Faith Technologies

PRODUCT MANUAL

E-LOAD / DC SOURCE / AC SOURCE / ATE

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400-616-0086

Leadership in technology, goodness in products

FAITH - a registered trademark and abbreviation of Shenzhen FAITH TECHNOLOGY CO. Headquartered in Shenzhen, the city of science and technology innovation, Faith was founded in 2002. The company is committed to providing FAITH brand, accurate and reliable power electronic test equipment, is the world's leading manufacturer of power electronic test equipment.

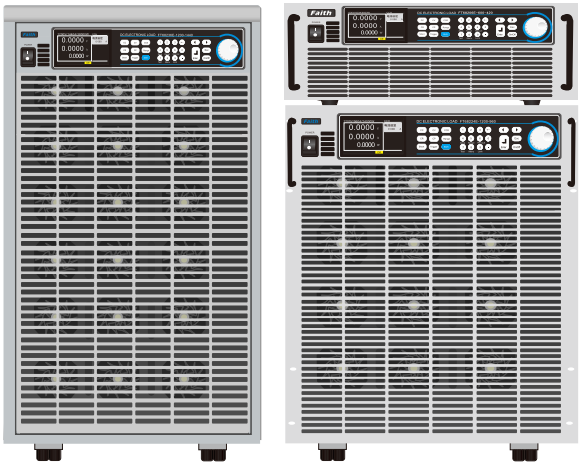
Faith electronic load and DC power supply with international advanced level, Faith has a rich product line, has become the power power supply, communication power supply, charging piles, chargers, power batteries, LED power supply and other power electronics industry, the mainstream test equipment.

FAITH has passed the ISO9001:2000 international quality management system certification and CE certification, and owns 63 invention patents and other types of intellectual property rights.

CATALOG

FT68200A/AL/E series

Ultra-high power electronic load



Summary

The FT68200A/AL/E series of high power programmable DC electronic loads is designed for high reliability and high power density, which is twice the power density of traditional loads.

FT68200A/AL/E series has 150V, 600V, 1200V three voltage ranges, single power range from 4kW to 60kW, a single current up to 2400A. Its wider working range and extremely fast dynamic frequency effectively increase the test capability and application range. The whole series of products have strong overload capacity, and the instantaneous over-power pulling can reach 2 times the rated power, which can effectively reduce the test cost.

FT68200A/AL/E has LAN, RS232, RS485, CAN, GPIB, USB and other communication interfaces as well as analog interfaces. It supports both SCPI and ModBus communication protocols, which provides great convenience for system integration applications.

Characteristics

- Single power: 4kW ~ 60kW, the maximum power can be extended to 600kW through the master/slave parallel;
- Power density 6kW/3U;
- Voltage range: 150V, 600V, 1200V;
- Current range :100A/kW(150V), 70A/kW(600V), 40A/kW(1200V);
- High precision, voltage accuracy is (0.025%+0.025%F.S.);
- The current accuracy is (0.05%+0.05%F.S.);
- Multiple working modes: CC, CV, CR, CP, CRD, CPD, CV+CC, CR+CC, CP+CC operation mode;
- Programming speed 50kHz, sampling speed 500kHz;
- 30kHz dynamic scanning function;
- The remote data transmission rate can reach 1kHz, which can greatly improve the data acquisition ability of the communication interface;
- Instantaneous overpower with load function, instantaneous overload capacity more than twice the rated power;
- OCP, OPP, LED simulation, load effect, battery internal resistance, battery discharge test function;
- Time measurement, (Vpk+/-) measurement function;
- Automatic test function, sine wave band load function, sequence function;
- Comprehensive protection functions: over voltage, over current, over temperature, current limit, power limit, input reverse connection, power off memory, etc;
- External analog programming input and current monitoring output with high voltage isolation capability;
- TFT color LCD screen, English and Chinese menu interface;
- Equipped with various communication interfaces: RS232, RS485, LAN, USB, GPIB (optional), CAN (optional);
- Supports SCPI and ModBus communication protocols.

Application filed

- Power battery, lead-acid battery, fuel cell discharge test;
- BMS and battery protection device testing;
- Dc charging pile, charging module, vehicle charger, A/D power converter and other power electronic power device testing;
- Test high-power switching power supply, UPS power supply, communication power supply, server power supply;
- Virtual load testing of solar arrays and industrial motorsl.

Ultra high power density

The FT68200A/AL/E series features a high power density design that is only half the size and one-third less weight than conventional electronic loads.

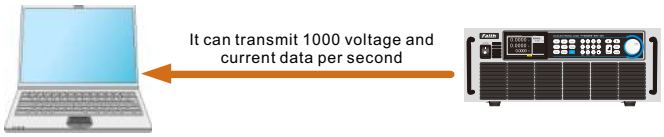
24kW / 14U

VS

General Electronic Load

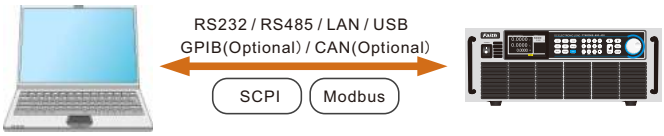
1kHz data transmission

FT68200A/AL/E series can provide users with up to 1kHz data transmission, that is, 1000 voltage and current data points per second, in order to achieve waveform rendering and dynamic data analysis and other functions. In the application of system integration, the host computer can get a lot of test data directly and reduce the cost by this function without oscilloscope and high-speed current acquisition hardware.



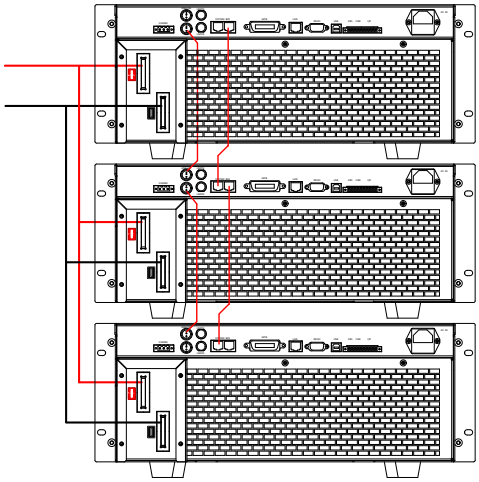
Multi-interface and multi-protocol

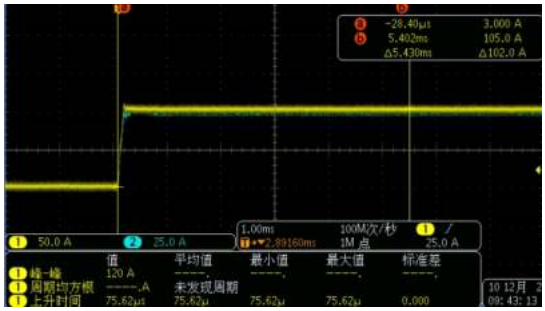
The FT68200A/AL/E series is equipped with a variety of communication interfaces, and supports both SCPI and Modbus communication protocols. Users can configure the system on the menu according to their needs, which makes the system integration more flexible.



Cascade

The cascade function of the FT68200A/AL/E series supports the parallel use of up to 10 loads, extending the power usage range of electronic loads. During the cascading process, each load automatically equalizes traffic, and the slave automatically copies the load parameters of the host. Single machine can also be used independently, more flexible power configuration.

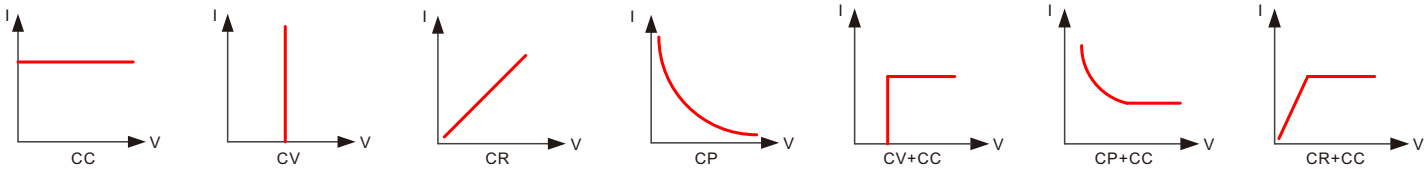




When two master-slave cascades are loaded, the current waveforms coincide completely

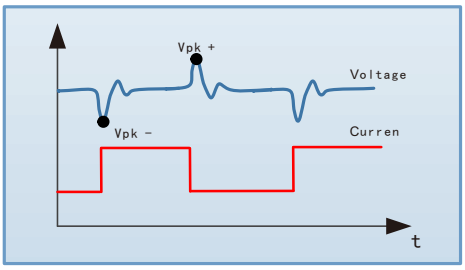
Multiple operating modes

FT68200A/AL/E series has four basic operating modes of constant current, constant voltage, constant resistance and constant power, which can meet a wide range of test needs. At the same time, it also has the function of CV+CC, CR+CC, CP+CC multiple composite operation modes. Users can set the current limit value according to their own test requirements to avoid overcurrent damage to the test product during the test process. Among them, CV+CC mode can be applied to simulate battery charging characteristics, test charging piles and similar products such as vehicle chargers. CR+CC mode simulates power supply voltage current limitation and accuracy testing.



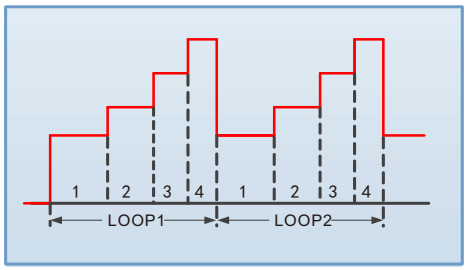
30kHz dynamic sweep,Vpk+/- capture

FT68200A/AL/E series with dynamic sweep function, the maximum frequency can be set 30kHz. During the test, the peak voltage Vpk+, valley voltage Vpk- and the occurrence frequency of the measured power supply are captured and recorded by adjusting the current pulling frequency. It can effectively test the dynamic response of various power supplies at different frequencies.



Sequence function

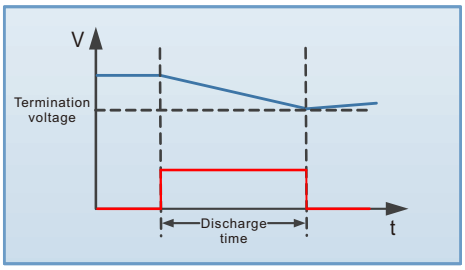
The FT68200A/AL/E series of electronic loads provides sequential test capabilities for editing up to 20 test files with 100 steps each. It supports load timing changes in CC, CV, CR, CP and other modes, and also supports sequence editing functions such as file link. A maximum of 2000 steps can be edited (5000 steps can be customized). The time range of a single step is 0.1ms to 99999s.



Battery test

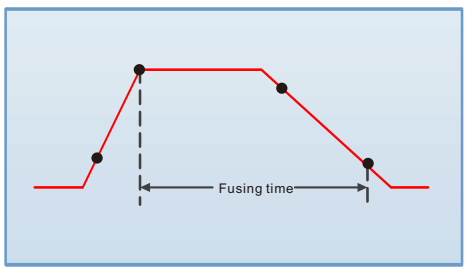
FT68200A/AL/E series electronic load with battery test function. Three discharge modes of fixed current, fixed resistance and fixed power are provided, and the discharge cutoff conditions can be set by itself: cut-off voltage, cut-off time and cut-off power. If any of the three conditions are met, the discharge stops. During the discharge process, the discharge quantity and discharge time are recorded.

The FT68200A/AL/E series is tested for internal resistance and capacity by direct current discharge (DCIR).



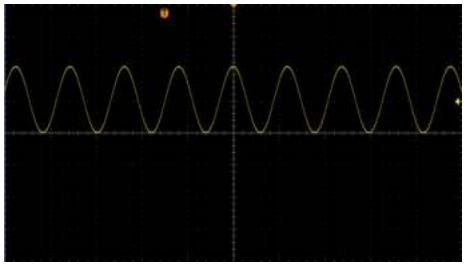
Time measurement

FT68200A/AL/E series electronic load with time measurement function. By capturing the external switching signal, combined with the switching signal and the voltage and current signal, the response and operation time of the system and the pulse width of the pulse current can be measured. It is mainly used to measure the on-off time, holding time, rising edge and falling edge time of the power supply,as well as the fuse fuse time and circuit breaker response time.



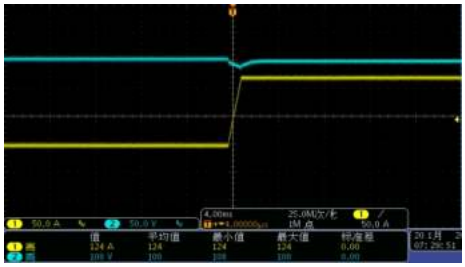
Sine wave dynamic load

The FT68200A/AL/E series has sine-wave current-carrying function and can be used for impedance analysis and testing of fuel cells.



Instantaneous overpower loading function

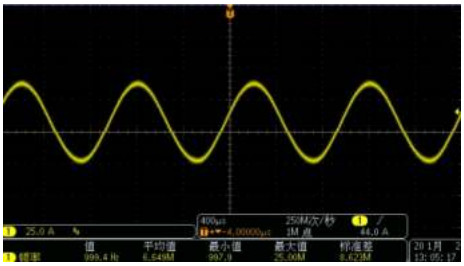
The FT68200A/AL/E series electronic load has the instantaneous loading capacity of 2 times the rated power. In simulating DC motor starting characteristics, instantaneous overload characteristics of power supply, instantaneous high-rate discharge characteristics of power battery, instantaneous load capacity of power electronic devices and other instantaneous high-power loading test, it can greatly save costs.



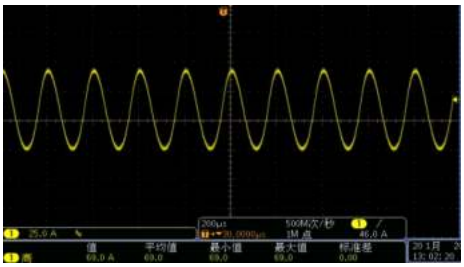
The FT68206E-150-600 is rated at 6kW and carries 12kW instantly

External analog programming

The FT68200A/AL/E series has external analog programming capabilities. Other devices can continuously control the load via an external voltage signal (DC or AC). The external voltage signal of 0 ~ 10V corresponds to 0 ~ 100% full scale on-load current. This function can also be used for various complex band carrier shape test.



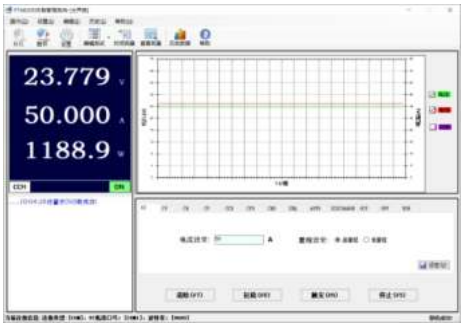
1kHz sine wave

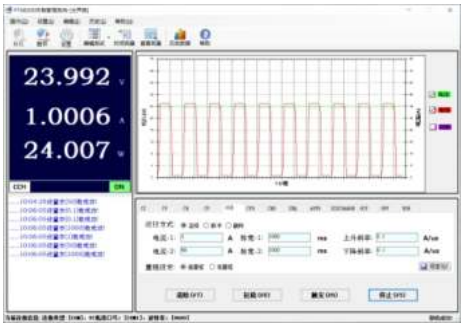


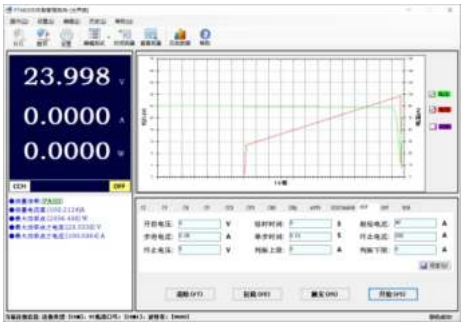
5kHz sine wave

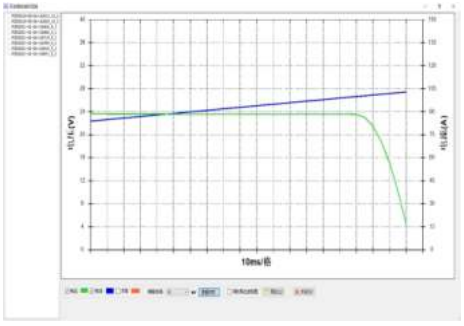
Computer graphical operation software

FT68200A/AL/E series provides a host computer software with virtual instrument function, which can read test data in real time, generate images, export reports, print reports, etc., which is convenient for customers to use.









Ordering information

Product series	Power class	150V	600V	1200V	Height
A series	4kW	FT68204A-150-400	FT68204A-600-280	FT68204A-1200-160	4U
	5kW	FT68205A-150-500	FT68205A-600-350	FT68205A-1200-200	4U
	6kW	FT68206A-150-600	FT68206A-600-420	FT68206A-1200-240	4U
	8kW	FT68208A-150-800	FT68208A-600-560	FT68208A-1200-320	7U
	10kW	FT68210A-150-1000	FT68210A-600-700	FT68210A-1200-400	7U
	12kW	FT68212A-150-1200	FT68212A-600-840	FT68212A-1200-480	7U
	18kW	FT68218A-150-1800	FT68218A-600-1260	FT68218A-1200-720	11U
	24kW	FT68224A-150-2400	FT68224A-600-1680	FT68224A-1200-960	14U
	30kW	FT68230A-150-2400	FT68230A-600-2100	FT68230A-1200-1200	20U
	36kW	FT68236A-150-2400	FT68236A-600-2400	FT68236A-1200-1440	20U
	42kW	FT68242A-150-2400	FT68242A-600-2400	FT68242A-1200-1680	26U
	48kW	FT68248A-150-2400	FT68248A-600-2400	FT68248A-1200-1920	26U
	54kW	FT68254A-150-2400	FT68254A-600-2400	FT68254A-1200-2160	32U
	60kW	FT68260A-150-2400	FT68260A-600-2400	FT68260A-1200-2400	32U
AL series	4kW	FT68204AL-150-240	FT68204AL-600-160	FT68204AL-1200-120	4U
	5kW	FT68205AL-150-300	FT68205AL-600-200	FT68205AL-1200-150	4U
	6kW	FT68206AL-150-360	FT68206AL-600-240	FT68206AL-1200-180	4U
	8kW	FT68208AL-150-480	FT68208AL-600-320	FT68208AL-1200-240	7U
	10kW	FT68210AL-150-600	FT68210AL-600-400	FT68210AL-1200-300	7U
	12kW	FT68212AL-150-720	FT68212AL-600-480	FT68212AL-1200-360	7U
	18kW	FT68218AL-150-1080	FT68218AL-600-720	FT68218AL-1200-540	11U
	24kW	FT68224AL-150-1440	FT68224AL-600-960	FT68224AL-1200-720	14U
	30kW	FT68230AL-150-1800	FT68230AL-600-1200	FT68230AL-1200-900	20U
	36kW	FT68236AL-150-2160	FT68236AL-600-1440	FT68236AL-1200-1080	20U
	42kW	--	FT68242AL-600-1680	FT68242AL-1200-1260	26U
	48kW	--	FT68248AL-600-1920	FT68248AL-1200-1440	26U
	54kW	--	FT68254AL-600-2160	FT68254AL-1200-1620	32U
	60kW	--	--	FT68260AL-1200-1800	32U
E series	4kW	FT68204E-150-400	FT68204E-600-280	FT68204E-1200-160	4U
	5kW	FT68205E-150-500	FT68205E-600-350	FT68205E-1200-200	4U
	6kW	FT68206E-150-600	FT68206E-600-420	FT68206E-1200-240	4U
	8kW	FT68208E-150-800	FT68208E-600-560	FT68208E-1200-320	7U
	10kW	FT68210E-150-1000	FT68210E-600-700	FT68210E-1200-400	7U
	12kW	FT68212E-150-1200	FT68212E-600-840	FT68212E-1200-480	7U
	18kW	FT68218E-150-1800	FT68218E-600-1260	FT68218E-1200-720	11U
	24kW	FT68224E-150-2400	FT68224E-600-1680	FT68224E-1200-960	14U
	30kW	FT68230E-150-2400	FT68230E-600-2100	FT68230E-1200-1200	20U
	36kW	FT68236E-150-2400	FT68236E-600-2400	FT68236E-1200-1440	20U
	42kW	FT68242E-150-2400	FT68242E-600-2400	FT68242E-1200-1680	26U
	48kW	FT68248E-150-2400	FT68248E-600-2400	FT68248E-1200-1920	26U
	54kW	FT68254E-150-2400	FT68254E-600-2400	FT68254E-1200-2160	32U
	60kW	FT68260E-150-2400	FT68260E-600-2400	FT68260E-1200-2400	32U

* Height does not include castor size, high power can be customized

Optional Information

Name	Model or Specification	Instruction
GPIB adapter card	Suffix G	
CAN adapter card	Suffix C	
Parallel machine kit	PC010-682	

* Test cables are optional. For details about specifications and models, see Optional Accessories in this manual.

Specification parameters-1 FT68200A/AL/E series has many models, only some of them are listed for reference.

Model	FT68206A/E-150-600		FT68206A/E-600-420		FT68206A/E-1200-240	
Voltage*3	150V		600V		1200V	
Current	600A		420A		180A	
Power*2	6,000W		6,000W		6,000W	
Full current minimum operating voltage	1.5V/600A		14V/420A		20V/180A	
Constant current						
Range	0-60A	0-600A	0-42A	0-420A	0-18A	0-180A
Resolution	1mA	10mA	0.7mA	7mA	0.43mA	43mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Constant voltage						
Range	0-30V	0-150V	0-120V	0-600V	0-240V	0-1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Constant power*4						
Range	0 - 6,000W		0 - 6,000W		0 - 6,000W	
Resolution	100mW		100mW		100mW	
Precision	0.2%+0.2% F.S.		0.2%+0.2% F.S.		0.2%+0.2% F.S.	
Constant resistance*4						
Range	0.009Ω ～ 50Ω	0.09Ω ～250Ω	0.053Ω ～ 286Ω	0.53Ω ～ 1429Ω	0.25Ω ～1333Ω	2.5Ω ～ 6600Ω
Precision	Vin/Rset*(0.2%)+0.2%IF.S.		Vin/Rset*(0.2%)+0.2%IF.S		Vin/Rset*(0.2%)+0.2%IF.S.	
Slope						
Current slope	0.001～0.6A/us	0.01～6A/us	0.0001～0.4A/us	0.001～4A/us	0.0001～0.18A/us	0.001～1.8A/us
Current measurement						
Range	0-60A	0-600A	0-42A	0-420A	0-24A	0-240A
Resolution	1mA	10mA	0.7mA	7mA	0.4mA	4mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Voltage measurement						
Range	0-30V	0-150V	0-120V	0-600V	0-240V	0-1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Other specification						
AC voltage	220VAC ±10%， 50～60Hz，360VA					
Operating temperature	0～40℃					
Full power operating temperature	0～25℃					
Weight	40Kg					
Dimension	432mm(W)*177mm(H)*665mm(D)					

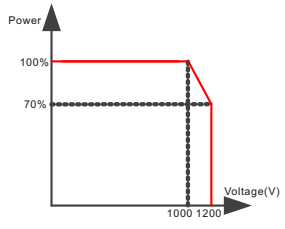
Specification parameters-2 FT68200A/AL/E series has many models, only some of them are listed for reference.

Model	FT68212A/E-150-1200		FT68212A/E-600-840		FT68212A/L-1200-360	
Voltage*3	150V		600V		1200V	
Current	1200A		840A		360A	
Power*2	12,000W		12,000W		12,000W	
Full current minimum operating voltage	1.5V/1200A		14V/840A		20V/360A	
Constant current						
Range	0-120A	0-1200A	0-84A	0-840A	0-36A	0-360A
Resolution	2mA	20mA	1.4mA	14mA	0.6mA	6mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Constant voltage						
Range	0-30V	0-150V	0-120V	0-600V	0-240V	0-1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Constant power*4						
Range	0 - 12,000W		0 - 12,000W		0 - 12,000W	
Resolution	200mW		200mW		200mW	
Precision	0.2%+0.2% F.S.		0.2%+0.2% F.S.		0.2%+0.2% F.S.	
Constant resistance*4						
Range	0.005 ～ 250Ω	0.05 ～125Ω	0.027 ～143Ω	0.27 ～714Ω	0.12 ～ 650Ω	1.2～3250Ω
Precision	Vin/Rset*(0.2%)+0.2%IF.S.		Vin/Rset*(0.2%)+0.2%IF.S.		Vin/Rset*(0.2%)+0.2%IF.S.	
Slope						
Current slope	0.001～1.2A/us	0.01～12A/us	0.0001～0.8A/us	0.001～ 8A/us	0.0001～0.36A/us	0.001～ 3.6A/us
Current measurement						
Range	0-120A	0-1200A	0-84A	0-840A	0-36A	0-360A
Resolution	2mA	20mA	1.4mA	14mA	0.6mA	6mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Voltage measurement						
Range	0-30V	0-150V	0-120V	0-600V	0-240V	0-1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Other specification						
AC voltage	220VAC ±10% ， 50～60Hz， 720VA					
Operating temperature	0～40℃					
Full power operating temperature	0～25℃					
Weight	72Kg					
Dimension	432mm(W)*385mm(H)*715mm(D)（Caster included）					

Specification parameters-3 FT8200A/AL/E series has many models, only some of them are listed for reference.

Model	FT68224A/E-150-2400		FT68224A/E-600-1680		FT68224A/L-1200-720	
Voltage*3	150V		600V		1200V	
Current	2400A		1680A		720A	
Power*2	24,000W		24,000W		24,000W	
Full current minimum operating voltage	1.5V/2400A		14V/1680A		20V/720A	
Constant current						
Range	0-240A	0-2400A	0-168A	0-1680A	0-72A	0-720A
Resolution	4mA	40mA	2.8mA	28mA	1.2mA	12mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Constant voltage						
Range	0-30V	0-150V	0-120V	0-600V	0-240V	0-1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Constant power*4						
Range	0 - 24,000W		0 - 24,000W		0 - 24,000W	
Resolution	400mW		400mW		400mW	
Precision	0.2%+0.2% F.S.		0.2%+0.2% F.S.		0.2%+0.2% F.S.	
Constant resistance*4						
Range	0.002 ～13Ω	0.02 ～63Ω	0.013 ～71Ω	0.13 ～357Ω	0.046 ～333Ω	0.46 ～1665Ω
Precision	Vin/Rset*(0.2%)+0.2%IF.S.		Vin/Rset*(0.2%)+0.2%IF.S.		Vin/Rset*(0.2%)+0.2%IF.S.	
Slope						
Current slope	0.001～2.4A/us	0.01～24A/us	0.001～1.6A/us	0.01～16A/us	0.001～0.72A/us	0.01～7.2A/us
Current measurement						
Range	0-240A	0-2400A	0-168A	0-1680A	0-72A	0-720A
Resolution	4mA	40mA	2.8mA	28mA	1.2mA	12mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Voltage measurement						
Range	0-30V	0-150V	0-120V	0-600V	0-240V	0-1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Other specification						
AC voltage	220VAC ±10%， 50～60Hz， 1420VA					
Operating temperature	0～40℃					
Full power operating temperature	0～25℃					
Weight	156Kg					
Dimension	432mm(W)*695mm(H)*714mm(D)(Caster included)					

* All specifications are subject to change without notice.
*1. The above accuracy parameters are measured in the temperature range of 25±5˚C.
*2. The rated power specification is allowed at ambient temperature of 25˚C.
*3. If the operating voltage exceeds 1.05 times the rated voltage, it will cause permanent damage to the device.
*4. The input value of voltage and current shall not be less than 5%F.S.
*5. For the voltage class of 1200V model, the relationship between its rated input power and input voltage is shown in the following figure：

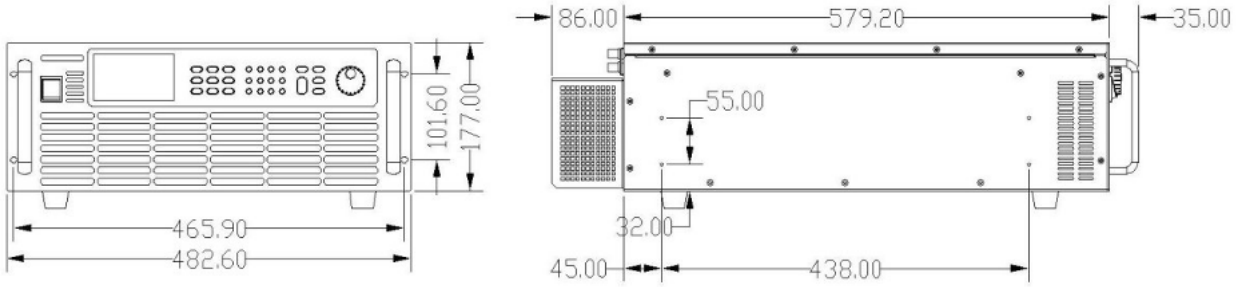


A / AL / E Function configuration list

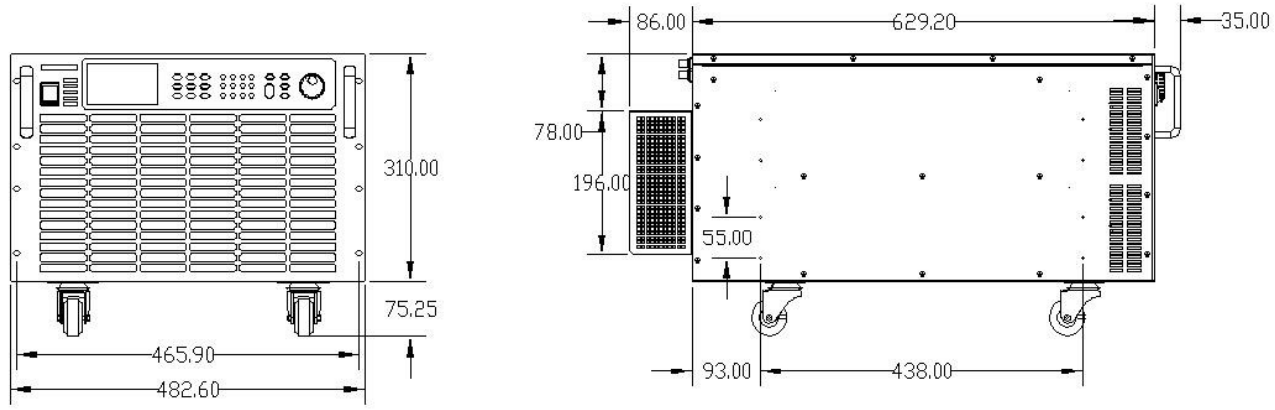
Function list	A	AL	E
Constant current (CCH/CCL)	✓	✓	✓
Constant voltage (CVH/CVL)	✓	✓	✓
Constant resistance (CR)	✓	✓	✓
Constant power (CP)	✓	✓	✓
Dynamic current (CCDH/CCDL)	✓	✓	✓
Dynamic resistance (CRD)	✓	✓	×
Dynamic power (CPD)	✓	✓	×
Sequence (SEQ)	✓	✓	✓
Auto(AUTO)	✓	✓	✓
Over current protection (OCP)	✓	✓	✓
Over power protection (OPP)	✓	✓	✓
Discharge (DISCHARGE)	✓	✓	✓
Load effect (LOEF)	✓	✓	✓
Discharge resistance (ESR)	✓	✓	✓
LED simulation (LED)	✓	✓	×
Dynamic scanning (SWEEP)	✓	✓	✓
CV+CC	✓	✓	×
CR+CC	✓	✓	×
CP+CC	✓	✓	×
Save	✓	✓	✓
Recall	✓	✓	✓
Remote compensation	✓	✓	✓
Constant voltage velocity	✓	✓	✓
Simulation programming	✓	✓	✓
External control	✓	✓	✓
Simulation short	✓	✓	✓
Timed load	✓	✓	✓
VON / VOFF	✓	✓	✓
Limit set	✓	✓	✓
Hardware limitation	✓	✓	✓
Protection set	✓	✓	✓
Time measurement	✓	✓	✓
Vpk+/-	✓	✓	✓
Data transmission	1kHz/s	1kHz/s	1kHz/s
Parallel operation	✓	✓	✓
Communication	RS232/RS485/LAN/USB (GPIB, CAN Optional)		

Dimension drawing

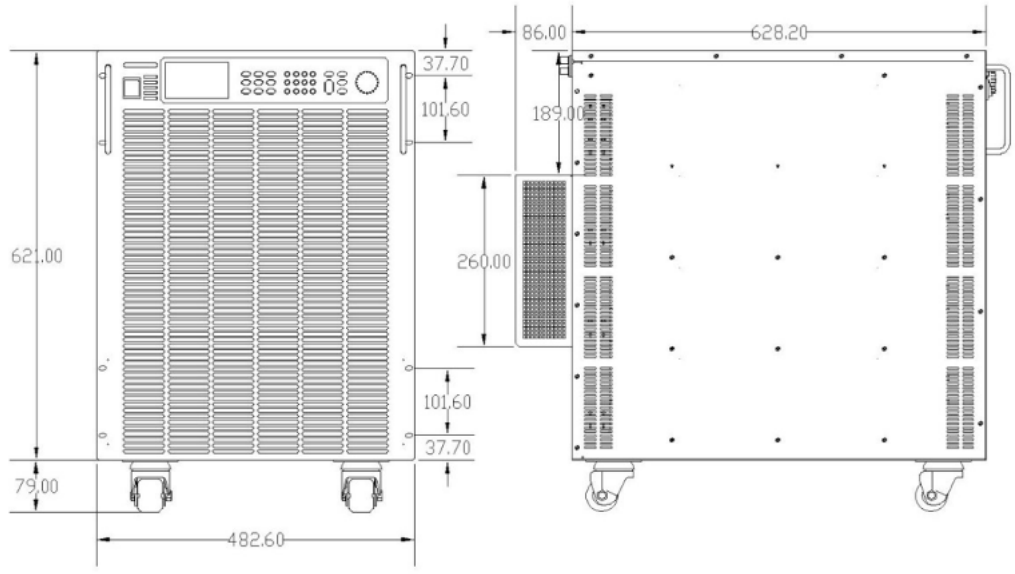
4U model (4kW、6kW) Dimension Drawing



4U model (7kW～12kW) Dimension Drawing



4U model (20kW～24kW) Dimension Drawing



FT6800 series

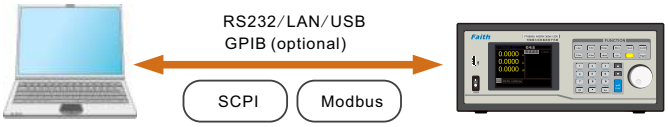
Ultra-high power electronic load

Characteristics

- Single power: 2.6kW ~ 52kW, can be expanded to 300kW through master/slave cascade;
- 0.05% accuracy, 0.1mA/0.1mV resolution, 20kHz dynamic frequency control;
- Quick call, OCP/OVP test, automatic test function, easy to operate and flexible;
- External simulation programming function, which can realize complex carrier shape simulation;
- One-click testing of power battery and supercapacitor test functions;
- Comprehensive protection function: over voltage, over current, over temperature, current limit, power limit, input reverse connection, etc;
- TFT color LCD display, English and Chinese menu interface;
- Provide a variety of remote communication interfaces: RS232, LAN, USB, GPIB (optional);
- SCPI and ModBus-RTU protocols are available;
- Chinese simplified, traditional, English three kinds of operation interface and software interface.

Multi-interface and multi-protocol

The FT6800 series is equipped with multiple communication interfaces and supports both SCPI and Modbus communication protocols. Users can configure the system on the menu according to their needs, which makes the system integration more flexible.



Summary

FT6800 series high power programmable DC electronic load, based on high reliability, high stability of the design of multi-function, large capacity electronic load products. The loop control unit has high bandwidth, strong anti-oscillation ability, and can adapt to all kinds of power supplies to the greatest extent; The power module fast fusing protection design ensures the continuous working ability of the whole machine to the greatest extent.

FT6800 series product line is rich, voltage 40V, 120V, 500V, 800V, 1000V, 1200V multiple grades, single power range from 2.6kW to 52kW, a single current up to 2400A. Wider working range, extremely fast dynamic frequency, can effectively meet most of the test needs.

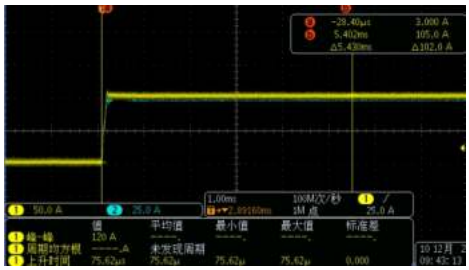
FT6800 series interface using color LCD display, with good resolution. With the full number keyboard, the operation is very simple. It is equipped with LAN, RS232, USB, GPIB (optional) and other communication interfaces and analog interfaces, which supports both SCPI and ModBus communication protocols, providing great convenience for system integration applications.

Application field

- Power battery, lead-acid battery, fuel cell discharge test;
- BMS and battery protection device testing;
- DC charging pile, charging module, vehicle charger, A/D power converter and other power electronic power device testing;
- Test high-power switching power supply, UPS power supply, communication power supply, server power supply;
- Virtual load testing of solar arrays and industrial motors.

Cascad

The FT6800 series supports the master-slave cascading function to realize the parallel use of multiple loads of the same model, and the maximum power can be extended to 300kW. In cascaded mode, users only need to control the hosts. Each slave automatically replicates the load parameters of the hosts to achieve independent flow balancing. The cascaded system can achieve all the functions of a single machine, including on-load in CV mode.



When two master-slave cascades are loaded, the current waveforms coincide completely

Battery test

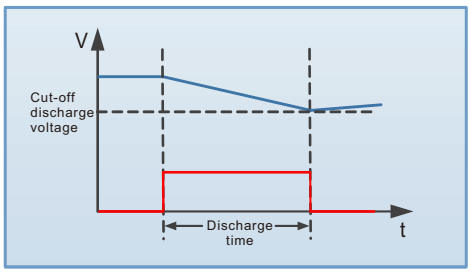
The internal resistance and capacity of battery are important indexes for evaluating battery parameters. To facilitate testing, the FT6800 series load provides battery testing functions, including battery internal resistance testing and battery capacity testing.

Battery internal resistance test

The FT6800 series load is tested by direct current discharge (DCR).

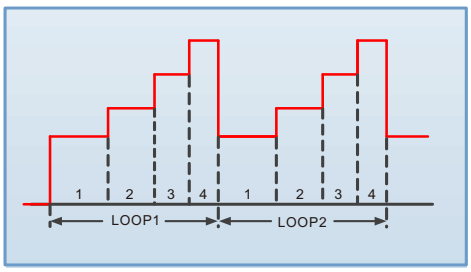
Battery capacity test

This function uses constant current discharge. During the discharge process, the discharge quantity, discharge capacity and discharge time are recorded.



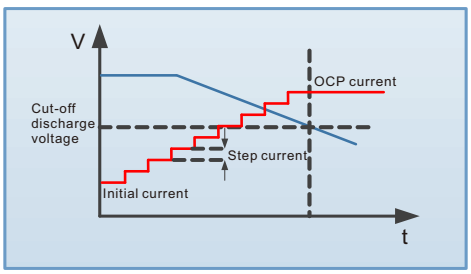
Sequence function

The FT6800 series of electronic loads provides serial testing capabilities. Users can edit the test sequence of a load to simulate various changes at the load input. Four modes of CC, CV, CP and CR were tested in sequence. The electronic load can store up to 20 sequence files, each file can perform up to 50 steps, and the maximum time of a single step can be set to 0.1ms ~ 90000s, which is suitable for various time-load tests. At the same time, the user can also set the number of cycles of the sequence and the switching mode.



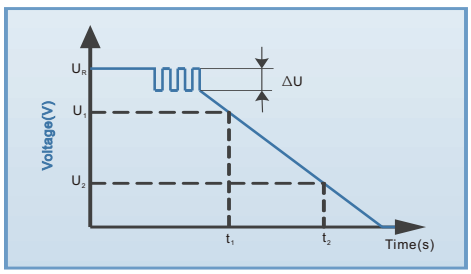
OCP test

The FT6800 series load itself provides OCP testing, which is mainly used to test the BMS, the overcurrent and overpower point of the power module. During OCP testing, the overcurrent protection point of the tested object will be automatically found and recorded in IMAX, PMAX. Combined with the high and low limit values of the test parameters, it can automatically determine whether the test results exceed the set specifications, saving time for product design verification and production line system testing.



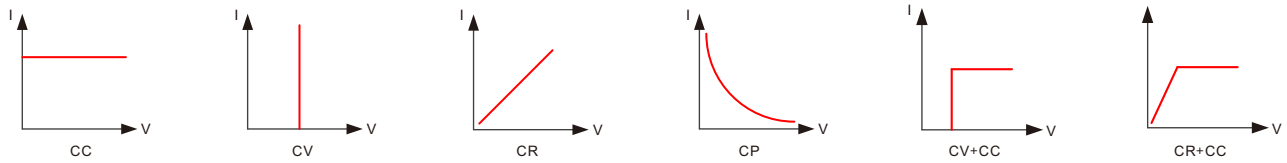
Supercapacitor test

The internal resistance and capacity of ultracapacitors are important indicators for evaluating capacitance parameters. In order to facilitate ultracapacitor testing, FT6800 series loads provide ultracapacitor testing functions. This function can test the internal resistance and capacity of the supercapacitor at the same time. The discharge current, discharge termination point and capacity calculation start and end point of the supercapacitor can be set to test.



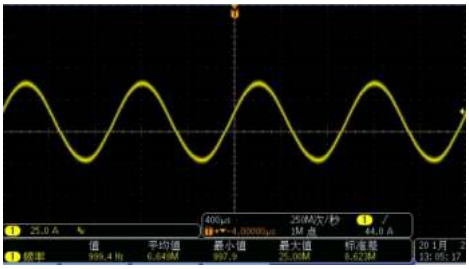
Multiple operating modes

FT6800 series has four basic operating modes of constant current, constant voltage, constant resistance and constant power, which can meet a wide range of test needs. At the same time, it also has the function of CV+CC, CR+CC composite operation mode. Users can set the current limit value according to their own test requirements to avoid overcurrent damage to the test product during the test process. Among them, CV+CC mode can be applied to simulate battery charging characteristics, test charging piles and similar products such as vehicle chargers. CR+CC mode simulates power supply voltage current limitation and accuracy testing.

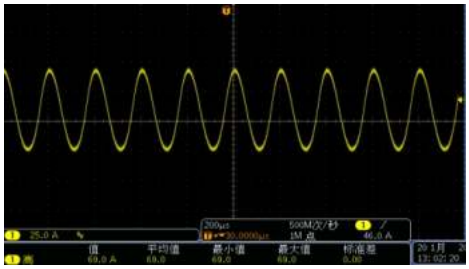


External simulation programming

The FT6800 series has external analog programming capabilities. Other devices can continuously control the load via an external voltage signal (DC or AC). The external voltage signal of 0 ~ 10V corresponds to 0 ~ 100% full scale on-load current. This function can also be used for various complex band carrier shape tests.



1kHz sine wave



5kH sine wave

Computer graphical operation software

The FT6800 system provides a functional software with virtual instrument function, which can export test data, generate images, and print reports. The software displays images and data in real time, which is more intuitive and convenient for comparison.

Ordering information

Model	Specification	Model	Specification	Model	Specification
FT6803A	2.6kW/300A/120V	FT6812A	8kW/160A/800V	FT68016C	16kW/320A/800V
FT6804A	2.6kW/100A/500V	FT6813A	8kW/160A/1000V	FT68016D	16kW/320A/1kV
FT6805A	4kW/300A/120V	FT6814A	12kW/600A/120V	FT68016E	16kW/240A/1.2kV
FT6806A	4kW/100A/500V	FT6815A	12kW/300A/500V	FT68020A	20kW/900A/120V
FT6807A	5.2kW/600A/120V	FT6817A	12kW/240A/800V	FT68020B	20kW/500A/500V
FT6808A	5.2kW/200A/500V	FT6818A	12kW/240A/1kV	FT68020C	20kW/400A/800V
FT6809A	5.2kW/60A/800V	FT6819A	12kW/180A/1.2kV	FT68020D	20kW/400A/1kV
FT6810A	8kW/600A/120V	FT68016A	16kW/900A/120V	FT68020E	20kW/300A/1.2kV
FT6811A	8kW/200A/500V	FT68016B	16kW/400A/500V		

Optional information

Name	Specification	Instruction
GPIB adapter card	Suffix G	

* Optional test cables and other optional parts, the relevant specifications and models are detailed in the “Optional Accessories” section of this manual.

Specification parameters-1 FT6800 series has many models, only some of them are listed for reference.

Model	FT6803A		FT6804A		FT6805A		FT6806A	
Voltage	120V		500V		120V		500V	
Current	300A		100A		300A		100A	
Power	2600W		2600W		4000W		4000W	
Full current minimum operating voltage	2V/300A		4.5V/100A		2V/300A		4.5V/100A	
Constant current								
Range	0-30A	0-300A	0-10A	0-100A	0-30A	0-300A	0-10A	0-100A
Resolution	0.5mA	5mA	0.2mA	2mA	0.6mA	6mA	0.2mA	2mA
Precision	0.1%+0.15%F.S.	0.05%+0.1%F.S.	0.1%+0.15%F.S.	0.05%+0.1%F.S.	0.1%+0.15%F.S.	0.05%+0.1%F.S.	0.1%+0.15%F.S.	0.05%+0.1%F.S.
Constant voltage								
Range	0-12V	0-120V	0-50V	0-500V	0-12V	0-120V	0-50V	0-500V
Resolution	0.2mV	2mV	1mV	10mV	0.2mV	2mV	1mV	10mV
Precision	0. 05%+0. 05%. S.							
Constant power								
Range	0-2600W		0-2600W		0-4000W		0-4000W	
Resolution	50mW		50mW		70mW		70mW	
Precision	0. 5%+1%F. S.		0. 5%+1%F. S.		0. 2%+0. 3%F. S.		0. 2%+0. 3%F. S.	
Constant resistance								
Range	0.004-40Ω	0.08-640Ω	0.05-500Ω	1-8000Ω	0.004-40Ω	0.08-640Ω	0.05-500Ω	1-8000Ω
Precision	0.01%+0.075S	0.01%+0.005S	0.01%+0.0062S	0.01%+0.0004S	0.01%+0.083S	0.01%+0.0052S	0.01%+0.025S	0.01%+420uS
Resolution	16bits							
Slope								
Current slope range	5-300A/ms	300-15000A/ms	1-100A/ms	100-5000A/ms	5-300A/ms	300-15000A/ms	1-100A/ms	100-5000A/ms
Voltage slope range	1.0-50V/ms	50-500V/ms	4.0-200V/ms	200-2000V/ms	1.0-50V/ms	50-500V/ms	4.0-200V/ms	200-2000V/ms
Power slope range	5-300A/ms	300-15000A/ms	1-100A/ms	100-5000A/ms	5-300A/ms	300-15000A/ms	1-100A/ms	100-5000A/ms
Resistance slope range	5-300A/ms	300-15000A/ms	1-100A/ms	100-5000A/ms	5-300A/ms	300-15000A/ms	1-100A/ms	100-5000A/ms
Precision	（1±35%）* Set value							
Voltage measurement								
Range	0-12V	0-120V	0-50V	0-500V	0-12V	0-120V	0-50V	0-500V
Precision	0.025%+0.025%F.S.							
Current measurement								
Range	0-30A	0-300A	0-10A	0-100A	0-30A	0-300A	0-10A	0-100A
Precision	0.1%+0.15%F.S.	0.05%+0.1%F.S.	0.1%+0.15%F.S.	0.05%+0.1%F.S.	0.1%+0.15%F.S.	0.05%+0.1%F.S.	0.1%+0.15%F.S.	0.05%+0.1%F.S.
Power measurement								
Range	0-2600W		0-2600W		0-4000W		0-4000W	
Precision	0. 2%+0. 3%F. S							
Transient measurement								
T1&T2	0.025-60ms	1-60000ms	0.025-60ms	1-60000ms	0.025-60ms	1-60000ms	0.025-60ms	1-60000ms
Resolution	1us	1ms	1us	1ms	1us	1ms	1us	1ms
Precision	1us+100ppm	1ms+100ppm	1us+100ppm	1ms+100ppm	1us+100ppm	1ms+100ppm	1us+100ppm	1ms+100ppm
Dimension	440(W)×200(H)×630(D)							
Temperature specification	Protection temperature 85℃, operating temperature 0 ~ 40℃, full power operating temperature 0 ~ 25℃.							

Specification parameters-2 FT6800 series has many models, only some of them are listed for reference.

Model	FT6807A		FT6808A		FT6810A		FT6811A	
Voltage	120V		500V		120V		500V	
Current	600A		200A		600A		200A	
Power	5200W		5200W		8000W		8000W	
Full current minimum operating voltage	2. 5V/600A		4. 5V/200A		2. 5V/600A		4. 5V/200A	
Constant current								
Range	0-60A	0-600A	0-20A	0-200A	0-60A	0-600A	0-20A	0-200A
Resolution	1mA	10mA	0. 4mA	4mA	1mA	10mA	0. 4mA	4mA
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 1%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 1%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 1%F. S.	0.1%+0.15%F.S.	0.1%+0.1%F.S.
Constant voltage								
Range	0-12V	0-120V	0-50V	0-500V	0-12V	0-120V	0-50V	0-500V
Resolution	0. 2mV	2mV	1mV	10mV	0. 2mV	2mV	1mV	10mV
Precision	0. 05%+0. 05%F. S.							
Constant power								
Range	0-5200W		0-5200W		0-8000W		0-8000W	
Resolution	90mW		90mW		140mW		140mW	
Precision	0. 2%+0. 3%F. S.							
Constant resistance								
Range	0. 002～20Ω	0. 04～320Ω	0. 025～250Ω	0. 5～4000Ω	0. 002～20Ω	0. 04～320Ω	0. 025～250Ω	0. 5～4000Ω
Precision	0. 01%+0. 15S	0. 01%+0. 01S	0. 01%+0. 12S	0. 01%+830uS	0. 01%+0. 15S	0. 01%+0. 01S	0. 01%+0. 012S	0. 01%+830uS
Resolution	16bits							
Slope								
Current slope range	10-600A/ms	600-30000A/ms	3. 2-160A/ms	160-8000A/ms	10-600A/ms	600-30000A/ms	4-200A/ms	200-10000A/ms
Voltage slope range	1. 0-50V/ms	50-500V/ms	4. 0-200V/ms	200-2000V/ms	1-50V/ms	50-500V/ms	4-200V/ms	200-2000V/ms
Power slope range	10-600A/ms	600-30000A/ms	3. 2-160A/ms	160-8000A/ms	10-600A/ms	600-30000A/ms	4-200A/ms	200-10000A/ms
Resistance slope range	10-600A/ms	600-30000A/ms	3. 2-160A/ms	160-8000A/ms	10-600A/ms	600-30000A/ms	4-200A/ms	200-10000A/ms
Precision	（1±35%）* Set value							
Voltage measurement								
Range	0-12V	0-120V	0-50V	0-500V	0-12V	0-120V	0-50V	0-500V
Precision	0. 025%+0. 025%F. S.							
Current measurement								
Range	0-60A	0-600A	0-20A	0-200A	0-60A	0-600A	0-20A	0-300A
Precision	0.1%+0.15%F.S.	0.1%+0.1%F.S.	0.1%+0.15%F.S.	0.1%+0.1%F.S.	0.1%+0.15%F.S.	0.1%+0.1%F.S.	0.1%+0.15%F.S.	0.1%+0.1%F.S.
Power measurement								
Range	0-5200W		0-5200W		0-8000W		0-8000W	
Precision	0. 2%+0. 3%F. S							
Transient measurement								
T1&T2	0. 025-60ms	1-60000ms	0. 025-60ms	1-60000ms	0. 025-60ms	1-60000ms	0. 025-60ms	1-60000ms
Resolution	1us	1ms	1us	1ms	1us	1ms	1us	1ms
Precision	1us+100ppm	1ms+100ppm	1us+100ppm	1ms+100ppm	1us+100ppm	1ms+100ppm	1us+100ppm	1ms+100ppm
Dimension	440（W）×420（H）×630（D）							
Temperature specification	Protection temperature 85℃, operating temperature 0 ~ 40℃, full power operating temperature 0 ~ 25℃.							

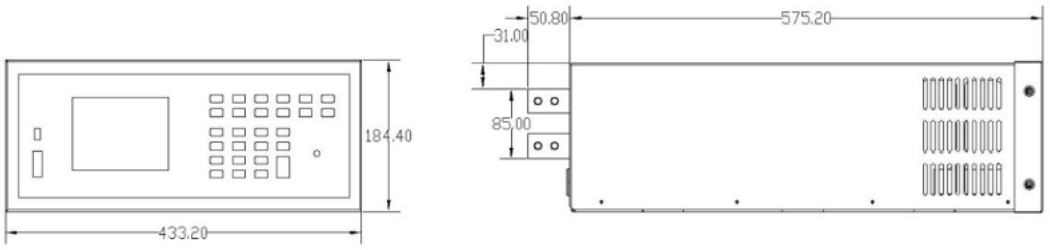
* All specifications are subject to change without notice.

1. Meet the rated specifications in the ambient temperature range of 25±5.

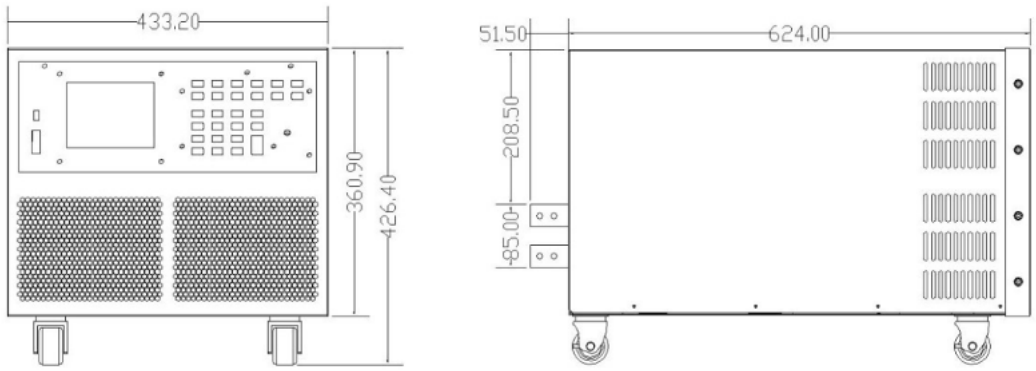
2. If the operating voltage exceeds 1.05 times the rated voltage, permanent damage may be caused to the device.

Dimension drawing

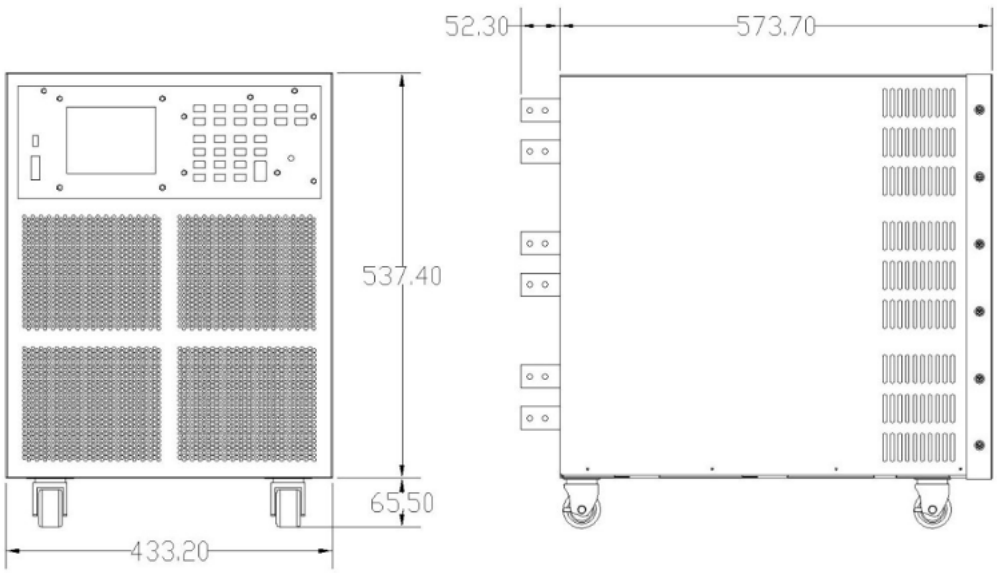
2.6kW～4kW Model Dimension Drawing



5.2kW～8kW Model Dimension Drawing



12kW Model Dimension Drawing



FTR9000 series

Feedback high power programmable DC electronic load

Characteristic

- Single machine range: Voltage: 0 ~ 2250V, Current: 0 ~ 4500A , Power: 0 ~ 180kW;
- Master/slave parallel expansion power up to 1.8MW;
- Voltage accuracy: 0.05%+0.05%F.S. Current accuracy: 0.1%+0.1%F.S.;
- Power factor 0.99, the overall efficiency is higher than 93%;
- Automatic line loss compensation;
- With constant voltage, constant current, constant power, constant resistance function;
- Voltage and current slope can be set;
- Provides the battery discharge test function;
- With sequence and waveform functions, can achieve such as automotive electronic test voltage waveform, user-defined and other complex voltage and current waveform;
- Over voltage, over current, over power, over temperature, under voltage, power failure, island protection and other comprehensive protection functions;
- High voltage isolation digital, analog, monitoring, control interface;
- Communication ports LAN and USB are standard, RS485, CAN, or GPIB are optional;
- Communication protocol Support SCPI, MODBUS, CAN-OPEN (optional) protocol, provide host computer and SDK development kit for secondary development;
- TFT color LCD screen, Chinese, English, Chinese menu interface;
- Intelligent fan control;
- Standard 19-inch rack design, over 16U can choose wheel design;

Application field

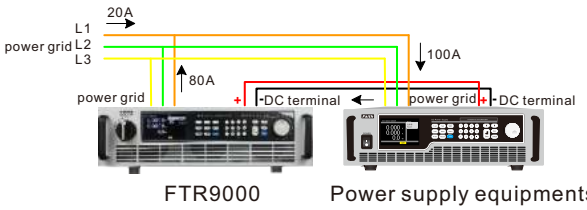
- Energy storage, microgrid equipment production and development;
- Production and development of server power supply, UPS and inverter;
- Solar arrays, wind power applications;
- Fuel cell, power battery, lead battery, ultracapacitor application;
- Aerospace, railway, new energy vehicles, motor drive test and application;
- UAV, laser, sensor applications.

Summary

The FTR9000 series is a feedback programmable DC electronic load. It not only has the function of traditional consumption load, but also returns the energy consumed by the traditional load to the power grid cleanly to achieve the purpose of energy saving. Can be widely used in new energy equipment testing, lithium ion, fuel and other battery discharge test, automatic test system, AC/DC, DC/DC and other unidirectional module product testing, aging. The product is equipped with a rich communication, programming interface and color screen and a variety of text menu interface, easy to operate intuitive, power electronics, new energy, sensors, motor drive, system integration and other industries commonly used equipment.

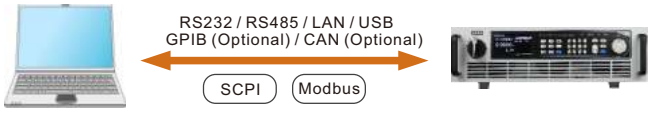
Energy feedback

FTR9000 series products can recover the output energy of DC source equipment and return it to the internal power grid without pollution, and the recovered energy can be directly used by internal electrical appliances, reducing the heat generated by energy consumption, so as to achieve a win-win situation of work and energy saving.



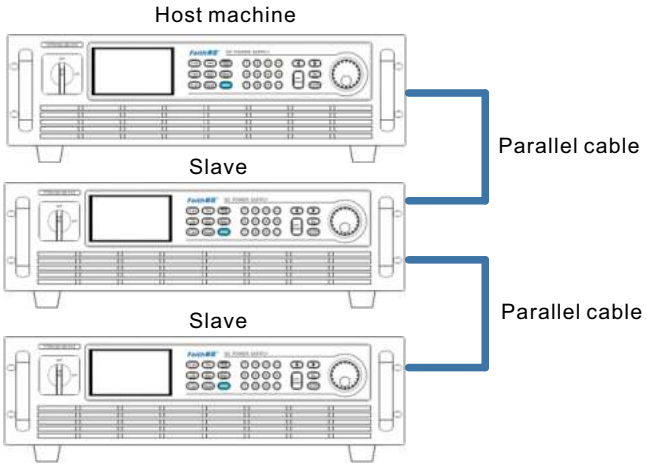
Multi-interface and multi-protocol

The FTR9000 series is equipped with a variety of communication interfaces, and supports both SCPI and Modbus communication protocols. Users can configure the system on the menu according to their needs, which makes the system integration more flexible.



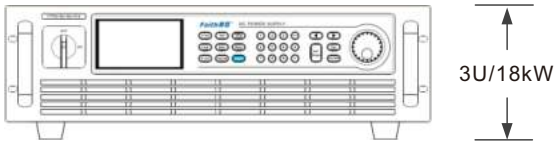
Cascade

The cascading function of the FTR9000 series supports parallel use of up to 10 loads, extending the power usage range of electronic loads. During the cascading process, each load automatically equalizes traffic, and the slave automatically copies the load parameters of the host. Single machine can also be used independently, more flexible power configuration.



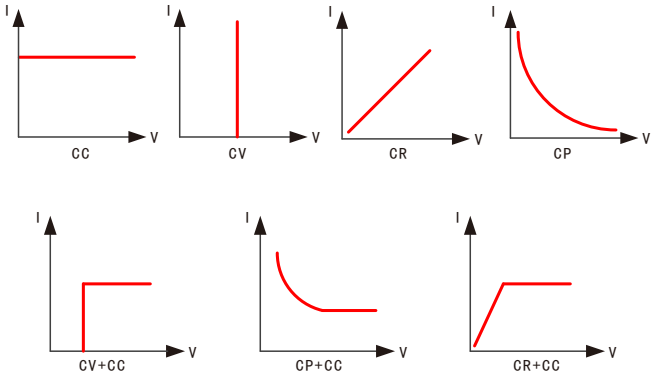
3U/18kW High power density

The FTR9000 series feedback high power programmable DC electronic load adopts a high power density design, which reduces the volume of the same power by 80% compared to the ordinary energy consumption electronic load, and is more flexible and convenient to use.



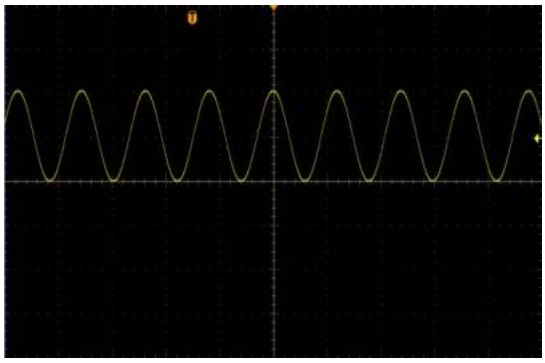
Multiple operating modes

The FTR9000 series has four basic operating modes of constant current, constant voltage, constant resistance and constant power, which can meet a wide range of test needs. At the same time, it also has the function of CV+CC, CR+CC, CP+CC multiple composite operation modes. Users can set the current limit value according to their own test requirements to avoid overcurrent damage to the test product during the test process. Among them, CV+CC mode can be applied to simulate battery charging characteristics, test charging piles and similar products such as vehicle chargers. CR+CC mode simulates power supply voltage current limitation and accuracy testing.



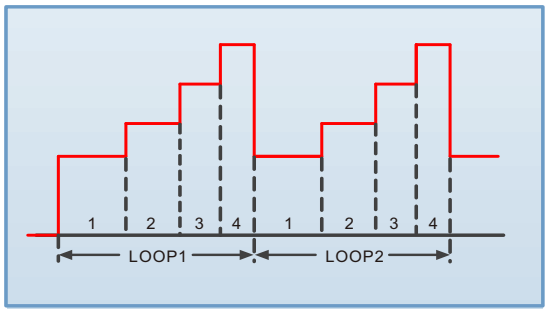
Sine wave dynamic load

The FTR9000 series has sine-wave current-carrying capability and can be used for impedance analysis and testing of fuel cells.



Sequence and waveform functions

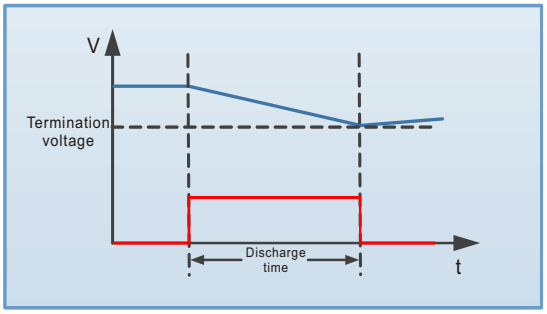
The FTR9000 series of electronic loads provides sequential test capabilities for editing up to 10 test files with 100 steps each. It supports load timing changes in CC, CV, CR, CP and other modes, and also supports sequence editing functions such as file link. A maximum of 5000 timing steps can be edited. The time range of a single step is 1ms to 99999s.



Battery test

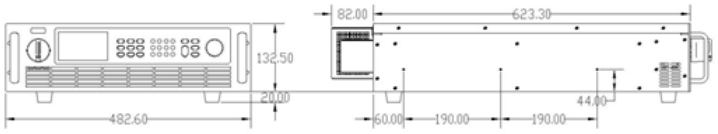
The FTR9000 series electronic loads feature battery testing. Three discharge modes of fixed current, fixed resistance and fixed power are provided, and the discharge cutoff conditions can be set by itself: cut-off voltage, cut-off time and cut-off power. If any of the three conditions are met, the discharge stops. During the discharge process, the discharge quantity and discharge time are recorded.

The FTR9000 series is tested for internal resistance and capacity by direct current discharge (DCR).

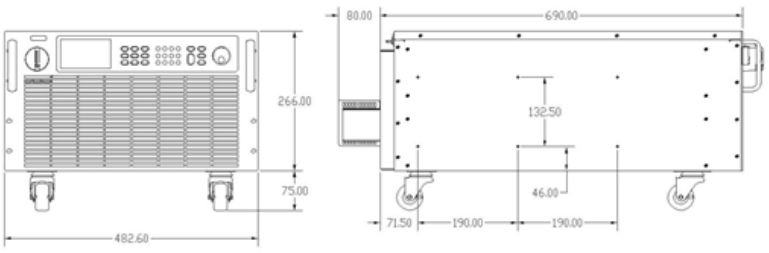


Dimension Drawing

5kW～18kW Model Dimension Drawing



20kW～36kW Model Dimension Drawing



Ordering Information *Higher power specifications are not listed.

Voltage	Model	Current	Power	Dimension	Voltage	Model	Current	Power	Dimension
80V	FTR9050-80-150	150A	5kW	3U	300V	FTR9060-300-75	75A	6kW	3U
	FTR9100-80-300	300A	10kW	3U		FTR9120-300-150	150A	12kW	3U
	FTR9150-80-450	450A	15kW	3U		FTR9180-300-225	225A	18kW	3U
	FTR9300-80-900	900A	30kW	6U		FTR9360-300-450	450A	36kW	6U
	FTR9450-80-1350	1350A	45kW	16U		FTR9540-300-675	675A	54kW	16U
	FTR9600-80-1800	1800A	60kW	16U		FTR9720-300-900	900A	72kW	16U
	FTR9750-80-2250	2250A	75kW	22U		FTR9900-300-1125	1125A	90kW	22U
Voltage	Model	Current	Power	Dimension	Voltage	Model	Current	Power	Dimension
500V	FTR9060-500-40	40A	6kW	3U	800V	FTR9060-800-25	25A	6kW	3U
	FTR9120-500-80	80A	12kW	3U		FTR9120-800-50	50A	12kW	3U
	FTR9180-500-120	120A	18kW	3U		FTR9180-800-75	75A	18kW	3U
	FTR9360-500-240	240A	36kW	6U		FTR9360-800-150	150A	36kW	6U
	FTR9540-500-360	360A	54kW	16U		FTR9540-800-225	225A	54kW	16U
	FTR9720-500-480	480A	72kW	16U		FTR9720-800-300	300A	72kW	16U
	FTR9900-500-600	600A	90kW	22U		FTR9900-800-375	375A	90kW	22U
Voltage	Model	Current	Power	Dimension	Voltage	Model	Current	Power	Dimension
1000V	FTR9120-1000-40	40A	12kW	3U	1500V	FTR9120-1500-25	25A	12kW	3U
	FTR9240-1000-80	80A	24kW	6U		FTR9180-1500-40	40A	18kW	3U
	FTR9360-1000-120	120A	36kW	16U		FTR9360-1500-80	80A	36kW	6U
	FTR9480-1000-160	160A	48kW	16U		FTR9540-1500-120	120A	54kW	16U
	FTR9600-1000-200	200A	60kW	22U		FTR9720-1500-160	160A	72kW	16U
Voltage	Model	Current	Power	Dimension	Voltage	Model	Current	Power	Dimension
2250V	FTR9180-2250-25	25A	18kW	3U	2250V	FTR9720-2250-100	100A	72kW	16U
	FTR9360-2250-50	50A	36kW	6U		FTR9900-2250-125	125A	90kW	22U
	FTR9540-2250-75	75A	54kW	16U		FTR91080-2250-150	150A	108kW	22U

Optional information

Name	Model	Instructions
GPIB Interface	Suffix G	
CAN+485 Interface	Suffix R	
Composite signal port	Suffix F	

* Test cables are optional. For details about specifications and models, see Optional Accessories in this manual.

