FTP Power Supply (2 kW, 3.2 kW, 6.5 kW)

Programmable DC Power Supply

FTP020-80-60 2 kW/80V/60A (2U)

- Output voltage: 40 V up to 1500 V;
- Output current: 3.5 A up to 240 A;
- Output power: 2 / 3.2 / 6.5 kW;
- Wider voltage and current output range with constant power;
- Easy Master-Slave parallel or serial of up to 5 identical units;
- 0.1%+0.1%F.S. and 0.1%+0.2%F.S. accuracy for voltage and current measurement respectively;
- 20 user programmable sequence files, each support up to 20 steps;
- 1ms typical transient response, Voltage & current slew rate control;
- CV / CC priority start (prevents voltage or current overshoot with output ON);
- Remote sense compensation;
- Optional analog programming & monitoring interface;
- ±OVP, ±OCP, ±OPP, OTP, ±LVP, foldback protection, as well as voltage / current limit;
- Standard LAN, RS232, optional GPIB interface;
- SCPI and ModBus RTU protocol;
- TFT color LCD display.

General

FTP series DC power supplies provide wider voltage and current output range at full power, this means both low voltage/high current and high voltage/low current devices can be tested using a single power supply. The FTP series adopt 2U chassis for 2 kW and 3.2 kW mode, and 4U chassis for 6.5 kW model. The output voltage ranges from 40 V to 1500 V, and output current up to 240 A. Furthermore, FTP series allow for master-slave parallel or serial connection of up to 5 identical units to extend the output range.

The FTP series provide accurate output, fast transient response, low ripple noise, excellent line and load regulation, fast and precise programmability. With 4.3-inch color TFT screen, full keypad and rotary knob, convenient for benchtop users. In addition, this series offer standard LAN and RS232 interfaces support both SCPI and Modbus protocol, which is ideal for automated test systems.

Furthermore, the FTP series come standard with user programmable sequence, CV or CC priority start, CV-to-CC or CC-to-CV foldback, etc., to name a few.

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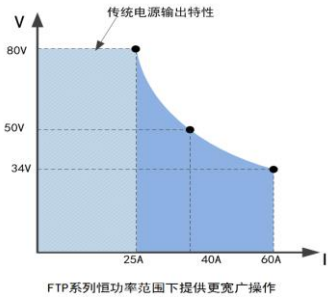
AC input

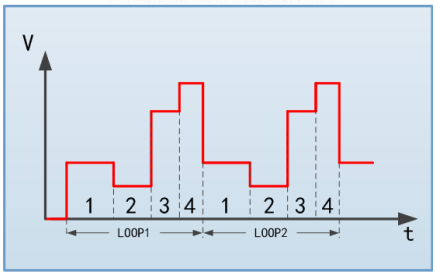
All models are provided with an active Power Factor Correction (PFC) circuit and designed for a usage in single-phase 190 VAC ~ 265 VAC input, power factor 0.98, power supply efficiency is larger than 90%.

Wide operating region with constant power

FTP series power supply provides wide range of output voltage & current within the power rating of the power supply, this means both low voltage/high current and high voltage/low current DUTs can be tested using a single supply avoiding the need for multiple power supplies.



FTP系列恒功率范围下提供更宽广操作

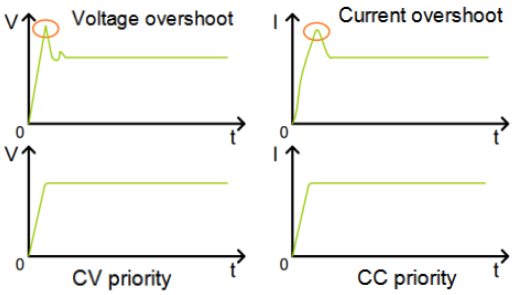


Programmable sequence

All models provides users with a programmable sequence function, which can simulate power supply interruptions, instantaneous drops, and other voltage and current changes. The sequence feature allows users to program a list of steps to the power supply's internal memory and execute them. A total of 20 steps can be allocated to each internal memory location, up to a maximum of 20 locations (sequences). The test sequence can be programmed locally through the keypad and rotary knob. Test sequences can be linked, as well as configured for single or repeated execution. Each steps' settings include voltage, current, duration, and duration time range is 1 ms...86400 s.

