

FT10 SERIES

AC/DC Programmable Power Supplies 300W-400W



Summary

The FT10 series programmable DC power supply is a compact and high-performance economical DC power supply. It is small in size and lightweight, with a wide range of voltage and current usage. One power supply can replace multiple models, significantly expanding the application scope. It can be applied in various fields such as laboratory testing, system integration, and large-scale production line testing.

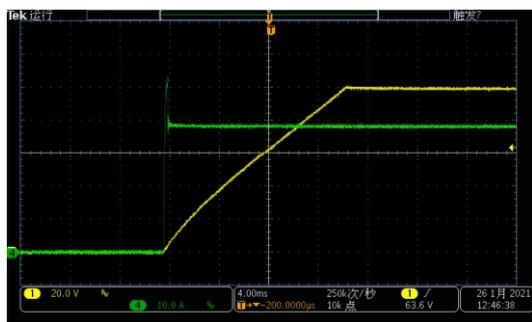
- Comprehensive protection functions including overvoltage protection, overcurrent protection, overpower protection, and overtemperature protection;
- Supports output time setting, allowing control and recording of output time;
- LCD display with wide viewing angle and high brightness;
- Standard RS232 and RS485 interfaces, optional LAN;
- Supports standard SCPI and Modbus-RTU communication protocols.

Characteristic

- Single unit power output range: 300W/400W;
- Voltage levels included: 20V, 40V, 80V, 160V;
- High power factor and low harmonic content in input;
- Output terminals are available on both front and rear panels;
- Supports remote voltage compensation;
- Sequence and waveform editing functions;
- Battery charging function;

CV, CC priority

When the power output is connected to inductive or capacitive loads, it will cause a certain degree of overshoot in the output current or voltage. In mild cases, it will trigger the protection of the tested equipment; in severe cases, it will directly lead to the damage of the tested equipment. The FT10 series has the priority function of CV and CC output, which effectively suppresses the output overshoot and its associated effects.



CV priority (high speed build voltage, current overshoot)



CC priority (high speed build current, voltage overshoot)

Battery charging function

The FT10 series is equipped with battery charging function. It allows the setting of parameters such as charging voltage, charging current, charging termination voltage, charging termination current, charging termination capacity, and charging termination time, which can fully simulate the battery charging process and effectively protect the battery.

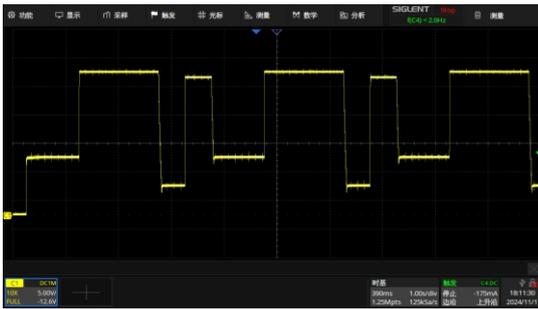
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Sequence function

In the sequence output function mode, complex output variations can be simulated based on the sequence parameters edited by the user. The sequence output function, with the menu option "SEQ", enables users to customize the voltage and current waveforms themselves.

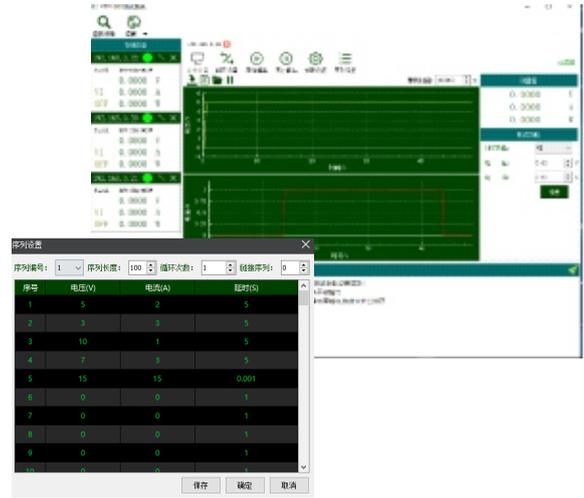


Sequence test output waveform

The FT10 series power supply offers 10 sequence files, with each file supporting up to 100 operation steps. Within the operation steps, you can set voltage settings, current settings, and running time. It supports "cycle count" and "linked files" attributes. "Cycle count" can control the number of times the sequence runs in a loop; setting it to 0 indicates an infinite loop. "Linked files" enables running between different files in a linked manner. Setting it to 0 indicates no linking.

