FT10 series

Programmable DC power supply

Summary

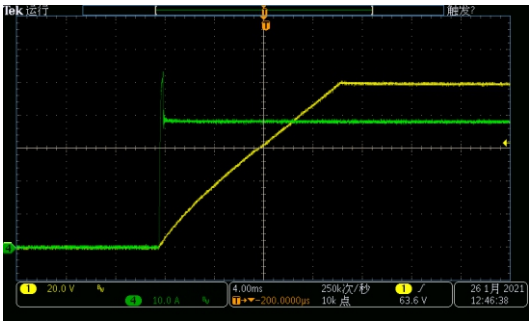
The FT10 series programmable DC power supply is a compact and high-performance economical DC power supply. It is small in size and lightweight, with a wide range of voltage and current usage. One power supply can replace multiple models, significantly expanding the application scope. It can be applied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

Characteristic

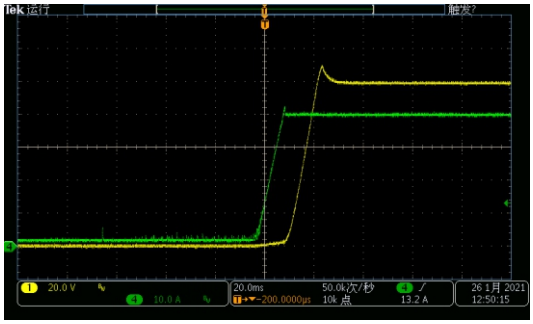
- Single unit power output range: 300W/400W;
- Voltage levels included: 20V, 40V, 80V, 160V;
- High power factor and low harmonic content in input;
- Output terminals are available on both front and rear panels;
- Supports remote voltage compensation;
- Sequence and waveform editing functions;
- Battery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

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)



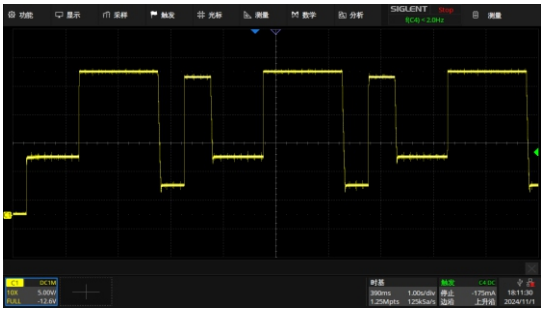
CC priority (high speed build current, voltage overshoot)

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.

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.

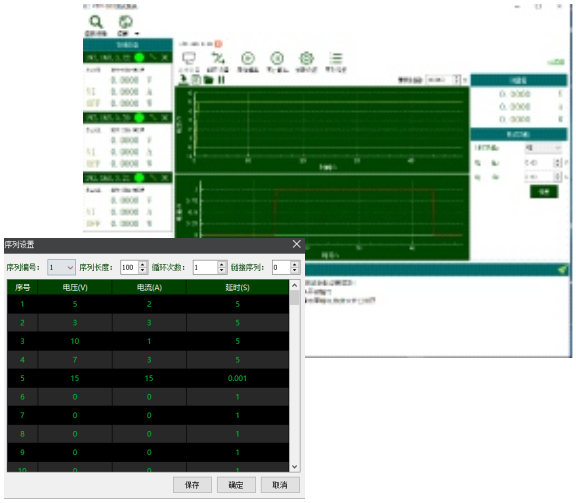


Sequence test output waveform

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

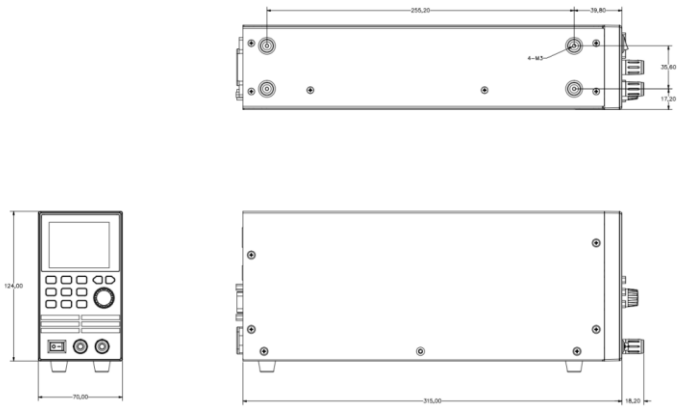
Model	Voltage	Current	Power
FT1040A	20V	30A	400W
FT1030B	40V	12A	300W
FT1040B		16A	400W
FT1030C	80V	6A	300W
FT1040C		8A	400W
FT1040D	160V	4A	400W

Optional information

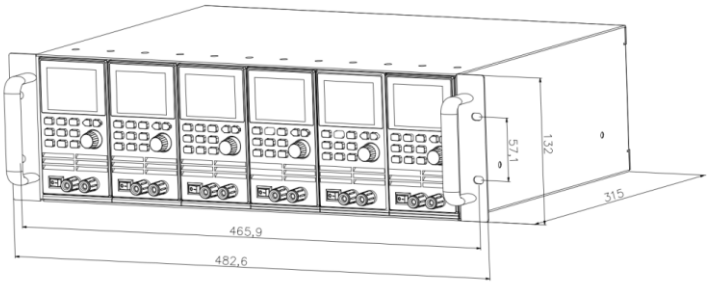
Name	Model or specification	Instructions
LAN interface	FT1001L	Installation before factory shipment
19-inch mounting kit	FT-H306	Six (3U/19") shelf kit

Dimension

FL series dimension drawing (mm):



Schematic diagram of the upper frame kit (mm):



Specification table

General specification table				
Voltage temperature coefficient	50ppm/℃			
Current temperature coefficient	100ppm/℃			
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℃～40℃(full load)			
Storage temperature	-20℃～70℃			
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			

Electrical specification table - 1						
Model	FT1040A	FT1030B	FT1040B	FT1030C	FT1040C	FT1040D
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.