency filter: OFF, Power factor λ: 1, peak factor: 3. After preheating. After zeroing or changing the range in wiring state.
The f in the measurement accuracy formula is the frequency in kHz.
When the data update rate is 10ms, 20ms, 50ms, 100ms, all accuracies are increased by 0.03% x display.
Impact due to change to Temp. after resetting or changing the scale:
Plus 0.02% x scale/℃ for voltage DC accuracy, 500μA/℃ for current DC accuracy, 50μV/℃ for external sensor DC accuracy, product of voltage impact and current impact for power DC accuracy.

Multi-channel High Precision Power Analyzer
AN87660(F) Series

- Six-channel synchronous power analysis.
- **Basic Accuracy:** 0.05% of reading + 0.05% of range
- **Measurement Bandwidth:** DC, 0.5Hz~100kHz
- **Sampling Rate:** 200kSps
- **Maximum Voltage:** Standard 1000V (DC1500V)
- **Maximum Current:** 20A (standard) 50A/5A (optional), support for mixed configurations, optional sensors available
- **LCD Display:** Full touchscreen experience, customizable display interface, waveform display
- **Data Storage:** Customizable storage items, export in CSV format
- **Perfect Size:** Standard 3U height, meets system integration requirements

Production Application

- Analysis of standby power consumption and power for single-phase/three-phase household and commercial appliances
- Analysis of power, efficiency, and harmonics for photovoltaic inverters
- Measurement of electrical performance for electric vehicles and charging piles
- Power and harmonics analysis for power electronics, transformers, and generators
- Power and harmonics analysis for variable frequency drives and variable frequency motors
- Analysis of power, harmonics, and surge current for switching power supplies
- Power analysis for lighting systems and LED lighting

Features

- **Multi-channel Configuration:** Configurable with 1 to 6 channels for synchronous measurement units, adaptable for various load measurement needs such as single-phase, three-phase three by two, three-phase four by two, four-phase (DC + three-phase three), etc. (applicable to loads like air conditioners, inverters, variable frequency drives, motors).
- **High Accuracy:** Utilizes high-speed FPGA + ARM dual-core processing, 16-bit high-speed high-precision AD converter, achieving a basic accuracy of up to 0.1%, with a fastest data update cycle of 100ms.
  Wide Power Range: Each channel can measure currents up to 50A (optional specifications include 20A, 5A, 1A, etc., supporting mixed configurations), with a minimum power resolution of 0.1mW, meeting requirements for standby power consumption measurement and rated power measurement.
- **Wide Bandwidth:** Dual-use for AC and DC signals, with a power measurement bandwidth ranging from DC, 0.5Hz to 100kHz, suitable for measuring power of various standard and non-standard sinusoidal waveform loads.

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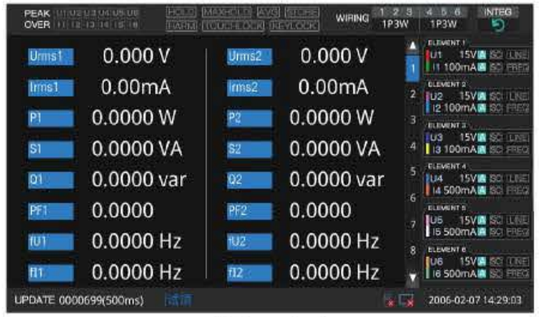
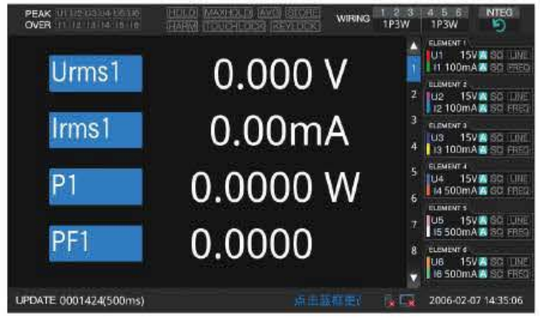
- **Multi-channel Harmonic Analysis:** Capable of simultaneous harmonic analysis on six channels, measuring up to 50th harmonic, distortion analysis, and displaying harmonic content of each order and total content intuitively.-
- **Multi-channel Frequency Measurement:** Six channels can perform frequency measurements simultaneously.
- **Line Filtering:** Employs low-pass filters of 500Hz and 5.5kHz, capable of measuring the fundamental value of PWM waveforms and filtering out high-frequency interference from switch mode power supplies.
- **Sensors:** Ratio function, supports conventional I-I, V-V type voltage/current transformers; supports BNC interface I-V type current sensors, with a maximum input voltage of 10V, optional high-current sensors available.
- **Efficiency Calculation:** Simultaneously measures input and output energy consumption of devices, and calculates their efficiency.
- **Energy Accumulation:** Capable of separately accumulating forward energy, reverse energy, and comprehensive energy, facilitating measurement for energy transactions.

UI



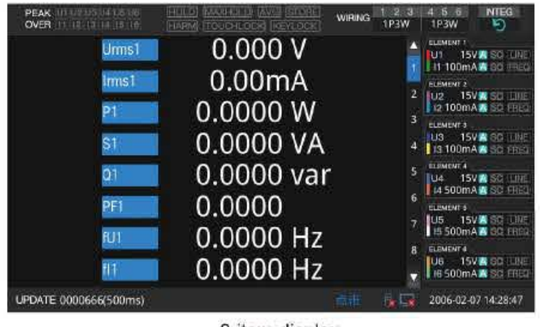
16-item display

Full numerical



4-item display

List display



8-item display

Waveform Display

Touchscreen setting

Channel configuration

The multi-channel power analyzer supports various wiring configurations, including 1P2W, 1P3W, 3P3W, 3V3A, 3P4W, etc. In these configurations, adjacent input units with numbers greater than the currently selected unit are grouped together as a wiring set.

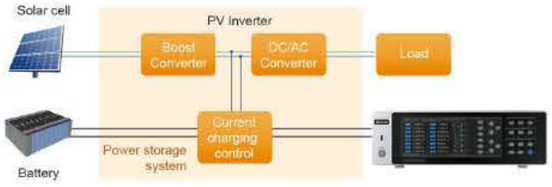
Wiring method	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
1P2W	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W
1P3W	1P3W	1P3W	1P3W	1P3W	1P3W	
3P3W	3P3W	3P3W	3P3W	3P3W	3P3W	
3V3A	3V3A	3V3A	3V3A	3V3A		
3P4W	3P4W	3P4W	3P4W	3P4W		

Application

Photovoltaic inverter power measurement

- Complies with "GB/T 37409-2019 Technical Specification for Testing of Photovoltaic Grid-Connected Inverters"
- Voltage range: 0~1000V (DC1500V)
- Current range: 0~50A/current sensor
- Capable of simultaneously measuring input, output (single-phase, three-phase) power, and power factor
- Automatic efficiency calculation
- 50th harmonic, distortion analysis
- Bidirectional power measurement for buying and selling electricity

Wiring method	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
Single-phase PV inverters	1P2W DC	1P2W AC	1P2W	1P2W	1P2W	1P2W
Three-phase PV inverters	3P3W/3V3A/3P4W AC			1P2W DC	1P2W	1P2W



Electric vehicle electrical performance measurement

- Multi-channel, capable of simultaneously detecting multiple parameters: OBC (On-Board Charger), charging piles efficiency testing, battery charge and discharge performance, power conversion performance, motor performance, etc.
- AC/DC, maximum current 50A, expandable with larger current sensors.

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- High accuracy, basic accuracy 0.1%, minimum power resolution 0.1mW
- Capable of measuring instantaneous effective value, average value, peak value, energy consumption, etc., of AC and DC signals.

Wiring method	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
Electric Vehicle	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W

Frequency converters power measurement
- Complies with GB12668 standard
- Power bandwidth: DC, 0.5Hz~100kHz
- Current range: 0~50A/current sensor
- Capable of simultaneously measuring input and output power
- 50th harmonic, distortion analysis

Wiring method	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
Frequency Converter	3P3W/3V3A/3P4W			3P3W/3V3A/3P4W		

Power supplies, UPS power measurement
- Current range: 0~1A/5A/20A/50A
- Power bandwidth: DC, 0.5Hz~100kHz
- Capable of simultaneously measuring input, output (single-phase, three-phase) power, monitoring battery charge and discharge
- Automatic efficiency calculation

Wiring method	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
UPS	1P2W Mains Input	1P2W Battery	1P2W Battery	3P3W/3V3A/3P4W Power Supply Output		

Household appliance performance evaluation, standby power consumption measurement
- Complies with IEC 62301-2011 standard
- Current range: 0~1A/5A/20A/50A, capable of measuring rated power and standby power
- Minimum power resolution: 0.1mW
- 50th harmonic, distortion analysis

Wiring method	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
Household appliances	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W
Commercial appliances	3P4W			3P4W		

Measurement of lighting and LED power
- Current range: 0~1A/5A/50A
- Minimum power resolution: 0.1mW
- Can measure input and output power, power factor, efficiency of the driver power supply
- 50th harmonic, distortion analysis

Wiring method	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
Lighting	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W

Specifications

Model	AN87660(F)	
Measurement Channels - x	1～6	
Wiring Method	1P2W (Single-phase 2-wire) 1P3W (Single-phase 3-wire) 3P3W (3-phase 3-wire, 2 voltage 2 current) 3P3W (3V3A) (3-phase 3-wire, 3 voltage 3 current) 3P4W (3-phase 4-wire)	
Measurement Parameters	Voltage (U), Current (I), Active Power (P), Reactive Power (Q), Apparent Power (S), Power Factor (λ), Voltage Frequency (fU), Current Frequency (fI), Phase Angle (Φ), Efficiency (η), Total Energy (Wh), Forward Energy (Wh+), Reverse Energy (Wh-), Current Integration (Ah), 50th Harmonic Analysis (HDF), Voltage and Current Total Harmonic Distortion (THD), Peak Voltage (Vpk), Peak Current (Ipk), Voltage Peak Factor (CfU), Current Peak Factor (CfI)...	
Input Impedance	Voltage: Approximately 2MΩ, Direct Current Input: Approximately 2.5mΩ (50A specification), Current Sensor Input: Approximately 100kΩ	
AD Sampling Rate	Around 200kS/s	
Peak Crest Factor at Full Range	3 or 6	
Voltage Rated Range (direct input)	When the crest factor is 3: 15/30/60/100/150/300/600/1000*[V], When the crest factor is 6: 7.5/15/30/50/75/150/300/500*[V], *The maximum range crest factor is 1.5	
Current Rated Range (direct input)	When the crest factor is 3: 20A current: 500m/1/2/5/10/20*[A] Optional: 50A current: 1/2/5/10/20/50*[A] 5A current: 100m/200m/500m/1/2/5*[A] 1A current: 20m/50m/100m/200m/500m/1*[A] When the crest factor is 6: 20A current: 250m/0.5/1/2.5/5/10*[A] Optional: 50A current: 0.5/1/2.5/5/10/25*[A] 2 5A current: 50m/100m/250m/0.5/1/2.5*[A] 1A current: 10m/25m/50m/100m/250m/0.5*[A] *The maximum range crest factor is 1.5	
Current Rated Range (BNC sensor)	Optional: 200m/500m/1/2/5/10[V]	
Voltage, Current Range Accuracy Range	(1%～110%)*×range *For voltage 1000V and current maximum range, the accuracy range is (1% to 100%) * range	
Power Factor Range	±(0.001 ～ 1.000)	
Voltage Measurement Accuracy	DC	±(0.05% × display value + 0.05% × range)
	0.1Hz≤f≤66Hz	±(0.05% × display value + 0.05% × range)
	66Hz＜f≤1kHz	±(0.1% × display value + 0.1% × range)
	1kHz＜f≤10kHz	±({0.1 + 0.05 × (f - 1)}% × display value + 0.2% × range)
	10kHz＜f≤100kHz	±({0.5 + 0.04 × (f - 10)}% × display value + 0.3% × range)

Current Measurement Accuracy	DC	±(0.05% × display value + 0.05% × range)
	0.1Hz≤f≤66Hz	±(0.05% × display value + 0.05% × range)
	66Hz＜f≤1kHz	±(0.1% × display value + 0.1% × range)
	1kHz＜f≤10kHz	±((0.1 × f)% display value + 0.2% × range)
	10kHz＜f≤100kHz	±({1 + 0.08 × (f - 10)}% × display value + 0.3% × range)
Power Measurement Accuracy	DC	±(0.05% × display value + 0.05% × range)
	0.5Hz≤f＜45Hz	±(0.1% × display value + 0.1% × range)
	45Hz≤f≤66Hz	±(0.05% × display value + 0.05% × range)
	66Hz＜f≤1kHz	±(0.2% × display value + 0.1% × range)
	1kHz＜f≤10kHz	±({0.2 + 0.1 × (f - 1)}% × display value + 0.2% × range)
	10kHz＜f≤50kHz	±({0.2 + 0.1 × (f - 1)}% × display value + 0.3% × range)
	50kHz＜f≤100kHz	±({5.1 + 0.18 × (f - 50)}% × display value + 0.3% × range)
Active Power Resolution	0.1mW	
Frequency Measurement Range	DC，0.5Hz ～ 100kHz	
Frequency Measurement Accuracy	±0.1% × display value	
Harmonic Measurement	11Hz to 600Hz, 1 to 50th harmonic content, total distortion	
Energy Measurement Range	0 to 999999MWh (Resolution: 1mWh / 0.01mAh)	
Energy Measurement Accuracy	±(0.1% × display value + 0.1% × full scale)	
Extended Uncertainty	Voltage, current, power, frequency, and energy accuracy ≤ 0.20%	
Filtering Function	500Hz and 5.5kHz voltage line, current line, and frequency filtering	
Ratio Function	1 ～ 50000	
Data Update Cycle	100m / 200m / 500m / 1/ 2 / 5 /10[s]	
Control Interface	Standard: RS-232, Digital Input/Output Interface, Ethernet Port; Optional: RS-485, GPIB	
Display	7-inch LCD touchscreen	
Dimensions	426×132.5×430.3 （W,front panel)×(H, front pane)×(D,excluding terminal posts)mm	
Cutout Dimensions	422×128.5 (W, chassis)×(H, chassis) mm	
Base Height	17.5 mm	
Total Weight	Around7.5 kg	

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

[Conditions]

Temperature: 23±5℃, Humidity: 30%~75%RH, Input Waveform: Sinusoidal Wave, Common Mode Voltage: 0V, Line Filter: OFF, Frequency Filter: ON below 440Hz, Power Factor λ: 1, Crest Factor: 3. After preheating, under wiring conditions, zero adjustment or change of range.

In the measurement accuracy formula, f represents frequency, with unit kHz.

When the data update rate is 100ms, all accuracies are added to 0.05% of the reading.

Due to the influence of temperature changes after zero adjustment or range change:

Voltage DC accuracy increases by 0.02%/℃ of the range, Current DC accuracy increases by 500μA/℃, External sensor DC accuracy increases by 50μV/℃, Power DC accuracy increases by the product of voltage and current influences.