Specification information-1

Model	FTR9050-80-150	FTR9060-300-75	FTR9060-500-40	FTR9060-800-25
Voltage	80V	300V	500V	800V
Current	150A	75A	40A	25A
Resistance	0. 02～106Ω	0. 3～800Ω	0. 5～2. 5kΩ	1. 2～6kΩ
Power	5kW	6kW		
Minimum on-load voltage	0. 5V@150A	2V@75A	3. 1V@40A	2. 5V@25A
Current slope(Max)	75A/ms	37. 5A/ms	20A/ms	12. 5A/ms
Model	FTR9100-80-300	FTR9120-300-150	FTR9120-500-80	FTR9120-800-50
Voltage	80V	300V	500V	800V
Current	300A	150A	80A	50A
Resistance	0. 01～50Ω	0. 15～400Ω	0. 25～1. 25kΩ	0. 6～3kΩ
Power	10kW	12kW		
Minimum on-load voltage	0. 5V@300A	2V@150A	3. 1V@80A	2. 5V@50A
Current slope(Max)	150A/ms	75A/ms	40A/ms	25A/ms
Model	FTR9150-80-450	FTR9180-300-225	FTR9180-500-120	FTR9180-800-75
Voltage	80V	300V	500V	800V
Current	450A	225A	120A	75A
Resistance	0. 006～35Ω	0. 1～266Ω	0. 16～833Ω	0. 4～2kΩ
Power	15kW	18kW		
Minimum on-load voltage	0. 5V@450A	2V@225A	3. 1V@120A	2. 5V@75A
Current slope(Max)	225A/ms	112. 5A/ms	60A/ms	37. 5A/ms
Model	FTR9300-80-900	FTR9360-300-450	FTR9360-500-240	FTR9360-800-150
Voltage	80V	300V	500V	800V
Current	900 A	450A	240A	150A
Resistance	0. 003～17Ω	0. 05～133Ω	0. 08～416Ω	0. 2～1kΩ
Power	30kW	36kW		
Minimum on-load voltage	0. 5V@900A	2V@450A	3. 1V@240A	2. 5V@150A
Current slope(Max)	450A/ms	225A/ms	120A/ms	75A/ms
Model	FTR9450-80-1350	FTR9540-300-675	FTR9540-500-360	FTR9540-800-215
Voltage	80V	300V	500V	800V
Current	1350 A	675A	360A	215A
Resistance	0. 002～11Ω	0. 03～88Ω	0. 05～277Ω	0. 1～666Ω
Power	45kW	54kW		
Minimum on-load voltage	0. 5V@1350A	2V@675A	3. 1V@360A	2. 5V@215A
Current slope(Max)	675A/ms	337. 5A/ms	180A/ms	107. 5A/ms
Model	FTR9600-80-1800	FTR9720-300-900	FTR9720-500-480	FTR9720-800-300
Voltage	80V	300V	500V	800V
Current	1800 A	900A	480A	300A
Resistance	0. 002～8. 8Ω	0. 025～66Ω	0. 042～208Ω	0. 1～500Ω
Power	60kW	72kW		
Minimum on-load voltage	0. 5V@1800A	2V@900A	3. 1V@480A	2. 5V@300A
Current slope(Max)	900A/ms	450A/ms	240A/ms	150A/ms
Model	FTR9750-80-2250	FTR9900-300-1125	FTR9900-500-600	FTR9900-800-375
Voltage	80V	300V	500V	800V
Current	2250 A	1125A	600A	375A
Resistance	0. 002～9Ω	0. 02～53Ω	0. 033～166Ω	0. 08～400Ω
Power	75kW	90kW		
Minimum on-load voltage	0. 5V@2250A	2V@1125A	3. 1V@600A	2. 5V@375A
Current slope(Max)	1125A/ms	562. 5A/ms	300A/ms	187. 5A/ms
Model	FTR9900-80-2700	FTR91080-300-1350	FTR91080-500-720	FTR91080-800-450
Voltage	80V	300V	500V	800V
Current	2700 A	1350A	720A	450A
Resistance	0. 001～6Ω	0. 017～44Ω	0. 027～138Ω	0. 066～333Ω
Power	90kW	108kW		
Minimum on-load voltage	0. 5V@2700A	2V@1350A	3. 1V@720A	2. 5V@450A
Current slope(Max)	1350A/ms	675A/ms	360A/ms	225A/ms
Model	FTR91050-80-3150	FTR91260-300-1575	FTR91260-500-840	FTR91260-800-525
Voltage	80V	300V	500V	800V
Current	3150A	1575A	840A	525A
Resistance	0. 001～4. 4Ω	0. 014～38Ω	0. 024～119Ω	0. 057～285Ω
Power	105kW	126kW		
Minimum on-load voltage	0. 5V@3150A	2V@1575A	3. 1V@840A	2. 5V@525A
Current slope(Max)	1575A/ms	787. 5A/ms	420A/ms	262. 5A/ms
Model	FTR91200-80-3600	FTR91440-300-1800	FTR91440-500-960	FTR91440-800-600
Voltage	80V	300V	500V	800V
Current	3600A	1800A	960A	600A
Resistance	0. 001～4. 4Ω	0. 013～33Ω	0. 021～104Ω	0. 05～250Ω
Power	120kW	144kW		
Minimum on-load voltage	0. 5V@3600A	2V@1800A	3. 1V@960A	2. 5V@600A
Current slope(Max)	1800A/ms	900A/ms	480A/ms	300A/ms
Model	FTR91350-80-4050	FTR91620-300-2025	FTR91620-500-1080	FTR91620-800-675
Voltage	80V	300V	500V	800V
Current	4050A	2050A	1080A	675A
Resistance	0. 001～3. 9Ω	0. 011～30Ω	0. 018～92Ω	0. 044～222Ω
Power	135kW	162kW		
Minimum on-load voltage	0. 5V@4050A	2V@2025A	3. 1V@1080A	2. 5V@675A
Current slope(Max)	2025A/ms	1012. 5A/ms	54A/ms	337. 5A/ms
Model	FTR91500-80-4500	FTR91800-300-2250	FTR91800-500-1200	FTR91800-800-750
Voltage	80V	300V	500V	800V
Current	4500A	2250A	1200A	750A
Resistance	0. 001～3. 5Ω	0. 01～26Ω	0. 017～83Ω	0. 04～200Ω
Power	150kW	180kW		
Minimum on-load voltage	0. 5V@4500A	2V@2250A	3. 1V@1200A	2. 5V@750A
Current slope(Max)	2250A/ms	1125A/ms	600A/ms	375A/ms
Constant voltage①				
Resolution	16bits			
Precision	0. 05%+0. 05%F. S.			
Constant current①				
Resolution	16bits			
Precision	0. 1%+0. 1% F. S.			
Constant resistance①				
Resolution	0. 001Ω			
Precision	1%+0. 5%I. F. S.			
Constant power①				
Resolution	1W			
Precision	0. 5%F. S.			
External analog programming①				
Resolution	0～5V corresponds to 0～100%F. S.			
Voltage precision	0. 5%F. S.			
Current precision	0. 5%F. S.			
Voltage measurement①				
Resolution	16bits			
Precision	0. 05%+0. 05%F. S.			
Current measurement①				
Resolution	16bits			
Precision	0. 1%+0. 1% F. S.			
Resistance measurement①				
Resolution	0. 001Ω			
Precision	1%+0. 5%I. F. S.			
Power measurement①				
Resolution	1W			
Precision	0. 5%F. S.			
Transient response	The response time is less than 2ms			
Parallel operation	Supports 10 masters and slaves of the same model with capacity expansion			
Protection	Over-voltage, over-current, over-power, over-temperature, under-voltage, etc.			
Communication interface	LAN、USB serial port(optional GPIB、CAN、RS485)			
Communication protocol	SCPI、MODBUS、CAN-Open protocols(Optional)			
Input characteristic				
Input voltage	340VAC～480VAC, frequency range 45Hz～63Hz			
Power factor	0. 99(typical value)			
efficiency	>93% (typical value)			
Use environment				
Operating temperature	0℃～40℃			
Storage temperature	-20℃～70℃			
Use altitude	<2000m			
Heat dissipation method	Air-cooled, intelligent air control			
Dimension(WxHxD)	5kW～18kW: 482.6mm x 132.5mm x 740.0mm, includes output protection cover			
Weight	5kW≈18kg, 10kW≈25kg, 15kW≈32kg			

Specification information-2

Model	FTR9120-1000-40	FTR9180-1500-40	FTR9180-2250-25
Voltage	1000V	1500V	2250V
Current	40A	40A	25A
Resistance	1～5kΩ	1. 5～7. 5kΩ	3. 6～18k
Power	12kW	18kW	
Minimum on-load voltage	6. 2V@40A	9. 3V@40A	7. 5V@25A
Current slope(Max)	20A/ms	20A/ms	12. 5A/ms
Model	FTR9240-1000-80	FTR9360-1500-80	FTR9360-2250-50
Voltage	1000V	1500V	2250V
Current	80A	80A	50A
Resistance	0. 5～2. 5 kΩ	0. 75～7. 5kΩ	1. 8～9kΩ
Power	24kW	36kW	
Minimum on-load voltage	6. 2V@80A	9. 3V@80A	7. 5V@50A
Current slope(Max)	40A/ms	40A/ms	25A/ms
Model	FTR9360-1000-120	FTR9540-1500-120	FTR9540-2250-75
Voltage	1000V	1500V	2250V
Current	120A	120A	75A
Resistance	0. 33～1. 6kΩ	0. 5～2. 5kΩ	1. 2～6kΩ
Power	36kW	54kW	
Minimum on-load voltage	6. 2V@120A	9. 3V@120A	7. 5V@75A
Current slope(Max)	60A/ms	60A/ms	37. 5A/ms
Model	FTR9480-1000-160	FTR9720-1500-160	FTR9720-2250-100
Voltage	1000V	1500V	2250V
Current	160A	160A	100A
Resistance	0. 25～1. 25kΩ	0. 375～1. 875kΩ	0. 9～4. 5kΩ
Power	48kW	72kW	
Minimum on-load voltage	6. 2V@160A	9. 3V@160A	7. 5V@100A
Current slope(Max)	80A/ms	80A/ms	50A/ms
Model	FTR9600-1000-200	FTR9900-1500-200	FTR9900-2250-125
Voltage	1000V	1500V	2250V
Current	200A	200A	125A
Resistance	0. 2～1kΩ	0. 3～1. 5kΩ	0. 72～3. 6kΩ
Power	60kW	90kW	
Minimum on-load voltage	6. 2V@200A	9. 3V@200A	7. 5V@125A
Current slope(Max)	100A/ms	100A/ms	62. 5A/ms
Model	FTR9720-1000-240	FTR91080-1500-240	FTR91080-2250-150
Voltage	1000V	1500V	2250V
Current	240A	240A	150A
Resistance	0. 166～800Ω	0. 25～1. 25kΩ	0. 6～3kΩ
Power	72kW	108kW	
Minimum on-load voltage	6. 2V@240A	9. 3V@240A	7. 5V@150A
Current slope(Max)	120A/ms	120A/ms	75A/ms
Model	FTR9840-1000-280	FTR91260-1500-280	FTR91260-2250-175
Voltage	1000V	1500V	2250V
Current	280A	280A	175A
Resistance	0. 143～714Ω	0. 214～1. 07kΩ	0. 514～2. 5kΩ
Power	84kW	126kW	
Minimum on-load voltage	6. 2V@280A	9. 3V@280A	7. 5V@175A
Current slope(Max)	140A/ms	140A/ms	87. 5A/ms
Model	FTR9960-1000-320	FTR91440-1500-320	FTR91440-2250-200
Voltage	1000V	1500V	2250V
Current	320A	320A	200A
Resistance	0. 125～625Ω	0. 188～938Ω	0. 45～2. 25kΩ
Power	96kW	144kW	
Minimum on-load voltage	6. 2V@320A	9. 3V@320A	7. 5V@200A
Current slope(Max)	160A/ms	160A/ms	100A/ms
Model	FTR91080-1000-360	FTR91620-1500-360	FTR91620-2250-225
Voltage	1000V	1500V	2250V
Current	360A	360A	225A
Resistance	0. 11～555Ω	0. 167～833Ω	0. 4～2kΩ
Power	108kW	162kW	
Minimum on-load voltage	6. 2V@360A	9. 3V@360A	7. 5V@225A
Current slope(Max)	180A/ms	180A/ms	112. 5A/ms
Model	FTR91200-1000-400	FTR91800-1500-400	FTR91800-2250-250
Voltage	1000V	1500V	2250V
Current	400A	400A	250A
Resistance	0. 1～500Ω	0. 15～750Ω	0. 36～1. 8kΩ
Power	120kW	180kW	
Minimum on-load voltage	6. 2V@400A	9. 3V@400A	7. 5V@250A
Current slope(Max)	200A/ms	200A/ms	125A/ms
Constant voltage①			
Resolution	16bits		
Precision	0. 05%+0. 05%F. S.		
Constant current①			
Resolution	16bits		
Precision	0. 1%+0. 1% F. S.		
Constant resistance①			
Resolution	0. 001Ω		
Precision	1%+0. 5%I. F. S.		
Constant power①			
Resolution	1W		
Precision	1%F. S.		
External analog programming①			
Resolution	0～5V corresponds to 0～100%F.S.		
Voltage precision	0. 5%F. S.		
Current precision	0. 5%F. S.		
Voltage measurement①			
Resolution	16bits		
Precision	0. 05%+0. 05%F. S.		
Current measurement①			
Resolution	16bits		
Precision	0. 1%+0. 1% F. S.		
Resistance measurement①			
Resolution	0. 001Ω		
Precision	1%+0. 5%I. F. S.		
Power measurement①			
Precision	1%F. S.		
Transient response	The response time is less than 2ms		
Parallel operation	Supports 10 masters and slaves of the same model with capacity expansion		
Protection	Over-voltage, over-current, over-power, over-temperature, under-voltage, etc.		
Communication interface	LAN、USB series port (Optional GPIB、CAN、RS485)		
Communication protocol	SCPI、MODBUS、CAN-Open protocols（Optional）		
Input characteristic			
Input Voltage	340VAC～480VAC，frequency range 45Hz～63Hz		
Power factor	0. 99（typical value）		
efficiency	＞93%（typical value）		
Use environment			
Operating temperature	0℃～40℃		
Storage temperature	-20℃～70℃		
Use altitude	＜2000m		
Heat dissipation method	Air-cooled, intelligent air control		
Dimension(WxHxD)	5kW～18kW：482. 6mm x 132. 5mm x 740. 0mm，includes output protection cover		
Weight	5kW≈18kg，10kW≈25kg，15kW≈32kg		

NZ/N series

Ultra-low voltage and high current DC electronic load

Summary

Ultra-low voltage and high current DC electronic load is a highly reliable and high performance electronic load developed on the basis of FT conventional electronic load for fuel cell testing, CPU power supply testing and other low-voltage and high-current testing scenarios. For different current levels, this product contains two series: NZ, N. Its voltage is 0-20V or 40V, of which the NZ series can be 0V full-current load, and the N series is ultra-low voltage full-current load. The maximum load capacity is up to 0V@1200A and 0.2V@5000A, which is an excellent choice for your test with high precision and high cost performance.

Characteristics

- Single machine range:

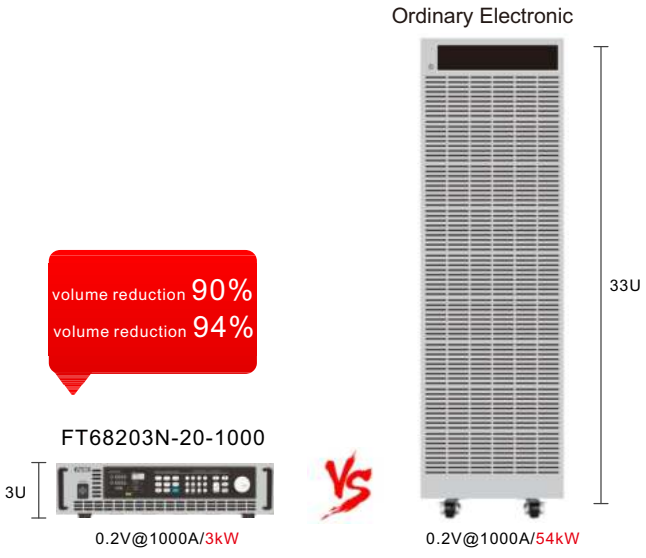
  Voltage: 0 ~ 2250V,

  Current: 0 ~ 4500A ,

  Power: 0 ~ 180kW;
- Master/slave parallel expansion power up to 1.8MW;
- Voltage accuracy: 0.05%+0.05%F.S. Current accuracy: 0.1%+0.1%F.S.;
- Power factor 0.99, the overall efficiency is higher than 93%;
- Automatic line loss compensation;
- With constant voltage, constant current, constant power, constant resistance function;
- Voltage and current slope can be set;
- Provides the battery discharge test function;
- With sequence and waveform functions, can achieve such as automotive electronic test voltage waveform, user-defined and other complex voltage and current waveform;
- Over voltage, over current, over power, over temperature, under voltage, power failure, island protection and other comprehensive protection functions;
- High voltage isolation digital, analog, monitoring, control interface; Communication ports LAN and USB are standard, RS485, CAN, or GPIB are optional;
- Communication protocol Support SCPI, MODBUS, CAN-OPEN (optional) protocol, provide host computer and SDK development kit for secondary development;
- TFT color LCD screen, Chinese, English, Chinese menu interface; Intelligent fan control;
- Standard 19-inch rack design, over 16U can choose wheel design;

Ultra low voltage full current load

Ultra-low voltage and high current DC electronic load with ultra-low internal resistance, the smallest internal resistance <0.2mΩ. FT68203N-20-1000 can carry 1000A of current at 0.2V input with a power of only 3kW, which is only one-eighteenth of the power of an ordinary electronic load under the same low-voltage loading conditions. The smaller test power can provide larger test current, which can greatly reduce the test cost in fuel cell membrane electrode, monolithic cell and short stack test.

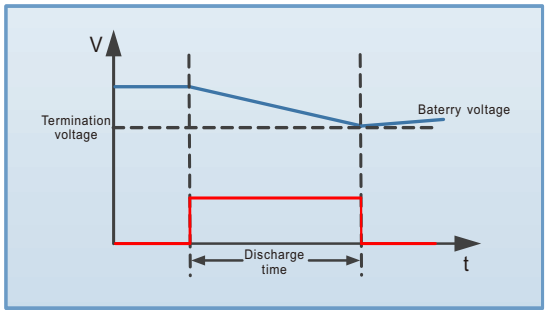


Application field

- Fuel cell testing;
- Battery forced discharge testing;
- CPU and power device power supply system testing;
- Other low-voltage high-current test scenarios.

Battery capacity testing

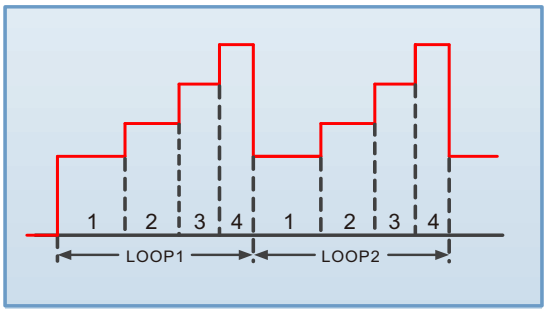
In order to facilitate battery testing, the electronic load provides a battery capacity test function. Battery test includes: battery internal resistance test and battery capacity test. Battery capacity test adopts constant current mode to discharge. During the discharge process, the load automatically records the voltage, current, time, AH and other parameters.



Voltage and current curves during capacity testing

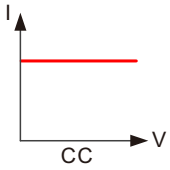
Sequence functions

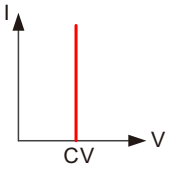
The electronic load provides sequence test function. Users can edit the test sequence of a load by themselves to simulate various changes of the load input, suitable for all kinds of complex load testing.

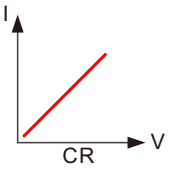


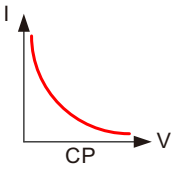
Constant state function

The electronic load has four test modes: constant current, constant voltage, constant resistance and constant power, which can meet a wide range of test requirements. Constant current and constant resistance modes can be used to test whether the output voltage maintains a stable output under different load conditions. For battery chargers and adapters, the Constant Voltage mode varies the output voltage of the charger and adapter to verify that the output current is correct.



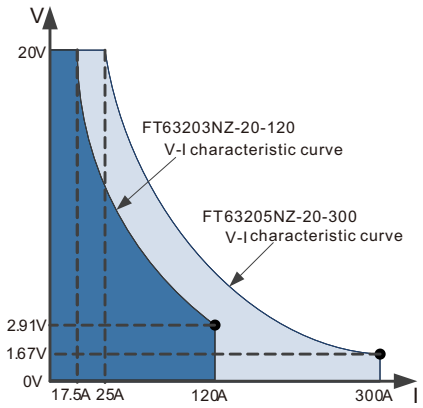






0V input full current carry

NZ series can be loaded with full current at 0V input. The low-voltage and high-current load characteristics provide a strong advantage in fuel cell, battery forced discharge, and CPU power supply system testing.



NZ Series Product Characteristic Curve

Ordering information

NZ series related products				
Voltage	Model	Specification	Dimension	Remark
20V	FT682003NZ-20-120	20V/120A/350W(0V@120A)	2U	0V full current with load
	FT682011NZ-20-120	20V/120A/1100W(0V@120A)	2U	
	FT682005NZ-20-300	20V/300A/500W(0V@300A)	2U	
	FT682012NZ-20-300	20V/300A/1.2kW(0V@300A)	4U	
	FT68203NZ-20-300	20V/300A/3kW(0V@300A)	4U	
	FT682024NZ-20-600	20V/600A/2.4kW(0V@600A)	7U	
	FT68206NZ-20-600	20V/600A/6kW(0V@600A)	7U	
	FT682036NZ-20-900	20V/900A/3.6kW(0V@900A)	11U	
	FT68209NZ-20-900	20V/900A/9kW(0V@900A)	11U	
	FT682048NZ-20-1200	20V/1200A/4.8kW(0V@1200A)	14U	
	FT68212NZ-20-1200	20V/1200A/12kW(0V@1200A)	14U	
N series related products				
Voltage	Model	Specification	Dimension	Remark
40V	FT682007N-40-150	40V/150A/700W (0.2V@150A)	3U	0.2V full current with load
	FT682015N-40-300	40V/300A/1.5kW (0.2V@300A)	3U	
	FT682022N-40-450	40V/450A/2.25kW (0.2V@450A)	3U	
	FT68203N-40-600	40V/600A/3kW(0.2@600A)	3U	
	FT682045N-40-900	40V/900A/4.5kW(0.2@900A)	5U	
	FT68206N-40-1200	40V/1200A/6kW(0.2@1200A)	5U	
	FT68209N-40-1800	40V/1800A/9kW(0.2@1800A)	12U	
	FT68212N-40-2400	40V/2400A/12kW(0.2@2400A)	12U	
	FT68215N-40-3000	40V/3000A/15kW(0.2@3000A)	12U	
20V	FT682007N-20-250	20V/250A/700W (0.2V@250A)	3U	
	FT682015N-20-500	20V/500A/1.5kW (0.2V@500A)	3U	
	FT682022N-20-750	20V/750A/2.25kW (0.2V@750A)	3U	
	FT68203N-20-1000	20V/1000A/3kW(0.2@1000A)	3U	
	FT682045N-20-1500	20V/1500A/4.5kW(0.2@1500A)	5U	
	FT68206N-20-2000	20V/2000A/6kW(0.2@2000A)	5U	
	FT68209N-20-3000	20V/3000A/9kW(0.2@3000A)	12U	
	FT68212N-20-4000	20V/4000A/12kW(0.2@4000A)	12U	
	FT68215N-20-5000	20V/5000A/15kW(0.2@5000A)	12U	
Larger specifications can be customized				

Specification parameters-1

Model	FT682024NZ-20-600		FT682036NZ-20-900		FT682048NZ-20-1200	
Voltage*3	20V		20V		20V	
Current	600A		900A		1200A	
Power*2	2400W		3600W		4800W	
Full current minimum operating voltage	-1. 5V/600A		-1. 5V/900A		-1. 5V/1200A	
Constant current						
Range	0～60A	0～600A	0～90A	0～900A	0～120A	0～1200A
Resolution	1mA	10mA	1. 5mA	15mA	2mA	20mA
Precision	0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.	
Constant voltage						
Range	0～4V	0～20V	0～4V	0～20V	0～4V	0～20V
Resolution	0. 08mV	0. 4mV	0. 08mV	0. 4mV	0. 08mV	0. 4mV
Precision	0.025%+0.05%F.S.	0.025%+0.025%F.S.	0.025%+0.05%F.S.	0.025%+0.025%F.S.	0.025%+0.05%F.S.	0.025%+0.025%F.S.
Constant power						
Range	0～2400W		0～3600W		0～4, 800W	
Resolution	40mW		60mW		80mW	
Precision	0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.	
Constant resistance						
Range	0. 0012～6. 7Ω	0. 012～33Ω	0. 0008～4. 4Ω	0. 008～22Ω	0. 0006～3. 3Ω	0. 006～16. 5Ω
Precision	Vin/Rset*(0. 2%)+0. 2%IF. S.		Vin/Rset*(0. 2%)+0. 2%IF. S.		Vin/Rset*(0. 2%)+0. 2%IF. S.	
Dynamic measurement						
T1&T2	10us～60s		10us～60s		10us～60s	
Precision	1us+20ppm		1us+20ppm		1us+20ppm	
Current slope	0.0001～0.6A/us	0.0001～6A/us	0.0001～0.9A/us	0. 0001～9A/us	0.0001～1.2A/us	0. 0001～12A/us
Current measurement						
Range	0～60A	0～600A	0～90A	0～900A	0～120A	0～1200A
Resolution	1mA	10mA	1. 5mA	15mA	2mA	20mA
Precision	0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.	
Voltage measurement						
Range	-0. 7V～4V	-3. 3V～20V	-0. 7V～4V	-3. 3V～20V	-0. 7V～4V	-3. 3V～20V
Resolution	0. 08mV	0. 4mV	0. 08mV	0. 4mV	0. 08mV	0. 4mV
Precision	0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.	
Other specification						
AC voltage	220VAC ±10%, 50～60Hz, 3600VA		220VAC ±10%, 50～60Hz, 5400VA		220VAC ±10%, 50～60Hz, 7200VA	
Operating temperature	0～40℃		0～40℃		0～40℃	
Full power operating temperature	0～25℃		0～25℃		0～25℃	
Weight	67kg		90kg		122kg	
Dimension	432mm*385mm*712. 2mm		432mm*563mm*715. 2mm		432mm*700mm*712. 2mm	

Specification parameters-2

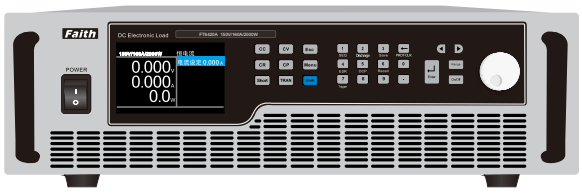
Model	FT682007N-40-150		FT68203N-40-600		FT68206N-40-1200	
Voltage*3	40V		40V		40V	
Current	150A		600A		1200A	
Power*2	750W		3, 000W		6, 000W	
Full current minimum operating voltage	0. 2V/150A		0. 2V/600A		0. 2V/1200A	
Constant current						
Range	0-15A	0-150A	0-60A	0-600A	0-120A	0-1200A
Resolution	0. 25mA	2. 5mA	1mA	10mA	2mA	20mA
Precision	0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.	
Constant voltage						
Range	0-8V	0-40V	0-8V	0-40V	0-8V	0-40V
Resolution	0. 14mV	0. 66mV	0. 14mV	0. 66mV	0. 14mV	0. 66mV
Precision	0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.	
Constant power*4						
Range	0 - 750W		0 - 3, 000W		0 - 6, 000W	
Resolution	12. 5mW		50mW		100mW	
Precision	0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.	
Constant resistance*4						
Range	0. 01～53Ω	0. 1～266Ω	0. 002～13. 2Ω	0. 02～66Ω	0. 001～6. 7Ω	0. 013～33Ω
Precision	Vin/Rset*(0. 2%)+0. 2%IF. S.		Vin/Rset*(0. 2%)+0. 2%IF. S.		Vin/Rset*(0. 2%)+0. 2%IF. S.	
Dynamic measurement						
T1&T2	10us～60s		10us～60s		10us～60s	
Resolution	2us		2us		2us	
Precision	2us+100ppm		2us+100ppm		2us+100ppm	
Current slope	0.0001～0.15A/us	0. 0001～1. 5A/us	0. 0001～0. 6A/us	0. 0001～6A/us	0. 0001～1. 2A/us	0. 0001～12A/us
Current measurement						
Range	0-15A	0-150A	0-60A	0-600A	0-120A	0-1200A
Resolution	0. 25mA	2. 5mA	1mA	10mA	2mA	20mA
Precision	0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.	
Voltage measurement						
Range	0-8V	0-40V	0-8V	0-40V	0-8V	0-40V
Resolution	0. 14mV	0. 66mV	0. 14mV	0. 66mV	0. 14mV	0. 66mV
Precision	0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.	
Other specification						
AC Voltage	220VAC ±10%, 50～60Hz, 300VA		220VAC ±10%, 50～60Hz, 300VA		220VAC ±10%, 50～60Hz, 480VA	
Operating temperature	0～40℃		0～40℃		0～40℃	
Full power operating temperature	0～25℃		0～25℃		0～25℃	
Weight	28kg		40kg		72kg	
Dimension	432mm(W)*132mm(H)*662.2mm(D)		432mm(W)*132mm(H)*662.2mm(D)		432mm(W)*222mm(H)*662.2mm(D)	

Specification parameters-3

Model	FT682007N-20-250		FT68203N-20-1000		FT68206N-20-2000	
Voltage*3	20V		20V		20V	
Current	250A		1000A		2000A	
Power*2	750W		3, 000W		6, 000W	
Full current minimum operating voltage	0. 2V/250A		0. 2V/1000A		0. 2V/2000A	
Constant current						
Range	0-25A	0-250A	0-100A	0-1000A	0-200A	0-2000A
Resolution	0. 42mA	4. 2mA	1. 6mA	17mA	3. 2mA	33mA
Precision	0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.	
Constant voltage						
Range	0-4V	0-20V	0-4V	0-20V	0-4V	0-20V
Resolution	0. 07mV	0. 33mV	0. 07mV	0. 33mV	0. 07mV	0. 33mV
Precision	0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.	
Constant power*4						
Range	0 - 750W		0 - 3, 000W		0 - 6, 000W	
Resolution	12. 5mW		50mW		100mW	
Precision	0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.	
Constant resistance*4						
Range	0. 003～16Ω	0. 03～80Ω	0. 0008～4Ω	0. 008～20Ω	0. 0004～2Ω	0. 004～10Ω
Precision	Vin/Rset*(0. 2%)+0. 2%IF. S.		Vin/Rset*(0. 2%)+0. 2%IF. S.		Vin/Rset*(0. 2%)+0. 2%IF. S.	
Dynamic measurement						
T1&T2	10us～60s		10us～60s		10us～60s	
Precision	2us+100ppm		2us+100ppm		2us+100ppm	
Current slope	0.0001～0.25A/us	0. 0001～2. 5A/us	0. 0001～1A/us	0. 0001～10A/us	0. 0001～2A/us	0. 0001～20A/us
Current measurement						
Range	0-25A	0-250A	0-100A	0-1000A	0-200A	0-2000A
Resolution	0. 42mA	4. 2mA	1. 6mA	17mA	3. 2mA	33mA
Precision	0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.	
Voltage measurement						
Range	0-4V	0-20V	0-4V	0-20V	0-4V	0-20V
Resolution	0. 07mV	0. 33mV	0. 07mV	0. 33mV	0. 07mV	0. 33mV
Precision	0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.	
Other specification						
AC Voltage	220VAC ±10%, 50～60Hz, 300VA		220VAC ±10%, 50～60Hz, 300VA		220VAC ±10%, 50～60Hz, 480VA	
Operating temperature	0～40℃		0～40℃		0～40℃	
Full power operating temperature	0～25℃		0～25℃		0～25℃	
Weight	28kg		40kg		72kg	
Dimension	432mm(W)*132mm(H)*662.2mm(D)		432mm(W)*132mm(H)*662.2mm(D)		432mm(W)*222mm(H)*662.2mm(D)	

FT6400A Series

Medium power electronic load



Summary

The FT6400 series adopts a modular design with rich features and strong adaptability, featuring high reliability and high maintainability. Mainly used in: power battery, medium and high power DC power supply, DC generator and other power electronic testing field.

The FT6400 electronic load provides a series of protection functions for over current, over voltage, over power, over temperature, and voltage inverse equality, as well as Von, Voff and programmable protection functions for the device under test. These features greatly improve the reliability of the product and are a trusted product for the integration of engineering test and automated test systems.

Characteristic

- Power range: 1200W/2000W/3000W;
- Voltage range: 150V, 600V;
- Battery capacity and internal resistance test function;
- Analog short-circuit function;
- Convenient and practical OCP test function;
- Support analog programming function;
- 20kHz dynamic test function, can set up and down slope;
- Time measurement, (Vpk+/-) measurement function;
- Powerful sequence test function, support a variety of mode test, single step test time up to 24 hours;
- Over voltage/over current/over power/over temperature/polarity reverse and other all-round intelligent protection functions;
- Rich SCPI commands, convenient for the establishment of intelligent test platform and secondary development;
- Istandard with complete functions of the upper computer software;
- Intelligent fan control to reduce noise;
- Provides RS232, LAN communication interface.

Application field

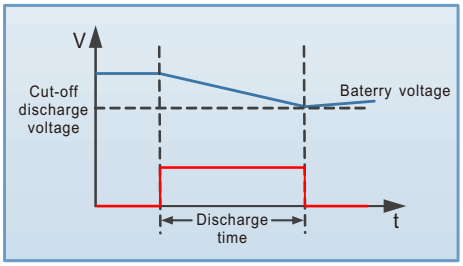
- Discharge test of power batteries, lead-acid batteries and fuel cells;
- BMS and battery protection device test;
- Testing of DC charging piles, charging modules, vehicle chargers, A/D power converters and other power electronic power devices;
- Test high-power switching power supplies, UPS power supplies, communication power supplies, and server power supplies;
- Virtual load test of solar arrays and industrial motors.

Constant state function

FT6400 series electronic load has four test modes of constant current, constant voltage, constant resistance and constant power, which can meet a wide range of test requirements. For example, constant current and constant resistance modes can be used to test whether the output voltage of a voltage source maintains a stable output under different load conditions. For battery chargers and car charging piles, the constant voltage mode can change the output voltage of the charger and charging pile to check whether the output current is correct.

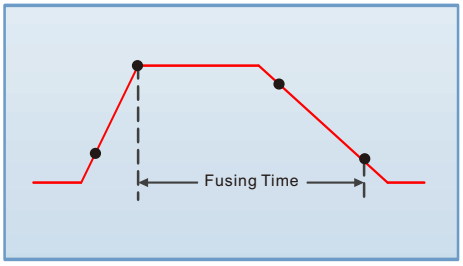
Time measurement

FT6400 series electronic load with time measurement function. By capturing the external switching signal, combined with the switching signal and the voltage and current signal, the response and operation time of the system and the pulse width of the pulse current can be measured. It is mainly used to measure the on-off time, holding time, rising edge and falling edge time of the power supply, as well as the fuse fuse time and circuit breaker response time.



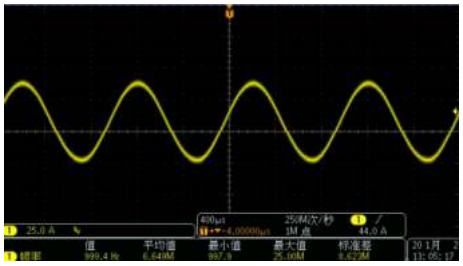
Battery test

The internal resistance and capacity of battery are important indexes for evaluating battery parameters. To facilitate testing, the FT6400 series loads provide battery testing capabilities, including battery resistance testing and battery capacity testing. This function uses constant current discharge. During the discharge process, the discharge quantity, discharge capacity and discharge time are recorded.

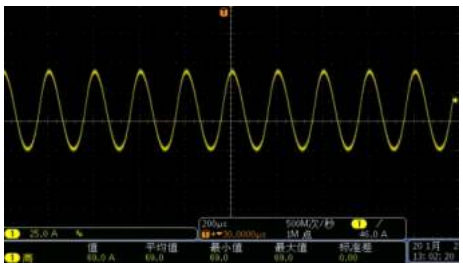


External simulation programming

The FT6400 series has external analog programming capabilities. Other devices can continuously control the load via an external voltage signal (DC or AC). The external voltage signal of 0 ~ 10V corresponds to 0 ~ 100% full scale on-load current. This function can also be used for various complex band carrier shape tests.



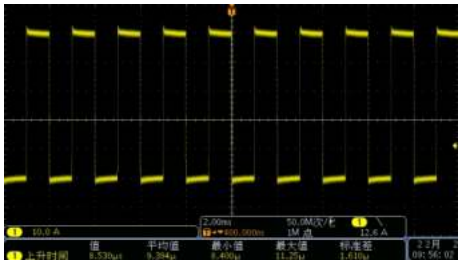
1kHz sine wave



5kHz sine wave

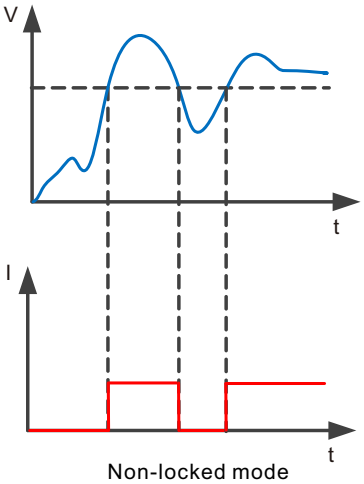
Dynamic function

To meet the growing demand for high-speed testing, the FT6400 series of electronic loads offers high-speed programmable dynamic testing capabilities (current dynamic and resistance dynamic testing). Dynamic testing allows users to set load high/low level, T1/T2 time and switch slope up to 10A/us. This function is often used to test the dynamic characteristics of the power supply. In order to adapt to the needs of different occasions, the dynamic function includes three modes: continuous, pulse and flip. Continuous mode provides on-load frequencies up to 20kHz; In pulse and flip modes, trigger signals can be received to produce on-load changes, allowing you to test at will.

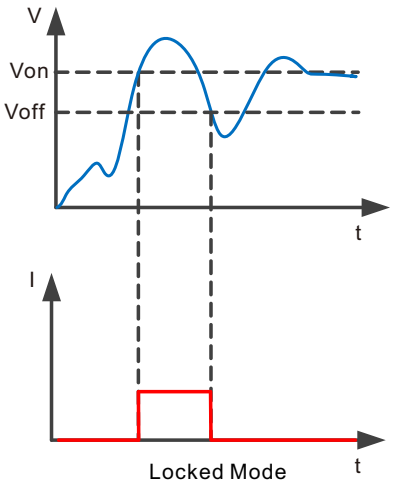


Protection function

FT6400 series provides over voltage, over current, over power, over temperature, voltage inverse equality protection function. In addition, the user can set the voltage, current, power protection value according to the need. When the output voltage of the device under test rises or falls slowly, the Von and Voff functions can be enabled. To meet more test requirements, Von on-load voltage supports both locked and non-locked modes. The full range of protection functions ensure the reliability of the product, which is a reliable product for engineering testing and automatic testing systems.

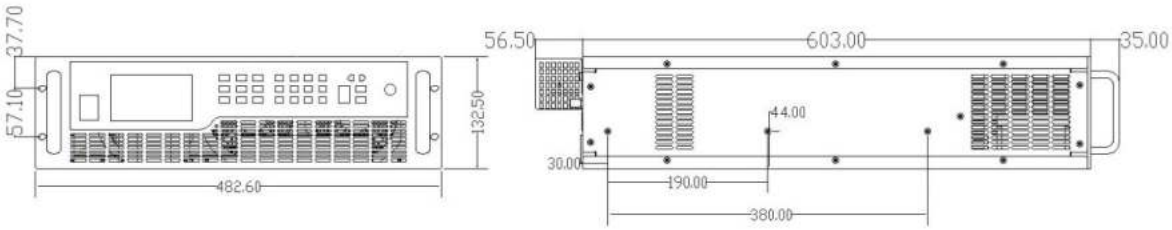


Non-locked mode



Locked Mode

Dimension picrure



Dimension of FT6412A～FT6431A models

Ordering information

Model	Specification	Height
FT6412A	150V/120A/1200W	3U
FT6413A	600V/30A/1200W	3U
FT6420A	150V/160A/2000W	3U
FT6421A	600V/60A/2000W	3U
FT6430A	150V/240A/3000W	3U
FT6431A	600V/90A/3000W	3U

* Height does not include footrest height;
* Optional test cables and other optional parts, the relevant specifications and models are detailed in the “Optional Accessories” section of this manual.

Specification parameters

Model	FT6412A	FT6413A	FT6420A	FT6421A	FT6430A	FT6431A
Voltage	150V	600V	150V	600V	150V	600V
Current	120A	30A	160A	60A	240A	90A
Power	1200W	1200W	2000W	2000W	3000W	3000W
Minimum operating voltage	2V@120A	5V@30A	2V@160A	5V@60A	2V@240A	5V@90A
Constant current						
Range	12A/120A	3A/30A	16A/160A	6A/60A	24A/240A	9A/90A
Resolution	0. 2mA/2mA	0. 05mA/0. 5mA	0. 3mA/3mA	0. 1mA/1mA	0. 4mA/4mA	1. 5mA/15mA
Low precision	0. 1%+0. 15%F. S.					
High precision	0. 1%+0. 15%F. S.					
Constant voltage						
Range	30V/150V	120V/600V	30V/150V	120V/600V	30V/150V	120V/600V
Resolution	0. 5mV/2. 5mV	2mV/10mV	0. 5mV/2. 5mV	2mV/10mV	0. 5mV/2. 5mV	2mV/10mV
Low precision	0. 05%+0. 1%F. S.					
High precision	0. 05%+0. 1%F. S.					
Constant power *2						
Range	0～1200W	0～1200W	0～2000W	0～2000W	0～3000W	0～3000W
Resolution	20mW	20mW	40mW	40mW	60mW	60mW
Precision	0. 5%+1%F. S.					
Constant resistance *2*3						
Low range	0. 1～75Ω	1. 5～1200Ω	0. 08～50Ω	0. 8～600Ω	0. 05～35Ω	0. 55～400Ω
High range	0. 48～375Ω	7. 5～6000Ω	0. 4～250Ω	4～3000Ω	0. 24～180Ω	2. 6～2000Ω
Resolution	16 bits					
Low precision	0.35%+0.05S	0.35%+0.003S	0.35%+0.08S	0.35%+0.006S	0.35%+0.1S	0.35%+0.009S
High precision	0.35%+0.01S	0.35%+0.0004S	0.35%+0.02S	0.35%+0.0008S	0.35%+0.03S	0.35%+0.0016S
Slope						
Range	0.0003～3A/us	0.0001～1A/us	0.0004～4A/us	0.0002～2A/us	0.0006～6A/us	0.0003～3A/us
Precision	(1±35%)* Setting value					
Measurement						
Voltage						
Range	30V/150V	120V/600V	30V/150V	120V/600V	30V/150V	120V/600V
Resolution	0. 5mV/2. 5mV	2mV/10mV	0. 5mV/2. 5mV	2mV/10mV	0. 5mV/2. 5mV	2mV/10mV
Precision	0. 05%+0. 05%F. S.					
Current measurement						
Range	12A/120A	3A/30A	16A/160A	6A/60A	24A/240A	9A/90A
Resolution	0. 2mA/2mA	0. 05mA/0. 5mA	0. 3mA/3mA	0. 1mA/1mA	0. 4mA/4mA	1. 5mA/15mA
Precision	0. 1%+0. 1%F. S.					
Temperature						
Protection temperature	85℃					
Operating temperature	0～40℃					
Full power operating temperature	0～25℃					
Other specification						
Weight	20kg	20kg	24kg	24kg	28kg	28kg
Communication interface	RS232、LAN					
Display interface	TFT Chinese and English display					
Dimension(mm)	483(W)×133(H)×600(D)					

FT63200A/E series

Medium power electronic load

Summary

The power programmable DC electronic load in the FT63200A/E series is designed for high reliability and high power density, and can achieve 2U/3kW, which is twice the power density of traditional loads.

The FT63200A/E series has three voltage ranges of 150V, 600V and 1200V, and the single power range is from 600W to 3kW. Its wider working range and extremely fast dynamic frequency effectively increase the test capability and application range. The whole series of products have strong overload capacity, and the instantaneous over-power pulling can reach 2 times the rated power, which can effectively reduce the test cost.

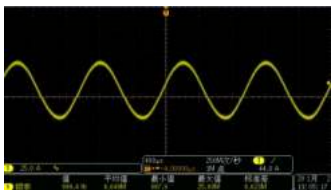
FT63200A/E has LAN, RS485, CAN, USB, RS232 and other communication interfaces and analog interfaces, and supports SCPI, Modbus, CANopen communication protocols, which provides great convenience for system integration applications.

Characteristic

- High power density design, the whole machine can achieve 3kW/2U;
- Single power: 600W ~ 3000W, the maximum power can be extended to 30kW through the master/slave parallel;
- Voltage level: 150V, 600V, 1200V;
- High precision, voltage accuracy is (0.025%+0.025%F.S.);
  The current accuracy is (0.05%+0.05%F.S.);
- Multiple working modes: CC, CV, CR, CP, CRD, CPD, CV+CC, CR+CC, CP+CC operation mode;
- Sampling speed 500kHz;
- 30kHz dynamic scanning function;
- Remote data transmission rate up to 1kHz, can greatly improve the communication interface data acquisition capability;
- Instantaneous over-power load function, instant load capacity can reach twice the rated power;
- OCP, OPP, LED simulation, load effect, battery internal resistance, battery discharge test function;
- Time measurement, (Vpk+/-) measurement function;
- Automatic test function, sine wave band load function, sequence function;
- Comprehensive protection functions: over voltage, over current, over temperature, current limit, power limit, input reverse connection, power off memory, etc;
- External analog programming input and current monitoring output, with high voltage isolation capability;
- TFT color LCD display, Chinese and English menu interface;
- Equipped with a variety of communication interfaces: RS485, LAN, USB, RS232, CAN (optional);
- Supports SCPI and ModBus communication protocols.

External simulation programming

The FT63200A/E series has external analog programming capabilities. Other devices can continuously control the load via an external voltage signal (DC or AC). The external voltage signal of 0 ~ 10V corresponds to 0 ~ 100% full scale on-load current. This function can also be used for various complex band carrier shape tests.



1kHz sine wave

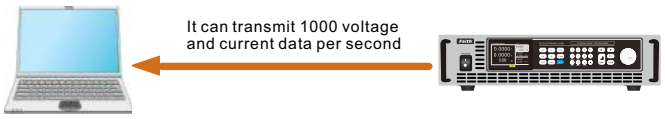
5kHz sine wave

Cascade

The cascade function of the FT63200A/E series supports the parallel use of up to 10 loads, extending the power usage range of electronic loads. During the cascading process, each load automatically equalizes traffic, and the slave automatically copies the load parameters of the host. Single machine can also be used independently, more flexible power configuration.

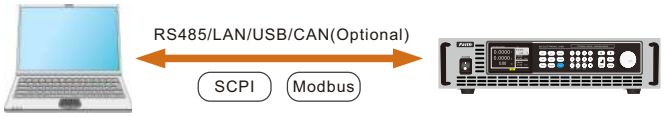
1kHz data transmission

FT63200A/E series can provide users with up to 1kHz data transmission, that is, 1000 voltage and current data points per second, in order to achieve waveform rendering and dynamic data analysis functions. In the application of system integration, the host computer can get a lot of test data directly and reduce the cost by this function without oscilloscope and high-speed current acquisition hardware.



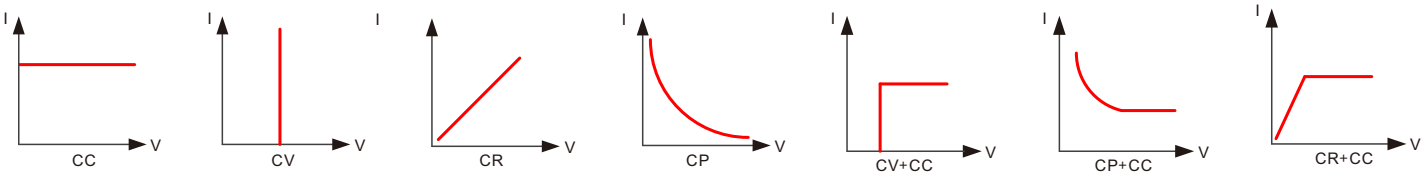
Multi-interface and multi-protocol

The FT63200A/E series is equipped with a variety of communication interfaces, and supports both SCPI and Modbus communication protocols. Users can configure the system on the menu according to their needs, which makes the system integration more flexible.



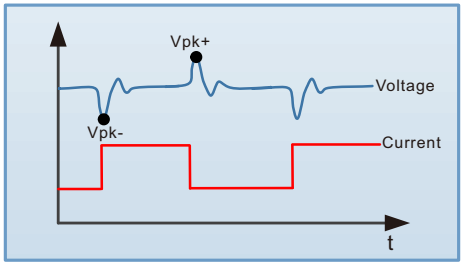
Multiple operating modes

FT63200A/E series has four basic operating modes of constant current, constant voltage, constant resistance and constant power, which can meet a wide range of test needs. At the same time, it also has the function of CV+CC, CR+CC, CP+CC multiple composite operation modes. Users can set the current limit value according to their own test requirements to avoid overcurrent damage to the test product during the test process. Among them, CV+CC mode can be applied to simulate battery charging characteristics, test charging piles and similar products such as vehicle chargers. CR+CC mode simulates power supply voltage current limitation and accuracy testing.



30kHz dynamic sweep,Vpk+/- capture

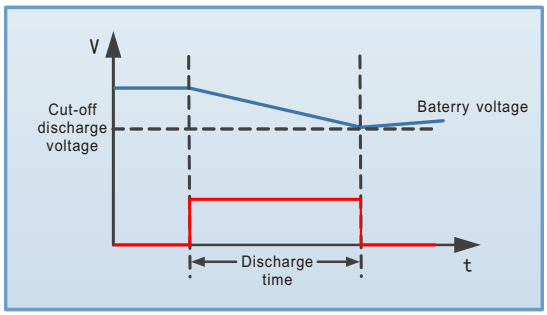
FT63200A/E series has dynamic sweep function, the maximum frequency can be set 30kHz. During the test, the peak voltage Vpk+, valley voltage Vpk- and the occurrence frequency of the measured power supply are captured and recorded by adjusting the current pulling frequency. It can effectively test the dynamic response of various power supplies at different frequencies.



Battery test

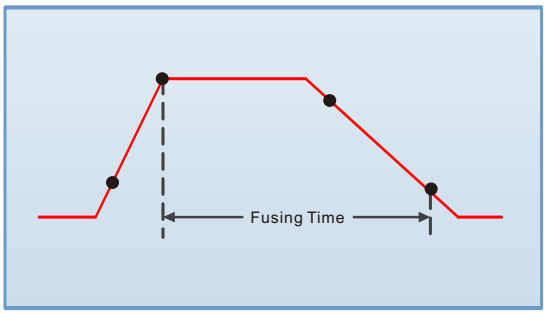
FT63200A/E series electronic load with battery test function. Three discharge modes of fixed current, fixed resistance and fixed power are provided, and the discharge cutoff conditions can be set by itself: cut-off voltage, cut-off time and cut-off power. If any of the three conditions are met, the discharge stops. During the discharge process, the discharge quantity and discharge time are recorded.

The FT63200A/E series is tested by direct current discharge (DCR) for internal resistance and capacity.



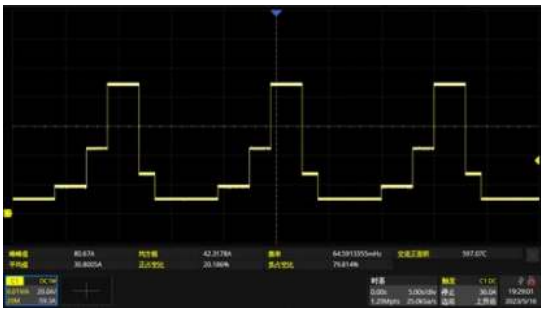
Time measurement

FT63200A/E series electronic load with time measurement function. By capturing the external switching signal, combined with the switching signal and the voltage and current signal, the response and operation time of the system and the pulse width of the pulse current can be measured. It is mainly used to measure the on-off time, holding time, rising edge and falling edge time of the power supply, as well as the fuse fuse time and circuit breaker response time.



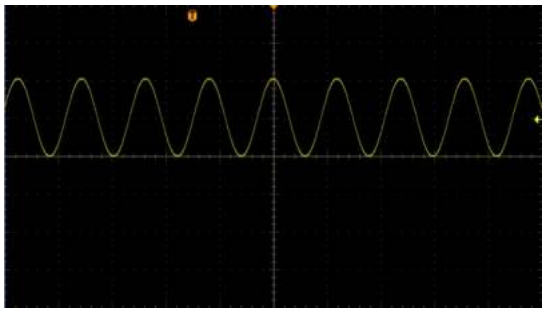
Sequence function

The FT63200A/E series of electronic loads provides sequential test capability for editing up to 50 test files with 100 steps each. It supports load timing changes in CC, CV, CR, CP and other modes, and also supports sequence editing functions such as file link. A maximum of 5000 steps can be edited. The time range of a single step is 0.1ms to 99999s.



Sine wave dynamic load

The FT63200A/E series is equipped with sine-wave current-carrying function and can be used for impedance analysis and testing of fuel cells.

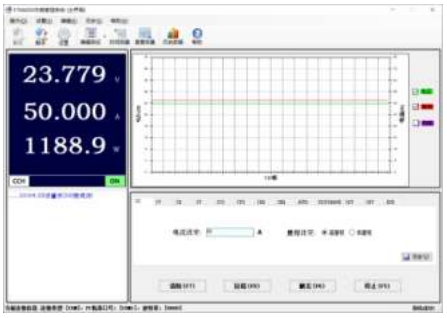


Instantaneous overpower loading function

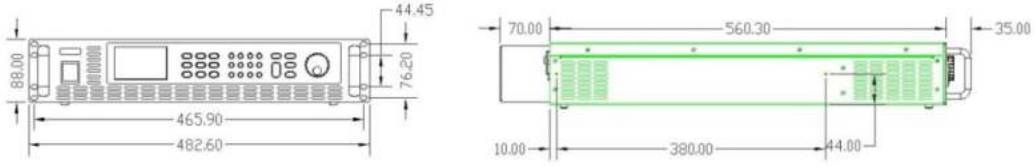
The FT63200A/E series of electronic loads have instantaneous loading capacity of more than twice the rated power. In simulating DC motor starting characteristics, instantaneous overload characteristics of power supply, instantaneous high-rate discharge characteristics of power battery, instantaneous load capacity of power electronic devices and other instantaneous high-power loading test, it can greatly save costs.

Computer graphical operation software

FT63200A/E series provides a host computer software with virtual instrument function, which can read test data in real time, generate images, export reports, print reports, etc., which is convenient for customers to use.



Dimension drawing



2U model dimension drawing

Order information

Product series	Power class	150V	600V	1200V	Height
A series	600W	FT63206A-150-60	FT63206A-600-40	FT63206A-1200-15	2U
	600W	FT63206A-150-120	-	-	2U
	750W	FT63207A-150-75	FT63207A-600-50	FT63207A-1200-20	2U
	1200W	FT63212A-150-120	FT63212A-600-75	FT63212A-1200-30	2U
	1500W	FT63215A-150-150	FT63215A-600-100	FT63215A-1200-40	2U
	2250W	FT63222A-150-225	FT63222A-600-150	FT63222A-1200-60	2U
	3000W	FT63230A-150-300	FT63230A-600-200	FT63230A-1200-80	2U
E series	600W	FT63206E-150-60	FT63206E-600-40	FT63206E-1200-15	2U
	600W	FT63206E-150-120	-	-	2U
	750W	FT63207E-150-75	FT63207E-600-50	FT63207E-1200-20	2U
	1200W	FT63212E-150-120	FT63212E-600-75	FT63212E-1200-30	2U
	1500W	FT63215E-150-150	FT63215E-600-100	FT63215E-1200-40	2U
	2250W	FT63222E-150-225	FT63222E-600-150	FT63222E-1200-60	2U
	3000W	FT63230E-150-300	FT63230E-600-200	FT63230E-1200-80	2U

Optional information

Name	Model or Specification	Instruction
CAN adapter card	Suffix C	

*Optional test cables and other optional parts, the relevant specifications and models are detailed in the “Optional Accessories” section of this manual.

Specification parameters-1

Model	FT63206E-150-60		FT63206E-600-40		FT63206E-1200-15	
Voltage	150V		600V		1200V	
Current	60A		40A		15A	
Power	600W		600W		600W	
Minimum operating voltage	1.5V@60A		8V@40A		20V@15A	
Constant current						
Range	6A	60A	4A	40A	1.5A	15A
Resolution	0.1mA	1mA	0.07mA	0.7mA	0.025mA	0.25mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Constant voltage						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Constant resistance						
Range	0.09～500Ω	0.9～2500Ω	0.56～15000Ω	5.6～15000Ω	3～16000Ω	30～80000Ω
Precision	Vin/Rset*(0.2%)+0.2%IF.S		Vin/Rset*(0.2%)+0.2%IF.S		Vin/Rset*(0.2%)+0.2%IF.S	
Constant power						
Range	600W		600W		600W	
Precision	0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.	
Dynamic						
T1&T2	10us～60S		10us～60S		10us～60S	
Resolution	2us		2us		2us	
Precision	1us+20PPM		1us+20PPM		1us+20PPM	
Slope	0.001～0.06A/us	0.001～0.6A/us	0.0001～0.04A/us	0.001～0.4A/us	0.0001～0.025A/us	0.001～0.25A/us
Current measurement						
Range	6A	60A	4A	40A	1.5A	15A
Resolution	0.1mA	1mA	0.07mA	0.7mA	0.025mA	0.25mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Voltage measurement						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Other specification						
AC voltage	110Vac/220Vac±10%，50～60Hz，220VA					
Operating temperature	0～40℃					
Weight	16kg					
Dimension	482.6mm(W)x 88.0mm(H)x 662.2mm(L)					

*All specifications are subject to change without notice.
1. Meet rated specifications within an ambient temperature range of 25±5°C.
2. If the operating voltage exceeds 1.05 times the rated voltage, permanent damage to the device may occur.

Specification parameters-2

Model	FT63207E-150-75		FT63207E-600-50		FT63207E-1200-20	
Voltage	150V		600V		1200V	
Current	75A		50A		20A	
Power	750W		750W		750W	
Minimum operating voltage	1.5V@75A		8V@50A		20V@20A	
Constant current						
Range	7.5A	75A	5A	50A	2A	20A
Resolution	0.15mA	1.5mA	0.1mA	1mA	0.05mA	0.5mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Constant voltage						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Constant resistance						
Range	0.074～400Ω	0.74～2000Ω	0.446～2400Ω	4.46～12000Ω	2.23～12000Ω	22.3～60000Ω
Precision	Vin/Rset*(0.2%)+0.2%IF.S		Vin/Rset*(0.2%)+0.2%IF.S		Vin/Rset*(0.2%)+0.2%IF.S	
Constant power						
Range	750W		750W		750W	
Precision	0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.	
Dynamic						
T1&T2	10us～60S		10us～60S		10us～60S	
Resolution	2us		2us		2us	
Precision	1us+20PPM		1us+20PPM		1us+20PPM	
Slope	0.001～0.07A/us	0.001～0.7A/us	0.0001～0.05A/us	0.001～0.5A/us	0.0001～0.03A/us	0.001～0.3A/us
Current measurement						
Range	7.5A	75A	5A	50A	2A	20A
Resolution	0.15mA	1.5mA	0.1mA	1mA	0.05mA	0.5mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Voltage measurement						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Other specification						
AC voltage	110Vac/220Vac±10%，50～60Hz，220VA					
Operating temperature	0～40℃					
Weight	16kg					
Dimension	482.6mm(W)x 88.0mm(H)x 662.2mm(L)					

* All specifications are subject to change without notice.
1. Meet rated specifications within an ambient temperature range of 25±5°C.
2. If the operating voltage exceeds 1.05 times the rated voltage, permanent damage to the device may occur.

Specification parameters-3

Model	FT63212E-150-120		FT63212E-600-75		FT63212E-1200-30	
Voltage	150V		600V		1200V	
Current	120A		75A		30A	
Power	1200W		1200W		1200W	
Minimum operating voltage	1.5V@120A		14V@75A		20V@30A	
Constant current						
Range	12A	120A	7.5A	75A	3A	30A
Resolution	0.2mA	2mA	0.125mA	1.25mA	0.05mA	0.5mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Constant voltage						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Constant resistance						
Range	0.045～250Ω	0.45～1250Ω	0.3～1600Ω	3～8000Ω	1.5～8000Ω	15～40000Ω
Precision	Vin/Rset*(0.2%)+0.2%IF.S.		Vin/Rset*(0.2%)+0.2%IF.S.		Vin/Rset*(0.2%)+0.2%IF.S.	
Constant power						
Range	1200W		1200W		1200W	
Precision	0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.	
Dynamic						
T1&T2	10us～60S		10us～60S		10us～60S	
Resolution	2us		2us		2us	
Precision	1us+20PPM		1us+20PPM		1us+20PPM	
Slope	0.001～0.12A/us	0.01～1.2A/us	0.0001～0.075A/us	0.001～0.75A/us	0.0001～0.045A/us	0.001～0.45A/us
Current measurement						
Range	12A	120A	7.5A	75A	3A	30A
Resolution	0.2mA	2mA	0.125mA	1.25mA	0.05mA	0.5mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Voltage measurement						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Other specification						
AC voltage	110Vac/220Vac±10%，50～60Hz，220VA					
Operating temperature	0～40℃					
Weight	18kg					
Dimension	482.6mm(W)x 88.0mm(H)x 662.2mm(L)					

* All specifications are subject to change without notice.
1. Meet rated specifications within an ambient temperature range of 25±5°C.
2. If the operating voltage exceeds 1.05 times the rated voltage, permanent damage to the device may occur.

Specification parameters-4

Model	FT63215E-150-150		FT63215E-600-100		FT63215E-1200-40	
Voltage	150V		600V		1200V	
Current	150A		100A		40A	
Power	1500W		1500W		1500W	
Minimum operating voltage	1.5V@150A		14V@100A		20V@40A	
Constant current						
Range	15A	150A	10A	100A	4A	40A
Resolution	0.3mA	3mA	0.2mA	2mA	0.1mA	1mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Constant voltage						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Constant resistance						
Range	0.037～200Ω	0.37～1000Ω	0.223～1200Ω	2.23～6000Ω	1.115～6000Ω	11.15～30000Ω
Precision	Vin/Rset*(0.2%)+0.2%IF.S.		Vin/Rset*(0.2%)+0.2%IF.S.		Vin/Rset*(0.2%)+0.2%IF.S.	
Constant power						
Range	1500W		1500W		1500W	
Precision	0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.	
Dynamic						
T1&T2	10us～60S		10us～60S		10us～60S	
Resolution	2us		2us		2us	
Precision	1us+20PPM		1us+20PPM		1us+20PPM	
Slope	0.001～0.14A/us	0.01～1.4A/us	0.0001～0.1A/us	0.001～1A/us	0.0001～0.06A/us	0.001～0.6A/us
Current measurement						
Range	15A	150A	10A	100A	4A	40A
Resolution	0.3mA	3mA	0.2mA	2mA	0.1mA	1mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Voltage measurement						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Other specification						
AC voltage	110Vac/220Vac±10%，50～60Hz，220VA					
Operating temperature	0～40℃					
Weight	18kg					
Dimension	482.6mm(W)x 88.0mm(H)x 662.2mm(L)					

* All specifications are subject to change without notice.
1. Meet rated specifications within an ambient temperature range of 25±5°C.
2. If the operating voltage exceeds 1.05 times the rated voltage, permanent damage to the device may occur.

Specification parameters-5

Model	FT63222E-150-225		FT63222E-600-150		FT63222E-1200-60	
Voltage	150V		600V		1200V	
Current	225A		150A		60A	
Power	2250W		2250W		2250W	
Minimum operating voltage	1. 5V@225A		14V@150A		20V@60A	
Constant current						
Range	22. 5A	225A	15A	150A	6A	60A
Resolution	0. 45mA	4. 5mA	0. 3mA	3mA	0. 15mA	1. 5mA
Precision	0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.	
Constant voltage						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0. 5mV	2. 5mV	2mV	10mV	4mV	20mV
Precision	0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.	
Constant resistance						
Range	0. 025～89Ω	0. 25～444Ω	0. 149～533Ω	1. 49～2667Ω	0. 743～2667Ω	7. 43～13333Ω
Precision	Vin/Rset*(0. 2%)+0. 2%IF. S.		Vin/Rset*(0. 2%)+0. 2%IF. S.		Vin/Rset*(0. 2%)+0. 2%IF. S.	
Constant power						
Range	2250W		2250W		2250W	
Precision	0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.	
Dynamic						
T1&T2	10us～60S		10us～60S		10us～60S	
Resolution	2us		2us		2us	
Precision	1us+20PPM		1us+20PPM		1us+20PPM	
Slope	0. 001～0. 21A/us	0. 01～2. 1A/us	0. 0001～0. 15A/us	0. 001～1. 5A/us	0. 0001～0. 06A/us	0. 001～0. 6A/us
Current measurement						
Range	22. 5A	225A	15A	150A	6A	60A
Resolution	0. 4mA	4mA	0. 3mA	3mA	0. 15mA	1.5mA
Precision	0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.		0. 05%+0. 05%F. S.	
Voltage measurement						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0. 5mV	2. 5mV	2mV	10mV	4mV	20mV
Precision	0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.		0. 025%+0. 025%F. S.	
Other specification						
AC voltage	110Vac/220Vac±10%，50～60Hz，220VA					
Operating temperature	0～40℃					
Weight	20kg					
Dimension	482. 6mm(W)x 88. 0mm(H)x 662. 2mm(L)					

*All specifications are subject to change without notice.
1. Meet rated specifications within an ambient temperature range of 25±5°C.
2. If the operating voltage exceeds 1.05 times the rated voltage, permanent damage to the device may occur.

Specification parameters-6

Model	FT63230E-150-300		FT63230E-600-200		FT63230E-1200-80	
Voltage	150V		600V		1200V	
Current	300A		200A		80A	
Power	3000W		3000W		3000W	
Minimum operating voltage	1.5V@300A		14V@200A		20V@80A	
Constant current						
Range	30A	300A	20A	200A	8A	80A
Resolution	0.6mA	6mA	0.4mA	4mA	0.2mA	2mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Constant voltage						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Constant resistance						
Range	0.019～100Ω	0.19～500Ω	0.112～600Ω	1.12～3000Ω	0.558～3000Ω	5.58～15000Ω
Precision	Vin/Rset*(0.2%)+0.2%IF.S.		Vin/Rset*(0.2%)+0.2%IF.S.		Vin/Rset*(0.2%)+0.2%IF.S.	
Constant power						
Range	3000W		3000W		3000W	
Precision	0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.		0. 2%+0. 2% F. S.	
Dynamic						
T1&T2	10us～60s		10us～60s		10us～60s	
Resolution	2us		2us		2us	
Precision	1us+20PPM		1us+20PPM		1us+20PPM	
Slope	0.001～0.28A/us	0.01～2.8A/us	0.0001～0.2A/us	0.001～2A/us	0.0001～0.12A/us	0.001～1.2A/us
Current measurement						
Range	30A	300A	20A	200A	8A	80A
Resolution	0.6mA	6mA	0.4mA	4mA	0.2mA	2mA
Precision	0.05%+0.05%F.S.		0.05%+0.05%F.S.		0.05%+0.05%F.S.	
Voltage measurement						
Range	30V	150V	120V	600V	240V	1200V
Resolution	0.5mV	2.5mV	2mV	10mV	4mV	20mV
Precision	0.025%+0.025%F.S.		0.025%+0.025%F.S.		0.025%+0.025%F.S.	
Other specification						
AC voltage	110Vac/220Vac±10%，50～60Hz，220VA					
Operating temperature	0～40℃					
Weight	22kg					
Dimension	482.6mm(W)x 88.0mm(H)x 662.2mm(L)					

* All specifications are subject to change without notice.
1. Meet rated specifications within an ambient temperature range of 25±5°C.
2. If the operating voltage exceeds 1.05 times the rated voltage, permanent damage to the device may occur.

A/E function configuration list

Function list	A	E
Constant current(CCH/CCL)	✓	✓
Constant oltage(CVH/CVL)	✓	✓
Constant resistance(CR)	✓	✓
Constant power(CP)	✓	✓
Dynamic current (CCDH/CCDL)	✓	✓
Dynamic resistance(CRD)	✓	×
Dynamic power(CPD)	✓	×
Sequence(SEQ)	✓	✓
Auto	✓	✓
Over current protection	✓	✓
Over power protection	✓	✓
Discharge	✓	✓
Load effect	✓	✓
Discharge resistance	✓	✓
LED simulation(LED)	✓	×
Dynamic scanning(SWEEP)	✓	✓
CV+CC	✓	×
CR+CC	✓	×
CP+CC	✓	×
Save	✓	✓
Recall	✓	✓
Remote compensatio	✓	✓
Constant voltage velocity	✓	✓
Simulation programming	✓	✓
External control	✓	✓
Simulation short	✓	✓
Timed load	✓	✓
VON/VOFF	✓	✓
Limit set	✓	✓
Hardware limitation	✓	✓
Protection Set	✓	✓
Time measurement	✓	✓
Vpk+/-	✓	✓
Data transmission	1kHz/s	1kHz/s
Parallel operation	✓	✓
Communication	RS485/LAN/RS232/USB/CAN(Optional)	

FT6300A series

Small and medium power electronic load

Characteristic

- Voltage level: 120V, 500V;
- Scope of power: 150W / 300W / 600W / 900W / 1350W / 1800W;
- On-load current range up to 240A, safe, stable, reliable and durable;
- Dynamic test frequency up to 20kHz, slope adjustable (for FT6309A-FT6319A);
- Constant voltage, constant current, constant resistance and constant power four test modes;
- Quick call, one-key call test function;
- Sequence test, can simulate the actual load complex changes;
- Intelligent automatic test function, automatic completion of quality judgment;
- Battery internal resistance and battery capacity test;
- Supports remote sampling to compensate voltage drop;
- OCP test, automatically find the overcurrent protection point;
- Intelligent fan control to reduce noise;
- High definition, high brightness display (VFD);
- Keyboard with knob setting, easy to operate;
- Over-voltage/over-current/over-power/over-temperature/polarity reverse protection functions;
- Rich SCPI commands, convenient for the establishment of intelligent test platform and secondary development;
- Standard RS232 interface, remote control can be achieved by computer.

SCPI with remote control

The FT6200 series supports standard SCPI commands, through which all functions of panel operations can be implemented. This provides convenience for the establishment of intelligent test platform and the secondary development of users. The FT6200 series provides easy remote control of electronic loads via the RS232 interface.

Summary

The FT6300 series electronic load is available in a variety of models with power from 150W to 1800W and current up to 240A. It is mainly used in the testing of various chargers/adapters, switching power supplies, LED drivers, power batteries, communication power supplies, fuses, solar cells and their components.

The FT6300 series provides basic functions such as CC, CV, CR and CP. Dynamic and sequential testing to simulate various load changes; Intelligent automatic test function can greatly improve the production line test efficiency.

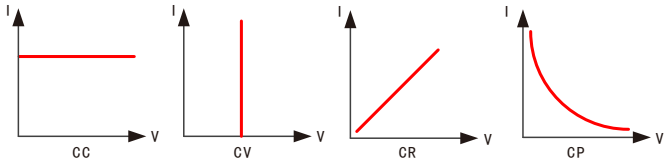
The FT6300 series is equipped with RS232 interface and supports standard SCPI command. All functions of panel operation can be realized through SCPI command, which provides convenience for the establishment of intelligent test platform and the secondary development of users.

Automatic test

The FT6300 series features flexible automated testing. In the automatic test, CC, CV, CR, CP and other test modes are included, which can compare the test parameters with the corresponding upper and lower limits, and finally display the test results in the form of PASS or FAILED. The fully automatic operation mode can greatly improve the test efficiency.

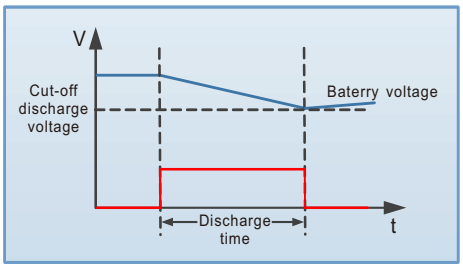
Constant state function

FT6300 series electronic load has four test modes of constant current, constant voltage, constant resistance and constant power to meet a wide range of test requirements. Constant current and constant resistance modes can be used to test whether the output voltage of the voltage source maintains a stable output under different load conditions. For battery chargers and adapters, constant voltage mode can change the output voltage of the charger and adapter to verify that the output current is correct.



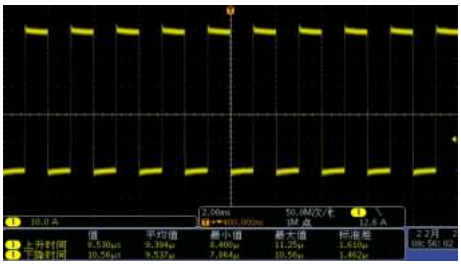
Battery test function

To facilitate battery testing, the FT6300 series offers a battery test function. Battery test includes: battery internal resistance test and battery capacity test. Constant current CC mode is used to test the battery capacity, and only need to set the battery protection voltage and discharge current during the test. Load automatically records voltage, current, time, AH number, below the protection voltage, the load automatically stops testing. With software, more parameters can be tested and analyzed.