CV / CC priority

When power supply is connected to an inductive or capacitive load, it will cause voltage or current overshoot, which may trigger the protection of the device under test, or even cause the device under test to be damaged in severe cases. This series power supply provides CC priority and CV priority function, which forces the power supply to operate in CC or CV mode at the moment the output is turned on, effectively avoids the current or voltage overshoot resulted from capacitive or inductive load.



Optional analog programming and monitoring interface

In addition to front panel and remote interface control, there is a galvanically isolated analog interface terminal, located on the rear of the device. It offers analog inputs to set voltage, current from 0...100% through control voltages of 0 V...10 V or 0 V...5 V. To monitor the output voltage and current, there are analog outputs with 0 V...10 V or 0 V...5 V. Also, several inputs and outputs are available for controlling and monitoring the device status. The controlling speed of analog programming is 1000 points per second.

Protective features

For protection of the equipment connected, the series provide programmable protection functions such as OVP, OCP, OPP and LVP. Moreover, there are built-in hardware protection function OTP. If a protection is triggered, the DC output will be shut off immediately and a status signal will be prompt on the display and via the interfaces. Similarly, foldback protection is used to disable the output when a transition is made between the CC and CV operating modes. The DC output will be shut off and locked in foldback mode after a specified delay if the power supply transitions into CV or CC mode, depending on the foldback mode settings. This feature is particularly useful for protecting current or voltage sensitive loads.

Master-slave parallel or serial operation

The FTP series support master-slave parallel or series operation of up to 5 identical units. Parallel / series operation expands the output range of the power supply, greatly enhances the application area of the FTP power supply. Allowed maximum output voltage is 600V for series operation. Parallel and serial operation can not be mixed. When in serial operation, please plug out all current sharing cable, otherwise the power supply may be damaged.

Digital interfaces

All models features two galvanically isolated digital interfaces by default, these are standard LAN and USB (optional GPIB interface). USB, LAN can be used to control and monitor the devices either with SCPI language commands or ModBus RTU protocol, while with GPIB only SCPI is supported.

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Control software

The series provide a control software for Windows PCs, which can read test data, generate images, export reports, print reports, etc. in real time, it is convenient for customers to use.

Options

Automobile waveform;
GPIB interface;
Analog programming and monitoring interface;
Anti backflow current module.

Model options

Voltage	Model	Current	Power	Voltage	Model	Current	Power
40V	FTP020-40-120	120A	2kW	50V	FTP020-50-110	110A	2kW
	FTP032-40-120	120A	3.2kW		FTP032-50-110	110A	3.2kW
	FTP065-40-240	240A	6.5kW		FTP065-50-220	220A	6.5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
80V	FTP020-80-60	60A	2kW	120V	FTP020-120-40	40A	2kW
	FTP032-80-60	60A	3.2kW		FTP032-120-40	40A	3.2kW
	FTP065-80-120	120A	6.5kW		FTP065-120-80	80A	6.5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
160V	FTP020-160-30	30A	2kW	300V	FTP020-300-16	16A	2kW
	FTP032-160-30	60A	3.2kW		FTP032-300-16	16A	3.2kW
	FTP065-160-60	60A	6.5kW		FTP065-300-32	32A	6.5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
400V	FTP020-400-12	12A	2kW	600V	FTP020-600-8	8A	2kW
	FTP032-400-12	12A	3.2kW		FTP032-600-8	8A	3.2kW
	FTP065-400-24	24A	6.5kW		FTP065-600-16	16A	6.5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
800V	FTP020-800-8	8A	2kW	1000V	FTP020-1000-5	5A	2kW
	FTP032-800-8	8A	3.2kW		FTP032-1000-5	5A	3.2kW
	FTP065-800-16	16A	6.5kW		FTP065-1000-10	10A	6.5kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power
1200V	FTP020-1200-5	5A	2kW	1500V	FTP020-1500-3.5	3.5A	2kW
	FTP032-1200-5	5A	3.2kW		FTP032-1500-3.5	3.5A	3.2kW
	FTP065-1200-10	10A	6.5kW		FTP065-1500-7	7A	6.5kW