Compact Multi-channel Power Analyzer
AN87400(F)

- **Basic accuracy:** 0.05% of reading + 0.05% of range
- **Measurement bandwidth:** DC, 0.5Hz - 100kHz
- **Sampling rate:** 200kSps
- **Maximum voltage:** standard 1500VDC
- **Maximum current:** 20A (standard) 1A (optional) , supports mixed combinations, optional sensor configuration
- **LCD Display:** touch screen experience, customizable display interface items, and waveform display
- **Data storage:** customizable storage projects, CSV format export
- **Perfect size:** 3U half-width size, meeting system integration requirements

Channel Configuration

Wiring method	Channel 1	Channel 2	Channel 3	Channel 4
Single-phase photovoltaic inverter	1P2W DC	1P2W AC	1P2W	1P2W
Three-phase photovoltaic inverter	3P3W/3V3A/3P4W AC			1P2W DC
Electric vehicles	1P2W	1P2W	1P2W	1P2W

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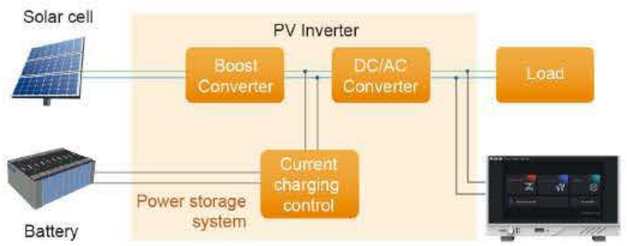
Product Application



Photovoltaic inverter power measurement

- Complying with Testing Specification for Photovoltaic Grid-connected Inverter (GB/T 37409-2019)
- Voltage range: 0-1,500V
- Current range: 0-20A/current sensor
- Capable of simultaneous measuring input, output (single-phase and three-phase) power, and power factor
- Automatic efficiency calculation
- Analysis of 100 times harmonics and distortion.
- Bidirectional power measurement for buying and selling electricity

AN87400(F)

Electric vehicle electrical performance measurement

- Multi-channel, capable of simultaneously detecting multiple parameters: OBC efficiency testing, charging station efficiency testing, battery charging and discharging performance, power conversion performance, motor performance, etc.
- AC/DC, with maximum current 20A, expandable to larger current sensors.
- High precision, with basic precision 0.05% and minimum power resolution 0.1mW.
- Capable of measuring instantaneous effective value, average value, peak value of AC/DC signals, energy consumption, etc.

Technical Specifications

Model	AN87400(F)-X	
Measurement Channels - x	1～4	
Wiring Method	1P2W (single-phase 2-wire), 1P3W (single-phase 3-wire), 3P3W (three-phase 3-wire, 2 voltage 2 current), 3P3W (3V3A) (three-phase 3-wire, 3 voltage 3 current), 3P4W (three-phase 4-wire)	
Measurement Parameters	Voltage (U), current (I), active power (P), reactive power (Q), apparent power (S), power factor (λ), voltage frequency (fU), current frequency (fI), phase angle (Φ), efficiency (η), total energy (Wh), forward energy (Wh+), reverse energy (Wh-), current integration (Ah), 100 times harmonic distortion factor (HDF), total harmonic distortion (THD) of voltage and current, peak voltage (Vpk), peak current (Ipk), voltage peak factor (CfU), current peak factor (CfI) ...	
Input Impedance	Voltage: approximately 2MΩ, Current direct input: approximately 10mΩ Current sensor input: approximately 100kΩ	
AD Sampling Rate	Approximate 200kS/s	
Full range peak factor	3 or 6	
Voltage rated ranges (direct input)	When the peak factor is 3: 15/30/60/100/150/300/600/1000 * [V] When the peak factor is 6: 7.5/15/30/50/75/150/300/500 * [V] * Full range peak factor is 1.5	
Current rated ranges (direct input)	When the peak factor is 3: 20A current specifications: 500m/1/2/5/10/20 * [A] 5A current specifications: 100m/200m/500m/1/2/5 * [A] 1A current specifications: 20m/50m/100m/200m/500m/1 * [A] When the peak factor is 6: 20A current specifications: 250m/0.5/1/2.5/5/10 * [A] 5A current specifications: 50m/100m/250m/0.5/1/2.5 * [A] 1A current specifications: 10m/25 m/50m/100m/250m/0.5 * [A] * Full range peak factor of above specifications is 1.5	
Current rated ranges (BNC sensor)	When the peak factor is 3: 200m/500m/1/2/5/10 [V] When the peak factor is 6: 100m/250m/0.5/1/2.5/5 [V]	
Voltage and current range accuracy range	(1% - 110%) * × range * The accuracy range for voltage of 1,000V and current of 20A is (1% - 100%) × range.	
Power factor range	± (0.001 - 1.000)	
Voltage Measurement Accuracy	DC 0.1Hz≤f≤66Hz 66Hz＜f≤1kHz 1kHz＜f≤10kHz 10kHz＜f≤100kHz	±(0.05% × display value + 0.05% × range) ±(0.05% × display value + 0.05% × range) ±(0.1% × display value + 0.1% × range) ±({0.1 + 0.05 × (f - 1)}% × display value + 0.2% × range) ±({0.5 + 0.04 × (f - 10)}% × display value + 0.3% × range)
Current Measurement Accuracy	DC 0.1Hz≤f≤66Hz 66Hz＜f≤1kHz 1kHz＜f≤10kHz 10kHz＜f≤100kHz	±(0.05% × display value + 0.05% × range) ±(0.05% × display value + 0.05% × range) ±(0.1% × display value + 0.1% × range) ±((0.1 × f)% display value + 0.2% × range) ±({1 + 0.08 × (f - 10)}% × display value + 0.3% × range)
Power Measurement Accuracy	DC 0.5Hz≤f＜45Hz 45Hz≤f≤66Hz 66Hz＜f≤1kHz 1kHz＜f≤10kHz 10kHz＜f≤50kHz 50kHz＜f≤100kHz	±(0.05% × display value + 0.05% × range) ±(0.1% × display value + 0.1% × range) ±(0.05% × display value + 0.05% × range) ±(0.2% × display value + 0.1% × range) ±({0.2 + 0.1 × (f - 1)}% × display value + 0.2% × range) ±({0.2 + 0.1 × (f - 1)}% × display value + 0.3% × range) ±({5.1 + 0.18 × (f - 50)}% × display value + 0.3% × range)

Active power resolution	0.1mW
Frequency measurement range	DC, 0.5Hz - 100kHz
Frequency measurement accuracy	± 0.1% × display value
Harmonic measurement	11Hz - 600Hz, with maximum 100 times harmonic content and total distortion
Energy measurement range	0 - 99,999MWh (Resolution: 1mWh/0.01mAh)
Energy measurement accuracy	± (0.1% × display value + 0.1% × range)
Filter function	500Hz and 5.5kHz voltage and current line filters, as well as frequency filtering
Transformation ratio functionality	1 - 50,000
Data update cycle	100m/200m/500m/1/2/5/10 [s]
Control interface	Standard: RS-232, network interface; optional: RS-485, GPIB
Communication protocol	MODBUS protocol and SCPI protocol
Displayer	7-inch LCD touch screen
Appearance size	215 (W) × 133 (H) × 374 (D) mm
Opening size	215 (W) × 133 (H) mm
Foot height	15mm
Machine weight	Approximate 4kg

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

[Conditions]

- Temperature: 23 ± 5℃, humidity: 30%-75%RH, input waveform: sine wave, common mode voltage: 0V, line filter: OFF, frequency filter: ON for frequencies below 440Hz, power factor λ: 1, peak factor: 3. After warming up. Under wiring conditions, after zero adjustment or range change.
- In the accuracy formula, f represents frequency in kHz.
- When the data update rate is 100ms, add 0.03% of the reading to all accuracies.
- Due to the effect of temperature changes after zero adjustment or range change: add 0.02%/℃ to voltage DC accuracy and range, add 500μA/℃ to current DC accuracy, add 50μV/℃ to external sensor DC accuracy, and for power DC accuracy, add the product of the voltage and current effects.

Three-phase Power Analyzer
AN87330(F)

Product Introduction

The AN87330(F) series high-accuracy power meter adopts the latest FPGA+ARM digital processing system to achieve synchronous sampling, which fully meets the testing needs of three-phase equipment in the fields of motors, home appliances, new energy etc. on the market. It is specially designed for production lines such as automated line and integrated system etc.

Features

- High performance, wide frequency band: accuracy up to 0.1%, the bandwidth is DC, 0.5Hz~100kHz, suitable for testing of non-sinusoidal wave load.
- True differential synchronous conditioning sampling, guaranteeing super large direct test capability, voltage: 0.15~1000V, current: 5mA~50A/1mA~20A.
- Standard RS232, LAN port, standard MODBUS protocol, to meet the customization needs of multiple protocols, optional RS485, GPIB module.
- Support three-phase interphase angle test.

Applications

- Dynamic test of brushless DC motor
  - FG signal RMS, peak-peak measurement, duty cycle calculation, wave data analysis.
  - Measurement of RMS and frequency of 3-phase back electromotive force.
  - Phase angle test
- Power measurement of inverter motor and inverter
  - Power bandwidth DC, 0.5Hz~100kHz
  - Current: 0~20A/current sensor
  - Simultaneously measure input and output power
  - 50th harmonic and distortion analysis

Specifications

Model	AN87330(F)
Current	20A
Wiring	1P3W (1-phase 3-wire)、3P3W (3-phase 3-wire,2 voltage 2 current)、3V3A (3-phase 3 -wire,3 voltage 3 current)、3P4W (3-phase 4-wire)
Input impedance of all phase	Voltage:approx.2MΩ; Current direct input:approx.10mΩ current sensor input:approx.100kΩ
Full range peak factor	3
Rated voltage(direct input)	15/30/60/100/150/300/600/1000*[V];*1000V full range peak factor:1.5
Rated current(direct input)	100m/200m/500m/1/2/5/10/20*[A];*20A full range peak factor:1.5
Rated current(sensor input) (optional)	50m/100m/200m/500m/1/2/5/10[V]
Voltage/current accuracy	(1%～110%) × range;*voltage:1000V range、current 20A accuracy range(1%～100%) × range
Power factor	±(0.001 ～ 1.000)
Voltage accuracy	DC:±(0.1% × display + 0.2% × range) 0.5Hz≤f＜45Hz: ±(0.1% × display + 0.2% × range) 45Hz≤f≤66Hz: ±(0.1% × display + 0.1% × range) 66Hz＜f≤1kHz: ±(0.1% × display + 0.2% × range) 1kHz＜f≤10kHz: ±({0.07 × f}% × display + 0.3% × range) 10kHz＜f≤100kHz: ±(0.5% × display + 0.5% × range), ±[{0.04 × (f–10)}% × display]
Current accuracy	DC: ±(0.1% × display + 0.2% × range) 0.5Hz≤f＜45Hz: ±(0.1% × display + 0.2% × range) 45Hz≤f≤66Hz: ±(0.1% × display +0.1% × range) 66Hz＜f≤1kHz: ±(0.1% × display +0.2% × range) 1kHz＜f≤10kHz: ±({0.07 × f}%× display +0.3% × range) 10kHz＜f≤100kHz: ±(0.5% × display + 0.5% × range), ±[{0.04 × (f–10)}% × display]
Active power accuracy	DC: ±(0.1% × display + 0.2% × range) 0.5Hz≤f＜45Hz: ±(0.3% × display + 0.2% × range) 45Hz≤f≤66Hz: ±(0.1% × display + 0.1% × range) 66Hz＜f≤1kHz: ±(0.2% × display + 0.2% × range) 1kHz＜f≤10kHz: ±(0.1% × display + 0.3% × range), ±[{0.067 × (f–1)}% × display] 10kHz＜f≤100kHz: ±(0.5% × display + 0.5% × range), ±[{0.09 × (f–10)}% × display]
Active power measurement/ resolution	4.4mW~4.4kW/phase @220V, PF=0.01~1 , 0.1mW
Frequency range/accuracy	DC,0.5Hz ～ 100kHz, ±(0.1% × display)
Harmonic measurement	10Hz ～ 600Hz, 1～50th harmonic content, total distortion
Electric energy range/ accuracy	0～99999MWh (resolution:1mWh/0.01mAh), ±(0.2% × display)
Electric energy timing	H:9999 Min:59 Sec:59
Filter	500Hz, 5.5kHz voltage line, current line and frequency filter
Ratio	1.0～5000.0
External input change	0.010~100.000
Data update cycle	100m/200m/500m/1/2/5/10[s]
Alarm	Three-phase total voltage, three-phase total current, three-phase total power upper/lower limit, threshold
Control interface	Standard:RS-232, Ethernet; Optional:RS-485, motor measuring board (pulse torque speed sensor)
Communication protocol	Ainuo3.0, Modbus, TCP Modbus
Dimension	Dimension:213(W)× 133(H)× 400(D)mm, Opening: 213(W) × 133(H) mm, Foot height:15 mm

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

Single-Phase Power Analyzer
AN87310(F)

Product Introduction

This AN87310(F) series AC/DC power meter adopts STM32 controller as the core and supplemented by FPGA, using direct sampling and intelligent identification technology, widely used in electrical measurements of single-phase electrical equipment, such as voltage, current, power, power factor, frequency, electrical energy, time, harmonics etc., wide range, 4-window LED highlight, simple operation, U disk read/write, serial communication, parameter alarm, voltage/current ratio settings and other functions, multi-purpose, professional and reliable.

Features

- Universal wide-range design for AC/DC, DC~100kHz bandwidth, stronger load adaptability
- Reliable, stable, compact, light
- Fast measurement, refresh rate up to 0.1s
- Standard RS-232 or RS-485 port, support MODBUS communication, automatic testing

Applications

- Strict industrial site type test
- High temperature aging room test
- Power tool test
- Lighting test
- Standby power measurement of household appliances and commercial appliances lines
- Current: 1mA~22A/5mA~55A, voltage: 0.15~1200V, rated power and standby power can be measured
- Minimum power resolution: 0.1mW
- 50th harmonic and distortion analysis

Specifications

Model	AN87310(F)
Current	20A/50A (optional)
Wiring	1P2W(1-phase 2-wire)
Input impedance	Voltage:approx.2MΩ;Current direct input: approx.10mΩ ;Current sensor input: approx.100kΩ
Full range peak factor	3
Rated voltage (direct input)	15/30/60/100/150/300/600/1000*[V];*1000V Full range peak factor:1.5
Rated current (direct input)	100m/200m/500m/1/2/5/10/20[A]
Rated current(sensor input)	50m/100m/200m/500m/1/2/5/10[V]
Voltage/current accuracy	(1%～110%) × range
Power factor	±(0.001 ～ 1.000)
Voltage accuracy	DC: ±(0.1% × display + 0.2% × range) 0.5Hz≤f＜45Hz: ±(0.1% × display + 0.2% × range) 45Hz≤f≤66Hz: ±(0.1% × display + 0.1% × range) 66Hz＜f≤1kHz: ±(0.1% × display + 0.2% × range) 1kHz＜f≤10kHz: ±({0.07×f}% × display + 0.3% × range) 10kHz＜f≤100kHz: ±(0.5% × display + 0.5% × range), ±[{0.04 × (f–10)}% × display]
Current accuracy	DC: ±(0.1% × display + 0.2% × range) 0.5Hz≤f＜45Hz: ±(0.1% × display + 0.2% × range) 45Hz≤f≤66Hz: ±(0.1% × display + 0.1% × range) 66Hz＜f≤1kHz: ±(0.1% × display + 0.2% × range) 1kHz＜f≤10kHz: ±({0.07×f}% × display + 0.3% × range) 10kHz＜f≤100kHz: ±(0.5% × display + 0.5% × display), ±[{0.04×(f–10)}% × display]
Active power accuracy	DC: ±(0.1% × display + 0.2% × range) 0.5Hz≤f＜45Hz: ±(0.3% × display + 0.2% × range) 45Hz≤f≤66Hz: ±(0.1% × display + 0.1% × range) 66Hz＜f≤1kHz: ±(0.2% × display + 0.2% × range) 1kHz＜f≤10kHz: ±(0.1% × display + 0.3% × range), ±[{0.067 × (f–1)}% × display] 10kHz＜f≤100kHz: ±(0.5% × display + 0.5% × range), ±[{0.09×(f–10)}% × range]
Active power range/ resolution	2.2mW~4.4kW@220V,PF=0.01~1, 0.1mW
Frequency range/accuracy	DC, 0.5Hz~100kHz, ±0.1% × display
Harmonic measurement	11Hz~600Hz, 1～50th harmonic content, total distortion
Electric energy range	0～99999MWh (Resolution:1mWh/0.01mAh), ±0.5% × display
Electric energy counting	H:9999, Min:59, Sec:59
Filter	500Hz, 5.5kHz Voltage line, current line and frequency filter
Ratio	1~5000
Current Sensor Ratio Range	0.010~100.000 mV/A
Data update cycle	100m/250m/500m/1/2/5[s]
Alarm	5groups ,voltage, current, power upper/lower limit, threshold
Control interface	Standard:RS-232; Optional:RS-485
Dimension	Dimension:213(W)×88(H)×380(D) mm, Opening:210(W)×85(H) mm, Foot height:15 mm

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

Partial Discharge (PD) Tester
AN8A10PD(F) Series

Motor Stator/Complete Machine Comprehensive Tester
AN8A10RT(F) Series

Exceeding & Trustworthy Motor Test Scheme Ainuo

Partial Discharge(PD) Tester
AN8A10PD(F) Series

Product Overview

The tester utilizes advanced RF, high-frequency, and weak signal processing technologies to develop a unique high-frequency partial discharge detection solution. It employs high precision digital signal processing chips to accurately capture the partial discharge signals of the products under test. It is suitable for local discharge test of new energy main drive motor of industrial motor.