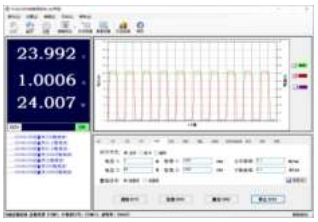
Dynamic function

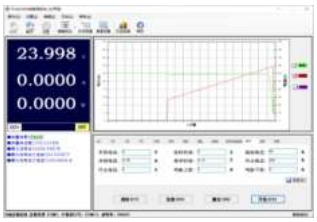
The FT6300 series of electronic loads provides programmable dynamic testing capabilities. Dynamic test function includes continuous, pulse, flip three ways, support load slope setting. The dynamic mode is used to simulate various on-load mutations and anomalies, and is suitable for testing the dynamic characteristics of the power supply, the stability of the power supply, the protection point and protection time of the battery, and the burst on-load simulation of various pulses.

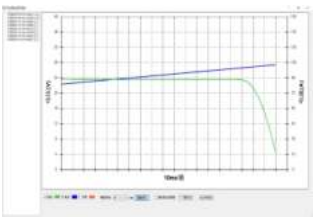


Computer graphical operation software

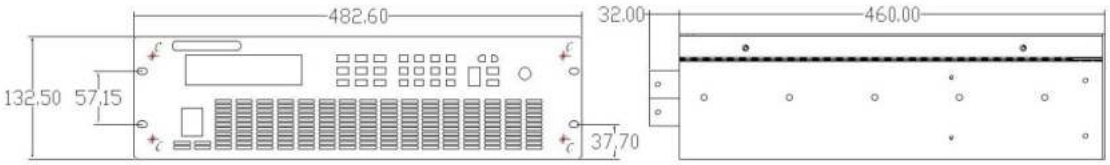
FT6300 series provides a host computer software with virtual instrument function, which can read test data in real time, generate images, export reports, print reports, etc., which is convenient for customers to use.







Dimension Drawing



FT6309A～FT6319A Dimension Drawing

Ordering information

Model	Specification	Dimension	Model	Specification	Dimension
FT6301A	120V/30A/150W	1/2 3U	FT6309A	120V/120A/900W	3U
FT6302A	120V/30A/300W	1/2 3U	FT6310A	500V/30A/900W	3U
FT6303A	500V/15A/300W	1/2 3U	FT6313A	120V/180A/1350W	3U
FT6304A	120V/60A/300W	1/2 3U	FT6314A	500V/45A/1350W	3U
FT6305A	500V/30A/600W	1/2 3U	FT6318A	120V/240A/1800W	3U
FT6306A	120V/120A/600W	1/2 3U	FT6319A	500V/60A/1800W	3U

*Optional test cables and other optional parts, the relevant specifications, models, see the “Optional Accessories” section of this manual for details.

Specification parameters-1

Model	FT6301A	FT6302A	FT6303A	FT6304A	FT6305A	FT6306A
Voltage	0～120V	0～120V	0～500V	0～120V	0～500V	0～120V
Current	0～30A	0～30A	0～15A	0～60A	0～30A	0～120A
Power	150W	300W	300W	300W	600W	600W
Minimum operating voltage	1. 2V@30A	1V@30A	1. 6V@15A	1. 5V@60A	1. 5V@30A	1. 8V@120A
Constant voltage						
Range	20V/120V	20V/120V	50V/500V	20V/120V	50V/500V	12V/120V
Resolution	1mV/10mV	1mV/10mV	1mV/10mV	1mV/10mV	1mV/10mV	1mV/10mV
Low precision	0. 05%+4mV	0. 05%+4mV	0. 05%+10mV	0. 05%+4mV	0. 05%+10mV	0. 05%+3mV
High precision	0. 05%+30mV	0. 05%+30mV	0. 05%+130mV	0. 05%+30mV	0. 05%+130mV	0. 05%+30mV
Constant current						
Range	3A/30A	3A/30A	3A/15A	6A/60A	3A/30A	12A/120A
Resolution	0. 1mA/1mA	0. 1mA/1mA	0. 1mA/1mA	0. 1mA/1mA	0. 1mA/1mA	1mA/10mA
Low precision	0. 05%+3mA	0. 05%+3mA	0. 05%+1. 5mA	0. 1%+6mA	0. 1%+3mA	0. 1%+12mA
High precision	0. 1%+30mA	0. 1%+30mA	0. 1%+15mA	0. 1%+60mA	0. 1%+30mA	0. 1%+120mA
Constant resistance mode (input voltage and current value ≥ 10% of full scale)						
Low range	0. 1～10Ω	0. 1～10Ω	0. 1～10Ω	0. 1～10Ω	0. 1～10Ω	0. 1～10Ω
High range	10. 00～4kΩ	10. 00～4kΩ	10. 00～4kΩ	10. 00～4kΩ	10. 00～4kΩ	10. 00～4kΩ
Resolution	16bit	16bit	16bit	16bit	16bit	16bit
Low precision	0. 35%+0. 08S	0. 35%+0. 08S	0. 35%+0. 08S	0. 35%+0. 08S	0. 35%+0. 08S	0. 35%+0. 08S
High precision	0. 35%+0. 008S	0. 35%+0. 008S	0. 35%+0. 008S	0. 35%+0. 008S	0. 35%+0. 008S	0. 35%+0. 008S
Constant power mode (input voltage and current value ≥ 10% of full scale)						
Range	100W/150W	100W/300W	100W/300W	100W/300W	100W/600W	100W/600W
Resolution	1mW/10mW	1mW/10mW	1mW/10mW	1mW/10mW	1mW/10mW	1mW/10mW
Low precision	1%+100mW					
High precision	1%+150mW	1%+300mW	1%+300mW	1%+300mW	1%+600mW	1%+600mW
Current measurement						
Low precision	0. 1%+3mA	0. 1%+3mA	0. 1%+3mA	0. 1%+12mA	0. 1%+3mA	0. 1%+12mA
High precision	0. 1%+30mA	0. 1%+30mA	0. 1%+15mA	0. 1%+60mA	0. 1%+30mA	0. 1%+120mA
Voltage measurement						
Low precision	0. 02%+4mV	0. 02%+4mV	0. 02%+10mV	0. 02%+4mV	0. 02%+10mV	0. 02%+3mV
High precision	0. 02%+30mV	0. 02%+30mV	0. 02%+130mV	0. 02% + 30mV	0. 02%+130mV	0. 02%+30mV
Power measurement						
Precision	1%+150mW	1%+300mW	1%+300mW	1%+300mW	1%+600mW	1%+600mW
Transient mode	Frequency range: 0. 083Hz～1kHz					
Equipment size	213(W)×134(H)×374(D)(FT6301A/FT6302A/FT6303A/FT6304A)					
(mm)	213(W)×134 (H)×594(D)(FT6305A/FT6306A)					

Specification parameters-2

Model	FT6309A	FT6310A	FT6313A	FT6314A	FT6318A	FT6319A
Voltage	120V	500V	120V	500V	120V	500V
Current	120A	30A	180A	45A	240A	60A
Power	900W	900W	1350W	1350W	1800W	1800W
Minimum operating voltage	2. 5V@120A	5V@30A	2. 5V@180A	5V@45A	2. 5V@240A	5V@60A
Constant current						
Range	12A/120A	3A/30A	18A/180A	4. 5A/45A	24A/240A	6A/60A
Resolution	0. 2mA/2mA	0. 05mA/0. 5mA	0. 3mA/3mA	0. 8mA/8mA	0. 4mA/4mA	1mA/10mA
Low precision	0. 1%+0. 1%F. S.					
High precision	0. 1%+0. 1%F. S.					
Constant voltage						
Range	20V/120V	50V/500V	20V/120V	50V/500V	20V/120V	50V/500V
Resolution	0. 4mV/2mV	0. 9mV/9mV	0. 4mV/2mV	0. 9mV/9mV	0. 4mV/2mV	0. 9mV/9mV
Low precision	0. 05%+0. 1%F. S.					
High precision	0. 05%+0. 1%F. S.					
Constant power*2						
Range	0～900W	0～900W	0～1350W	0～1350W	0～1800W	0～1800W
Resolution	15mW	15mW	22. 5mW	22. 5mW	30mW	30mW
Precision	1%+0. 5%F. S.					
Constant resistance*2*3						
Low range	0. 025～50Ω	0. 25～500Ω	0. 0167～33. 3Ω	0. 167～333Ω	0. 0125～25Ω	0. 125～250Ω
High range	0. 6～1200Ω	10～20000Ω	0. 4～800Ω	6. 67～13333Ω	0. 3～600Ω	5～10kΩ
Resolution	16bit					
Low precision	0. 2%+0. 009S	0. 2%+0. 0125S	0. 2%+0. 018S	0. 2%+0. 005S	0. 2%+0. 018S	0. 2%+0. 024S
High precision	0. 2%+0. 002S	0. 2%+160uS	0. 2%+0. 004S	0. 2%+240uS	0. 2%+0. 004S	0. 2%+300uS
Slope						
Current range	0～120A	0～30A	0～180A	0～45A	0～240A	0～60A
Slope	0. 1～5A/us	0. 01～1. 25A/us	0. 15～7. 5A/us	0. 1～1. 8A/us	0. 2～10A/us	0. 1～2. 5A/us
Precision	(1±35%)×Setting value					
Measurement						
Voltage measurement						
Range	12V/120V	50V/500V	12V/120V	50V/500V	12V/120V	50V/500V
Resolution	0. 2mV/2mV	0. 9mV/9mV	0. 2mV/2mV	0. 9mV/9mV	0. 2mV/2mV	0. 9mV/9mV
Precision	0. 05%+0. 1%F. S.					
Current measurement						
Range	12A/120A	3A/30A	18A/180A	4. 5A/45A	24A/240A	6A/60A
Resolution	0. 2mA/20mA	0. 05mA/5mA	0. 3mA/3mA	0. 8mA/8mA	0. 4mA/4mA	1mA/10mA
Precision	0. 05%+0. 1%F. S.					
Temperature						
Protection temperature	85℃					
Operating temperature	0～40℃					
Full power operating temperature	0～25℃					
Other characteristic						
Weight	18kg	18kg	20kg	20kg	22kg	22kg
Dimension(mm)	427 (W) × 135 (H) × 460 (D)					

*All specifications are subject to change without notice.
1. Meet rated specifications within an ambient temperature range of 25±5°C.
2. If the operating voltage exceeds 1.05 times the rated voltage, permanent damage to the device may occur.

FT6200A series

Small power electronic load

Summary

The FT6200A series of low-power electronic loads is a desktop-grade electronic load with superior utility and versatility. Can be widely used in switching power supplies, adapters, LED drivers, 3C batteries, supercapacitors, power electronic devices, solar cell modules, chargers and other products research and development, production, quality inspection and other testing links. The product is equipped with TFT screen and English and Chinese menu interface, which is convenient and intuitive to operate, and is a necessary common configuration on the desk of power electronics engineers.

The FT6200 series is equipped with RS232 interface and supports standard SCPI command. All functions of panel operation can be realized through SCPI command, which provides convenience for the establishment of intelligent test platform and the secondary development of users.

Characteristic

- Constant current(CC), constant voltage(CV), constant resistance (CR) and constant power (CP) on-load mode;
- On-load slope, on-load voltage (Von) and off-load voltage (Voff) can be set;
- Dynamic test up to 50kHz;
- The minimum current resolution can reach 0.05mA, and the minimum voltage resolution can reach 0.5mV;
- Current accuracy is(0.05%+0.05%F.S.),voltage accuracy is (0.025%+0.025%F.S.);
- Fast NG/GO inspection to confirm DUT is within specifications;
- OPP/OCP/OVP/OT and other comprehensive protection functions;
- Powerful load sequence editing function, can achieve high-speed complex carrier shape;
- The intelligent automatic test function can significantly improve the test efficiency;
- With OCP, OPP, LED simulation, load effect, battery internal resistance, battery discharge and other test functions;
- Analog short-circuit function;
- Quick call, one-click call test parameters;
- A current monitoring port and a digital I/O port are standard;
- The SENSE terminal is installed on the front panel and supports remote sampling;
- TFT color LCD screen, English and Chinese menu interface;
- Standard RS232 interface, remote control can be achieved by computer;
- Rich SCPI commands, convenient for the establishment of intelligent test platform and secondary development;
- Fully functional upper computer software as standard;
- Reduce noise with intelligent fan control.

Quick call

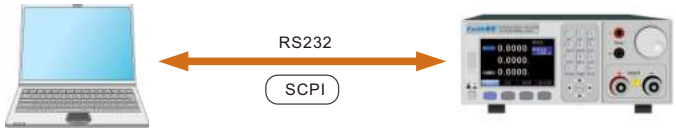
Quick call function supports CC/CV/CR/CP and other stationary parameter setting, supports OCP, sequence, automatic test, battery internal resistance, battery capacity and other functions, one-click call has been set functions and corresponding parameters. The quick call is suitable for testing in R&D, testing, quality and incoming material inspection departments. Quick calls reduce the number of Settings and operational loads in the test, which can reduce the probability of setting errors, improve test efficiency and test accuracy.

Automatic test

The FT6200 series features flexible automated testing. In the automatic test, CC, CV, CR, CP and other test modes are included, which can compare the test parameters with the corresponding upper and lower limits, and finally display the test results in the form of PASS or FAILED. The fully automatic operation mode can greatly improve the test efficiency.

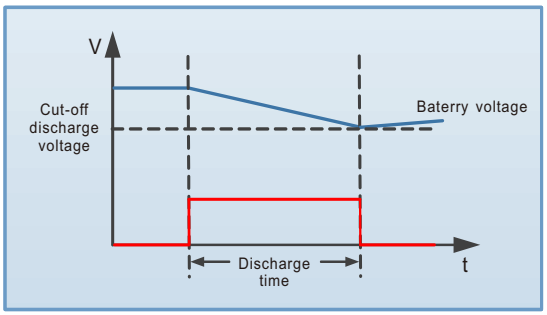
SCPI with remote control

The FT6200 series supports standard SCPI commands, through which all functions of panel operations can be implemented. This provides convenience for the establishment of intelligent test platform and the secondary development of users. The FT6200 series provides easy remote control of electronic loads via the RS232 interface.



Battery test function

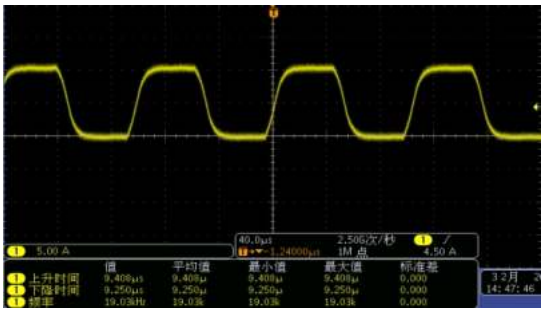
To facilitate battery testing, the FT6200 series offers a battery test function. Battery test includes: battery internal resistance test and battery capacity test. The battery capacity test provides three discharge modes of fixed current, fixed resistance and fixed power, and can set the discharge cutoff conditions: cutoff voltage, cutoff time and cutoff power. If any of the three conditions are met, the discharge stops. During the discharge process, the load automatically records voltage, current, time, AH and other parameters. Below the protection voltage, the load automatically stops testing. With software, more parameters can be tested and analyzed.



Voltage and current curve during capacity test

Dynamic function

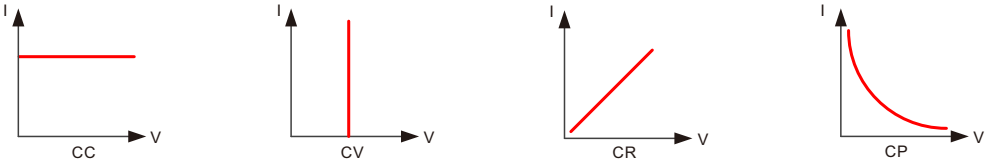
The FT6200 series of electronic loads provides programmable dynamic testing capabilities. Dynamic test function includes continuous, pulse, flip three ways, support load slope setting. The dynamic mode is used to simulate various on-load mutations and anomalies, and is suitable for testing the dynamic characteristics of the power supply, the stability of the power supply, the protection point and protection time of the battery, and the burst on-load simulation of various pulses.



10kHz dynamic load

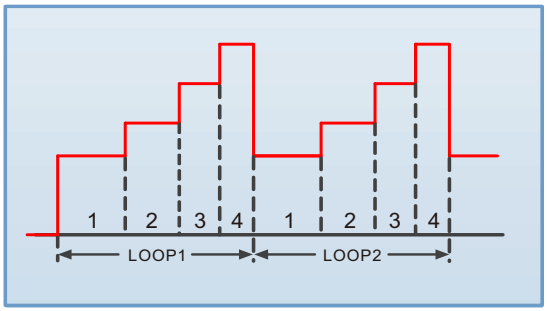
Constant state function

FT6200 series electronic load has four test modes of constant current, constant voltage, constant resistance and constant power, which can meet a wide range of test requirements. Constant current and constant resistance modes can be used to test whether the output voltage of the voltage source maintains a stable output under different load conditions. For battery chargers and adapters, constant voltage mode can change the output voltage of the charger and adapter to verify that the output current is correct.



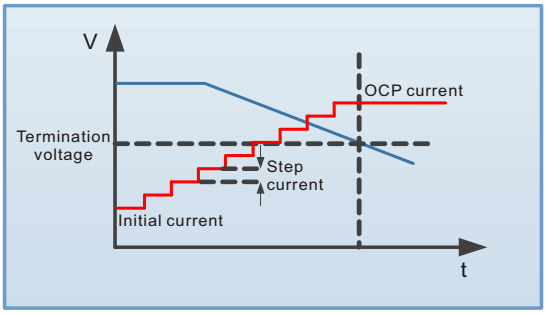
Sequence function

The FT6200 series of electronic loads provides serial testing capabilities. Users can edit the test sequence of a load to simulate various changes at the load input. The electronic load can store up to 10 sequence files, each file can perform up to 100 steps, the maximum time of a single step can be set to 50us ~ 36000s, and at the same time support file link and other sequence editing functions. Suitable for all kinds of complex on-load tests.

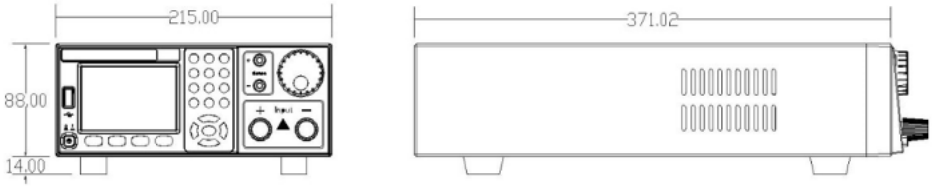


OCP/OPP test

The FT6200 series load itself provides OCP testing, which is mainly applied to the testing of BMS, overcurrent and overpower points of the power module. During OCP testing, the overcurrent protection point of the tested object will be automatically found and recorded in IMAX, PMAX. Combined with the high and low limit values of the test parameters, it can automatically determine whether the test results exceed the set specifications, saving time for product design verification and production line system testing.



Dimension picture



Ordering information

Model	Specification	Dimension
FT6211A	150V/30A/150W	1/2 2U
FT6212A	150V/30A/300W	1/2 2U
FT6213A	500V/15A/300W	1/2 2U
FT6214A	150V/60A/300W	1/2 2U
FT6212A+	150V/30A/400W	1/2 2U
FT6214A+	150V/60A/400W	1/2 2U

Specification parameters-1

Channel model	FT6211A		FT6212A		FT6213A	
Voltage	150V		150V		500V	
Current	30A		30A		15A	
Power	150W		300W		300W	
Minimum operating voltage	1. 2V@30A		0. 9V@30A		3V@15A	
Constant current						
Range	3A	30A	3A	30A	3A	15A
Resolution	0. 05mA	0. 5mA	0. 05mA	0. 5mA	0. 05mA	0. 25mA
Precision	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.
Constant voltage						
Range	30V	150V	30V	150V	100V	500V
Resolution	0. 5mV	2. 5mV	0. 5mV	2. 5mV	2mV	8. 5mV
Precision	0. 025%+0. 025%F. S					
Constant resistance*4						
Range	0. 04Ω～10Ω	10Ω～20kΩ	0. 03Ω～10Ω	10Ω～20kΩ	0. 2Ω～10Ω	10Ω～20kΩ
Precision	0. 01%+0. 08S	0. 01%+0. 0008S	0. 01%+0. 08S	0. 01%+0. 0008S	0. 01%+0. 08S	0. 01%+0. 0008S
Constant power*4						
Range	150W		300W		300W	
Precision	0. 1%+0. 1%F. S.		0. 1%+0. 1%F. S.		0. 1%+0. 1%F. S.	
Dynamic state*5						
T1&T2	10us～50s		10us～50s		10us～50s	
Slope	0. 6A/ms～1. 2A/us		0. 6A/ms～1. 2A/us		0. 6A/ms～0. 6A/us	
Current measurement						
Range	3A	30A	3A	30A	3A	15A
Resolution	0. 05mA	0. 5mA	0. 05mA	0. 5mA	0. 05mA	0. 25mA
Precision	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.
Voltage measurement						
Range	30V	150V	30V	150V	100V	500V
Resolution	0. 5mV	2. 5mV	0. 5mV	2. 5mV	2mV	8. 5mV
Precision	0. 025%+0. 025%F. S					
Short-circuit						
Current(CC)	≒3A	≒30A	≒3A	≒30A	≒3A	≒15A
Voltage(CV)	≒0V	≒0V	≒0V	≒0V	≒0V	≒0V
Power(CP)	≒150W	≒150W	≒300W	≒300W	≒300W	≒300W
Other						
Dimension (H*W*D)	88×215×380					
Weight	4kg		5kg		5kg	
Operating temperature	0℃～40℃					

* All specifications are subject to change without notice.

Notes:

* 1. The above accuracy parameters are measured in the temperature range of 25±5℃.

* 2. Rated power specifications are permitted at an ambient temperature of 25℃.

* 3. If the operating voltage exceeds 1.05 times the rated voltage, permanent damage will be caused to the device.

* 4. Voltage and current input values must not be less than 5% F.S.

* 5. Rise/fall slope: 10% to 90% current rise/fall slope for 0 to maximum current.

Specification parameters-2

Channel model	FT6214A		FT6212A+		FT6214A+	
Voltage	150V		150V		150V	
Current	60A		30A		60A	
Power	300W		400W		400W	
Minimum operating voltage	2V@60A		0. 9V@30A		2V@60A	
Constant current						
Range	0-6A	0-60A	3A	30A	0-6A	0-60A
Resolution	0. 1mA	1mA	0. 05mA	0. 5mA	0. 1mA	1mA
Precision	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.
Constant voltage						
Range	30V	150V	30V	150V	30V	150V
Resolution	0. 5mV	2. 5mV	0. 5mV	2. 5mV	0. 5mV	2. 5mV
Precision	0. 025%+0. 025%F. S					
Constant resistance*4						
Range	0. 015Ω～5 Ω	5Ω～10kΩ	0. 03Ω～10Ω	10Ω～20kΩ	0. 015Ω～5 Ω	5Ω～10k Ω
Precision	0. 01%+0. 08S	0. 01%+0. 0008S	0. 01%+0. 08S	0. 01%+0. 0008S	0. 01%+0. 08S	0. 01%+0. 0008S
Constant power*4						
Range	300W		400W		400W	
Precision	0. 1%+0. 1%F. S.		0. 1%+0. 1%F. S.		0. 1%+0. 1%F. S.	
Dynamic state*5						
T1&T2	10us～50s		10us～50s		10us～50s	
Slope	1. 2A/ms～2. 5A/us		0. 6A/ms～1. 2A/us		1. 2A/ms～2. 5A/us	
Current measurement						
Range	0-6A	0-60A	3A	30A	0-6A	0-60A
Resolution	0. 1mA	1mA	0. 05mA	0. 5mA	0. 1mA	1mA
Precision	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.	0. 05%+0. 1%F. S.	0. 05%+0. 05%F. S.
Voltage measurement						
Range	30V	150V	30V	150V	30V	150V
Resolution	0. 5mV	2. 5mV	0. 5mV	2. 5mV	0. 5mV	2. 5mV
Precision	0. 025%+0. 025%F. S					
Short-circuit						
Current(CC)	≒6A	≒60A	≒3A	≒30A	≒6A	≒60A
Voltage(CV)	≒0V	≒0V	≒0V	≒0V	≒0V	≒0V
Power(CP)	≒300W	≒300W	≒400W	≒400W	≒400W	≒400W
Other						
Dimension (H*W*D)	88×215×380					
Weight	5kg		5kg		5kg	
Operating temperature	0℃～40℃					

* All specifications are subject to change without notice.

Notes:

* 1. The above accuracy parameters are measured in the temperature range of 25±5℃.

* 2. Rated power specifications are permitted at an ambient temperature of 25℃.

* 3. If the operating voltage exceeds 1.05 times the rated voltage, permanent damage will be caused to the device.

* 4. Voltage and current input values must not be less than 5% F.S.

* 5. Rise/fall slope: 10% to 90% current rise/fall slope for 0 to maximum current.

FT66100A series

Multi-channel DC electronic load

Summary

FT66100 multi-channel programmable DC electronic load, modular design, a single frame can install up to 6 electronic load modules. Its 8-inch color screen can display the work content of 6 channels at the same time, and adaptively adjust the optimal display interface according to the number of channels. This load provides a wide range of test functions, suitable for a variety of single or multi-output DC power supplies, chargers, LED drivers or related equipment testing, including both CC, CV, CR and CP basic test mode, but also provides LED test mode and dynamic test function, dynamic frequency up to 20kHz.

The FT66100 series adopts the structure of one host and one module. Users can freely choose modules according to the number of test channels and power requirements, which is very suitable for building a power test platform. It is equipped with RS232, GPIB (optional), LAN (optional) and other communication control interfaces, which is convenient for users to implement remote intelligent control, greatly improve work efficiency, and provide a variety of solutions for your design and testing.

Characteristic

- 8-inch color display, can display 6 channels data and set parameters at the same time, self-adaptive screen display;
- Support Chinese/English/Chinese language display;
  5-bit data, 0.05% accuracy, 20kHz dynamic frequency can be set up and down slope;
- Constant current, constant voltage, constant resistance, constant power and LED five test functions;
- Multiple modules can be set synchronization mode, calmly cope with high current or multi-output channel device test;
- Over voltage/over current/over power/over temperature/polarity reverse and other all-round intelligent protection;
- With adjustable hardware current and power limit value, can effectively provide reliable protection for the tested equipment;
- Support quick call, numeric keys can arbitrarily call the saved settings, easy to test;
- Support automatic test, load automatically complete the test process, and give the test result;
- Support OCP test, automatically find the overcurrent protection point, record the maximum current and maximum power value and produce the result judgment;
- Two short-circuit states, switching and delay, to ensure the safety of the power supply under test;
- Perfect hardware and software protection, comprehensive internal and external protection;
- Simulate capacitive inductive load, control battery charging and discharging state;
- RS232, GPIB (optional), LAN (optional) communication port, standard
- SCPI instruction set, easy to build the test system;
- Intelligent fan control saves energy and reduces noise.

Program function

The FT66100 series provides program testing capabilities to simulate complex changes in actual loads. In program mode, the load performs multiple tests on the device based on the file and prompts the test results in the form of Pass or Fail after the test is completed. The advantages of the program mode are especially obvious in the product inspection, which can significantly improve the efficiency of product inspection. The load can store up to 10 programs, each containing 10 sequences, for a total of 100 files. If a single program sequence is not sufficient to test the object under test, you can use the program chain feature to obtain more sequences for testing.

Application field

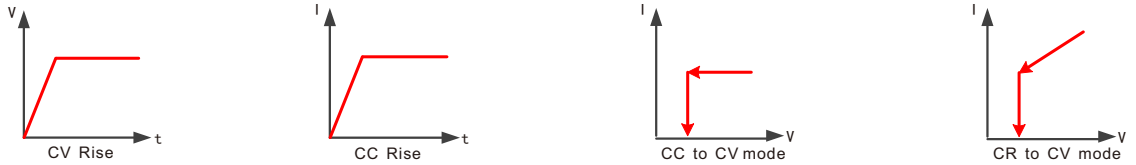
- Production, aging and quality inspection of low-power power supply products such as low-power power supply, DC converter, mobile phone charger, 3C battery, BMS, etc.
- Automotive wiring harness, connectors, fuses, relays, central electrical box and other product testing;
- Battery pack, BMS protection board balanced discharge, power tool production testing, LED power board production testing and other related fields.

Constant state function

FT66100 series electronic load with constant current, constant voltage, constant resistance and constant power, LED five test modes, can meet a wide range of test requirements. Constant current and constant resistance modes can be used to test whether the output voltage of the voltage source maintains a stable output under different load conditions. For battery chargers and adapters, constant voltage mode can change the output voltage of the charger and adapter to verify that the output current is correct.

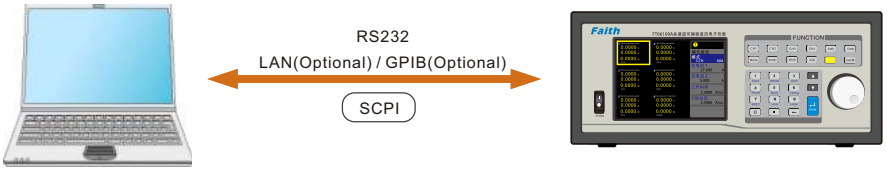
APPLY mode

The FT66100A series offers a wide range of application modes to suit testing in special situations, including four modes:
Inductive load simulation (CC Rise), capacitive load simulation (CV Rise), constant current constant voltage (CC To CV) and constant resistance To constant voltage mode (CR To CV).
The constant voltage soft start mode is equivalent to a capacitive load, and the size of its analog capacitance is proportional to the rise time of the soft start. The constant current soft start mode is equivalent to an inductive load, and its analog inductance is proportional to the rise time of the soft start. CC TO CV mode and CR TO CV mode are mainly used for battery or capacitor product testing, which can make the discharge more thorough.



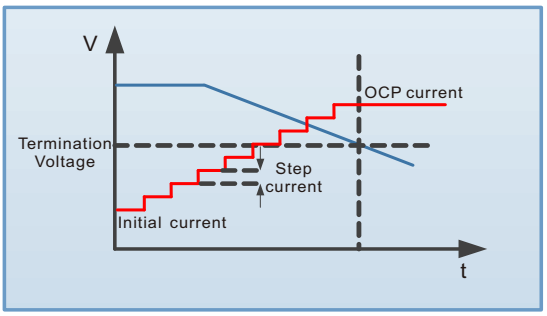
SCPI with remote control

The FT66100 series supports standard SCPI commands, through which all functions of panel operations can be implemented. This provides convenience for the establishment of intelligent test platform and the secondary development of users. The FT66100A series can easily achieve remote control of electronic loads through RS232, GPIB (optional), LAN (optional) interfaces.



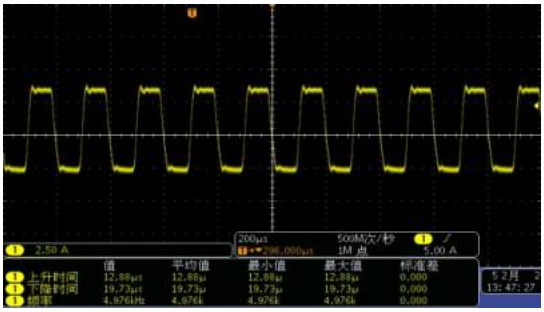
OCP test

FT66100 series load itself provides OCP test, mainly used in BMS, power module overcurrent and overpower point test. During OCP testing, the overcurrent protection point of the tested object will be automatically found and recorded in IMAX, PMAX. Combined with the high and low limit values of the test parameters, it can automatically determine whether the test results exceed the set specifications, saving time for product design verification and production line system testing.



Dynamic function

The FT66100 series provides programmable dynamic testing capabilities. The dynamic mode is used to simulate all kinds of on-load sudden changes and anomalies, and is suitable for testing the dynamic characteristics of power supplies. Maximum frequency up to 20kHz, support up slope, down slope, range switching parameter Settings.



Ordering information

Model	Specification	Note
FT66100A	FT66100 series electronic load mainframe	1,800W max. power per unit, 6 mounting positions
FT66103A	Electronic load module 80V/60A/300W	Occupy a mounting position
FT66105A	Electronic load module 500V/10A/300W	Occupy a mounting position
FT66106A	Electronic load module 80V/120A/600W	Occupy two mounting position
FT66108A	Electronic load module 500V/20A/600W	Occupy two mounting position

Optional information

Name	Model	Instruction
GPIB interface	FT661000A	
LAN interface	FT661001A	

Specification parameters

Model	FT66103A		FT66105A		FT66106A		FT66108A	
Power	300W		300W		600W		600W	
Current	60A		10A		120A		20A	
Voltage*1	80V		500V		80V		500V	
Full current minimum operating voltage	1. 5V@60A		4. 5V@10A		2V@120A		5V@20A	
Constant current								
Range	0～6A	0～60A	0～1A	0～10A	0～12A	0～120A	0～2A	0～20A
Resolution	0. 1mA	1mA	0. 02mA	0. 2mA	0. 2mA	2mA	0. 04mA	0. 4mA
Precision	0. 1%+0. 1%F. S.		0. 1%+0. 1%F. S.		0. 1%+0. 1%F. S.		0. 1%+0. 1%F. S.	
Constant voltage								
Range	0～16V	0～80V	0～50V	0～500V	0～16V	0～80V	0～50V	0～500V
Resolution	0. 3mV	2mV	1mV	10mV	0. 3mV	2mV	1mV	10mV
Precision	0. 05%+0. 1%F. S.		0. 05%+0. 1%F. S.		0. 05%+0. 1%F. S.		0. 05%+0. 1%F. S.	
Constant power*2								
Range	0～300W		0～300W		0～600W		0～600W	
Resolution	5mW		5mW		10mW		10mW	
Precision	0. 5%+1%F. S.		0. 5%+1%F. S.		0. 5%+1%F. S.		0. 5%+1%F. S.	
Constant resistance *2*3*4								
Range	0. 025Ω～100Ω（16V）		0. 5Ω～1875Ω（50V）		12. 5mΩ～50Ω（16V）		0. 25～937. 5Ω（50V）	
	0. 625Ω～2500Ω（80V）		25Ω～93600Ω（500V）		0. 3125～1250Ω（80V）		12. 5～46. 8KΩ（500V）	
Resolution	16bit		16bit		16bit		16bit	
Precision	0. 35%+0. 05S（100Ω）		0. 35%+0. 0025S（1875Ω）		0. 35%+0. 104S（50Ω）		0. 35%+0. 0052S（937. 5Ω）	
	0. 35%+0. 002S（2500Ω）		0. 35%+53uS（93600Ω）		0. 35%+0. 004S（1250Ω）		0. 35%+110uS（46800Ω）	
Transient state								
T1 & T2	0. 025～50ms/Res: 5us		0. 025～50ms/Res: 5us		0. 025～50ms/Res: 5us		0. 025～50ms/Res：5us	
	0. 1～500ms/Res: 25us		0. 1～500ms/Res: 25us		0. 1～500ms/Res: 25us		0. 1～500ms/Res：25us	
	10～50s/Res: 2. 5ms		10～50s/Res: 2. 5ms		10～50s/Res: 2. 5ms		10～50s/Res: 2. 5ms	
Precision	1us/1ms+100ppm		1us/1ms+100ppm		1us/1ms+100ppm		1us/1ms+100ppm	
Slope								
Current Range	0～6A	0～60A	0～1A	0～10A	0～12A	0～120A	0～2A	0～20A
Slope *5	1～25mA/us	0.01～2. 5A/us	0.16～40mA/us	1.6～400mA/us	2～50mA/us	0.02～5A/us	0.32～80mA/us	3.2～800mA/us
	0.001A/us	0.01A/us	0.16mA/us	1. 6mA/us	0. 002A/us	0. 02A/us	0. 32mA/us	3. 2mA/us
Precision	（1±35%）× Setting value							
Measurement								
Voltage measurement								
Range	0～16V	0～80V	0～50V	0～500V	0～16V	0～80V	0～50V	0～500V
Resolution	0. 3mV	2mV	1mV	10mV	0. 3mV	2mV	1mV	10mV
Precision	0. 05%+0. 1%F. S.		0. 05%+0. 1%F. S.		0. 05%+0. 1%F. S.		0. 05%+0. 1%F. S.	
Current measurement								
Range	0～6A	0～60A	0～1A	0～10A	0～12A	0～120A	0～2A	0～20A
Resolution	0. 1mA	1mA	0. 02mA	0. 2mA	0. 2mA	2mA	0. 04mA	0. 4mA
Precision	0. 05%+0. 1%F. S.		0. 05%+0. 1%F. S.		0. 05%+0. 1%F. S.		0. 05%+0. 1%F. S.	
Power measurement								
Range	0～300W		0～300W		0～600W		0～600W	
Resolution	5mW		5mW		10mW		10mW	
Precision	0. 5%+1%F. S.		0. 5%+1%F. S.		0. 5%+1%F. S.		0. 5%+1%F. S.	
Short-circuit characteristic								
Current(CC)	≒6A	≒60A	≒1A	≒10A	≒12A	≒120A	≒2A	≒20A
Voltage(CV)	0V		0V		0V		0V	
Other characteristic								
Temperature drift	100ppm/℃（Typical value）		100ppm/℃（Typical value）		100ppm/℃（Typical value）		100ppm/℃（Typical value）	
Weight	2. 7kg		2. 7kg		5. 5kg		5. 5kg	
Occupies the module installation bit	1		1		2		2	

FT6100 series

Multi-channel electronic load array

Summary

The FT6100 series is a full-featured multi-channel programmable DC electronic load product based on highly reliable, highly integrated applications. Products are tailor-made for integrated applications and are highly cost-effective. In most integrated applications, it can replace the small power single electronic load, saving a lot of space for system construction, and significantly saving costs.

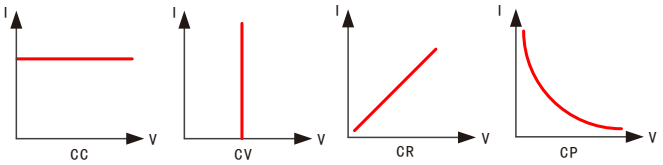
Developed specifically for embedded integrated applications, the FT6100 is a standard 19-inch chassis, equipped with RS485, LAN communication interfaces, and Modbus-RTU. Support Visual C++, C#, Delphi, Visual Basic, Labview and other most of the software platform for secondary development, users can customize their own application software according to needs.

Characteristic

- Compact structure, economical, cost-effective, and occupy small space;
- Channel modular design is small, can achieve 3U/48CH, only 1/16 of the conventional electronic load;
- Electrical isolation between channels, can be controlled separately or arbitrarily parallel;
- Each channel electronic load power range: 50W ~ 1080W, voltage specifications: 80V, 100V, 500V;
- Electronic load on-load mode: CC, CV (some models do not support), CR, CP four test modes;
- Channel support dynamic and sequence functions, load current and timing can be edited;
- With time measurement function, battery discharge function;
- OCP/OVP/OPP/OTP multiple protection;
- Standard RS485, LAN, support standard MODBUS communication protocol;
- Perfect dynamic link library, easy to secondary development;
- Standard with complete functions of the upper computer software;
- High reliability, long mean time between failures;
- LCD display, can display each channel voltage, current, power and status;
- With over voltage, over current, over power, over temperature protection;
- Standard 19 inches, can be installed in the cabinet;
- Intelligent fan design, good heat dissipation and low noise.

Constant state function

FT6100 series electronic load has four test modes of constant current, constant voltage (some models do not support), constant resistance and constant power, which can meet a wide range of test requirements. Constant current and constant resistance modes can be used to test whether the output voltage of the voltage source maintains a stable output under different load conditions. For battery chargers and adapters, constant voltage mode can change the output voltage of the charger and adapter to verify that the output current is correct



Application programming

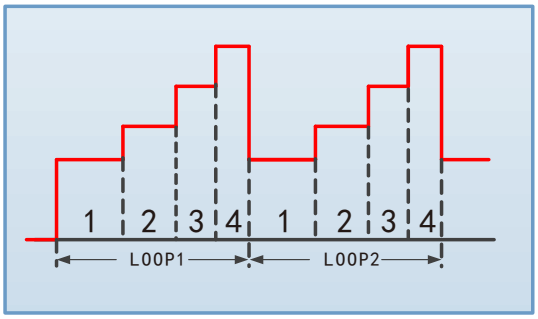
The FT6100 provides a LAN or RS485 interface for multi-machine integration and can be easily integrated into the test system. Communication adopts standard Modbus protocol and provides detailed programming manual and DLL development kit, supports C#, C++, Delph, Labview development languages, convenient secondary development. To facilitate debugging, the product comes with a Demo software, which can perform all functions of the load system, waveform display, and data saving functions. The software system is easy to operate and powerful, and users can easily use it.

Application field

- Production, aging and quality inspection of low-power power supply products such as low-power power supply, DC converter, mobile phone charger, 3C battery, BMS, etc;
- Automotive wiring harness, connectors, fuses, relays, central electrical box and other product testing;
- Battery pack, BMS protection board balanced discharge, power tool production testing, LED power board production testing and other related fields.

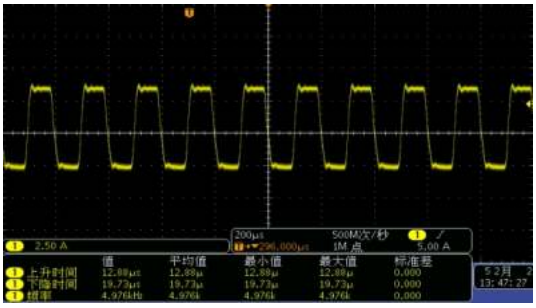
Sequence function

The FT6100 series of electronic loads provides serial testing capabilities. You can edit up to 20 test files with 100 steps each. Support CC, CV (some models do not support), CR, CP and other modes of load timing changes, and also support file link and other sequence editing functions. A maximum of 2000 timing steps can be edited. The time range of a single step is 1ms to 86400s.



Dynamic function

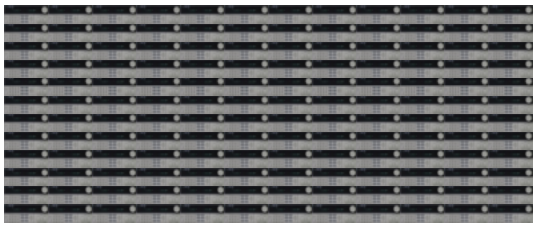
The FT6100 series of electronic loads provides programmable dynamic testing capabilities. The dynamic mode is used to simulate all kinds of on-load sudden changes and anomalies, and is suitable for testing the dynamic characteristics of power supplies. The setting range of dynamic pulse width is 50us ~ 60000m.



3U/12CH High integration

The FT6100 series adopts a highly integrated design, and a single 3U can integrate 48 electronic load channels, which is three-quarters smaller than the traditional electronic load volume, and greatly compresses the space of the integrated system. Each channel is electrically isolated, independent of each other, and can be controlled separately.

VS



Ordering information

Model	Specification	Note
FT6100	FT6100 dedicated mainframe chassis	2160W maximum power per unit, 12-channel mounting position
FT61005-80-5	Electronic load module, 80V/5A/50W*12	Occupies 12 mounting positions
FT61018-80-20	Electronic load module, 80V/20A/180W*3	Occupies 3 mounting positions
FT61036-80-20	Electronic load module, 80V/20A/360W	Occupies 2 mounting positions
FT61054-80-30	Electronic load module, 80V/30A/540W	Occupies 3 mounting positions
FT61072-80-40	Electronic load module, 80V/40A/720W	Occupies 4 mounting positions
FT61108-80-60	Electronic load module, 80V/60A/1080W	Occupies 6 mounting positions
FT61036-500-10	Electronic load module, 500V/10A/360W	Occupies 2 mounting positions
FT61054-500-15	Electronic load module, 500V/15A/540W	Occupies 3 mounting positions
FT61072-500-20	Electronic load module, 500V/20A/720W	Occupies 4 mounting positions
FT61108-500-30	Electronic load module, 500V/30A/1080W	Occupies 6 mounting positions
FT61236-100-5	Electronic load module, 100V/5A/50W*36CH	3U/36 channels*1 per unit
FT61248-100-5	Electronic load module, 100V/5A/50W*48CH	3U/48 channels*1 per unit
Note: *1, this product does not have CV function, does not support remote sampling		

Specification parameters-1

Model	FT61005-80-5	FT61018-80-20	FT61036-80-20	FT61054-80-30	FT61072-80-40	FT61108-80-60
Current	5A	20A	20A	30A	40A	60A
Voltage	80V	80V	80V	80V	80V	80V
Power	50W*12	180W*3	360W	540W	720W	1080W
Full current minimum operating voltage	1V@5A	1V@20A	0.6V@20A	0.6V@30A	0.4V@40A	0. 6V@60A
Maximum number of modules per unit	1	4	6	4	3	2
Constant current						
Range	0～5A	0～20A	0～20A	0～30A	0～40A	0～60A
Resolution	1. 25mA	5mA	5mA	7. 5mA	10mA	15mA
Precision	0.1%+0.15%F.S.	0.1%+0.15%F. S.	0. 1%+0. 15%F. S.	0.1%+0. 15%F. S.	0.1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Constant voltage						
Range	0～80V	0～80V	0～80V	0～80V	0～80V	0～80V
Resolution	20mV	20mV	20mV	20mV	20mV	20mV
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0.1%+0.15%F.S.	0.1%+0.15%F.S.	0.1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Constant resistance						
Range	0. 2～4000Ω	0. 05～1000Ω	0. 05～1000Ω	0. 033～670Ω	0. 025～500Ω	0. 016～330Ω
Resolution	12bits	12bits	12bits	12bits	12bits	12bits
Precision	Vin/Rset*0. 2%+0. 3%IF. S.					
Constant power						
Range	0～50W	0～180W	0～360W	0～540W	0～720W	0～1080W
Precision	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.
Current measurement						
Range	0～5A	0～20A	0～20A	0～30A	0～40A	0～60A
Resolution	1. 25mA	5mA	5mA	7. 5mA	10mA	15mA
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Voltage measurement						
Range	0～80V	0～80V	0～80V	0～80V	0～80V	0～80V
Resolution	20mV	20mV	20mV	20mV	20mV	20mV
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Dynamic current						
Dynamic pulse width	0. 05～59. 999ms/60～60000ms					
Resolution	1us/1ms					
Precision	1us+100ppm					
Basic characteristic						
AC input	220VAC±10%，50～60Hz，120VA					
Temperature drift	50ppm/℃					

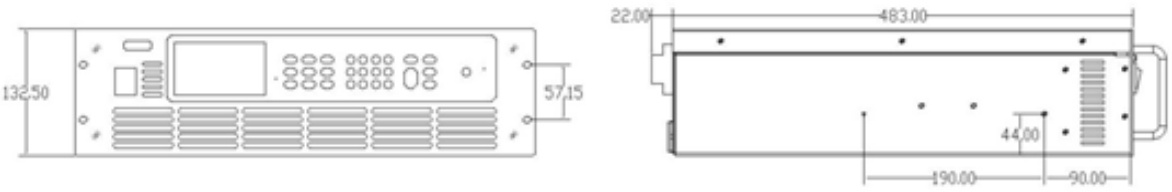
Specification parameters-2

Model	FT61036-500-10	FT61054-500-15	FT61072-500-20	FT61108-500-30
Current	10A	15A	20A	30A
Voltage	500V	500V	500V	500V
Power	360W	540W	720W	1080W
Full current minimum operating voltage	5V@10A	5V@15A	5V@20A	5V@30A
Maximum number of modules per unit	6	4	3	2
Constant current				
Range	0～10A	0～15A	0～20A	0～30A
Resolution	2. 5mA	3. 75mA	5mA	7. 5mA
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Constant voltage				
Range	0～500V	0～500V	0～500V	0～500V
Resolution	125mV	125mV	125mV	125mV
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Constant resistance				
Range	0. 6～12000Ω	0. 4～8000Ω	0. 3～6000Ω	0. 2～4000Ω
Resolution	12bits	12bits	12bits	12bits
Precision	Vin/Rset*0. 2%+0. 3%IF. S.			
Constant power				
Range	0～360W	0～540W	0～720W	0～1080W
Precision	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.
Current measurement				
Range	0～10A	0～15A	0～20A	0～30A
Resolution	2. 5mA	3. 75mA	5mA	7. 5mA
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Voltage measurement				
Range	0～500V	0～500V	0～500V	0～500V
Resolution	125mV	125mV	125mV	125mV
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Dynamic current				
Dynamic pulse width	0. 05～59. 999ms/60～60000ms			
Resolution	1us/1ms			
Precision	1us+100ppm			
Basic characteristic				
AC input	220VAC±10%，50～60Hz，120VA			
Temperature drift	50ppm/℃			

Specification parameters-3

Model	FT61236-100-5	FT61248-100-5
Current	5A	5A
Voltage	100V	100V
Power	50W	50W
Channel number	36CH	48CH
Full current minimum operating oltage	1V@5A	1V@5A
Constant current		
Range	0～5A	0～5A
Resolution	1. 25mA	1. 25mA
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Constant resistance		
Range	0. 25～5000Ω	0. 25～5000Ω
Resolution	12bits	12bits
Precision	Vin/Rset*0. 2%+0. 3%IF. S.	Vin/Rset*0. 2%+0. 3%IF. S.
Constant power		
Range	0～50W	0～50W
Precision	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.
Current measurement		
Range	0～5A	0～5A
Resolution	1. 25mA	1. 25mA
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Voltage measurement		
Range	0～100V	0～100V
Resolution	25mV	25mV
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Other characteristic		
AC input	220VAC±10%，50～60Hz，120VA	220VAC±10%，50～60Hz，120VA
Temperature drift	50ppm/℃	50ppm/℃

Dimension drawing



FT6110A/R series

Multi-channel electronic load array

Summary

The FT6110A/R series multi-channel electronic load is a high-performance, cost-effective product for power ATE test systems. In integrated applications, it can replace small power single electronic loads, saving a lot of space for system construction, and significantly saving costs.

In order to facilitate the development of power ATE test system, FT6110A/R has built-in special functions such as voltage and current ripple test, dynamic frequency sweep, load effect test, LED driver test, OCP test, slope setting, etc., and provides a complete DLL development kit. Support C#, C++, Delph, Labview development languages, convenient for users to secondary development.

Characteristic

- Compact structure, economical, cost-effective, and occupy small space;
- Channel modular design is small, can achieve 3U/8CH, only 1/3 of the conventional electronic load;
- Electrical isolation between channels, can be controlled separately or arbitrarily parallel;
- Power channel: 150W x 8CH/300W x 4CH;
- Voltage range: 0 ~ 150V/0 ~ 500V;
- Current range: 0 ~ 30A/0 ~ 15A;
- 50kHz dynamic test function, can set up, down slope;
- Up to 500kHz voltage and current sampling rate;
- Supports remote and near-end voltage functions;
- Battery discharge test function;
- Load effect test function;
- Voltage and current ripple test function;
- Dynamic frequency sweep function;
- Sequence function, simulate more complex load with carrier shape;
- Automatic test function, more suitable for production test, automatic judgment output test results;
- Convenient and practical OCP test function;
- Time measurement function;
- Over voltage, over current, over power, over temperature and reverse detection protection;
- Provides LAN, RS485 remote communication interface, convenient multi-computer integration;
- Standard MODBUS communication protocol, provides a perfect dynamic link library, easy to secondary development;
- Standard with complete functions of the upper computer software;
- The 19-inch rack structure is designed for easy system integration and installation.

Application field

- Production, aging and quality inspection of low-power power supply products such as low-power power supply, DC converter, mobile phone charger, 3C battery, BMS, etc;
- Automotive wiring harness, connectors, fuses, relays, central electrical box and other product testing;
- Battery pack, BMS protection board balanced discharge, power tool production testing, LED power board production testing and other related fields.

Ripple test function

Load support voltage ripple Vpp, current ripple (Ipp) measurement, bandwidth 10Hz ~ 250kHz. In the range of measurement bandwidth, the ripple measurement accuracy is high and the repeatability is good. Generally speaking, the ripple includes two different frequency segments, power ripple and switch ripple. The load ripple measurement results are the comprehensive results of superposition of the two kinds of ripple.

Automatic test function

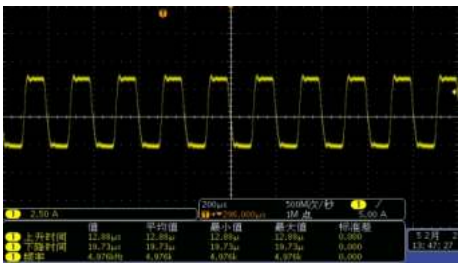
Automatic test function A single file can support 100 steps of testing, each step of the test can set the load mode, load value, detection items, detection items upper/lower limits, running time. The running time ranges from 0.1s to 86400s. This function only needs to complete the product insertion and removal, and the load will be tested and judged automatically. After the test is completed, it will be reflected in the form of PASS or FAIL.

Load effect test function

When the output load changes, the power supply products will cause the change of the output stability, which is called the load effect. The load effect test function provides users with multiple sets of on-load parameters and stable time Settings. After the test is completed, the load adjustment rate, voltage change rate and DC internal resistance of the power supply are provided directly.

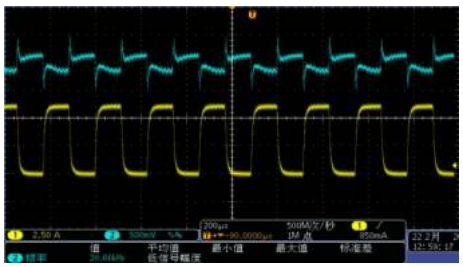
Dynamic function

The FT6110A/R series of electronic loads provides programmable dynamic testing capabilities. The dynamic mode is used to simulate all kinds of on-load sudden changes and anomalies, and is suitable for testing the dynamic characteristics of power supplies. The maximum frequency can reach 50kHz, support continuous, pulse, flip, rise slope, fall slope, range switching parameter settings.



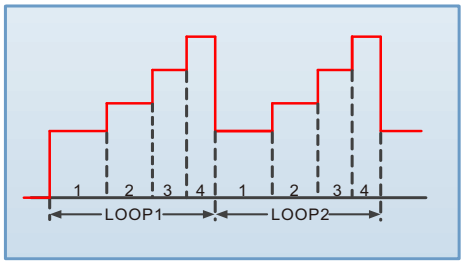
Dynamic frequency sweep function

The dynamic sweep function can manually or automatically adjust the on-load frequency continuously, up to 50kHz. This test function captures the maximum (Vp+) and minimum (Vp-) voltage peaks of the power class test object under the worst conditions.



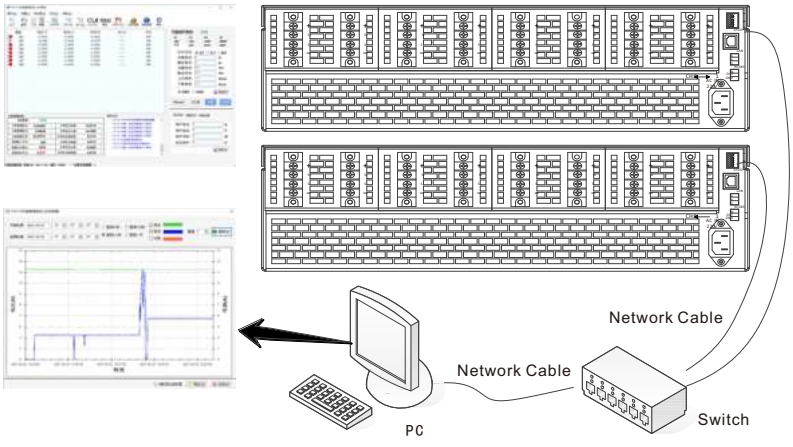
Sequence function

The FT6110A/R series electronic load provides serial test functionality, allowing users to edit 10 serial test files, which can be linked and run repeatedly. Each test file supports 20 test steps. In each test step, the user can set the load mode, load master value, and single step time. The single step time ranges from 0.001s to 86400s.



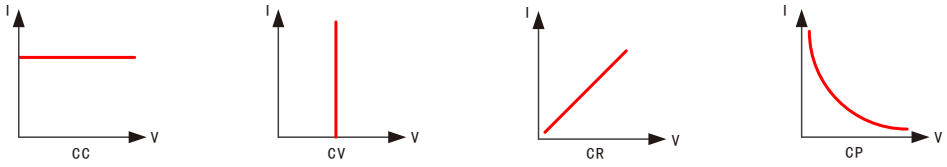
Application programming

The FT6110A/R provides a LAN or RS485 interface for multi-machine integration and can be easily integrated into the test system. Communication adopts standard Modbus protocol and provides detailed programming manual and DLL development kit, supports C#, C++, Delph, Labview development languages, convenient secondary development. To facilitate debugging, the product comes with a Demo software, which can perform all functions of the load system, waveform display, and data saving functions. The software system is easy to operate and powerful, and users can easily use it.



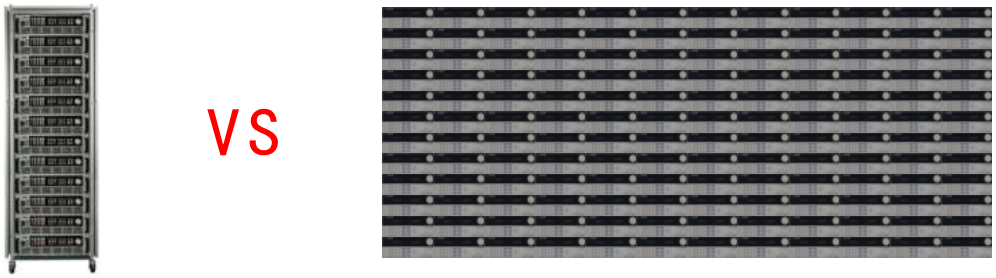
Constant state function

FT6110A/R series electronic load has four test modes of constant current, constant voltage, constant resistance and constant power, which can meet a wide range of test requirements. Constant current and constant resistance modes can be used to test whether the output voltage of the voltage source maintains a stable output under different load conditions. For battery chargers and adapters, constant voltage mode can change the output voltage of the charger and adapter to verify that the output current is correct.

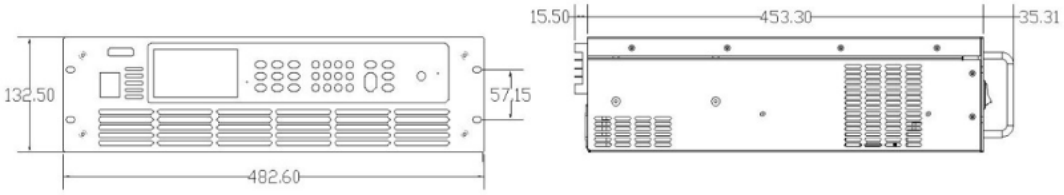


3U/8CH High integration

The FT6110A/R series adopts a highly integrated design, and a single 3U can integrate 8 electronic load channels, which is two-thirds smaller than the traditional electronic load volume and greatly compresses the space of the integrated system. Each channel is electrically isolated, independent of each other, and can be controlled separately.



Dimension drawing



FT6110A/R Chassis Dimension Drawing

Ordering information

Model	Specification	Note
FT6110	FT6110 Series dedicated chassis	The maximum power of a unit is 1200 W. Within the same mainframe, A/R series models cannot be mixed and matched.
FT6111A	Electronic load module 150V/30A/150W, 2 Channels	A series
FT6112A	Electronic load module 150V/30A/300W, 1 Channel	A series
FT6113A	Electronic load module 500V/15A/300W, 1 Channel	A series
FT6114A	Electronic load module 600V/15A/300W, 1 Channel	A series
FT6111R	Electronic load module 150V/30A/150W, 2 Channels	R series
FT6112R	Electronic load module 150V/30A/300W, 1 Channel	R series
FT6113R	Electronic load module 500V/15A/300W, 1 Channel	R series
FT6114R	Electronic load module 600V/15A/300W, 1 Channel	R series

Specification parameters

Channel model	FT6111A		FT6112A		FT6113A		FT6111R		FT6112R		FT6113R	
Number of channels per unit	4, 6, 8		2, 3, 4		2, 3, 4		4, 6, 8		2, 3, 4		2, 3, 4	
Voltage	150V		150V		500V		150V		150V		500V	
Current	30A		30A		15A		30A		30A		15A	
Power	150W		300W		300W		150W		300W		300W	
Full current minimum operating voltage	1. 6V@30A		1V@30A		5V@15A		1. 6V@30A		1V@30A		5V@15A	
Constant current												
Range	3A	30A	3A	30A	3A	15A	3A	30A	3A	30A	3A	15A
Resolution	0.75mA	7.5mA	0.75mA	7.5mA	0.75mA	7.5mA	0.05mA	0.5mA	0.05mA	0.5mA	0.025mA	0.25mA
Precision	0.1%+0.25%F.S.						0. 05%+0. 05%F. S.					
Constant voltage												
Range	30V	150V	30V	150V	100V	500V	30V	150V	30V	150V	100V	500V
Resolution	7. 5mV	37. 5mV	7. 5mV	37.5mV	25mV	125mV	0. 5mV	2. 5mV	0. 5mV	2. 5mV	2mV	8. 5mV
Precision	0.1%+0.1%F.S.						0. 025%+0. 025%F. S					
Constant resistance												
Range	0. 05Ω～5kΩ		0. 05Ω～5kΩ		0. 35Ω～15kΩ		0. 05Ω～5kΩ		0. 05Ω～5kΩ		0. 35Ω～15kΩ	
Precision	0. 5%+0. 002R		0. 5%+0. 002R		0. 5%+0. 02R		0. 5%+0. 002R		0. 5%+0. 002R		0. 5%+0. 02R	
Constant power												
Range	150W		300W		300W		150W		300W		300W	
Precision	0.1%+0.15%		0.1%+0.15%		0.1%+0.15%		0.1%+0.15%		0.1%+0.15%		0.1%+0.15%	
Dynamic function												
T1&T2	10us～60s		10us～60s		10us～60s		10us～60s		10us～60s		10us～60s	
Resolution	2us		2us		2us		2us		2us		2us	
Precision	1us+20ppm		1us+20ppm		1us+20ppm		1us+20ppm		1us+20ppm		1us+20ppm	
Slope	0.6A/ms～1A/us		0.6A/ms～2A/us		0.6A/ms～0.8A/us		0.6A/ms～1A/us		0.6A/ms～2A/us		0.6A/ms～0.8A/us	
Current measurement												
Range	3A	30A	3A	30A	3A	15A	3A	30A	3A	30A	3A	15A
Resolution	0. 75mA	7. 5mA	0. 75mA	7. 5mA	0. 75mA	7. 5mA	0. 05mA	0. 5mA	0.05mA	0. 5mA	0.025mA	0.25mA
Precision	0.1%+0.25%F.S.						0.05%+0.05%F.S.					
Voltage measurement												
Range	30V	150V	30V	150V	100V	500V	30V	150V	30V	150V	100V	500V
Resolution	7. 5mV	37. 5mV	7. 5mV	37. 5mV	25mV	125mV	0. 5mV	2. 5mV	0. 5mV	2. 5mV	2mV	8. 5mV
Precision	0.1%+0.1%F.S.						0.025%+0.025%F.S					
Ripple measurement												
Range	*	*	*	*	*	*	30V	150V	30V	150V	100V	500V
Bandwidth	*	*	*	*	*	*	10Hz～250kHz		10Hz～250kHz		10Hz～250kHz	
Precision	*	*	*	*	*	*	0.03%+2mV	0.03%+10mV	0.03%+2mV	0.03%+10mV	0.03%+6mV	0.03%+30mV

A-series vs. R-series load function comparison table

Functions and characteristics	FT6110A	FT6110R
Maximum number of channels	8	8
Working mode	CC, CV, CR, CP	CC, CV, CR, CP
Sampling rate	250kHz	500kHz
Sampling resolution	12Bits	16Bits
Sampling precision	Voltage：0. 1%+0. 1%F. S.	Voltage：0. 025%+0. 025%F. S.
	Current：0. 1%+0. 25%F. S.	Current：0. 05%+0. 05%F. S.
Programmed resolution	12Bits	16Bits
Programmed accuracy	Voltage：0. 1%+0. 1%F. S.	Voltage：0. 025%+0. 025%F. S.
	Current：0. 1%+0. 25%F. S.	Current：0. 05%+0. 05%F. S.
CC transient function	50kHz	50kHz
Slope control	Can set	Can set
Analog short circuit test function	P	P
Von function	P	P
Voltage compensation function	P	P
Battery discharge test function	P	P
Load effect test function	O	P
Ripple test function	O	P
Dynamic frequency sweep function	O	P
OCP test function	P	P
Time measuring function	O	P
Automatic test function	P	P
Sequence function	P	P
Protection function	OCP, OVP, OPP, OTP, RV, LVP	OCP, OVP, OTP, OPP, RV, LVP
Communication interface	LAN，RS485	LAN，RS485
Communication protocol	MODBUS	MODBUS
External IO input/output	P	P
DLL development kit	P	P
Application system software	P	P

FTB9000 series

Wide range high power bidirectional programmable DC power supply

Characteristic

- Unit range:
  Voltage: 0 ~ 2250V,
  Current: 0 ~ ±4500A ,
  Power: 0 ~ ±180kW;
- Main-slave parallel expansion power up to 1.8MW;
- Voltage accuracy: 0.02%+0.02%F.S.;
- Current accuracy: 0.1%+0.1%F.S.;
- Power factor 0.99, the overall efficiency is higher than 93%;
- Feedback load function, feedback efficiency up to 95%;
- Two-way energy transfer, seamless cross-quadrant switching;
- Automatic line loss compensation;
- With constant voltage, constant current, constant power, constant resistance function;
- CV/CC priority mode;
- Voltage/current slope can be set;
- With voltage output slow up, slow down function;
- With charge, discharge function;
- With sequence and waveform functions, can achieve such as automotive electronic test voltage waveform, user-defined and other
- complex voltage, current waveform;
- With battery simulator function (optional);
- Standard feature rich "Faithtech power product demonstration platform" software, with basic solar photovoltaic cell simulation function;
- Optional feature-rich "Faithtech Solar PV Matrix Simulation Software" (optional);
- Over voltage, over current, over power, over temperature, under voltage, power off and other comprehensive protection functions;
- High voltage isolation digital, analog, monitoring, control interface;
- Equipped with a variety of communication interfaces: LAN, USB, optional RS485, CAN or GPIB;
- Communication protocol support SCPI, MODBUS, CAN-OPEN (optional) protocol;
- Provide communication programming manual, SDK development kit and demonstration host computer;
- TFT color LCD screen, Chinese, English and Chinese menu interface;
- Intelligent fan control;
- 3U/18kW high power density, standard 19-inch rack design.

Summary

FTB9000 series products are a wide range of high power bidirectional programmable DC power supply with both DC power supply and feedback load function. It can not only realize the function of Source, but also feed the absorbed energy back to the power grid as a feedback load to realize the bidirectional flow of energy.

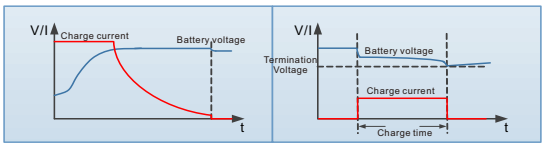
FTB9000 series adopts full digital control, high operation precision, fast response, wide output adjustment range, programmable output function, can realize the source and load dual quadrant seamless switching, at the same time with rich test functions and simple human-computer interaction interface, in automotive electronics, energy storage, fuel cell and other high-power test scenarios have a wide range of applications.

Characteristic

- Energy testing:
  Energy Storage converters (PCS),
  Microgrid equipment production,
  Inverter production, development,
  Solar arrays, wind power generation applications;
- Automotive production testing:
  Automotive motors,
  Automotive electronics,
  Two-way DC/DC converter;
- Other tests:
  Power semiconductor components,
  Development of server power supply,++ UPS,
  Avionics,
  Consumer electronics;

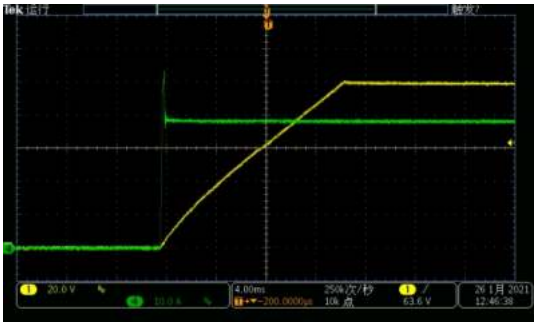
Battery charge/discharge test

Due to its unique bidirectional design, FTB9000 series has charge/discharge test function, which is suitable for various kinds of batteries and energy storage equipment charge/discharge test.

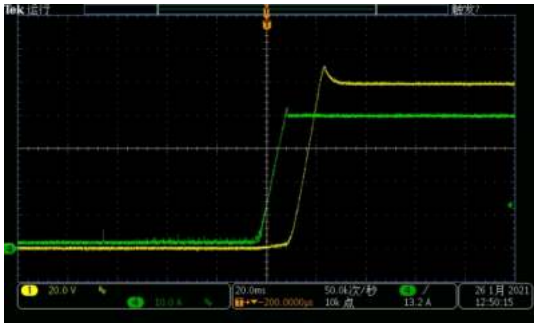


CV and CC are preferred

When the power output is connected to the inductive or capacitive load, the output current or voltage will overshoot to a certain extent, which will trigger the protection of the device under test, or even damage the device under test. FTB9000 series with CV, CC output priority function to effectively inhibit the output overshoot and the impact.



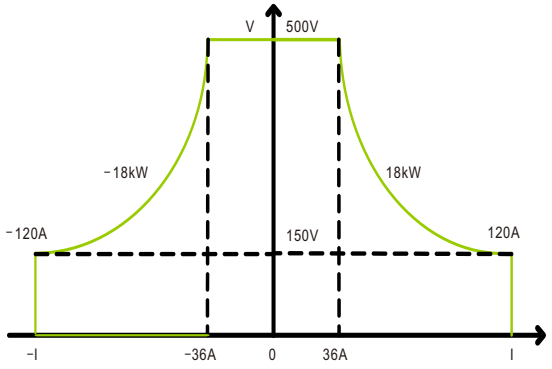
CV priority
(high speed build voltage, current overshoot)



CC priority
(high speed build current, voltage overshoot)

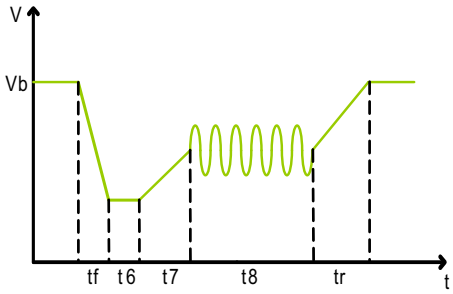
Double quadrant, wide range

FTB9000 series products have dual quadrant working characteristics, can be used as DC power output energy, and can be used as feedback load to absorb energy. At the same time, FTB9000 has a wide working range, with more than 3 times the wide range of output range, one power supply can cover more applications, saving costs for users.



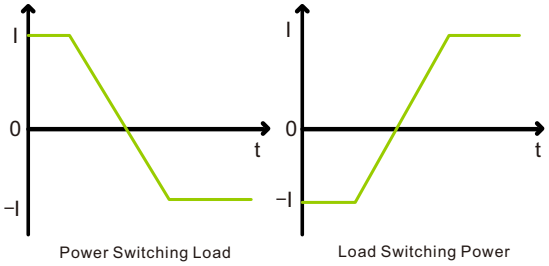
Sequence and waveform function

FTB9000 provides users with sequence editing functions for power supply interruptions, instantaneous drops, and other voltage and current changes. A total of 10 sequence files, each file 100 steps, support cycle, link to facilitate the realization of complex waveform output.



Seamless switching of two-way current

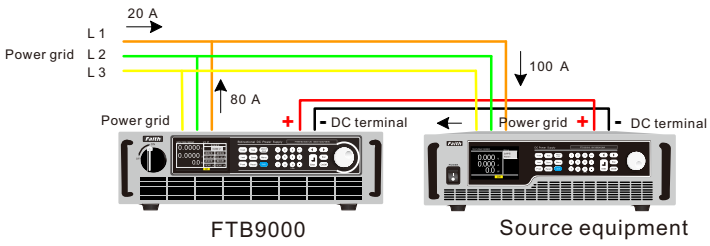
When the conventional DC power supply and load switch between positive and negative current, a short step will be generated at 0A, resulting in discontinuous current commutation. FTB9000 not only has the dual-quadrant working ability, but also has the high-speed current switching ability, which can realize the seamless connection of positive and negative current switching, effectively avoid voltage or current overshooting, and is widely used in the test of motor, battery pack, BMS and energy storage system.

