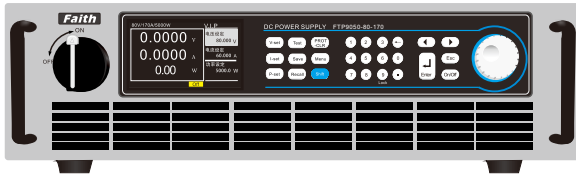


FTP9000 series

Wide range high power programmable DC power supply

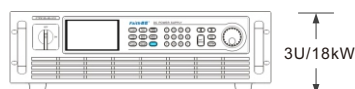


Features

- 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.

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.



Brief description

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.

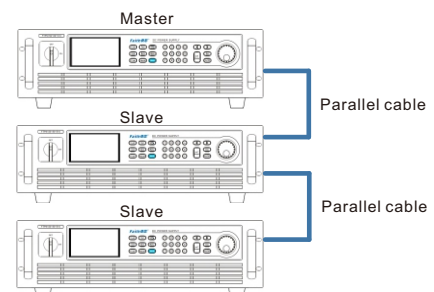
FTP9000 series has LAN/RS485/CAN/GPIB/USB(serial port) interface, which supports both SCPI protocol and standard ModBus-RTU protocol, and then with built-in isolated data/mode control interface, which brings great application diversity and convenience for system integration applications.

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.

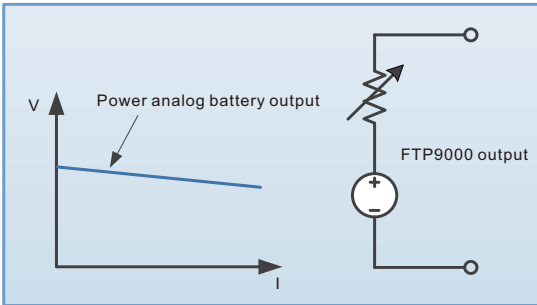
Master and slave parallel function

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.



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.



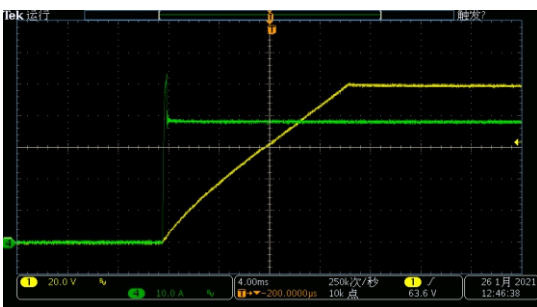
Analog programming function

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.



CV, CC preferred

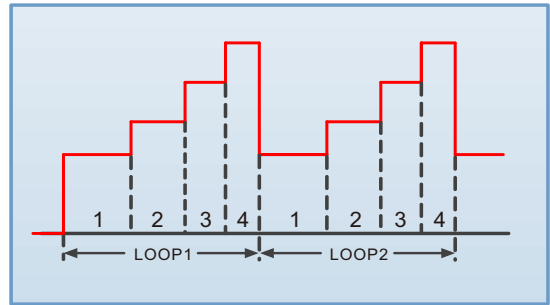
When the power output is connected to the inductive or capacitive load, the output current or voltage will overshoot to a certain extent, which will trigger the protection of the device under test, or even damage the device under test. FTP9000 series with CV, CC output priority function to effectively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



CV priority (high speed build voltage, current overshoot)

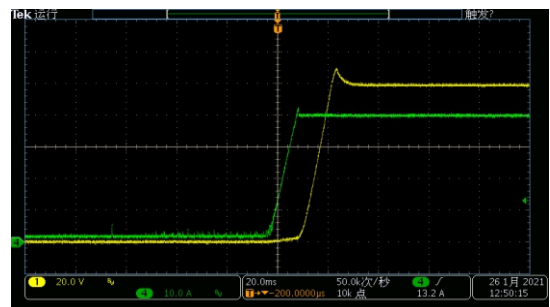
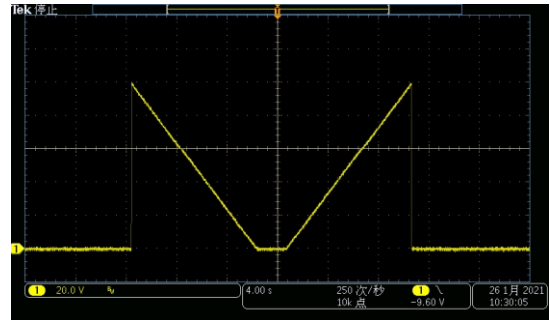
Serial function

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.