Test items

- PDIV, RPDIV, PDEV, and RPDEV
- **PDIV:** It refers to the lowest voltage when the test voltage gradually increases from the lower voltage that does not produce partial discharge, and the partial discharge amount exceeds a certain specified value in the test.
- **RPDIV:** It refers to the lowest voltage when the test voltage gradually increases from the lower voltage that does not produce partial discharge, and the partial discharge amount in the test repeatedly exceeds a specified value.
- **PDEV:** It refers to the maximum voltage when the test voltage gradually decreases from the higher value exceeding the initial voltage of partial discharge, and the partial discharge amount in the test is less than a specified value.
- **RPDEV:** It refers to the maximum voltage when the test voltage gradually decreases from a higher value exceeding the initial voltage of partial discharge, and the partial discharge amount is repeatedly less than a certain specified value in the test.

Software interface

Features

- Measurable It provides the industry's exclusive PD-UHF measurement and testing solutions.
- **Multi-function:** One device can support both interturn PD (DC-PD) and withstand voltage PD (AC-PD) at the same time.
- **Multi-channel:** It supports multi-channel switching, and automatically completes all tests at one wiring to meet the test needs of multi-winding motors.
- **High performance:** It adopts a high signal-to-noise ratio identification algorithm to achieve high sensitivity testing of partial discharge.
- **High reliability:** It has undergone strict working condition tests and millions of tests in complex environments.
- **High stability:** The test results are stable and not easily affected by the environmental conditions of the production site Multi-interface.
- The system supports USB, RS232, LAN and other interfaces, supports PLC communication, TCP/IP network protocol, etc., supports MES docking customization, database upload, etc.

Specifications

Product Name		Partial Discharge (PD) Tester	
Model		AN8A10PD(F) Series	Customized Parameter
Impulse PD (DC-PD)	Output Voltage	Range: (300-5000) VAC	Energy Boost
		Allowable Error: ±(2.5%×Setting value+10V);	
	Step Voltage	10V/step	
	Pulse Count	1-32 times	
	Combo Interval	20ms	
	Step Interval	0.1s-99.0s, Allowable Error: ±(1%×Setting Value+0.1s)	
	Peak Value Range	(0-120) mV	
	Determination Methods	Discharge Level Comparison	
Sine PD (AC-PD)	Output Voltage	Range: (300~5000) VAC	
		Allowable Error: ±(1%×Setting Value+2V)	
	Step Voltage	10V/step	
	Duration	1-99s	
	Step Interval	0.1s-99.0s, Allowable Error: ±(1%×Setting Value+0.1s)	
	Peak Value Range	(0-120) mV	
	Determination Methods	Discharge Level Comparison	
Others	Microwave Sensor	Senses electromagnetic waves generated by discharge	
	Test Range	Distance from the object under test: 10-30cm	
	Background Noise	Provide background noise compensation	
	Ambient Conditions	Operating Temperature Range: 5-40℃, Working Humidity Range: 20-80%RH	
		Storage Temperature Range: -10-50℃, Storage Humidity Range: 5-90%RH	

The above specifications are subject to change without notice.

Motor Stator/Complete Machine Comprehensive Tester
AN8A10RT(F) Series

Features

- **High integration:** It can integrate 7 test functions and complete all tests with one wiring connection.
- **Multi-channel:** The system can support up to 32 channels, meeting the needs of testing multiple windings, multiple attachments and other multiple taps of the motor.
- **Wide range:** The extendable resistance measurement range is 0.1m2~20,000K2; the upper limit of the insulation testing range reaches 50GΩ.
- **High performance:** In view of the low inductance characteristics of the new energy main drive motor, special constant voltage, impact and oscillation technologies are developed, and the interturn detection ability is many times higher than that of traditional technology.
- **High precision:** The accuracy of the module can reach up to 1% level, which is the measurement level of the same type of international single-function meter in the United States.
- **High reliability:** It has undergone strict working condition tests and millions of tests in complex environments.
- **Multiple interfaces:** The system supports USB, RS232, LAN and other interfaces, supports PLC communication, TCP/IP network protocol, etc., which is convenient for data interaction and instrument control, and meets the requirements of automatic production line docking.

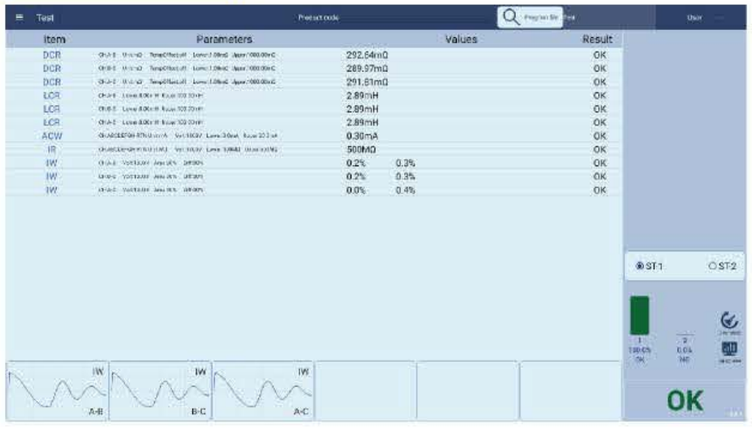
Product Overview

This tester features resistance, inductance, insulation, withstand voltage, interturn tests and other functions, with all functions tested in one wiring connection. It is a new comprehensive tester with high integration, high precision, practicality, and safety. It is suitable for stator/complete machine test requirements of new energy vehicle motors, household appliance motors, servo motors, stepper motors, fan motors, pump motors, large industrial motors, BLDC motors, etc.

Test items

- AC withstand voltage, DC withstand voltage, insulation resistance, DC resistance, resistance balance, interturn, inductance, inductance balance, reverse embedding, steering, etc.

Software interface



Specifications

Product Name		Motor Stator/Complete Machine Comprehensive Tester	
Model		AN8A10RT(F) Series	Customized Parameter
Withstand voltage test	Output voltage	Range: (300-3,000)VAC, step size: 10V/step	5,000VAC
		Allowable Error: ±(1%×Setting value+5V)	DCW
	Breakdown current	Range: (0.01-20.0)mA	100mA
		Allowable Error: ±(1% × Reading value + 5 digits)	
	Duration	Range: (1.0-99.9)s, allowable error: ±(1%×Setting value+0.1s)	
Insulation test	Output voltage	Range: (200-1,000)VDC, step: 5V/step	2,500V
		Allowable Error: ±(1%×Setting value+5V)	
	Ripple coefficient	＜5%	
	Resistance measurement	Range: 1.0-500MΩ	50GΩ
		Allowable Error: ±(2%×Reading value+2 digits)	
	Duration	Range: (1.0-99.9)s, allowable error: ±(0.1% × Setting value + 2 digits)	
Resistance test	Testing and measurement	Range: (0.1-20k) Ω, unit Ω	1mΩ～2MΩ
		Allowable Error: ±(0.3%×Reading value+0.1%×Range)	
	Temperature measurement	(-10.0-60.0)°C, Allowable error: ±0.5℃	
Resistance balance	Calculation formula	|Resistance value - Average resistance| / Average resistance*100%	Others
	Display range	0.0%～99.9%	
Interturn test	Impulse voltage	Range: (300-3,000)V, Step: 10V/step	5000V
		Allowable Error: ±(2.5%×Setting value+10V)	
Inductance test	Combo Interval	20ms	
	Waveform Sampling	100MHz	
	Testing Range	1.0uH-1,000.0mH	99.99kH
	Basic Accuracy	0.5%	
	Test Frequency	100Hz, 120Hz, 1kHz, 10kHz	
	Test Level	0.1, 0.3, 1.0 (V)	
Rotation test	Decision Parameter	Forward rotation, reverse rotation, and non-rotation	

The above specifications are subject to change without notice.

Lower Power DC Electronic Load
AN235(F) Series

High Power DC Electronic Load
AN236(F) Series

High Power Bidirectional DC Electronic Load
ANEL(F) Series

AC/DC Electronic Load
AN29(F) Series

Lower Power DC Electronic Load
AN235(F) Series

Product Introduction

The AN235(F) Series is a line of low-power DC electronic loads launched by Ainuo Instrument. It comes in two voltage ranges, 150V and 600V, with power ranges from 150W to 1200W. This series of electronic loads is primarily used for testing a variety of products in fields such as chargers, adapters, batteries, LED drivers, low-power switch power supplies, components, relays, military, aerospace, and more.Featuring a new-generation digital controller, the AN235(F) Series offers both conventional and multiple compound modes, along with serialization and automation capabilities. This caters to various needs such as programming and automated testing, making it capable of partially replacing testing systems.

Features

- Precision measurement technology supports accuracy of voltage 0.015%+0.03%F.S., current 0.03%+0.05%F.S., and power 0.1%+0.1%F.S.
- Built-in dynamic load-pull mode, with a dynamic frequency up to 25kHz, and equipped with Vpk+/- testing capability.
- Built-in LED mode, capable of simulating LED loads for testing LED power supplies.
- Tiny dynamic overshoot magnitude, less than 30% of the set current.
- Built-in constant current(CC), constant voltage(CV), constant resistance(CR), constant power(CP), short circuit simulation, over-current protection testing, serialization testing, and various other functions including automatic testing.
- Comprehensive protection features, supporting over-current, over-voltage, over-temperature, and reverse connection protection, among others.
- Built-in temperature acquisition circuitry and variable-speed fan control.
- Built-in battery mode suitable for discharging tests for energy integration.
- Flexible interface options, standard RS232, optional RS485.
- Lightweight design, featuring an injection-molded casing made of ABS+PC material, providing an elegant and aesthetically pleasing appearance while enhancing overall quality.

Serialized Models

AN235(F) Series offers a complete range of serialized models for selection, as shown in the following table:

Model	Features	Height	Width
AN23511 V2(F)	150V/30A/150W	2U	half width
AN23512 V2(F)	150V/60A/300W	2U	half width
AN23512B V2(F)	600V/15A/300W	2U	half width
AN23513(F)	150V/120A/600W	2U	half width
AN23513B(F)	600V/30A/600W	2U	half width
AN23514(F)	150V/240A/1200W	2U	half width
AN23514B(F)	600V/60A/1200W	2U	half width

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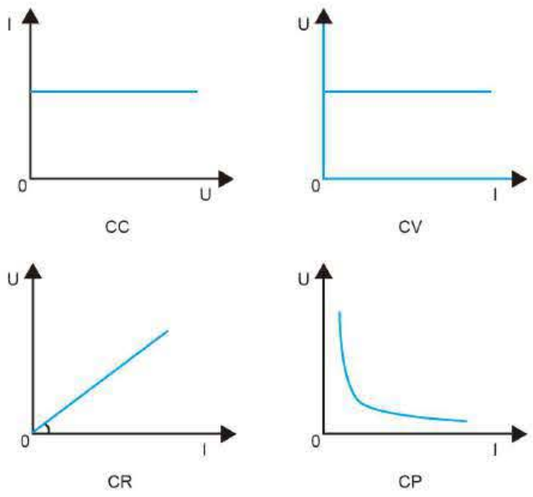
Applications

- Switching power supply testing
- Adapter, charger, and power bank testing
- Automotive electronics testing, such as fuses, control boxes, etc.
- Military and aerospace power supply testing
- Testing server power supplies and communication power supplies
- Battery discharge testing
- Relay simulation load testing
- Testing DC power supplies and power electronic components

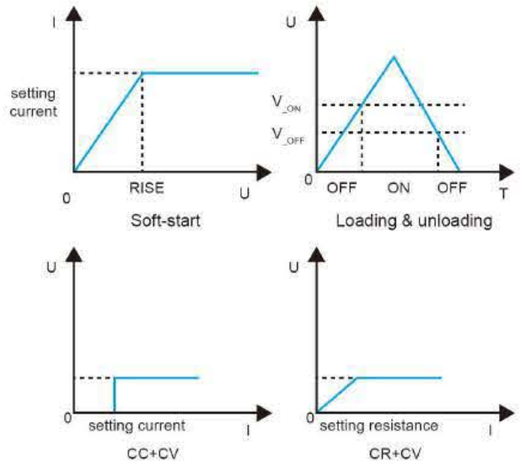
Basic Mode

The AN235(F) load incorporates four major basic modes: constant voltage mode(CV), constant current mode(CC), constant resistance mode(CR), and constant power mode(CP), meeting a wide range of testing needs.



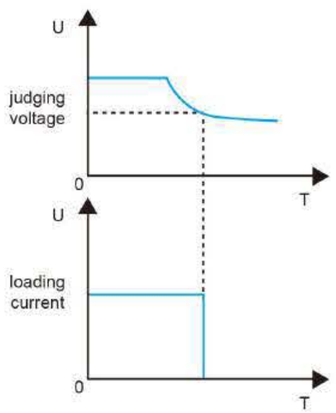
Composite Mode

The AN235(F) load integrates four major compound modes: soft start mode, load-unload mode, CC+CV mode, and CR+CV mode, meeting a wide range of testing needs.



BATY Mode - Dedicated Battery Test Mode

The AN235(F) Series load has a constant battery capacity test and discharge via constant current (CC) mode. Voltage threshold can be set for judgment. When the battery voltage drops to the threshold, the loading automatically stops, and the current output of the battery under test is turned off to avoid damage to the battery due to over-discharge.
The load provides a real-time display of the discharge level in Ah. BATY mode is also suitable for supercapacitors and other similar discharge tests.

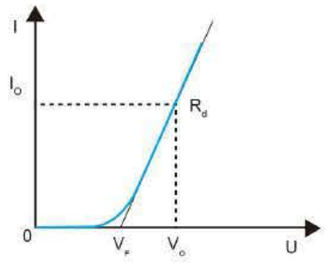


Adjustable Load Rise/Fall Slope

Various current rise/fall rates can be set for AN235(F) series loads as required. Current change rate: 2.5A/us; time.20us-999999ms,resolution: 20us.

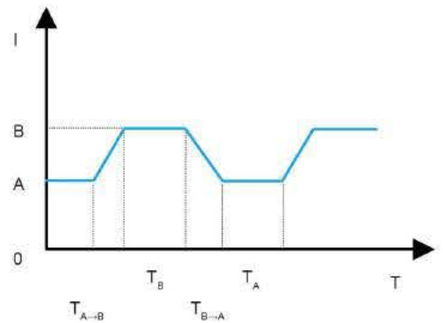
LED Mode - Simulate LED Load Mode

The AN235(F) Series load has built-in simulated LED load mode, loading as shown below to simulate the characteristics that the current of LED is 0 before it is turned on and rises according to the volt-ampere curve after it is turned on. Electronic load is adopted to simulate loading so as to avoid light pollution or unstable parameters of LED strips and resistive loads.