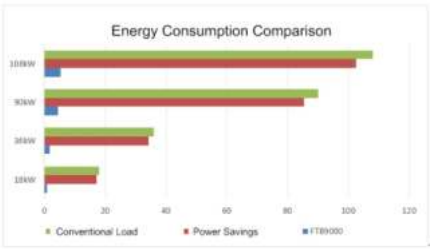


Power Switching Load　　Load Switching Power

Feedback load function

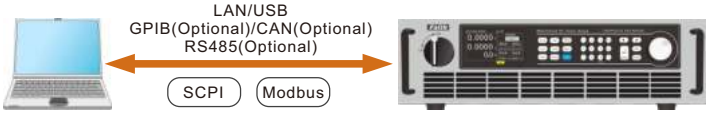
FTB9000 series products have the feedback load function, which can return the energy of the equipment under test to the factory Intranet for direct use, rather than dissipate it as heat. Its energy feedback conversion efficiency is as high as 95%, which can not only greatly reduce the cost of electricity for users, but also avoid the use of air conditioning and other refrigeration systems and reduce noise.

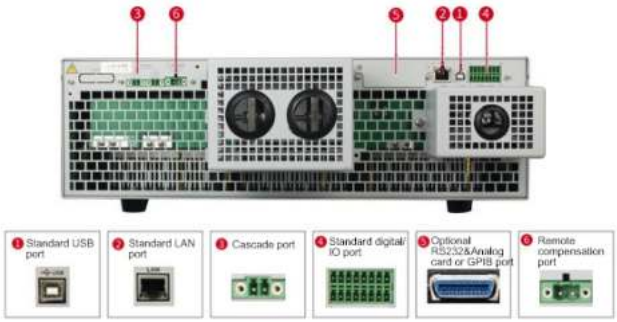




Multi-interface and Multi-protocol

The FTB9000 series is equipped with a variety of communication interfaces, and supports both SCPI and Modbus communication protocols. Users can configure in the menu according to their needs, which makes the system integration more flexible.



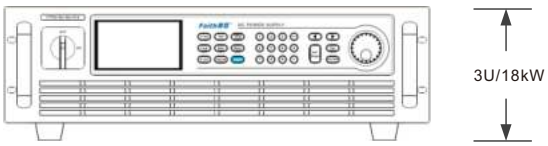


Faithtech Solar PV Matrix Simulation Software (optional)

Faithtech Solar PV Matrix simulation software is a photovoltaic test software supporting Faithtech power supply series. It adopts simple and intuitive graphical interface to present users with intuitive and friendly man-machine interface. Users can easily use the software to output, measure and display the maximum power tracking status and numerical records of photovoltaic inverters in real time. The software built-in EN50530, Sandia and other 5 kinds of regulatory test procedures, can simulate the solar panel under different parameters of the series parallel test, as well as cloud cover and other tests; It is convenient for users to test the static and dynamic MPPT efficiency of photovoltaic inverters.

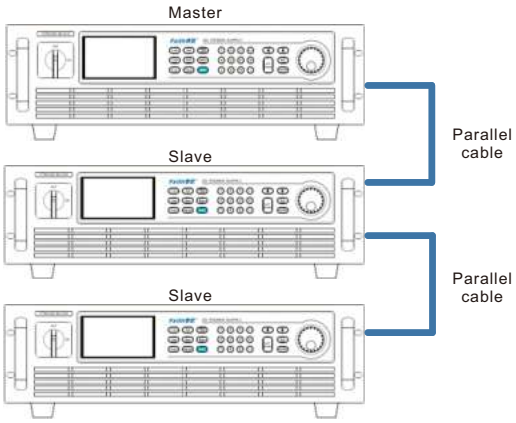
3U/18kW high power density

The FTB9000 series provides a high power density of 3U/18kW, with accurate output, fast response and low ripple noise. The wide range of voltage 80V ~ 2250V and current 25A ~ 4500A is suitable for every test and verification link from design to production process.



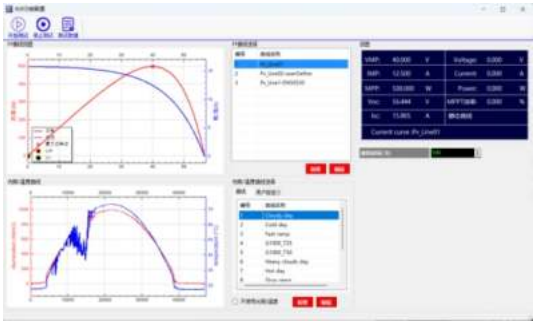
Master/slave parallel function

FTB9000 series power supplies support the parallel operation of 10 power supplies of the same model, so that users can achieve greater power expansion. When the parallel operation, the host automatically displays the parameters, and the slave automatically copies the set parameters of the host to achieve automatic current sharing.



Photovoltaic array simulation function

FTB9000 series comes standard with feature-rich "Faith Power Demonstration Platform" with basic PV function for testing PV inverters. With the host computer demonstration platform, more test functions can be realized, such as dynamic MPPT, typical weather data, custom light/temperature change curve and so on. For more complex PV test functions, you can choose the Fiesta Solar PV Matrix simulation software.

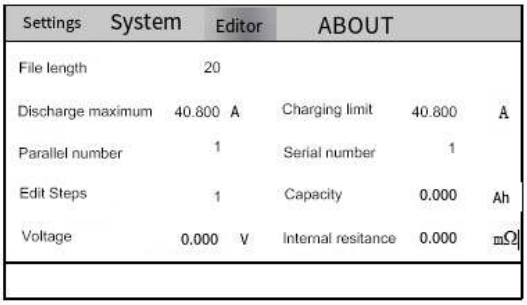


Computer graphical operation software

A host computer software platform with the function of virtual instrument can be provided, which can remotely and real-time set test data, read test data, generate images, export reports, print reports, etc., and realize multi-functional test synchronously, so as to facilitate test use.

Battery simulation function (optional)

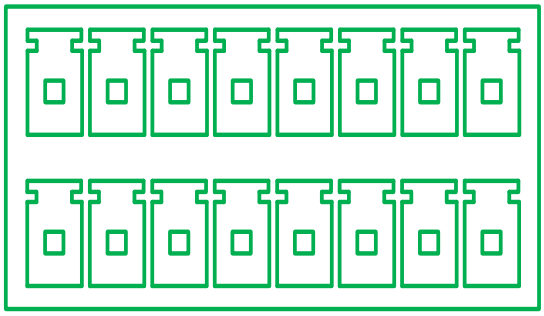
The FTB9000 has a unique current bipolar design, which can simulate the charge and discharge characteristics of the battery for various tests. Under the battery simulation function, users can edit battery files. The battery file mainly describes the characteristic curves of the battery capacity, open circuit voltage and internal resistance of the battery. After the battery simulation function is turned on, it will absorb current (charge) or output current (discharge) according to the external load, and adjust the output voltage to make the output voltage conform to the characteristic curve specified in the file.



Composite signal port (optional)

FTB9000 series optional composite signal port, which has the following functions:

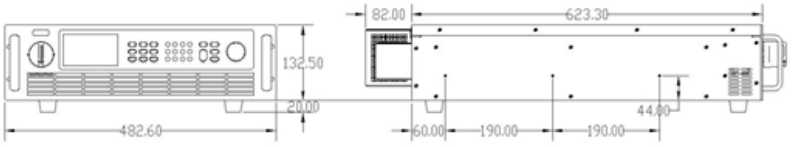
- READY power supply working status indicator;
- Output mode indication;
- Compound external control;
- Voltage and current output monitoring;
- Voltage, current, power programming control;
- Master, slave communication, etc.



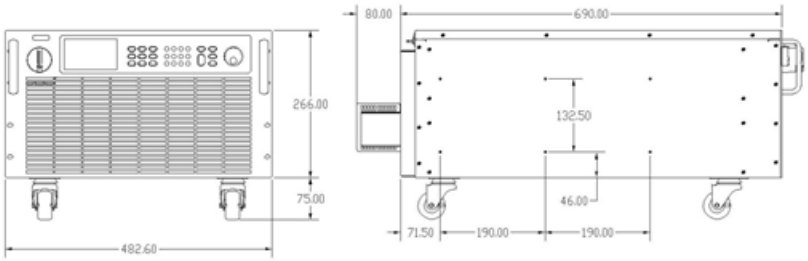
Dimensions drawing

The FTB9000 series products have a standard 19-inch chassis and can be installed in a standard cabinet.

Dimensions for 5kW~18kW model



Dimensions for 20kW~36kW model



Ordering information

* Higher power specifications are not listed.

For detail, please check the https://www.faithtechate.com

Voltage	Model	Current	Power	Dimension	Voltage	Model	Current	Power	Dimension
80V	FTB9050-80-150	150A	5kW	3U	300V	FTB9060-300-75	75A	6kW	3U
	FTB9100-80-300	300A	10kW	3U		FTB9120-300-150	150A	12kW	3U
	FTB9150-80-450	450A	15kW	3U		FTB9180-300-225	225A	18kW	3U
	FTB9300-80-900	900A	30kW	6U		FTB9360-300-450	450A	36kW	6U
	FTB9450-80-1350	1350A	45kW	16U		FTB9540-300-675	675A	54kW	16U
	FTB9600-80-1800	1800A	60kW	16U		FTB9720-300-900	900A	72kW	16U
	FTB9750-80-2250	2250A	75kW	22U		FTB9900-300-1125	1125A	90kW	22U
Voltage	Model	Current	Power	Dimension	Voltage	Model	Current	Power	Dimension
500V	FTB9060-500-40	40A	6kW	3U	800V	FTB9060-800-25	25A	6kW	3U
	FTB9120-500-80	80A	12kW	3U		FTB9120-800-50	50A	12kW	3U
	FTB9180-500-120	120A	18kW	3U		FTB9180-800-75	75A	18kW	3U
	FTB9360-500-240	240A	36kW	6U		FTB9360-800-150	150A	36kW	6U
	FTB9540-500-360	360A	54kW	16U		FTB9540-800-225	225A	54kW	16U
	FTB9720-500-480	480A	72kW	16U		FTB9720-800-300	300A	72kW	16U
	FTB9900-500-600	600A	90kW	22U		FTB9900-800-375	375A	90kW	22U
Voltage	Model	Current	Power	Dimension	Voltage	Model	Current	Power	Dimension
1000V	FTB9120-1000-40	40A	12kW	3U	1500V	FTB9120-1500-25	25A	12kW	3U
	FTB9240-1000-80	80A	24kW	6U		FTB9180-1500-40	40A	18kW	3U
	FTB9360-1000-120	120A	36kW	16U		FTB9360-1500-80	80A	36kW	6U
	FTB9480-1000-160	160A	48kW	16U		FTB9540-1500-120	120A	54kW	16U
	FTB9600-1000-200	200A	60kW	22U		FTB9720-1500-160	160A	72kW	16U
Voltage	Model	Current	Power	Dimension	Voltage	Model	Current	Power	Dimension
2250V	FTB9180-2250-25	25A	18kW	3U	2250V	FTB9720-2250-100	100A	72kW	16U
	FTB9360-2250-50	50A	36kW	6U		FTB9900-2250-125	125A	90kW	22U
	FTB9540-2250-75	75A	54kW	16U		FTB91080-2250-150	150A	108kW	22U

Optional information

Name	Model or specification	Note
GPIB interface	Suffix G	
CAN+485 interface	Suffix R	
Composite signal port	Suffix F	
Photovoltaic cell array simulation	Suffix P	

*Optional test cables and other optional parts, the relevant specifications and models are detailed in the "Optional Accessories" section of this manual.

General specification parameters

Items	Parameters
AC input	Three-phase input, 340VAC～480VAC, frequency: 47Hz～63Hz
Power factor	0.99（typical value）
Efficiency	＞93% (typical value)
Output voltage	0～rated value(maximum rating 2250V, menu setting, digital or coded knob inputs)
Output current	0～rated value(maximum rating 10000A, menu setting, digital or coded knob inputs)
Output power	0～rated value(maximum rating 180kW, menu setting, digital or coded knob inputs)
Voltage measurement accuracy	0.02%+0.02%F.S.
Accuracy of current measurement	0.1%+0.1%F.S.
Voltage and current Monitoring	Voltage/current monitor output voltage: DC 0～5V
Display interface	4.3-inch TFT color LCD screen, supporting simplified Chinese, traditional Chinese and English display
Operation interface	Function keys, numeric keys and knobs
Transient response	10%~90% dynamic load change, equipment voltage recovery to the rated value of 0.75% of the accuracy of the range of time required less than 2ms
Parallel operation	Support 10 sets of the same type of master and slave parallel expansion
Protection	Over-voltage, over-current, over-power, over-temperature, under-voltage, etc
Communication interface	LAN、USB serial port (optional GPIB、CAN、RS485)
Communication protocol	SCPI、MODBUS、CAN-Open protocols
Operating temperature	0℃～40℃
Storage temperature	-20℃～70℃
Use altitude	＜2000m
Heat dissipation mode	Air-cooled, intelligent air control

Specification parameters-1

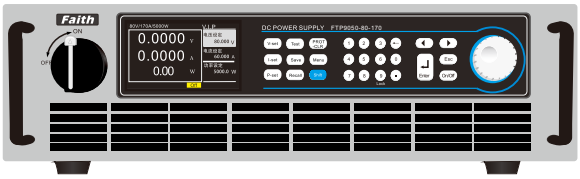
Parameter items		Technical parameters			
Voltage rating		80V	300V	500V	800V
Model		FTB9050-80-150	FTB9060-300-75	FTB9060-500-40	FTB9060-800-25
Power		-5～5kW	-6～6kW	-6～6kW	-6～6kW
Current		-150～150A	-75～75A	-40～40A	-25～25A
Resistance		0. 02～106Ω	0. 3～800Ω	0. 5～2. 5kΩ	1. 2～6kΩ
Model		FTB9100-80-300	FTB9120-300-150	FTB9120-500-80	FTB9120-800-50
Power		-10～10kW	-12～12kW	-12～12kW	-12～12kW
Current		-300～300A	-150～150A	-80～80A	-50～50A
Resistance		0. 01～50Ω	0. 15～400Ω	0. 25～1. 25kΩ	0. 6～3kΩ
Model		FTB9150-80-450	FTB9180-300-225	FTB9180-500-120	FTB9180-800-75
Power		-15～15kW	-18～18kW	-18～18kW	-18～18kW
Current		-450～450A	-225～225A	-120～120A	-75～75A
Resistance		0. 006～35Ω	0. 1～266Ω	0. 16～833Ω	0. 4～2kΩ
Model		FTB9300-80-900	FTB9360-300-450	FTB9360-500-240	FTB9360-800-150
Power		-30～30kW	-36～36kW	-36～36kW	-36～36kW
Current		-900～900A	-450～450A	-240～240A	-150～150A
Resistance		0. 003～17Ω	0. 05～133Ω	0. 08～416Ω	0. 2～1kΩ
Models		FTB9450-80-1350	FTB9540-300-675	FTB9540-500-360	FTB9540-800-215
Power		-45～45kW	-54～54kW	-54～54kW	-54～54kW
Current		-1350～1350A	-675～675A	-360～360A	-215～215A
resistance		0. 002～11Ω	0. 03～88Ω	0. 05～277Ω	0. 1～666Ω
Model		FTB9600-80-1800	FTB9720-300-900	FTB9720-500-480	FTB9720-800-300
Power		-60～60kW	-72～72kW	-72～72kW	-72～72kW
Current		-1800～1800A	-900～900A	-480～480A	-300～300A
Resistance		0. 002～8. 8Ω	0. 025～66Ω	0. 042～208Ω	0. 1～500Ω
Model		FTB9750-80-2250	FTB9900-300-1125	FTB9900-500-600	FTB9900-800-375
Power		-75～75kW	-90～90kW	-90～90kW	-90～90kW
Current		-2250～2250A	-1125～1125A	-600～600A	-375～375A
Resistance		0. 002～9Ω	0. 02～53Ω	0. 033～166Ω	0. 08～400Ω
Model		FTB9900-80-2700	FTB91080-300-1350	FTB91080-500-720	FTB91080-800-450
Power		-90～90kW	-108～108kW	-108～108kW	-108～108kW
Current		-2700～2700A	-1350～1350A	-720～720A	-450～450A
Resistance		0. 001～6Ω	0. 017～44Ω	0. 027～138Ω	0. 066～333Ω
Model number		FTB91050-80-3150	FTB91260-300-1575	FTB91260-500-840	FTB91260-800-525
Power		-105～105kW	-126～126kW	-126～126kW	-126～126kW
Current		-3150～3150	-1575～1575A	-840～840A	-525～525A
Resistance		0. 001～4. 4Ω	0. 014～38Ω	0. 024～119Ω	0. 057～285Ω
Model		FTB91200-80-3600	FTB91440-300-1800	FTB91440-500-960	FTB91440-800-600
Power		-120～120kW	-144～144kW	-144～144kW	-144～144kW
Current		-3600～3600A	-1800～1800A	-960～960A	-600～600A
Resistance		0. 001～4. 4Ω	0. 013～33Ω	0. 021～104Ω	0. 05～250Ω
Model		FTB91350-80-4050	FTB91620-300-2025	FTB91620-500-1080	FTB91620-800-675
Power		-135～135kW	-162～162kW	-162～162kW	-162～162kW
Current		-4050～4050A	-2050～2050A	-1080～1080A	-675～675A
Resistance		0. 001～3. 9Ω	0. 011～30Ω	0. 018～92Ω	0. 044～222Ω
Model		FTB91500-80-4500	FTB91800-300-2250	FTB91800-500-1200	FTB91800-800-750
Power		-150～150kW	-180～180kW	-180～180kW	-180～180kW
Current		-4500～4500A	-2250～2250A	-1200～1200A	-750～750A
Resistance		0. 001～3. 5Ω	0. 01～26Ω	0. 017～83Ω	0. 04～200Ω
Voltage parameters					
Programming accuracy		0.02%+0.02%F.S.	0.02%+0.02%F.S.	0.02%+0.02%F.S.	0.02%+0.02%F.S.
Measurement accuracy		0.02%+0.02%F.S.	0.02%+0.02%F.S.	0.02%+0.02%F.S.	0.02%+0.02%F.S.
Program/measure resolution		1mV	5mV	10mV	10mV
Linear adjustment rate		0. 01%F. S.	0. 01%F. S.	0. 01%F. S.	0. 01%F. S.
Load adjustment rate		0. 02%F. S.	0. 02%F. S.	0. 02%F. S.	0. 02%F. S.
Upward slope		10000V/s	40000V/s	40000V/s	40000V/s
Descent time	No-load	<5s	<5s	<10s	<10s
	Full load	≤30ms	≤30ms	≤30ms	≤30ms
Noise & Ripple	Peak-to-peak value(Vpp)	320mV	300 mV	450 mV	800 mV
	rms value(Vrms)	25 mV	40 mV	70 mV	200 mV
Current parameters					
Programming accuracy		0. 1%+0. 1%F. S.	0. 1%+0. 1%F. S.	0. 1%+0. 1%F. S.	0. 1%+0. 1%F. S.
Measurement accuracy		0. 1%+0. 1%F. S.	0. 1%+0. 1%F. S.	0. 1%+0. 1% F. S.	0. 1%+0. 1%F. S.
Programming/measuring resolution		Imax/2^{16}	Imax/2^{16}	Imax/2^{16}	Imax/2^{16}
Linear adjustment rate		0.05%F.S.	0.05%F.S.	0.05%F.S.	0.05%F.S.
Load adjustment rate		0. 1%F. S.	0. 1%F. S.	0. 1%F. S.	0. 1%F. S.
Power parameter					
Programming accuracy		0. 5%F. S.	0. 5%F. S.	0. 5%F. S.	0. 5%F. S.
Measurement accuracy		0. 5%F. S.	0. 5%F. S.	0. 5%F. S.	0. 5%F. S.
Programming/measuring resolution		1W	1W	1W	1W
Resistance parameter					
Programming accuracy		1%+0. 5%I. F. S.	1%+0. 5%I. F. S.	1%+0. 5%I. F. S.	1%+0. 5%I. F. S.
Measurement accuracy		1%+0. 5%I. F. S.	1%+0. 5%I. F. S.	1%+0. 5%I. F. S.	1%+0. 5%I. F. S.
Programming/measuring resolution		0. 001Ω	0. 001Ω	0. 001Ω	0. 001Ω
Other					
Dimensions (W*H*D)		5kW～18kW：482. 6mm x 132. 5mm x 740. 0mm，includes output shields			
Weight		5kW、6kW≈18kg， 10kW、12kW≈25kg， 15kW、18kW≈32kg			

Specification parameters-2

Parameter items		Technical parameters			
Voltage rating		1000V		1500V	2250V
Model		FTB9120-1000-40		FTB9120-1500-25	～
Power		-12～12kW		-12～12kW	～
Current		-40～40A		-25～25A	～
Resistance		1～5kΩ		2. 25～11kΩ	～
Model		～		FTB9180-1500-40	FTB9180-2250-25
Power		～		-18～18kW	-18～18kW
Electric current		～		-40～40A	-25～25A
Resistance		～		1. 5～7. 5kΩ	3. 6～18k
Model		FTB9240-1000-80		FTB9360-1500-80	FTB9360-2250-50
Power		-24～24kW		-36～36kW	-36～36kW
Current		-80～80A		-80～80A	-50～50A
Resistance		0.5～2.5kΩ		0. 75～7. 5kΩ	1. 8～9kΩ
Model		FTB9360-1000-120		FTB9540-1500-120	FTB9540-2250-75
Power		-36～36kW		-54～54kW	-54～54kW
Current		-120～120A		-120～120A	-75～75A
Resistance		0. 33～1. 6kΩ		0. 5～2. 5kΩ	1. 2～6kΩ
Model		FTB9480-1000-160		FTB9720-1500-160	FTB9720-2250-100
Power		-48～48kW		-72～72kW	-72～72kW
Current		-160～160A		-160～160A	-100～100A
Resistance		0. 25～1. 25kΩ		0. 375～1. 875kΩ	0. 9～4. 5kΩ
Models		FTB9600-1000-200		FTB9900-1500-200	FTB9900-2250-125
Power		-60～60kW		-90～90kW	-90～90kW
Current		-200～200A		-200～200A	-125～125A
Resistance		0. 2～1kΩ		0. 3～1. 5kΩ	0. 72～3. 6kΩ
Model		FTB9720-1000-240		FTB91080-1500-240	FTB91080-2250-150
Power		-72～72kW		-108～108kW	-108～108kW
Current		-240～240A		-240～240 A	-150～150A
Resistance		0. 166～250Ω		0. 25～1. 25kΩ	0. 6～3kΩ
Model		FTB9840-1000-280		FTB91260-1500-280	FTB91260-2250-175
Power		-84～84kW		-126～126kW	-126～126kW
Current		-280～280A		-280～280A	-175～175A
Resistance		0. 143～714Ω		0. 214～1. 07kΩ	0. 514～2. 5kΩ
Models		FTB9960-1000-320		FTB91440-1500-320	FTB91440-2250-200
Power		-96～96kW		-144～144kW	-144～144kW
Current		-320～320A		-320～320A	-200～200A
Resistance		0. 125～625Ω		0. 188～938Ω	0. 45～2. 25kΩ
Models		FTB91080-1000-360		FTB91620-1500-360	FTB91620-2250-225
Power		-108～108kW		-162～162kW	-162～162kW
Current		-360～360A		-360～360A	-225～225A
Resistance		0. 11～555Ω		0. 167～833Ω	0. 4～2kΩ
Model		FTB91200-1000-400		FTB91800-1500-400	FTB91800-2250-250
Power		-120～120kW		-180～180kW	-180～180kW
Current		-400～400A		-400～400A	-250～250A
Resistance		0. 1～500Ω		0. 15～750Ω	0. 36～1. 8kΩ
Voltage parameters					
Programming accuracy		0.02%+0.02%F.S.		0.02%+0.02%F.S.	0.02%+0.02%F.S.
Measurement accuracy		0.02%+0.02%F.S.		0.02%+0.02%F.S.	0.02%+0.02%F.S.
Program/measure resolution		17mV		25mV	37. 5mV
Linear adjustment rate		0. 01%F. S.		0. 01%F. S.	0. 01%F. S.
Load adjustment rate		0. 02%F. S.		0. 02%F. S.	0. 02%F. S.
Upward slope		40000V/s		40000V/s	40000V/s
Descent time	No-load	<10s		<10s	<10s
	Full load	≤30ms		≤30ms	≤30ms
Noise & Ripple	Peak-to-peak Value (Vpp)	12kW	1600mV	-	-
		18kW	-	2400mV	3600mV
	RMS (Vrms)	12kW	350mV	-	-
		18kW	-	400mV	400mV
Current parameters					
Programming accuracy		0. 1%+0. 1% F. S.		0. 1%+0. 1% F. S.	0. 1%+0. 1% F. S.
Measurement accuracy		0. 1%+0. 1% F. S.		0. 1%+0. 1% F. S.	0. 1%+0. 1% F. S.
Programming/measuring resolution		Imax / 2^{16}		Imax / 2^{16}	Imax / 2^{16}
Linear adjustment rate		0. 05%F. S.		0. 05%F. S.	0. 05%F. S.
Load adjustment rate		0. 05%F. S.		0. 05%F. S.	0. 05%F. S.
Power parameters					
Programming accuracy		1%F. S.		1%F. S.	1%F. S.
Accuracy of measurement		1%F. S.		1%F. S.	1%F. S.
Programming/measuring resolution		1W		1W	1W
Resistance parameters					
Programming accuracy		1%+0. 5%I. F. S.		1%+0. 5%I. F. S.	1%+0. 5%I. F. S.
Measurement accuracy		1%+0. 5%I. F. S.		1%+0. 5%I. F. S.	1%+0. 5%I. F. S.
Programming/measuring resolution		0. 001Ω		0. 001Ω	0. 001Ω
Other					
Dimensions (W*H*D)		5kW～18kW:482. 6mm x 132. 5mm x 740. 0mm, includes output shields			
Weight		5kW、6kW≈18kg,			
		10kW、12kW≈25kg,			
		15kW、18kW≈32kg			

FTP9000 series

Wide range high power programmable DC power supply



Summary

FTP9000 series wide range of high power programmable DC power supply voltage range from 80V to 2250V, single current up to 6120A, single maximum power of 180kW.

FTP9000 series features high power density, high power factor, high efficiency and wide output range. Wide current range output and automatic constant power support, can greatly increase the application coverage. Humanized graphic window interface, support a variety of languages, to the user to bring intuitive operating experience.

FTP9000 series has LAN/RS485/CAN/GPIB/USB(serial port) interface, which supports both SCPI protocol and standard ModBus-RTU protocol, and then with built-in isolated data/mode control interface, which brings great application diversity and convenience for system integration applications.

Characteristic

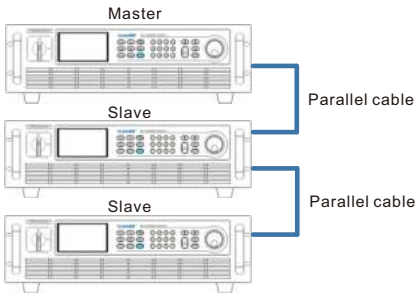
- Unit range:
  Voltage: 0 ~ 2250V,
  Current: 0 ~ 6120A ,
  Power: 5 ~ 180kW;
- Master and slave parallel up to 10 sets, extended power up to 1800kW;
- Voltage accuracy: 0.02%+0.02%F.S.; Current accuracy: 0.1%+0.1%F.S.
- Voltage and current sampling rate 500kHz, resolution 16Bits;
- Constant voltage, constant current and automatic constant power mode;
- The overall efficiency is higher than 93%;
- PFC control function, power factor 0.99;
- High power density, 3U/18kW;
- Automatic line loss compensation;
- Voltage, current priority function;
- Voltage, current slope can be set;
- Voltage output slow up, slow down function;
- Sequence function up to 100 steps, sequence file support link;
- High voltage isolated, digital/analog composite signal monitoring control port (optional);
- Standard feature rich “Faithtech power product demonstration platform” software, with basic solar photovoltaic cell simulation function;
- Optional feature-rich “Faithtech Solar PV Matrix Simulation Software” (optional);
- Communication interface standard LAN, USB(serial port), optional RS485, CAN or GPIB;
- Communication protocol support SCPI and ModBus;
- Provide communication programming manual, SDK development kit and demonstration PC software;
- TFT color LCD screen, English and Chinese menu interface;
- Over voltage, over current, over power, over temperature, under voltage, reverse connection and other all-round protection functions.

Application filed

- Multi-specification flexible application of power electronics laboratory;
- Fuel cell, power battery, lead battery, ultracapacitor testing;
- Simulation of power supply environment of vehicle, airborne and shipboard electronic equipment;
- DC charger, charging pile design and test system integration;
- Design and test of server power supply, UPS and inverter;
- Design and test in solar energy, wind energy, energy storage;
- Uav, laser, sensor field power supply and design test.

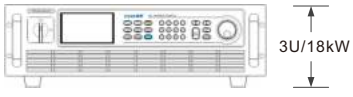
Master and slave parallel function

FTP9000 series power supplies support the parallel operation of 10 power supplies of the same model, so that users can achieve greater power expansion. In parallel operation, the slave automatically copies the set parameters of the host to achieve automatic current sharing.



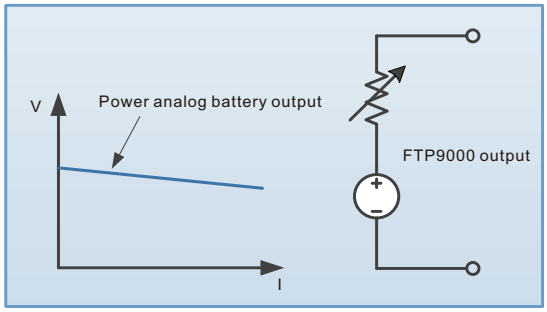
3U/18kW high power densit

The FTP9000 series provides a high power density of 3U/18kW, with accurate output, fast response and low ripple noise. The wide range of voltage 80V ~ 2250V and current 510A ~ 20A is suitable for every test and verification link from design to production process.



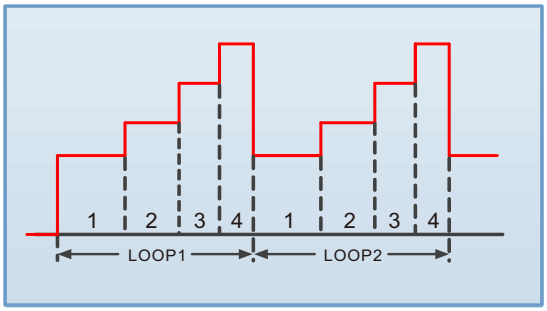
Battery internal resistance simulation function

FTP9000 series power supply with battery internal resistance analog output function, when the output current of the power supply increases, the output voltage can be adjusted according to the user's pre-set internal resistance value.



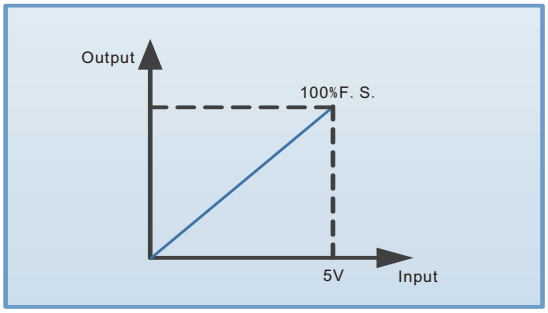
Serial function

FTP9000 provides users with sequence editing functions for power outages, instantaneous drops, and other voltage and current changes. FTP9000 provides 10 sequence files, each file 100 steps, support cycle, link to facilitate the realization of complex waveform output.



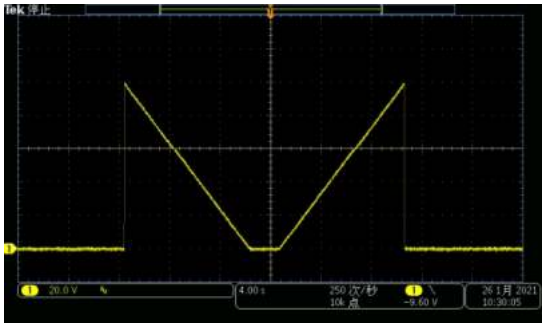
Analog programming function

The output rated voltage, rated current and rated power of the power supply are controlled by external 0~5V DC voltage signal. The analog programming function controls the rate of 1000 points per second.



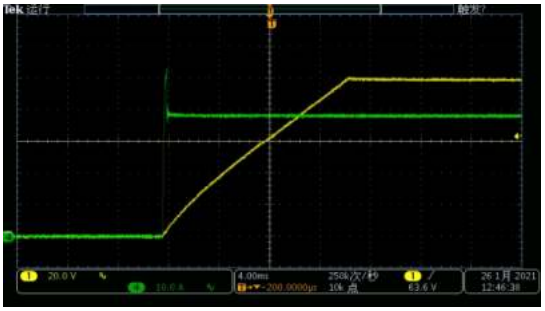
Voltage slow rise and slow fall function

FTP9000 series power supply is designed for the user output voltage slow rise, slow down function. Simple and easy to use, can achieve voltage slope control.

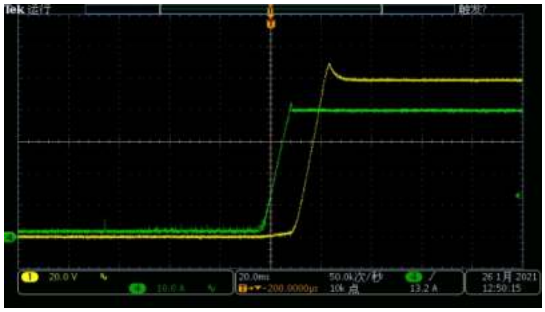


CV, CC preferred

When the power output is connected to the inductive or capacitive load, the output current or voltage will overshoot to a certain extent, which will trigger the protection of the device under test, or even damage the device under test. FTP9000 series with CV, CC output priority function to effectively inhibit the output overshoot and the impact.



CV priority(high speed build voltage, current overshoot)



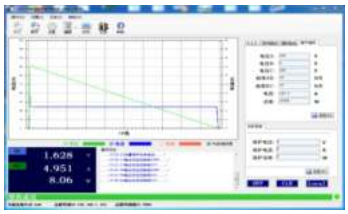
CC priority (high speed build current, voltage overshoot)

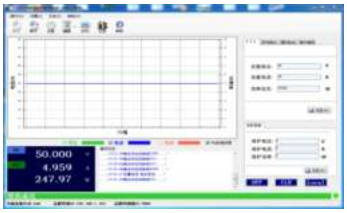
Photovoltaic array simulation function

FTP9000 series comes standard with feature-rich "Faith Power Demonstration Platform" with basic PV function for testing PV inverters. With the host computer demonstration platform, more test functions can be realized, such as dynamic MPPT, typical weather data, custom light/temperature change curve and so on. For more complex PV test functions, you can choose the Fiesta Solar PV Matrix simulation software.

Computer graphical operation software

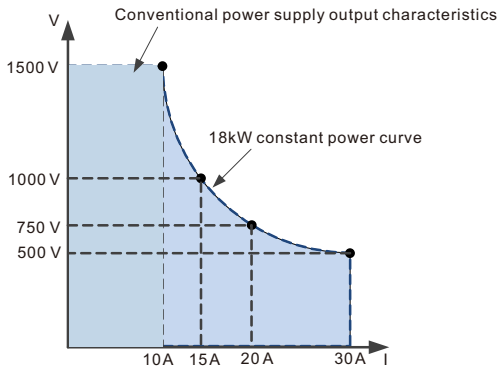
FTP9000 series provides a host computer software with virtual instrument function, which can read test data in real time, generate images, export reports, print reports, etc., which is convenient for customers to use.





Automatic constant power, wide range output

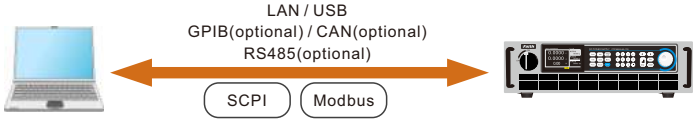
FTP9000 series power supply has more than 3 times the wide output range, one power supply can cover more applications, saving costs for users.



FTP9000 series provides wider operation in constant power range

Multi-interface and Multi-protocol

The FTP9000 series is equipped with multiple communication interfaces, and supports SCPI and Modbus. The user can configure in the menu according to the needs, which makes the system integration more flexible.



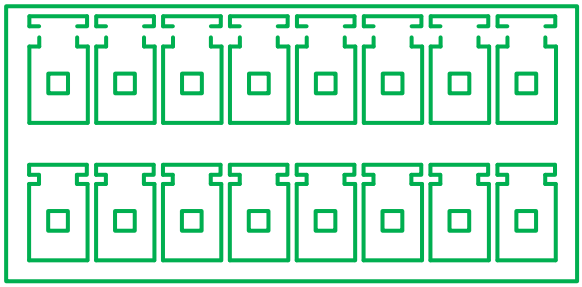
Equipped with dissipator to speed up braking (optional)

Inductive load such as motor will reverse power supply to power supply when it decelerates or stops quickly, resulting in overvoltage or damage of power supply. In order to release this part of energy and prevent damage to the power supply, FTP9000 series can be matched with the corresponding dissipator in parallel. The power of the dissipator is recommended to exceed 20% of the power of the corresponding power supply. To extend the power, multiple power dissipators are supported in parallel. When testing, the power supply and the dissipator are in parallel, which can effectively prevent the motor from decelerating overvoltage, reduce the deceleration distance, and improve the dynamic performance.

Composite signal port (optional)

FTP9000 series optional composite signal port, which has the following functions:

- READY power supply working status indicator;
- Output mode indication;
- Compound external control;
- Voltage and current output monitoring;
- Voltage, current, power programming control;
- Master, slave communication, etc.



Faithtech Solar PV Matrix Simulation Software (optional)

Faithtech Solar PV Matrix simulation software is a photovoltaic test software supporting Faithtech power supply series. It adopts simple and intuitive graphical interface to present users with intuitive and friendly man-machine interface. Users can easily use the software to output, measure and display the maximum power tracking status and numerical records of photovoltaic inverters in real time. The software built-in EN50530, Sandia and other 5 kinds of regulatory test procedures, can simulate the solar panel under different parameters of the series parallel test, as well as cloud cover and other tests; It is convenient for users to test the static and dynamic MPPT efficiency of photovoltaic inverters.

Ordering information

Voltage	Model	Current	Power	Voltage	Model	Current	Power
80V	FTP9050-80-170	170A	5kW	200V	FTP9150-200-210	210A	15kW
	FTP9100-80-340	340A	10kW		FTP9300-200-420	420A	30kW
	FTP9150-80-510	510A	15kW		FTP9450-200-630	630A	45kW
	FTP9300-80-1020	1020A	30kW		FTP9600-200-840	840A	60kW
	FTP9450-80-1530	1530A	45kW		-	-	-
	FTP9600-80-2040	2040A	60kW		-	-	-
	FTP9750-80-2550	2550A	75kW		-	-	-
	FTP9900-80-3060	3060A	90kW		-	-	-
Voltage	Model	Current	Power	Voltage	Model	Current	Power
300V	FTP9060-300-75	75A	6kW	400V	FTP9150-400-120	120A	15kW
	FTP9120-300-150	150A	12kW		FTP9300-400-240	240A	30kW
	FTP9180-300-225	225A	18kW		FTP9450-400-360	360A	45kW
	FTP9360-300-450	450A	36kW		FTP9600-400-480	480A	60kW
	FTP9540-300-675	675A	54kW		-	-	-
	FTP9720-300-900	900A	72kW		-	-	-
	FTP9900-300-1125	1125A	90kW		-	-	-
Voltage	Model	Current	Power	Voltage	Model	Current	Power
500V	FTP9060-500-40	40A	6kW	800V	FTP9060-800-25	25A	6kW
	FTP9120-500-80	80A	12kW		FTP9120-800-50	50A	12kW
	FTP9180-500-120	120A	18kW		FTP9180-800-75	75A	18kW
	FTP9360-500-240	240A	36kW		FTP9360-800-150	150A	36kW
	FTP9540-500-360	360A	54kW		FTP9540-800-225	225A	54kW
	FTP9720-500-480	480A	72kW		FTP9720-800-300	300A	72kW
	FTP9900-500-600	600A	90kW		FTP9900-800-375	375A	90kW
	FTP9150-500-90	90A	15kW		FTP9150-800-75	75A	15kW
	FTP9300-500-180	180A	30kW		FTP9300-800-150	150A	30kW
	FTP9450-500-270	270A	45kW		FTP9450-800-225	225A	45kW
	FTP9600-500-360	360A	60kW		FTP9600-800-300	300A	60kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
1000V	FTP9120-1000-40	40A	12kW	1200V	FTP9150-1200-40	40A	15kW
	FTP9240-1000-80	80A	24kW		FTP9300-1200-80	80A	30kW
	FTP9360-1000-120	120A	36kW		FTP9450-1200-120	120A	45kW
	FTP9480-1000-160	160A	48kW		FTP9600-1200-160	160A	60kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
1500V	FTP9120-1500-25	25A	12kW	2250V	FTP9180-2250-25	25A	18kW
	FTP9180-1500-40	40A	18kW		FTP9360-2250-50	50A	36kW
	FTP9240-1500-50	50A	24kW		FTP9540-2250-75	75A	54kW
	FTP9360-1500-80	80A	36kW		FTP9720-2250-100	100A	72kW
	FTP9540-1500-120	120A	54kW		FTP9900-2250-125	125A	90kW
	FTP9720-1500-160	160A	72kW		-	-	-
	FTP9900-1500-200	200A	90kW		-	-	-

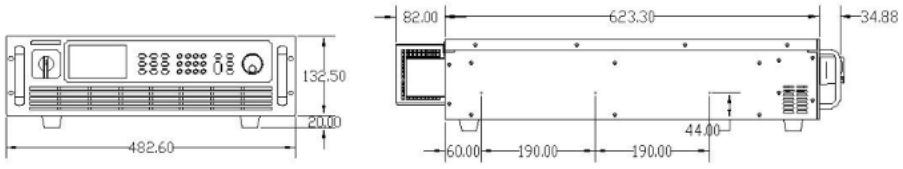
Optional information

Name	Model or specification	Note
GPIB interface	Suffix G	
CAN、485 interface	Suffix R	
Composite signal port	Suffix F	
PV array simulation	Suffix P	
Anti-backup device*	Suffix D	Used to prevent current backflow in battery loads

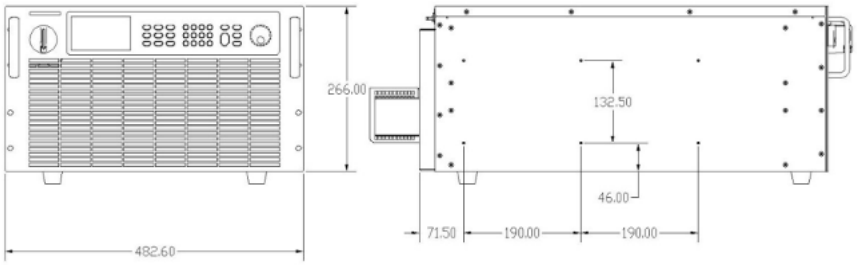
*The backflow prevention device is built-in for 5kW, 6kW, 10kW and 12kW models, and external for the rest of the models.
*Optional parts such as test cables are available. For specifications and models, please refer to the "Optional Accessories" section of this manual.

Dimension drawing

Dimensions for 5kW ~ 18kW models



Dimensions for 20kW ~ 36kW models



General specification table

Voltage rise slope	
Maximum slope	6000V/s
Voltage drop time	
No load	＜2s
Full load	≤30ms
Transient response	10% ~ 90% dynamic load, the time required for voltage recovery to 0.75% of rated value within the accuracy range is less than 2ms.
Paralleling	Supports 10 masters and slaves of the same model with capacity expansion.
Protection	Over-voltage, over-current, over-power, over-temperature, under-voltage, etc.
Communication interface	LAN、USB serial port (Optional GPIB、CAN、RS485)
Communication protocol	SCPI、MODBUS、CAN-Open protocols
Input characteristics	
Input voltage	340VAC～460VAC，Frequency: 47Hz～63Hz
Power factor	0. 99 (typical values)
Efficiency	＞93% (typical values)
Operating environment	
Operating temperature	0℃～40℃
Storage temperature	-20℃～70℃
Altitude of use	＜2000m
Heat dissipation method	Air-cooled, intelligent air control

Specification table-1

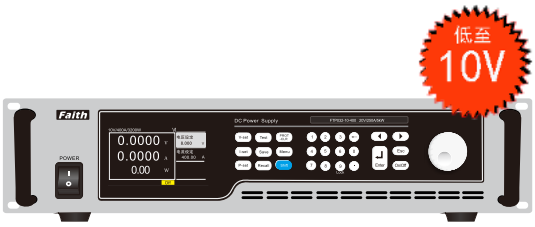
Model	FTP9050-80-170	-	-	FTP9050-500-30	FTP9050-800-25	-
Voltage	0～80V	-	-	0～500V	0～800V	-
Current	0～170A	-	-	0～30A	0～25A	-
Power	0～5kW					
Model	FTP9100-80-340	-	-	FTP9100-500-60	FTP9100-800-50	-
Voltage	0～80V	-	-	0～500V	0～800V	-
Current	0～340A	-	-	0～60A	0～50A	-
Power	0～10kW					
Model	FTP9150-80-510	FTP9150-200-210	FTP9150-400-120	FTP9150-500-90	FTP9150-800-75	FTP9150-1200-40
Voltage	0～80V	0～200V	0～400V	0～500V	0～800V	0～1200V
Current	0～510A	0～210A	0～120A	0～90A	0～75A	0～40A
Power	0～15kW					
Model	FTP9300-80-1020	FTP9300-200-420	FTP9300-400-240	FTP9300-500-180	FTP9300-800-150	FTP9300-1200-80
Voltage	0～80V	0～200V	0～400V	0～500V	0～800V	0～1200V
Current	0～1020A	0～420A	0～240A	0～180A	0～150A	0～80A
Power	0～30kW					
Model	FTP9600-80-2040	FTP9600-200-840	FTP9600-400-480	FTP9600-500-360	FTP9600-800-300	FTP9600-1200-160
Voltage	0～80V	0～200V	0～400V	0～500V	0～800V	0～1200V
Current	0～2040A	0～840A	0～480A	0～360A	0～300A	0～160A
Power	0～60kW					
Model	FTP9900-80-3060	-	-	FTP9900-500-540	FTP9900-800-450	FTP9900-1200-240
Voltage	0～80V	-	-	0～500V	0～800V	0～1200V
Current	0～3060A	-	-	0～540A	0～450A	0～240A
Power	0～90kW					
Model	～	-	-	FTP91200-500-720	FTP91200-800-600	FTP91200-1200-320
Voltage	～	-	-	0～500V	0～800V	0～1200V
Current	～	-	-	0～720A	0～600A	0～320A
Power	0～120kW					
Voltage programming①						
Resolution	16bits					
Accuracy	0. 02%+0. 02%F. S.					
Current programming①						
Resolution	16bits					
Accuracy	0. 1%+0. 1% F. S.					
Power programming①						
Accuracy	1%F. S.					
External analog programming①						
Control voltage	0～5V corresponds to 0～100%F. S.					
Voltage accuracy	0. 5%F. S.					
Current accuracy	0. 5%F. S.					
Linear adjustment rate②						
Voltage	0. 02%F. S.					
Current	0. 05%F. S.					
Power	0. 05%F. S.					
Load adjustment rate③						
Voltage	0. 05%F. S.					
Current	0. 15%F. S.					
Power	0. 75%F. S.					
Voltage measurement①						
Resolution	16bits					
Accuracy	0. 02%+0. 02%F. S.					
Current measurement①						
Resolution	16Bits					
Accuracy	0. 1%+0. 1% F. S.					
Power measurement①						
Accuracy	1%F. S.					
Output noise & ripple④						
Voltage ripple (p-p)	5kW	160mV	300mV	550mV	450mV	800mV	-
	10kW	320mV	300mV	550mV	450mV	800mV	-
	15kW	320mV	300mV	550mV	450mV	800mV	2000mV
Voltage ripple (rms)	5kW	16mV	40mV	65mV	70mV	200mV	-
	10kW	25mV	40mV	65mV	70mV	200mV	-
	15kW	25mV	40mV	65mV	70mV	200mV	350mV
Dimension (WxHxD)	5kW～18kW: 482. 6mm x 132. 5mm x 702. 0mm, Includes output cover						
	20kW～36kW: 482. 6mm x 266mm x 738. 0mm, Includes cover, without casters						
Weight	5kW≈17kg，10kW≈24kg，15kW≈30kg，30kW≈65kg						

Specification table-2

Model	FTP9060-300-75	FTP9060-500-40	FTP9060-800-25	-	-	-
Voltage	0～300V	0～500V	0～800V	-	-	-
Current	0～75A	0～40A	0～25A	-	-	-
Power	0～6kW					
Model	FTP9120-300-150	FTP9120-500-80	FTP9120-800-50	-	FTP9120-1000-40	FTP9120-1500-25
Voltage	0～300V	0～500V	0～800V	-	0～1000V	0～1500V
Current	0～150A	0～80A	0～50A	-	0～40A	0～25A
Power	0～12kW					
Model	FTP9240-300-300	FTP9240-500-160	FTP9240-800-100	FTP9240-1000-80	FTP9240-1500-50	-
Voltage	0～300V	0～500V	0～800V	0～1000V	0～1500V	-
Current	0～300A	0～160A	0～100A	0～80A	0～50A	-
Power	0～24kW					
Model	FTP9360-300-450	FTP9360-500-240	FTP9360-800-150	FTP9360-1000-120	FTP9360-1500-80	FTP9360-2250-50
Voltage	0～300V	0～500V	0～800V	0～1000V	0～1500V	0～2250V
Current	0～450A	0～240A	0～150A	0～120A	0～80A	0～50A
Power	0～36kW					
Model	FTP9720-300-900	FTP9720-500-480	FTP9720-800-300	FTP9720-1000-240	FTP9720-1500-160	FTP9720-2250-100
Voltage	0～300V	0～500V	0～800V	0～1000V	0～1500V	0～2250V
Current	0～900A	0～480A	0～300A	0～240A	0～160A	0～100A
Power	0～72kW					
Model	FTP9900-300-1125	FTP9900-500-600	FTP9900-800-375	FTP9720-1000-240	FTP9900-1500-200	FTP9900-2250-125
Voltage	0～300V	0～500V	0～800V	0～1000V	0～1500V	0～2250V
Current	0～1125A	0～600A	0～375A	0～240A	0～200A	0～125A
Power	0～90kW					
Model	FTP91080-300-1350	FTP91080-500-720	FTP91080-800-450	FTP91080-1000-360	FTP91080-1500-200	FTP91080-2250-150
Voltage	0～300V	0～500V	0～800V	0～1000V	0～1500V	0～2250V
Current	0～1350A	0～720A	0～450A	0～360A	0～240A	0～150A
Power	0～108kW					
Voltage programming①						
Resolution	16bits					
Accuracy	0. 02%+0. 02%F. S.					
Current programming①						
Resolution	16bits					
Accuracy	0. 1%+0. 1% F. S.					
Power programming①						
Accuracy	1%F. S.					
External analog programming①						
Control voltage	0～5V corresponds to 0～100%F.S.					
Voltage accuracy	0. 5%F. S.					
Current accuracy	0. 5%F. S.					
Linear Adjustment Rate②						
Voltage	0. 02%F. S.					
Current	0. 05%F. S.					
Power	0. 05%F. S.					
Load Adjustment Rate③						
Voltage	0. 05%F. S.					
Current	0. 15%F. S.					
Power	0. 75%F. S.					
Voltage Measurement①						
Resolution	16bits					
Accuracy	0. 02%+0. 02%F. S.					
Current Measurement①						
Resolution	16Bits					
Accuracy	0. 1%+0. 1% F. S.					
Power Measurement①						
Accuracy	1%F. S.					
Output Noise & Ripple④						
Voltage ripple (p-p)	300mV	450mV	800mV	2000mV	2400mV	3600mV
Voltage ripple (rms)	40mV	70mV	200mV	350mV	400mV	400mV
Dimension (WxHxD)	6kW～18kW：482. 6mm x 132. 5mm x 707. 0mm，Includes output cover					
	24kW～36kW：482. 6mm x 266mm x 743. 0mm，Includes cover, without casters					
Weight	6kW≈17kg，12kW≈24kg，18kW≈30kg，36kW≈65kg					

FTP series

Wide range programmable DC power supply



Characteristic

- Unit range:

  Voltage: 0 ~ 1500V,

  Current: 0 ~ 800A ,

  Power: 1.6kW, 2kW, 3.2kW, 4.8kW, 6.5kW;
- High precision voltage and current control and measurement;
- High stability: low linear adjustment rate, low load adjustment rate, low ripple, low noise;
- Fast response: transient response of 1ms typical value;
- Slope control: can quickly and accurately control the voltage (or current) rise and fall;
- PFC control: input power factor greater than 0.98;
- Cascade function: support master-slave parallel mode, like the operation of a single power supply to operate the entire cascade;
- Sequence function: Powerful and flexible sequence function, can simulate complex waveform output;
- Quick call: press the digital key to directly call the saved voltage and current parameters;
- Provide a composite signal port with powerful signal monitoring capabilities (optional) :

  Analog programming: control output voltage and output current through analog quantity;

  External control: open or close the output through the external digital signal, and the external output digital control number;

  Monitoring output: the output waveform of voltage and current is output in the form of analog quantity, easy to monitor;
- Remote compensation: compensate the voltage difference caused by the current to ensure the measured value of the voltage at the load end;
- Power-off save: the configuration parameters of the power supply automatically restore to the state when the last shutdown;
- Standard feature rich "Faith power product demonstration platform" software, with basic solar photovoltaic cell simulation function;
- Optional feature-rich "Faithtech Solar PV Matrix Simulation Software" (optional);
- Communication port: standard RS232 and LAN communication port, optional GPIB, RS485, CAN;
- Communication protocol: Support SCPI, Modbus protocol;
- Display operation: TFT color display, support Chinese and English display, convenient and quick key operation;
- Protection function: OVP, OCP, OPP, OTP, LVP, SHUT, FAULT, ALTER and other comprehensive protection function.

Summary

FTP series wide range programmable DC power supply is a high performance DC power supply developed by Faith tech. It has the advantages of wide output range, high current, low ripple noise, fast transient response, high resolution, high precision, and the voltage current slope can be set.

FTP series product line is rich, including 48 different models, 5 power levels, voltage range from 10V to 1500V, it is the best choice for ATE system integration, laboratory testing, vehicle equipment testing, superconducting testing, motor testing, battery charging simulation, voltage and current sensor calibration, laser testing and power supply, electronic product life cycle testing and other applications.

Application fields

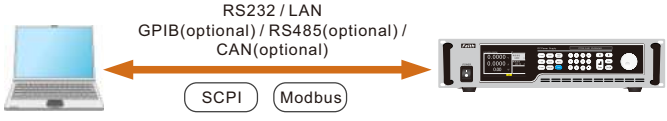
- Multi-specification flexible application of power electronics laboratory;
- Fuel cell, power battery, lead battery, super capacitor test;
- Simulation of power supply environment of vehicle, airborne and shipboard electronic equipment;
- DC charger, charging pile design and test system integration;
- Server power supply, UPS, inverter design and test;
- Solar energy, wind energy, energy storage design and testing;
- Uav, laser, sensor field power supply and design test.

High precision measurement function

FTP series built-in 16bits high precision A/D converter, voltage 0.05%F.S., current 0.1%+0.1%F.S. The measurement accuracy of FTP. The measurement values of voltage, current and power can be displayed on the display screen of the front panel of the power supply at the same time. In addition, FTP provides additional voltage and current monitoring output function, the user can monitor the output waveform of voltage and current through the oscilloscope by monitoring the output terminal.

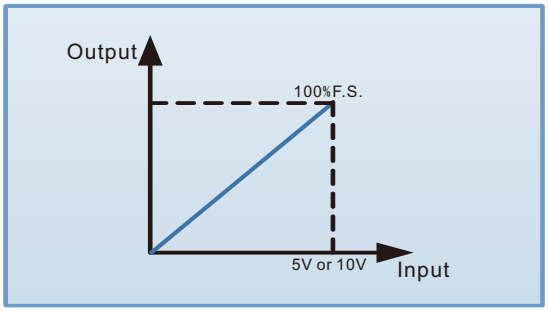
Multi-interface and multi-protocol

The FTP series is equipped with multiple communication interfaces, and supports SCPI and Modbus two communication protocols. The user can configure it in the menu according to the needs, which makes the system integration more flexible.



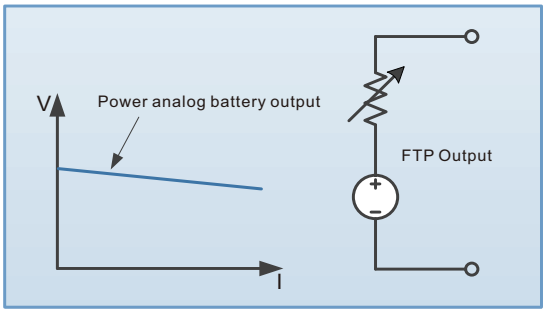
Analog programming capabilities

FTP series has two analog input ports, voltage programming and current programming, which can respectively control the output voltage and output current. The analog programming signal can choose 0 ~ 5V or 0 ~ 10V DC voltage signal. The programming signal corresponds to the output voltage and output current of 0 ~ 100%F.S.



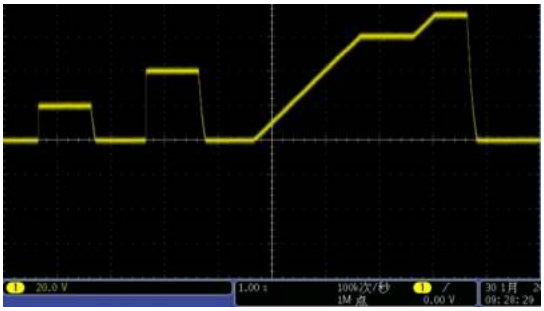
Battery internal resistance simulation function

FTP series power supply with battery internal resistance analog output function, when the output current of the power supply increases, the output voltage can be adjusted according to the user's preset internal resistance value.



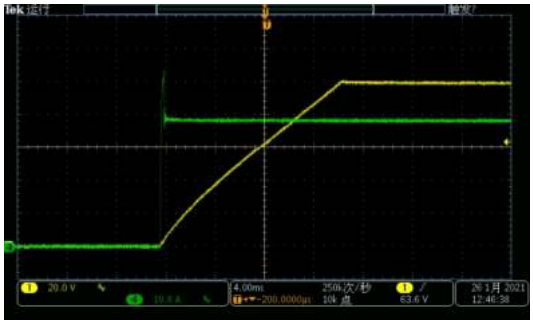
Serial function

The sequence function allows users to edit their own voltage and current waveforms. The FTP series offers 10 sequence files, each supporting up to 100 run steps. In the run steps, you can set the output voltage, output current, and delay. Sequence function support, support cycle, link and other attributes, to facilitate the realization of complex waveform output.

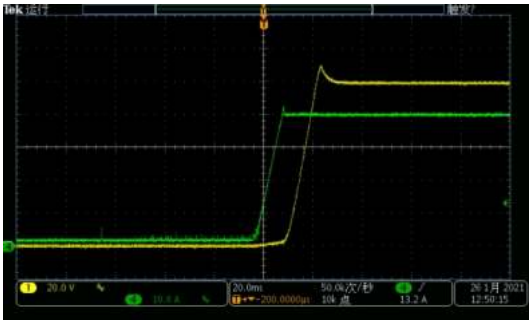


CV, CC is preferred

When the power output is connected to the inductive or capacitive load, the output current or voltage will overshoot to a certain extent, which will trigger the protection of the device under test, or even damage the device under test. FTP series with CV, CC output priority function to effectively inhibit the output overshoot and the impact.



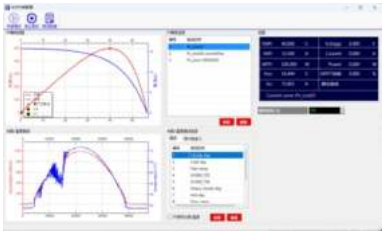
CV priority (high speed build voltage, current overshoot)



CC priority (high speed build current, voltage overshoot)

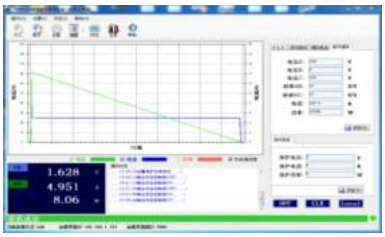
Photovoltaic battery array simulation function

The FTP series comes standard with a feature-rich "Faith Power Demo Platform" with basic PV function for testing PV inverters. With the host computer demonstration platform can achieve more test functions, such as dynamic MPPT, typical weather data, custom light/temperature curve and so on. If you need more complex photovoltaic test functions, you can choose "Faithtech Solar Photovoltaic Matrix Simulation software".



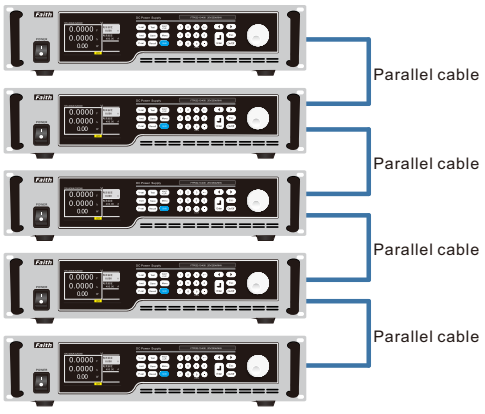
Computer graphical operation software

FTP series provides a host computer software with virtual instrument function, which can read test data in real time, generate images, export reports, print reports, etc., which is convenient for customers to use.



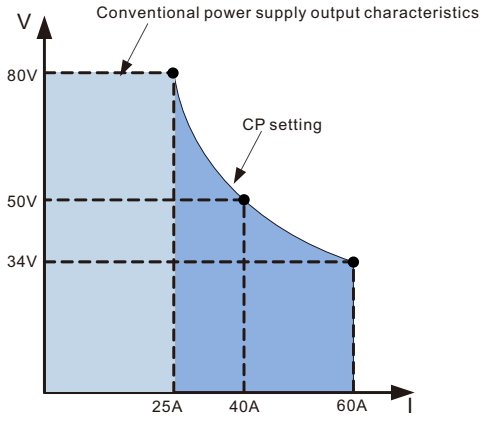
Multi-machine parallel function

The FTP power supply supports up to 10 power supplies in parallel, which greatly expands the application output range of the power supply. Parallel function in addition to the automatic load between the power supply, to maintain the output value is consistent, but also to ensure the output slope curve or waveform is consistent. In the parallel state of the host, the power supply screen displays the total voltage, current and power values. Each slave automatically equalizes current and sums automatically.



Constant power, wide range output

The FTP series has an output range of over 2.4 times wide range. It can automatically adjust the output voltage and current within the set range to achieve constant power output. CP function for solar photovoltaic simulation test, load stability test and protection safety test to provide help.

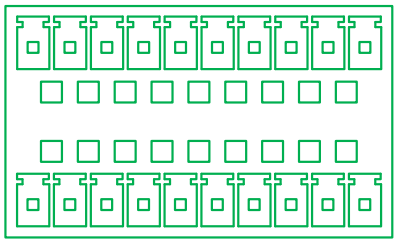


FTP series provides wider operation in constant power range

Composite signal port (optional)

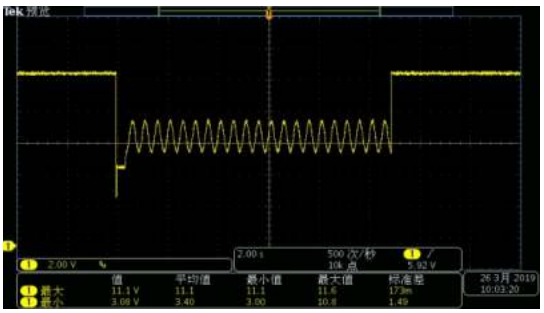
FTP series optional composite signal port, which has the following functions:

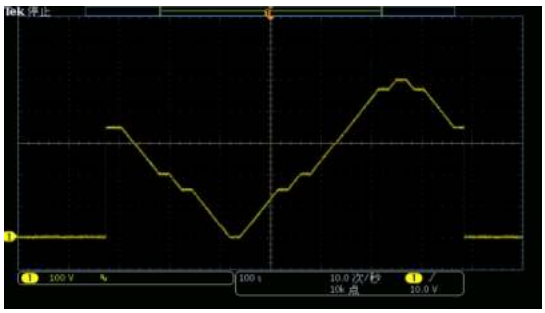
- Voltage, current output monitoring;
- Voltage, current programming control;
- Working mode indication;
- Scram control input;
- READY power supply working status indication;
- DC_ON output voltage monitoring, etc.



Automotive power supply waveform simulation (optional)

Due to the complex electrical environment of the automobile power supply system, the power supply voltage often fluctuates greatly, for example, the motor, solenoid valve and other components start and close. The automotive electronic waveform test function of FTP-C series power supply can realize the simulation function of ISO16750-2 (environmental conditions and tests of electrical and electronic equipment of road vehicles Part 2: Electrical load) and Volkswagen VW80000 electrical and electronic equipment test waveform.





Faithtech solar PV matrix simulation software (optional)

Faithtech Solar PV Matrix simulation software is a photovoltaic test software supporting Faithtech power supply series. It adopts simple and intuitive graphical interface to present users with intuitive and friendly man-machine interface. Users can easily use the software to output, measure and display the maximum power tracking status and numerical records of photovoltaic inverters in real time. The software built-in EN50530, Sandia and other 5 kinds of regulatory test procedures, can simulate the solar panel under different parameters of the series parallel test, as well as cloud cover and other tests; It is convenient for users to test the static and dynamic MPPT efficiency of photovoltaic inverters.

Ordering information

Voltage	Model	Current	Power	Voltage	Model	Current	Power
10V	FTP016-10-200	200A	1. 6kW	20V	FTP020-20-250	250A	2kW
	FTP032-10-400	400A	3. 2kW		FTP032-20-250	250A	3. 2kW
	FTP048-10-600	600A	4. 8kW		FTP048-20-375	375A	4. 8kW
	FTP065-10-800	800A	6. 5kW		FTP065-20-500	500A	6. 5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
30V	FTP016-30-85	85A	1. 6kW	40V	FTP020-40-120	120A	2kW
	FTP032-30-170	170A	3. 2kW		FTP032-40-120	120A	3. 2kW
	FTP048-30-255	255A	4. 8kW		FTP065-40-240	240A	6. 5kW
	FTP065-30-340	340A	6. 5kW		–	–	–
Voltage	Model	Current	Power	Voltage	Model	Current	Power
50V	FTP020-50-110	110A	2kW	80V	FTP020-80-60	60A	2kW
	FTP032-50-110	110A	3. 2kW		FTP032-80-60	60A	3. 2kW
	FTP065-50-220	220A	6. 5kW		FTP065-80-120	120A	6. 5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
120V	FTP020-120-40	40A	2kW	160V	FTP020-160-30	30A	2kW
	FTP032-120-40	40A	3. 2kW		FTP032-160-30	30A	3. 2kW
	FTP065-120-80	80A	6. 5kW		FTP065-160-60	60A	6. 5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
300V	FTP020-300-16	16A	2kW	400V	FTP020-400-12	12A	2kW
	FTP032-300-16	16A	3. 2kW		FTP032-400-12	12A	3. 2kW
	FTP065-300-32	32A	6. 5kW		FTP065-400-24	24A	6. 5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
600V	FTP020-600-8	8A	2kW	800V	FTP020-800-8	8A	2kW
	FTP032-600-8	8A	3. 2kW		FTP032-800-8	8A	3. 2kW
	FTP065-600-16	16A	6. 5kW		FTP065-800-16	16A	6. 5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
1000V	FTP020-1000-5	5A	2kW	1200V	FTP020-1200-5	5A	2kW
	FTP032-1000-5	5A	3. 2kW		FTP032-1200-5	5A	3. 2kW
	FTP065-1000-10	10A	6. 5kW		FTP065-1200-10	10A	6. 5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
1500V	FTP020-1500-3. 5	3. 5A	2kW	–	–	–	–
	FTP032-1500-3. 5	3. 5A	3. 2kW		–	–	–
	FTP065-1500-7	7A	6. 5kW		–	–	–

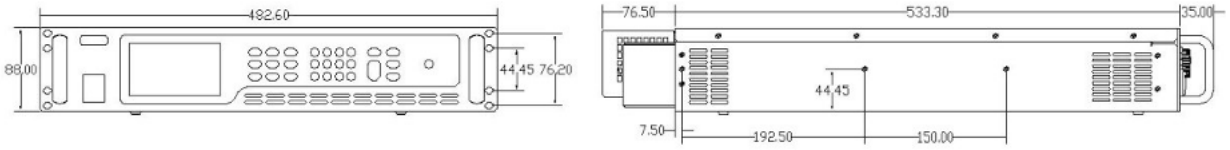
Optional information

Name	Model or Specification	Note
CAN interface	Suffix N	
RS485 interface	Suffix S	
GPIB interface	Suffix G	
Composite signal port	Suffix F	
Battery load prevention backfilling device	Suffix D	40V to 800V models
Automotive waveform testing options	Suffix C	40V, 80V models only

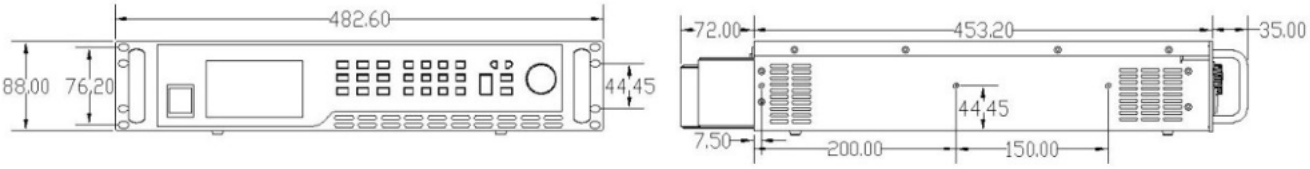
*Test cable and other optional parts are available. The relevant specifications and models are detailed in the "Optional Accessories" section of this manual.