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.



CC priority (high speed build current, voltage overshoot)

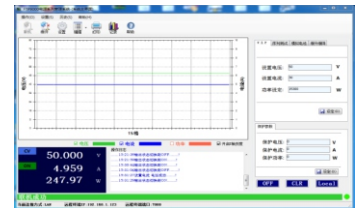
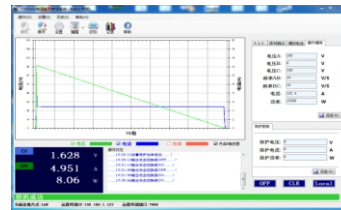
Photovoltaic array simulation function

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.



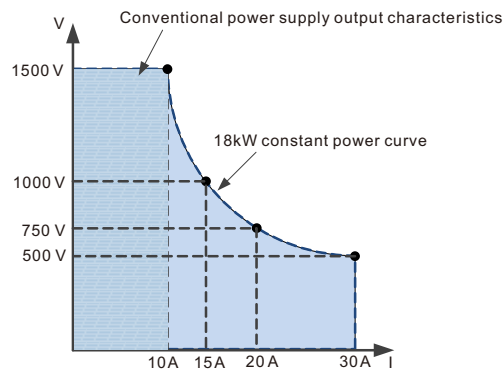
Computer graphical operation software

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

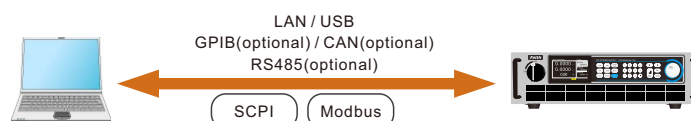
FTP9000 series power supply has more than 3 times the wide output range, one power supply can cover more applications, saving costs for users.



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.



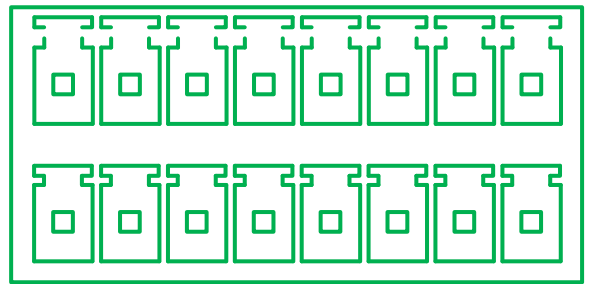
Equipped with dissipator to speed up braking (optional)

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 | 300V | FTP9060-300-75 | 75A | 6kW |
| | FTP9100-80-340 | 340A | 10kW | | FTP9120-300-150 | 150A | 12kW |
| | FTP9150-80-510 | 510A | 15kW | | FTP9180-300-225 | 225A | 18kW |
| | FTP9300-80-1020 | 1020A | 30kW | | FTP9360-300-450 | 450A | 36kW |
| | FTP9450-80-1530 | 1530A | 45kW | | FTP9540-300-675 | 675A | 54kW |
| | FTP9600-80-2040 | 2040A | 60kW | | FTP9720-300-900 | 900A | 72kW |
| | FTP9750-80-2550 | 2550A | 75kW | | FTP9900-300-1125 | 1125A | 90kW |
| | FTP9900-80-3060 | 3060A | 90kW | | FTP91080-300-1350 | 1350A | 108kW |
| 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 |
| 1000V | FTP9120-1000-40 | 40A | 12kW | 1000V | FTP9180-1000-75 | 75A | 18kW |
| | FTP9240-1000-80 | 80A | 24kW | | FTP9360-1000-150 | 150A | 36kW |
| | FTP9360-1000-120 | 120A | 36kW | | FTP9540-1000-225 | 225A | 54kW |
| | FTP9480-1000-160 | 160A | 48kW | | FTP9720-1000-300 | 300A | 72kW |
| Voltage | Model | Current | Power | Voltage | Model | Current | Power |
| 1500V | FTP9120-1500-25 | 25A | 12kW | 2250V | FTP9180-2250-25 | 25A | 18kW |
| | FTP9240-1500-50 | 50A | 24kW | | FTP9360-2250-50 | 50A | 36kW |
| | FTP9180-1500-40 | 40A | 18kW | | 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