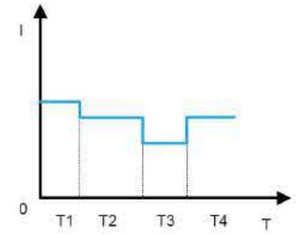
CCD Mode - Fast Dynamic Testing

The AN235(F) Series loads have built-in high-speed dynamic loading test function, with a dynamic change up to 25kHz, including three modes: continuous, pulse, and trigger. You can set the current loading value, loading time, rise/fall time, etc., as shown in the figure below. In addition to dynamically loading, the load also provides peak-to-peak voltage measurement with a sampling frequency of up to 25kHz.



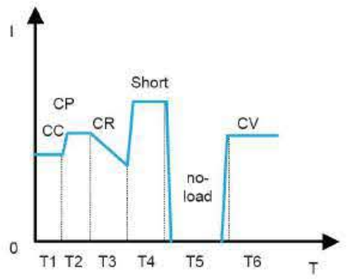
LIST Mode - Serialized Loading Function

The AN235(F) Series load has built-in simulated LED load mode, loading as shown below to simulate the characteristic that the current of LED is 0 before it is turned on and rises according to the volt-ampere curve after it is turned on. Electronic load is adopted to simulate loading so as to avoid light pollution or unstable parameters of LED strips and resistive loads.



AutoMode - Automatic Test Function

Up to 8 groups of data can be edited via built-in series test of AN235(F) load. 50 steps can be edited in each group, including three (6)modes: no-load, constant current (CC)constant voltage (CV), constant power (CP), constant resistance (CR), and short-circuit; 4 parameters can be edited, tested and compared: current, voltage, power and resistance, and the delay test time (0.2~100s) can be edited, while considering the speed and accuracy of the test.

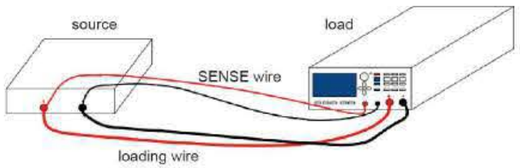


High Precision Measurement

AN235(F) Series load has two levels of voltage/current measurement. Taking AN23514(F) as an example, the voltage is 20V/150V, suitable for low voltage and high voltage applications at the same time; the current is 24A/240Aproviding more accurate current measurements for various applications. High-precision AD, and D/A chips are adopted, some models support accuracy of voltage 0.015%+0.03%F.S., current 0.03%+0.05%F.S., and power 0.1%+0.1%F.S.

Remote Measurement

AN235(F) Series loads have remote measurement functions. When the current consumption on the load is high, the voltage drop generated by the load terminal, and the connection line between the load and the source under test is high and cannot be ignored, To ensure measurement accuracy, the remote test (SENSE) is added. Select the remote test when the loading current is large or for test items with strict voltage requirements. The SENSE terminal is set at the front operation panel, convenient for wiring.



I Monitor - Current Monitoring

AN235(F) Series loads have an analog current output terminal (BNC), outputting 0~5.5V analog signal corresponding to 0~maximum current. It can be directly connected to an external voltmeter or oscilloscope through the BNC terminal for real-time monitoring of current waves without additional current problems.

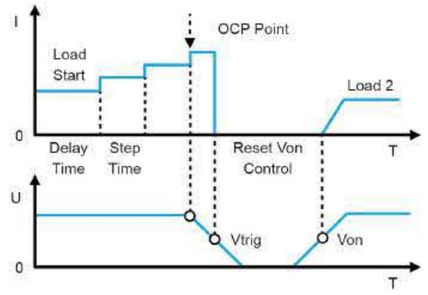
All-Round Protection

The AN235(F) Series load features high reliability and multiple protection and alarm mechanisms, including OVP (Over Voltage Protection), OCP (Over Current Protection), OTP (Over Temperature Protection), OPP (Over Power Protection), RVP (Reverse Voltage Protection), and SSP (Sense Protection).

Precisely Lock The Power Protection Point

AN235(F) Series loads have OCP/OPP functions. Too large an output current of the source under test may cause damage. Therefore, most of the power sources under test have an overcurrent protection function: when overloaded, the output voltage will be reduced or the output will be stopped. Therefore, a test mode for this condition is set for the load - Over Current Test (OCP).

After setting the loading circuit and the threshold voltage, when the load detects that the voltage is less than or equal to the threshold, the loading stops, and at the same time, the current at the moment of protection is displayed on the screen, and the result is judged according to the protection point.



Panel Description

No.	Name	Description
①	Power supply switch	AC power supply switch of the electronic load master unit
②	F1-F5 Menu	F1-F5, shortcut menu
③	Display screen	Shows settings and measured data
④	Direction key	Direction key
⑤	Knob	Used for moving cursor up and down and adjusting parameters
⑥	Tricolor light	Indicator light for load working status
⑦	Vsense terminal	Remote detection of power supply voltage
⑧	Number keys	Number keys 0-9 and undo key
⑨	Control button	LOAD、MENU、ESC、ENTER
⑩	DC load terminal	Load terminal

No.	Name	Description
①	I_Monitor	Load current waveform detection
②	COM	RS232 or RS485 optional
③	PLC	Realize multiple PLC functions (reserved)
④	Power socket	Power input + fuse
⑤	Ground terminal	Connect to the group

Specifications

Model		AN23511V2(F)	
Constant Current Mode(CC)	Range	0-3A	0-30A
	Set Resolution	0.1mA	1mA
	Accuracy	0.03%+0.05%F.S.	
Constant Voltage Mode(CV)	Range	0.1-20V	0.1-150V
	Set Resolution	1mV	10mV
	Accuracy	0.03%+0.02%F.S.	
Constant Resistance Mode(CR) (When input voltage and current values ≥ 10% of full range)	Range	0.03Ω-99.999Ω / 100Ω-999.99Ω / 1000Ω-9999.9Ω	
	Set Resolution	0.001Ω / 0.01Ω / 0.1Ω	
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.	
Constant Power Mode(CP) (When input voltage and current values ≥ 10% of full range)	Range	100W/150W	
	Set Resolution	1mW/10mW	
	Accuracy	0.1%+0.1%F.S.	
Voltage Measurement	Range	0-20V	0-150V
	Measurement Resolution	1mV	10mV
	Accuracy	0.015%+0.03%F.S.	
Current Measurement	Range	0-3A	0-30A
	Measurement Resolution	0.01mA	0.1mA
	Accuracy	0.03%+0.05%F.S.	0.03%+0.08%F.S.
Power Measurement (When input voltage and current values ≥ 10% of full range)	Range	100W/150W	
	Measurement Resolution	1mW/10mW	
	Accuracy	0.1%+0.1%F.S.	
Battery Test		Input voltage: Maximum voltage setting, Current resolution: Resolution for this range of current, Time range: 0-99.999 hours	
Dynamic Test		Testing frequency: 0-25kHz, Current change rate: 2.5A/μs, Time range: 20μs - 999,999ms, with a resolution of 20μs	
Current Soft Start Time		0-999999ms, time accuracy is 20μs.	
Short Circuit Function		≥1.1 times the range of this stage.	
Temperature	Working Temperature	0~40℃	
	Storage Temperature	-25~70℃	
Dimension	W×H×D (mm)	213×88×401	
Weight	Kg	6.7	6.6

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

Model		AN23512V2(F)		AN23512BV2(F)	
Constant Current Mode(CC)	Range	0-6A	0-60A	0-3A	0-15A
	Set Resolution	0.1mA	1mA	0.1mA	1mA
	Accuracy	0.03%+0.05%F.S.			
Constant Voltage Mode(CV)	Range	0.1-20V	0.1-150V	0.1-60V	0.1-600V
	Set Resolution	1mV	10mV	1mV	10mV
	Accuracy	0.03%+0.02%F.S.		0.03%+0.02%F.S.	0.03%+0.05%F.S.
Constant Resistance Mode(CR) (When input voltage and current values ≥ 10% of full range)	Range	0.03Ω-99.999Ω / 100Ω-999.99Ω / 1000Ω-9999.9Ω			
	Set Resolution	0.001Ω / 0.01Ω / 0.1Ω			
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.			
Constant Power Mode(CP) (When input voltage and current values ≥ 10% of full range)	Range	100W/300W			
	Set Resolution	1mW/10mW			
	Accuracy	0.1%+0.1%F.S.			
Voltage Measurement	Range	0-20V	0-150V	0-60V	0-600V
	Measurement Resolution	1mV	10mV	1mV	10mV
	Accuracy	0.015%+0.03%F.S.		0.015%+0.03%F.S.	0.015%+0.05%F.S.
Current Measurement	Range	0-6A	0-60A	0-3A	0-15A
	Measurement Resolution	0.01mA	0.1mA	0.01mA	0.1mA
	Accuracy	0.03%+0.05%F.S.	0.03%+0.08%F.S.	0.03%+0.05%F.S.	0.03%+0.08%F.S.
Power Measurement (When input voltage and current values ≥ 10% of full range)	Range	100W/300W			
	Measurement Resolution	1mW/10mW			
	Accuracy	0.1%+0.1%F.S.			
Battery Test		Input voltage: Maximum voltage setting, Current resolution: Resolution for this range of current, Time range: 0-99.999 hours			
Dynamic Test		Testing frequency: 0-25kHz, Current change rate: 2.5A/μs, Time range: 20μs - 999,999ms, with a resolution of 20μs			
Current Soft Start Time		0-999999ms, time accuracy is 20μs.			
Short Circuit Function		≥1.1 times the range of this stage.			
Temperature	Working Temperature	0~40℃			
	Storage Temperature	-25~70℃			
Dimension	W×H×D (mm)	213×88×401			
Weight	Kg	6.7		6.6	

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

Model		AN23513(F)		AN23513B(F)	
Constant Current Mode(CC)	Range	0-12A	0-120A	0-3A	0-30A
	Set Resolution	1mA	10mA	0.1mA	1mA
	Accuracy	0.05%+0.05%F.S.	0.1%+0.05%F.S.	0.03%+0.05%F.S.	
Constant Voltage Mode(CV)	Range	0.1-20V	0.1-150V	0.1-60V	0.1-600V
	Set Resolution	1mV	10mV	1mV	10mV
	Accuracy	0.03%+0.02%F.S.		0.03%+0.02%F.S.	0.03%+0.05%F.S.
Constant Resistance Mode(CR) (When input voltage and current values ≥ 10% of full range)	Range	0.03Ω-99.999Ω / 100Ω-999.99Ω / 1000Ω-9999.9Ω			
	Set Resolution	0.001Ω / 0.01Ω / 0.1Ω			
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.			
Constant Power Mode(CP) (When input voltage and current values ≥ 10% of full range)	Range	100W/600W			
	Set Resolution	1mW/10mW			
	Accuracy	0.1%+0.1%F.S.			
Voltage Measurement	Range	0-20V	0-150V	0-60V	0-600V
	Measurement Resolution	1mV	10mV	1mV	10mV
	Accuracy	0.015%+0.03%F.S.		0.015%+0.03%F.S.	0.015%+0.05%F.S.
Current Measurement	Range	0-12A	0-120A	0-3A	0-30A
	Measurement Resolution	0.1mA	1mA	0.01mA	0.1mA
	Accuracy	0.05%+0.05%F.S.	0.1%+0.08%F.S.	0.05%+0.05%F.S.	0.1%+0.08%F.S.
Power Measurement (When input voltage and current values ≥ 10% of full range)	Range	100W/600W			
	Measurement Resolution	1mW/10mW			
	Accuracy	0.1%+0.1%F.S.			
Battery Test		Input voltage: Maximum voltage setting, Current resolution: Resolution for this range of current, T ime range: 0-99.999 hours			
Dynamic Test		Testing frequency: 0-25kHz, Current change rate: 2.5A/μs, Time range: 20μs - 999,999ms, with a resolution of 20μs			
Current Soft Start Time		0-999999ms, time accuracy is 20μs.			
Short Circuit Function		≥1.1 times the range of this stage.			
Temperature	Working Temperature	0~40℃			
	Storage Temperature	-25~70℃			
Dimension	W×H×D (mm)	426×88×460			
Weight	Kg	12.4		12.0	

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

Model		AN23514(F)		AN23514B(F)	
Constant Current Mode(CC)	Range	0-24A	0-240A	0-6A	0-60A
	Set Resolution	1mA	10mA	0.1mA	1mA
	Accuracy	0.05%+0.05%F.S.	0.1%+0.05%F.S.	0.03%+0.05%F.S.	
Constant Voltage Mode(CV)	Range	0.1-20V	0.1-150V	0.1-60V	0.1-600V
	Set Resolution	1mV	10mV	1mV	10mV
	Accuracy	0.03%+0.02%F.S.		0.03%+0.02%F.S.	0.03%+0.05%F.S.
Constant Resistance Mode(CR) (When input voltage and current values ≥ 10% of full range)	Range	0.03Ω-99.999Ω / 100Ω-999.99Ω / 1000Ω-9999.9Ω			
	Set Resolution	0.001Ω / 0.01Ω / 0.1Ω			
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.			
Constant Power Mode(CP) (When input voltage and current values ≥ 10% of full range)	Range	100W/1200W			
	Set Resolution	1mW/0.1W			
	Accuracy	0.1%+0.1%F.S.			
Voltage Measurement	Range	0-20V	0-150V	0-60V	0-600V
	Measurement Resolution	1mV	10mV	1mV	10mV
	Accuracy	0.015%+0.03%F.S.		0.015%+0.03%F.S.	0.015%+0.05%F.S.
Current Measurement	Range	0-24A	0-240A	0-6A	0-60A
	Measurement Resolution	0.1mA	1mA	0.01mA	0.1mA
	Accuracy	0.05%+0.05%F.S.	0.1%+0.1%F.S.	0.03%+0.05%F.S.	0.03%+0.08%F.S.
Power Measurement (When input voltage and current values ≥ 10% of full range)	Range	100W/1200W			
	Measurement Resolution	1mW/0.1W			
	Accuracy	0.1%+0.1%F.S.			
Battery Test		Input voltage: Maximum voltage setting, Current resolution: Resolution for this range of current, Time range: 0-99.999 hours			
Dynamic Test		Testing frequency: 0-25kHz, Current change rate: 2.5A/μs, Time range: 20μs - 999,999ms, with a resolution of 20μs			
Current Soft Start Time		0-999999ms, time accuracy is 20μs.			
Short Circuit Function		≥1.1 times the range of this stage.			
Temperature	Working Temperature	0~40℃			
	Storage Temperature	-25~70℃			
Dimension	W×H×D (mm)	426×88×460			
Weight	Kg	12.4		12.0	

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

High Power DC Electronic Load AN236(F) Series

Product Introduction

The AN236(F) Series is a new high power DC electronic load introduced by Ainuo Instrument Co., Ltd. It offers voltage ranges of 150V, 600V, and 1,200V, with power ranges from 2kW to 60kW. This series of electronic loads are mainly used for testing products in various fields such as new energy vehicle OBCs, power batteries, charging stations, power electronics, servo/server power supplies, high voltage UPS, military, photovoltaics, grid energy storage, aerospace, and more. Featuring a new generation digital controller, it comes with five basic modes, seven advanced modes, and sequence function to meet users' programming and automation test requirements.

Features

- High power density: 6kW in 4U height, and 24kW in 13U height. Compact, light, convenient.
- With precision measurement technology, it supports voltage accuracy of 0.015%+0.015%F.S., current accuracy of 0.04%+0.04%F.S., and power accuracy of 0.1%+0.1%F.S. (maintained constant at high temperatures).
- Built-in dynamic loading mode with a dynamic frequency of up to 25kHz and Vpk+/- test function.
- Built-in FLEX mode for simulating capacitive loads, inductive loads, and complex impedance loads.
- Wide range, offering nearly twice the current range of traditional high power loads with the same capacity.
- Excellent dynamic characteristics, with a maximum current slew rate of 96A/us.
- Built-in functions include constant current(CC), constant voltage(CV), constant resistance(CR), constant power(CP), short circuit simulation, overcurrent protection test, sequence test, etc.
- It has comprehensive protection features including overcurrent, overvoltage, overtemperature, reverse connection, SENSE protection, etc.
- It has a built-in temperature sensing chip and a speed-controlled fan.
- It has a built-in battery mode for discharging tests for energy integration and timing.
- Versatile Interfaces – Standard configurations include six communication interfaces: LAN, GPIB, USB, CAN, RS232, and RS485, ensuring seamless integration with various test systems.