Dimensions drawing

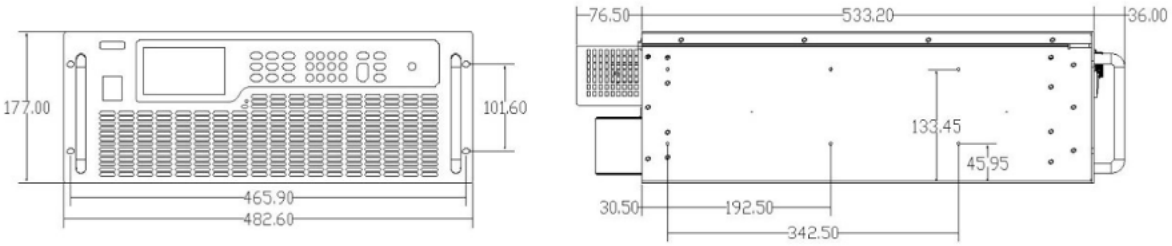
Dimensions of 1.6kW, 2kW, 3.2kW models(10V～30V model):



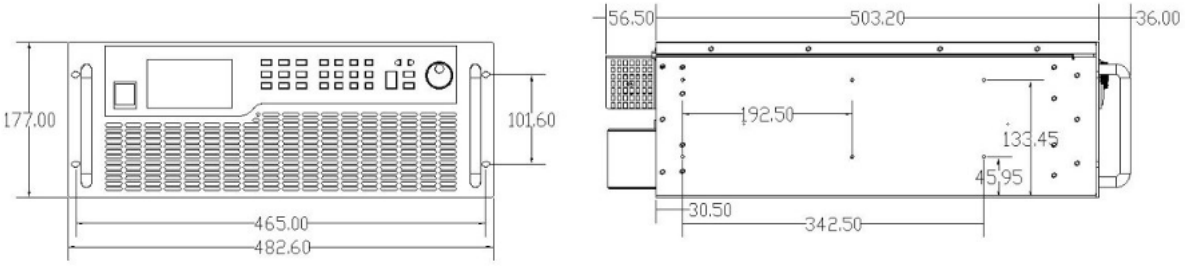
Dimensions of 2kW, 3.2kW models(40V～1500V model):



Dimensions of 4.8kW, 6.5kW models(10V～30V model):



Dimensions of 6.5kW models(40V～1500V model):



General Specification Table

General specification table	
Items	Parameters
Input	190VAC ~ 265VAC, frequency: 47Hz ~ 63Hz, PF: 0.98(Typical)
Efficiency	0.9(Typical)
Transient response	Typical value 1ms, load change 50%, time required for voltage to return to accuracy range
Cascade	Supports power expansion in master/slave mode
Communication interface	RS232 and LAN, optional: GPIB, RS485, CAN
Operating temperature	0℃～40℃
Storage temperature	-20℃～70℃
Use altitude	＜2000m

Specification table-1

Model	FTP016-10-200	FTP020-20-250	FTP016-30-85
Voltage	0～10V	0～20V	0～30V
Current	0～200A	0～250A	0～85A
Power	1600W	2000W	1600W
Model	FTP032-10-400	FTP032-20-250	FTP032-30-170
Voltage	0～10V	0～20V	0～30V
Current	0～400A	0～250A	0～170A
Power	3200W		
Model	FTP048-10-600	FTP048-20-375	FTP048-30-255
Voltage	0～10V	0～20V	0～30V
Current	0～600A	0～375A	0～255A
Power	4800W		
Model	FTP065-10-800	FTP065-20-500	FTP065-30-340
Voltage	0～10V	0～20V	0～30V
Current	0～800A	0～500A	0～340A
Power	6500W		
Voltage programming			
Resolution	16Bits		
Accuracy	0. 05%F. S.		
Current programming			
Resolution	16Bits		
Accuracy	0. 1%+0. 1%F. S.		
External analog programming			
Control voltage	0～5V or 0～10V corresponds to 0～100%F. S.		
Voltage accuracy	0. 2%F. S.		
Current accuracy	0. 5%F. S.		
Analog outputs			
Output voltage	0 ~ 100%F.S corresponds to 0 ~ 10V.		
Voltage accuracy	0. 5%F. S.		
Current accuracy	0. 5%F. S.		
Linear adjustment rate			
Voltage	0. 01%+0. 01%F. S.		
Current	0. 02%+0. 01%F. S.		
Loads adjustment rate			
Voltage	0. 01%+0. 05%F. S.		
Current	0. 02%+0. 1%F. S.		
Voltage measurement			
Resolution	16Bits		
Accuracy	0. 05%F. S.		
Current measurement			
Resolution	16Bits		
Accuracy	0. 1%+0. 1%F. S.		
Output noise & ripple			
Voltage ripple (p-p)	60mV	60mV	60mV
Voltage ripple (rms)	10mV	20mV	20mV
Rising slope			
Voltage	5V/ms (max)		
Current	2A/ms (max)		
OVP setting			
Range	0～110%F. S.		
Accuracy	1%F. S.		
Dimension	430 (W) ×88 (H) ×606. 5 (D) mm （1. 6kW&2kW&3. 2kW ）;		
	430 (W) ×177 (H) ×606. 5 (D) mm （4. 8kW&6. 5kW ）		
Weight	20kg (2kW&3. 2kW Models)； 35kg (6. 5kW Models)		

Specification table-2

Model	FTP020-40-120	FTP020-50-110	FTP020-80-60	FTP020-120-40	FTP020-160-30	FTP020-300-16
Voltage	0～40V	0～50V	0～80V	0～120V	0～160V	0～300V
Current	0～120A	0～110A	0～60A	0～40A	0～30A	0～16A
Power	2000W					
Model	FTP032-40-120	FTP032-50-110	FTP032-80-60	FTP032-120-40	FTP032-160-30	FTP032-300-16
Voltage	0～40V	0～50V	0～80V	0～120V	0～160V	0～300V
Current	0～120A	0～110A	0～60A	0～40A	0～30A	0～16A
Power	3200W					
Model	FTP065-40-240	FTP065-50-220	FTP065-80-120	FTP065-120-80	FTP065-160-60	FTP065-300-32
Voltage	0～40V	0～50V	0～80V	0～120V	0～160V	0～300V
Current	0～240A	0～220A	0～120A	0～80A	0～60A	0～32A
Power	6500W					
Voltage programming						
Resolution	16Bits					
Accuracy	0. 05%F.S.					
Current programming						
Resolution	16Bits					
Accuracy	0. 1%+0. 1% F. S.					
External analog programming						
Control voltage	0～5V or 0～10V corresponds to 0～100%F.S.					
Voltage accuracy	0. 2%F. S.					
Current accuracy	0. 5%F. S.					
Analog outputs						
Output voltage	0～100%F.S corresponds to 0～10V					
Voltage accuracy	0. 5%F. S.					
Current accuracy	0. 5%F. S.					
Linear adjustment rate						
Voltage	0.01%+0.01%F.S.					
Current	0.02%+0.01%F.S.					
Load adjustment rate						
Voltage	0.01%+0.05%F.S.		0.01%+0.01%F.S.			
Current	0. 02%+0. 1%F. S.					
Voltage measurement						
Resolution	16Bits					
Accuracy	0.05%F.S.					
Current measurement						
Resolution	16Bits					
Accuracy	0. 1%+0. 1%F. S.					
Output noise & ripple						
Voltage ripple (p-p)	60mV	70mV	80mV	80mV	100mV	100mV
Voltage ripple (rms)	20mV	20mV	20mV	20mV	40mV	40mV
Rising slope						
Voltage	5V/ms(max)					
Current	2A/ms(max)					
OVP setting						
Range	0～110%F.S.					
Accuracy	1%F. S.					
Dimension	430(W)×88(H)×453(D)mm (2kW&3.2kW Model); 430(W)×177(H)×503(D)mm (6.5kW Model)					
Weight	15kg(2kW&3.2kW Model); 29kg(6.5kW Model)					

Specification table-3

Model	FTP020-400-12	FTP020-600-8	FTP020-800-8	FTP020-1000-5	FTP020-1200-5	FTP020-1500-3.5
Voltage	0～400V	0～600V	0～800V	0～1000V	0～1200V	0～1500V
Current	0～12A	0～8A	0～8A	0～5A	0～5A	0～3.5A
Power	2000W					
Model	FTP032-400-12	FTP032-600-8	FTP032-800-8	FTP032-1000-5	FTP032-1200-5	FTP032-1500-3.5
Voltage	0～400V	0～600V	0～800V	0～1000V	0～1200V	0～1500V
Current	0～12A	0～8A	0～8A	0～5A	0～5A	0～3.5A
Power	3200W					
Model	FTP065-400-24	FTP065-600-16	FTP065-800-16	FTP065-1000-10	FTP065-1200-10	FTP065-1500-7
Voltage	0～400V	0～600V	0～800V	0～1000V	0～1200V	0～1500V
Current	0～24A	0～16A	0～16A	0～10A	0～10A	0～7A
Power	6500W					
Voltage programming						
Resolution	16Bits					
Accuracy	0.05%F.S.					
Current programming						
Resolution	16Bits					
Accuracy	0. 1%+0. 1% F. S.					
External analog programming						
Control voltage	0～5V or 0～10V corresponds to 0～100%F.S.					
Voltage accuracy	0. 2%F. S.					
Current accuracy	0. 5%F. S.					
Analog outputs						
Output voltage	0～100%F.S corresponds to 0～10V.					
Voltage accuracy	0. 5%F. S.					
Current accuracy	0. 5%F. S.					
Linear adjustment rate						
Voltage	0.01%+0.01%F.S.					
Current	0.02%+0.01%F.S.					
Load adjustment rate						
Voltage	0.01%+0.01%F.S.					
Current	0.02%+0. 1%F. S.					
Voltage measurement						
Resolution	16Bits					
Accuracy	0.05%F.S.					
Current measurement						
Resolution	16Bits					
Accuracy	0. 1%+0. 1%F. S.					
Output noise & ripple						
Voltage ripple (p-p)	300mV	300mV	500mV	450mV	500mV	700mV
Voltage ripple (rms)	60mV	60mV	80mV	80mV	120mV	150mV
Rising slope						
Voltage	5V/ms(max)					
Current	2A/ms(max)					
OVP setting						
Range	0～110%F.S.					
Accuracy	1%F. S.					
Dimension	430(W)×88(H)×453(D)mm (2kW&3.2kW Model); 430(W)×177(H)×503(D)mm (6.5kW Model)					
Weight	15kg(2kW&3.2kW Model); 29kg(6.5kW Model)					

FTP3000 series

Wide range low power programmable DC power supply

Summary

FTP3000 series small power supply is a power supply with high cost performance, super practicality and versatility. It can be widely used in laboratory test, vehicle equipment test, solar inverter test, DC/DC converter and inverter test, engine start test, battery automatic charging, electronic product life cycle and other test links. Product configuration with color screen and Chinese and English menu interface, easy to operate intuitive, is the common configuration of power electronics engineers desk.

Characteristic

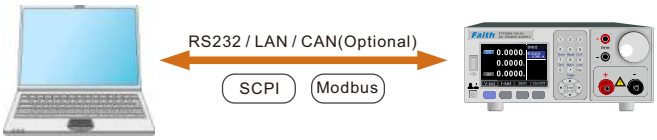
- Unit range:
  Voltage: 0 ~ 600V,
  Current: 0 ~ 80A ,
  Power: 900W, 1500W;
- 24-bit high resolution ADC measurement;
- Power factor greater than 0.98;
- Stable output, low ripple noise;
- Voltage and current slope can be set;
- Remote line loss compensation;
- Support constant power output;
- Sequence editing function, support cycle and link;
- OPP, OCP, OVP, OTP and other comprehensive protection functions;
- Quick call, one-key call test parameters;
- Isolated composite signal terminal (optional) with strong external control and internal monitoring capabilities;
- Intelligent fan control, reduce noise;
- TFT color LCD display, Chinese and English menu interface;
- Equipped with RS232, LAN, CAN(optional) communication port, support SCPI, ModBus, CAN-OPEN protocol;
- Upper computer software and SDK development kit, convenient for customers to carry out secondary development.

Voltage and current slope setting

FTP3000 series supports voltage slope setting and current slope setting. The adjustment of the slope slows down the rise and fall of the voltage (or current), which can effectively avoid the damage of the inrush current on the DUT. The voltage slope is measured in V/s and the current slope is measured in A/s.

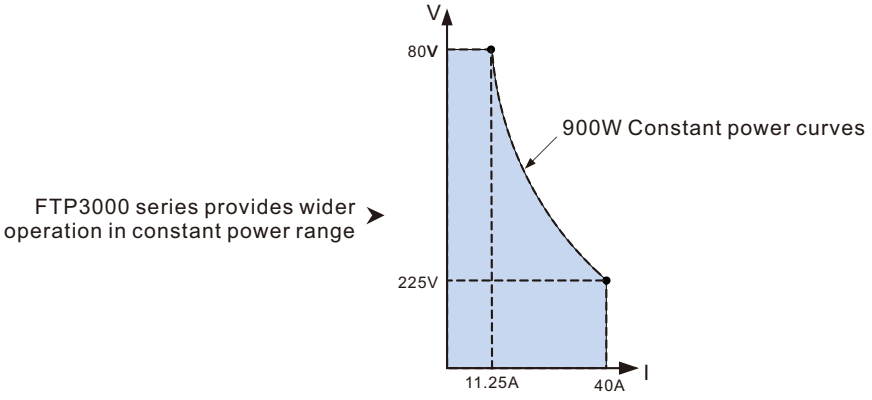
Multi-interface and multi-protocol

The FTP3000 series is equipped with multiple communication interfaces: RS232, LAN, CAN (optional), SCPI and Modbus communication protocols. The user can configure in the menu according to the demand, which makes the system integration more flexible.



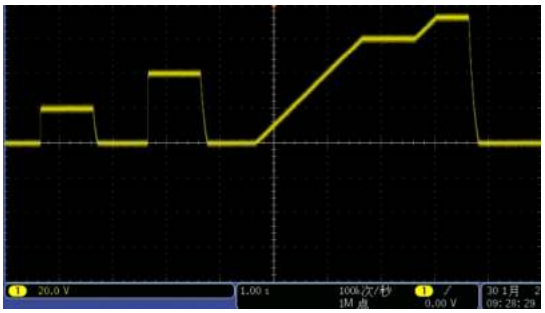
Constant power, wide range output

FTP3000 series has an output range of more than 3.5 times wide range and supports constant power output function. After the output is turned on, the power supply constantly adjusts the output voltage or output current to keep the output power constant. If the load exceeds the power supply's adjustment range, the output will be maintained at the maximum set value. (Note: The constant power output function is mainly applied to the load with a response speed of more than 10ms.)



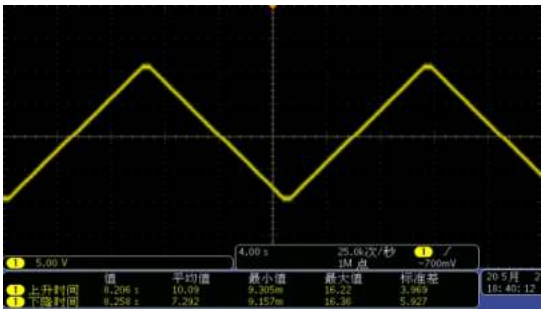
Serial function

The sequence function allows users to edit their own voltage and current waveforms. The FTP3000 series offers 20 sequence files, each supporting up to 20 running steps. In the run steps, you can set the output voltage, output current, and delay. Sequence function support, support cycle, link and other attributes, to facilitate the realization of complex waveform output.



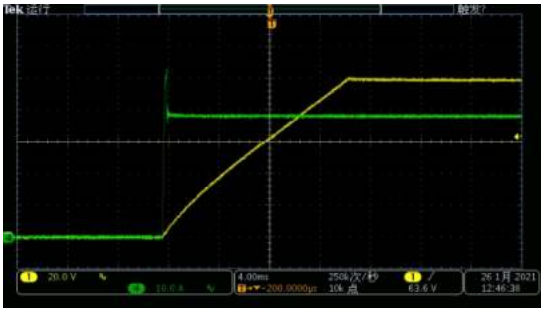
Voltage RAMP output function (RAMP)

The FTP3000 series supports the voltage RAMP function, which can make the output voltage slowly increase from the low point to the high point, or make the output voltage slowly drop from the high point to the low point. The RAMP function has three working modes: Continuous (Continuous), Pulse (Pulse) and Toggle.

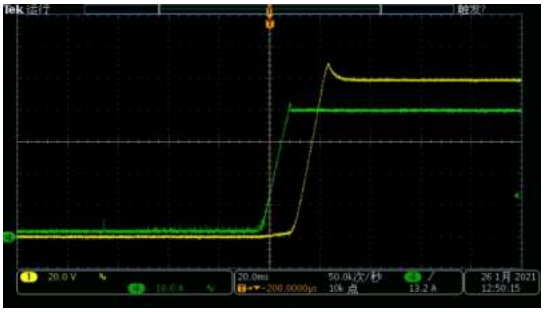


CV and CC are preferred

When the power output is connected to the inductive or capacitive load, the output current or voltage will overshoot to a certain extent, which will trigger the protection of the device under test, or even damage the device under test. FTP3000 series with CV, CC output priority function to effectively inhibit the output overshoot and the impact.



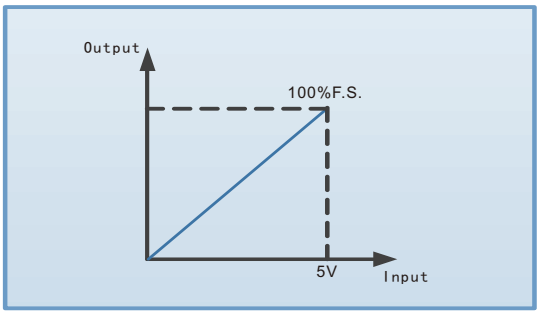
CV priority (high speed build voltage, current overshoot)



CC priority (high speed build current, voltage overshoot)

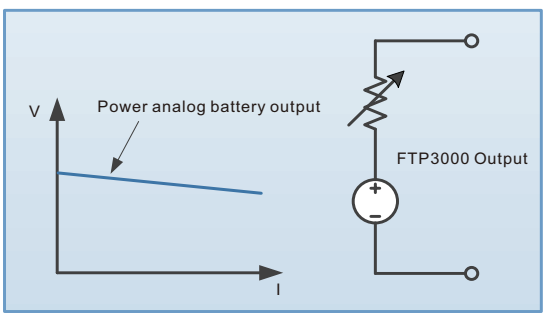
Analog programming functions

FTP3000 series has two analog input ports, voltage programming and current programming, which can respectively control the output voltage and output current. The analog programming signal is 0 ~ 5V DC voltage signal. The programming signal corresponds to the output voltage and output current of 0 ~ 100%F.S.



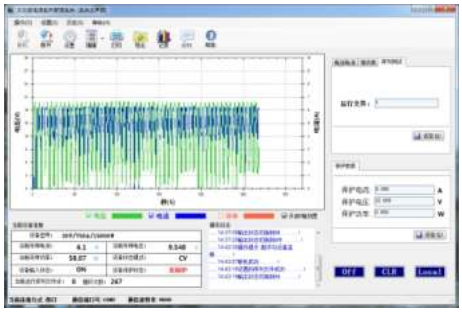
Battery internal resistance simulation function

FTP3000 series power supply has the function of simulating the battery internal resistance output. When the output current of the power supply increases, the output voltage can be adjusted according to the preset internal resistance value.



Computer graphical operation software

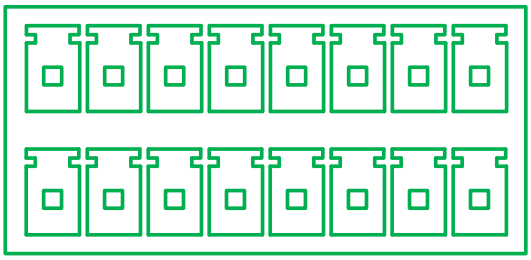
FTP3000 series provides a host computer software with virtual instrument function, which can read test data in real time, generate images, export reports, print reports, etc., for the convenience of customers.



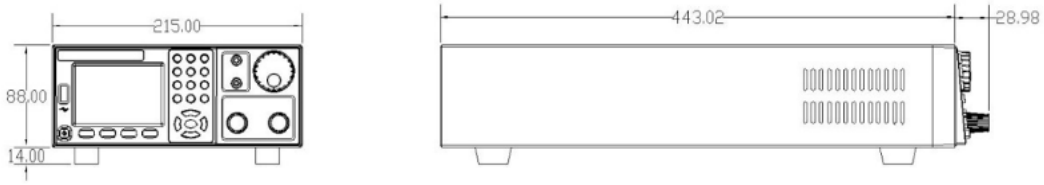
Composite signal port (optional)

FTP3000 series can be optional composite signal port, which has the following functions:

- READY power supply working status indicator;
- Output mode indication;
- Compound external control (which can be used as a trigger or ON/OFF control signal);
- Voltage and current output monitoring;
- Voltage, current programming control.



Dimension drawing



Ordering information

Voltage	Model	Current	Power	Voltage	Model	Current	Power
40V	FTP3009-40-80	80A	900W	80V	FTP3009-80-40	40A	900W
	FTP3015-40-80	80A	1500W		FTP3015-80-40	40A	1500W
Voltage	Model	Current	Power	Voltage	Model	Current	Power
150V	FTP3009-150-20	20A	900W	300V	FTP3009-300-10	10A	900W
	FTP3015-150-20	20A	1500W		FTP3015-300-10	10A	1500W
Voltage	Model	Current	Power	Voltage	Model	Current	Power
600V	FTP3009-600-5	5A	900W	--	--	--	--
	FTP3015-600-5	5A	1500W				

Optional information

Name	Model or specification	Note
Composite signal port	Suffix F	
CAN interface	Suffix N	
Battery load prevention backfilling device	Suffix D	Models other than 40V
GPIB interface	FT7130	RS232 to GPIB

*Test cable and other optional parts are available. The relevant specifications and models are detailed in the "Optional Accessories" section of this manual.

Specification table

Model	FTP3009-40-80	FTP3009-80-40	FTP3009-150-20	FTP3009-300-10	FTP3009-600-5
Voltage	0～40V	0～80V	0～150V	0～300V	0～600V
Current	0～80A	0～40A	0～20A	0～10A	0～5A
Power	900W				
Model	FTP3015-40-80	FTP3015-80-40	FTP3015-150-20	FTP3015-300-10	FTP3015-600-5
Voltage	0～40V	0～80V	0～150V	0～300V	0～600V
Current	0～80A	0～40A	0～20A	0～10A	0～5A
Power	1500W				
Voltage programming					
Resolution	16Bits				
Accuracy	0. 1%+0. 1%F. S.				
Current programming					
Resolution	16Bits				
Accuracy	0. 1%+0. 2%F. S.				
External analog programming					
Control voltage	0～5V corresponds to 0～100%F.S.				
Voltage accuracy	0.2%F.S.				
Current accuracy	0.5%F.S.				
Analog outputs					
Output voltage	0～100%F.S corresponds to 0～5V				
Voltage accuracy	0.5%F.S.				
Current accuracy	0.5%F.S.				
Linear adjustment rate					
Voltage	0.01%+0.01%F.S.				
Current	0.02%+0.01%F.S.				
Loads adjustment rate					
Voltage	0.01%+0.05%F.S.				
Current	0.02%+0.1%F.S.				
Voltage measurement					
Resolution	16Bits				
Accuracy	0. 1%+0. 1%F. S.				
Current measurement					
Resolution	16Bits				
Accuracy	0. 1%+0. 2%F. S.				
Output noise & ripple					
Voltage ripple (p-p)	60mV	60mV	80mV	150mV	300mV
Voltage ripple (rms)	10mV	20mV	20mV	30mV	60mV
Slope					
Voltage	5V/ms (max)				
Current	2A/ms (max)				
OVP setting					
Range	0～110%F.S.				
Accuracy	1%F.S.				
Transient response	Typical value 1ms, load change 50%, time required for voltage to return to accuracy range				
Efficiency	0.9 (Typical)				
Communication	RS232 and LAN				
Input	190VAC ~ 265VAC, frequency: 47Hz ~ 63Hz, PF: 0.99(Typical)				
Operating temperature	0℃～40℃				
Operating temperature	-20℃～70℃				
Storage temperature	＜2000m				
Dimension	215(W)×88(H)×452.5(D)mm				
Weight	7kg				

FTP1000 series

Programmable DC power supply

Summary

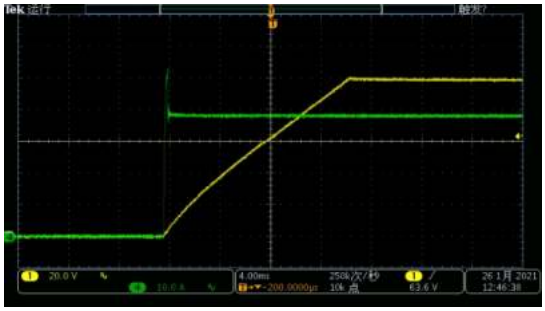
The FTP1000 series programmable DC power supply is a small volume, high performance, high power density DC power supply. The 1U/19 "full width/half width design makes the single machine more portable and the cabinet integration more convenient. The maximum output power is 1800W, which can be used in different fields such as laboratory test, system integration, large-scale production line test.

Features

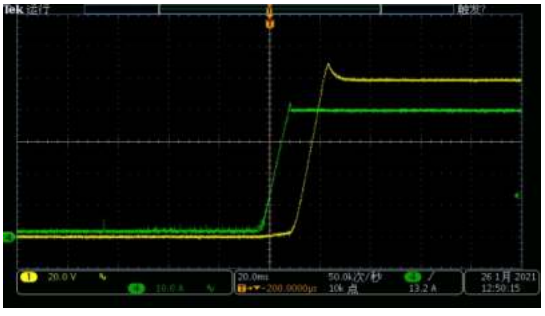
- Output Power: 600W/900W/1500W/1800W;
- Output Voltage: 0~3000V;
- Output current: 0~120A;
- Small size,1U/half 19 inch or full 19 inch;
- Input high Power factor,low harmonic;
- Sequence and waveform editing function;
- Equipped with battery charging function;
- Comprehensive protection function for over voltage,over current,over power,over temperature;
- Support to set output time,can control and record output time;
- Support Voltage compensation remotely;
- OLED display, wide viewing angle,high brightness;
- Standard RS232 and LAN, optional RS485;
- Support standard SCPI and Modbus-RTU communication protocol.

CV、CC priority

When the power output is connected to an inductive or capacitive load, it can cause a certain degree of overshoot in the output current or voltage. In mild cases it can trigger the protection of the tested equipment, and in severe cases it can directly cause damage to the tested equipment. The FTP1000 series have CV and CC output priority functions, it can suppress output overshoot effectively and its impact.



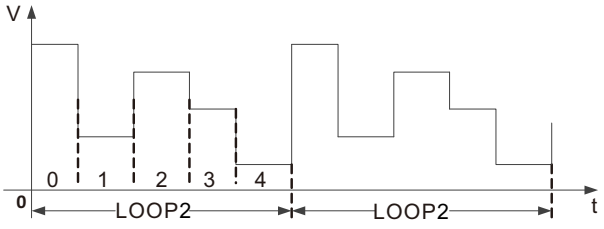
CV priority
(high speed build voltage, current overshoot)



CC priority
(high speed build current, voltage overshoot)

Sequence function

In the sequence output mode, complex output changes can be simulated based on user edited sequence parameters.Sequence output function, with menu option "SEQ", allow user to edit voltage and current waveform themselves.



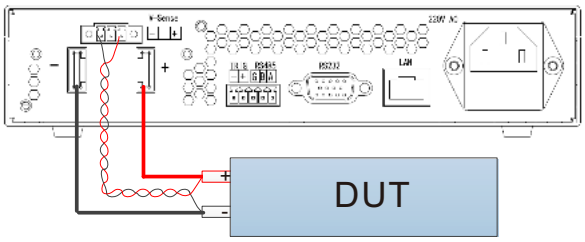
(Output waveform for sequence testing)

FTP1000 series provide 10 sequence files, each supporting up to 100 running steps.It can be set the voltage setting,current setting and runtime in running step.Support “Cycle numbers”and “Link file”,The cycle numbers can control sequence cycle running numbers,set 0 in infinite loop.The Link files can be used to run links between different files,set 0 to indicate no link.

Remote sensing function

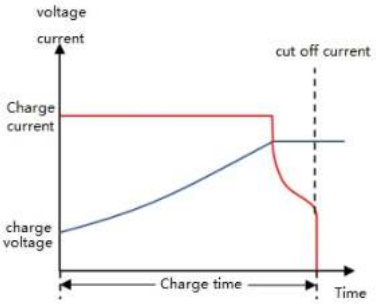
A voltage drop will be occurred on the connection line between the power supply and the load terminal when the load consumes high current, then remote sensing can automatically compensate for the voltage drop on the load line.the wiring diagram as below:

(Note: 1000V and above models do not have remote sensing function)



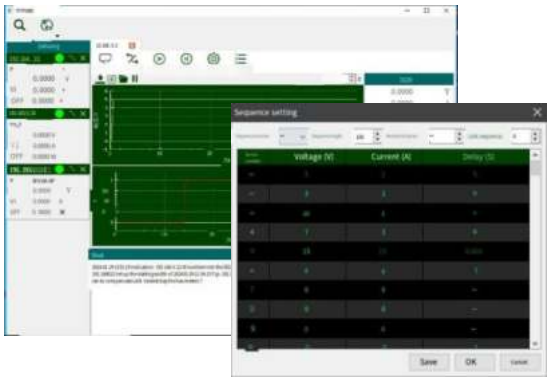
Battery charge function

FTP1000 series provide battery charge function,can define charge voltage、charge current、charge cut off voltage、charge cut off current、charge cut off capacity、charge cut off time etc，fully simulate the charging process of the battery, which can effectively protect the battery.

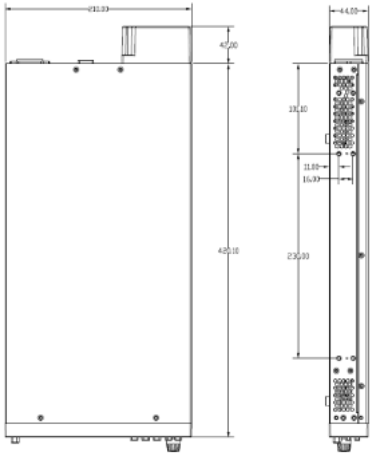


Computer graphical operation software

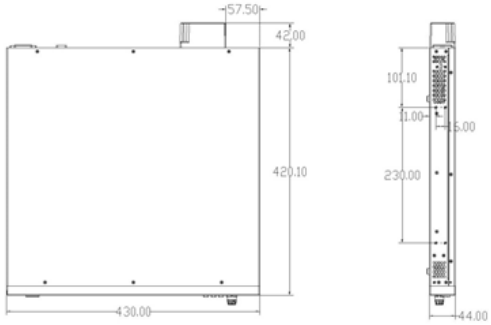
FTP1000 series provides a host computer software platform with the function of virtual instrument, which can remotely and real-time set test data, read test data, generate images, export data, etc. At the same time, multiple machines can be connected for control respectively, and the functions can be synchronized for convenient test use.



Dimension drawing



600W, 900W model:



1500W, 1800W model:

Ordering information

Voltage	Model	Current	Power	Remarks	Voltage	Model	Current	Power	Remarks
15V	FTP1060-15-60	60A	600W	Ac input: 180Vac ~260Vac	36V	FTP1060-36-30	30A	600W	Ac input: 180Vac ~ 260Vac
	FTP1090-15-60	60A	900W			FTP1090-36-30	30A	900W	
	FTP1150-15-120	120A	1500W			FTP1150-36-60	60A	1500W	
	FTP1180-15-120	120A	1800W			FTP1180-36-60	60A	1800W	
	FTP1060-15-60-WL	60A	600W	Ac input: 90Vac ~ 260Vac		FTP1060-36-30-WL	30A	600W	Ac input: 90Vac ~ 260Vac
	FTP1120-15-120-WL	120A	1200W			FTP1120-36-60-WL	60A	1200W	
Voltage	Model	Current	Power	Remarks	Voltage	Model	Current	Power	Remarks
60V	FTP1060-60-15	15A	600W	Ac input: 180Vac ~260Vac	60V	FTP1060-60-30	30A	600W	Ac input: 180Vac ~ 260Vac
	FTP1090-60-15	15A	900W			FTP1090-60-30	30A	900W	
	FTP1150-60-30	30A	1500W			FTP1150-60-60	60A	1500W	
	FTP1180-60-30	30A	1800W			FTP1180-60-60	60A	1800W	
	FTP1060-60-15-WL	15A	600W	Ac input: 90Vac ~ 260Vac		FTP1060-60-30-WL	30A	600W	Ac input: 90Vac ~ 260Vac
	FTP1120-60-30-WL	30A	1200W			FTP1120-60-60-WL	60A	1200W	
Voltage	Model	Current	Power	Remarks	Voltage	Model	Current	Power	Remarks
80V	FTP1060-80-12	12A	600W	Ac input: 180Vac ~260Vac	100V	FTP1060-100-10	10A	600W	Ac input: 180Vac ~ 260Vac
	FTP1090-80-12	12A	900W			FTP1090-100-10	10A	900W	
	FTP1150-80-24	24A	1500W			FTP1150-100-20	20A	1500W	
	FTP1180-80-24	24A	1800W			FTP1180-100-20	20A	1800W	
	FTP1060-80-12-WL	12A	600W	Ac input: 90Vac ~ 260Vac		FTP1060-100-10-WL	10A	600W	Ac input: 90Vac ~ 260Vac
	FTP1120-80-24-WL	24A	1200W			FTP1120-100-20-WL	20A	1200W	
Voltage	Model	Current	power	Remarks	Voltage	Model	Current	Power	Remarks
120V	FTP1060-120-08	8A	600W	Ac input: 180Vac ~260Vac	150V	FTP1060-150-06	6A	600W	Ac input: 180Vac ~ 260Vac
	FTP1090-120-08	8A	900W			FTP1090-150-06	6A	900W	
	FTP1150-120-16	16A	1500W			FTP1150-150-12	12A	1500W	
	FTP1180-120-16	16A	1800W			FTP1180-150-12	12A	1800W	
	FTP1060-120-08-WL	8A	600W	Ac input: 90Vac ~ 260Vac		FTP1060-150-06-WL	6A	600W	Ac input: 90Vac ~ 260Vac
	FTP1120-120-16-WL	16A	1200W			FTP1120-150-12-WL	12A	1200W	
Voltage	Model	Current	Power	Remarks	Voltage	Model	Current	Power	Remarks
150V	FTP1060-150-12	12A	600W	Ac input: 180Vac ~260Vac	300V	FTP1060-300-03	3A	600W	Ac input: 180Vac ~ 260Vac
	FTP1090-150-12	12A	900W			FTP1090-300-03	3A	900W	
	FTP1150-150-24	24A	1500W			FTP1150-300-06	6A	1500W	
	FTP1180-150-24	24A	1800W			FTP1180-300-06	6A	1800W	
	FTP1060-150-12-WL	12A	600W	Ac input: 90Vac ~ 260Vac		FTP1060-300-03-WL	3A	600W	Ac input: 90Vac ~ 260Vac
	FTP1120-150-24-WL	24A	1200W			FTP1150-300-06-WL	6A	1200W	
Voltage	Model	Current	Power	Remarks	Voltage	Model	Current	Power	Remarks
600V	FTP1060-600-015	1.5 A	600W	Ac input: 180Vac ~260Vac	1000V	FTP1060-1000-009	0.9 A	600W	Ac input: 180Vac ~ 260Vac
	FTP1090-600-015	1.5 A	900W			FTP1090-1000-009	0.9 A	900W	
	FTP1150-600-03	3A	1500W			FTP1150-1000-018	1.8 A	1500W	
	FTP1180-600-03	3A	1800W			FTP1180-1000-018	1.8 A	1800W	
	FTP1060-600-015-WL	1.5 A	600W	Ac input: 90Vac ~ 260Vac		FTP1060-1000-009-WL	0.9 A	600W	Ac input: 90Vac ~ 260Vac
	FTP1120-600-03-WL	3A	1200W			FTP1120-1000-018-WL	1.8 A	1200W	
Voltage	Model	Current	Power	Remarks	Voltage	Model	Current	Power	Remarks
2000V	FTP1060-2000-009	0.9 A	600W	Ac input: 180Vac ~260Vac	3000V	FTP1060-3000-003	0.3 A	600W	Ac input: 180Vac ~260Vac
	FTP1090-2000-009	0.9 A	900W			FTP1090-3000-003	0.3 A	900W	
	FTP1150-2000-018	1.8 A	1500W			FTP1150-3000-006	0.6 A	1500W	
	FTP1180-2000-018	1.8 A	1800W			FTP1180-3000-006	0.6 A	1800W	
	FTP1060-2000-009-WL	0.9 A	600W	Ac input: 90Vac ~ 260Vac		FTP1060-3000-003-WL	0.3 A	600W	Ac input: 90Vac ~ 260Vac
	FTP1120-2000-018-WL	1.8 A	1200W			FTP1120-3000-006-WL	0.6 A	1200W	

*Other voltage specifications can be customized through negotiation if there are batch requirements

Optional accessories

Item	Model or Spec	Description
19inch shelf kit	FT-H111	Single (1U/½19 ") shelf kit
19inch shelf kit	FT-H112	Two mounted shelf kits side by side
19inch shelf kit	FT-H113	Single (1U/ full 19 ") shelf kit
Stacking kit	FT-D104	Multi layer stacking kit

General specification table

General Spec.	
Voltage temperature coefficient	50ppm/℃
Current temperature coefficient	100ppm/℃
Input characteristics	
AC input Voltage	180VAC～260VAC, frequency 47Hz～63Hz or 90VAC～260VAC, frequency 47Hz～63Hz
Power factor	0.99@220Vac, rated output power
Max input current(full load)	600W: 3.5A, 900W: 5A, 1500W: 8.75A, 1800W: 10A @220Vac
Environmental condition	
Operation temperature	0°C~40°C(full load)
Storage temperature	-20°C~70°C
Operation humidity	30%~90% RH(non-condensing)
Storage humidity	10%~95% RH(non-condensing)
Operation Altitude	＜2000m
Structural characteristics	
Communication interface	RS232 , LAN, RS485
Cooling method	Forced air flow from front to rear, no ventilation holes on the upper cover and base, variable speed fan
Dimension(W*H*D）	210*44*462 mm(600W, 900W model)
	430*44*462 mm(above 900W model)
Weight	4.5kg(600W, 900W model)
	9kg(above 900W model)

Specification table-1

Model		FTP1060-15-60	FTP1060-36-30	FTP1060-60-15	FTP1060-60-30	FTP1060-80-12
Rated Voltage		0~15V	0~36V	0~60V	0~60V	0~80V
Rated Current		0~60A	0~30A	0~15A	0~30A	0~12A
Rated Power		600W				
Model		FTP1090-15-60	FTP1090-36-30	FTP1090-60-15	FTP1090-60-30	FTP1090-80-12
Voltage		0~15V	0~36V	0~60V	0~60V	0~80V
Current		0~60A	0~30A	0~15A	0~30A	0~12A
Power		900W				
Model		FTP1150-15-120	FTP1150-36-60	FTP1150-60-30	FTP1150-60-60	FTP1150-80-24
Voltage		0~15V	0~36V	0~60V	0~60V	0~80V
Current		0~120A	0~60A	0~30A	0~60A	0~24A
Power		1500W				
Model		FTP1150-15-120	FTP1150-36-60	FTP1150-60-30	FTP1150-60-60	FTP1150-80-24
Voltage		0~15V	0~36V	0~60V	0~60V	0~80V
Current		0~120A	0~60A	0~30A	0~60A	0~24A
Power		1800W				
Voltage programming*1						
Resolution		1mV	1mV	1mV	1mV	1mV
Accuracy		0.1%+0.1%F.S.				
Current programming*2						
Resolution		1mA	1mA	1mA	1mA	1mA
Accuracy		0.1%+0.1%F.S.				
Line regulation						
Voltage		≤0.02%F.S.				
Current		≤0.05%F.S.				
Load regulation						
Voltage		≤0.02%F.S.				
Current		≤0.05%F.S.+2mA				
Voltage measurement*1						
Resolution		1mV	1mV	1mV	1mV	1mV
Accuracy		0.1%+0.1%F.S.				
Current measurement*2						
Resolution		1mA	1mA	1mA	1mA	1mA
Accuracy		0.1%+0.1%F.S.				
Output noise and ripple						
Voltage ripple (Vp-p)		≤50mV	≤60mV	≤100mV	≤100mV	≤150mV
Voltage ripple (Vrms)		≤12mV	≤15mV	≤15mV	≤15mV	≤25mV
Current ripple (Arms)*3	≤900W	≤60mA	≤30mA	≤15mA	≤30mA	≤12mA
	>900W	≤120mA	≤60mA	≤30mA	≤60mA	≤24mA
Fall time (full load)*7		100ms				
Transient response time		Restore the output voltage deviation to within 0.5% of the rated voltage (50%-100% load) ≤ 2ms				
Efficiency*8		0.86	0.86	0.88	0.88	0.88

Specification table-2

Model		FTP1060-100-10	FTP1060-120-08	FTP1060-150-06	FTP1060-150-12	FTP1060-300-03
Rated Voltage		0~100V	0~120V	0~150V	0~150V	0~300V
Rated Current		0~10A	0~8A	0~6A	0~12A	0~3A
Rated Power		600W				
Model		FTP1090-100-10	FTP1090-120-08	FTP1090-150-06	FTP1090-150-12	FTP1090-300-03
Rated Voltage		0~100V	0~120V	0~150V	0~150V	0~300V
Rated Current		0~10A	0~8A	0~6A	0~12A	0~3A
Rated Power		900W				
Model		FTP1150-100-20	FTP1150-120-16	FTP1150-150-12	FTP1150-150-24	FTP1150-300-06
Rated Voltage		0~100V	0~120V	0~150V	0~150V	0~300V
Rated Current		0~20A	0~16A	0~12A	0~24A	0~6A
Rated Power		1500W				
Model		FTP1180-100-20	FTP1180-120-16	FTP1180-150-12	FTP1180-150-24	FTP1180-300-06
Rated Voltage		0~100V	0~120V	0~150V	0~150V	0~300V
Rated Current		0~20A	0~16A	0~12A	0~24A	0~6A
Rated Power		1800W				
Voltage programming*1						
Resolution		10mV	10mV	10mV	10mV	10mV
Accuracy		0.1%+0.1%F.S.				
Current programming*2						
Resolution		1mA	1mA	1mA	1mA	1mA
Accuracy		0.1%+0.1%F.S.				
Line regulation						
Voltage		≤0.02%F.S.				
Current		≤0.05%F.S.				
Load regulation						
Voltage		≤0.02%F.S.				
Current		≤0.05%F.S.+2mA				
Voltage measurement*1						
Resolution		10mV	10mV	10mV	10mV	10mV
Accuracy		0.1%+0.1%F.S.				
Current measurement*2						
Resolution		1mA	1mA	1mA	1mA	1mA
Accuracy		0.1%+0.1%F.S.				
Output noise and ripple						
Voltage ripple (Vp-p)		≤200mV	≤200mV	≤200mV	≤200mV	≤300mV
Voltage ripple (Vrms)		≤30mV	≤30mV	≤30mV	≤30mV	≤75mV
Current ripple (Arms) *3	≤900W	≤10mA	≤8mA	≤6mA	≤12mA	≤3mA
	>900W	≤20mA	≤16mA	≤12mA	≤24mA	≤6mA
Rise and fall time						
Rise time (no load)*4		100ms	100ms			200ms
Rise time (full load)*5		100ms	100ms			200ms
Fall time (no load)*6		2.5s	2.5s			3s
Fall time (full load)*7		100ms	100ms			120ms
Transient response time		Restore the output voltage deviation to within 0.5% of the rated voltage (50%-100% load)≤2ms				
Efficiency*8		0.88	0.88	0.88	0.88	0.88

Specification table-3

Model		FTP1060-600-015	FTP1060-1000-009	FTP1060-2000-009	FTP1060-3000-003
Rated Voltage		0~600V	0~1000V	0~2000V	0~3000V
Rated Current		0~1.5A	0~0.9A	0~0.9A	0~300mA
Rated Power		600W			
Model		FTP1090-600-015	FTP1090-1000-009	FTP1090-2000-009	FTP1090-3000-003
Rated Voltage		0~600V	0~1000V	0~2000V	0~3000V
Rated Current		0~1.5A	0~0.9A	0~0.9A	0~300mA
Rated Power		900W			
Model		FTP1150-600-03	FTP1150-1000-018	FTP1150-1000-018	FTP1150-3000-006
Rated Voltage		0~600V	0~1000V	0~2000V	0~3000V
Rated Current		0~3A	0~1.8A	0~1.8A	0~600mA
Rated Power		1500W			
Model		FTP1180-600-03	FTP1180-1000-018	FTP1180-1000-018	FTP1180-3000-006
Rated Voltage		0~600V	0~1000V	0~2000V	0~3000V
Rated Current		0~3A	0~1.8A	0~1.8A	0~600mA
Rated Power		1800W			
Voltage programming*1					
Resolution		10mV	100mV	100mV	100mV
Accuracy		0.1%+0.1%F.S.			
Current programming*2					
Resolution		1mA	1mA	1mA	1mA
Accuracy		0.1%+0.2%F.S.			0.1%+1mA
Line regulation					
Voltage		≤0.02%F.S.			
Current		≤0.05%F.S.			
Load regulation					
Voltage		≤0.02%F.S.			
Current		≤0.05%F.S.+2mA			
Voltage measurement*1					
Resolution		10mV	100mV	100mV	100mV
Accuracy		0.1%+0.1%F.S.			
Current measurement*2					
Resolution		1mA	1mA	1mA	1mA
Accuracy		0.1%+0.2%F.S.			0.1%+1mA
Output noise and ripple					
Voltage ripple (Vp-p)		≤600mV	≤1000mV	≤300mV	≤3500mV
Voltage ripple (Vrms)		≤125mV	≤200mV	≤75mV	≤600mV
Current ripple (Arms)*3	≤900W	≤3mA	≤1mA	≤3mA	≤1mA
	>900W	≤6mA	≤2mA	≤6mA	≤1mA
Rise and fall time					
Rise time (no load)*4		250ms	≤250ms	≤400ms	≤400ms
Rise time (full load)*5		250ms	≤250ms	≤400ms	≤400ms
Fall time (no load)*6		3.5s	≤8s	≤12s	≤15s
Fall time (full load)*7		150ms	≤250ms	≤400ms	≤400ms
Transient response time		Restore the output voltage deviation to within 0.5% of the rated voltage (50%-100% load)≤2ms			
Efficiency*8		0.88	0.88	0.88	0.88

Remarks:
*All specifications are subject to change without notice;
*1. The minimum voltage shall be ≥ 0.2% F.S;
*2. The minimum current value must be ≥ 0.2% F.S;
*3. Ripple measurement condition is 10%~100% of rated voltage and rated current;
*4. Change time of rated voltage from 10% to 90% under no-load condition;
*5. Change time of rated voltage from 10% to 90% under full load (resistive load);
*6. Change time of rated voltage from 90% to 10% under no-load condition;
*7. Change time of rated voltage from 90% to 10% under full load (resistive load);
*8. The value is measured at 220Vac/50Hz input, rated voltage and maximum power output.

FTG series

Combined ultra-high power programmable DC power supply

Summary

FTG series programmable DC switching power source, voltage range from 10V to 1500V, single current up to 20000A, single maximum power of 600kW. The first technology in China, the control and measurement accuracy of 0.1% is still maintained when the current is working, which provides strong support for sensor testing, superconducting material testing, cable testing and other tests.

FTG series has the advantages of high power density, high current and low ripple noise, fast transient response, high resolution and high precision. The power supply system adopts the modular stacking architecture. The modules are connected through high-speed external buses, which ensures high reliability and facilitates maintenance and expansion. It can be used in laboratory testing, vehicle equipment testing, solar inverter testing, DC/DC converter and inverter testing, engine start-up testing, automatic battery charging, electronic product life cycle testing.

FTG series with LAN/RS232/ RS485 (optional) /GPIB (optional) /CAN (optional) interface, support both SCPI protocol and standard ModBus-RTU protocol, coupled with the built-in isolation data/mode control interface (optional), bring great application diversity and convenience for system integration applications.

Characteristic

- Unit range:

  Voltage:0～1500V,

  Current:0～20000A,

  Power:4～600kW;
- High precision voltage and current control and measurement;
- Constant voltage, constant current, constant power output function;
- Convenient and practical sequence function, can achieve various voltage and current waveform output;
- Complex waveform editing function, can achieve a variety of complex voltage and current waveform output;
- High power density,3U/15kW;
- With voltage remote compensation and protection function, remote and near automatic switching, easy to use;
- Supports voltage and current monitoring output;
- The output time can be set freely, and the output time can be accurately controlled and recorded;
- Feature-rich "Faith Power Product Demonstration Platform" software is standard, with basic solar PV cell simulation functions;
- Feature-rich "Faithtech Solar PV Matrix Simulation Software" is available (optional);
- Analog programming: Output voltage and output current are controlled by analog (optional);
- Composite signal ports with powerful signal monitoring capabilities (optional);
- Monitoring output: The output waveform of voltage and current is output in the form of analog quantity for easy monitoring;
- Provides RS232, LAN, RS485 (optional), GPIB (optional), CAN (optional) a variety of remote communication interfaces;
- Standard SCPI and Modbus-RTU instructions facilitate the establishment of intelligent test platform and secondary development;
- Modular stack combination, standard rack design, easy to install and maintain;
- Over voltage/over current/over power/over temperature comprehensive intelligent protection function;
- TFT color LCD display, support simplified Chinese, traditional Chinese and English display;
- Intelligent fan control reduces noise and increases fan life.

Application field

- Flexible application of multiple specifications in power electronics laboratory;
- Fuel cell, power battery, lead-acid battery, supercapacitor test;
- Power supply environment simulation of vehicle, airborne and shipboard electronic equipment;
- DC charger, charging pile design and test system integration;
- Server power supply, UPS, inverter design and test;
- Solar energy, wind energy, energy storage design and testing;
- Sensor, superconducting material, cable and other product testing;
- Power supply and design testing in UAV, laser and sensor fields.

Measuring function

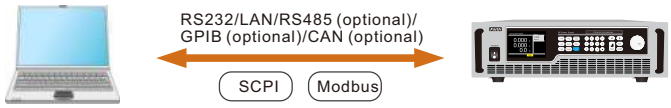
FTG series built-in 16bits high precision A/D converter, voltage 0.05%F.S., current 0.1%+0.1%F.S. The measurement accuracy. The measured values of voltage, current, and power can be simultaneously displayed on the display on the front panel of the power supply. In addition, FTG provides additional voltage and current monitoring output function, users can monitor the voltage and current output waveform through the oscilloscope through the monitoring output terminal.

Constant power function

The FTG series power supply has a constant power output function, which allows the user to set the power output value, maximum output voltage and maximum output current. Constant power output After opening, the power supply constantly adjusts the output voltage and output current, so that the output power is maintained at the set value. Users can also adjust the response speed to accommodate various loads at different rates.

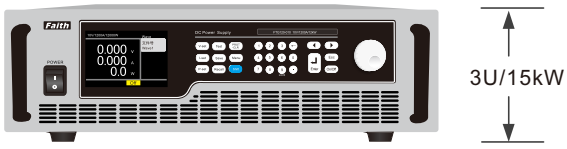
Multi-interface and multi-protocol

FTG series is equipped with a variety of communication interfaces, while supporting SCPI and Modbus two communication protocols. Users can configure the system on the menu according to their needs, which makes the system integration more flexible.



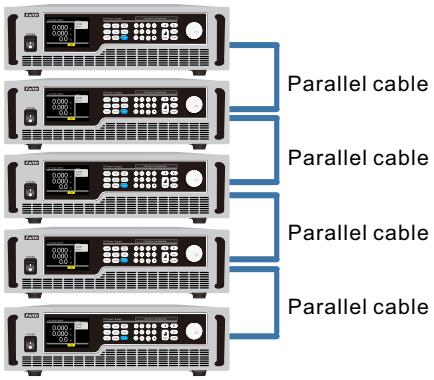
3U/15kW high power density

The FTG series offers a high power density of 3U/15kW with accurate output, fast response and low ripple noise. A wide range of voltage 10V ~ 1500V, current 3.5A ~ 20000A combination, suitable for every test verification link from design to product production process.



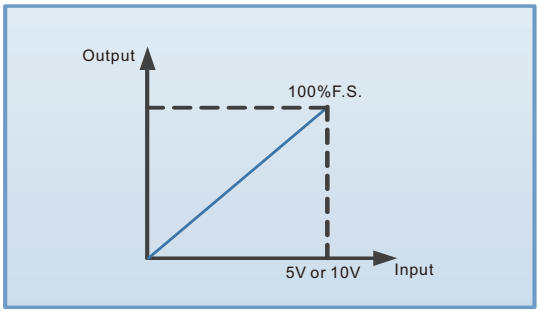
Master/slave parallel function

FTG power supply supports up to 10 power supplies in parallel, greatly expanding the application output range of the power supply. In addition to the automatic load balancing between the power supplies, the cascade function ensures the consistency of the output value, and also ensures the consistency of the output slope curve or waveform. When the host is in parallel, the power screen displays the total voltage, current, and power values. Each slave automatic flow, automatic summing.



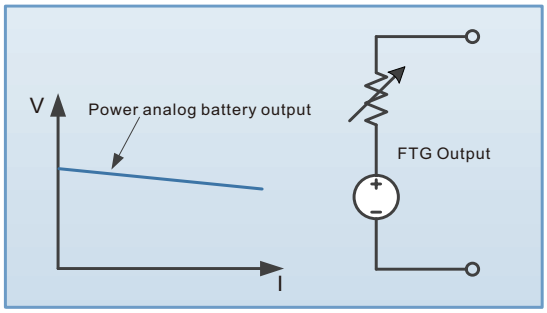
Analog programming function

FTG series has two analog input ports, voltage programming and current programming, which can respectively control the output voltage and output current. The analog programming signal can be selected from 0 ~ 5V or 0 ~ 10V DC voltage signal. The programmed signal corresponds to the output voltage and output current from 0 to 100%F.S.



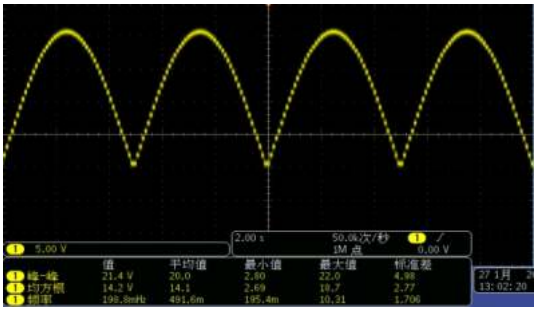
Battery internal resistance simulation function

FTG series power supply with battery internal resistance analog output function, when the output current of the power supply increases, the output voltage can be adjusted according to the user's pre-set internal resistance value.



Sequence function

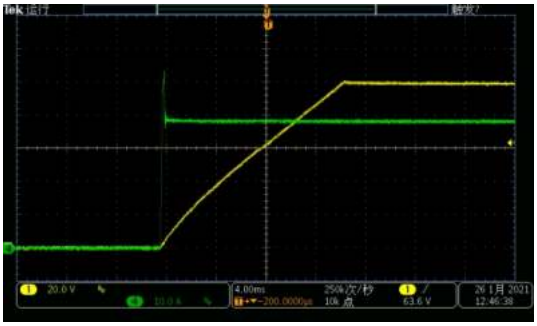
FTG series power supply has serial output function, users can edit complex voltage and current waveform according to actual needs. Support 10 sequence files, each file 100 steps, support loop, link, easy to achieve complex waveform output.



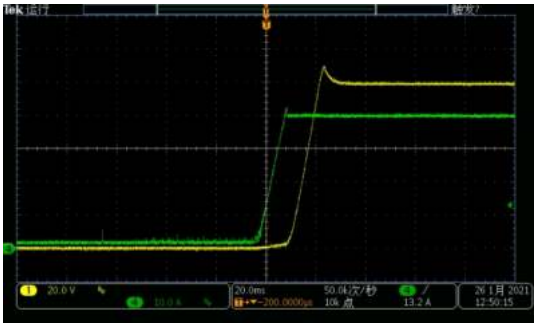
Half-wave sine generated by the sequence function

CV and CC are preferred

When the power output is connected to the inductive or capacitive load, the output current or voltage will overshoot to a certain extent, which will trigger the protection of the device under test, or directly cause damage to the device under test. FTG series with CV, CC output priority function to effectively inhibit output overshoot and the impact.



CV Priority
(High-speed build-up voltage, current overshoot)



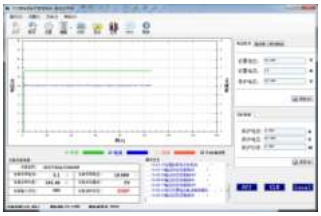
CC priority
(High-speed build-up current, voltage overshoot)

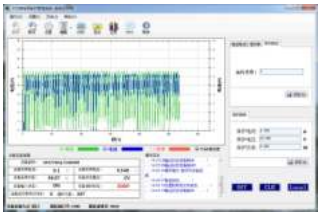
Photovoltaic array simulation function

The FTG series comes standard with the feature-rich “Faith Power Demo Platform”, which has the basic version of the PV function to test PV inverters. The FTG series comes standard with a feature-rich “Faith Power Demo Platform” with basic PV functionality to test PV inverters, and a host of additional features such as dynamic MPPT, typical weather data, customized light/temperature profiles, and more. For more complex PV test functions, the optional Faithtech Solar PV Matrix Simulation Software is available.

Computer graphical operation software

FTG series provides a host computer software with virtual instrument function, which can read test data in real time, generate images, export reports, print reports, etc., which is convenient for customers to use.





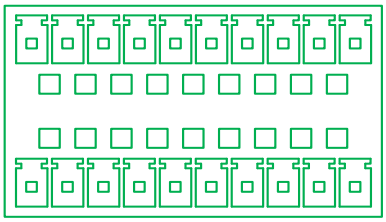
Dissipator equipped, accelerated braking (optional)

Inductive load such as motor will reverse power supply when it decelerates or stops quickly, causing overvoltage or damage to power supply. In order to release this part of energy and prevent damage to the power supply, FTG series can be equipped with the corresponding dissipator in parallel. The power of the dissipator is recommended to exceed 20% of the power of the corresponding power supply. To extend more power, multiple power dissipators are supported in parallel. During the test, the power supply is connected in parallel with the dissipator, which can effectively prevent the motor from decelerating overvoltage, reduce the decelerating distance, and improve the dynamic performance.

Composite signal port (optional)

The FTG series is available with an optional composite signal port, which provides the following functions:

- Voltage and current output monitoring;
- Voltage and current programming control;
- Working mode indication;
- Scram control input;
- READY Indicates the working status of power supply;
- DC_ON Output voltage monitoring, etc.



Faith Solar PV Matrix Simulation software (optional)

Faithtech Solar PV Matrix simulation software is a photovoltaic test software for Faithtech power supply series, using a simple and intuitive graphical interface to present users with an intuitive and friendly human-machine interface. Users can easily use the software to output, measure and display the maximum power tracking status and numerical record of the photovoltaic inverter in real time. Software built-in EN50530, Sandia and other 5 kinds of regulatory test programs, can simulate the solar panel under different parameters of the series parallel test, as well as cloud shielding and other tests; It is convenient for users to test the static and dynamic MPPT performance of photovoltaic inverters.

Ordering information-1

Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
10V	FTG040-010	400A	4kW	15V	FTG045-015	300A	4.5kW	20V	FTG050-020	250A	5kW
	FTG080-010	800A	8kW		FTG090-015	600A	9kW		FTG100-020	500A	10kW
	FTG120-010	1200A	12kW		FTG135-015	900A	13.5kW		FTG150-020	750A	15kW
	FTG160-010	1600A	16kW		FTG180-015	1200A	18kW		FTG200-020	1000A	20kW
	FTG200-010	2000A	20kW		FTG225-015	1500A	22.5kW		FTG250-020	1250A	25kW
	FTG240-010	2400A	24kW		FTG270-015	1800A	27kW		FTG300-020	1500A	30kW
	FTG360-010	3600A	36kW		FTG405-015	2700A	40.5kW		FTG450-020	2250A	45kW
	FTG480-010	4800A	48kW		FTG540-015	3600A	54kW		FTG600-020	3000A	60kW
	FTG600-010	6000A	60kW		FTG675-015	4500A	67.5kW		FTG900-020	4500A	90kW
	FTG1200-010	12000A	120kW		FTG1080-015	7200A	108kW		FTG1200-020	6000A	120kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
30V	FTG050-030	167A	5kW	40V	FTG050-040	125A	5kW	50V	FTG050-050	100A	5kW
	FTG100-030	334A	10kW		FTG100-040	250A	10kW		FTG100-050	200A	10kW
	FTG150-030	500A	15kW		FTG150-040	375A	15kW		FTG150-050	300A	15kW
	FTG200-030	667A	20kW		FTG200-040	500A	20kW		FTG200-050	400A	20kW
	FTG250-030	833.5A	25kW		FTG250-040	625A	25kW		FTG250-050	500A	25kW
	FTG300-030	1000A	30kW		FTG300-040	750A	30kW		FTG300-050	600A	30kW
	FTG450-030	1500A	45kW		FTG450-040	1125A	45kW		FTG450-050	900A	45kW
	FTG600-030	2000A	60kW		FTG600-040	1500A	60kW		FTG600-050	1200A	60kW
	FTG900-030	3000A	90kW		FTG900-040	2250A	90kW		FTG900-050	1800A	90kW
	FTG1200-030	4000A	120kW		FTG1200-040	3000A	120kW		FTG1200-050	2400A	120kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
60V	FTG050-060	83.5A	5kW	100V	FTG050-100	50A	5kW	160V	FTG050-160	31.5A	5kW
	FTG100-060	167A	10kW		FTG100-100	100A	10kW		FTG100-160	62.5A	10kW
	FTG150-060	250A	15kW		FTG150-100	150A	15kW		FTG150-160	94A	15kW
	FTG200-060	333.5A	20kW		FTG200-100	200A	20kW		FTG200-160	125A	20kW
	FTG250-060	417A	25kW		FTG250-100	250A	25kW		FTG250-160	156.5A	25kW
	FTG300-060	500A	30kW		FTG300-100	300A	30kW		FTG300-160	188A	30kW
	FTG450-060	750A	45kW		FTG450-100	450A	45kW		FTG450-160	281.5A	45kW
	FTG600-060	1000A	60kW		FTG600-100	600A	60kW		FTG600-160	375A	60kW
	FTG900-060	1500A	90kW		FTG900-100	900A	90kW		FTG900-160	562.5A	90kW
	FTG1200-060	2000A	120kW		FTG1200-100	1200A	120kW		FTG1200-160	750A	120kW

*More standard voltage specification products, including 75V/80V/120V/150V/200V, etc. are not listed;
*More high power specification models are not listed;
*Suffix H indicates: 10V, 15V, 20V, 30V for current high slope models; 600V, 1000V for voltage high slope models.

Ordering information-2

Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
250V	FTG050-250	20A	5kW	300V	FTG050-300	17A	5kW	400V	FTG050-400	12. 5A	5kW
	FTG100-250	40A	10kW		FTG100-300	33. 5A	10kW		FTG100-400	25A	10kW
	FTG150-250	60A	15kW		FTG150-300	50A	15kW		FTG150-400	37. 5A	15kW
	FTG200-250	80A	20kW		FTG200-300	67A	20kW		FTG200-400	50A	20kW
	FTG250-250	100A	25kW		FTG250-300	83. 5A	25kW		FTG250-400	62. 5A	25kW
	FTG300-250	120A	30kW		FTG300-300	100A	30kW		FTG300-400	75A	30kW
	FTG450-250	180A	45kW		FTG450-300	150A	45kW		FTG450-400	112. 5A	45kW
	FTG600-250	240A	60kW		FTG600-300	200A	60kW		FTG600-400	150A	60kW
	FTG900-250	360A	90kW		FTG900-300	300A	90kW		FTG900-400	225A	90kW
	FTG1200-250	480A	120kW		FTG1200-300	400A	120kW		FTG1200-400	300A	120kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
500V	FTG050-500	10A	5kW	600V	FTG050-600	8. 5A	5kW	800V	FTG050-800	6. 5A	5kW
	FTG100-500	20A	10kW		FTG100-600	17A	10kW		FTG100-800	12. 5A	10kW
	FTG150-500	30A	15kW		FTG150-600	25A	15kW		FTG150-800	19A	15kW
	FTG200-500	40A	20kW		FTG200-600	33. 5A	20kW		FTG200-800	25A	20kW
	FTG250-500	50A	25kW		FTG250-600	42A	25kW		FTG250-800	31. 5A	25kW
	FTG300-500	60A	30kW		FTG300-600	50A	30kW		FTG300-800	37. 5A	30kW
	FTG450-500	90A	45kW		FTG450-600	75A	45kW		FTG450-800	56. 5A	45kW
	FTG600-500	120A	60kW		FTG600-600	100A	60kW		FTG600-800	75A	60kW
	FTG900-500	180A	90kW		FTG900-600	150A	90kW		FTG900-800	112. 5A	90kW
	FTG1200-500	240A	120kW		FTG1200-600	200A	120kW		FTG1200-800	150A	120kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
1000V	FTG050-1000	5A	5kW	1200V	FTG050-1200	4. 5A	5kW	1500V	FTG050-1500	3. 5A	5kW
	FTG100-1000	10A	10kW		FTG100-1200	8. 5A	10kW		FTG100-1500	7A	10kW
	FTG150-1000	15A	15kW		FTG150-1200	12. 5A	15kW		FTG150-1500	10A	15kW
	FTG200-1000	20A	20kW		FTG200-1200	17A	20kW		FTG200-1500	13. 5A	20kW
	FTG250-1000	25A	25kW		FTG250-1200	21A	25kW		FTG250-1500	17A	25kW
	FTG300-1000	30A	30kW		FTG300-1200	25A	30kW		FTG300-1500	20A	30kW
	FTG450-1000	45A	45kW		FTG450-1200	37. 5A	45kW		FTG450-1500	30A	45kW
	FTG600-1000	60A	60kW		FTG600-1200	50A	60kW		FTG600-1500	40A	60kW
	FTG900-1000	90A	90kW		FTG900-1200	75A	90kW		FTG900-1500	60A	90kW
	FTG1200-1000	120A	120kW		FTG1200-1200	100A	120kW		FTG1200-1500	80A	120kW

*More standard voltage specification products, including 75V/80V/120V/150V/200V, etc. are not listed;
*More high power specification models are not listed;
*Suffix H indicates: 10V, 15V, 20V, 30V for current high slope models; 600V, 1000V for voltage high slope models.

Ordering information-3

Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
10V	FTG040-010H	400A	4kW	15V	FTG045-015H	300A	4. 5kW	20V	FTG050-020H	250A	5kW
	FTG080-010H	800A	8kW		FTG090-015H	600A	9kW		FTG100-020H	500A	10kW
	FTG120-010H	1200A	12kW		FTG135-015H	900A	13. 5kW		FTG150-020H	750A	15kW
	FTG240-010H	2400A	24kW		FTG270-015H	1800A	27kW		FTG300-020H	1500A	30kW
	FTG480-010H	4800A	48kW		FTG540-015H	3600A	54kW		FTG600-020H	3000A	60kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
30V	FTG050-030H	167A	5kW	600V	FTG050-600H	8. 5A	5kW	1000V	FTG050-1000H	5A	5kW
	FTG100-030H	334A	10kW		FTG100-600H	17A	10kW		FTG100-1000H	10A	10kW
	FTG150-030H	500A	15kW		FTG150-600H	25A	15kW		FTG150-1000H	15A	15kW
	FTG300-030H	1000A	30kW		FTG300-600H	150A	30kW		FTG300-1000H	30A	30kW
	FTG600-030H	2000A	60kW		FTG600-600H	100A	60kW		FTG600-1000H	60A	60kW

Optional information

Name	Model or Specification	Note
CAN interface	Suffix N	
RS485 interface	Suffix S	
GPIB interface	Suffix G	
Composite signal port	Suffix F	
Voltage/current high slope	Suffix H	Supported by some models
Battery load backfill prevention device	Suffix D	50V and above available

*Test cables are optional. For details about specifications and models, see Optional Accessories in this manual.

General specification table

Item	Parameters
AC input	Three-phase input, 340VAC～420VAC, frequency 47Hz～63Hz
Output voltage	0 ～ rated value (max. rated value 1500V, menu setting, digital or coded knob input)
Output current	0 ～ rated value (max. rated value 10000A, menu setting, digital or coded knob input)
Output power	0 ～ rated value (max. rated value 600kW, menu setting, digital or coded knob input)
Efficiency	0.87(Typical)
Linear adjustment rate	Voltage: 0.01%F.S.; Current: 0.05%F.S.
Load adjustment rate	Voltage: 0.02%F.S.; Current: 0.1%F.S.
Analog programming	Voltage control/current control; Programming voltage support: DC0~5V/DC0~10V input
Voltage measurement accuracy	0. 05%F. S.
Current measurement accuracy	0. 1%+0. 1%F. S.
Voltage and current monitoring	Voltage/current monitoring output voltage: DC 0 to 10V
Protection	OVP/OCP/OPP/RVP/LVP/OTP
Transient response	Typical 1ms, 50% load change, time required for voltage to return to 0.75% of set value
Voltage temperature bleaching	20ppm/℃
Current temperature bleaching	40ppm/℃
Display interface	4.3-inch TFT color LCD display, support Simplified Chinese, Traditional Chinese and English display
Operating interface	Function keys, numeric keys and knobs (dual knobs set voltage and current separately)
Communication interface	RS232, LAN, GPIB (optional), RS485 (optional), CAN (optional)
Storage capacity	20 sets of quick call parameters + 10 sequence files + 1 waveform file
Heat dissipation mode	Air cooling
Operating temperature	0℃～40℃
Storage temperature	-20℃～70℃
Service altitude	＜2000m

Electrical specification table-1

Model	FTG040-010	FTG045-015	FTG050-020	FTG050-030	FTG050-040	FTG050-050	FTG050-060	FTG050-100	FTG050-160
Output voltage	0-10V	0-15V	0-20V	0-30V	0-40V	0-50V	0-60V	0-100V	0-160V
Output current	0-400A	0-300A	0-250A	0-167A	0-125A	0-100A	0-83.5A	0-50A	0-31.5A
Output power	4kW	4.5kW	5kW						
Model	FTG080-010	FTG090-015	FTG100-020	FTG100-030	FTG100-040	FTG100-050	FTG100-060	FTG100-100	FTG100-160
Output voltage	0-10V	0-15V	0-20V	0-30V	0-40V	0-50V	0-60V	0-100V	0-160V
Output current	0-800A	0-600A	0-500A	0-334A	0-250A	0-200A	0-167A	0-100A	0-62.5A
Output power	8kW	9kW	10kW						
Model	FTG120-010	FTG135-015	FTG150-020	FTG150-030	FTG150-040	FTG150-050	FTG150-060	FTG150-100	FTG150-160
Output voltage	0-10V	0-15V	0-20V	0-30V	0-40V	0-50V	0-60V	0-100V	0-160V
Output current	0-1200A	0-900A	0-750A	0-500A	0-375A	0-300A	0-250A	0-150A	0-94A
Output power	12kW	13.5kW	15kW						
Model	FTG240-010	FTG270-015	FTG300-020	FTG300-030	FTG300-040	FTG300-050	FTG300-060	FTG300-100	FTG300-160
Output voltage	0-10V	0-15V	0-20V	0-30V	0-40V	0-50V	0-60V	0-100V	0-160V
Output current	0-2400A	0-1800A	0-1500A	0-1000A	0-750A	0-600A	0-500A	0-300A	0-188A
Output power	24kW	27kW	30kW						
Model	FTG480-010	FTG540-015	FTG600-020	FTG600-030	FTG600-040	FTG600-050	FTG600-060	FTG600-100	FTG600-160
Output voltage	0-10V	0-15V	0-20V	0-30V	0-40V	0-50V	0-60V	0-100V	0-160V
Output current	0-4800A	0-3600A	0-3000A	0-2000A	0-1500A	0-1200A	0-1000A	0-600A	0-375A
Output power	48kW	54kW	60kW						
Model	◆	◆	◆	◆	FTG1200-40	FTG1200-50	FTG1200-60	FTG1200-100	FTG1200-160
Output voltage	◆	◆	◆	◆	0-40V	0-50V	0-60V	0-100V	0-160V
Output current	◆	◆	◆	◆	0-3000A	0-2400A	0-2000A	0-1200A	0-750A
Output power	◆	◆	◆	◆	120kW				
Model	◆	◆	◆	◆	◆	◆	FTG1500-60	FTG1500-100	FTG1500-160
Output voltage	◆	◆	◆	◆	◆	◆	0-60V	0-100V	0-160V
Output current	◆	◆	◆	◆	◆	◆	0-2500A	0-1500A	0-940A
Output power	◆	◆	◆	◆	◆	◆	150kW		
Model	◆	◆	◆	◆	◆	◆	◆	FTG2100-100	FTG2100-160
Output voltage	◆	◆	◆	◆	◆	◆	◆	0-100V	0-160V
Output current	◆	◆	◆	◆	◆	◆	◆	0-2100A	0-1313A
Output power	◆	◆	◆	◆	◆	◆	◆		210kW
Voltage output ripple④									
V(p-p)	55mV	60mV	60mV	65mV	75mV	75mV	115mV	135mV	175mV
V(rms)	20mV	20mV	20mV	20mV	20mV	20mV	25mV	25mV	25mV
Voltage programming									
Resolution	16Bits								
Precision①	0.05%F.S.								
Current programming									
Resolution	16Bits								
Precision①	0.1%+0.1%F.S.								
External analog programming									
Control voltage	0-5V or 0-10V corresponds to 0-100%F.S.								
Voltage precision①	0.2%F.S.								
Current precision①	0.5%F.S.								
Output precision①	0.5%F.S.								
Line regulation rate②									
Voltage	0.05%F.S.				0.01%F.S.				
Current	0.05%F.S.								
Load regulation rate③									
Voltage	0.05%F.S.				0.02%F.S.				
Current	0.1%F.S.								
Voltage measurement									
Resolution	16Bits								
Precision①	0.05%F.S.								
Current measurement									
Resolution	16Bits								
Precision①	0.1%+0.1%F.S.								
OVP setting									
Range	0-110%F.S.								
Precision	1%F.S.								
Dimension(WxHxD)	(≤15kW)- 482.6mm x 132.0mm x 694.5mm; (20kW -30kW)- 482.6mm* 265.9mm x 694.5mm;								
	(35kW-60kW) - 482.6mm x 656mm x 710.5mm; >60kW - 600mm x XXXmm x 800mm standard cabinet is used								
Weight	18.5kg/5kW; 25kg/10kW; 31.5kg/15kW; 62kg/30kW; 123kg/60kW; other models are subject to actual weight.								