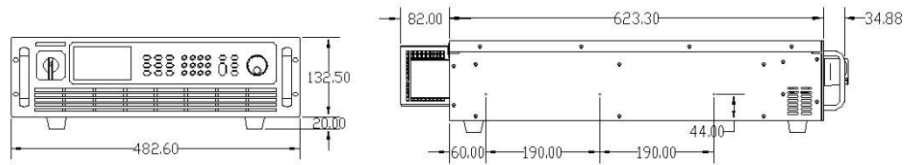
| Name | Model or specification | Note |
|--|------------------------|--|
| GPIB interface | FTP9001B | One of three options, factory-installed |
| CAN+485 interface | FTP9001C | |
| Composite signal port | FTP9001R | |
| RS232 interface | FTP9001F | Factory-installed |
| Faithtech Solar PV Matrix Simulation Software V1.0 | Suffix FT-SAS | |
| Anti-backup device* | Suffix D | Applied to prevent current back-up in battery-type loads |

*The backflow prevention device is built-in for 5kW, 6kW, 10kW and 12kW models, and external for the rest of the models.

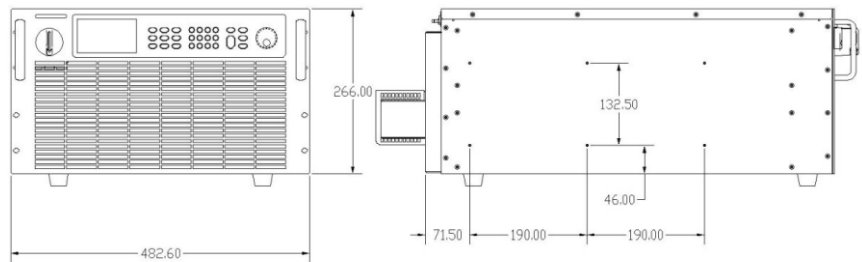
*Optional parts such as test cables are available. For specifications and models, please refer to the "Optional Accessories" section of this manual.

Dimension

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、RS232) |
| 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°C~40°C |
| Storage temperature | -20°C~70°C |
| Altitude of use | <2000m |
| Heat dissipation method | Air-cooled, intelligent air control |