Computer graphical operation software

The FT10 series offers an upper computer software platform with virtual instrument capabilities. It enables remote real-time setting of test data, reading of test data, generating images, and exporting data through a computer. The functions are fully synchronized, making it convenient for testing.



Order information

| Model | Voltage | Current | Power |
|--------------|---------|---------|-------|
| FT10-20V-30A | 20V | 30A | 400W |
| FT10-40V-12A | 40V | 12A | 300W |
| FT10-40V-16A | | 16A | 400W |
| FT10-80V-6A | 80V | 6A | 300W |
| FT10-80V-8A | | 8A | 400W |
| FT10-160V-4A | 160V | 4A | 400W |

Optional information

| Name | Model or specification | Instructions |
|----------------------|------------------------|--------------------------------------|
| LAN interface | FT1001L | Installation before factory shipment |
| 19-inch mounting kit | FT-H306 | Six (3U/19") shelf kit |

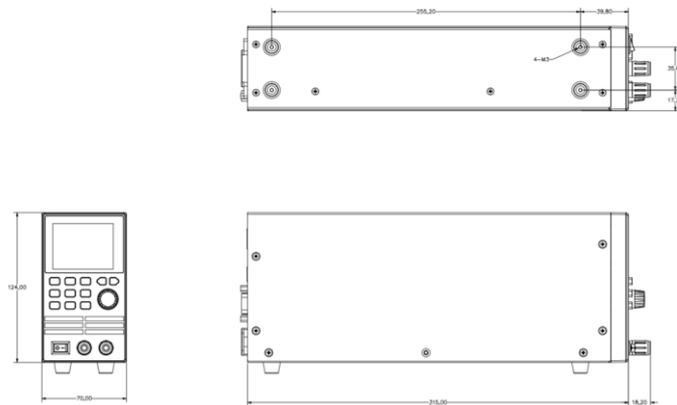
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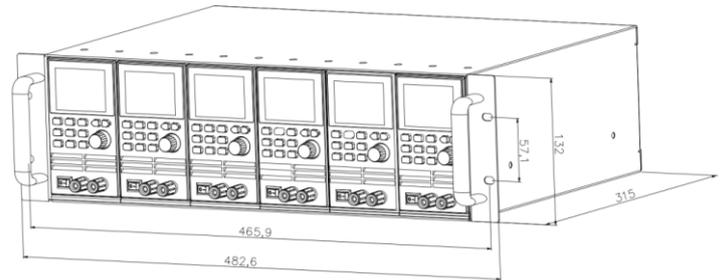


Dimension

FL series dimension drawing (mm):



Schematic diagram of the upper frame kit (mm):



Specification table

| General specification table | | | | |
|--|---|------|------|------|
| Voltage temperature coefficient | 50ppm/°C | | | |
| Current temperature coefficient | 100ppm/°C | | | |
| Input character | | | | |
| Input voltage for communication | Single phase, 90VAC to 130VAC(50% rated power) Single phase, 180VAC to 260VAC(100% rated power) | | | |
| Input frequency range | 47Hz~63Hz | | | |
| Power factor | 0.99'@220Vac (TYP), rated output power | | | |
| Maximum input current at full load(@220V ac) | 1.6A | 2.1A | 1.6A | 2.1A |
| Environmental characteristics | | | | |
| Operating temperature | 0°C~40°C(full load) | | | |
| Storage temperature | -20°C~70°C | | | |
| Operation humidity | 30%~90% RH(without condensation) | | | |
| Storage humidity | 10%~95% RH(without condensation) | | | |
| Operation altitude | < 2000m | | | |
| Structural characteristics | | | | |
| Communication interface | RS232、RS485、LAN(optional) | | | |
| Cooling method | Forced air-cooling, forward airflow and rear airflow, no ventilation holes on top cover and base, speed control fan | | | |
| Dimensions(width x height x depth) | 70*124*317 mm | | | |
| Weight | 2.3kg | | | |
| AC input terminal | IEC320 AC interface | | | |
| Output terminal | Front panel: 4mm banana socket; Back panel: spring-type terminal connector | | | |