Electrical specification table-2

Model	FTG050-250	FTG050-300	FTG050-400	FTG050-500	FTG050-600	FTG050-800	FTG050-1000	FTG050-1200	FTG050-1500
Output voltage	0-250V	0-300V	0-400V	0-500V	0-600V	0-800V	0-1000V	0-1200V	0-1500V
Output current	0-20A	0-17A	0-12.5A	0-10A	0-8.5A	0-6.5A	0-5A	0-4A	0-3.5A
Output power	5kW								
Model	FTG100-250	FTG100-300	FTG100-400	FTG100-500	FTG100-600	FTG100-800	FTG100-1000	FTG100-1200	FTG100-1500
Output voltage	0-250V	0-300V	0-400V	0-500V	0-600V	0-800V	0-1000V	0-1200V	0-1500V
Output current	0-40A	0-33.5A	0-25A	0-20A	0-17A	0-12.5A	0-10A	0-8.5A	0-7A
Output power	10kW								
Model	FTG150-250	FTG150-300	FTG150-400	FTG150-500	FTG150-600	FTG150-800	FTG150-1000	FTG150-1200	FTG150-1500
Output voltage	0-250V	0-300V	0-400V	0-500V	0-600V	0-800V	0-1000V	0-1200V	0-1500V
Output current	0-60A	0-50A	0-37.5A	0-30A	0-25A	0-19A	0-15A	0-12.5A	0-10A
Output power	15kW								
Model	FTG300-250	FTG300-300	FTG300-400	FTG300-500	FTG300-600	FTG300-800	FTG300-1000	FTG300-1200	FTG300-1500
Output voltage	0-250V	0-300V	0-400V	0-500V	0-600V	0-800V	0-1000V	0-1200V	0-1500V
Output current	0-120A	0-100A	0-75A	0-60A	0-50A	0-37.5A	0-30A	0-25A	0-20A
Output power	30kW								
Model	FTG600-250	FTG600-300	FTG600-400	FTG600-500	FTG600-600	FTG600-800	FTG600-1000	FTG600-1200	FTG600-1500
Output voltage	0-250V	0-300V	0-400V	0-500V	0-600V	0-800V	0-1000V	0-1200V	0-1500V
Output current	0-240A	0-200A	0-150A	0-120A	0-100A	0-75A	0-60A	0-50A	0-40A
Output power	60kW								
Model	FTG1200-250	FTG1200-300	FTG1200-400	FTG1200-500	FTG1200-600	FTG1200-800	FTG1200-1000	FTG1200-1200	FTG1200-1500
Output voltage	0-250V	0-300V	0-400V	0-500V	0-600V	0-800V	0-1000V	0-1200V	0-1500V
Output current	0-480A	0-400A	0-300A	0-240A	0-200A	0-150A	0-120A	0-100A	0-80A
Output power	120kW								
Model	FTG2100-250	FTG2100-300	FTG2100-400	FTG2100-500	FTG2100-600	FTG2100-800	FTG2100-1000	FTG2100-1200	FTG2100-1500
Output voltage	0-250V	0-300V	0-400V	0-500V	0-600V	0-800V	0-1000V	0-1200V	0-1500V
Output current	0-840A	0-700A	0-525A	0-420A	0-350A	0-262A	0-210A	0-175A	0-140A
Output power	210kW								
Voltage output ripple④									
V(p-p)	185mV	200mV	300mV	350mV	350mV	500mV	650mV	750mV	850mV
V(rms)	35mV	40mV	50mV	50mV	60mV	80mV	100mV	120mV	140mV
Voltage programming									
Resolution	16Bits								
Precision①	0.05%F.S.								
Current programming									
Resolution	16Bits								
Precision①	0.1%+0.1%F.S.								
External analog programming									
Control voltage	0-5V or 0-10V corresponds to 0-100%F.S.								
Voltage precision①	0.2%F.S.								
Current precision①	0.5%F.S.								
Output precision①	0.5%F.S.								
Line regulation rate②									
Voltage	0.01%F.S.								
Current	0.05%F.S.								
Load regulation rate③									
Voltage	0.02%F.S.								
Current	0.1%F.S.								
Voltage measurement									
Resolution	16Bits								
Precision①	0.05%F.S.								
Current measurement									
Resolution	16Bits								
Precision①	0.1%+0.1%F.S.								
OVP setting									
Range	0-110%F.S.								
Precision	1%F.S.								
Dimension(WxHxD)	(≤15kW)- 482.6mm x 132.0mm x 694.5mm; (20kW -30kW)- 482.6mm* 265.9mm x 694.5mm ;								
	(35kW-60kW) - 482.6mm x 656mm x 710.5mm; >60kW - using 600mm x XXXmm x 800mm								
Weight	18.5kg/5kW; 25kg/10kW; 31.5kg/15kW; 62kg/30kW; 123kg/60kW; other models are subject to actual weight.								

Electrical specification table-3

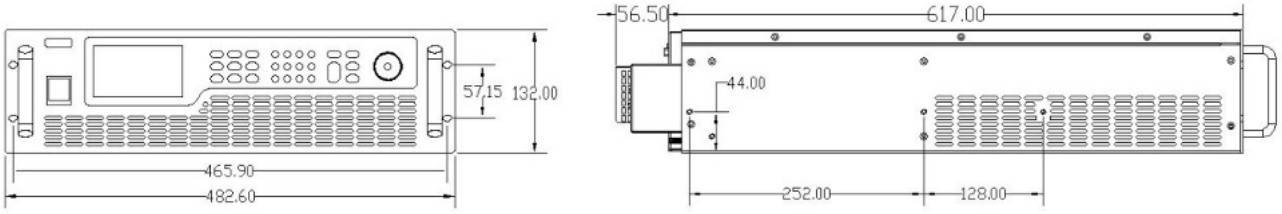
Model	FTG040-010H	FTG045-015H	FTG050-020H	FTG050-030H
Output voltage	0-10V	0-15V	0-20V	0-30V
Output current	0-400A	0-300A	0-250A	0-167A
Output power	4kW	4.5kW	5kW	5kW
Model	FTG080-010H	FTG090-015H	FTG100-020H	FTG100-030H
Output voltage	0-10V	0-15V	0-20V	0-30V
Output current	0-800A	0-600A	0-500A	0-334A
Output power	8kW	9kW	10kW	10kW
Model	FTG120-010H	FTG135-015H	FTG150-020H	FTG150-030H
Output voltage	0-10V	0-15V	0-20V	0-30V
Output current	0-1200A	0-900A	0-750A	0-500A
Output power	12kW	13.5kW	15kW	15kW
Model	FTG240-010H	FTG270-015H	FTG300-020H	FTG300-030H
Output voltage	0-10V	0-15V	0-20V	0-30V
Output current	0-2400A	0-1800A	0-1500A	0-1000A
Output power	24kW	27kW	30kW	30kW
Model	FTG480-010H	FTG540-015H	FTG600-020H	FTG600-030H
Output voltage	0-10V	0-15V	0-20V	0-30V
Output current	0-4800A	0-3600A	0-3000A	0-2000A
Output power	48kW	54kW	60kW	60kW
Voltage slope	0.001V/ms - 5V/ms			
Current slope	0.001A/ms - 150A/ms			
Voltage output ripple④				
V(p-p)	55mV	60mV	60mV	65mV
V(rms)	20mV	20mV	20mV	20mV
Voltage programming				
Resolution	16Bits			
Precision①	0.05%F.S.			
Current programming				
Resolution	16Bits			
Precision①	0.1%+0.1%F.S.			
External analog programming				
Control voltage	0-5V or 0-10V corresponds to 0-100%F.S.			
Voltage precision①	0.2%F.S.			
Current precision①	0.5%F.S.			
Output precision①	0.5%F.S.			
Line regulation rate②				
Voltage	0.05%F.S.			
Current	0.05%F.S.			
Load regulation rate③				
Voltage	0.05%F.S.			
Current	0.1%F.S.			
Voltage measurement				
Resolution	16Bits			
Precision①	0.05%F.S.			
Current measurement				
Resolution	16Bits			
Precision①	0.1%+0.1%F.S.			
OVP setting				
Range	0～110%F.S.			
Precision	1%			
Dimension(WxHxD)	(≤15kW) - 482.6mm x 132.0mm x 694.5mm;			
	(20kW～30kW) - 482.6mm* 265.9mm x 694.5mm;			
	(35kW～60kW) - 482.6mm x 656mm x 710.5mm			
Weight	18.5kg/5kW; 25kg/10kW; 31.5kg/15kW; 62kg/30kW; 123kg/60kW			

Electrical specification table-4

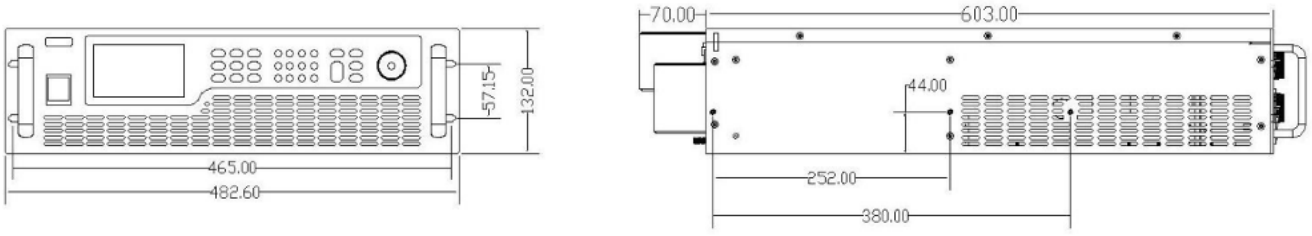
Model		FTG050-600H	FTG050-1000H
Output voltage		0-600V	0-1000V
Output current		0-8.5A	0-5A
Output power		5kW	5kW
Model		FTG100-600H	FTG100-1000H
Output voltage		0-600V	0-1000V
Output current		0-17A	0-10A
Output power		10kW	10kW
Model		FTG150-600H	FTG150-1000H
Output voltage		0-600V	0-1000V
Output current		0-25A	0-15A
Output power		15kW	15kW
Model		FTG300-600H	FTG300-1000H
Output voltage		0-600V	0-1000V
Output current		0-50A	0-30A
Output power		30kW	30kW
Model		FTG600-600H	FTG600-1000H
Output voltage		0-600V	0-1000V
Output current		0-100A	0-60A
Output power		60kW	60kW
Rising time	50%F. S. CC Load	30ms	25ms
	No Load	30ms	25ms
Down time	50%F. S. CC Load	30ms	25ms
	10%F. S. CC Load	100ms	80ms
	No Load	1.2s	3s
Voltage slope		0.001V/ms - 20V/ms	0.001V/ms - 40V/ms
Current slope		0.001A/ms - 2A/ms	0.001A/ms - 2A/ms
Voltage output ripple④			
V(p-p)		1500mV	2550mV
V(rms)		650mV	1950mV
Voltage programming			
Resolution		16Bits	
Precision①		0.05%F.S.	
Current programming			
Resolution		16Bits	
Precision①		0.1%+0.1%F.S.	
External analog programming			
Control voltage		0-5V or 0-10V corresponds to 0-100%F.S.	
Voltage precision①		0.2%F.S.	
Current precision①		0.5%F.S.	
Output precision①		0.5%F.S.	
Line regulation rate②			
Voltage		0.01%F.S.	
Current		0.05%F.S.	
Load regulation rate③			
Voltage		0.02%F.S.	
Current		0.1%F.S.	
Voltage measurement			
Resolution		16Bits	
Precision①		0.05%F.S.	
Current measurement			
Resolution		16Bits	
Precision①		0.1%+0.1%F.S.	
OVP setting			
Range		0～110%F.S.	
Precision		1%	
Dimension(WxHxD)		(≤15kW) - 482.6mm x 132.0mm x 694.5mm; (20kW～30kW)- 482.6mm x 265.9mm x 694.5mm ; (35kW～60kW)–482.6mm x 656mm x 710.5mm	
Weight		18.5kg/5kW；25kg/10kW；31.5kg/15kW；62kg/30kW；123kg/60kW	

Dimension drawing

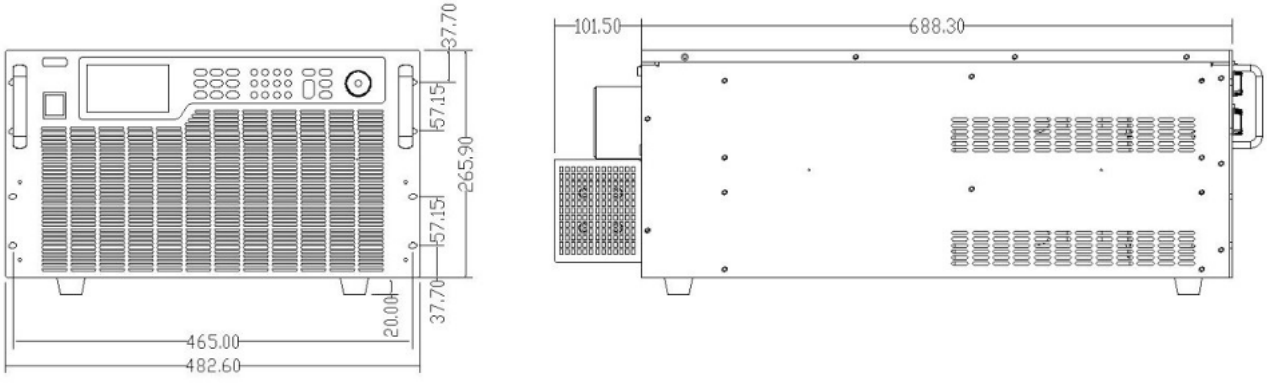
Dimensional drawings for 4kW ~ 15kW models (40V or less models)



Dimensional drawings for 5kW to 15kW models (40V and above models)

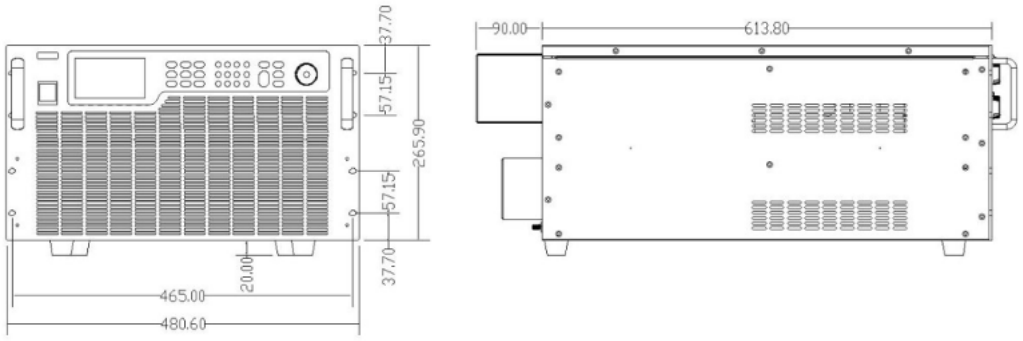


Dimensional drawings for 16kW to 30kW models (40V and below)

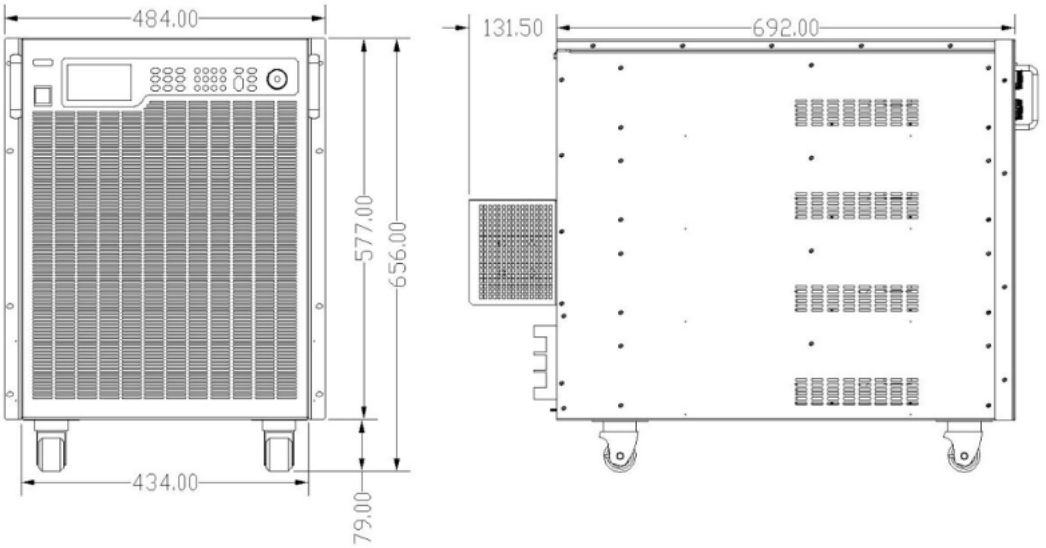


Dimension drawing

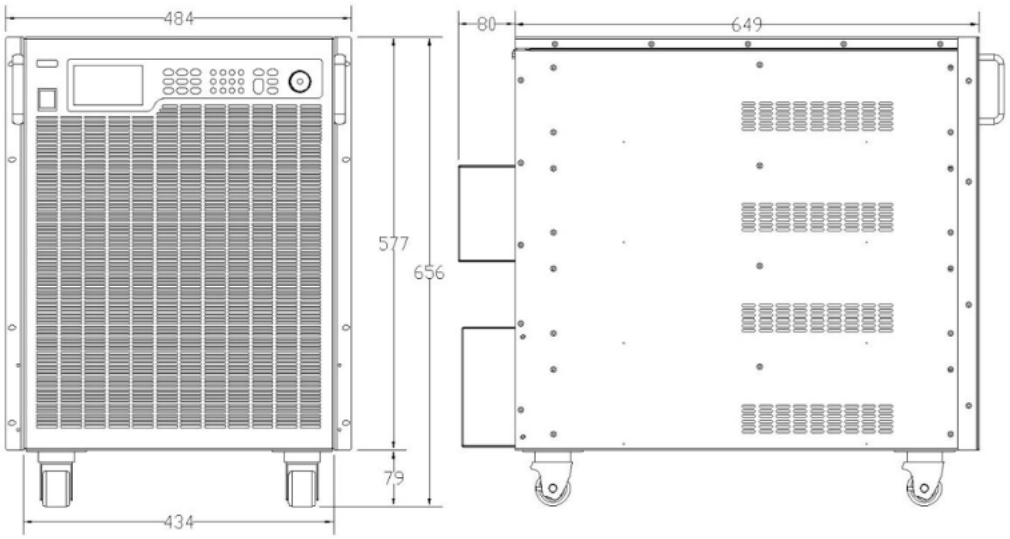
Dimension drawing of 20kW□ 30kW model (40V or above model)



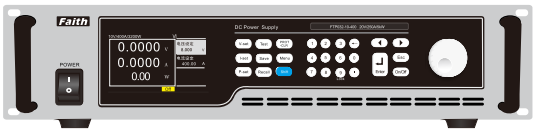
Dimensions for 28kW to 60kW models (40V and below)



Dimensions for 35kW to 60kW models (40V and above)



Automotive power supply waveform simulation test power supply



FTP032-C series
automotive power supply waveform analog test power supply

Summary

Automotive power supply system due to the complexity of the electrical environment, such as motors, solenoid valves and other components start, shutdown and other reasons lead to large fluctuations in the supply voltage and other abnormal phenomena. In order to improve the reliability of automotive electrical and electronic equipment, automotive electronics manufacturers and OEMs often use traditional programmable DC power supplies to conduct electrical reliability testing, due to the diversity of test standards, the complexity of the programming function, and the traditional power supply rate slower for the reasons of this work to add difficulty and cost.

The automotive electronic waveform testing capabilities of Faith's FTP032-C Series, FTG-C Series and FTB9000-C power supplies address these issues.

The FTP032-C series, FTG-C series and FTB9000-C series power supplies are capable of realizing the waveform test function of ISO16 750-2 (Environmental Conditions and Tests for Electrical and Electronic Equipment for Road Vehicles, Part 2: Electrical Loads), LV124, LV148, SAEJ1113-11, ISO21848, and Volkswagen's VW80000 for testing electrical and electronic equipment function.

FTG-C series and FTB9000-C series high-voltage power supplies are also suitable for testing electrical and electronic equipment of new energy vehicles, and their test waveforms meet the requirements of VW80300 test.

Characteristic

- Voltage level: 40V, 80V, 600V, 1000V;
- Power level: 3.2kW ~ 90kW (higher power can be customized);
- High accuracy: 16-bit high-speed ADC/DAC, precision measurement and control;
- Channel power range: low linear adjustment rate, low load adjustment rate, low ripple, low noise;
- Slope control: fast and precise control of voltage (or current slope) rise and fall;
- Fast response: 2ms typical value transient response;
- Protection function: over-voltage, over-current, over-power, over-temperature and other all-round intelligent protection;
- External control: ON/OFF control, analog programming, monitoring and other isolated interfaces (optional);
- Support standards: ISO16750-2, VW80000, VW80300, SAEJ1113-11, LV124, ISO21848, Lv148;
- Upper computer function: waveform display, standard test waveform import, power control, sampling data save/readback, etc., sampling rate up to 100 points/second;
- Provide LAN, RS232 remote communication interface;
- Intelligent fan control, noise reduction, improve service life;
- TFT color LCD display, support Simplified Chinese and English display.

FTG-C series
automotive power supply waveform simulation test power supply

FTB9000-C series
automotive power supply waveform simulation test power supply

Waveform realization

FTP032-40-120C, FTP032-80-60C, FTG-C 40V, 80V models can be realized:

ISO16750-2 standard waveforms:

Slow rise and fall of supply voltage, start-up characteristics, instantaneous drop of supply voltage, voltage dip reset performance.

VW80000 standard waveforms:

E-01, E-02, E-03, E-04, E-05, E-07, E-08, E-09, E-11a, E-11b, E-12.

ISO21848 standard waveforms:

Overvoltage, slow drop and rise of supply voltage, interruption of supply voltage.

SAEJ1113-11 standard waveforms:

Test_2B, Test_4, Test_5.

LV124 standard waveforms:

E-01, E-02, E-03, E-04, E-05, E-07 , E-08, E-09, E-11, E-12.

LV148 standard waveforms:

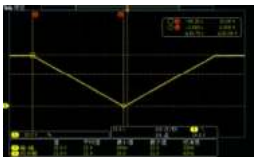
E48-01a, E48-01b, E48-02, E48-03, E48-04, E48-06, E48-08, E48-10, E48-15, E48-16, E48-17, E48-18, E48-19.

FTH-C 600V, 1000V, FTB9000-C 500V, 1000V models are available:

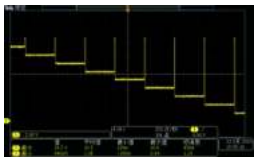
VW80300 standard waveforms:

HVPT-1, EHV-01, EHV-02, EHV-03, EHV-05, EHV-06.

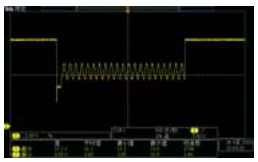
Partial waveform realizations are shown to the below:



ISO16750
supply voltage jog up and jog down

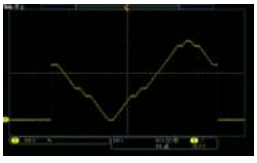


ISO16750
voltage dip reset characteristics



VW80000 E-11
cold start pulse (enhanced)

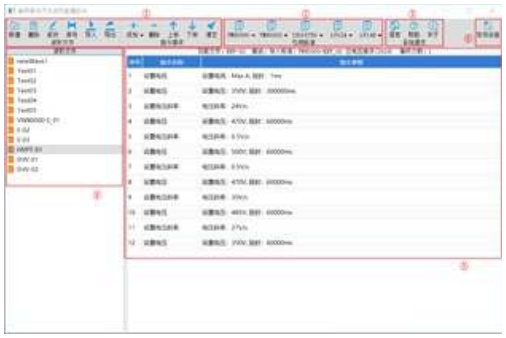
VW80000E-09
reset characteristic pulse



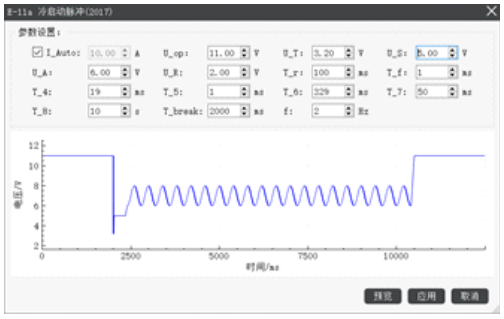
VW80300 HVPT-1
high voltage cycle

VW80300 EHV-03
undervoltage operation

Upper computer software interface



Main interface



Standard waveform operation interface

Ordering information

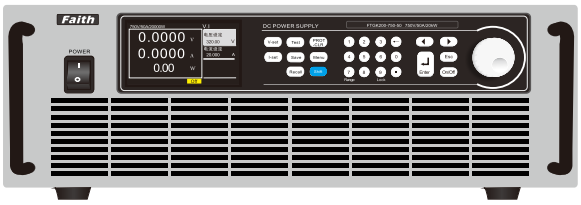
Model	Specification	Adaptation standard
FTP020-40-120C	2kW/40V/120A	ISO16750-2,VW80000, SAEJ1113-11, LV124
FTP032-40-120C	3. 2kW/40V/120A	
FTP065-40-240C	6. 5kW/40V/240A	
FTG050-40C	5kW/40V/125A	
FTG100-40C	10kW/40V/250A	
FTG150-40C	15kW/40V/375A	
FTG300-40C	30kW/40V/750A	
FTP020-80-60C	2kW/80V/60A	ISO16750-2, VW80000, SAEJ1113-11, LV124, ISO21848, LV148
FTP032-80-60C	3. 2kW/80V/60A	
FTP065-80-120C	6. 5kW/80V/120A	
FTG050-80C	5kW/80V/62. 5A	
FTG100-80C	10kW/80V/125A	
FTG150-80C	15kW/80V/187. 5A	
FTG300-80C	30kW/80V/375A	
FTB9050-80-150C	5kW/80V/150A	
FTB9100-80-300C	10kW/80V/300A	
FTB9150-80-450C	15kW/80V/450A	
FTB9300-80-900C	30kW/80V/900A	
FTB9060-500-40C	6kW/500V/40A	VW80300
FTB9120-500-80C	12kW/500V/80A	
FTB9180-500-120C	18kW/500V/120A	
FTG050-600C	5kW/600V/8. 5A	
FTG100-600C	10kW/600V/17A	
FTG150-600C	15kW/600V/25A	
FTG300-600C	30kW/600V/50A	
FTB9120-1000C	12kW/1000V/40A	
FTB9240-1000C	24kW/1000V/80A	
FTG050-1000C	5kW/1000V/5A	
FTG100-1000C	10kW/1000V/10A	
FTG150-1000C	15kW/1000V/15A	
FTG300-1000C	30kW/1000V/30A	

Specification table There are many models in the series, only some of them are listed for reference.

Model	FTP032-40-120C	FTP032-80-60C	FTB9050-80-150C	FTG150-600C	FTG150-1000C	FTG300-600C	FTG300-1000C
Voltage	0～40V	0～80V	0～80V	0～600V	0～1000V	0～600V	0～1000V
Current	0～120A	0～60A	0～150A	0～25A	0～15A	0～50A	0～30A
Power	3. 2kW		5kW	15kW		30kW	
Voltage programming							
Resolution	16Bits						
Precision	0. 05%F. S.		0. 02%+0. 02%F. S.	0. 05%F. S.			
Current programming							
Resolution	16Bits						
Precision	0. 1%+0. 1%F. S.						
Voltage measurement							
Resolution	16Bits						
Precision	0. 05%F. S.		0. 02%+0. 02%F. S.	0. 05%F. S.			
Current measurement							
Resolution	16Bits						
Precision	0.1% + 0.1% F.S.						
Output noise&ripple							
Ripple voltage (p - p)	60mV	80mV	160mV	350mV	650mV	350mV	650mV
Ripple voltage (rms)	20mV	20mV	16mV	60mV	100mV	60mV	100mV
Slope							
Voltage	Max: 10V/ms			Max: 40V/ms (load current less than 50% of rated current)			
Current	Max: 2A/ms			Max: 2A/ms			
OVP settings							
Range	0～110%F.						
Precision	1%F. S.						
Transient response	Typical 2mS, 50% change in load, time required for voltage to return to within accuracy range						
Efficiency	0.9 (Typical)			0.87 (Typical)			
Standard adaptability	ISO16750-2; VW80000; LV124; SAEJ1113-11	ISO16750-2; VW80000; LV124; SAEJ1113-11; ISO21848; LV148		VW80300			
Communication interface	RS232 and LAN, optionally RS485, CAN or GPIB						
Inputs	190VAC～265VAC, Frequency: 47HZ～63HZ, PF: 0.98(typical)		340VAC～480VAC, Frequency: 45HZ～63HZ, PF: 0.99(typical)	340VAC～420VAC, Frequency47HZ～63HZ			
Dimension WXHXD(mm)	430x88x453mm	482x132. 5x702mm		482x265x694mm		482x656x710mm(with wheels)	
Weight	Approx. 15kg	Approx. 40kg		Approx. 60kg		Approx. 120kg	

FTGK series

Ultra high power industrial programmable DC power supply



Characteristic

- Unit range:

  voltage: 0～1000V,

  current: 0～6000A,

  power: 20～1800kW;
- Constant-voltage, constant-current output function;
- High reliability (can work stably for a long time);
- High environmental adaptability (resistance to high and low temperature and humidity, dust);
- Low electromagnetic interference (small interference to the power grid);
- Convenient and practical sequence function, can achieve voltage and current waveform output;
- High power density, 4U/20kW, 4U/30kW, wide range of output voltage (0 ~ 1000V) current (0 ~ 100A);
- Support voltage, current monitoring output;
- Analog programming: control output voltage and output current through analog quantity;
- Provide a powerful signal monitoring ability of the composite signal port (optional);
- Monitoring output: voltage and current output waveform in the form of analog output, easy to monitor;
- Standard USB serial port, LAN, optional RS485, GPIB, CAN, a variety of remote communication interface;
- Standard SCPI and Modbus-RTU instruction, easy to set up intelligent test platform and secondary development;
- Modular stack combination, standard rack design, easy to install and maintain;
- Over voltage/over current/over power/over temperature comprehensive intelligent protection function;
- TFT color LCD display, support simplified Chinese, traditional Chinese and English display;
- Intelligent fan control, improve the life of the whole machine.

Product positioning

FTGK series ultra-large power industrial programmable DC power supply, widely used in high quality DC power supply industry scenes, with high reliability (can work stably for a long time), high environmental adaptability (resistance to high and low temperature and humidity, dust), low electromagnetic interference (small interference to the power grid) and other remarkable features.

FTGK series power supply is suitable for all kinds of industrial environment or on-site environment of DC power supply, including industrial production (such as vapor deposition, ion deposition, vacuum coating, electrolytic hydrogen production); Aging test of electronic products (such as compressors, vehicle equipment, inverters, DC motors); On-site charging and replenishment support (such as airports, stations, docks); Dc lighting power supply, etc.

FTGK series power supply with LAN/USB serial port, optional RS485, GPIB, CAN interface; It supports both SCPI protocol and standard ModBus-RTU protocol, and then with built-in isolation number/mode control interface (optional), it brings great application diversity and convenience for industrial system integration applications.

Application filed

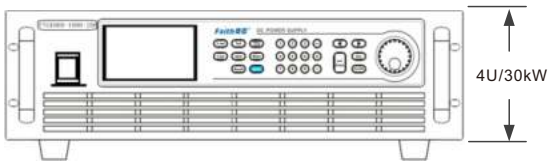
- Equipment production and testing in the field of solar energy;
- Equipment production and production testing in the field of semiconductors;
- Power supply, charging and power supply environment simulation of vehicle, airborne and shipboard electronic equipment;
- Production and testing of sensors, superconducting materials, cables and other products;
- Industrial production and testing of fuel cells, power batteries, lead storage batteries, and supercapacitors;
- Production and testing of power supply and equipment for UAV, laser and sensor fields;
- Production and testing of server power supplies, UPS and inverters.

Serial functions

FTGK series power supply has sequence output function, users can edit complex voltage and current waveform according to actual needs. Support 10 sequence files, each file 100 steps. Support loop, link, easy to achieve complex waveform output.

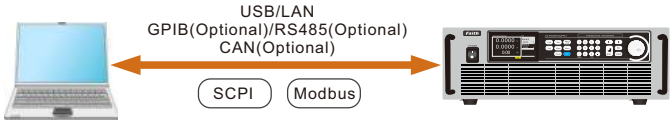
4U/30kW high power density

The FTGK series offers a high power density of 4U/30kW, with precise output and low ripple noise. The wide range of voltage 0V ~ 1000V and current 100A ~ 6000A is suitable for every test and verification link from design to production process.



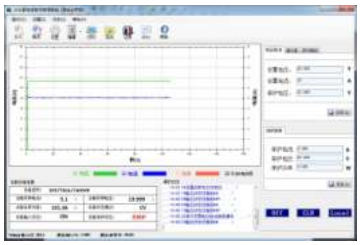
Multi-interface and multi-protocol

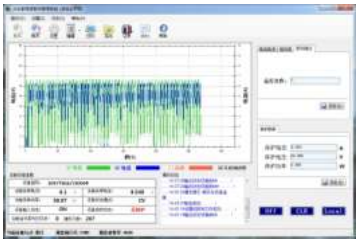
FTGK series is equipped with a variety of communication interfaces, while supporting SCPI and Modbus two communication protocols. The user can configure in the menu according to the needs, which makes the system integration more flexible.



Computer graphical operation software

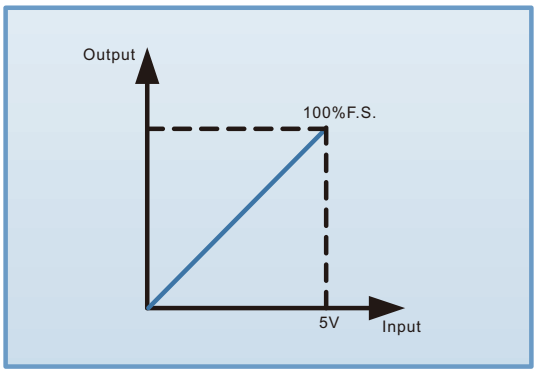
FTGK series provides a host computer software with virtual instrument function, which can read test data in real time, generate images, export reports, print reports, etc., which is convenient for customers to use.





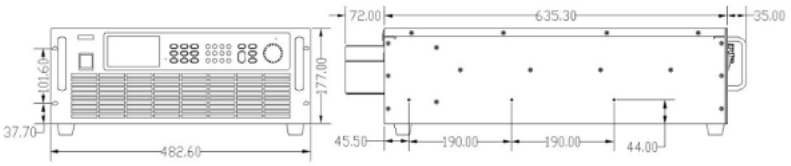
Analog programming function

FTGK series has two analog input ports, voltage programming and current programming, which can respectively control the output voltage and output current. The analog programming signal uses 0 ~ 5V DC voltage signal. The programming signal corresponds to the voltage and output current of the 0 ~ 100%F.S. output range.

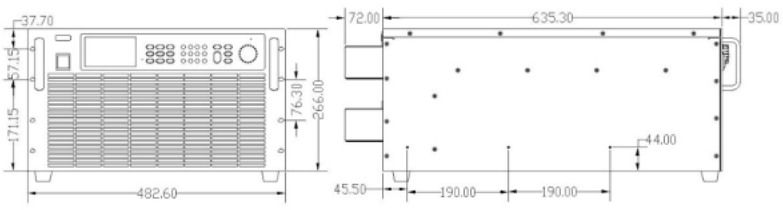


Dimension drawing

Dimension drawing of 30kW model



Dimension drawing of 60kW model



Orderimg information

Voltage	Model	Current	Power
750V	FTGK200-750-50	50A	20kW
	FTGK400-750-100	100A	40kW
1000V	FTGK300-1000-100	100A	30kW
	FTGK600-1000-200	200A	60kW
	FTGK900-1000-300	300A	90kW
	FTGK1200-1000-400	400A	120kW
	FTGK1500-1000-500	500A	150kW
	FTGK1800-1000-600	600A	180kW
	FTGK2100-1000-700	700A	210kW
	FTGK2400-1000-800	800A	240kW
	FTGK2700-1000-900	900A	270kW
	FTGK3000-1000-1000	1000A	300kW
	FTGK3300-1000-1100	1100A	330kW
	FTGK3600-1000-1200	1200A	360kW
	FTGK3900-1000-1300	1300A	390kW
	FTGK4200-1000-1400	1400A	420kW

* Higher power specifications and models are not listed individually. If you need special models to be customized, please contact us.

General specification table

Items	Parameters
Ac input	300VAC～ 450VAC, frequency: 50Hz～60Hz
Output voltage	0～rated value
Output current	0～rated value
Output power	0～rated value
Power factor	0.98(half load and above)
Efficiency	＞95% (typical)
Voltage rise time (no load)	≤ 2.5s
Voltage drop time (no load)	≤ 10s
Parallel operation	Support 10 master and slave parallel expansion of the same model
Protection	Over voltage, over current, over power, over temperature, under voltage, etc
Communication interface	LAN, USB serial port (optional GPIB, CAN, Rs485)
Communication protocol	SCPI, MODBUS, CAN-Open protocol
Display interface	4.3-inch TFT color LCD screen, supporting simplified Chinese, traditional Chinese and English display
Operation interface	Function keys, number keys and knobs (double knobs set voltage and current separately)
perating temperature	0℃～ 40℃
Storage temperature	-20℃～ 70℃
Use altitude	＜2000m
Cooling method	Air cooling, intelligent risk control

Specification table

Model	FTGK200-750-50		FTGK300-1000-100		FTGK400-750-100	
Voltage	50～750V		10～1000V		50～750V	
Current	0～50A		0～100A		0～100A	
Range	50～500V/0～50A	50～750V/0～30A	10～500V/0～100A	10～1000V/0～50A	50～500V/0～100A	50～750V/0～60A
Power	0～20kW		0～30kW		0～40kW	
Model	FTGK600-1000-200		FTGK900-1000-300		FTGK1200-1000-400	
Voltage	10～1000V		10～1000V		10～1000V	
Current	0～200A		0～300A		0～400A	
Range	10～500V/0～200A	10～1000V/0～100A	10～500V/0～300A	10～1000V/0～150A	10～500V/0～400A	10～1000V/0～200A
Power	0～60kW		0～90kW		0～120kW	
Model	FTGK1500-1000-500		FTGK1800-1000-600		FTGK2100-1000-700	
Voltage	10～1000V		10～1000V		10～1000V	
Current	0～500A		0～600A		0～700A	
Range	10～500V/0～500A	10～1000V/0～250A	10～500V/0～600A	10～1000V/0～300A	10～500V/0～700A	10～1000V/0～350A
Power	0～150kW		0～180kW		0～210kW	
Model	FTGK2400-1000-800		FTGK2700-1000-900		FTGK3000-1000-1000	
Voltage	10～1000V		10～1000V		10～1000V	
Current	0～800A		0～900A		0～1000A	
Range	10～500V/0～800A	10～1000V/0～400A	10～500V/0～900A	10～1000V/0～450A	10～500V/0～1000A	10～1000V/0～500A
Power	0～240kW		0～270kW		0～300kW	
Model	FTGK3300-1000-1100		FTGK3600-1000-1200		FTGK3900-1000-1300	
Voltage	10～1000V		10～1000V		10～1000V	
Current	0～1100A		0～1200A		0～1300A	
Range	10～500V/0～1100A	10～1000V/0～550A	10～500V/0～1200A	10～1000V/0～600A	10～500V/0～1300A	10～1000V/0～650A
Power	0～330kW		0～360kW		0～390kW	
Model	FTGK4200-1000-1400		FTGK4500-1000-1500		FTGK4800-1000-1600	
Voltage	10～1000V		10～1000V		10～1000V	
Current	0～1400A		0～1500A		0～1600A	
Range	10～500V/0～1400A	10～1000V/0～700A	10～500V/0～1500A	10～1000V/0～750A	10～500V/0～1500A	10～1000V/0～800A
Power	0～420kW		0～450kW		0～480kW	
Voltage programming①						
Accuracy	0.1%+0.2%F.S. (Steady state, input voltage 325Vac ~ 450Vac, output voltage 10% ~ 90%F.S.)					
Current programming①						
Accuracy	0. 5%+0. 5% F. S.					
External analog programming①						
Control voltage	0～5V corresponds to 0～100% F.S.					
Voltage accuracy	1. 0%F. S.					
Current accuracy	1. 0%F. S.					
linear rate of adjustment②						
Voltage	0. 1%+0. 1%F. S.					
Current	0. 1%+0. 1%F. S.					
Load adjustment rate③						
Voltage	0. 3%F. S.					
Current	0. 3%F. S.					
Voltage measurement①						
Accuracy	0.1%+0.2%F.S. (Steady state, input voltage 325Vac ~ 450Vac, output voltage 5% ~ 95%F.S.)					
Current measurement①						
Accuracy	0. 5%+0. 5% F. S.					
Output noise & ripple④						
Voltage ripple (p-p)	≤1%F.S.(voltage regulation, input voltage 325Vac ~ 450Vac, output voltage 10% ~ 90%F.S., output current 0 ~ rated current value)					
Dimension	20/30kW: (WxHxD) 482.6mm x 177.0mm x 742.0mm, includes output shield					
	40/60kW: (WxHxD) 482.6mm x 266.0mm x 742.0mm, includes output shield					
Weight	20kW≈20kg, 30kW≈25kg, 40kW≈30kg, 60kW≈50kg					

FTDM series

Modular bidirectional test power supply

Characteristic

- Ultra high power density, up to 3U/60kW;
- Intelligent forward and reverse operation, seamless switching between DC power supply and feedback load;
- Integrated off grid and on grid switching function;
- Soft switch design,low loss and high efficiency;
- Power factor > 0.99;
- High dynamic response,with a full load switching time as low as 10ms;
- Equipped with output programmable function,capable of simulating various power supply and load characteristic curves;
- Modular design,easy to maintain,supporting parallel expansion;
- Wide working temperature range -20℃ to 45℃;
- The output voltage has a wide range,high accuracy, and fast dynamic response;
- DSP design to achieve fully digital control;
- Touch screen operation control,simple and intuitive;
- Adopting interleaved parallel technology to reduce ripple current;
- Multi dimensional intelligent fan regulation technology,reducing power consumption and noise.

Summary

FTDM series modular bi-directional test power supply adopts the latest optimized modular design and advanced control algorithm to realize multi device parallel connection. The power level of parallel system covers 6kW~1MW. With LCD local monitoring and BMS system remote dispatching functions, excellent load adaptability and grid adaptability. The independent air duct design enables it to effectively cope with various complex application environments, and the system operation is safer and more reliable, with stronger economic and environmental adaptability. Realize intelligent forward and reverse operation and seamless switching, which can meet the application scene of two-way energy transformation. Meanwhile, the product has off/on grid switching function, and the switching time does not exceed 10ms.

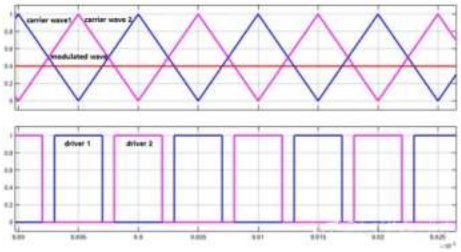
FTDM series is widely used in new energy vehicle motors, electronic control testing, power battery pack charging and discharging testing, power electronics testing and other fields.

Application fields

- Charging pile testing and aging;
- Production and development of energy storage converter (PCS) and microgrid equipment;
- Test of motor system and electronic control system;
- Test of power battery and energy storage equipment.

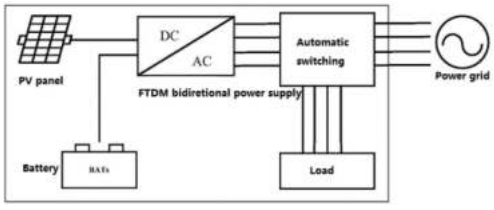
Adopt interleaving technology

FTDM series adopts interleaving technology, which can improve the change frequency of current and voltage at input and output terminals, and reduce the current and voltage ripple.



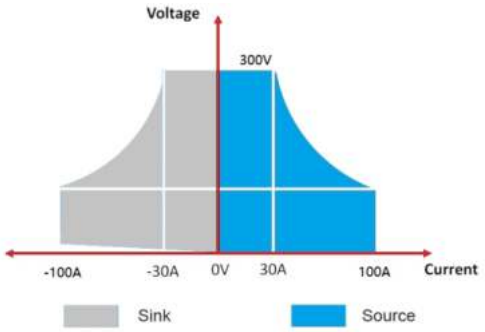
Off/On grid automatic switching

The FTDM series integrates off grid and on grid switching circuits, which can achieve automatic off grid and on grid switching function.



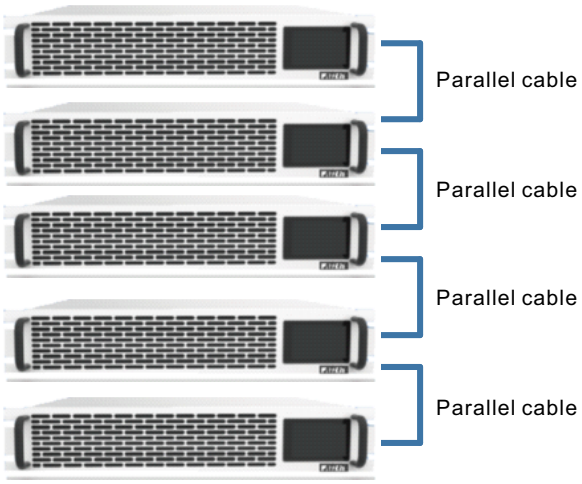
Seamless switching between DC power supply and feedback load

Realize current mode conversion between source and load, so as to carry out fast and continuous seamless switching between output and absorption current, effectively avoid voltage or current overshoot, which is widely used for testing energy storage equipment such as batteries, battery packages, and battery protection boards.



Multiple device paralleling

FTDM series uses advanced control algorithm to realize parallel connection of multiple devices, and the power level of parallel system can cover 1MW, greatly expanding the application output range of power supply. The parallel operation function can not only automatically equalize the load between power supplies, maintain the consistency of output values, but also ensure the consistency of output slope curve or waveform. For the host in parallel, the power screen displays total voltage, current and power values. Each slave automatically shares the current and calculates the sum.



Ordering information

Model	Range of output voltage	Current	Power	Remark
FTDM006-100-100	2.5～100Vdc	±100A	6kW	Isolation bidirectional/height 3U
FTDM018-100-300		±300A	18kW	
FTDM006-450-60	10～450Vdc	±60A	6kW	
FTDM018-450-180		±180A	18kW	
FTDM015-950-50	50～950Vdc	±50A	15kW	Isolation bidirectional/height 2U
FTDM030-950-100	50～950Vdc	±100A	30kW	Non isolated bidirectional (Energy storage converter)/height 3U
FTDM060-1000-88	680～1000Vdc	±88A	60kW	

Specification table-1

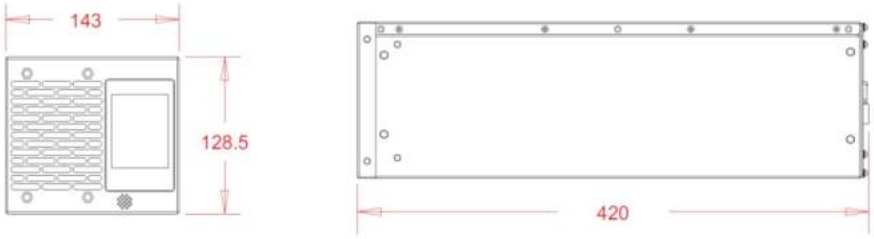
Model	FTDM006-100-100	FTDM006-450-60	FTDM018-100-300	FTDM018-450-180	FTDM015-950-50
Parameters at AC side					
Voltage system	Single phase 3-wire system	Single phase 3-wire system	3-phase 5-wire system	3-phase 5-wire system	3-phase 5-wire system
Rated voltage	220Vac±15%	220Vac±15%	380Vac±15%	380Vac±15%	380Vac±15%
Rated frequency	45~ 65Hz (Adaptive 50/60Hz power grid)				
Power factor	0.99				
Total harmonic distortion (THDi)	≤5%				⩽3%
Parameters at DC side					
Voltage range	2.5Vdc-100Vdc	10Vdc-450Vdc	2.5Vdc-100Vdc	10Vdc-450Vdc	50～950Vdc
Current range	±100A	±60A	±300A	±180A	±50A
Voltage accuracy	0.1%F.S.				
Current accuracy	0.1%F.S.				
Basic features					
AC/DC startup function	Has				
Forward and reverse switching time	⩽10ms				
Peak efficient	92%				93.50%
COMM. interface	CAN, RS485, LAN				
Dimension (H*W*D)	143*128.5*420mm		436*129*420mm		436*86*420mm
Weight (kg)	8kg		25kg		16kg
Environmental features					
Working temperature	-20℃~+45℃				
Storage temperature	-40℃~+70℃				
Working humidity	30%~90%rh (No condensation)				
Storage humidity	20%~ 95%rh (No condensation)				
Cooling mode	Forced air cooling				
Altitude	3000m				
Protection grade	IP20				
Noise	⩽70dB				
Safety features					
Safety specifications and standards	Refer to 18487.1				
Withstand voltage: input&output-PE	3535Vdc				
Withstand voltage: Sinput&output-CAN	2828Vdc				
Surge: input&output-PE	6kV				
EMC features	Refer to 33008.1				
Radiation	CLASS A				
ESD	Critical grade 3				
EFT	Critical grade 3				
RF immunity	Critical grade 3				

Specification table-2

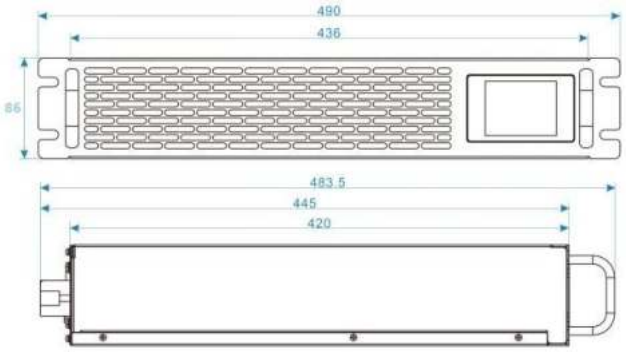
Model	FTDM030-950-100	FTDM060-1000-88
Parameters at AC side		
Voltage system	3-phase 5-wire system	
Rated voltage	380Vac±15%	
Rated frequency	50/60Hz	
Power factor	0.99	
Current range	±45A	±92A
Total harmonic distortion (THDi)	≤3%	
Parameters at DC side		
Voltage range	50Vdc-950Vdc	680Vdc-1000Vdc
Current range	±100A	±88A
Voltage accuracy	0.1%+0.1F.S.	
Current accuracy	0.1%+0.1F.S.	
Basic features		
AC/DC startup function	Has	
Forward and reverse switching time	≤10ms	
Peak efficient	95%	97%
COMM. interface	CAN, RS485, LAN	
Dimension (H*W*D)	129*436*470mm	
Weight (kg)	25kg	
Environmental features		
Working temperature	-20℃~+45℃	
Storage temperature	-40℃~+70℃	
Working humidity	30%~ 90%rh (No condensation)	
Storage humidity	20%~ 95%rh (No condensation)	
Cooling mode	Forced air cooling	
Altitude	3000m	
Protection grade	IP20	
Noise	≤70dB	
Safety features		
Safety specifications and standards	Refer to 18487.1	
Withstand voltageinput&output-PE	3535Vdc	
Withstand voltageinput&output-CAN	2828Vdc	
Surge: input&output-PE	6kV	
EMC features	Refer to 33008.1	
Radiation	CLASS A	
ESD	Critical grade 3	
EFT	Critical grade 3	
RF immunity	Critical grade 3	
MTBF	100000hrs	

Dimension drawing

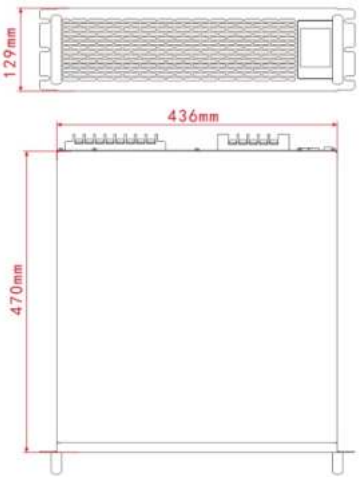
6kW dimensions



15kW dimensions



30kW, 60kW dimensions



FTL series

High precision small and medium power programmable DC power supply

Summary

FTL series is a high performance, multi-function, small and medium power programmable DC linear power supply. The product is stable and mature, and has overload, polarity reverse, over voltage, over current, over temperature and other comprehensive protection functions, which can keep the power supply and load working safely in unstable environment. FTL has <0.01% adjustment rate, <1mVrms ripple and noise and good transient performance. FTL series is suitable for both high index laboratory use and high performance test system use.

Characteristic

- <0.01% low adjustment rate;
- Ultra high resolution and accuracy 1mV/1mA;
- Low ripple and low noise;
- Overload, polarity reverse protection, over voltage protection, over current protection, over temperature protection;
- With constant voltage and constant current two output states, according to the load automatically switch;
- 4.3 inch LCD screen high-definition display, can fully display the output state of the instrument;
- Convenient and fast operation and setting interface, high-speed adjustment knob and digital key input;
- Built-in buzzer as prompt or warning;
- Endless servo, intelligent fan;
- One-key locking function, effectively prevent misoperation;
- With output control switch, the control is more flexible;
- Can store/call 100 groups of voltage and current data, with timed execution can achieve simple automatic testing purposes;
- Remote induction to compensate the load line voltage drop;
- Support battery charging function;
- Voltage and current dual range switching (some models);
- Standard RS232 interface, programming instruction set in line with SCPI;
- Interface optional: analog control interface, RS485 interface, LAN port;
- Protocol optional: MODBUS-RTU protocol.

Quick call

FTL power supply support quick call function, one click to invoke the corresponding power output parameters and status. Improve the test speed and prevent misoperation. For testing, quality, production and other links have a good help.

CV/CC function

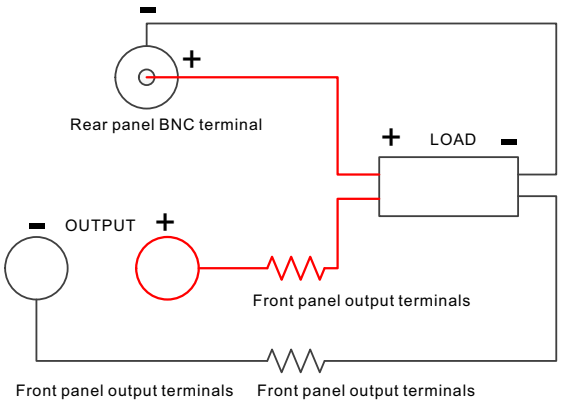
FTL power source is suitable for constant voltage or constant current output, the power supply in constant voltage or constant current state is determined by the load. The power supply automatically switches the constant voltage and constant current working state.

Sequence function

FTL power supply supports multi-step sequence function, the power supply will change the working state according to the time or trigger, which is used to test the function and stability of the load product. For example, the power supply has a variety of state jumps, simulated impact, slow rise slow fall, switching stability and so on.

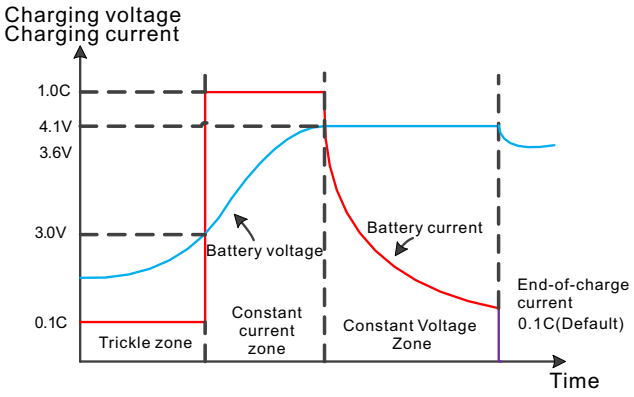
Remote sensing function

When the load consumes a large current, there will be a voltage drop on the connection line from the power supply to the load terminal. The remote sensing automatically compensates for the voltage drop on the load line. The wiring diagram of the remote sensing function power supply measurement is as follows:



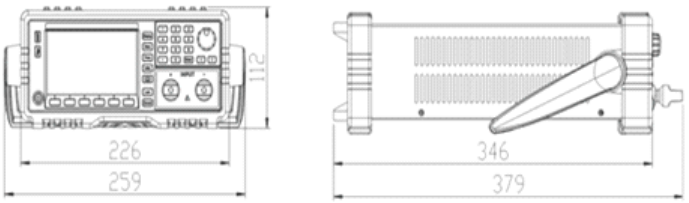
Battery charging function

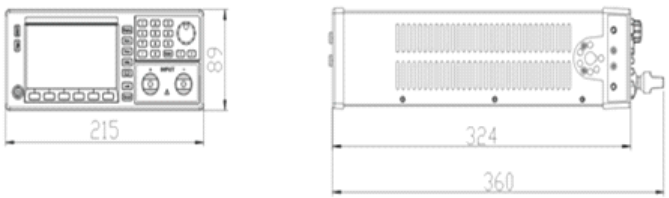
FTL can charge the battery according to the specified mode, and can define trickle charging threshold voltage, floating charging voltage, trickle charging current, standard charging current, termination current threshold, charging time and other parameters, which can fully simulate the charging process of the battery and effectively protect the battery.



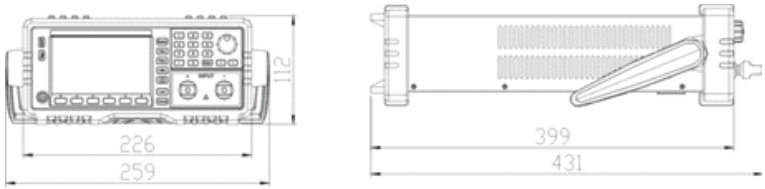
Dimension drawing

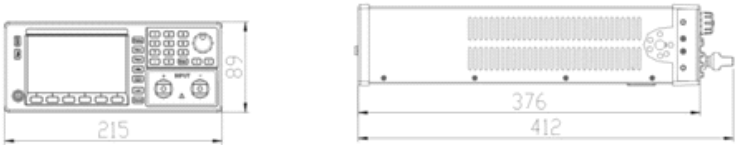
Bare metal size: 215(W)*89(H)*352(D)mm





Bare metal size: 215(W)*89(H)*412(D)mm





Ordering information

Model	Specification	Voltage resolution	Current resolution	Redundancy range
FTL3003	30V/3A/90W	1mV	0.1mA	32V/3. 2A/90W
FTL3005	30V/5A/150W	1mV	0.1mA	32V/5. 5A/150W
FTL3603	36V/3A/108W	1mV	0.1mA	40V/3. 2A/108W
FTL3605	36V/5A/180W	1mV	0.1mA	40V/5. 5A/180W
FTL6003	60V/3A/180W	1mV	0.1mA	64V/3. 2A/180W
FTL6005	60V/5A/300W	1mV	0.1mA	64V/5. 5A/300W
FTL7503	75V/3A/225W	1mV	0.1mA	80V/3. 2A/225W
FTL7505	75V/5A/375W	1mV	0.1mA	80V/5. 5A/375W
FTL3010	30V/10A/300W	1mV	1mA	32V/11A/300W
FTL12001	120V/1A/120W	10mV	0.1mA	128V/1. 1A/120W
FTL12002	120V/2A/240W	10mV	0.1mA	128V/2. 2A/240W
FTL150015	150V/1. 5A/225W	10mV	0.1mA	160V/1. 6A/225W
FTL1820	18V/20A/360W	1mV	1mA	19V/21A/360W
FTL12003	120V/3A/360W	10mV	0.1mA	128V/3. 2A/360W
FTL300012	300V/1. 2A/360W	10mV	0.1mA	320V/1. 2A/360W
FTL500007	500V/0. 7A/350W	10mV	0.1mA	500V/0. 7A/350W
FTL2030K	20V/30A/600W	1mV	1mA	20.5V/30.5A/600W
FTL3020K	30V/20A/600W	1mV	1mA	31V/21A/600W
FTL6010K	60V/10A/600W	1mV	1mA	60.5V/10.5A/600W
FTL80075K	80V/7. 5A/600W	1mV	1mA	80.5V/8A/600W
FTL1560K	15V/60A/900W	1mV	1mA	15.5V/60.5A/900W
FTL2045K	20V/45A/900W	1mV	1mA	20.5V/45.5A/900W
FTL3030K	30V/30A/900W	1mV	1mA	31V/31A/900W
FTL3625K	36V/25A/900W	1mV	1mA	36.5V/25.5A/900W
FTL4520K	45V/20A/900W	1mV	1mA	45.5V/20.5A/900W
FTL6015K	60V/15A/900W	1mV	1mA	60.5V/15.5A/900W
FTL8011K	80V/11A/900W	1mV	1mA	80.5V/11.5A/900W
FTL120075K	120V/7. 5A/900W	10mV	1mA	121V/7. 6A/900W
FTL15006K	150V/6A/900W	10mV	1mA	151V/6. 1A/900W

Specification table-1

Model	FTL series
Voltage output characteristic	
Power supply effect	≤0. 01%+3mV
Load effect	≤0. 01%+3mV (I≤3A) /≤0. 02%+5mV (I>3A)
Recovery time	≤100us (50% load change, minimum load 0. 5A)
Ripple and noise	≤1mVrms (I≤3A) (5Hz～1MHz) /≤2mVrms (I>3A) (5Hz～1MHz)
Temperature coefficient	≤100ppm/℃
Setting accuracy	±(0. 03%+10mV) (25±5℃)
Current output characteristics	
Power supply effect	≤0. 1%+3mA
Load effect	≤0. 1%+3mA (I≤3A) /≤0. 1%+5mA (I>3A)
Ripple and noise	≤3mArms (I≤3A) /≤6mArms (I>3A)
Set accuracy	±(0. 1%+0. 1%F. S.) (25±5℃)
Display	
Voltage	5 digits display
Current	5 digits display
Voltage accuracy	±(0. 02% of reading+5mV) (25±5℃)
Current accuracy	±(0. 1% of reading+0. 1%F. S.) (25±5℃)
Other characteristics	
Protection	Overload protection, polarity reverse protection, over voltage protection, over current protection, over temperature protection
Remote induction	Maximum compensated voltage 5%F.S.
Battery charging	Lithium battery curve charge
Lock keyboard	Available
Interfaces	Standard RS232, support SCPI instruction set (optional analog control interface, RS485 interface, LAN interface, MODBUS-RTU protocol)
Storage call out	100 sets
Insulation	Between the base and the terminal: ≥20MΩ/500VDC; Between the base and the AC power cable: ≥30MΩ/500VDC
Power Input	AC 110V/220V±10%, 50/60Hz
dimension	215(W)×89(H)×352(D)mm/215(W)×89(H)×412(D)mm
Weight	6. 8～9. 8kg

Specification table-2

Model	FTL(with suffix K) series
Voltage output	
Power supply effect	≤ 0.01%+4mV
Load effect	≤0.1%+5mV
Recovery time	≤1.5ms(50% load change)
Ripple and noise	2mVrms, 30mVpp
Temperature coefficient	≤100ppm/℃
Setting accuracy	±(0.03% of reading+10mV)(25±5℃)
Set resolution	1mV
Current output	
Power supply effect	≤0.1%+3mA
Load effect	≤0.1%+5mA
Ripple and noise	≤10mArms
Set accuracy	±(0.1% of reading+0.1% F.S.)(25±5℃)
Set resolution	1mA
Display	
Voltage	5 digits display
Current	5 digits display
Voltage resolution	1mV
Current resolution	1mA
Voltage accuracy	±(0.02% of reading+5mV)(25±5℃)
Current accuracy	±(0.1% of reading+0.1%F.S.)(25±5℃)
Other characteristics	
Protection	Overload protection, polarity reverse protection, over voltage protection, over current protection, over temperature protection
Lock keyboard	Available
Interfaces	Standard RS232, support SCPI instruction set (optional analog control interface, RS485 interface, LAN interface, MODBUS-RTU protocol)
Storage call out	100 sets
Power input	AC 220V±10%, 50/60Hz
Dimension	215(W)×89(H)×352(D)mm/215(W)×89(H)×412(D)mm
Weight	4.5～5.5kg

FTL series

Multi-channel programmable linear DC power supply

Summary

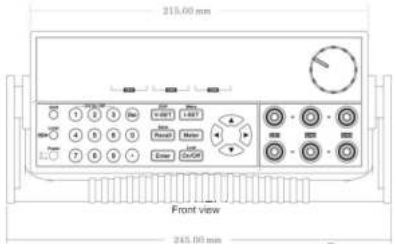
FTL multi-programmable linear DC power supplies feature high resolution, high accuracy and high stability with overvoltage/overheat protection, series and parallel operation modes, and resolutions up to 1mV/1mA.

Characteristic

- Three-way simultaneous voltage/current display, and all adjustable;
- Intelligent temperature control fan to reduce noise;
- Optional series/parallel or synchronized use;
- Low ripple and low noise;
- Software monitoring and calibration can be carried out through computer;
- Remote measurement function (SENSE) to compensate the voltage drop on the line;
- Timable output time (0.1 to 3600 seconds);
- Output with switch control;
- 40 sets of setting data can be saved, fast storage recall;
- Interface: RS-232, USB;
- Optional LAN port for 3-way power supply.

Application filed

- Routine testing and maintenance of production line benches;
- Laboratories, research institutes;
- Electronic repairs;
- Automation equipment integration testing.



Dimension drawing

FTL3003-3/FTL3006-3/FTL6003-3
FTL3003F-3/FTL3006F-3/FTL6003F-3
Bare metal size: 215(W)X90(H)X375(D)mm

FTL3003-3X/FTL3006-3X/FTL6003-3X
Bare metal size: 215(W)X90(H)X487(D)mm

Ordering information

Model	Power	Voltage	Current	Resolution
FTL3003-3	90W*2/18W*1	31V*2/6V*1	3A*3	1mV/1mA
FTL3006-3	180W*2/18W*1	31V*2/6V*1	6A*2/3A*1	1mV/1mA
FTL6003-3	180W*2/18W*1	61V*2/6V*1	3A*3	1mV/1mA
FTL3003-3X	90W*3	31V*3	3A*3	1mV/1mA
FTL3006-3X	180W*3	31V*3	6A*3	1mV/1mA
FTL6003-3X	180W*3	61V*3	3A*3	1mV/1mA
FTL3003F-3	90W*1/-90W*1/18W*1	31V*1/-31V*1/6V*1	3A*3	1mV/1mA
FTL3006F-3	180W*1/-180W*1/18W*1	31V*1/-31V*1/6V*1	6A*2/3A*1	1mV/1mA
FTL6003F-3	180W*1/-180W*1/18W*1	61V*1/-61V*1/6V*1	3A*3	1mV/1mA

Specification table

Model		FTL3003-3	FTL3006-3	FTL6003-3	FTL3003-3X	FTL3006-3X	FTL6003-3X
Rated output	Voltage	0～31V*2/0～6V*1	0～31V*2/0～6V*1	0～61V*2/0～6V*1	0～31V*3	0～31V*3	0～61V*3
	Current	0～3A*3	0～6A*2/0～3A*1	0～3A*3	0～3A*3	0～6A*3	0～3A*3
Model		FTL3003F-3	FTL3006F-3	FTL6003F-3	-	-	-
Rated output	Voltage	0～31V/0～-31V/ 0～6V*1	0～31V/0～-31V 0～6V*1	0～61V/0～-61V 0～6V*1	-	-	-
	Current	0～3A*3	0～6A*2/0～3A*1	0～3A*3	-	-	-
Load regulation rate	Voltage	≤0. 01%+3mV					
	Current	≤0. 01%+3mA					
Power regulation rate	Voltage	≤0. 01%+3mV					
	Current	≤0. 01%+3mA					
Setting value resolution	Voltage	1mV					
	Current	1mA					
Readback resolution	Voltage	1mV					
	Current	1mA					
Setpoint accuracy	Voltage	≤0. 03%+10mV					
	Current	≤0. 1%+5mA	≤0. 1%+8mA	≤0. 1%+5mA	≤0. 1%+5mA	≤0. 1%+8mA	≤0. 1%+5mA
Readback accuracy	Voltage	≤0. 03%+10mV					
	Current	≤0. 1%+5mA	≤0. 1%+8mA	≤0. 1%+5mA	≤0. 1%+5mA	≤0. 1%+8mA	≤0. 1%+5mA
Ripple and noise	Voltage(rms)	≤2mVrms					
	Current	≤5mArms					
Series/Parallel setpoint accuracy	Voltage	≤0. 2%+5mV	≤0. 2%+10mV	≤0. 2%+5mV	≤0. 2%+10mV	≤0. 2%+10mV	≤0. 2%+5mV
	Current	≤0. 1%+30mA					
Memory	Store/Call	40 grops					
	Functions	Timing off output					
Timer	Time setting	0. 1s～3600s					
	Resolution	0. 1s					
Working temperature		0～40℃					
Bare metal size (W*H*D)	mm	215*90*375	215*90*375	215*90*375	215*90*485	215*90*485	215*90*485
Box size (W*H*D)	mm	325*210*475	325*210*475	325*210*475	325*210*575	325*210*575	325*210*575
Net weight	kg	8. 5	8. 5	8. 5	11	11	11
Gross weight	kg	10	10	10	13	13	13

FTL series

Multichannel programmable linear DC power supply

Characteristic

- Multi in 1 is easy to install and takes up little space;
- 30V/3A,30V/5A,60V/3A five-way isolated output;
- 30V/10A, 60V/5A four-way isolated output;
- Voltage compensation function, improve accuracy;
- 1mV/0.1mA high resolution;
- Linear power supply, low ripple;
- Panel operation, stand-alone use is also very convenient;
- Comes standard with RS-232.

Dimension

FTL3003-5X / 3005-5X / 6003-5X / 3010-4X / 6005-4X

Bare unit dimension: 484(W)X132(H)X380(D)mm

Application filed

- Routine test and maintenance of production line workbench;
- Laboratory, research institute;
- Automated equipment integration test;
- Electronic maintenance.