Serialized Models

The AN236(F) Series offers a complete range of models to choose from, as shown in the table below.

	150V	600V	1200V	Height
2kW	AN23602E-150-200(F)	AN23602E-600-140(F)	AN23602E-1200-80(F)	4U
3kW	AN23603E-150-300(F)	AN23603E-600-210(F)	AN23603E-1200-120(F)	4U
4kW	AN23604E-150-400(F)	AN23604E-600-280(F)	AN23604E-1200-160(F)	4U
5kW	AN23605E-150-500(F)	AN23605E-600-350(F)	AN23605E-1200-200(F)	4U
6kW	AN23606E-150-600(F)	AN23606E-600-420(F)	AN23606E-1200-240(F)	4U
8kW	AN23608E-150-800(F)	AN23608E-600-560(F)	AN23608E-1200-320(F)	7U
10kW	AN23610E-150-1000(F)	AN23610E-600-700(F)	AN23610E-1200-400(F)	7U
12kW	AN23612E-150-1200(F)	AN23612E-600-840(F)	AN23612E-1200-480(F)	7U
15kW	AN23615E-150-1500(F)	AN23615E-600-1050(F)	AN23615E-1200-600(F)	10U
18kW	AN23618E-150-1800(F)	AN23618E-600-1260(F)	AN23618E-1200-720(F)	10U
20kW	AN23620E-150-2000(F)	AN23620E-600-1400(F)	AN23620E-1200-800(F)	13U
24kW	AN23624E-150-2400(F)	AN23624E-600-1680(F)	AN23624E-1200-960(F)	13U
30kW	AN23630E-150-2400(F)	AN23630E-600-2100(F)	AN23630E-1200-1200(F)	26U
36kW	AN23636E-150-2400(F)	AN23636E-600-2400(F)	AN23636E-1200-1440(F)	26U
42kW	AN23642E-150-2400(F)	AN23642E-600-2400(F)	AN23642E-1200-1680(F)	34U
48kW	AN23648E-150-2400(F)	AN23648E-600-2400(F)	AN23648E-1200-1920(F)	34U
54kW	AN23654E-150-2400(F)	AN23654E-600-2400(F)	AN23654E-1200-2160(F)	38U
60kW	AN23660E-150-2400(F)	AN23660E-600-2400(F)	AN23660E-1200-2400(F)	33U

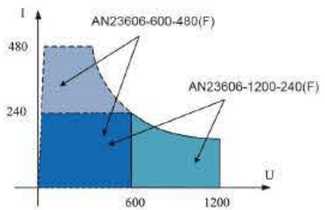
Any changes to the above parameter specifications will not be notified separately.

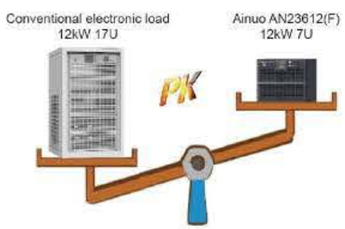
Applications

- DC charging pile/on-board charger and power electronics tests.
- Smart manufacturing and industrial motor tests.
- Automotive electronics tests, such as fuses, control boxes, etc.
- Relay simulation load test.
- Military aerospace power test.
- Server power supplies, high voltage UPS, and communication power tests.
- Battery discharge test.
- Virtual load tests for photovoltaic component array and wind power generation.
- Simulation test for energy storage systems.
- DC power supply and power electronic components.

High Power Density, Compact and Wide Voltage

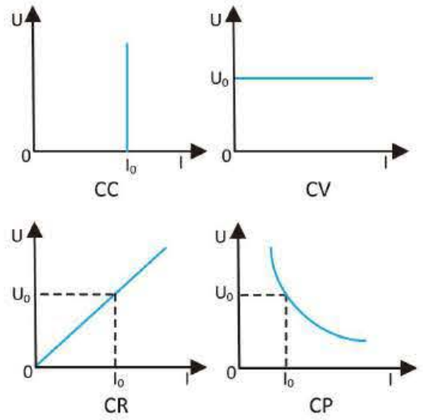
- The AN236(F) Series load features a wide input voltage and current range, meeting various testing needs for high current, low voltage, or high voltage, low current. With a high power density design, it has half the volume and one-third of the weight compared to traditional electronic loads.





Basic Mode

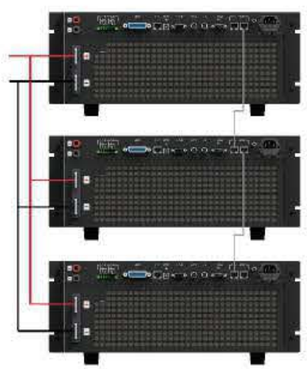
Built-in basic constant voltage(CV), constant current(CC), constant resistance(CR), and constant power(CP) modes, which can meet a wide range of testing needs.



Master/Slave Parallel Connection – Flexibl Power Configuration

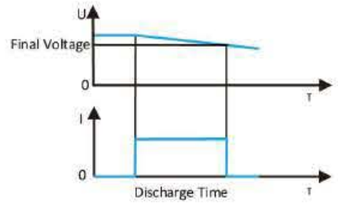
The 23600E(F) series employs digital parallel technology to achieve master/slave parallel functionality, supporting arbitrary parallel connection of different models within the same voltage rating. The maximum number of parallel units is 16, with a maximum combined power of 960 kW and a maximum combined current of 38.4 kA.

In parallel mode, only the master unit requires operation and control, providing the same convenience as a single unit. The master and slave units automatically distribute current and support multiple modes of load testing.



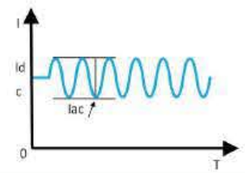
BATY Mode - Battery Test Dedicated Mode

For batteries, the AN236(F) Series load provides three discharge modes: constant current, constant resistance, and constant power modes. By setting voltage thresholds and test times (1s-100,000s), the electronic load can control the load to prevent over-discharge and battery damage. Additionally, the load also provides a display of the discharged energy. The BATY mode is also suitable for super capacitors and similar discharge testing scenarios.



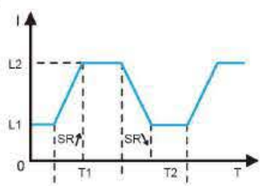
SWD Mode – Sine Wave Loading

The AN23600E(F) electronic load features a sine wave current loading function, where the current is output in a fixed-frequency sine wave. Users can control the output waveform by adjusting the DC current component (I_DC), the AC sine wave component (I_AC), and the sine wave frequency (Frequency). The minimum point of the sine wave loading current must not fall below zero amperes, and the frequency adjustment range is 0–20 kHz. This function is widely used in fuel cell ACIR testing.



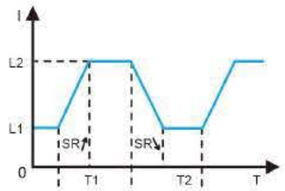
CCD Mode - Rapid Dynamic and Vpp Testing

The AN236(F) Series of loads feature built-in high-speed dynamic loading testing capabilities, with dynamic changes possible up to 25kHz. Users can set a repeating number of cycles for a specified period, ranging from 1 to 100,000, or conduct continuous dynamic loading. As illustrated in the diagram below, users can set the high and low loading values of the current, loading time, rise and fall slopes, etc. While conducting dynamic loading, the load also provides measurements of the peak-to-peak voltage, with a sampling frequency of up to 500kHz.



CRD Mode - Rapid Dynamic and Vpp Testing

The AN236(F) Series features built-in high-speed dynamic load testing capabilities, with dynamic changes possible up to 25kHz. Users can set a repeating number of cycles for a specified period, ranging from 1 to 100,000, or conduct continuous dynamic loading. As shown in the diagram below, users can set the high and low loading values of the resistance, loading time, rise and fall slopes, etc. While conducting dynamic loading, the load also provides measurements of the peak-to-peak voltage, with a sampling frequency of up to 500kHz.



CC Mode - Ultra-Fast Loading Speed and Ultra-Low Overshoot

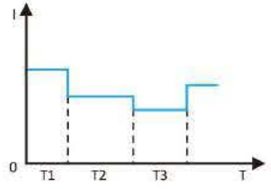
For example, the AN23606E-1200-240(F) can provide a rise speed of 12A/uS. While addressing fast loading issues, the load's built-in digital controller ensures minimal overshoot. The figure below shows the comparison of the current rise waveforms during full-speed loading between the AN236(F) Series load and a certain brand of electronic load.

CV Mode - High-performance Controller with Adjustable Loop Speed

With the increasing application scenarios of constant current sources, the AN236(F) Series load is equipped with an optimized zero-point compensation controller. While meeting the requirements for fast, stable, and accurate loading, it offers three adjustable loop speeds, greatly expanding the load's adaptability. Unlike the ordinary integral lag control, as shown in the figure on the right, there is a distinct predictive control section. The current waveform below shows the "prediction" of the tested power supply at the earliest time, enabling a rapid and stable CV loading process.

LIST Mode - Sequence Loading Function

The AN236(F) load features a built-in sequence test function that can edit up to 8 sets of data, with each set editable for 200 steps. Each step can be edited for execution time within the range of 0-100s. In scenarios such as battery discharge, server, and communication power mixed load modulation, providing different load current waveforms as an effective supplement for dynamic current tests.



High Precision Measurement

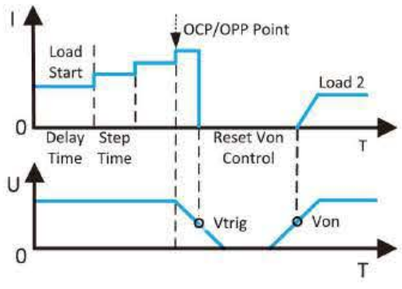
The AN236(F) Series load offers three grade for voltage and current measurements. Taking the AN23606E-1200-240 as an example, it provides voltage ranges of 150V/600V/1,200V, catering to the needs of low, medium, and high voltage ranges. For current measurement, it offers 24A/120A/240A, providing more accurate measurement values for different application scenarios. Utilizing high-precision A/D and D/A chips, it supports accuracies of voltage 0.015%+0.015%F.S., current 0.04%+0.04%F.S., and power 0.1%+0.1%F.S.

Instantaneous Overpower Function

The AN236(F) Series load has an instant 2 times overpower capability, allowing the load to withstand a load capacity exceeding the rated power for a short period of time. This effectively solves the selection issue for impact-type products. Users can select based on the rated power of the power supply or battery, rather than the maximum power, which saves costs and improves adaptability.

Precisely Lock Power Protection Point

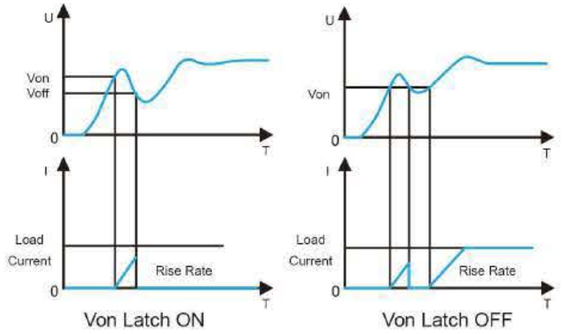
Too large output current/power of the source under test may cause damage. Therefore, most of the power sources under test have overcurrent/overpower protection: the output voltage is reduced or stopped when overloaded. So this kind of load provides test modes for this situation. Over Current Point, Over Power Point (OCP, OPP).
When the load detects that the voltage is less than or equal to the threshold after setting the loading current and the threshold, the loading stops, and the current power at the moment of protection is displayed on the screen, and the result is judged according to the protection point.



Von/Voff Function - Flexible Voltage Protection

During the power-on moment of the DUT (Device Under Test) when the output hasn't stabilized yet, immediate loading by the load can lead to the failure of the DUT's startup, risking voltage oscillations or damage to the DUT. Some DUTs cannot tolerate excessively low operating voltages, such as battery systems, where over-discharge can cause irreversible damage to the batteries. Therefore, the load provides a flexible automatic load and unload function - Von/Voff.

Once the voltage judgment is set, the load will remain unloaded when the voltage detected is lower than the Von voltage. It will start loading only when the voltage rises above the Von voltage, thus ensuring the startup voltage protection of the DUT. The automatic unload depends on the setting of Von Latch. If set to ON, the load unloads when the voltage is below Voff, and it won't load again. If set to OFF, the load unloads when the voltage is below Von, and it will reload when the voltage is higher than Von.

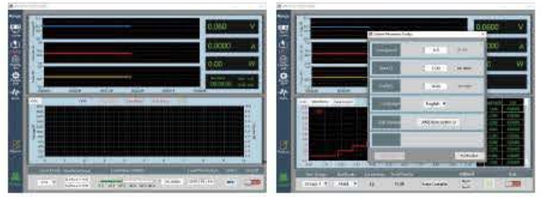


Visual Programming Software

Users can test by using the PC software programming load. It will be troublesome to set the series test (List) via load interface but can be set quickly via the graphical interface of the host, cooperated with the wave drawing, convenient for the testers. Over Current Point, Over Power Point (OCP, OPP), the host will store the test results and process data automatically, and generate a test result report.

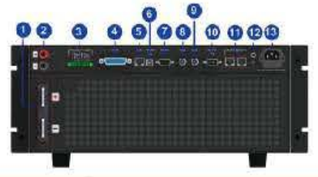
Data Acquisition Function

Users can utilize the load's data acquisition function in conjunction with a trigger source to capture instantaneous voltage and current data.
The upper computer software can then plot the data points into waveforms, and the test data can be exported to excel.
Sampling time: 1-40 microsecond; resolution: 1 microsecond;
Number of sampling points: 1-1,024 (total number of sampling points);
Trigger source: Load on/Load off/TTL/BUS/Manual.