Specification table

| | | | | | | |
|-------------------------------------|---|-------------------|------------------|------------------|-------------------|-------------------|
| Models | FTP9050-80-170 | FTP9060-300-75 | FTP9060-500-40 | FTP9060-800-25 | - | - |
| Voltage | 0~80V | 0~300V | 0~500V | 0~800V | - | - |
| Current | 0~170A | 0~75A | 0~40A | 0~25A | - | - |
| Power | 0~5kW | 0~6kW | | | | |
| Models | FTP9100-80-340 | FTP9120-300-150 | FTP9120-500-80 | FTP9120-800-50 | FTP9120-1000-40 | - |
| Voltage | 0~80V | 0~300V | 0~500V | 0~800V | 0~1000V | - |
| Current | 0~340A | 0~150A | 0~80A | 0~50A | 0~40A | - |
| Power | 0~10kW | 0~12kW | | | | |
| Models | FTP9150-80-510 | FTP9180-300-225 | FTP9180-500-120 | FTP9180-800-75 | FTP9180-1000-75 | FTP9180-2250-25 |
| Voltage | 0~80V | 0~300V | 0~500V | 0~800V | 0~1000V | 0~2250V |
| Current | 0~510A | 0~225A | 0~120A | 0~75A | 0~75A | 0~25A |
| Power | 0~15kW | 0~18kW | | | | |
| Models | FTP9300-80-1020 | FTP9240-300-300 | FTP9240-500-160 | FTP9240-800-100 | FTP9240-1000-80 | - |
| Voltage | 0~80V | 0~300V | 0~500V | 0~800V | 0~1000V | - |
| Current | 0~1020A | 0~300A | 0~160A | 0~100A | 0~80A | - |
| Power | 0~30kW | 0~24kW | | | | |
| Models | FTP9450-80-1530 | FTP9360-300-450 | FTP9360-500-240 | FTP9360-800-150 | FTP9360-1000-150 | FTP9360-2250-50 |
| Voltage | 0~80V | 0~300V | 0~500V | 0~800V | 0~1000V | 0~2250V |
| Current | 0~1530A | 0~450A | 0~240A | 0~150A | 0~150A | 0~50A |
| Power | 0~45kW | 0~36kW | | | | |
| Models | FTP9600-80-2040 | FTP9720-300-900 | FTP9720-500-480 | FTP9720-800-300 | FTP9720-1000-300 | FTP9720-2250-100 |
| Voltage | 0~80V | 0~300V | 0~500V | 0~800V | 0~1000V | 0~2250V |
| Current | 0~2040A | 0~900A | 0~480A | 0~300A | 0~300A | 0~100A |
| Power | 0~60kW | 0~72kW | | | | |
| Models | FTP9750-80-2550 | FTP9900-300-1125 | FTP9900-500-600 | FTP9900-800-375 | FTP9900-1000-375 | FTP9900-2250-125 |
| Voltage | 0~80V | 0~300V | 0~500V | 0~800V | 0~1000V | 0~2250V |
| Current | 0~2550A | 0~1125A | 0~600A | 0~375A | 0~375A | 0~125A |
| Power | 0~75kW | 0~90kW | | | | |
| Models | FTP9900-80-3060 | FTP91080-300-1350 | FTP91080-500-720 | FTP91080-800-450 | FTP91080-1000-200 | FTP91080-2250-150 |
| Voltage | 0~80V | 0~300V | 0~500V | 0~800V | 0~1000V | 0~2250V |
| Current | 0~3060A | 0~1350A | 0~720A | 0~450A | 0~450A | 0~150A |
| Power | 0~90kW | 0~108kW | | | | |
| Voltage programming① | | | | | | |
| Resolution | 16bits | | | | | |
| Precision | 0.02%+0.02%F.S. | | | | | |
| Current programming① | | | | | | |
| Resolution | 16bits | | | | | |
| Precision | 0.1%+0.1%F.S. | | | | | |
| Power programming① | | | | | | |
| Precision | 1%F.S. | | | | | |
| External analog programming② | | | | | | |
| Control voltage | 0~5V corresponds to 0~100%F.S. | | | | | |
| Voltage precision | 0.5%F.S. | | | | | |
| Current precision | 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 measurement④ | | | | | | |
| Resolution | 16bits | | | | | |
| Precision | 0.02%+0.02%F.S. | | | | | |
| Current measurement④ | | | | | | |
| Resolution | 16Bits | | | | | |
| Precision | 0.1%+0.1%F.S. | | | | | |
| Power measurement④ | | | | | | |
| Precision | 1%F.S. | | | | | |
| Output noise & ripple④ | | | | | | |
| Voltage ripple p-p | 320mV | 300mV | 450 mV | 800 mV | 2000mV | 3600mV |
| Voltage Ripple rms | 25mV | 40mV | 70 mV | 200mV | 350mV | 400mV |
| Dimensions (WxHxD) | 5kW~18kW: 482.6mm x 132.5mm x 707.0mm, including output guards | | | | | |
| Weight | 24kW~36kW: 482.6mm x 266mm x 743.0mm, including protective cover, without casters | | | | | |
| | 6kW≈17kg, 12kW≈24kg, 18kW≈30kg, 36kW≈65kg | | | | | |