Ordering formation

Model	Power	Voltage	Current	Resolution
FTL3003-5X	90W*5	30V*5	3A*5	1mV/0. 1mA
FTL3005-5X	150W*5	30V*5	5A*5	1mV/0. 1mA
FTL6003-5X	180W*5	60V*5	3A*5	1mV/0. 1mA
FT6005-4X	300W*4	60V*4	5A*4	1mV/0. 1mA
FTL3010-4X	300W*4	30V*4	10A*4	1mV/1mA

Specification Table

Model		FTL3003-5X	FTL3005-5X	FTL6003-5X	FT6005-4X	FTL3010-4X
Rated output voltage		0～30V*5CH	0～30V*5CH	0～60V*5CH	0～60V*4CH	0～30V*4CH
Rated output current		0～3A*5CH	0～5A*5CH	0～3A*5CH	0～5A*4CH	0～10A*4CH
Variable voltage mode		Linear power supply				
Load regulation rate	Voltage	≤0. 02%+5mV				
	Current	≤0. 02%+5mA				≤0. 02%+10mA
Power regulation rate	Voltage	≤0. 02%+5mV				
	Current	≤0. 02%+5mA				≤0. 02%+10mA
Setting value resolution	Voltage	1mV				
	Current	0. 1mA				1mA
Setting accuracy (25℃±5℃)	Voltage	≤0. 05%+5 Byte				
	Current	≤0. 05%+2mA				
Readback resolution	Voltage	1mV				
	Current	0. 1mA				1mA
Readback accuracy (25℃±5℃)	Voltage	≤0. 05%+5 Byte				
	Current	≤0. 05%+2mA				
Temperature coefficient	Operating environment	0～40℃≤80%RH				
	Storage environment	-15～70℃≤80%RH				
Interface	Standard configuration	RS232				
Bare metal size(W*H*D)	mm	484*132*380				
Net weight	kg	24. 3				

FTLP series

Wide range programmable DC power supply

Characteristic

- Full digital control;
- Minimal form factor for easy portability;
- Full scale high resolution;
- Low ripple low noise;
- Ultra high brightness VA screen display;
- Fixed voltage, fixed current and fixed power output;
- Standard RS232 and RS485, USB or LAN can choose one;
- Wide AC input range of 100-240VAC;
- Support SCPI instruction set, MODBUS-RTU protocol;
- High reliability: over voltage/over current/over heat protection function;
- The output has switch control;
- Remote compensation function, external trigger function;
- High quality and cost-effective;
- Multiple sets of output voltage and current can be preset: 4×100 sets;
- Optional LAN or USB interface;
- An 8-way chassis is optional to form an 8-way power supply.

Summary

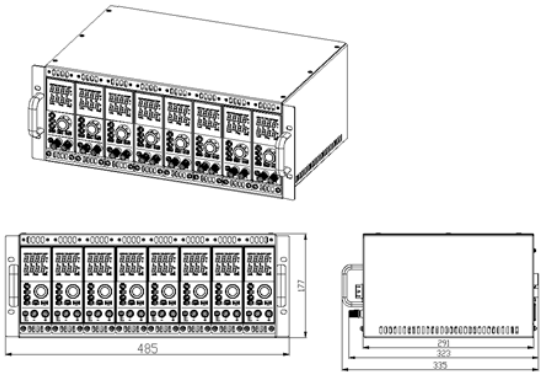
The FTLP series is a wide range of portable programmable DC power supplies, with the widest voltage and current utilization rate of similar products, which greatly improves the application range.

Taking FTL8005P as an example, 100W power, the output value is adjustable within 80V/5A, and the change rate of voltage and current is automatically controlled, and the power ratio is as much as four times. One machine can replace the previous 80V×1.2A/60V×1.6A/32V×3.1A/20V×5A four models, reducing your repeated investment.

Provide a variety of communication interfaces, with a wealth of SCPI and MODBUS instructions, convenient to set up a variety of test platforms. Widely used in battery chargers, high voltage ultra-high speed diodes, electrolytic capacitors, electromechanical control fields and ATE test systems.

Dimension drawing

Unit dimensions(in mm)



8-way chassis dimensions(in mm)

Ordering information

Model	Power	Voltage	Current	Resolution
FTL8005P	100W	81V	5. 1A	10mV/1mA
FTL4005P	100W	40. 5	4. 1A	10mV/1mA
FTL4016P	180W	40. 5V	16. 4A	10mV/10mA
FTL8008P	180W	81V	8. 2A	10mV/1mA
FTL16004P	180W	162V	4. 1A	100mV/1mA

Specification table

Model		FTL8005P	FTL8008P	FTL4005P	FTL4016P	FTL16004P
Rated output	Voltage	0. 5～81V	0. 5～81V	0. 5～40. 5V	0. 5～40. 5V	0. 5～162V
	Current	0～5. 1A	0～8. 2A	0～5.1A	0～16. 4A	0～4. 1A
	Power	100W	180W	100W	180W	180W
	OVP	0. 5～88V	0. 5～88V	0. 5～44V	0. 5～44V	0. 5～176V
	OCP	0～5. 5A	0～8. 8A	0～5.5A	0～17. 6A	0～4. 4A
Load regulation rate	Voltage	≤20mV	≤30mV	≤40mV	≤40mV	≤20mV
	Current	≤10mA	≤10mA	≤10mA	≤10mA	≤10mA
Power regulation rate	Voltage	<0. 01%+3mV	<0. 01%+3mV	<0. 01%+3mV	<0. 01%+3mV	<0. 01%+3mV
	Current	<0. 1%+5mA	<0. 1%+5mA	<0. 1%+5mA	<0. 1%+5mA	<0. 1%+5mA
Setting value accuracy	Voltage	<0. 05%+10mV	<0. 05%+10mV	<0. 05%+10mV	<0. 05%+10mV	<0. 05%+100mV
	Current	<0. 2%+2mA	<0. 2%+5mA	<0. 2%+2mA	<0. 3%+10mA	<0. 2%+5mA
Display value accuracy	Voltage	<0. 05%+10mV	<0. 05%+10mV	<0. 05%+10mV	<0. 05%+10mV	<0. 05%+100mV
	Current	<0. 2%+2mA	<0. 2%+5mA	<0. 2%+2mA	<0. 3%+10mA	<0. 2%+5mA
Ripple	Voltage	<10mV rms	<10mV rms	<6mV rms	<6mV rms	<15mV rms
	Current	<8mA rms	<8mA rms	<8mA rms	<10mA rms	<10mA rms
Rise Time	No load	300ms	300ms	300ms	300ms	500ms
	Full load	300ms	300ms	300ms	300ms	500ms
Down time	No load	500ms	500ms	300ms	300ms	1s
	Full load	200ms	300ms	200ms	100ms	500ms
Protection		Over voltage protection, over current protection, over temperature protection				
Interface		Standard RS232, RS485, USB interface, support SCPI instruction set				
		Optional USB interface or LAN network port				
Additional features		Remote compensation, external trigger, keylock LOCK, preset 400 sets of voltage and current data				
AC input	Voltage	100～240Vac				
	Frequency	47～63Hz				
Efficiency	η	80%				
Fuse specifications		2AT 250V slow break type				
Power factor	PF value	>0. 9				
Withstand pressure		I/P-FG：2KVAC/min ≤5mA				
Insulation resistance		O/P-FG：500VDC >100MΩ				
Accessories		1 power cord, 1 RS232 cross cable, 1 set of test wires				
Dimension	W*H*D	55*140*315(mm)				
Weight	Net	1. 8Kg				

FTL-P series

Wide range low power programmable DC power supply

Summary

FTL-P series wide range low power programmable DC power supply is a kind of super practical and versatile power supply developed by Faith after many years of experience in the design and development of DC switching power supply. The product uses active power factor correction circuit, with high power density, high power efficiency, high power factor.

Products can be widely used in laboratory testing, electronic product design and other test links, its wide range of characteristics, so that it can reach a larger output voltage or current, one can replace a variety of models. It is a common configuration on the desk of power electronics engineers.

Characteristics

- 4.3" TFT color LCD display, can fully display the status of the power supply;
- 300 sets storage and call function, can store/call 100 sets of voltage and current and other data, can realize some automatic testing;
- High accuracy and high resolution 1mV/1mA;
- With timing output function, support unlimited and specified number of cycles of output;
- Remote induction to compensate the load line pressure drop;
- One-key lock function, effectively prevent misoperation;
- Can display the load resistance value, with low resistance measurement function;
- Battery charging function;
- Support U disk storage;
- Standard RS232, RS485 interface, programming instruction set in line with SCPI, MODBUS-RTU;
- Optional RS232+LAN interface or RS485+LAN interface;
- Standard external trigger interface;
- Overload protection, polarity reverse protection, over voltage protection, over current protection, over temperature protection.

Man-machine interface and operation

FTL-P series convenient and fast operation and setting interface in line with ergonomic principle, and provides two display modes of ordinary display mode and waveform display mode, users can choose the display mode suitable for observation according to needs. The product has constant current and constant voltage automatic switching function, according to the load situation automatic switching. Power supply support SCPI, MODBUS-RTU protocol programmable instrument standard instruction, equipped with RS232, RS485 interface, easy to form ATE system with other programmable instruments, suitable for PLC control, to achieve automatic control. The product adopts full electronic calibration, and the chassis is free from disassembly.

Protection function

Perfect protection circuit, with overload, polarity reverse protection, over voltage protection, over current protection, over temperature protection functions. With voltage and current protection function at the same time, the power supply can be automatically switched between CC/CV according to the load of access, improve the power supply's adaptability to the load. The efficient cooling system can automatically adjust the speed of the cooling fan according to the temperature of the system, which can reduce the noise of the system and improve the power density of the system.

Ordering information

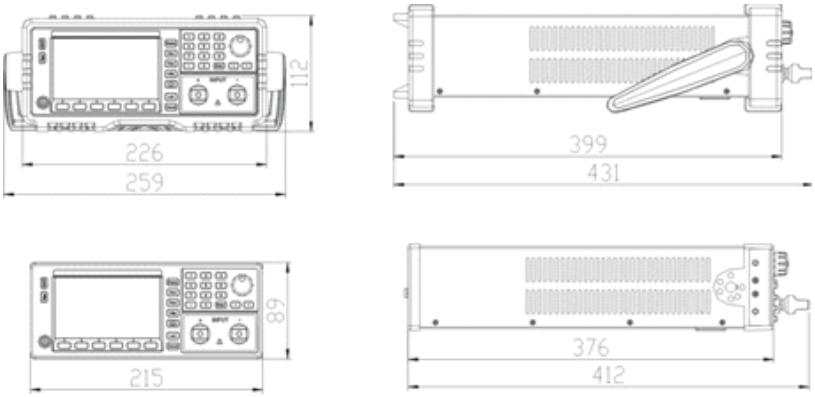
Model	Specifications	Voltage resolution	Current resolution	Redundancy range
FTL8020P	80V/20A/400W	1mV	1mA	80. 5V/20. 5A/400W
FTL35110P	35V/110A/850W	1mV	10mA	35V/111A/850W
FTL35110P-015	35V/110A/1500W	1mV	10mA	35V/111A/1500W
FTL60005P	600V/5A/850W	10mV	1mA	605V/5. 5A/850W
FTL60005P-015	600V/5A/1500W	10mV	1mA	605V/5. 5A/1500W

Specification table

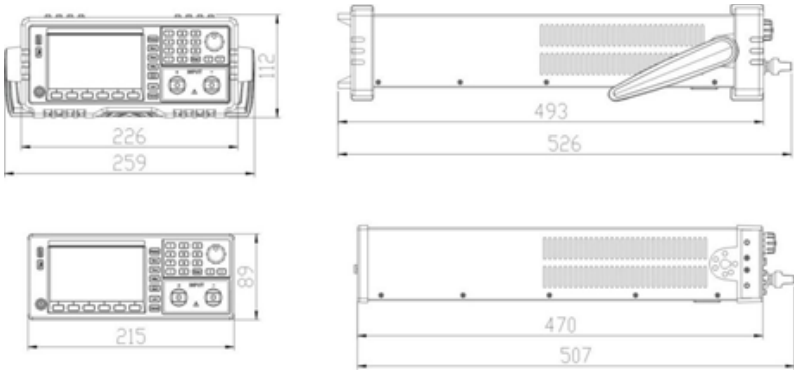
Model	FTL8020P	FTL35110P	FTL35110P-015	FTL60005P	FTL60005P-015
Index adaptation temperature (25±5℃)					
Voltage	0-80V	0-35V		0-600V	
Current	0-20A	0-110A		0-5A	
Power	400W	850W	1500W	850W	1500W
Voltage output					
Power supply effect	≤0.01% of reading + 2.5mV	≤0.01% of reading + 5mV		≤0.01% of reading + 50mV	
Load effect	≤0.01% of reading + 5mV			≤0.01% of reading + 100mV	
Recovery time	≤5ms	≤500us			
Rise time	≤300ms(no load); ⩽1s(full load)	≤300ms(no load); ⩽500ms(full load)		≤300ms(no load); ⩽1s(full load)	
Descent time	≤500ms(no load); ⩽300ms(full load)	≤5s(no load); ⩽150ms(full load)		≤5s(no load); ⩽200ms(full load)	
Ripple and noise	≤50mVpp	≤100mVpp		≤300mVpp	
Temperature coefficient	≤100ppm				
Set accuracy	±(0.01% of reading + 10mV)			±(0.03% of reading + 200mV)	
Set resolution	1mV			10mV	
Current output					
Power supply effect	≤0.1%+2.5mA	≤0.1%+10mA			
Load effect	≤0.1%+5mA	≤0.1%+10mA			
Ripple and noise	≤15mArms	≤150mArms		≤ 30mArms	
Set accuracy	±(0.1% of reading + 10mA)	±(0.1% of reading + 60mA)		±(0.1% of reading + 10mA)	
Set resolution	1mA	10mA		1mA	
Display					
Voltage	5 digits display				
Current	5 digits display				
Voltage resolution	1mV			10mV	
Current resolution	1mA	10mA		1mA	
Voltage accuracy	±(0.01% of reading + 5mV)			±(0.02% of reading + 100mV)	
Current accuracy	±(0.1% of reading +10mA)	±(0.1% of reading +40mA)		±(0.1% of reading +5mA)(25±5℃)	
SENSE compensation voltage	1V				
Protection	Overload protection, polarity reverse protection, over voltage protection, over current protection, over temperature protection				
Lock keyboard	available				
Interfaces	RS232, RS485 interface, support standard SCPI instruction set, MODBUS-RTU protocol, external trigger interface				
Storage call out	300 groups				
Insulation	Between base and terminal: ≥20MΩ/500VDC				
Operating environment	Indoor use, altitude: ≤ 2000m, ambient temperature: 0 ~ 40℃				
	Relative humidity: ≤80%, installation grade: II, pollution degree: 2				
Storage environment	Ambient temperature: -10 ~ 70℃, relative humidity: ≤70%				
Power input	110V± 10%(half power); 220V± 10%(full power); 47～63Hz				
Accessories	1 power cord, 1 RS232 cross cable				
Dimensions	215(W)X89(H)X412(D)mm	215(W)X89(H)X507(D)mm			

Dimensional drawing

FTL-P(400W and below power)
Dimensions: 215(W)*89(H)*412(D)mm



FTL-P(850W and above power)
Dimensions: 215(W)*89(H)*507(D)mm



FTL-PL series

Wide range high precision low noise linear power supply

Summary

FTL-PL series wide range high precision low noise linear power supply, combining the advantages of linear power supply and wide range power supply, is a high-performance laboratory power source, the product is high precision, high index; Wide range of use, good adaptability, convenient and flexible; Hardware protection function, high reliability; And other advantages. It is very suitable for the use of research and development laboratory scenarios, and is also suitable for the use of high-performance testing requirements.

Characteristic

- Wide range output, 4x power range design;
- Minimum resolution: Current 0.1mA, voltage 1mV;
- Linear power supply, low ripple and low noise;
- Serial features;
- Voltage compensation function;
- OVP, OCP hardware protection design, faster speed;
- Front and rear panel output function;
- Temperature monitoring function;
- Smart fan function;
- Standalone DVM DC voltmeter function;
- SCPI and Modbus protocols are supported;
- Standard RS232, RS485, USB communication interface;
- LAN interface with optional network port.

Output function of front and rear panels

The power output can be output in the front panel or the rear panel, which provides effective convenience for users in system wiring and experiment management.

Automatic control function

Power support SCPI and Modbus protocol, configured with RS232, RS485, USB communication interface, optional network port LAN interface, can be easily composed of a variety of test systems.

Serial functions

The power supply supports the function of multi-group multi-step sequence, which can effectively set the power supply to run orderly in a variety of states, so that users can easily and controllably complete complex experiments. Each group sequence is 100 steps, each step time is maximum 9999 seconds, and the number of cycles can be edited.

Store/call function

The power supply can store/call 100 groups of voltage and current data, users can use the power supply conveniently and efficiently.

DVM measurement function

The built-in 4-bit and a half voltmeter can measure the DC power supply in real time, which provides users with a more convenient and flexible compound application, making the laboratory more efficient, with measuring accuracy of 0.03%+5mV and measuring range of 0~80V.

Keyboard lock function

The power supply can lock the key ON the power panel to prevent misoperation. At this time, there is an icon on the display to indicate that only the ON/OFF key can be used, which is convenient for laboratory management.

Ordering information

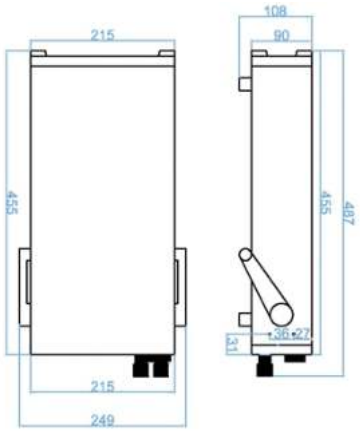
Model	Specifications	Voltage resolution	Current resolution
FTL8005PL	80V/5A/100W	1mV	0. 1mA
FTL8010PL	80V/10A/200W	1mV	1mA
FTL8020PL	80V/20A/400W	1mV	1mA
FTL8030PL	80V/30A/600W	1mV	1mA

Specification table

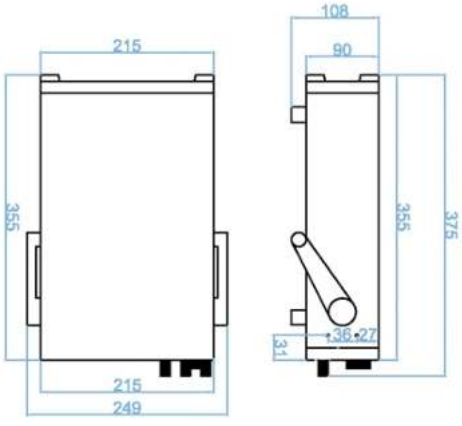
Model		FTL8005PL	FTL8010PL	FTL8020PL	FTL8030PL
Rated output	Voltage	80V	80V	80V	80V
	Current	5A	10A	20A	30A
	Power	100W	200W	400W	600W
Load regulation rate	Voltage	≤0. 01%+3mV	≤0. 01%+10mV	≤0. 01%+30mV	≤0. 01%+30mV
	Current	≤0. 05%+2mA	≤0. 05%+4mA	≤0. 05%+6mA	≤0. 05%+10mA
Power regulation rate	Voltage	≤0. 01%+3mV	≤0. 01%+10mV	≤0. 01%+30mV	≤0. 01%+30mV
	Current	≤0. 05%+2mA	≤0. 05%+4mA	≤0. 05%+6mA	≤0. 05%+10mA
Setting value accuracy	Voltage	≤0. 03%+5mV	≤0. 03%+5mV	≤0. 03%+5mV	≤0. 03%+5mV
	Current	≤0. 1%+3mA	≤0. 1%+5mA	≤0. 1%+10mA	≤0. 1%+15mA
Display value accuracy	Voltage	≤0. 03%+5mV	≤0. 03%+5mV	≤0. 03%+5mV	≤0. 03%+5mV
	Current	≤0. 1%+3mA	≤0. 1%+5mA	≤0. 1%+10mA	≤0. 1%+15mA
Ripple(20Hz～20MHz)	Voltage	≤5mVp-p	≤8mVp-p	≤15mVp-p	≤20mVp-p
	Current	≤5mArms	≤6mArms	≤8mArms	≤15mArms
Rise time	10%-90%	≤150mS	≤150mS	≤200mS	≤150mS
Down time	10%-90%	≤2S	≤2S	≤2.5S	≤2S
Protection		Over voltage protection, over current protection, over temperature protection			
Interface		Standard RS232, RS485, USB interface, support SCPI instruction set			
Additional features		Remote compensation, OVP/OCP hardware protection, temperature monitoring function, optional analog quantity function			
AC input	Voltage	1200VA MAX			
	Frequency	50/60Hz			
Dimension	W*H*D	215*90*375(mm)		215*90*487(mm)	

Dimension drawing

FTL-PL (400W and above power)
Bare machine size: 215(W)*90(H)*487(D)mm



FTL-PL (400W and above power)
Bare machine size: 215(W)*90(H)*487(D)mm



FTL-G series

Medium and high power programmable linear DC power supply

Characteristic

- <0.01% low adjustment rate;
- Ultra-high resolution and accuracy;
- Continuous or dynamic load options; Low ripple and low noise;
- Overload, polarity reverse protection, over voltage protection, over current protection, over temperature protection; With constant voltage and constant current two output states, according to the load automatically switch;
- 4.3 inch TFT high definition liquid crystal display, a full display of instrument status;
- Convenient and fast operation and setting interface, high-speed adjustment knob and digital key input;
- Built-in buzzer as prompt or warning;
- One-key lock function to effectively prevent misoperation;
- Upper and lower limit judgment, fuse test, pulse output, output timing, fixed power output, low resistance measurement, shortcut key;
- Can store/call 300 groups of voltage and current data, with timing execution can achieve simple automatic testing purposes;
- Standard RS232, RS485 interface, programming instruction set in line with SCPI, MODBUS protocol;
- Optional RS232+LAN interface or optional RS485+LAN interface;
- Intelligent fan, no pole servo.

Sequence function

FTL-G power supply supports multi-step sequence function, the power supply will change the working state according to the time or trigger, which is used to test the function and stability of the load product. For example, the power supply has a variety of state jumps, simulated impact, slow rise slow fall, switching stability and so on.

CV/CC function

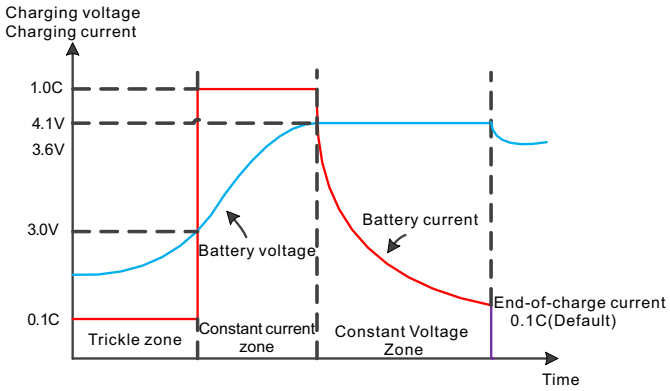
FTL-G power is derived from the constant voltage or constant current output, the power supply in the constant voltage or constant current state is determined by the load. The power supply automatically switches the constant voltage and constant current working state.

Summary

FTL-G series of high power programmable linear DC power supply, is a high precision, low ripple, high speed, wide range of programmable linear DC power supply. Power 500 ~ 12000W, voltage 15 ~ 1300V, with overload and polarity reverse protection and standard over voltage, over current and over temperature protection, the output channel has a high regulation rate of 0.01% and less than 1mVrms ripple and noise. Can be widely used in semiconductor materials, wireless charging, BMS, super capacitors and other precision manufacturing testing fields, and high index requirements of the laboratory.

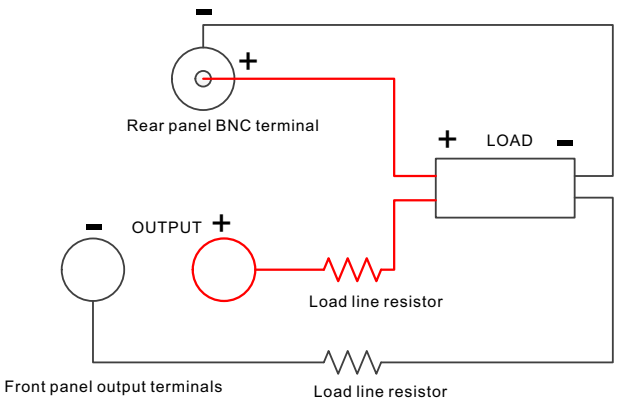
Battery charging function

FTL-G can charge the battery according to the specified mode, and can define trickle charging threshold voltage, floating charging voltage, trickle charging current, standard charging current, termination current threshold, charging time and other parameters, which can fully simulate the charging process of the battery and effectively protect the battery.



Remote sensing function

When the load consumes a large current, there will be a voltage drop on the connection line from the power supply to the load terminal. The remote sensing automatically compensates for the voltage drop on the load line. The wiring diagram of the remote sensing function power supply measurement is as follows:



Quick call

FTL-G power supply supports the quick call function, one click to invoke the corresponding output parameters and status of the power supply. Improve the test speed and prevent misoperation.For testing, quality, production and other links have a good help.

Ordering information

Model	Specification	Model	Specification
FTL110006G	600W/1100V/0. 65A	FTL15020G	3000W/150V/20A
FTL36822G	700W/368V/2. 2A	FTL30200G	6000W/30V/200A
FTL52516G	750W/525V/1. 65A	FTL60100G	6000W/60V/100A
FTL63016G	900W/630V/1. 65A	FTL15040G	6000W/150V/40A
FTL85011G	900W/850V/1. 1A	FTL12060G	7200W/120V/60A
FTL110011G	1000W/1100V/1. 1A	FTL60150G	9000W/60V/150A
FTL36832G	1050W/368V/3. 2A	FTL12075G	9000W/120V/75A
FTL130011G	1200W/1300V/1. 1A	FTL15060G	9000W/150V/60A
FTL15200G	3000W/15V/200A	FTL60200G	12000W/60V/200A
FTL30100G	3000W/30V/100A	FTL120100G	12000W/120V/100A
FTL6050G	3000W/60V/50A	FTL15080G	12000W/150V/80A
FTL12030G	3000W/120V/30A	--	--

General specification

Model	FTL-G 300V or less model
Voltage output	
Power supply effect	≤0.01%+3mV
Load effect	≤0.02%+5mV
Recovery time	≤100us(50% load change,minimum load 0.5A)
Ripple and noise	≤0.02% of F.S.
Temperature coefficient	≤100ppm/℃
Setting accuracy	±(0.03% of reading + 0.02% of F.S.)(25±5℃)
Set resolution	1mV(V≤64V) / 10mV(V>64V)
Current output	
Power supply effect	≤0.1%+3mA
Load effect	≤ 0.05%+3mA(I≤3A)/≤0.05%+6mA(I>3A)
Ripple and noise	＜0. 1% of F. S.
Set accuracy	±(0.1% of reading + 0.1% of FS)(25±5℃)
Set resolution	10mA(V≤64A)/100mV(V>64A)
Display	
Voltage	5 digits display
Current	5 digits display
Voltage accuracy	±(0.02% of reading + 0.02% of F.S.)(25±5℃)
Current accuracy	±(0.1% of reading + 0.1% of F.S.)(25±5℃)
Other characteristics	
Protection	Overload protection, over voltage protection, over current protection, over temperature protection
Remote sensing	Maximum compensated voltage 5%F.S.
Battery charging	Support battery charging function, lithium battery curve charging function
Lock keyboard	Available
Interfaces standard	RS232 interface, RS485 interface, support SCPI instruction set, MODBUS-RTU protocol
Storage call out	300 sets
Insulation	between the base and the terminal: ≥20MΩ/500VDC; between the base and the AC power cable: ≥30MΩ/500VDC
Operating environment	Ambient temperature: 0 ~ 40℃, relative humidity: ≤80%
Storage environment	Ambient temperature: -10 ~ 70℃, relative humidity: ≤70%
Power input	AC 110V/220V±10%, 50/60Hz

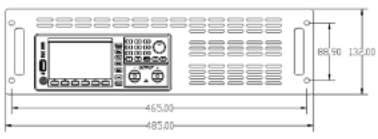
Specification table-1

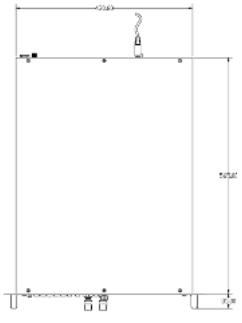
Model	FTL36822G	FTL36832G	FTL52516G	FTL63016G
Rated DC output (0℃ ~40℃)				
Voltage	0～368V	0～368V	0～525V	0～630V
Current	0～2. 2A	0～3. 2A	0～1. 65A	0～1. 65A
Power	700W	1050W	750W	900W
Over voltage protection	0. 1～385V	0. 1～385V	0. 1～550V	0. 1～660V
Over current protection	0. 01～2. 4A	0. 01～3. 6A	0. 01～1. 8A	0. 01～1. 8A
Voltage output				
Power supply effect	≤0.01%+30mV			
Load effect	≤0.01%+30mV			
Recovery time	≤100us(50% load change,minimum load 0.5A)			
Ripple and noise	≤10mVrms(5Hz～1MHz)			
Temperature coefficient	≤100ppm/℃			
Setting accuracy	±(0.03% of reading +0.02% of FS)(25±5℃)			
Set resolution	10mV			
Current output				
Power supply effect	≤0.2%+3mA			
Load effect	≤0.2%+3mA			
Ripple and noise	≤1mArms			
Set accuracy	±(0.1% of reading + 0.1% of F.S.)(25±5℃)			
Set resolution	1mA			
Display				
Voltage	5 digits display			
Current	5 digits display			
Resolution	10mV/1mA			
Voltage accuracy	±(0.02% of reading +0.02% of FS)(25±5℃)			
Current accuracy	±(0.1% of reading + 0.1% of FS)(25±5℃)			
Protection	Overload protection, over voltage protection, over current protection, over temperature protection			
Interface	RS232 interface, RS485 interface, support SCPI instruction set, MODBUS-RTU protocol			
Other features	Store and recall 300 groups, upper and lower limit judgment, fuse test, pulse output, output timing, constant power output, low resistance measurement			
Insulation	Between the base and the terminal: ≥20MΩ/500VDC; between the base and the AC power cable: ≥30MΩ/500VDC			
Operating environment	Ambient temperature: 0 ~ 40℃, relative humidity: ≤80%			
Power input	AC220V±10%, 50/60Hz, optional AC110V±10%, 50/60Hz			
Dimension(W*H*D)	485X132X600mm			
Weight	28kg	27kg	27kg	28kg

Specification table-2

Model	FTL85011G	FTL110006G	FTL110011G	FTL130011G
Rated DC output(0℃～40℃)				
Voltage	0～850V	0～1100V	0～1100V	0～1300V
Current	0～1. 1A	0～0. 65A	0～1. 1A	0～1. 1A
Power	900W	600W	1000W	1200W
Over voltage protection	0. 1～660V	0. 1～1200V	0. 1～1200V	0. 1～1400V
Over current protection	0. 01～1. 2A	0. 01～0. 7A	0. 01～1. 2A	0. 01～1. 2A
Voltage output				
Power supply effect	≤0.01%+50mV			
Load effect	≤0.01%+50mV			
Recovery time	≤100us(50% load change,minimum load 0.5A)			
Ripple and noise	10mVrms(5Hz～1MHz)			
Temperature coefficient	≤100ppm/℃			
Setting accuracy	±(0.03% of reading +0.02% of F.S.)(25±5℃)			
Set resolution	100mV			
Current output				
Power supply effect	≤0.2%+3mA			
Load effect	≤0.2%+3mA			
Ripple and noise	≤1mArms			
Set accuracy	±(0.1% of reading + 0.1% of F.S.)(25±5℃)			
Set resolution	1mA			
Display				
Voltage	5 digits display			
Current	5 digits display			
Resolution	100mV/1mA			
Voltage accuracy	±(0.02% of reading +0.02% of F.S.)(25±5℃)			
Current accuracy	±(0.1% of reading + 0.1% of F.S.)(25±5℃)			
Protection	Overload protection, over voltage protection, over current protection, over temperature protection			
Interface	RS232 interface, RS485 interface, support SCPI instruction set, MODBUS-RTU protocol			
Other features	Store and recall 300 groups, upper and lower limit judgment, fuse test, pulse output, output timing, constant power output, low resistance measurement			
Insulation	Between the base and the terminal: ≥20MΩ/500VDC; between the base and the AC power cable: ≥30MΩ/500VDC			
Operating environment	Ambient temperature: 0～40℃, relative humidity: ≤80%			
Power input	AC220V±10%, 50/60Hz, optional AC110V±10%, 50/60Hz			
Dimension(W*H*D)	485X132X600mm			
Weight	28kg	28kg	28kg	30kg

Dimensional drawing





Bare metal size: 430.6(W)*132(H)*600(D)mm

FT8330 series

Battery cell simulating power supply

Characteristic

- Voltage output: 0~6V;
- Current output: 0~1A/0~2A/0~3A;
- Voltage accuracy,resolution up to 1/10000;
- Four wiring system can effectively eliminate the measurement impact brought by the wire;
- Single device channels can reach 36, and channels can also be selected according to the demand;
- Each channel is isolated, and can be connected in parallel or series at will;
- Temperature drift coefficient is less than 30ppm/℃;
- Professional test software,supporting data report and data analysis;
- RS485 and Ethernet control interface;
- Support SCPI and Modbus protocols;
- Standard 19 inch, can be installed in the rack;
- Intelligent fan control, long life and low noise.

Ultra high accuracy

FT8330 series has high accuracy, voltage accuracy is 0.01%+0.01% F.S. Voltage resolution is as low as 0.1mV, current resolution is as low as 0.1 μA. For the test of device power consumption in standby mode, the FT8330 has 0.1**μ**A current resolution measurement,can easily measure the standby current of μA level.

Serial connection between channels

FT8330 electrical isolation between each channel. When it is necessary to simulate multiple strings of battery cells, the simulator can support any multi-channel in series, or multiple battery cell simulators in series. Users can also perform remote control and other automatic test applications through remote interfaces.

Summary

The FT8330 series battery simulator is a high precision, multi-channel, single quadrant programmable battery analog power supply.Single device channels is up to 36 and each channel is electrically isolated, it is convenient for users to connect series and parallel power supplies. The ultra-high output accuracy, as well as the characteristics of ultra-low ripple and interference, make this series of power supplies widely used in testing systems such as battery cells, super capacitors, and BMS. The FT8330 series adopts a standard 19 inch chassis and provides Ethernet port and RS485 communication interface, which is convenient for integration into research and development and production line automation testing platforms, and can also be used separately.

Application fields

- BMS(battery management system) testing;
- CMS(capacity management system) testing;
- R&D testing of charge and discharge protection board;
- Battery cell test;
- Super capacitor core test;
- Power supply testing for other types of electronic products.

Ultra high integration

FT8330 series adopts standard 19 inch and two chassis specifications. Single 2U chassis can accommodate up to 24CH, and a 3U chassis can accommodate 36CH. The channels are isolated from each other. One device can test 36 work stations at most at the same time, which can effectively reduce the number of devices used by users and improve the test efficiency.

2U/24 channel

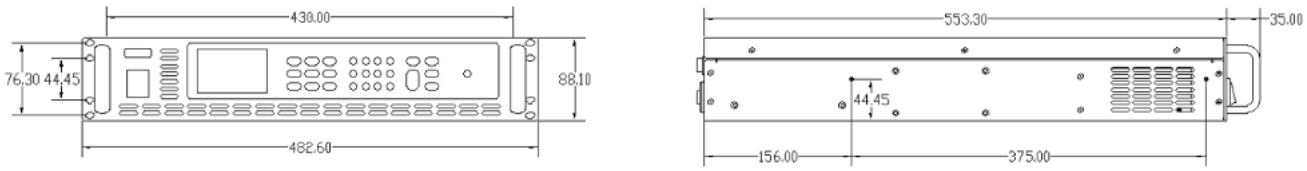
Ordering information

Channels	A series mode	R series mode	Specification	Height	Remark
12CH	FT833012A-6-1	FT833012R-6-1	6V/1A/6W	2U	Series A, current single range; R series, current double range, high sampling rate
	FT833012A-6-2	FT833012R-6-2	6V/2A/12W		
	FT833012A-6-3	FT833012R-6-3	6V/3A/18W		
18CH	FT833018A-6-1	FT833018R-6-1	6V/1A/6W		
	FT833018A-6-2	FT833018R-6-2	6V/2A/12W		
	FT833018A-6-3	FT833018R-6-3	6V/3A/18W		
24CH	FT833024A-6-1	FT833024R-6-1	6V/1A/6W		
	FT833024A-6-2	FT833024R-6-2	6V/2A/12W		
	FT833024A-6-3	FT833024R-6-3	6V/3A/18W		
36CH	FT833036A-6-1	FT833036R-6-1	6V/1A/6W	3U	
	FT833036A-6-2	FT833036R-6-2	6V/2A/12W		
	FT833036A-6-3	FT833036R-6-3	6V/3A/18W		

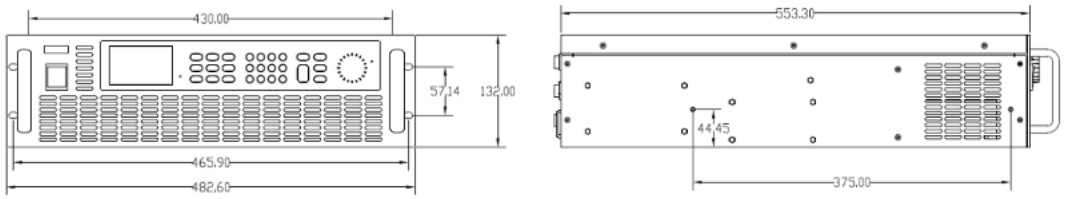
Optional information

Name	Model or Spec.	Description
Testing wire	FT8330-TL03A	3A test wire/wire length 1.5m

Dimension drawing



2U model dimensions



3U model dimensions

Specification table-1

Model	FT833024A-6-1	FT833024A-6-2	FT833024A-6-3
Current	1A	2A	3A
Voltage	6V	6V	6V
Power	6W	12W	18W
Channels	24CH		
CV mode			
Range	0~6V		
Set resolution	0.1mV		
Set accuracy(25±3℃)	0.01%+0.01%F.S.		
Readback resolution	0.1mV		
Readback accuracy(25±3℃)	0.01%+0.01%F.S.		
Voltage load regulation rate	＜0.02%F.S.		
Temperature coefficient	＜30ppm/℃		
Voltage ripple(rms)	2mV		
Current ripple(rms)	1.2mA		
Voltage rise time(No load)	＜3ms		
Voltage rise time(full load)	＜3ms		
Voltage fall time(No load)	＜3s		
Voltage fall time(full load)	＜3ms		
Dynamic response time	＜1ms		
CC mode			
Range	0~1A	0~2A	0~3A
Set resolution	0.25mA	0.5mA	0.75mA
Set accuracy(25±3℃)	0.05%+0.05%F.S		
Readback resolution	0.25mA	0.5mA	0.75mA
Readback accuracy(25±3℃)	0.05%+0.05%F.S		
Current load regulation rate	＜0.01%F.S.		
Temperature coefficient	＜30ppm/℃		
Other characteristics			
Withstand voltage (output to ground)	1500VDC		
Withstand voltage (channel to channel)	1500VDC		
Single channel sampling speed	4Hz		
Programming response time	＜10ms		
Communication interface	LAN、RS485(isolated)		
AC input voltage	1φ 110V/220V ac ±10% VLN, 50/60Hz		
Dimension (H x W x D)	88.1mm×482.6mm×521.4mm		
Weight	10kg		

Specification table-2

Model	FT833024R-6-1		FT833024R-6-2		FT833024R-6-3	
Current	1mA/1A		1mA/2A		1mA/3A	
Voltage	6V		6V		6V	
Power	6W		12W		18W	
Channels	24CH					
CV mode						
Range	0~6V					
Set resolution	0.1mV					
Set accuracy(25±5℃)	0.01%+0.01%F.S.					
Readback resolution	0.1mV					
Readback accuracy(25±5℃)	0.01%+0.01%F.S.					
Voltage load regulation rate	＜0.02%F.S.					
Temperature coefficient(0~40℃)	＜30ppm/℃					
Voltage ripple(20Hz~20MHz)	≤2mVrms					
Voltage rise time(No load)	＜3ms					
Voltage rise time(full load)	＜3ms					
Voltage fall time(No load)	＜3s					
Voltage fall time(full load)	＜3ms					
Dynamic response time	＜1ms					
CC mode						
Range	0~1mA	0~1A	0~1mA	0~2A	0~1mA	0~3A
Set resolution	0.1uA	0.1mA	0.1uA	0.2mA	0.1uA	0.3mA
Set accuracy(25±5℃)	0.05%+0.05%F.S					
Readback resolution	0.1uA	0.1mA	0.1uA	0.2mA	0.1uA	0.3mA
Readback accuracy(25±5℃)	0.05%+0.05%F.S					
Current ripple(20Hz~20MHz)	3uArms	0.3mArms	3uArms	0.3mArms	3uArms	0.3mArms
Current load regulation rate	＜0.01%F.S.					
Temperature coefficient	＜30ppm/℃					
Other characteristics						
Withstand voltage (output relative to ground)	1500VDC					
Withstand voltage (channel to channel)	1500VDC					
Single channel sampling speed	20Hz					
Programming response time	＜10ms					
Communication interface	LAN、RS485(isolated)					
AC input voltage	1φ 110V/220V ac ±10% VLN，50/60Hz					
Dimension (H x W x D）	88.1mm*482.6mm*521.4mm					
Weight	10kg					

FT8331 series

Battery cell simulating power supply

Characteristic

- Voltage range:6V/15V/20V;
- Current range:1A/2A/3A/5A;
- Voltage precision up to 0.01%F.S.;
- Dual range current, automatic switching;
- uA level measurement, capable of static power consumption testing;
- Small size, high integration,3U/24CH;
- Voltage temperature drift coefficient less than 25ppm/℃;
- Unique fault simulation function, simulating battery disconnection, short circuit, reverse connection etc(only for A series);
- Equipped with various functions such as charging testing, battery simulation, SOC simulation,pulse function etc;
- Isolation between channels, capable of using multiple channels in series or parallel;
- Professional testing software that supports data reporting and analysis;
- Built in LAN,RS485 and CAN control interface;
- Support SCPI and Modbus protocol;
- USB interface supports file import,export and screenshot functions;
- 4.3 inch high-definition LCD screen, supporting local/remote control.

Application fields

- BMS (battery management system) testing;
- CMS (capacity management system) testing;
- Consumer electronics testing such as earphones, phones, tablets, e-cigarettes etc;
- Production testing of electric tool products;
- Power supply testing for other types of electronic products.

Summary

The FT8331 series is a high-precision, multi-channel, single quadrant programmable battery simulator. The voltage precision up to 0.01%F.S.,support μ A-level current measurement, with up to 24 channels on a single machine, and channels isolated from each other, facilitating the use of multiple channels in series.The simulator supports power mode, static power consumption testing function, charging mode, battery simulation, sequence testing, pulse function, and various fault simulations(only for A series), which can not only meet the requirements of BMS testing, but also meet the ATE testing of consumer electronics products.The built-in upper computer software is easy to operate and flexible to use. Supports single channel programming operations, multi-channel editing operations, and multi process programming operations.

The FT8331 series adopts a standard 19 inch chassis, with a height of 3U, and provides LAN, RS485, and CAN communication interfaces for easy integration into research and development and automated testing platforms, and can also be used separately.

Various battery testing function

FT8331 series have variety battery simulation functions for power mode, battery simulation, battery charging test, fault simulation etc. Realize one device for multiple purposes, simplify test equipment and optimize test process. The user can also set the curve of cell parameters (SOC, voltage, capacity, internal resistance and other parameters fitting) to simulate the battery output for testing the products to be inspected.

Ultra high accuracy

The FT8331 series has high accuracy and a voltage accuracy of 0.01% F.S. The voltage resolution is as low as 0.1mV, and the current resolution is as low as 0.1 μA. For testing the power consumption of devices in standby mode, The FT8331 is capable of measuring 0.1μA current resolution, can easily achieve uA level standby current testing.

Static power consumption testing

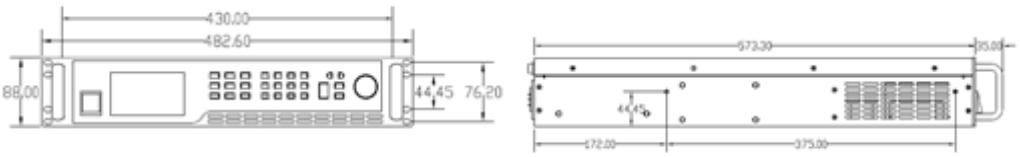
FT8331 has high-precision voltage and current measurement. Two current ranges with current accuracy up to 1μA. The FT8331 provides power supply for the tested product, which can visually test the static power consumption of the tested product in standby mode and screen out unqualified products.

Fault simulation function(only for A series)

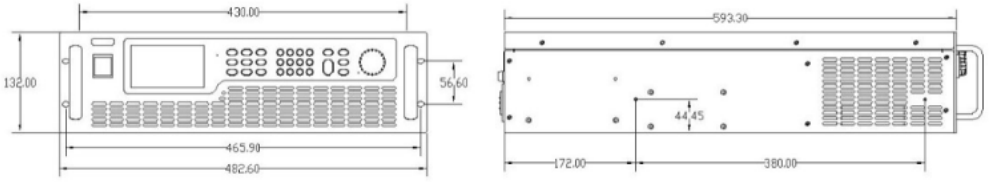
A device has at most 24 independent output simulator channels, each channel has built-in positive and negative short circuit, positive and negative circuit break, polarity reverse connection and other functions. It can be directly controlled by the upper computer software, eliminating the external matrix switch parts that simulate battery failure, saving more space and valuable investment for users.

Dimension drawing

Dimensional drawings for 2U models:



Dimensional drawings for 3U models:



Ordering information

Table-1 2U model

Channels	A series model	E series model	Specification	Height	Note
4CH	FT833104A-6-1	FT833104E-6-1	6V/1A/6W, 4 Channels	2U	Only the A-Series has fault simulation
	FT833104A-6-2	FT833104E-6-2	6V/2A/12W, 4 Channels		
	FT833104A-6-3	FT833104E-6-3	6V/3A/18W, 4 Channels		
	FT833104A-6-5	FT833104E-6-5	6V/5A/30W, 4 Channels		
	FT833104A-15-1	FT833104E-15-1	15V/1A/15W, 4 Channels		
	FT833104A-15-2	FT833104E-15-2	15V/2A/30W, 4 Channels		
	FT833104A-15-3	FT833104E-15-3	15V/3A/45W, 4 Channels		
	FT833104A-20-1	FT833104E-20-1	20V/1A/20W, 4 Channels		
	FT833104A-20-3	FT833104E-20-3	20V/3A/60W, 4 Channels		
8CH	FT833108A-6-1	FT833108E-6-1	6V/1A/6W, 8 Channels	2U	
	FT833108A-6-2	FT833108E-6-2	6V/2A/12W, 8 Channels		
	FT833108A-6-3	FT833108E-6-3	6V/3A/18W, 8 Channels		
	FT833108A-6-5	FT833108E-6-5	6V/5A/30W, 8 Channels		
	FT833108A-15-1	FT833108E-15-1	15V/1A/15W, 8 Channels		
	FT833108A-15-2	FT833108E-15-2	15V/2A/30W, 8 Channels		
	FT833108A-15-3	FT833108E-15-3	15V/3A/45W, 8 Channels		
	FT833108A-20-1	FT833108E-20-1	20V/1A/20W, 8 Channels		
	FT833108A-20-3	FT833108E-20-3	20V/3A/60W, 8 Channels		
12CH	FT833112A-6-1	FT833112E-6-1	6V/1A/6W, 12 channels	2U	
	FT833112A-6-2	FT833112E-6-2	6V/2A/12W, 12 channels		
	FT833112A-6-3	FT833112E-6-3	6V/3A/18W,12 channels		
	FT833112A-6-5	FT833112E-6-5	6V/5A/30W,12 channels		
	FT833112A-15-1	FT833112E-15-1	15V/1A/15W,12 channels		
	FT833112A-15-2	FT833112E-15-2	15V/2A/30W,12 channels		
	FT833112A-15-3	FT833112E-15-3	15V/3A/45W,12 channels		
	FT833112A-20-1	FT833112E-20-1	20V/1A/20W,12 channels		
	FT833112A-20-3	FT833112E-20-3	20V/3A/60W,12 channels		

Table-2 3U model

Channels	A series model	E series model	Specification	Height	Note
16CH	FT833116A-6-1	FT833116E-6-1	6V/1A/6W, 16 channels	3U	Only the A-Series has fault simulation
	FT833116A-6-2	FT833116E-6-2	6V/2A/12W, 16 channels		
	FT833116A-6-3	FT833116E-6-3	6V/3A/18W, 16 channels		
	FT833116A-6-5	FT833116E-6-5	6V/5A/30W, 16 channels		
	FT833116A-15-1	FT833116E-15-1	15V/1A/15W, 16 channels		
	FT833116A-15-2	FT833116E-15-2	15V/2A/30W, 16 channels		
	FT833116A-20-1	FT833116E-20-1	20V/1A/20W, 16 channels		
18CH	FT833118A-6-1	FT833118E-6-1	6V/1A/6W, 18 Channels	3U	
	FT833118A-6-2	FT833118E-6-2	6V/2A/12W, 18 channels		
	FT833118A-6-3	FT833118E-6-3	6V/3A/18W, 18 channels		
	FT833118A-6-5	FT833118E-6-5	6V/5A/30W, 18 channels		
	FT833118A-15-1	FT833118E-15-1	15V/1A/15W, 18 Channels		
	FT833118A-15-2	FT833118E-15-2	15V/2A/30W, 18 channels		
	FT833118A-20-1	FT833118E-20-1	20V/1A/20W, 18 channels		
24CH	FT833124A-6-1	FT833124E-6-1	6V/1A/6W, 24 Channels	3U	
	FT833124A-6-2	FT833124E-6-2	6V/2A/12W, 24 channels		
	FT833124A-6-3	FT833124E-6-3	6V/3A/18W, 24 Channels		
	FT833124A-6-5	FT833124E-6-5	6V/5A/30W, 24 channels		
	FT833124A-15-1	FT833124E-15-1	15V/1A/15W, 24 Channels		
	FT833124A-15-2	FT833124E-15-2	15V/2A/30W, 24 channels		
	FT833124A-20-1	FT833124E-20-1	20V/1A/20W, 24 channels		

Optional information

Name	Model or Spec.	Description
Testing wire	FT8331-TL05A	5A testing wire/length 1.5 metre

Specification table-1

Model		FT833124A-6-1	FT833124A-6-2	FT833124A-6-3	FT833124A-6-5	FT833124A-15-1	FT833124A-15-2	FT833124A-20-1
Voltage		±6V	±6V	±6V	±6V	±15V	±15V	±20V
Current		1A	2A	3A	5A	1A	2A	1A
Power		6W	12W	18W	30W	15W	30W	20W
Input resistance		≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ
Channel numbers		24CH	24CH	24CH	24CH	24CH	24CH	24CH
Max series connection		The maximum series output voltage does not exceed 1000V, and the masters can be connected in series						
Voltage parameters	Output range	0~6.12V				0~15.3V		0~20.4V
	Output precision	0.5mV				1.5mV		2mV
	Resolution	0.1mV				0.1mV		0.1mV
	Measurement precision	0.5mV				1.5mV		2mV
	Resolution	0.1mV				0.1mV		0.1mV
	Rise time	≤1ms						
	Temperature coefficient	25ppm/ ℃						
Current parameters(two ranges)								
Range 1	Output range	0~1A	0~2A	0~3A	0~5A	0~1A	0~2A	0~1A
	Measurement precision	0.05%+0.5mA	0.05%+1mA	0.05%+1.5mA	0.05%+2.5mA	0.05%+0.5mA	0.05%+1mA	0.05%+0.5mA
	Resolution	0.1mA						
Range 2	Output range	0~1mA	0~2mA	0~3mA	0~5mA	0~1mA	0~2mA	0~1mA
	Measurement precision	0.05%+0.5uA	0.05%+1uA	0.05%+1.5uA	0.05%+2.5uA	0.05%+0.5uA	0.05%+1uA	0.05%+0.5uA
	Resolution	0.1uA						
Temperature coefficient		50ppm/ ℃						
Other characteristics								
Wiring mode		PCB Welding terminal/ 4 wire system wiring						
Dimension		3U/19”						
Sampling speed		20Hz						
Communication interface		LAN、RS485、CAN						
Communication protocol		SCPI、Modbus、CAN-OPEN						
Transmission protocol		TCP/IP						
Fault simulation		Positive pole open circuit, negative pole open circuit, output short circuit, polarity reversal						
Input voltage		Single phase, 100~240Vac, 50/60Hz						
Environment characteristics	Operating temperature	0~40℃						
	Storage temperature	-25℃~60℃						
	Operating humidity	20%rh~85%rh (No condensation)						
	Storage humidity	＜90%rh (No condensation)						
	Using environment	altitude ＜2000m, only for indoor use						
	Dimension	590*430*132						
	Weigh	20kg						

Specification table-2

Model		FT833124E-6-1	FT833124E-6-2	FT833124E-6-3	FT833124E-6-5	FT833124E-15-1	FT833124E-15-2	FT833124E-20-1
Voltage		6V	6V	6V	6V	15V	15V	20V
Current		1A	2A	3A	5A	1A	2A	1A
Power		6W	12W	18W	30W	15W	30W	20W
Input resistance		≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ
Channel numbers		24CH	24CH	24CH	24CH	24CH	24CH	24CH
Max series connection		The maximum series output voltage does not exceed 1000V, and the masters can be connected in series						
Voltage parameters	Output range	0~6.12V				0~15.3V		0~20.4V
	Output precision	0.5mV				1.5mV		2mV
	Resolution	0.1mV				0.1mV		0.1mV
	Measurement precision	0.5mV				1.5mV		2mV
	Resolution	0.1mV				0.1mV		0.1mV
	Rise time	≤1ms						
	Temperature coefficient	25ppm/ ℃						
Current parameters(two ranges)								
Range 1	Output range	0~1A	0~2A	0~3A	0~5A	0~1A	0~2A	0~1A
	Measurement precision	0.05%+0.5mA	0.05%+1mA	0.05%+1.5mA	0.05%+2.5mA	0.05%+0.5mA	0.05%+1mA	0.05%+0.5mA
	Resolution	0.1mA						
Range 2	Output range	0~1mA	0~2mA	0~3mA	0~5mA	0~1mA	0~2mA	0~1mA
	Measurement precision	0.05%+0.5uA	0.05%+1uA	0.05%+1.5uA	0.05%+2.5uA	0.05%+0.5uA	0.05%+1uA	0.05%+0.5uA
	Resolution	0.1uA						
Temperature coefficient		50ppm/ ℃						
Other characteristics								
Wiring mode		PCB Welding terminal / 4 wire system wiring						
Dimension		3U/19"						
Sampling speed		20Hz						
Communication interface		LAN、RS485、CAN						
Communication protocol		SCPI、Modbus、CAN-OPEN						
Transmission protocol		TCP/IP						
Input voltage		Single phase, 100~240Vac, 50/60Hz						
Environment characteristics	Operating temperature	0~40℃						
	Storage temperature	-25℃~60℃						
	Operating humidity	20%rh~85%rh(No condensation)						
	Storage humidity	＜ 90%rh(No condensation)						
	Using environment	altitude＜2000m, only for indoor use						
	Dimension	590*430*132						
	Weigh	20kg						

FT8340 series

Bidirectional battery cell simulating power supply

Characteristic

- Voltage range:±5V/±6V/±15V/±20V(Positive and negative voltages are only available for A series);
- Current range:±1A/±2A/±3A/±5A/±10A;
- Two current ranges, uA level measurement, capable of static power consumption testing;
- Equipped with an independent DVM channel for high-precision measurement (only for A series);
- Voltage temperature drift coefficient less than 25ppm/℃;
- Seamless switching between source and load, powerful battery characteristic simulation function;
- Unique fault simulation function, simulating battery disconnection, short circuit, reverse connection etc(only for A series);
- Equipped with battery simulation function;
- Isolation between channels, capable of using multiple channels in series;
- Professional testing software that supports data reporting and analysis;
- Built in RS485 and dual LAN control interface;
- Standard 19 inch chassis,with a height of 2U,easy for rack installation.

Support active and passive equalization

FT8340 series adopts current bidirectional design, each channel supports current output and suction, and the balanced current is up to 5A. The user can customize the battery charging and discharging model and conduct real-time control through a dedicated host computer, which fully meets the requirements of BMS active/passive equalization test.

Summary

The FT8340 series is a high precision, multi-channel, dual quadrant programmable battery simulator.The current of the simulator can be charged and discharged, and supports various fault simulations, which can not only meet the requirements of BMS testing, but also meet the ATE testing of consumer electronics products.There are at most 12 channels in a device, and each channel is electrically isolated, which is convenient for users to use in series. The built-in upper computer software is easy to operate, flexible and easy to use. It supports single channel programming operations, multi-channel editing operations, and multi process programming operations.

The FT8340 series uses a standard 19 inch chassis,2U height, and provides dual network ports and RS485 communication interfaces, which is convenient for integrating into the R&D and production line automation test platform, or can be used alone.

Application fields

- BMS（battery management system）testing;
- CMS（capacity management system）testing;
- Consumer electronics testing such as earphones, phones, tablets, e-cigarettes etc;
- Production testing of electric tool products;
- Power supply testing for other types of electronic products.

Various battery simulation

FT8340 series products have various battery simulation functions such as power mode, battery simulation, battery charging test, discharge test, fault simulation etc. Realize one device for multiple purposes, simplify test equipment and optimize test process. The user can also set the curve of cell parameters (SOC, voltage, capacity, internal resistance and other parameters fitting) to simulate the battery output for testing the products to be inspected.

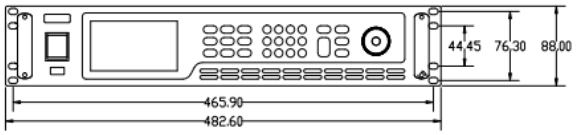
Static power consumption testing

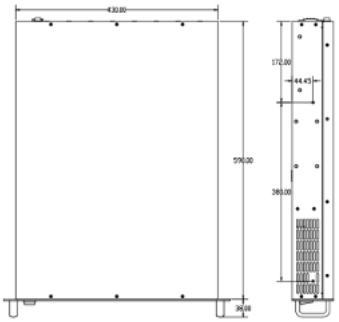
FT8340 has high-precision voltage and current measurement.Two current ranges with current accuracy up to 1μA.The FT8340 provides power supply for the tested product, which can visually test the static power consumption of the tested product in standby mode and screen out unqualified products.

Integrated fault simulation function (only for A series)

A device has at most 8 independent output simulator channels, each channel has built-in positive and negative short circuit, positive and negative circuit break, polarity reverse connection and other functions. It can be directly controlled by the upper computer software, eliminating the external matrix switch parts that simulate battery failure, saving more space and valuable investment for users.

Dimension drawing





Ordering information

Channels	A series model	E series model	Spec.	Height	Note
4CH	FT83404A-6-1	FT83404E-6-1	6V/1A/6W	2U	Only A series has DVM module and fault simulation.
	FT83404A-6-2	FT83404E-6-2	6V/2A/12W		
	FT83404A-6-3	FT83404E-6-3	6V/3A/18W		
	FT83404A-6-5	FT83404E-6-5	6V/5A/30W		
	FT83404A-15-1	FT83404E-15-1	15V/1A/15W		
	FT83404A-15-2	FT83404E-15-2	15V/2A/30W		
	FT83404A-15-3	FT83404E-15-3	15V/3A/45W		
	FT83404A-20-1	FT83404E-20-1	20V/1A/20W		
	FT83404A-20-3	FT83404E-20-3	20V/3A/60W		
8CH	FT83408A-6-1	FT83408E-6-1	6V/1A/6W	2U	
	FT83408A-6-2	FT83408E-6-2	6V/2A/12W		
	FT83408A-6-3	FT83408E-6-3	6V/3A/18W		
	FT83408A-6-5	FT83408E-6-5	6V/5A/30W		
	FT83408A-15-1	FT83408E-15-1	15V/1A/15W		
	FT83408A-15-2	FT83408E-15-2	15V/2A/30W		
	FT83408A-15-3	FT83408E-15-3	15V/3A/45W		
	FT83408A-20-1	FT83408E-20-1	20V/1A/20W		
	FT83408A-20-3	FT83408E-20-3	20V/3A/60W		
12CH	FT834012A-6-1	FT834012E-6-1	6V/1A/6W	2U	
	FT834012A-6-2	FT834012E-6-2	6V/2A/12W		
	FT834012A-6-3	FT834012E-6-3	6V/3A/18W		
	FT834012A-6-5	FT834012E-6-5	6V/5A/30W		
	FT834012A-15-1	FT834012E-15-1	15V/1A/15W		
	FT834012A-15-2	FT834012E-15-2	15V/2A/30W		
	FT834012A-15-3	FT834012E-15-3	15V/3A/45W		
	FT834012A-20-1	FT834012E-20-1	20V/1A/20W		
	FT834012A-20-3	FT834012E-20-3	20V/3A/60W		

Optional information

Name	Model or Spec.	Description
Test wire 1	FT8340-TL03A	3A test wire/length 1.5 meter
Test wire 2	FT8340-TL10A	10A test wire/length 1.5 meter

General specification table

Basic characteristics		
Connection mode		Green PCB soldering terminal/Four wire system wiring
Dimension		2U/19"
Sampling frequency		20Hz
Communication interface		LAN、RS485
Communication protocol		SCPI、Modbus
Transport protocol		TCP/IP
Input voltage		Single phas, 100 ~240Va, 50/60Hz
Environmental characteristics	Working temperature	0~40℃
	Storage temperature	-25℃~60℃
	Working humidity	20%rh~ 85%rh (No condensation)
	Storage humidity	＜90%rh (No condensation)
	Use environment	Altitude < 2000m, indoor use

Specification table-1

Model		FT834012A-6-1	FT834012A-6-2	FT834012A-6-3	FT834012A-6-5
Voltage *1		±6V	±6V	±6V	±6V
Current		±1A	±2A	±3A	±5A
Power		6W	12W	18W	30W
Input impedance		≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ
Number of channels		12CH	12CH	12CH	12CH
Maximum series connection		The maximum series output voltage does not exceed 1000V, and the hosts can be connected in			
Voltage parameter	Output range	0~6.12V			
	Output accuracy	0.01%+0.6mV			
	Resolution	0.1mV			
	Measurement accuracy	0.01%+0.6mV			
	Resolution	0.1mV			
	Rise time	≤1ms			
	Temperature coefficient	25ppm/ ℃			
Current parameters (double range)					
Rang 1	Output range	-1~1A	-2~2A	-3~3A	-5~5A
	Measurement accuracy	0.05%+0.5mA	0.05%+1mA	0.05%+1.5mA	0.05%+2.5mA
	Resolution	0.1mA			
Rang 2	Output range	-1~1mA			
	Measurement accuracy	0.05%+0.5uA			
	Resolution	0.1uA			
Temperature coefficient		50ppm/ ℃			

DVM(digital voltage meter)*1			
Channels	12CH	Measurement accuracy	0.01%+0.01%F.S.
Measurement voltage range	-30V~+30V	Measurement frequency	20Hz
Measurement resolution	0.1mV	Input impedance	2MΩ
Connection terminal	Pluggable Terminal Blocks	Temperature coefficient	30ppm/ ℃
Fault simulation (Simulated test failure)*1			
Positive broken circuit, negative broken circuit, output short circuit, polarity reverse connection			

Notice：1. The functions described are only available for series A.

Specification table-2

Model		FT834012A-15-1	FT834012A-15-2	FT834012A-15-3
Voltage *1		±15V	±15V	±15V
Current		±1A	±2A	±3A
Power		15W	30W	45W
Input impedance		≥3GΩ	≥3GΩ	≥3GΩ
Number of channels		12CH	12CH	12CH
Maximum series connection		The maximum series output voltage does not exceed 1000V, and the hosts can be connected in series		
Voltage parameter	Output range	0~15.3V		
	Output accuracy	0.01%+1.5mV		
	Resolution	0.1mV		
	Measurement accuracy	0.01%+1.5mV		
	Resolution	0.1mV		
	Rise time	≤1ms		
	Temperature coefficient	25ppm/ ℃		
Current parameters (double range)				
Rang 1	Output range	-1~1A	-2~2A	-3~3A
	Measurement accuracy	0.05%+0.5mA	0.05%+1mA	0.05%+1.5mA
	Resolution	0.1mA		
Rang 2	Output range	-1~1mA		
	Measurement accuracy	0.05%+0.5uA		
	Resolution	0.1uA		
Temperature coefficient		50ppm/ ℃		

DVM(digital voltage meter)*1			
Channels	12CH	Measurement accuracy	0.01%+0.01%F.S.
Measurement voltage range	-30V～+30V	Measurement frequency	20Hz
Measurement resolution	0.1mV	Input impedance	2MΩ
Connection terminal	Pluggable Terminal Blocks	Temperature coefficient	30ppm/ ℃
Fault simulation (Simulated test failure)*1			
Positive broken circuit, negative broken circuit, output short circuit, polarity reverse connection			

Notice：*1. The functions described are only available for Series A.

Specification table-3

Model		FT834012A-20-1	FT834012A-20-3
Voltage *1		±20V	±20V
Current		±1A	±3A
Power		20W	60W
Input impedance		≥3GΩ	≥3GΩ
Number of channels		12CH	12CH
Maximum series connection		The maximum series output voltage does not exceed 1000V, and the hosts can be connected in series	
Voltage parameter	Output range	0～20.4V	
	Output accuracy	0.01%+2mV	
	Resolution	0.1mV	
	Measurement accuracy	0.01%+2mV	
	Resolution	0.1mV	
	Rise time	≤1ms	
	Temperature coefficient	25ppm/ ℃	
Current parameters (double range)			
Rang 1	Output range	-1～1A	-3～3A
	Measurement accuracy	0.05%+0.5mA	0.05%+1.5mA
	Resolution	0.1mA	
Rang 2	Output range	-1～1mA	
	Measurement accuracy	0.05%+0.5uA	
	Resolution	0.1uA	
Temperature coefficient		50ppm/ ℃	

DVM(digital voltage meter)*1			
Channels	12CH	Measurement accuracy	0.01%+0.01%F.S.
Measurement voltage range	-30V～+30V	Measurement frequency	20Hz
Measurement resolution	0.1mV	Input impedance	2MΩ
Connection terminal	Pluggable Terminal Blocks	Temperature coefficient	30ppm/ ℃
Fault simulation (Simulated test failure)*1			
Positive broken circuit, negative broken circuit, output short circuit, polarity reverse connection			

Notice：*1. The functions described are only available for Series A.

FT8350 series

Bidirectional battery cell simulating power supply

Features

- Voltage range: 6V/15V/20V;
- Current range: ±1A/±2A/±3A/±5A;
- Voltage accuracy up to 0.01% F.S;
- Dual current range, automatic switching;
- μA level measurement, capable of conducting static power consumption testing;
- Small size, high integration, 3U/24CH;
- The voltage temperature drift coefficient is less than 25ppm/℃;
- Unique fault simulation function, simulating battery disconnection, short circuit, reverse connection etc.(only for A series);
- Equipped with various functions such as charge and discharge testing, battery simulation, SOC simulation, pulse function etc;
- Isolation between channels, which can be used in series with multiple channels;
- Professional testing software that supports data reporting and analysis;
- Equipped with LAN, RS485,and CAN control interfaces;
- Support SCPI and Modbus protocol;
- The USB interface supports file import, export, and screenshot functions;
- 4.3 inch high-definition LCD screen, supporting local/remote control.

Support active and passive equalization

FT8350 series adopts current bidirectional design, each channel supports current output and suction, and the balanced current is up to 5A. The user can customize the battery charging and discharging model and conduct real-time control through a dedicated upper computer, which fully meets the requirements of BMS active/passive equalization test.

Summary

FT8350 series is a high-precision, multi-channel, dual quadrant programmable battery simulator. Voltage precision up to 0.01% F.S., support μA level current measurement: there are up to 24 channels in a device, and the channels are isolated from each other, which is convenient for serial use of multiple channels. The simulator supports power supply mode,static power consumption test function, charging mode, discharge mode, battery simulation, sequence test, pulse function and multiple fault simulation (only A series), which can not only meet the requirements of BMS test, but also meet the ATE test of consumer electronic products. The built-in upper computer software is easy to operate, flexible and easy to use. Support single channel programming operation, multi-channel editing operation and multi process programming operation.

The FT8350 series adopts a standard 19 inch chassis with a height of 3U, and provides LAN, RS485 and CAN communication interfaces, which is convenient for integrating into R&D and automated test platform, or can be used alone.

Application field

- BMS (Battery Management System) testing;
- CMS (Ultra Capacity Management System) testing;
- Consumer electronics testing such as headphones, mobile phones, tablets, e-cigarettes, etc;
- Production testing of electric tool products;
- Power supply testing for other types of electronic products.

Ultra high accuracy

FT8350 series has high precision and voltage precision is 0.01% F.S. Voltage resolution is as low as 0.1mV, current resolution is as low as 0.1 μ A. For the test of device power consumption in standby mode, the FT8350 has 0.1 μA current resolution measurement, can easily measure the standby current of uA level.

Static power consumption test

The FT8350 offers high precision voltage and current measurement. Two current ranges, current accuracy up to 1μA. By supplying power to the product under test through FT8350, the static power consumption of the product under test in standby state can be visually tested and unqualified products can be screened out.

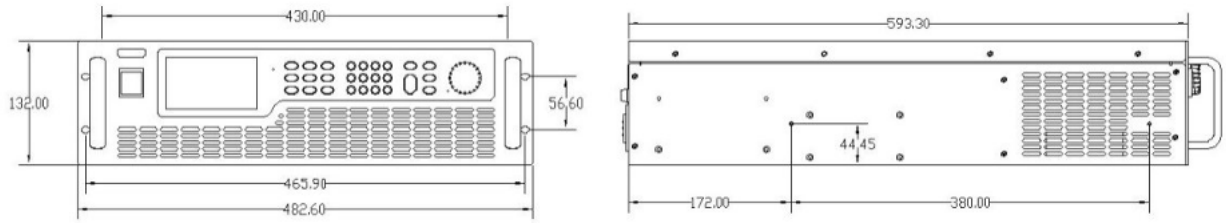
Various battery test functions

FT8350 series products have various battery simulation functions such as power mode, battery simulation, battery charging test, discharge test, fault simulation etc. Realize one device for multiple purposes, simplify test equipment and optimize test process. The user can also set the curve of cell parameters (SOC, voltage, capacity, internal resistance and other parameters fitting) to simulate the battery output for testing the products to be inspected.

Fault simulation function (A series)

FT8350 comes standard with fault simulation function per channel. A device has up to 24 independent output simulator channels, each of which can simulate fault functions such as positive/negative short circuit, positive/negative broken circuit, polarity reversal etc. By directly controlling through the upper computer software, the external matrix switch components that simulate battery failures are eliminated, saving space and valuable investment for users.