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Electrical specification table - 1

| Model | FT10-20V-30A | FT10-40V-12A | FT10-40V-16A | FT10-80V-6A | FT10-80V-8A | FT10-160V-4A |
|---------------------------|--|--------------|--------------|-------------|-------------|--------------|
| Rated voltage | 0~20V | 0~40V | 0~40V | 0~80V | 0~80V | 0~160V |
| Rated current | 0~30A | 0~12A | 0~16A | 0~6A | 0~8A | 0~4A |
| Rated power | 400W | 300W | 400W | 300W | 400W | 400W |
| Voltage programming*1 | | | | | | |
| Resolution | 1mV | 1mV | 1mV | 1mV | 1mV | 10mV |
| Precision | 0.05%+0.05%F.S. | | | | | |
| Current programming*2 | | | | | | |
| Resolution | 1mA | 1mA | 1mA | 1mA | 1mA | 1mA |
| Precision | 0.1%+0.1%F.S. | | | | | |
| Linear adjustment rate | | | | | | |
| 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 | 10mV |
| Precision | 0.05%+0.05%F.S. | | | | | |
| Voltage measurement*2 | | | | | | |
| Resolution | 1mA | 1mA | 1mA | 1mA | 1mA | 1mA |
| Precision | 0.1%+0.1%F.S. | | | | | |
| Output noise & ripple | | | | | | |
| Voltage ripple(Vp-p) | ≤60mV | ≤60mV | ≤60mV | ≤100mV | ≤100mV | ≤200mV |
| Voltage ripple(Vrms) | ≤10mV | ≤10mV | ≤10mV | ≤15mV | ≤15mV | ≤20mV |
| Current ripple(Arms)*3 | ≤30mA | ≤12mA | ≤16mA | ≤10mA | ≤10mA | ≤8mA |
| Rise time | | | | | | |
| Rise time (no load) * 4 | 50ms | 50ms | 50ms | 50ms | 50ms | 50ms |
| Rise time (full load) * 5 | 50ms | 50ms | 50ms | 50ms | 50ms | 50ms |
| Fall time (no load) * 6 | 400ms | 400ms | 400ms | 750ms | 750ms | 1.2s |
| Fall time (full load) * 7 | 100ms | 100ms | 100ms | 100ms | 100ms | 100ms |
| Transient response time | The output voltage deviation is restored to within 0.5% of the rated voltage (for a 50%-100% load) | | | | | |
| Efficiency (TYP)*8 | 0.83 | 0.85 | 0.85 | 0.87 | 0.87 | 0.87 |

Note:

* All specifications are subject to change without further notice;

* 1. The minimum voltage value must be ≥ 0.5% of Full Scale;

* 2. The minimum current value must be ≥ 0.5% of Full Scale;

* 3. The ripple measurement conditions are a 20 MHz measurement bandwidth, 10% to 100% of rated voltage and rated current;

* 4. The time for the rated voltage to change from 10% to 90% in the no-load state;

* 5. The time for the rated voltage to change from 10% to 90% in the full-load (resistive load) state;

* 6. The time for the rated voltage to change from 90% to 10% in the no-load state;

* 7. The time for the rated voltage to change from 90% to 10% in the full-load (resistive load) state;

* 8. Output measured at 220Vac/50Hz input, at the rated voltage and maximum power point.