Panel Instructions

No.	Name	Description
①	Power supply switch	AC power supply switch of the electronic load master unit
②	F1-F5 Menu	F1-F5, shortcut menu
③	Display screen	Shows settings and measured data
④	Direction key	Left and right key
⑤	Knob	Used for moving cursor up and down and adjusting parameters
⑥	Tricolor light	Indicator light for load working status
⑦	Control button	LOAD、MENU、ESC、ENTER
⑧	Number key	Number keys 0-9 and undo key



No.	Name	Description
①	DC load terminal	Load terminal
②	Vsense terminal	Remote detection of power supply voltage
③	RS485&CAN	485 Communication Interface, CAN Communication Interface
④	GPIB	GPIB Communication
⑤	LAN	Standard Ethernet Communication Interface
⑥	USB-B	Standard USB Communication Interface, PC Connectable
⑦	RS232	Standard RS232 Communication Interface
⑧	I_Monitor	Load current waveform detection
⑨	V_Monitor	Load voltage waveform detection
⑩	Digtal IO	Multiple input/output signals
⑪	Parallel terminal	Parallel connection port
⑫	Ground terminal	Connected to the ground
⑬	Power socket	Power supply input

Specifications

Model		AN23602E -150-200(F)	AN23603E -150-300(F)	AN23604E -150-400(F)	AN23605E -150-500(F)	AN23606E -150-600(F)	AN23608E -150-800(F)
Working range	Voltage	0-150V					
	Current	0-200A	0-300A	0-400A	0-500A	0-600A	0-800A
	Power	2kW	3kW	4kW	5kW	6kW	8kW
Minimum working voltage		1.8V@200A	1.8V@300A	1.8V@400A	1.8V@500A	1.8V@600A	1.8V@800A
Constant current loading	Range	20/100/200A	30/150/300A	40/200/400A	50/250/500A	60/300/600A	80/400/800A
	Resolution	0.2/1/2mA	0.2/1/2mA	0.4/2/4mA	0.5/2/5mA	0.5/2/5mA	1/5/10mA
	Accuracy	0.05%+0.05%F.S.					
Constant voltage loading	Range	16/80/150V					
	Resolution	0.1/0.5/1mV					
	Accuracy	0.025%+0.025%F.S.					
Constant resistance load	Range	15mΩ-150Ω(16V) 60mΩ-600Ω(80V) 1.5Ω-3000Ω(150V)	10mΩ-100Ω(16V) 40mΩ-400Ω(80V) 1Ω-2000Ω(150V)	7.5mΩ-75Ω(16V) 30mΩ-300Ω(80V) 0.75Ω-1500Ω(150V)	5mΩ-50Ω(16V) 20mΩ-200Ω(80V) 0.5Ω-1000Ω(150V)	5mΩ-50Ω(16V) 20mΩ-200Ω(80V) 0.5Ω-1000Ω(150V)	3.8mΩ-37.5Ω(16V) 15mΩ-150Ω(80V) 0.375Ω-750Ω(150V)
	Resolution	2mA/Vsense	2mA/Vsense	4mA/Vsense	5mA/Vsense	5mA/Vsense	10mA/Vsense
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.					
Constant power loading	Range	200/1000/2000W	300/1500/3000W	400/2000/4000W	500/2500/5000W	600/3000/6000W	800/4000/8000W
	Resolution	5/20/50mW	5/20/50mW	10/50/100mW	10/50/100mW	10/50/100mW	20/100/200mW
	Accuracy	0.2%+0.2%F.S.					
Current change rate	Setting range	0.2mA/us-2A/us (20A) 1mA/us-7A/us (100A) 2mA/us-14A/us (200A)	0.2mA/us-3A/us (30A) 1mA/us-10.5A/us (150A) 2mA/us-21A/us (300A)	0.4mA/us-4A/us (40A) 2mA/us-14A/us (200A) 4mA/us-28A/us (400A)	0.5mA/us-5A/us (50A) 2mA/us-17.5A/us (250A) 5mA/us-35A/us (500A)	0.5mA/us-6A/us (60A) 2mA/us-21A/us (300A) 5mA/us-42A/us (600A)	1mA/us-8A/us (80A) 5mA/us-24A/us (400A) 10mA/us-48A/us (800A)
	Resolution	0.2/1/2mA/us	0.2/1/2mA/us	0.4/2/4mA/us	1/5/10mA/us	0.5/2/5mA/us	1/5/10 mA/us
Specification	Dimension	426mm×177mm×600mm(W×H×D), The height can be increased by 201mm with detachable feet					426 mm×400 mm ×650 mm (W×H×D)
	Weight	24.5kg	29.5kg	29.5kg	35kg	35kg	61kg

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

Model		AN23610E -150-1000(F)	AN23612E -150-1200(F)	AN23615E -150-1500(F)	AN23618E -150-1800(F)	AN23620E -150-2000(F)	AN23624E -150-2400(F)
Working range	Voltage	0-150V					
	Current	0-1000A	0-1200A	0-1500A	0-1800A	0-2000A	0-2400A
	Power	10kW	12kW	15kW	18kW	20kW	24kW
Minimum working voltage		1.8V@1000A	1.8V@1200A	1.8V@1500A	1.8V@1800A	1.8V@2000A	1.8V@2400A
Constant current loading	Range	100/500/1000A	120/600/1200A	150/750/1500A	180/900/1800A	200/1000/2000A	240/1200/2400A
	Resolution	1/5/10mA	1/5/10mA	2/10/20mA	2/10/20mA	2/10/20mA	2/10/20mA
	Accuracy	0.05%+0.05%F.S.					
Constant voltage loading	Range	16/80/150V					
	Resolution	0.1/0.5/1mV					
	Accuracy	0.025%+0.025%F.S.					
Constant resistance load	Range	2.5mΩ-25Ω(16V) 10mΩ-100Ω(80V) 0.25Ω-500Ω(150V)	2.5mΩ-25Ω(16V) 10mΩ-100Ω(80V) 0.25Ω-500Ω(150V)	1.7mΩ-16.67Ω(16V) 6.7mΩ-66.67Ω(80V) 0.167Ω-333.34Ω(150V)	1.7mΩ-16.67Ω(16V) 6.7mΩ-66.67Ω(80V) 0.167Ω-333.34Ω(150V)	1.3mΩ-12.5Ω(16V) 5mΩ-50Ω(80V) 0.125Ω-250Ω(150V)	1.3mΩ-12.5Ω(16V) 5mΩ-50Ω(80V) 0.125Ω-250Ω(150V)
	Resolution	10mA/Vsense	10mA/Vsense	20mA/Vsense	20mA/Vsense	20mA/Vsense	20mA/Vsense
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.					
Constant power loading	Range	1000/5000/10000W	1200/6000/12000W	1500/7500/15000W	1800/9000/18000W	2000/10000/20000W	2400/12000/24000W
	Resolution	20/100/200mW	20/100/200mW	40/200/400mW	40/200/400mW	40/200/400mW	100/500/1000mW
	Accuracy	0.2%+0.2%F.S.					
Current change rate	Setting range	1mA/us-10A/us (100A) 5mA/us-27.5A/us (500A) 10mA/us-55A/us (1000A)	1mA/us-12A/us (120A) 5mA/us-30A/us (600A) 10mA/us-60A/us (1200A)	2mA/us-15A/us (150A) 10mA/us-32A/us (750A) 20mA/us-64A/us (1500A)	2mA/us-18A/us (180A) 10mA/us-36A/us (900A) 20mA/us-72A/us (1800A)	2mA/us-20A/us (200A) 10mA/us-40A/us (1000A) 20mA/us-80A/us (2000A)	2mA/us-24A/us (240A) 10mA/us-48A/us (1200A) 20mA/us-96A/us (2400A)
	Resolution	1/5/10 mA/us	1/5/10 mA/us	2/10/20 mA/us	2/10/20 mA/us	2/10/20 mA/us	2/10/20 mA/us
Specification	Dimensions	426 mm×400 mm×650 mm (W×H×D)		426 mm×532 mm×650 mm (W×H×D)		426 mm×665 mm×650 mm (W×H×D)	
	Weight	66.5kg	72kg	92.5kg	98kg	113kg	124kg

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

Specifications

Model		AN23630E -150-2400(F)	AN23636E -150-2400(F)	AN23642E -150-2400(F)	AN23648E -150-2400(F)	AN23654E -150-2400(F)	AN23660E -150-2400(F)
Working range	Voltage	0-150V					
	Current	0-2400A	0-2400A	0-2400A	0-2400A	0-2400A	0-2400A
	Power	30kW	36kW	42kW	48kW	54kW	60kW
Minimum working voltage		1.8V@2400A	1.8V@2400A	1.8V@2400A	1.8V@2400A	1.8V@2400A	1.8V@2400A
Constant current loading	Range	240/1200/2400A	240/1200/2400A	240/1200/2400A	240/1200/2400A	240/1200/2400A	240/1200/2400A
	Resolution	2/10/20mA	2/10/20mA	2/10/20mA	2/10/20mA	2/10/20mA	2/10/20mA
	Accuracy	0.05%+0.05%F.S.					
Constant voltage loading	Range	16/80/150V					
	Resolution	0.1/0.5/1mV					
	Accuracy	0.025%+0.025%F.S.					
Constant resistance load	Range	1.3mΩ-12.5Ω(16V) 5mΩ-50Ω(80V) 0.125Ω-250Ω(150V)	1.3mΩ-12.5Ω(16V) 5mΩ-50Ω(80V) 0.125Ω-250Ω(150V)	1.3mΩ-12.5Ω(16V) 5mΩ-50Ω(80V) 0.125Ω-250Ω(150V)	1.3mΩ-12.5Ω(16V) 5mΩ-50Ω(80V) 0.125Ω-250Ω(150V)	1.3mΩ-12.5Ω(16V) 5mΩ-50Ω(80V) 0.125Ω-250Ω(150V)	1.3mΩ-12.5Ω(16V) 5mΩ-50Ω(80V) 0.125Ω-250Ω(150V)
	Resolution	20mA/Vsense	20mA/Vsense	20mA/Vsense	20mA/Vsense	20mA/Vsense	20mA/Vsense
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.					
Constant power loading	Range	3000/15000/30000W	3600/18000/36000W	4200/21000/42000W	4800/24000/48000W	5400/27000/54000W	6000/30000/60000W
	Resolution	200/1000/2000mW	200/1000/2000mW	200/1000/2000mW	200/1000/2000mW	400/2000/4000mW	400/2000/4000mW
	Accuracy	0.2%+0.2%F.S.					
Current change rate	Setting range	2mA/us-24A/us (240A) 10mA/us-48A/us (1200A) 20mA/us-96A/us (2400A)	2mA/us-24A/us (240A) 10mA/us-48A/us (1200A) 20mA/us-96A/us (2400A)	2mA/us-24A/us (240A) 10mA/us-48A/us (1200A) 20mA/us-96A/us (2400A)	2mA/us-24A/us (240A) 10mA/us-48A/us (1200A) 20mA/us-96A/us (2400A)	2mA/us-24A/us (240A) 10mA/us-48A/us (1200A) 20mA/us-96A/us (2400A)	2mA/us-24A/us (240A) 10mA/us-48A/us (1200A) 20mA/us-96A/us (2400A)
	Resolution	2/10/20 mA/us	2/10/20 mA/us	2/10/20 mA/us	2/10/20 mA/us	2/10/20 mA/us	2/10/20 mA/us
Specification	Dimensions	610 mm×1410 mm ×800 mm (W×H×D)	610 mm×1410mm ×800 mm (W×H×D)	610 mm×1762 mm ×800 mm (W×H×D)	610 mm×1762 mm ×800 mm (W×H×D)	610 mm×1940 mm ×800 mm (W×H×D)	610 mm×1720 mm ×800 mm (W×H×D)
	Weight	205kg	231kg	272kg	298kg	435kg	469kg

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

Model		AN23602E -600-140(F)	AN23603E -600-210(F)	AN23604E -600-280(F)	AN23605E -600-350(F)	AN23606E -600-420(F)	AN23608E -600-560(F)
Working range	Voltage	0-600V					
	Current	0-140A	0-210A	0-280A	0-350A	0-420A	0-560A
	Power	2kW	3kW	4kW	5kW	6kW	8kW
Minimum working voltage		14V@140A	14V@210A	14V@280A	14V@350A	14V@420A	14V@560A
Constant current loading	Range	14/70/140A	21/105/210A	28/140/280A	35/175/350A	42/210/420A	56/280/560A
	Resolution	0.2/1/2mA	0.2/1/2mA	0.4/2/4mA	0.4/2/4mA	0.4/2/4mA	0.5/2/5mA
	Accuracy	0.05%+0.05%F.S.					
Constant voltage loading	Range	80/150/600V					
	Resolution	0.5/1/5mV					
	Accuracy	0.025%+0.025%F.S.					
Constant resistance load	Range	0.15Ω-1500Ω(80V) 0.6Ω-6000Ω(150V) 6Ω-12000Ω(600V)	0.1Ω-1000Ω(80V) 0.4Ω-4000Ω(150V) 4Ω-8000Ω(600V)	75mΩ-750Ω(80V) 300mΩ-3000Ω(150V) 3Ω-6000Ω(600V)	50mΩ-500Ω(80V) 200mΩ-2000Ω(150V) 2Ω-4000Ω(600V)	50mΩ-500Ω(80V) 200mΩ-2000Ω(150V) 2Ω-4000Ω(600V	38mΩ-375Ω(80V) 150mΩ-1.5kΩ(150V) 1.5Ω-3kΩ(600V)
	Resolution	2mA/Vsense	2mA/Vsense	4mA/Vsense	4mA/Vsense	4mA/Vsense	5mA/Vsense
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.					
Constant power loading	Range	200/1000/2000W	300/1500/3000W	400/2000/4000W	500/2500/5000W	600/3000/6000W	800/4000/8000W
	Resolution	5/20/50mW	5/20/50mW	10/50/100mW	10/50/100mW	10/50/100mW	20/100/200mW
	Accuracy	0.2%+0.2%F.S.					
Current change rate	Setting range	0.2mA/us-0.6A/us (14A) 1mA/us-3A/us (70A) 2mA/us-6A/us (140A)	0.2mA/us-0.9A/us (21A) 1mA/us-4.5A/us (105A) 2mA/us-9A/us (210A)	0.4mA/us-1.2A/us (28A) 2mA/us-6A/us (140A) 4mA/us-12A/us (280A)	0.4mA/us-1.5A/us (35A) 2mA/us-7.5A/us (175A) 4mA/us-15A/us (350A)	0.4mA/us-1.8A/us (42A) 2mA/us-9A/us (210A) 4mA/us-18A/us (420A)	0.5mA/us-1.8A/us (56A) 2mA/us-9A/us (280A) 5mA/us-18A/us (560A)
	Resolution	0.2/1/2mA/us	0.2/1/2mA/us	0.4/2/4mA/us	0.4/2/4mA/us	0.4/2/4mA/us	0.5/2/5mA/us
Specification	Dimensions	426mm×177mm×600mm(W×H×D), The height can be increased by 201mm with detachable feet					426 mm×400 mm ×650 mm (W×H×D)
	Weight	24.5kg	29.5kg	29.5kg	35kg	35kg	61kg

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

Specifications

Model		AN23610E -600-700(F)	AN23612E -600-840(F)	AN23615E -600-1050(F)	AN23618E -600-1260(F)	AN23620E -600-1400(F)	AN23624E -600-1680(F)
Working range	Voltage	0-600V					
	Current	0-700A	0-840A	0-1050A	0-1260A	0-1400A	0-1680A
	Power	10kW	12kW	15kW	18kW	20kW	24kW
Minimum working voltage		14V@700A	14V@840A	14V@1050A	14V@1260A	14V@1400A	14V@1680A
Constant current loading	Range	70/350/700A	84/420/840A	105/525/1050A	128/630/1260A	140/700/1400A	168/840/1680A
	Resolution	0.5/2.5/5mA	1/5/10mA	1/5/10mA	1/5/10mA	2/10/20mA	2/10/20mA
	Accuracy	0.05%+0.05%F.S.					
Constant voltage loading	Range	80/150/600V					
	Resolution	0.5/1/5mV					
	Accuracy	0.025%+0.025%F.S.					
Constant resistance load	Range	25mΩ-250Ω(80V) 0.1Ω-1000Ω(150V) 1Ω-2000Ω(600V)	25mΩ-250Ω(80V) 0.1Ω-1000Ω(150V) 1Ω-2000Ω(600V)	17mΩ-166.67Ω(80V) 67Ω-666.67Ω(150V) 0.67Ω-1333.34Ω(600V)	17mΩ-166.67Ω(80V) 67Ω-666.67Ω(150V) 0.67Ω-1333.34Ω(600V)	13mΩ-125Ω(80V) 50mΩ-500Ω(150V) 0.5Ω-1000Ω(600V)	13mΩ-125Ω(80V) 50mΩ-500Ω(150V) 0.5Ω-1000Ω(600V)
	Resolution	5mA/Vsense	10mA/Vsense	10mA/Vsense	10mA/Vsense	20mA/Vsense	20mA/Vsense
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.					
Constant power loading	Range	1000/5000/10000W	1200/6000/12000W	1500/7500/15000W	1800/9000/18000W	2000/10000/20000W	2400/12000/24000W
	Resolution	20/100/200mW	20/100/200mW	40/200/400mW	40/200/400mW	100/500/1000mW	100/500/1000mW
	Accuracy	0.2%+0.2%F.S.					
Current change rate	Setting range	0.5mA/us-2.1A/us (70A) 2.5mA/us-10.5A/us (350A) 5mA/us-21A/us (700A)	1mA/us-2.4A/us (84A) 5mA/us-12A/us (420A) 10mA/us-24A/us (840A)	1mA/us-2.7A/us (105A) 5mA/us-13.5A/us (525A) 10mA/us-27A/us (1050A)	1mA/us-3A/us (128A) 5mA/us-15A/us (630A) 10mA/us-30A/us (1260A)	2mA/us-3.3A/us (140A) 10mA/us-16.5A/us (700A) 20mA/us-33A/us (1400A)	2mA/us-3.6A/us (168A) 10mA/us-18A/us (840A) 20mA/us-36A/us (1680A)
	Resolution	0.5/2.5/5mA/us	1/5/10mA/us	1/5/10mA/us	1/5/10mA/us	2/10/20mA/us	2/10/20mA/us
Specification	Dimensions	426 mm×400 mm×650 mm (W×H×D)		426 mm×532 mm×650 mm (W×H×D)		426 mm×665 mm×650 mm (W×H×D)	
	Weight	66.5kg	72kg	92.5kg	98kg	113kg	124kg