Dimension drawing



Order information

Channels	A series models	E series models	Spec.	Height	Remark
16CH	FT835016A-6-1	FT835016E-6-1	6V/±1A/6W, 16CHS	3U	Only Series A has fault simulation function
	FT835016A-6-2	FT835016E-6-2	6V/±2A/12W, 16 CHS	3U	
	FT835016A-6-3	FT835016E-6-3	6V/±3A/18W, 16 CHS	3U	
	FT835016A-6-5	FT835016E-6-5	6V/±5A/30W, 16 CHS	3U	
	FT835016A-15-1	FT835016E-15-1	15V/±1A/15W, 16 CHS	3U	
	FT835016A-15-2	FT835016E-15-2	15V/±2A/30W, 16 CHS	3U	
	FT835016A-20-1	FT835016E-20-1	20V/±1A/20W, 16 CHS	3U	
18CH	FT835018A-6-1	FT835018E-6-1	6V/±1A/6W, 18 CHS	3U	
	FT835018A-6-2	FT835018E-6-2	6V/±2A/12W, 18 CHS	3U	
	FT835018A-6-3	FT835018E-6-3	6V/±3A/18W, 18 CHS	3U	
	FT835018A-6-5	FT835018E-6-5	6V/±5A/30W, 18 CHS	3U	
	FT835018A-15-1	FT835018E-15-1	15V/±1A/15W, 18 CHS	3U	
	FT835018A-15-2	FT835018E-15-2	15V/±2A/30W, 18 CHS	3U	
	FT835018A-20-1	FT835018E-20-1	20V/±1A/20W, 18 CHS	3U	
24CH	FT835024A-6-1	FT835024E-6-1	6V/±1A/6W, 24 CHS	3U	
	FT835024A-6-2	FT835024E-6-2	6V/±2A/12W, 24 CHS	3U	
	FT835024A-6-3	FT835024E-6-3	6V/±3A/18W, 24 CHS	3U	
	FT835024A-6-5	FT835024E-6-5	6V/±5A/30W, 24 CHS	3U	
	FT835024A-15-1	FT835024E-15-1	15V/±1A/15W, 24 CHS	3U	
	FT835024A-15-2	FT835024E-15-2	15V/±2A/30W, 24 CHS	3U	
	FT835024A-20-1	FT835024E-20-1	20V/±1A/20W, 24 CHS	3U	

Optional information

Name	Model or specification	Description
Test wire	FT8350-TL05A	5A test wire/1.5m length

Specification table-1

model		FT835024A-6-1	FT835024A-6-2	FT835024A-6-3	FT835024A-6-5	FT835024A-15-1	FT835024A-15-2	FT835024A-20-1
voltage		±6V	±6V	±6V	±6V	±15V	±15V	±20V
current		±1A	±2A	±3A	±5A	±1A	±2A	±1A
power		6W	12W	18W	30W	15W	30W	20W
Input impedance		≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ
Number of channels		24CH	24CH	24CH	24CH	24CH	24CH	24CH
Maximum series connection		The maximum series output voltage does not exceed 1000V, and the hosts can be connected in series						
Voltage parameter	Output range	0~6.12V				0~15.3V		0~20.4V
	Output accuracy	0.5mV				1.5mV		2mV
	Resolution	0.1mV				0.1mV		0.1mV
	Measurement accuracy	0.5mV				1.5mV		2mV
	Resolution	0.1mV				0.1mV		0.1mV
	Rise time	≤1ms						
	Temperature coefficient	25ppm/℃						
Current parameters (double range)								
Range 1	Output range	-1~1A	-2~2A	-3~3A	-5~5A	-1~1A	-2~2A	-1~1A
	Measurement accuracy	0.05%+0.5mA	0.05%+1mA	0.05%+1.5mA	0.05%+2.5mA	0.05%+0.5mA	0.05%+1mA	0.05%+0.5mA
	Resolution	0.1mA						
Range 2	Output range	-1~1mA	-2~2mA	-3~3mA	-5~5mA	-1~1mA	-2~2mA	-1~1mA
	Measurement accuracy	0.05%+0.5uA	0.05%+1uA	0.05%+1.5uA	0.05%+2.5uA	0.05%+0.5uA	0.05%+1uA	0.05%+0.5uA
	Resolution	0.1uA						
Temperature coefficient		50ppm/℃						
Other characteristics								
Connection mode		PCB soldering terminal/four wire system wiring						
Dimension		3U/19"						
Sampling frequency		20Hz						
Communication interface		LAN、RS485、CAN						
Communication protocol		SCPI、Modbus						
Transport protocol		TCP/IP						
Fault simulation		Positive broken circuit, negative broken circuit, output short circuit, polarity reverse connection						
Input voltage		Single phase, 100～240Vac, 50/60Hz						
Environmental characteristics	Working temperature	0～40℃						
	Storage temperature	-25℃～60℃						
	Working humidity	20%rh～85%rh (No condensation)						
	Storage humidity	＜90%rh (No condensation)						
	Use environment	Altitude < 2000m, indoor use						
	Dimension	430 (W) * 594(D) * 132(H)mm						
	Weight	20kg						

Specification table-2

Model		FT835024E-6-1	FT835024E-6-2	FT835024E-6-3	FT835024E-6-5	FT835024E-15-1	FT835024E-15-2	FT835024E-20-1
Voltage		6V	6V	6V	6V	15V	15V	20V
Current		±1A	±2A	±3A	±5A	±1A	±2A	±1A
Power		6W	12W	18W	30W	15W	30W	20W
Input impedance		≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ	≥3GΩ
Number of channels		24CH	24CH	24CH	24CH	24CH	24CH	24CH
Maximum series connection		The maximum series output voltage does not exceed 1000V, and the hosts can be connected in series						
Voltage parameter	Output range	0~6.12V				0~15.3V		0~20.4V
	Output accuracy	0.5mV				1.5mV		2mV
	Resolution	0.1mV				0.1mV		0.1mV
	Measurement accuracy	0.5mV				1.5mV		2mV
	Resolution	0.1mV				0.1mV		0.1mV
	Rise time	≤1ms						
	Temperature coefficient	25ppm/℃						
Current parameters (double range)								
Rang 1	Output range	-1~1A	-2~2A	-3~3A	-5~5A	-1~1A	-2~2A	-1~1A
	Measurement accuracy	0.05%+0.5mA	0.05%+1mA	0.05%+1.5mA	0.05%+2.5mA	0.05%+0.5mA	0.05%+1mA	0.05%+0.5mA
	Resolution	0.1mA						
Rang 2	Output range	-1~1mA	-2~2mA	-3~3mA	-5~5mA	-1~1mA	-2~2mA	-1~1mA
	Measurement accuracy	0.05%+0.5uA	0.05%+1uA	0.05%+1.5uA	0.05%+2.5uA	0.05%+0.5uA	0.05%+1uA	0.05%+0.5uA
	Resolution	0.1uA						
Temperature coefficient		50ppm/℃						
Other characteristics								
Connection mode		PCB soldering terminal/four wire wiring						
Dimension		3U/19"						
Sampling frequency		20Hz						
Communication interface		LAN、RS485、CAN						
Communication protocol		SCPI、Modbus						
Transport protocol		TCP/IP						
Input voltage		Single phase, 100~240Vac, 50/60Hz						
Environmental characteristics	Working temperature	0～40°C						
	Storage temperature	-25°C～60°C						
	Working humidity	20%rh～85%rh (No condensation)						
	Storage humidity	＜90%rh (No condensation)						
	Use environment	Altitude < 2000m, indoor use						
	Dimension	430 (W) * 594(D) * 132 (H) mm						
	Weight	20kg						

FT8360 series

Battery charge and discharge

Summary

FT8360 series battery charge and discharge equipment is a professional charge and discharge test equipment specially developed for high current/high power performance test. It is suitable for the performance test evaluation, cycle life verification, product model selection and other applications of large-capacity lithium-ion batteries and lithium-ion capacitors.

FT8360 series products adopt the latest technical solutions, with high energy conversion efficiency, high voltage and current accuracy, fast dynamic current response, multi-current range automatic current classification, high equipment power density, equipment use safety factor. Returnable high current cycle life test highlights the importance of energy conversion efficiency of equipment, which not only reduces power demand, but also reduces a lot of heat generation. It can reduce the power distribution demand for the laboratory, save the cost of running power and air conditioning, and improve the utilization rate of the experiment site.

In terms of safety, FT8360 series has multiple protection for each channel. The independent circuits are detected with redundancy to prevent over voltage of the battery cell when a single device fails, strengthening laboratory safety. In addition, the system will automatically identify and protect the inevitable human factors in the process of battery feeding and unloading.

Characteristic

- Modular design, each module for an independent channel;
- Each channel can detect different types of batteries, and completely independently work in different modes, without affecting each other;
- High measurement accuracy, voltage, current accuracy of 0.03%F.S.;
- With multiple current range, can automatically switch the range;
- With fast current response, response time ≤3ms;
- The discharge energy can be recovered, the efficiency is up to 80%;
- High-speed data recording, interval time 10ms;
- With multi-channel parallel function, parallel current up to 2400A;
- The channel has complete software and hardware multilevel protection.
- Multi-function recorder and thermostatic/wet box can be integrated;
- Professional testing software to support data reporting and data analysis.

Application Field

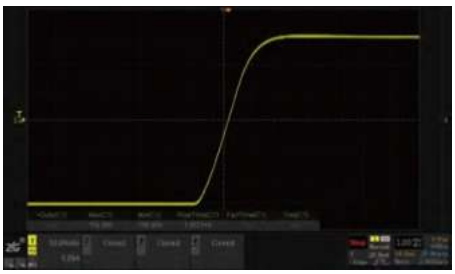
- Battery (cell) production;
- Battery research and testing;
- Battery quality test;
- Working condition simulation test;
- Battery echelon recovery, etc.

Energy Feedback

FT8360 series products have the function of feedback load, which can return the discharge energy of the tested battery to the factory Intranet for direct use, rather than dissipate it as heat. Its energy feedback conversion efficiency is as high as 80%, which can not only greatly reduce the cost of electricity for users, but also avoid the use of air conditioning and other refrigeration systems and reduce noise.

Current fast response

FT8360 series can achieve fast current response. The response time between -90% and +90% is within 3ms. The fast current response ability can simulate the actual working condition more accurately.

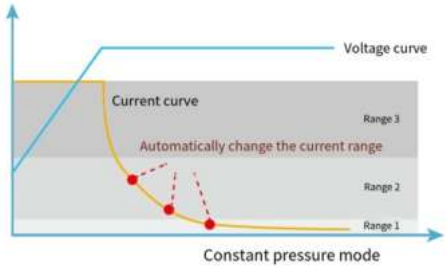


High precision measurement

The FT8360 series has high accuracy with voltage resolution as low as 0.1mV and voltage measurement accuracy of 0.03%F.S. Current measurement accuracy is 0.03%F.S. Higher measurement accuracy provides more accurate and efficient data for testing.

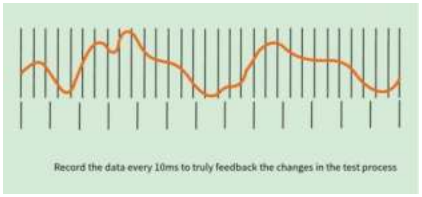
Multi-current range automatic switching

To achieve higher current measurement accuracy, FT8360 series has multiple current ranges, and each current range can be automatically switched.



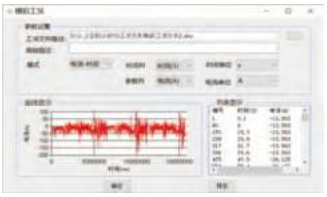
10ms Data collection interval

FT8360 series has high-speed data acquisition capability, which can realize the acquisition interval of 10ms and capture the transient changes of test data.



Computer graphical operation software

FT8360 series provides a test software for upper computer, which can realize test step editing, centralized control, real-time reading of test data, generating images, exporting reports, printing reports, etc., which is convenient for users to use.



Ordering information

Channel number	Model	Specification
16CH	FT836016-5-60	5V/±60A
16CH	FT836016-5-100	5V/±100A
8CH	FT836008-5-200	5V/±200A
8CH	FT836008-5-300	5V/±300A
4CH	FT836004-5-600	5V/±600A
2CH	FT836002-5-1200	5V/±1200A

Optional information

Option 1

Product type	Model	Size (W*H*D) mm	Note
Cabinet	FT8360-CAB19	720*1900*750	4 single units can be installed
	FT8360-CAB13	720*1300*750	2 single units can be installed

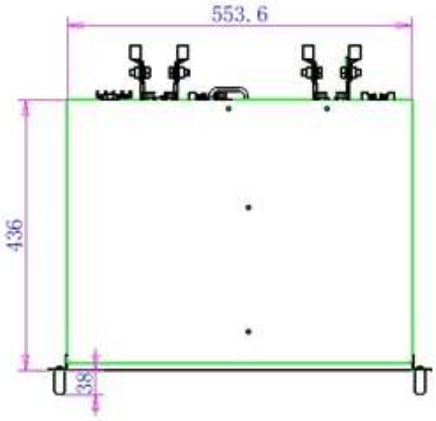
Option 2

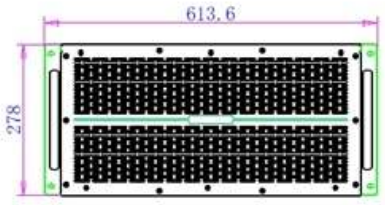
Product type	Model	Voltage	Pressure	Temperature measurement
Auxiliary measurement channels	FT8360-AUX01	2CH	2CH	6CH
		Notes:	Auxiliary voltage measurement channel: 2CH, range: -8V~8V, sampling period: 10ms, accuracy: ±1.5mV (25℃±10℃);	
			Auxiliary pressure measurement channel: 2CH, range: 0-10T/0-3mV/V, accuracy: <0.2%F.S. (25℃±10℃);	
			Auxiliary temperature measurement channel: 6CH (NTC RTD), range: -40℃～125℃, accuracy: ±0.5℃;	

Specification table

Bidirectional power supply models	FT836016-5-60	FT836016-5-100	FT83608-5-200	FT83608-5-300	FT836004-5-600	FT836002-5-1200
Channel number	16CH	16CH	8CH	8CH	4CH	2CH
Voltage range	Charge 0V～5V, discharge 1V～5V					
Voltage resolution	0. 1mV（24bit）					
Voltage accuracy	±0. 03%F. S. @25℃±10℃					
Charge/discharge current range	±60A	±100A	±200A	±300A	±600A	±1200A
Current resolution	0. 1mA（24bit）					
Current level	±30A/±60A	±30A/±50A/ ±100A	±60A/±100A/ ±200A	±50A/±200A/ ±300A	±100A/±400A/ ±600A	±200A/±800A/ ±1200A
Current precision	±0. 03%F. S. @25℃±10℃					
Current precision	±0. 05%F. S. @25℃±10℃					
Power resolution	1mW					
Fastest sampling time for main channel	10ms					
Current response time	<3ms (10% to ±90% F.S., battery load)					
Current switching time	<5ms (-90%FS～+90%F.S., battery load)					
Charging efficiency	81% (highest efficiency for 2V-4.2V battery voltage), 85% (highest efficiency for 5V battery voltage)					
Discharge efficiency	79% (highest efficiency for 2V-4.2V battery voltage), 82% (highest efficiency for 5V battery voltage)					
Hardware protection	Battery reverse connection protection, string protection, short circuit protection, protection function for bad contact detection					
Software protection	Setting safety protection conditions, including: upper and lower voltage limits, upper and lower current limits, upper capacity limit, delay time, work step time, temperature, pressure, water-cooling conditions of warm box, etc. Offline test function, power-down data protection (save current work step data), incoming call renewal protection, abnormal voltage trend protection, abnormal voltage fluctuation protection, etc.					
Charging mode	Constant current, constant voltage, constant current and voltage, constant power, limit following					
Cut-off conditions	Voltage, current, step time, capacity, temperature, pressure, custom variables					
Discharge mode	Constant current, constant power, constant resistance, constant current and constant voltage, limit following					
Cut-off conditions	Constant current, constant power, constant resistance, constant current and constant voltage, limit following					
Other modes	Simulated operating conditions, DC internal resistance testing, pulsing, temperature chamber configuration, shelving, cycling, pause					
Cyclic nesting	Nested loops with a minimum of 5 levels of nesting					
Auxiliary voltage protection channel	Accuracy ±1mV(25℃+10℃), 10ms sampling rate, -8V～8V, leakage current＜0.03uA, input impedance＞200MΩ, one for each main channel.					
Auxiliary pressure protection channel	Accuracy＜0.2%F.S.(25℃±10℃),0～10T/0～3mV/V, each main channel can be configured with one at most.					
Auxiliary temperature protection channel	(NTC type) accuracy ± 0.5 ℃ (25 ℃ + 20 ℃), -40 ℃ ～ 125 ℃, 500ms sampling rate, each main channel is configured with up to 4 NTC temperature detection.					
(NTC or thermocouple)	(Thermocouple type) Accuracy ±1℃ (25℃+20℃), -70℃～250℃, 500ms sampling rate, each main channel can be configured with up to 3 K-type or T-type thermocouples.					
Mechanical dimension (W*H*D)	630mm*278mm*520mm					
Machine weight	＜65kg					

Dimension drawing





FTPF series

Programmable AC power supply

Features

- Adopt modular power supply design with high power density, small size and light weight, which is one tenth volume of traditional (transformer) power supply;
- Output frequency range: 1-550Hz;
- With high-precision measurement, it can measure root mean square voltage Vrms, root mean square current Irms, active power W, frequency Hz, power factor PF, peak current Ipeak, etc.
- Adopt DDS digital waveform synthesis design, output high-precision voltage, extremely low waveform distortion;
- Including 50 harmonic editing function;
- With phase angle and initial angle editing function;
- 5V TTL level detection is available in voltage leap, phase leap and frequency leap, convenient for users to monitor sudden change conditions;
- Use touch screen and knob operation, convenient for parameter setting;
- Provide PC upper computer operation software to edit waveform, online voltage leap, frequency leap and phase leap setting;
- It has RS232, RS485, CAN2.0B and LAN communication interfaces.

Summary

FTPF series adopts digital control technology, modular power design, high power density, small size, and greatly reduces the failure rate. Its advanced direct digital frequency synthesizer (DDS) waveform generation technology,can obtain high stability and continuity of output frequency, and the output frequency range is 1-550Hz.

FTPF series has independent adjustable three-phase voltage and frequency, editable harmonics, adjustable initial phase and online variable phase and strong adaptability to nonlinear loads.In addition, the FTPF series provides a precise measurement function, which can measure the root mean square voltage Vrms, root mean square current Irms, active power W, frequency Hz, power factor PF, peak current Ipeak etc.

FTPF series has a variety of communication interfaces such as RS232, RS485, CAN, LAN, etc. It provides rich test functions and simple human-computer interface, and it is widely used in high-power test scenarios such as automotive electronics, energy storage, and automated testing.

Application field

- Home appliance field: test and durability experiment of home appliance products;
- Communication field: communication power supply, for communication electronic products testing and aging;
- Aerospace and aviation: testing and power supply of aerospace and avionics products;
- Research field: testing and electrical experiments of scientific research institutions, colleges, certification institutions and other institutions;
- Laboratories, production lines, charging rooms, aging rooms and other places that need long-term stable AC power supply;
- Automatic test field: AC power output and test product power supply in automatic test system.

Ordering information

Product type	Model	Input	Output	Phase voltage	Phase current	Power	Dimension
Single-phase in single-phase out	FTPF1103	1φ2W+G	1φ2W+G	0-350V	18A	3KVA	2U
	FTPF1105	1φ2W+G	1φ2W+G	0-350V	30A	5KVA	2U
	FTPF1110	1φ2W+G	1φ2W+G	0-350V	60A	10KVA	4U
Three-phase in single-phase out	FTPF3110	3φ4W+G	1φ2W+G	0-350V	60A	10KVA	2U
	FTPF3115	3φ4W+G	1φ2W+G	0-350V	90A	15KVA	4U
	FTPF3130	3φ4W+G	1φ2W+G	0-350V	180A	30KVA	4U
Three-phase in single-phase out	FTPF1310	1φ2W+G	3φ4W+G	0-350V	20A	10KVA	4U
Three-phase in three-phase out	FTPF3315	3φ4W+G	3φ4W+G	0-350V	30A	15KVA	6U
	FTPF3330	3φ4W+G	3φ4W+G	0-350V	60A	30KVA	6U
	FTPF3360	3φ4W+G	3φ4W+G	0-350V	90A	60KVA	900(W)*1750(H)*900(D)
	FTPF33100	3φ4W+G	3φ4W+G	0-350V	151A	100KVA	800(W)*2000(H)*1050(D)
	FTPF33150	3φ4W+G	3φ4W+G	0-350V	227A	150KVA	1100(W)*1650(H)*850(D)
	FTPF33200	3φ4W+G	3φ4W+G	0-350V	303A	200KVA	1300(W)*2000(H)*1250(D)
	FTPF33250	3φ4W+G	3φ4W+G	0-350V	378A	250KVA	1400(W)*2000(H)*1350(D)
	FTPF33300	3φ4W+G	3φ4W+G	0-350V	453A	300KVA	1400(W)*2000(H)*1350(D)
	FTPF33450	3φ4W+G	3φ4W+G	0-350V	680A	450KVA	800(W)*2000(H)*1050(D)*3
	FTPF33600	3φ4W+G	3φ4W+G	0-350V	906A	600KVA	1300(W)*2000(H)*1250(D)*3
	FTPF33900	3φ4W+G	3φ4W+G	0-350V	1356A	900KVA	1300(W)*2000(H)*1250(D)*3

Optional accessories

Name	Model or Spec.	Description
Extended frequency optional part	Suffix G	Output frequency 1Hz～1000Hz

Specification table-1

Model		FTPF1103	FTPF1105	FTPF1110	FTPF3110	FTPF3115	FTPF3130	FTPF1310
Capacity		3KVA	5KVA	10KVA	10KVA	15KVA	30KVA	10KVA
Production mode		SPWM						
INPUT								
Phase		1φ2W+G			3φ4W+G			1φ2W+G
Voltage		220V±20%			380V±20%			220V±20%
Frequency		47Hz - 63Hz						
PFC		0. 99 Max						
THDI		⩽3%						
OUTPUT								
Phase		1φ2W+G						3φ4W+G
Phase φ		A φ: 0-360°; B φ: 0-360°; C φ: 0-360°; 0.5°Step, three phase phase angle is independently adjustable, dynamic phase is adjustable, and low power grid crossing						
Start angle		A: 0-360°; B: 0-360°; C: 0-360°; 0.5°Step three phase initial angle is independently adjustable						
Harmonic edit		2-50 Times						
Voltage		A: 0-350VAC; B: 0-350VAC; C: 0-350VAC; 0.1v Step,three phase voltage is independently adjustable						
Current		18A	30A	60A	60A	90A	180A	20A
Frequency		1Hz-550Hz						
Efficiency		93%(typical)						
Linear regulation		0. 01%						
Load regulation		0. 20%						
T. H. D		0.5%@pure resistive load, 0.9%@Non-linear load						
Transient recovery time		<1ms (voltage 10%-90%)						
Frequency regulation		0. 01%						
Voltage resolution		0. 1V						
Frequency resolution		0. 01Hz						
Current resolution		0. 01A						
Measurement accuracy	Voltage	0. 2%F. S. +5dgt						
	Current	0. 2%F. S. +5dgt						
	Wattage	0. 2%F. S. +5dgt						
	Frequency	0. 01%F. S. +5dgt						
Setting accuracy	Voltage	0. 1%F. S.						
	Current	0. 01%F. S.						
Volt programming mode		Step mode, gradual change mode, abrupt change mode						
Freq programming mode		Step mode, gradual change mode, abrupt change mode						
Phase programming mode		Step mode, gradual change mode, abrupt change mode						
Communication interface		RS232、RS485、LAN						
Current limited(I-LIM) set		0-Max Current						
Input and output isolation		Input to Output 2500V withstand voltage						
Auxiliary test function		Voltage jump, frequency jump, phase jump, 5V TTL 1mS Pulse						
OUTPUT ON/OFF		5V TTL						
Protection		Over current protection, over voltage protection, over temperature protection,overload protection, short circuit protection						
Cooling		Air cooling						
Environment		-10℃～50℃/10%～90%RH						

Specification table-2

Model		FTPF3315	FTPF3330	FTPF3360	FTPF33100	FTPF33150	FTPF33200	FTPF33250
Capacity		15KVA	30KVA	60KVA	100KVA	150KVA	200KVA	250KVA
Production mode		SPWM						
INPUT								
Phase		3φ4W+G						
Voltage		380V±20%						
Frequency		47Hz - 63Hz						
PFC		0. 99 Max						
THDI		⩽3%						
OUTPUT								
Phase		3φ4W+G						
Phase φ		A φ: 0-360°; B φ: 0-360°; C φ: 0-360°; 0.5°Step, three phase phase angle is independently adjustable, dynamic phase is adjustable, and low power grid crossing						
Start angle		A: 0-360°; B: 0-360°; C: 0-360°; 0.5°Step three phase initial angle is independently adjustable						
Harmonic edit		2-50 Times						
Voltage		A: 0-350VAC; B: 0-350VAC; C: 0-350VAC; 0.1v Step,three phase voltage is independently adjustable						
Current		30A	60A	90A	151A	227A	303A	378A
Frequency		1Hz-550Hz		40Hz-120Hz				
Linear regulation		0. 01%						
Load regulation		0. 20%						
Efficiency		93%(typical)						
Energy feedback		100% Energy return						
T. H. D		0.5% @ purely resistive loads, 0.9% @ non-linear loads						
Transient recovery time		<1ms (voltage 10%-90%)						
Frequency regulation		0. 01%						
Voltage resolution		0. 1V						
Frequency resolution		0. 01Hz						
Current resolution		0. 01A						
Measurement accuracy	Voltage	0. 2%F. S. +5dgt						
	Current	0. 2%F. S. +5dgt						
	Wattage	0. 2%F. S. +5dgt						
	Frequency	0. 01%F. S. +5dgt						
Setting accuracy	Voltage	0. 1%F. S.						
	Current	0. 01%F. S.						
Volt programming mode		Step mode, gradual change mode, abrupt change mode						
Freq programming mode		Step mode, gradual change mode, abrupt change mode						
Phase programming mode		Step mode, gradual change mode, abrupt change mode						
Communication interface		RS232、RS485、TCP/IP						
Current limited(I-LIM) set		0-Max Current						
Input and output isolation		Input to Output 2500V withstand voltage						
Auxiliary test function		Voltage jump, frequency jump, phase jump, 5V TTL 1mS Pulse						
OUTPUT ON/OFF		5V TTL						
Protection		Over current protection, over voltage protection, over temperature protection, overload protection, short circuit protection						
Cooling		Air cooling						
Environment		-10℃～50℃/10%～90%RH						

Specification table-3

Model		FTPF33300	FTPF33450	FTPF33600	FTPF33900
Capacity		300KVA	450KVA	600KVA	900KVA
Production mode		SPWM			
INPUT					
Phase		3φ4W+G			
Voltage		380V±20%			
Frequency		47Hz - 63Hz			
PFC		0. 99 Max			
THDI		≤3%			
OUTPUT					
Phase		3φ4W+G			
Phase φ		A φ: 0-360°; B φ: 0-360°; C φ: 0-360°; 0.5°Step, three phase phase angle is independently adjustable, dynamic phase is adjustable, and low power grid crossing			
Start angle		A: 0-360°; B: 0-360°; C: 0-360°; 0.5°Step three phase initial angle is independently adjustable			
Harmonic edit		2-50 Times			
Voltage		A: 0-350VAC; B: 0-350VAC; C: 0-350VAC; 0.1v Step,three phase voltage is independently adjustable			
Current		453A	680A	906A	1356A
Frequency		40Hz-120Hz			
Linear regulation		0. 01%			
Load regulation		0. 20%			
Efficiency		93%(typical)			
Energy feedback		100% Energy return			
T. H. D		0.5% @ purely resistive loads, 0.9% @ non-linear loads			
Transient recovery time		<1ms (voltage 10%-90%)			
Frequency regulation		0. 01%			
Voltage resolution		0. 1V			
Frequency resolution		0. 01Hz			
Current resolution		0. 01A			
Measurement accuracy	Voltage	0. 2%F. S. +5dgt			
	Current	0. 2%F. S. +5dgt			
	Wattage	0. 2%F. S. +5dgt			
	Frequency	0. 01%F. S. +5dgt			
Setting accuracy	Voltage	0. 1%F. S.			
	Current	0. 01%F. S.			
Volt programming mode		Step mode, gradual change mode, abrupt change mode			
Freq programming mode		Step mode, gradual change mode, abrupt change mode			
Phase programming mode		Step mode, gradual change mode, abrupt change mode			
Communication interface		RS232、RS485、TCP/IP			
Current limited(I-LIM) set		0-Max Current			
Input and output isolation		Input to Output 2500V withstand voltage			
Auxiliary test function		Voltage jump, frequency jump, phase jump, 5V TTL 1mS Pulse			
OUTPUT ON/OFF		5V TTL			
Protection		Over current protection, over voltage protection, over temperature protection, overload protection, short circuit protection			
Cooling		Air cooling			
Environment		-10℃～50℃/10%～90%RH			

FTPS series

Programmable bidirectional AC power supply(Feedback power grid simulator)

Features

- Bidirectional converter and energy feedback can provide 100% rated current feedback;
- Adopt modular power supply design, with high power density, small size and light weight, which is one tenth of the volume of traditional (transformer) power supply;
- Output frequency range: 1-550Hz;
- With high-precision measurement, it can measure root mean square voltage Vrms, root mean square current Irms, active power W, frequency Hz, power factor PF, peak current Ipeak etc;
- Adopt DDS digital waveform synthesis design，output high-precision voltage，extremely low waveform distortion;
- Including 50 harmonic editing function;
- With phase angle and initial angle editing function;
- 5V TTL level detection is available in voltage leap, phase leap and frequency leap,convenient for users to monitor sudden change conditions;
- Use touch screen and knob operation,convenient for parameter setting;
- Provide PC upper computer operation software to edit waveform, online voltage leap, frequency leap and phase leap setting;
- It has RS232, RS485, and LAN communication interfaces.

Summary

FTPS series programmable bidirectional AC power supply (feedback power grid simulator) can not only realize the Source function, but also feed back the energy generated by EUT to the power grid to realize bidirectional flow of energy.

FTPS series adopts digital control technology, modular power design, high power density, small size, and greatly reduces the failure rate. Its advanced direct digital frequency synthesizer (DDS) waveform generation technology makes the output frequency stable and continuous, and the output frequency range is 1-550Hz. In addition, the FTPS series provides a precise measurement function, which can measure the root mean square voltage Vrms, root mean square current Irms, active power W, frequency Hz, power factor PF, peak current Ipeak, etc.

FTPS series has a variety of communication interfaces such as RS232, Rs485, LAN etc. It provides rich test functions and simple human-computer interface, and is widely used in high-power test scenarios such as automotive electronics, energy storage and automated testing.

Application field

- Home appliance field: test and durability experiment of home appliance products;
- Communication field: communication power supply, for communication electronic products testing and aging;
- Aerospace and aviation: testing and power supply of aerospace and avionics products;
- Research field: testing and electrical experiments of scientific research institutions, colleges, certification institutions and other institutions;
- Laboratories, production lines, charging rooms, aging rooms and other places that need long-term stable DC power supply;
- Automatic test field: DC power output and test product power supply in automatic test system.

Ordering information

Product type	Model	Input	Output	Phase voltage	Phase current	Power	Dimension
Three phase input single phase output	FTPS3105	3φ4W+G	1φ2W+G	0-350V	30A	5KVA	4U
	FTPS3110	3φ4W+G	1φ2W+G	0-350V	60A	10KVA	4U
	FTPS3115	3φ4W+G	1φ2W+G	0-350V	90A	15KVA	4U
Three phase input three phase output	FTPS3315	3φ4W+G	3φ4W+G	0-350V	30A	15KVA	8U
	FTPS3330	3φ4W+G	3φ4W+G	0-350V	60A	30KVA	8U
	FTPS3360	3φ4W+G	3φ4W+G	0-350V	90A	60KVA	900(W)*1750(H)*900(D)
	FTPS33100	3φ4W+G	3φ4W+G	0-350V	151A	100KVA	1100(W)*2000(H)*1050(D)
	FTPS33150	3φ4W+G	3φ4W+G	0-350V	227A	150KVA	1300(W)*2000(H)*1250(D)
	FTPS33200	3φ4W+G	3φ4W+G	0-350V	303A	200KVA	1300(W)*2000(H)*1250(D)
	FTPS33250	3φ4W+G	3φ4W+G	0-350V	378A	250KVA	1400(W)*2000(H)*1350(D)
	FTPS33300	3φ4W+G	3φ4W+G	0-350V	453A	300KVA	1400(W)*2000(H)*1350(D)
	FTPS33450	3φ4W+G	3φ4W+G	0-350V	680A	240KVA	800(W)*2000(H)*1050(D)*3
	FTPS33600	3φ4W+G	3φ4W+G	0-350V	906A	240KVA	1300(W)*2000(H)*1250(D)*3
	FTPS33900	3φ4W+G	3φ4W+G	0-350V	1356A	240KVA	1300(W)*2000(H)*1250(D)*3

Specification table-1

Model		FTPS3105	FTPS3110	FTPS3115	FTPS3315	FTPS3330	FTPS3360	FTPS33100
Capacity		5KVA	10KVA	15KVA	15KVA	30KVA	60KVA	100KVA
Production mode		SPWM						
INPUT								
Phase		3φ4W+G						
Voltage		380V±20%						
Frequency		47Hz – 63Hz						
PFC		0. 99 Max						
THDI		⩽5%						
OUTPUT								
Phase		1φ2W+G			3φ4W+G			
Phase φ		φ： 0–360°			A φ: 0-360°; B φ: 0-360°; C φ: 0-360°; 0.5°Step Three-phase phase angle independently adjustable, dynamic phase adjustable, low grid crossing			
Start angle		0–360°			A : 0-360°; B : 0-360°; C : 0-360°; 0.5°Step 3-phase start angle independently adjustable			
Harmonic edit		2–50 Times						
Phase voltage		0–350VAC			A: 0-350VAC; B: 0-350VAC; C: 0-350VAC; 0.1v Step three-phase voltage independently adjustable			
Phase current		30A	60A	90A	30A	60A	90A	151A
Frequency		1Hz–550Hz					40Hz–120Hz	
Efficiency		93%(typical)						
Energy feedback		100%energy feedback						
Linear regulation		0. 01%						
Load regulation		0. 20%						
T. H. D		0.5%@pure resistive load, 0.9%@Non-linear load						
Transient recovery time		<1ms (voltage 10%-90%)						
Frequency regulation		0. 01%						
Voltage resolution		0. 1V						
Frequency resolution		0. 01Hz						
Current resolution		0. 01A						
Measurement accuracy	Voltage	0. 2%F. S. +5dgt						
	Current	0. 2%F. S. +5dgt						
	Wattage	0. 2%F. S. +5dgt						
	Frequency	0. 01%F. S. +5dgt						
Setting accuracy	Voltage	0. 1%F. S.						
	Current	0. 01%F. S.						
Volt programming mode		Step mode, gradual change mode, abrupt change mode						
Freq programming mode		Step mode, gradual change mode, abrupt change mode						
Phase programming mode		Step mode, gradual change mode, abrupt change mode						
Communication interface		RS232、RS485、LAN						
Current limited (I-LIM) set		0–Max Current						
Input and output isolation		Input to Output 2500V withstand voltage						
Auxiliary test function		Voltage jump, frequency jump, phase jump, 5V TTL 1mS Pulse						
OUTPUT ON/OFF		5V TTL						
Protection		Over current protection, over voltage protection, over temperature protection, overload protection, short circuit protection						
Cooling mode		Air cooling						
Environment		–10℃～50℃/10%～90%RH						

Specification table-2

Model		FTPS33150	FTPS33200	FTPS33250	FTPS33300	FTPS33450	FTPS33600	FTPS33900
Capacity		150KVA	200KVA	250KVA	300KVA	450KVA	600KVA	900KVA
Production mode		SPWM						
INPUT								
Phase		3φ4W+G						
Voltage		380V±20%						
Frequency		47Hz – 63Hz						
PFC		0. 99 Max						
THDI		⩽5%						
OUTPUT								
Phase		3φ4W+G						
Phase φ		A φ: 0-360°; B φ: 0-360°; C φ: 0-360°; 0.5°Step Three-phase phase angle independently adjustable, dynamic phase adjustable, low grid ride through						
Start angle		A : 0-360°; B : 0-360°; C : 0-360°; 0.5°Step Three-phase start angle independently adjustable						
Harmonic edit		2–50 Times						
Voltage		A: 0-350VAC; B: 0-350VAC; C: 0-350VAC; 0.1v Step three-phase voltage independently adjustable						
Current		227A	303A	378A	453A	680A	906A	1356A
Frequency		40Hz–120Hz						
Linear regulation		0. 01%						
Load regulation		0. 20%						
Efficiency		93% (typical)						
Energy feedback		100% energy feedback						
T. H. D		0.5%@pure resistive load, 0.9%@Non-linear load						
Transient recovery time		<1ms (voltage 10%-90%)						
Frequency regulation		0. 01%						
Voltage resolution		0. 1V						
Frequency resolution		0. 01Hz						
Current resolution		0. 01A						
Measurement accuracy	Voltage	0. 2%F. S. +5dgt						
	Current	0. 2%F. S. +5dgt						
	Wattage	0. 2%F. S. +5dgt						
	Frequency	0. 01%F. S. +5dgt						
Setting accuracy	Voltage	0. 1%F. S.						
	Current	0. 01%F. S.						
Volt programming mode		Step mode, gradual change mode, abrupt change mode						
Freq programming mode		Step mode, gradual change mode, abrupt change mode						
Phase programming mode		Step mode, gradual change mode, abrupt change mode						
Communication interface		RS232、RS485、TCP/IP						
Current limited (I-LIM) set		0–Max Current						
Input and output isolation		Input to Output 2500V withstand voltage						
Auxiliary test function		Voltage jump, frequency jump, phase jump, 5V TTL 1mS Pulse						
OUTPUT ON/OFF		5V TTL						
Protection		Over current protection, over voltage protection, over temperature protection, overload protection, short circuit protection						
Cooling		Air cooling						
Environment		–10℃～50℃/10%～90%RH						

FT series

Programable AC variable frequency power supply

Features

- Digital fr0equency synthesizer (DDS) waveform generation technology, high frequency stability, good continuity;
- High measurement accuracy, suitable for current sinusoidal half wave and its similar with DC component of various waveform test;
- Full range of adjustable output voltage 1 ~ 150V/1 ~ 300V, resolution 0.1V;
- Output frequency 45 ~ 400Hz, resolution 0.1Hz;
- With 6 groups (M1-M6) data saving and calling function, can store common parameters, so as to easily call when in use;
- Protection mode: over voltage, over current, overload, short circuit, etc.;
- Measuring function: voltage RMS, current RMS, active power, frequency, power factor, etc.;
- Strong overload capacity, instant current can withstand 3 times of rated current;
- One can perform 100 groups of different voltage, frequency, rise time, running time setting, and can be used for continuous 60000 cycle test; (touch screen custom function)
- With RS232 or RS485 communication interface choice, (LAN port is optional), instruction execution time is less than 10ms.

Summary

FT series program controlled AC frequency conversion power supply, microprocessor as the core, using SPWM production, sine pulse width modulation technology, single capacity covers 1kVA-60kVA, output voltage 1 ~ 300V, frequency 45 ~ 400Hz stepless digital adjustable output can simulate different voltages and frequencies around the world. The product has the characteristics of strong load adaptability, good output waveform quality, easy operation, small size and light weight.

This series of frequency conversion power supply products adopt IGBT module group design, reduce circuit complexity, improve product stability, reduce power loss. At the same time, the product with high precision voltage, current, power, frequency meter, source meter integration, high performance-price ratio, suitable for all kinds of AC source effect test automation system, laboratory, measuring room and so on for a variety of precision testing.

Application fields

- Automated testing system;
- Computer and monitor equipment testing;
- Fluorescent lamp ballast testing;
- Production quality assurance/life testing;
- Motor equipment and various motor products testing;
- Switched DC power supply testing;
- Household electrical equipment testing;
- Transformer/TRIAC/SCR and other component testing.

Ordering information

Product type	Model	Input	Output	Power
Single phase input, single phase output	FT1101	1φ2W+PE	1φ2W+PE	1KVA
	FT1103	1φ2W+PE	1φ2W+PE	3KVA
	FT1105	1φ2W+PE	1φ2W+PE	5KVA
	FT1110	1φ2W+PE	1φ2W+PE	10KVA
3 phase input, single phase output	FT3110	3φ4W+PE	1φ2W+PE	10KVA
	FT3115	3φ4W+PE	1φ2W+PE	15KVA
	FT3120	3φ4W+PE	1φ2W+PE	20KVA
	FT3130	3φ4W+PE	1φ2W+PE	30KVA
Single phase input, 3 phase output	FT1306	1φ2W+PE	3φ4W+PE	6KVA
	FT1309	1φ2W+PE	3φ4W+PE	9KVA
3 phase input, 3 phase output	FT3310	3φ4W+PE	3φ4W+PE	10KVA
	FT3315	3φ4W+PE	3φ4W+PE	15KVA
	FT3320	3φ4W+PE	3φ4W+PE	20KVA
	FT3330	3φ4W+PE	3φ4W+PE	30KVA
	FT3345	3φ4W+PE	3φ4W+PE	45KVA
	FT3360	3φ4W+PE	3φ4W+PE	60KVA

Optional information

Name	Model or Spec.	Description
485 interface	Suffix R	Either RS232 or RS485

General specification table

Item	Parameters
Work mode	SPWM
Communication interface	Either RS232 or Rs485
Limited current setting	0-Max Current
Output protection	Over current, over temperature, over load, short protection
Memory	6 groups
Operation environment	0-40℃，20-80%RH

Specification table-1

Model		FT1101	FT1103	FT1105	FT1110	FT1306	FT1309
Power		1kVA	3kVA	5kVA	10kVA	6kVA	9kVA
AC input							
Phase		1φ2W+PE					
Voltage		220V±10%					
Frequency		47Hz～63Hz					
AC output							
Phase		1φ2W+PE				3φ4W+PE	
Voltage		0～150VAC /0～300VAC				Phase voltage 1 to 150VAC/1 to 300VAC Line voltage 1～260VAC/1～520VAC	
Frequency		45～400Hz, each step 0.1Hz					
Output current	L=120V	8.4A	25A	42A	84A	16.8A	25A
	H=240V	4.2A	12.5A	21A	42A	8.4A	12.5A
Line regulation		1%F. S.					
Load regulation		1%F. S.					
Frequency stability		0.10%					
Total harmonic distortion (T.H.D)		≤2% (Pure resistive load)					
Voltage resolution		0.1V					
Frequency resolution		0.1Hz					
Current resolution		0.01A					
Measurement accuracy	voltage	0.5% + 0.5% F.S.					
	current	0.5% + 0.5% F.S.					
	frequency	0.05% F.S.					
	power	0.5% + 0.5% F.S.					
Setting accuracy	voltage	0.2%F.S.					
	frequency	0.1%F.S.					
Three-phase phase difference		none				120°±2°	
Dimension(W*H*D)mm		430×160×430	430×235×500	380×600×520	430×700×520	500×1000×680	
Weight(Kg)		25	Wooden box 41 (carton 38)	74	105	150	165

Specification table-2

Model		FT3110	FT3115	FT3120	FT3130
Power		10kVA	15kVA	20kVA	30kVA
AC input					
Phase		3φ4W+PE			
Voltage		380V±10%			
Frequency		47Hz～63Hz			
AC output					
Phase		1φ2W+G			
Voltage		0~150VAC/0~300VAC			
Frequency		45～65Hz, step 0.1Hz (optional 45-400Hz)			
Output current	L=120V	84A	125A	168A	250A
	H=240V	42A	62.5A	84A	125A
Line regulation		1%F. S.			
Load regulation		1%F.S.			
Frequency stability		0.1%			
Total harmonic distortion (T.H.D)		≤2% (Pure resistive load)			
Voltage resolution		0.1V			
Frequency resolution		0.1Hz			
Current resolution		0.1A	0.1A		
Measurement accuracy	voltage	0.5%+0.5F.S.			
	current	0.5%+0.5F.S.			
	frequency	0.05%F.S.			
	power	0.5%+0.5%F.S.			
Setting accuracy	voltage	0.2%F.S.			
	frequency	0.1%F.S.			
Dimension(W*H*D)mm		430×700×520	480×900×600	520×1200×820	520×1200×820
Weight(Kg)		105	152	230	255

Specification table-3

Model		FT3310	FT3315	FT3320	FT3330	FT3345	FT3360
Power		10kVA	15kVA	20kVA	30kVA	45kVA	60kVA
AC input							
Phase		3φ4W+PE					
Voltage		380V±10%					
Frequency		47Hz~63Hz					
AC output							
Phase		3φ4W+PE					
Voltage		Phase voltage 1~150VAC/1~300VAC, line voltage 1~260VAC/1~520VAC					
Frequency		45～65Hz, step 0.01Hz (optionally 45-400Hz)					
Output current	L=120V	27.8A	42A	56A	84A	125A	166.6A
	H=240V	13.9A	21A	28A	42A	62.5A	83.3A
Line regulation		1%F.S.					
Load regulation		1%F.S.					
Frequency stability		0.1%					
Total harmonic distortion (T.H.D)		≤2% (Pure resistive load)					
Voltage resolution		0.1V					
Frequency resolution		0.1Hz					
Current resolution		0.1A					
Measurement accuracy	voltage	0.5%+0.5%F.S.					
	current	0.5%+0.5%F.S.					
	frequency	0.05%F.S.					
	power	0.5%+0.5%F.S.					
Setting accuracy	voltage	0.2%F.S.					
	frequency	0.1%F.S.					
Three-phase phase difference		120°±2°					
Dimension(W*H*D)mm		500X1000X680	500×1000×680		590×1237×800	720×1357×1100	720×1357×1100
Weight(Kg)		95	200	220	308	460	510

FTM7200

Power meter

Features

- The measuring accuracy reaches 0.2%;
- Large LCD display;
- Communication interface standard with standard USB/RS232/RS485;
- 50 harmonic test;
- Nine test parameters on the same screen display;
- The measurement speed is fast, the fastest 0.1S refresh rate;
- AC and DC universal broadband range design, DC~2kHz bandwidth, better load adaptability;
- Reliable, stable, small size, light weight.

5-inch true color LCD high-definition screen display, test data at a glance

Multiple test parameters and the current setting status can be displayed at the same time, which is convenient for users to monitor and analyze the status of the power supply in real time.

Real-time display of electric energy test data

The watt-hour and amp-hour accumulative data can be displayed in real time.

Summary

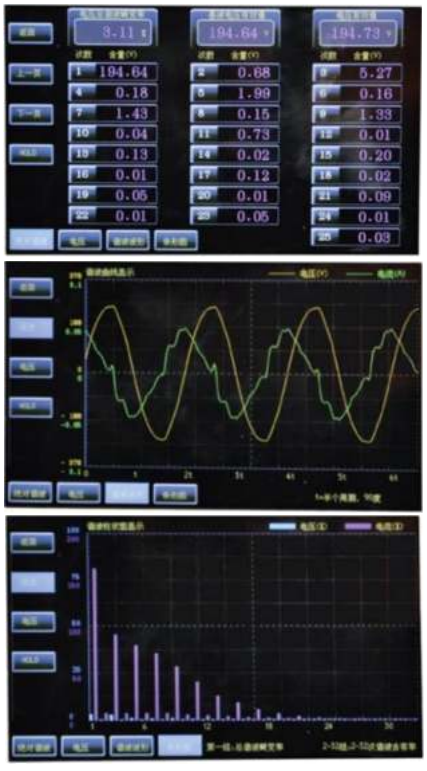
The FTM7200 is a new touch screen power meter with advanced 32-bit high-speed processor and dual-channel 24-bit AD converter. It has the features of high precision, wide dynamic range, compact structure and dexterity. With the continuous introduction of new energy efficiency standards, are around how to improve the energy saving performance of the fierce competition, the product is an essential power measurement instrument for many enterprises to evaluate the energy saving performance of equipment, with high precision, ultra-low standby power consumption measurement and other characteristics, but also support RS232/485, USB communication interface, greatly meet the user's different test communication needs.

Application fields

- Home appliance testing;
- UPS power supply test;
- Engine testing;
- Energy star test;
- Charging pile Test;
- Photovoltaic wind power testing;
- Switching power supply test;

Multi-mode display 50 voltage and current harmonic test data

Can test the absolute harmonics and relative harmonics of voltage and current respectively, three display modes: data list, waveform chart, bar chart.



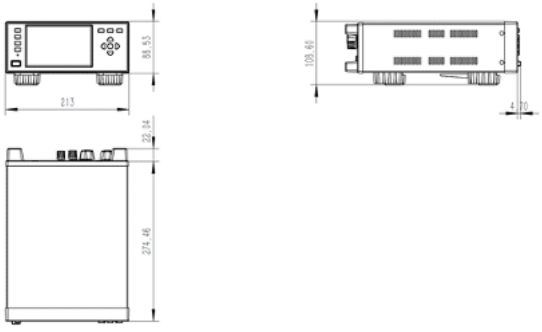
Ordering infromation

Model	Measurement voltage range	Measurement current range	Measurement system	Measurement accuracy	Measurement frequency	Harmonic analysis
FTM7200	0. 5V～600V	0. 05mA～40A	Single-phase	0. 2%	DC, 0. 5～2kHz	Maximum 50

Specification table

General specification table				
Item / Parameters	Specification description			
Measurement accuracy	0. 20%			
Input mode	Voltage and current are floating inputs			
Display mode	LCD screen (touch screen control)			
Display updates	Display refresh cycle 0.1 seconds -5 seconds can be set			
A/D conversion	The sampling period is about 70μS, 24 bit, and the voltage and current are sampled simultaneously			
Input impedance	The voltage input impedance is about 2MΩ, the current input impedance is low 0.5Ω, and the high grade is about 4MΩ. The input impedance of the external sensor signal input terminal changes according to the input voltage, which is about 100kΩ at 10V and 20kΩ at 2V			
Measurement mode	RMS(true RMS), AC(AC), DC (DC), V-MEAN (current rectified average, true RMS of current)			
Overall power consumption	<10VA			
Working power supply	AC100V-240V 45-440Hz DC100V-300V			
Communication port	Standard USB/RS232/RS485			
Dimensions	215mm x 88mm x 300mm (width x height x depth) (without packaging)			
Weight	About 2. 8kg			
Electrical parameter table				
Items	Measurement range	Inaccuracies		Minimum resolution
Voltage	0. 5V-600V	DC ±(0.1% of reading + 0.2% of range)		0. 001V
		0.5Hz≤f≤45Hz ±(0.1% of reading + 0.2% of range)		
		45Hz≤f≤66Hz ±(0.1% of reading + 0.1% of range)		
Current	0. 05mA-40A	66Hz≤f≤1kHz ±(0.1% of reading + 0.2% of range)		0. 001mA
Power	U*I*PF	DC ±(0.1% of reading + 0.2% of range)		0. 001mW
		0.5Hz≤f≤45Hz ±(0.3% of reading + 0.2% of range)		
		45Hz≤f≤66Hz ±(0.1% of reading + 0.1% of range)		
		66Hz≤f≤1kHz ±(0.2% of reading + 0.2% of range)		
Power factor	0. 01-1. 000	0. 5Hz≤f≤66Hz±0. 01		0. 001
		66Hz≤f≤1kHz±0. 02		
Frequency	DC, 0. 5Hz-2kHz	0.1%* of reading, when signal value is greater than 0.1* current range		0. 001Hz
Electrical energy accumulation	0～999999mWh 0～-999999mWh	DC ±(0.1% of reading + 0.2% of range)		0. 0001mWh
		0.5Hz≤f≤45Hz ±(0.3% of reading + 0.2% of range)		
		45Hz≤f≤66Hz ±(0.1% of reading + 0.1% of range)		
		66Hz≤f≤1kHz ±(0.1% of reading + 0.2% of range)		
Amperage accumulation	0～999999mAh 0～-999999mAh	DC ±(0.1% of reading + 0.2% of range)		0. 0001mAh
		0.5Hz≤f≤45Hz ±(0.1% of reading + 0.2% of range)		
		45Hz≤f≤66Hz ±(0.1% of reading + 0.1% of range)		
		66Hz≤f≤1kHz ±(0.1% of reading + 0.2% of range)		
Power chronograph	99999h	±2S/h		1S
Harmonics	1-50 times Accuracy level: Level B ICE61000-4-7	Maximum number of base wave frequency analyses		0. 0001
		10-65Hz	50	
		65-100Hz	32	
		100-200Hz	16	
		200-400Hz	8	

Dimension drawing



FTS4000

Multi-channel power load test system

Characteristic

- Can realize the automatic control and continuous monitoring of the multi-channel power-on process and the loading process;
- Timing control function, can customize each power output size and time step;
- Unique battery curve charge and discharge function, trickle charge, floating charge, standard charge, rate charge and charging time and termination current threshold setting, one power supply can easily achieve different battery material types of battery charging scenarios;
- Each line of equipment is isolated and independently controlled;
- Each power supply/load equipment model, range, power level can be arbitrarily matched, greatly convenient selection;
- Each equipment has perfect equipment protection function;
- High performance, low ripple noise programmed power supply;
- Adaptive constant voltage or constant current output, automatic switching working state;
- Standard power supply equipment, communication server port can be unlimited expansion;
- The user interface is simple and beautiful, the system appearance is customized design;
- Open software, hardware equipment can be added, adjusted and configured according to requirements;
- Real-time monitoring of channel data, graphical display of device information, record saving and call of test data, export into Excel file for saving.

Application field

- Multiplexed dynamic aging of electronic devices;
- Multi-way reliability experiments on electronic devices;
- Multiplex dynamic aging of electronic products;
- Multi-circuit reliability experiment of electronic products;
- Charge/discharge test of battery, capacitor;
- Charge/discharge test of battery core, capacitor core;
- Various electronic product experiments, aging.

Summary

FTS4000 multi-channel power load test system is a set of multichannel test system based on Faith's comprehensive power supply and electronic load product line, combined with Faith's automatic data acquisition control board. The system is a professional equipment designed for power load aging, testing and other application scenarios, which greatly simplifies field operation and improves test efficiency.

FTS4000 multi-channel power supply load system is equipped with high-performance programmable DC power supply load series and reliable industrial industrial control equipment, can locally and remotely control a single or multiple power supplies, to achieve high precision control and measurement of voltage and current, output timing control function, custom experiment step, voltage current power protection function, voltage remote compensation, Graphic real-time voltage, current and power display, output data saving and calling, etc.

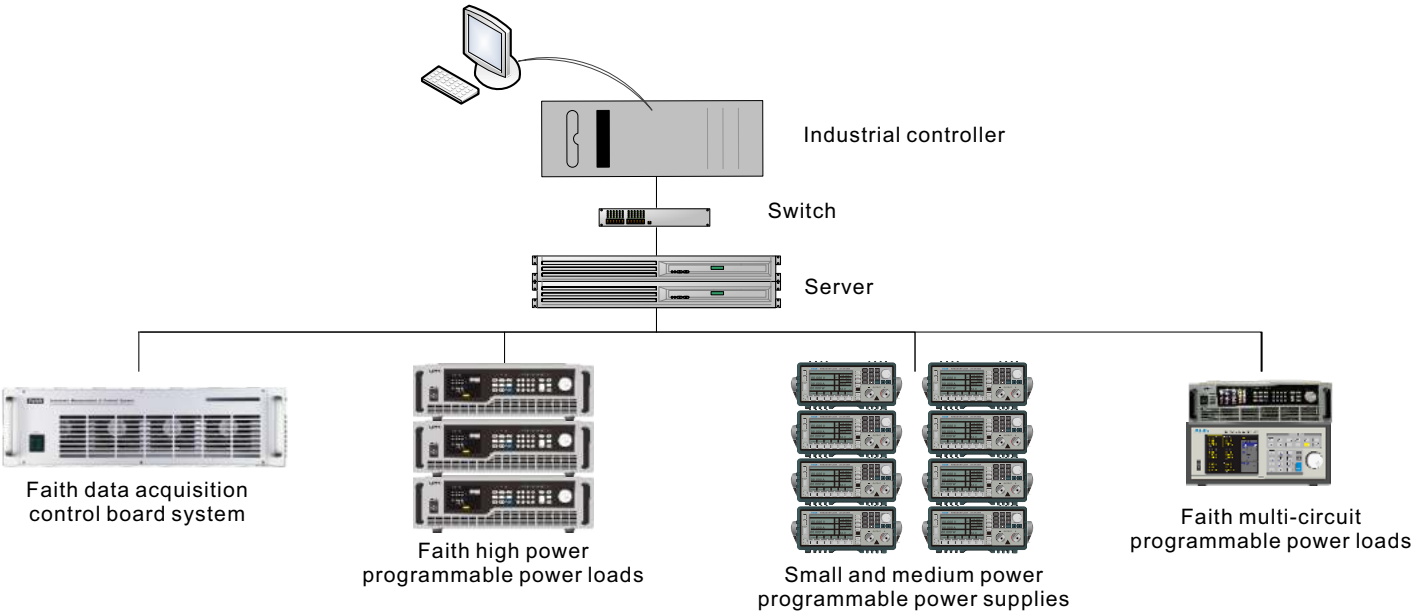
The configuration flexibility of the FTS4000 multi-channel power load system is high, and the user can flexibly choose according to the test demand, which can effectively control the test cost.

Professional system software

According to customer requirements, FTS4000 system provides users with an open software architecture suitable for a wide range of applications. Users can edit the test steps and control one or more power supplies/loads at the same time to test the power supply of the device under test.

- Open software, hardware equipment can be added, adjusted and configured according to requirements;
- Can edit the voltage, current and running timing of each channel power supply/load to realize complex on-load test;
- Automatically calculates line voltage drop, equivalent resistance and power loss during harness testing;
- Can display real-time information such as voltage, current, running time series of each channel;
- The test curve can be displayed in real time, and the test data can be exported to Excel file for saving.

Test system architecture



Recommended test equipment

DC power supplies

- FTL series
  Output range (stand-alone): 0～600V/0～110A/0～1500W

- FTP3000 series
  Output range (stand-alone): 0～600V/0～80A/0～1500W

- FTP series
  Output range (stand-alone): 0～1500V/0～240A/0～6500W

- FTG series
  Output range (stand-alone): 0～1500V/0～12000A/0～120,000W

- FT9000 series
  Output range (stand-alone): 0～2250V/0～6120A/5～180kW

- FT8330A
  Stand-alone: 2U/up to 24CH
  Output range (stand-alone): 0 to 6V/0 to 1A/0 to 6W

Electronic loads

- FT6200 series
  Output range (stand-alone): 0～500V/0～30A/0～300W

- FT6300 series
  Output range (stand-alone): 0～500V/0～240A/0～1800W

- FT66100 series
  Output range (stand-alone): 0～500V/0～120A/0～600W

- FT6400 series
  Output range (stand-alone): 0～1200V/0～2100A/0～6kW

- FT68200 series
  Output range (stand-alone): 0～1200V/0～2400A/5～60kW

- FT6100A
  Output range (stand-alone): 0～500V/0～120A/0～1080W

FT-SCA/SCE series

High precision current sensor

Features

- Adopt multi-point zero flux technology, with high precision, small zero offset and high linearity;
- Current range: ± 60A/± 200A/± 600A/± 1000A/± 1500A/± 2000A/± 3000A;
- High precision, current precision 10ppm;
- With temperature compensation technology, the temperature stability is 0.1ppm/K;
- AC/DC universal, which can measure AC, DC and pulse current;
- Primary and secondary side isolation measurement;
- No warm-up time;
- Wide band measurement, with the maximum measurement bandwidth of 500kHz;
- Low response time, minimum dynamic response time 1us.

Application fields

- Medical equipment: scanner, MRI;
- Electric Power: converter, inverter;
- New energy: photovoltaic, wind energy;
- Automobiles: electric vehicles;
- Ship: electric driven ship;
- Measurement: verification and calibration;
- Industrial control: industrial motor drive, robot;
- Rail transit: high-speed trains, subways, trams and trolleybus;
- DC excitation system measurement.

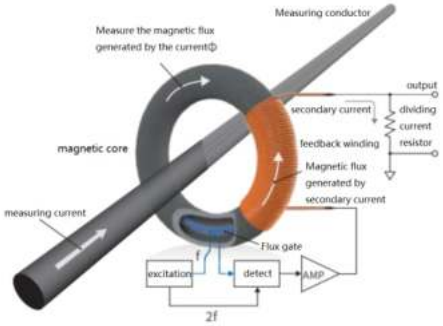
Summary

FT-SCA and SCE series high-precision current sensor is a current sensor that can measure DC, AC, pulse and various irregular waveforms under the condition that the primary side and secondary side are completely isolated. FT-SCA and SCE series adopts multi-point zero flux technology to control the excitation flux, DC flux and AC flux in a zero flux closed loop, and realizes the detection of high-frequency ripple by constructing a high-frequency ripple induction channel, so that the sensor has relatively high gain and measurement accuracy in the full bandwidth range.

The FT-SCA and SCE series is mainly used in the fields of metrological verification and calibration that require high accuracy, as well as power quality analysis, power analyzer, medical treatment, aerospace, rail transit and other fields that require high sensitivity, stability and reliability.

Multipoint zero magnetic flux technology

The magnetic core reaches the magnetic balance state by excitation. When the measuring current flows through the wire, breaking the magnetic balance, the flux gate will generate the excitation current, and the signal will drive the compensation coil after amplification, so that the magnetic flux in the magnetic core and the magnetic flux generated by the measuring current will cancel each other and remain in the "zero" state, that is, the so-called "zero flux" state.



Ordering information

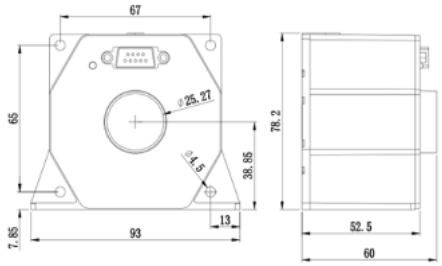
Model	Rated input	Primary overload current	transformation ratio	Rated output of secondary side	Bandwidth	Accuracy	Linearity	Working power supply	Diameter of hole
	（A）	（A）		（A）	（kHz）	（ppm）	（ppm）	（V）	（mm）
FT-SCA60	±60A	±72A	600：1	±0. 1A	500	10	2	±15Vdc±5%	φ25
FT-SCA200	±200A	±240A	1000：1	±0. 2A	500	10	2	±15Vdc±5%	φ25
FT-SCA600	±600A	±720A	1500：1	±0. 4A	500	10	2	±15Vdc±5%	φ38
FT-SCA1000	±1000A	±1200A	1500：1	±0. 67A	500	10	2	±15Vdc±5%	φ38
FT-SCA1500	±1500A	±1800A	1000：1	±1. 5A	500	10	2	±15Vdc±5%	φ38
FT-SCA2000	±2000A	±2200A	2000：1	±1A	100	50	20	±15Vdc±5%	φ70
FT-SCA3000	±3000A	±3300A	3000：1	±1A	100	50	20	±15Vdc±5%	φ70
FT-SCA5000	±5000A	±5500A	5000：1	±1A	50	50	20	220Vac±10%	φ160
FT-SCA8000	±8000A	±8800A	4000：1	±2A	50	50	20	220Vac±10%	φ120
FT-SCA10000	±10000A	±11000A	5000：1	±2A	20	100	20	220Vac±10%	φ120
FT-SCE60	±60A	±72A	600：1	±0. 1A	100	200	20	±15Vdc±5%	φ26
FT-SCE200	±200A	±240A	2000：1	±0. 1A	100	200	20	±15Vdc±5%	φ26
FT-SCE600	±600A	±720A	1500：1	±0. 4A	100	200	20	±15Vdc±5%	φ42
FT-SCE1000	±1000A	±1200A	1500：1	±0. 667A	100	200	20	±15Vdc±5%	φ38
FT-SCE1500	±1500A	±1600A	1000：1	±1. 5A	100	200	20	±15Vdc±5%	φ38

Optional information

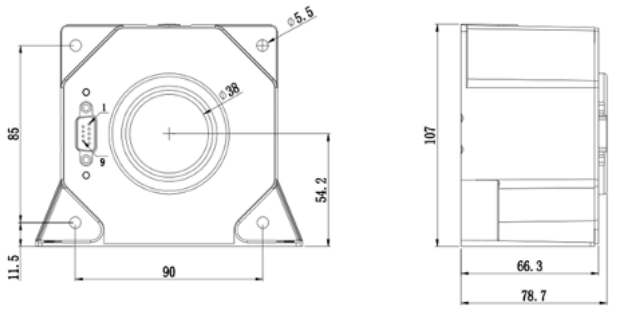
Name	Model or specification	Note
Sensor power supply box	FT-SC01	Single-channel power supply
Sensor power supply box	FT-SC04	Four-channel power supply

Dimension drawing

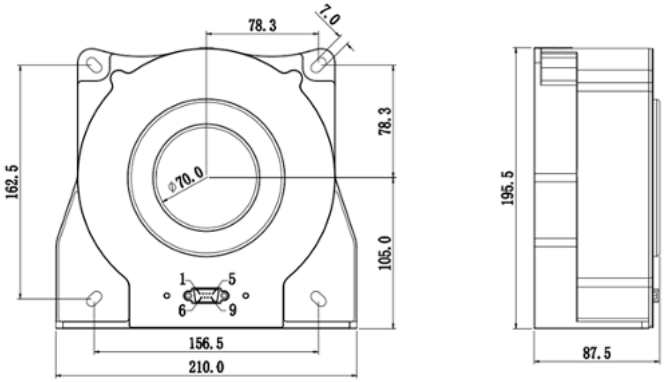
Dimensional drawing of FT-SCA 60A～200A current sensor:



Dimensional drawing of FT-SCA 600A～1500A current sensor:



Dimensional drawing of FT-SCA 2000A～3000A current sensor:

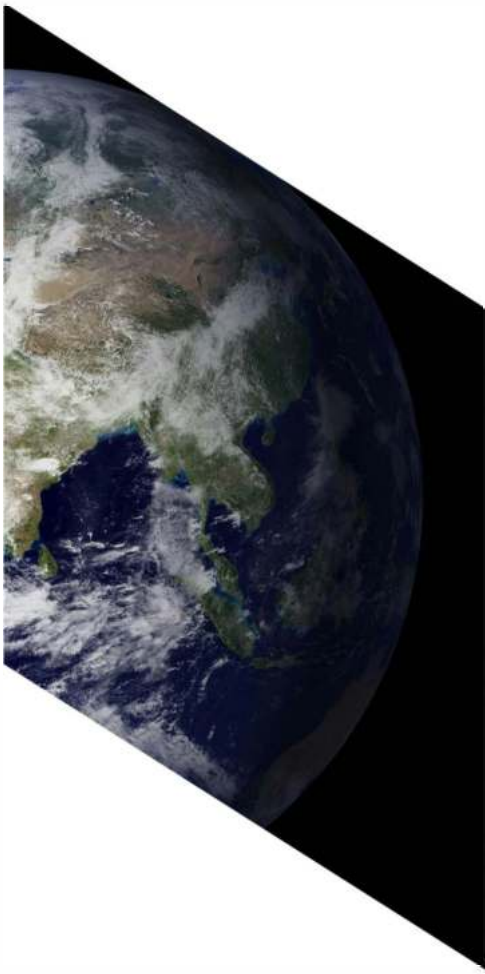


Specification table-1

Model	FT-SCA60	FT-SCA200	FT-SCA600	FT-SCA1000	FT-SCA1500	FT-SCA5000	FT-SCA10000
Electrical performance							
Rated DC current of primary side (I_{PN_DC})	±60A dc	±200A dc	±600A dc	±1000A dc	±1500A dc	±5000A dc	±10000A dc
Rated AC current of primary side*1 (I_{PN})	42. 4A ac	141A ac	424A ac	707A ac	1060A ac	3535A ac	7072A ac
Primary side overload current*2 (I_{PM})(≤1min)	±72A dc	±240A dc	±720A dc	±1300A dc	±1800A dc	±5500A dc	±11000A dc
Working voltage(V_C)	±14. 2V～±15. 8V					220V ac	220V ac
Power consumption current (I_{PWR})	±30mA ～ ±150mA	±30mA ～ ±270mA	±30mA ～ ±510mA	±30mA ～ ±830mA	±30mA ～ ±1630mA	210mA	±100mA ～ ±2500mA
Current ratio (K_N) (input: output)	600:1	1000:1	1500:1	1500:1	1000:1	5000:1	5000:1
Rated output current(I_{SN})	±0. 1A	±0. 2A	±0. 4A	±0. 67A	±1. 5A	±1A	±2A
Measuring resistance(R_M)	0Ω～60Ω, Nominal 20Ω	0Ω～30Ω, Nominal 10Ω	0Ω～5Ω, Nominal 2.5Ω	0Ω～3Ω, Nominal 1.5Ω	0Ω～2Ω, Nominal 1Ω	0Ω～1.5Ω, Nominal 1Ω	0Ω～1Ω, Nominal 0.5Ω
Precision measurement							
Accuracy*3(X_G)	10ppm					50ppm	100ppm
Linearity(ε_L)	2ppm					20ppm	
Temperature stability(T_C)	0. 1ppm/K					0. 1ppm/K	
Time stability(T_T)	0. 2ppm/month					0. 2ppm/month	
Power supply anti-interference	1ppm/V					1ppm/V	
Zero offset current(I_O)	1ppm@25℃					1ppm@25℃	
Ripple current(I_N)	0. 5ppm(DC-10Hz)					0. 5ppm(DC-10Hz)	
Dynamic response time(t_r)	1us(di/dt=100A/μs, rising to 90% I_{PN})					1us(di/dt=100A/μs, rising to 90% I_{PN})	
Current change rate(di/dt) (MIN)	100A/us	100A/us	100A/us	200A/us	100A/us	100A/us	200A/us
Frequency bandwidth(-3dB)	DC-500kHz					DC-50kHz	DC-20kHz
Zero offset current(I_{OT})	±5μA						±10μA
Security features							
Isolation voltage / between primary and secondary(V_D)	5kV（50Hz, 1min）						
Transient isolation withstand voltage / between primary and secondary side(V_W)	10kV（50us）						
General characteristic							
Operating temperature range(T_A)	-40℃～85℃						
Storage temperature range(T_S)	-40℃～85℃						
Relative humidity	20% ～80%RH						
Threading hole diameter(mm)	φ25	φ25	φ38	φ38	φ38	φ160	φ120
Weight	470g±50g	480g±50g	1150g±80g	1150g±80g	1150g±80g	28kg±2. 25kg	28kg±2. 25kg

Specification table-2

Model	FT-SCE60	FT-SCE200	FT-SCE600	FT-SCE1000	FT-SCE1500
Electrical performance					
Rated DC current of primary side (I_{PN_DC})	±60A dc	±200A dc	±600A dc	±1000A dc	±1500A dc
Rated AC current of primary side*1 (I_{PN})	42. 4A ac	141A ac	424A ac	707A ac	1060A ac
Primary side overload current*2 (I_{PM})(≤1min)	±72A dc	±240A dc	±720A dc	±1300A dc	±1600A dc
Working voltage(V_C)	±14. 2V～±15. 8V				
Power consumption current (I_{PWR})	±30mA～±150mA	±30mA～±150mA	±30mA～±510mA	±30mA～±830mA	±30mA～±1630mA
Current ratio (K_N) (input: output)	600:1	2000:1	1500:1	1500:1	1000:1
Rated output current(I_{SN})	±0. 1A	±0. 1A	±0. 4A	±0. 667A	±1. 5A
Measuring resistance(R_M)	0Ω ～ 60Ω, Nominal 10Ω	0Ω ～ 25Ω, Nominal 10Ω	0Ω ～ 5Ω, Nominal 2Ω	0Ω ～ 3Ω, Nominal 1.5Ω	0Ω ～ 2Ω, Nominal 1Ω
Precision measurement					
Accuracy*3(X_G)	200ppm				
Linearity(ε_L)	20ppm				
Zero offset current(I_O)	±5uA@25℃				
Dynamic response time(t_r)	1us(di/dt=100A/μs, rising to 90% I_{PN})				
Current change rate(di/dt) (MIN)	200A/us				
Frequency bandwidth(-3dB)	DC-100kHz				
Zero offset current(I_{OT})	±10μA				
Security features					
Isolation voltage / between primary and secondary(V_D)	5kV（50Hz, 1min）				
Transient isolation withstand voltage / between primary and secondary side(V_W)	10kV（50us）				
General characteristic					
Operating temperature range(T_A)	-40℃～85℃				
Storage temperature range(T_S)	-40℃～85℃				
Relative humidity	20%～80%RH				
Threading hole diameter(mm)	φ26	φ26	φ42	φ38	φ38
Weight	370g±50g	420g±50g	1000g±80g	1100g±80g	1150g±80g



Faith
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