Optional accessories table 1

Item	Type or specifications	Notes
GPIB interface	FT7130	RS232 to GPIB
Composite signal port	Model name ends with Suffix “F”	
Anti backflow current	Model name ends with Suffix “D”	FT7130
Automobile waveform test	Model name ends with Suffix “C”	

Optional accessories table 2: High current test cable matching table

Specification	DC2-2P15M	DC16-2P20M	DC25-2P25M	DC50-2P20M	DC50-2P40M	DC120-2P20M	DC150-2P20M
Max voltage	750V						
Max current	10A	60A	100A	200A	200A	300A	400A
Terminal	M8/Alligator	M8/M8	M8/M8	M8/M8	M8/M8	M8/M8	M10/M10
Cross-sectional area	4.0mm²	16mm²	25mm²	50mm²	50mm²	120mm²	150mm²
Length	~1.5m	~2m	~2m	~2m	~4m	~2m	~2m
Shape							

Specification table 1						
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	0.1%+0.1%F.S.					
Current programming						
Resolution	16Bits					
Accuracy	0.1%+0.3%F.S.		0.1%+0.2% 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 output						
Output voltage	0～100%F.S. corresponds to 0～10V.					
Voltage accuracy	0.5%F.S.					
Current accuracy	0.5%F.S.					
Line regulation						
Voltage	0.01%+0.01%F.S.					
Current	0.02%+0.01%F.S.					
Load regulation						
Voltage	0.01%+0.05%F.S.		0.01%+0.01%F.S.			

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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%+0.3%F.S.		0.1%+0.2%F.S.			
Ripple noise						
Ripple Vpp	60mV	70mV	80mV	80mV	100mV	100mV
Ripple Vrms	20mV	20mV	20mV	20mV	40mV	40mV
Rise slew rate						
Voltage	5V/ms(max)					
Current	2A/ms(max)					
OVP Setting						
Range	0～110%F.S.					
Accuracy	1%F.S.					
Transient	Typical 1ms					
Efficiency	0.9(Typical)					
Parallel/Serial	Support master-slave parallel and serial operation					
Communication	RS232 and LAN					
AC input	190VAC～265VAC, 47Hz～63Hz, PF: 0.98(Typical)					
Operation temp	0℃～40℃					
Storage temp	-20℃～70℃					
Altitude	＜2000m					
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 2						
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	0.1%+0.1%F.S.					
Current programming						

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Resolution	16Bits					
Accuracy	0.1%+0.2% 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 output						
Output voltage	0～100%F.S. corresponds to 0～10V.					
Voltage accuracy	0.5%F.S.					
Current accuracy	0.5%F.S.					
Line regulation						
Voltage	0.01%+0.01%F.S.					
Current	0.02%+0.01%F.S.					
Load regulation						
Voltage	0.01%+0.01%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.					
Ripple noise						
Ripple Vpp	300mV	300mV	500mV	450mV	500mV	700mV
Ripple Vrms	60mV	60mV	80mV	80mV	120mV	150mV
Rise slew rate						
Voltage	5V/ms(max)					
Current	2A/ms(max)					
OVP Setting						
Range	0～110%F.S.					
Accuracy	1%F.S.					
Transient	Typical 1ms					
Efficiency	0.9(Typical)					
Parallel/Serial	Support master-slave parallel and serial operation					
Communication	RS232 and LAN					
AC input	190VAC～265VAC, 47Hz～63Hz, PF: 0.98(Typical)					
Operation temp	0℃～40℃					
Storage temp	-20℃～70℃					
Altitude	＜2000m					
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)					

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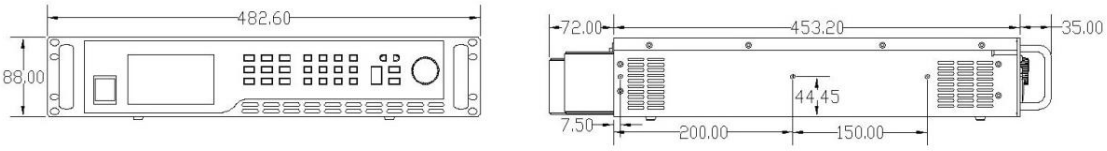
Dimension

2kW、3.2kW model dimension



6.5kW model dimension