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

Model		AN23630E -600-2100(F)	AN23636E -600-2400(F)	AN23642E -600-2400(F)	AN23648E -600-2400(F)	AN23654E -600-2400(F)	AN23660E -600-2400(F)
Working range	Voltage	0-600V					
	Current	0-2100A	0-2400A	0-2400A	0-2400A	0-2400A	0-2400A
	Power	30kW	36kW	42kW	48kW	54kW	60kW
Minimum working voltage		14V@2100A	14V@2400A	14V@2400A	14V@2400A	14V@2400A	14V@2400A
Constant current loading	Range	210/1050/2100A	240/1200/2400A	240/1200/2400A	240/1200/2400A	240/1200/2400A	240/1200/2400A
	Resolution	2/10/20mA	2/10/20mA	2/10/20mA	2/10/20mA	2/10/20mA	2/10/20mA
	Accuracy	0.05%+0.05%F.S.					
Constant voltage loading	Range	80/150/600V					
	Resolution	0.5/1/5mV					
	Accuracy	0.025%+0.025%F.S.					
Constant resistance load	Range	10mΩ-100Ω(80V) 40mΩ-400Ω(150V) 0.4Ω-800Ω(600V)	9mΩ-87.5Ω(80V) 4mΩ-350Ω(150V) 0.35Ω-700Ω(600V)	9mΩ-87.5Ω(80V) 4mΩ-350Ω(150V) 0.35Ω-700Ω(600V)	9mΩ-87.5Ω(80V) 4mΩ-350Ω(150V) 0.35Ω-700Ω(600V)	9mΩ-87.5Ω(80V) 4mΩ-350Ω(150V) 0.35Ω-700Ω(600V)	9mΩ-87.5Ω(80V) 4mΩ-350Ω(150V) 0.35Ω-700Ω(600V)
	Resolution	20mA/Vsense	20mA/Vsense	20mA/Vsense	20mA/Vsense	20mA/Vsense	20mA/Vsense
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.					
Constant power loading	Range	3000/15000/30000W	3600/18000/36000W	4200/21000/42000W	4800/24000/48000W	5400/27000/54000W	6000/30000/60000W
	Resolution	200/1000/2000mW	200/1000/2000mW	200/1000/2000mW	200/1000/2000mW	400/2000/4000mW	400/2000/4000mW
	Accuracy	0.2%+0.2%F.S.					
Current change rate	Setting range	2mA/us-3.6A/us (210A) 10mA/us-18A/us (1050A) 20mA/us-36A/us (2100A)	2mA/us-3.6A/us (240A) 10mA/us-18A/us (1200A) 20mA/us-36A/us (2400A)	2mA/us-3.6A/us (240A) 10mA/us-18A/us (1200A) 20mA/us-36A/us (2400A)	2mA/us-3.6A/us (240A) 10mA/us-18A/us (1200A) 20mA/us-36A/us (2400A)	2mA/us-3.6A/us (240A) 10mA/us-18A/us (1200A) 20mA/us-36A/us (2400A)	2mA/us-3.6A/us (240A) 10mA/us-18A/us (1200A) 20mA/us-36A/us (2400A)
	Resolution	2/10/20mA/us	2/10/20mA/us	2/10/20mA/us	2/10/20mA/us	2/10/20mA/us	2/10/20mA/us
Specification	Dimensions	610 mm×1410 mm ×800 mm (W×H×D)	610 mm×1410 mm ×800 mm (W×H×D)	610 mm×1762 mm ×800 mm (W×H×D)	610 mm×1762 mm ×800 mm (W×H×D)	610 mm×1940 mm ×800 mm (W×H×D)	610 mm×1720 mm ×800 mm (W×H×D)
	Weight	205kg	231kg	272kg	298kg	435kg	469kg

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

Specifications

Model		AN23602E -1200-80(F)	AN23603E -1200-120(F)	AN23604E -1200-160(F)	AN23605E -1200-200(F)	AN23606E -1200-240(F)	AN23608E -1200-320(F)
Working range	Voltage	0-1200V					
	Current	0-80A	0-120A	0-160A	0-200A	0-240A	0-320A
	Power	2kW	3kW	4kW	5kW	6kW	8kW
Minimum working voltage		20V@80A	20V@120A	20V@160A	20V@200A	20V@240A	20V@320A
Constant current loading	Range	8/40/80A	12/60/120A	16/80/160A	20/100/200A	24/120/240A	32/160/320A
	Resolution	0.1/0.5/1mA	0.1/0.5/1mA	0.2/1/2mA	0.2/1/2mA	0.2/1/2mA	0.4/2/4mA
	Accuracy	0.04%+0.06%F.S.					
Constant voltage loading	Range	150/600/1200V					
	Resolution	1/5/10mV					
	Accuracy	0.025%+0.025%F.S.					
Constant resistance load	Range	0.3Ω-3kΩ(150V) 1.2Ω-12kΩ(600V) 30Ω-60kΩ(1200V)	0.2Ω-2kΩ(150V) 0.8Ω-8kΩ(600V) 20Ω-40kΩ(1200V)	0.15Ω-1.5kΩ(150V) 0.6Ω-6kΩ(600V) 15Ω-30kΩ(1200V)	0.1Ω-1kΩ(150V) 0.4Ω-4kΩ(600V) 10Ω-20kΩ(1200V)	0.1Ω-1kΩ(150V) 0.4Ω-4kΩ(600V) 10Ω-20kΩ(1200V)	75mΩ-0.75kΩ(150V) 0.3Ω-3kΩ(600V) 7.5Ω-15kΩ(1200V)
	Resolution	1mA/Vsense	1mA/Vsense	2mA/Vsense	2mA/Vsense	2mA/Vsense	4mA/Vsense
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.					
Constant power loading	Range	200/1000/2000W	300/1500/3000W	400/2000/4000W	500/2500/5000W	600/3000/6000W	800/4000/8000W
	Resolution	5/20/50mW	5/20/50mW	10/50/100mW	10/50/100mW	10/50/100mW	20/100/200mW
	Accuracy	0.2%+0.2%F.S.					
Current change rate	Setting range	0.1mA/us-0.4A/us (8A) 0.5mA/us-2A/us (40A) 1mA/us-4A/us (80A)	0.1mA/us-0.6A/us (12A) 0.5mA/us-3A/us (60A) 1mA/us-6A/us (120A)	0.2mA/us-0.8A/us (16A) 1mA/us-4A/us (80A) 2mA/us-8A/us (160A)	0.2mA/us-1A/us (20A) 1mA/us-5A/us (100A) 2mA/us-10A/us (200A)	0.2mA/us-1.2A/us (24A) 1mA/us-6A/us (120A) 2mA/us-12A/us (240A)	0.4mA/us-1.2A/us (32A) 2mA/us-6A/us (160A) 4mA/us-12A/us (320A)
	Resolution	0.1/0.5/1mA/us	0.1/0.5/1mA/us	0.2/1/2mA/us	0.2/1/2mA/us	0.2/1/2mA/us	0.4/2/4mA/us
Specification	Dimensions	426mm×177mm×600mm(W×H×D), The height can be increased by 201mm with detachable feet					426 mm×400 mm ×650 mm (W×H×D)
	Weight	24.5kg	29.5kg	29.5kg	35kg	35kg	61kg

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

Model		AN23610E -1200-400(F)	AN23612E -1200-480(F)	AN23615E -1200-600(F)	AN23618E -1200-720(F)	AN23620E -1200-800(F)	AN23624E -1200-960(F)
Working range	Voltage	0-1200V					
	Current	0-400A	0-480A	0-600A	0-720A	0-800A	0-960A
	Power	10kW	12kW	15kW	18kW	20kW	24kW
Minimum working voltage		20V@400A	20V@480A	20V@600A	20V@720A	20V@800A	20V@960A
Constant current loading	Range	40/200/400A	48/240/480A	60/300/600A	72/360/720A	80/400/800A	96/480/960A
	Resolution	0.4/2/4mA	0.5/2/5mA	0.5/2/5mA	0.5/2/5mA	1/5/10mA	1/5/10mA
	Accuracy	0.04%+0.06%F.S.					
Constant voltage loading	Range	150/600/1200V					
	Resolution	1/5/10mV					
	Accuracy	0.025%+0.025%F.S.					
Constant resistance load	Range	50mΩ-0.5kΩ(150V) 0.2Ω-2kΩ(600V) 5Ω-10kΩ(1200V)	50mΩ-0.5kΩ(150V) 0.2Ω-2kΩ(600V) 5Ω-10kΩ(1200V)	34mΩ-0.34kΩ(150V) 0.14Ω-1.34kΩ(600V) 3.34Ω-6.67kΩ(1200V)	34mΩ-0.34kΩ(150V) 0.14Ω-1.34kΩ(600V) 3.34Ω-6.67kΩ(1200V)	25mΩ-0.25kΩ(150V) 0.1Ω-1kΩ(600V) 2.5Ω-5kΩ(1200V)	25mΩ-0.25kΩ(150V) 0.1Ω-1kΩ(600V) 2.5Ω-5kΩ(1200V)
	Resolution	4mA/Vsense	5mA/Vsense	5mA/Vsense	5mA/Vsense	10mA/Vsense	10mA/Vsense
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.					
Constant power loading	Range	1000/5000/10000W	1200/6000/12000W	1500/7500/15000W	1800/9000/18000W	2000/10000/20000W	2400/12000/24000W
	Resolution	20/100/200mW	20/100/200mW	40/200/400mW	40/200/400mW	100/500/1000mW	100/500/1000mW
	Accuracy	0.2%+0.2%F.S.					
Current change rate	Setting range	0.4mA/us-1.4A/us (40A) 2mA/us-7A/us (200A) 4mA/us-14A/us (400A)	0.4mA/us-1.6A/us (48A) 2mA/us-8A/us (240A) 4mA/us-16A/us (480A)	0.5mA/us-1.8A/us (60A) 2mA/us-9A/us (300A) 5mA/us-18A/us (600A)	0.5mA/us-2A/us (72A) 2mA/us-10A/us (360A) 5mA/us-20A/us (720A)	1mA/us-2.2A/us (80A) 5mA/us-11A/us (400A) 10mA/us-22A/us (800A)	1mA/us-2.4A/us (96A) 5mA/us-12A/us (480A) 10mA/us-24A/us (960A)
	Resolution	0.4/2/4mA/us	0.4/2/4mA/us	0.5/2/5mA/us	0.5/2/5mA/us	1/5/10mA/us	1/5/10mA/us
Specification	Dimensions	426 mm×400 mm ×650 mm(W×H×D)		426 mm×532 mm ×650 mm(W×H×D)		426 mm×665 mm ×650 mm(W×H×D)	
	Weight	66.5kg	72kg	92.5kg	98kg	113kg	124kg

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

Specifications

Model		AN23630E -1200-1200(F)	AN23636E -1200-1440(F)	AN23642E -1200-1680(F)	AN23648E -1200-1920(F)	AN23654E -1200-2160(F)	AN23660E -1200-2400(F)
Working range	Voltage	0-1200V					
	Current	0-1200A	0-1440A	0-1680A	0-1920A	0-2160A	0-2400A
	Power	30kW	36kW	42kW	48kW	54kW	60kW
Minimum working voltage		20V@1200A	20V@1440A	20V@1680A	20V@1920A	20V@2160A	20V@2400A
Constant current loading	Range	120/600/1200A	144/720/1440A	168/840/1680A	192/960/1920A	216/1080/2160A	240/1200/2400A
	Resolution	1/5/10mA	2/10/20mA	2/10/20mA	2/10/20mA	2/10/20mA	2/10/20mA
	Accuracy	0.04%+0.06%F.S.					
Constant voltage loading	Range	150/600/1200V					
	Resolution	1/5/10mV					
	Accuracy	0.025%+0.025%F.S.					
Constant resistance load	Range	20mΩ-0.2kΩ(150V) 80mΩ-0.8kΩ(600V) 2Ω-4kΩ(1200V)	17mΩ-0.17kΩ(150V) 67mΩ-0.67kΩ(600V) 1.67Ω-3.33kΩ(1200V)	14mΩ-0.14kΩ(150V) 57mΩ-0.57kΩ(600V) 1.43Ω-2.86kΩ(1200V)	13mΩ-0.13kΩ(150V) 50mΩ-0.5kΩ(600V) 1.25Ω-2.5kΩ(1200V)	11mΩ-0.11kΩ(150V) 44mΩ- 0.44kΩ(600V) 1.11Ω-2.22kΩ(1200V)	10mΩ-0.1kΩ(150V) 40mΩ-0.4kΩ(600V) 1Ω-2kΩ(1200V)
	Resolution	10mA/Vsense	20mA/Vsense	20mA/Vsense	20mA/Vsense	20mA/Vsense	20mA/Vsense
	Accuracy	Vin/Rset*(0.2%)+0.2%IF.S.					
Constant power loading	Range	3000/15000/30000W	3600/18000/36000W	4200/21000/42000W	4800/24000/48000W	5400/27000/54000W	6000/30000/60000W
	Resolution	200/1000/2000mW	200/1000/2000mW	200/1000/2000mW	200/1000/2000mW	400/2000/4000mW	400/2000/4000mW
	Accuracy	0.2%+0.2%F.S.					
Current change rate	Setting range	1mA/us-2.4A/us (120A) 5mA/us-12A/us (600A) 10mA/us-24A/us (1200A)	2mA/us-2.4A/us (144A) 10mA/us-12A/us (720A) 20mA/us-24A/us (1440A)	2mA/us-2.4A/us (168A) 10mA/us-12A/us (840A) 20mA/us-24A/us (1680A)	2mA/us-2.4A/us (192A) 10mA/us-12A/us (960A) 20mA/us-24A/us (1920A)	2mA/us-2.4A/us (216A) 10mA/us-12A/us (1080A) 20mA/us-24A/us (2160A)	2mA/us-2.4A/us (240A) 10mA/us-12A/us (1200A) 20mA/us-24A/us (2400A)
	Resolution	1/5/10mA/us	2/10/20mA/us	2/10/20mA/us	2/10/20mA/us	2/10/20mA/us	2/10/20mA/us
Specification	Dimensions	610 mm×1410mm ×800 mm (W×H×D)	610 mm×1410mm ×800 mm (W×H×D)	610 mm×1762 mm ×800 mm (W×H×D)	610 mm×1762 mm ×800 mm (W×H×D)	610 mm×1940 mm ×800 mm (W×H×D)	610 mm×1720 mm ×800 mm (W×H×D)
	Weight	205kg	231kg	272kg	298kg	435kg	469kg

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

Model		Common Parameters		
Voltage		150V	600V	1200V
Composite Impedance	Range	LS: 0.1uH~20uH RS: 30mΩ~20Ω CL: 30uF~50000uF RL: Consistent with CR mode high grade		
	Resolution	LS: 0.1uH RS: 1 mΩ CL: 1uF RL: Consistent with CR mode high grade		
LED Test	Range	coeff: 0.01~1		
Battery Test	Discharge Time	1s~100000s		
	Resolution	1s		
Current Dynamics	T1&T2	0.020~99.999ms/100ms~99999ms		
	Resolution	1us/1ms		
	Accuracy	2us+100ppm		
	Minimum Rise Time	10us(Typical)	20us(Typical)	20us(Typical)
Current Measurement	Range, Resolution	Same as current loading		
	Accuracy	0.04%+0.04%F.S.		0.04%+0.06%F.S.
Voltage Measurement	Range, Resolution	Same as voltage loading		
	Accuracy	0.015%+0.015%F.S.		
	Input Resistance	800kΩ(Typical)	1MΩ(Typical)	2MΩ(Typical)
Power Measurement	Range, Resolution	Same as power loading		
	Accuracy	0.1%+0.1%IF.S.*UF.S.		
Operating Temperature, Humidity		0 ~ 40℃, 20-90%RH		
Temperature Coefficient		100ppm/℃(Typical)		

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

High Power Bidirectional DC Electronic Load
ANEL(F) Series

Product Introduction

The ANEL(F) Series Regenerative DC Electronic Load is a high-tech product integrated with high-frequency PWM rectification technology, bidirectional DC conversion technology, and FPGA digital control technology. It has adaptive grid feedback capability and can support the continuous energy feedback in the full power range. It simultaneously possesses the capability of bidirectional operation in both positive and negative directions, enabling seamless energy transfer. With dual-loop control technology, it achieves ultra-high control precision, rapid response to customer load changes, ensuring equipment test stability and data precision. With its wide range of voltage and current adaptability capabilities and rich programming test functions, it better meets the diverse testing needs of customers' products. The device also includes multiple protection programming functions to better protect the safety of customer equipment during testing.

Features

- Source load integrated machine, with a pure load mode.
- Supports CV, CC, CP, and CR working modes.
- Voltage 0.05%FS, current 0.1%FS, and power 0.2%FS.
- Minimum current 0A and minimum power 0KW.
- Response time≤3ms; switching time≤4ms.
- Power factor≥0.99, current harmonic distortion≤3%.
- Provides 900-step programming function with a minimum programming time of 1mS.
- Supports simulation of 7 types of batteries including ternary lithium, lithium iron phosphate, lithium titanium oxide, lithium cobalt oxide, lithium manganese oxide, nickel-metal hydride, and lead-acid batteries.
- Supports 1st, 2nd, and 3rd grade battery models and internal resistance models, and allows for import and export of data in CSV and mat formats.
- Provides multi-unit parallel mode, supports parallel output of multiple loads of the same model.
- Equipped with CAN, RS232/RS485, LAN and other communication interfaces.

Exceeding & Trustworthy Electronic Load Ainuo

Specification and model

Product series	Product model	Rated current	Rated power	Peak current	Peak power	Voltage range	Overall dimensions/mm (W×D×H)
800V Series	ANEL800-800-100(F)	800A	100kW	1000A	125KW	12V-800V	1500×1000×2100
	ANEL800-1000-160(F)	1000A	160kW	1250A	200KW	12V-800V	2000×1000×2100
	ANEL800-1000-200(F)	1000A	200kW	1250A	250KW	12V-800V	2000×1000×2100
	ANEL800-1000-250(F)	1000A	250kW	1250A	312KW	12V-800V	2000×1000×2100
	ANEL800-1000-300(F)	1000A	300kW	1250A	375KW	12V-800V	2000×1200×2100
	ANEL800-1000-400(F)	1000A	400kW	1250A	500KW	12V-800V	2000×1200×2200
	ANEL800-1000-500(F)	1000A	500kW	1250A	625KW	12V-800V	2000×1200×2200
1000V Series	ANEL1000-600-100(F)	600A	100kW	750A	125KW	12V-1000V	1500×1000×2100
	ANEL1000-1000-160(F)	1000A	160kW	1250A	200KW	12V-1000V	2000×1000×2100
	ANEL1000-1000-200(F)	1000A	200kW	1250A	250KW	12V-1000V	2000×1000×2100
	ANEL1000-1000-250(F)	1000A	250kW	1250A	312KW	12V-1000V	2000×1000×2100
	ANEL1000-1000-300(F)	1000A	300kW	1250A	375KW	12V-1000V	2000×1200×2100
	ANEL1000-1000-400(F)	1000A	400kW	1250A	500KW	12V-1000V	2000×1200×2200
	ANEL1000-1000-500(F)	1000A	500kW	1250A	625KW	12V-1000V	2000×1200×2200

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

Product name		High Power Bidirectional DC Electronic Load
Work mode		CV CC CP CR
Energy feedback		Grid-following feedback
Isolation function		Electrical isolation between input and output
CV mode	Setting range	12V-Vmax
	Resolution	0.1V
	Accuracy	0.05%FS
CC mode	Setting range	0A-Imax
	Resolution	0.1A
	Accuracy	0.1%FS
CP mode	Setting range	0kW-Pmax
	Resolution	0.01kW
	Accuracy	0.2%FS
CR mode	Setting range	0Ω-1,000Ω
	Resolution	0.1Ω
	Accuracy	0.5%FS
Dynamic characteristics	Recovery time	≤3ms (10%-90% load switching)
	Rise time	≤3ms
	Switching time	≤4ms

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

AC characteristic	Mode	3-phase 4-wire+PE
	Voltage	323V-347V
	Frequency	45Hz-65Hz (Follows grid frequency)
	Phase	Follows grid phase
	Power factor	≥0.99
	Total harmonic content	≤3% (tested under conditions of standard AC power input with distortion within 1.5%)
	Overall efficiency	≥0.94
	Feedback performance	Full power continuous feedback
Product features	Output programming	It allows programmable output voltage waveforms, including voltage and current slopes, steps, cyclic control, and jump control.
	Emergency stop	It has an emergency stop button and built-in output contactor for quickly and completely disconnecting from the load equipment.
	Battery simulation	It can simulate five types of batteries: lithium ternary, lithium manganese, lithium cobalt, lithium iron phosphate, lead-acid, and nickel-metal hydride. It supports customizing battery cell capacity, series/parallel quantity, State of Charge (SOC), and temperature parameters.
	Ramp-up function	It provides voltage, current, and power programming ramp-up
	Multi-mode function	It supports various load modes, including CV, CC, CR, CP, CV-CC, CC-CP, CP-CR, CV-CC-CR, etc.
Protection functions	AC protection	AC undervoltage, overvoltage, and phase loss protection
	Built-in protection	Bus overvoltage protection, power module overheating protection, power module overcurrent protection, and power module short circuit protection
	Protection setting	Allow setting protection parameters and enable for OVP, LVP, OCP, LCP and OPP protection
	Limit setting	It supports setting upper and lower limits for voltage, current, and power parameters
Display and operation	Display mode	LCD
	Operation mode	Number key, knob and touch screen three-in-one
Display resolution	Voltage	0.001V
	Current	0.001A
	Power	0.001kW
Communication interface	Serial interface	Standard RS232/RS485 (select one)
	CAN interface	Supports CAN2.0 protocol, with a communication data update frequency ≥ 50Hz
	Ethernet	Supports the Ethernet communications
Analog interface		Supports external emergency stop switch quantity signal control
Safety performance working environment	Insulation resistance	≥2MΩ (tested at 1,000V insulation voltage)
	Withstand voltage	2,000VDC 5mAmin
	Grounding resistance	≤100mΩ
	Working temperature	0℃-40℃
	Working humidity	20-90%RH (no condensation)
	Altitude	≤2,000m
	Storage temperature	-10℃-70℃
Noise		≤70dB
Cooling method		Temperature-controlled air cooling. It has a built-in temperature-controlled variable speed fan.
Protection level		IP21

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Exceeding & Trustworthy Electronic Load Ainuo

AC/DC Electronic Load
AN29(F) Series

Product Introduction

AN29(F) Series AC/DC electronic load has flexible parallel and online functions. When multiple units are connected in parallel, they can expand the current and power, meeting testing requirements of high-power single-phase power supplies. When three-phase online, a three-phase load is formed to meet the three-phase power testing requirements. Multiple units can also be connected in parallel to form a high-power three-phase electronic load.

Features

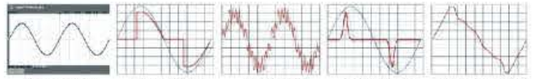
- CE
- Power Capacity: 1400W~ 8400W
- Working voltage is low to 2V, and up to 350Vrms
- Current range: 10Arms~60Arms, peak current: 45A~ 270A
- Frequency range: 44~ 1000Hz, DC
- Peak factor: 1.4 ~ 5.0000
- Adjustable power factor, setting range 0-1.0
- 3 units in parallel to realize 3 phase load
- Work mode: Constant current CC, constant resistance CR, constant power CP
- Current shift: current shift can be adjusted under testing
- DC: Static loading, dynamic loading, 40 programming steps
- AC: Waveform simulation, sine, 3-15 harmonic, phase gate, crest factor
- Upper/lower limits adjustment, over limit alarming(GO/NG)
- Remote voltage detect sense port, used for precise measurement, eliminate wires voltage drop
- Protection function: Over voltage, over current, over power, over heat, DC reversed polarity
- Measurement parameter: U, I, P, F and PF

Order information and extended functions

- AN29201(F): AC/DC Electronic Load 260V/10A/1400W
- AN29202(F): AC/DC Electronic Load 260V/20A/2800W
- AN29203(F): AC/DC Electronic Load 260V/30A/4200W
- AN29204(F): AC/DC Electronic Load 260V/40A/5600W
- AN29205(F): AC/DC Electronic Load 260V/50A/7000W
- AN29206(F): AC/DC Electronic Load 260V/60A/8400W
- RS485, GPIB optional

Production Function

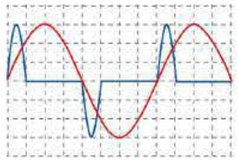
Waveform simulation



Test Function

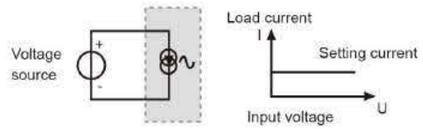
Power factor test

Simulate inductive and capacitive load, PF is from 0 to 1. If load current phase shift and PF are both need to set, PF can be set on front panel easily, do not need wire connection.



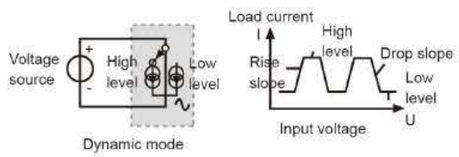
Regulation test

Under CC mode, load current is just changing setting value, not with DUT output voltage. Please refer to the characteristic curve.



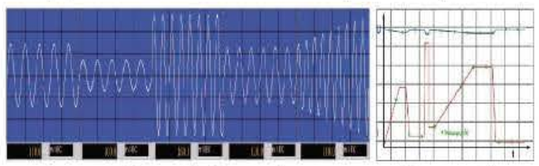
Dynamic performance test

Dynamic mode is switching between 2 levels in cycle, please refer to the characteristic curve. Dynamic current rising/dropping slope can be adjusted separately.



Programmable steps

4 groups, 10 steps/group. 4 groups can be parallel into 40 steps, and also can be divided into separated steps.



Programmable steps loading waveform

Programmable DC loading waveform

Connect in parallel and series

3 units in parallel to realize 3 phase load.

Specifications

Model		AN29201(F)	AN29202(F)	AN29203(F)	AN29204(F)	AN29205(F)	AN29206(F)
Power		1400W	2800W	4200W	5600W	7000W	8400W
Current		0-10Arms(45Apeak)	0-20Arms(90Apeak)	0-30Arms(135Apeak)	0-40Arms(180Apeak)	0-50Arms(225Apeak)	0-60Arms(270Apeak)
Voltage		2V- 260Vrms (360 Vpeak), customizable 2V-350Vrms (500Vpeak)					
Frequescy		44 - 1000Hz, DC					
AC part: Constant Current Mode	Setting Range	0.2~10Arms, programmable	0.2~20Arms, programmable	0.2~30Arms, programmable	0.4~40Arms, programmable	0.4~50Arms, programmable	0.4~60Arms, programmable
	Accuracy	DC/50/60/400Hz: 0.1% + 0.2% range					
	Resolution	2mA	5mA	5mA	7mA	9mA	10mA
Constant Resistance Mode	Setting Range	1Ω~1200Ω, programmable	1Ω~600Ω, programmable	1Ω~400Ω, programmable	1Ω~300Ω, programmable	1Ω~240Ω, programmable	1Ω~200Ω, programmable
	Accuracy	DC/50/60/400Hz: Min. resistance ~ 1/2 Max. resistance: ± (1.5% setting value + 0.5% range); greater than 1/2 Max. resistance - Max. resistance: + (3.5% setting value+0.5% range)					
	Resolution	0.2Ω	0.1Ω	0.067Ω	0.05Ω	0.04Ω	0.04Ω
Constant Power Mode	Setting Range	10W~1400W, programmable	10W~2800W, programmable	10W~4200WΩ, programmable	10W~5600W, programmable	10W~7000W, programmable	10W~8400W, programmable
	Accuracy	DC/50/60/400Hz: 0.2% + 0.3% range					
	Resolution	0.25W	0.5W	0.75W	1W	1.25W	1.5W
Peak Factor Mode	Peak Factor Setting Range	1.4~5.0, programmable					
	Phase Shift Angle Setting Range	-90°~+90°, programmable					
Gate Trigge Mode	Turn On Angle	0-359°					
	Turn off Angle	0-360°					
Harmonic Mode	Frequency	1-15					
	Setting Range	0-1					
	Resolution	0.1%					
Power Factor	Measurement Range	0~1 lead or lag	0~1 lead or lag	0~1 lead or lag	0~1 lead or lag	0~1 lead or lag	0~1 lead or lag
	Measurement Accuracy	1% range	1% range	1% range	1% range	1% range	1% range
	Resolution	0.01					
DC part	Voltage Working Range	2V- 260V , customizable 2V-350V					
	Current Setting Range	0.2A~10A	0.2A~20A	0.2A~30A	0.4A~40A	0.4A~50A	0.4A~60A
	Minimum Operating Voltage	2V					
	Rise Time	1ms					
	Operating Mode	Constant current, constant resistance, constant power, dynamic					
	Short Circuit Current Simulation	Use constant resistance mode					
Measurement part	Voltage Measurement Range	2V~260V, customizable 2V~350V					
	Voltage Measurement Accuracy	DC/50/60/400Hz: 0.1% + 0.1% range					
	Voltage Resolution	100mV					
	Current Measurement Range	0~10.00A	0~20.00A	0~30.00A	0~40.00A	0~50.00A	0~60.00A
	Current Measurement Accuracy	DC/50/60/400Hz: 0.1%+0.2% range					
	Current Resolution	2.0mA	4.0mA	6.0mA	8.0mA	10.0mA	12.0mA
	Other Parameters	Active power (W), apparent power (VA), reactive power (VAR), power factor, frequency					
Others	Protection	"Overcurrent: 10.5Arms; Overvoltage: 273Vrms; Over power: 1470W; Over temperature"	"Overcurrent: 21Arms; Overvoltage: 273Vrms; Over power: 2940W; Over temperature"	"Overcurrent: 31.5Arms; Overvoltage: 367Vrms; Over power: 4410W; Over temperature"	"Overcurrent: 42Arms; Overvoltage: 273Vrms; Over power: 2880W; Over temperature"	"Overcurrent: 52.5Arms; Overvoltage: 273Vrms; Over power: 7350W; Over temperature"	"Overcurrent: 63Arms; Overvoltage: 273Vrms; Over power: 8820W; Over temperature"
	Control Interface	Standard: RS-232, USB; Optional: Ethernet port					
	Operating Voltage	115/230 Vac ± 10%					
	Dimension WxHxD (mm)	440×222×465			440×354×465		
	Foot Height (mm)	15					

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