

FTH series high-power programmable DC power supply (4~15KW)



Voltage range: 0 ~ 1500V;

Current range: 0 ~ 1200A;

Power range: 4 ~ 15KW;

High power density (15KW in 3U)

The FTH series is a high-power DC switching power supply with the advantages of high power, high current, low ripple noise, fast transient response, high resolution, and high precision. It can be applied to laboratory test, vehicle equipment test, solar inverter test, DC/DC converter and inverter test, engine start test, automatic battery charging, electronic product life cycle test, etc.

The FTH Series offer many unique advantages for telecom, automated test system & integration, industrial, battery charge & simulation, electric cars and motors. These advantages include a high power density of 15KW in 3U, precision readback of output current and voltage, output trigger signals, as well as the ability to create complex DC transient waveforms to test device behavior to spikes, drops, and other voltage deviations.

The FTH series programmable DC power supply includes more than 100 different models, ranging from 5kW to 15kW, up to 1500V and up to 1200A. For high-power applications, parallel up to 5 units for up to 75kW through master-slave mode.

Feature

- CV, CC, CP modes;
- Easy Master-Slave parallel / series operation up of up to 5 identical units;
- 16-bit readback capability for precision V & I measurement;
- Programmable sequence waveforms;
- Voltage & current slew rate control;
- 1ms typical transient response;
- High slew rate models are available;
- 0.01% source effect, 0.02% load effect, 0.02% ripple;
- Remote sense voltage compensation;
- Digital/analog composite signal monitor & control port;

- ❑ OVP, OCP, OPP, OTP, LVP, etc. protections;
- ❑ Standard RS232, LAN, optional GPIB ports;
- ❑ Support SCPI protocol;

FTH has high slew rate models up to 40V/ms or 150A/ms

15kW/3U high power density

The FTH series programmable DC power supply provides a high power density of 15kW/3U, with features such as accurate output, fast response, and low ripple noise. FTH series DC power supply also has high slew rate models of up to 40V/ms and 150A/ms, greatly enhances the application area of the product.

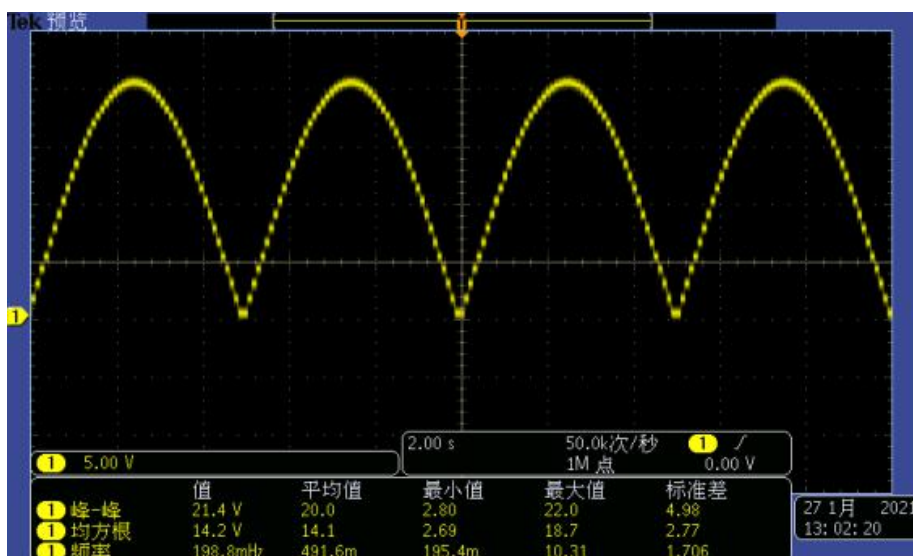


High-precision measurement

The FTH series programmable DC power supply has a built-in 16-bit high-precision A/D converter, with a measurement accuracy of 0.1%+0.1%F.S. voltage and 0.1%+0.2%F.S. current. In addition, FTH series power supply provides additional voltage and current monitoring output.

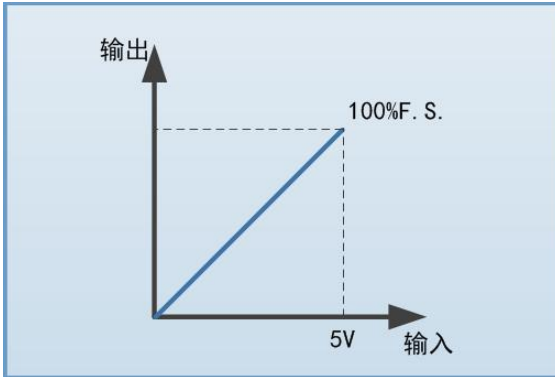
Programmable sequence waveforms

FTH power supply can simulate the power output environment of load change, and test the load output accordingly. The FTH power supply allows for 8 sequences files with 100 test steps in each sequence. Jumps between steps and multiple jumps are allowed, and sequence files can be linked.



Analog programming

The FTH series power supply has two analog input ports for voltage programming and current programming, which can control the output voltage and output current respectively. The analog programming signal is a 0 ~ 5V or 0 ~ 10V DC voltage signal. The programming signal corresponds to the 0~100%F.S. output voltage and output current.



Master-slave parallel / series operation

The FTH series power supply support master-slave parallel / series operation of up to 5 identical units. Parallel / series operation expands the output power of the power supply, greatly enhances the application area of the FTH 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.

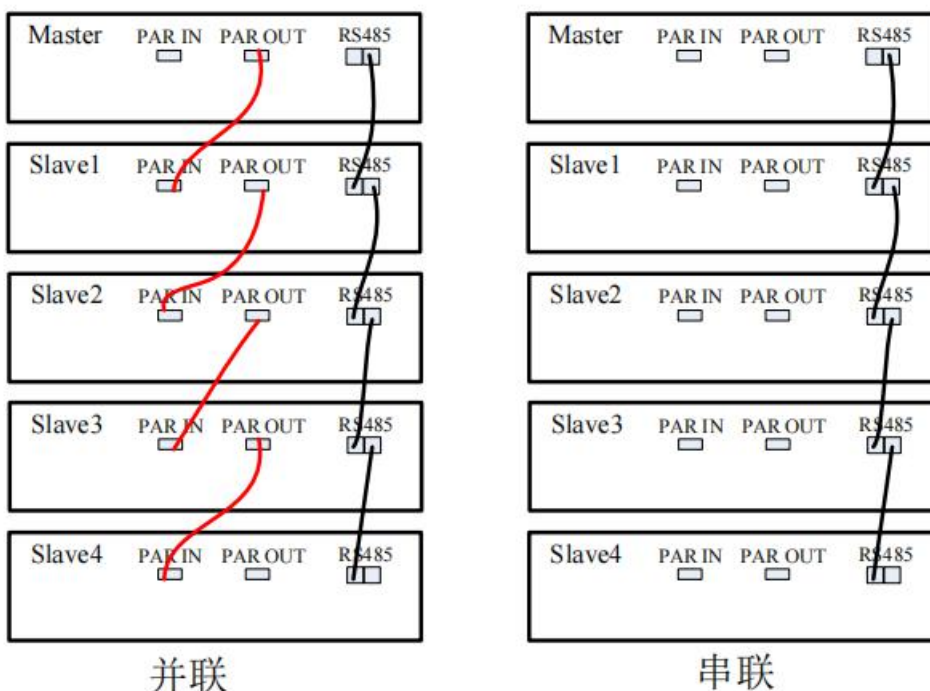
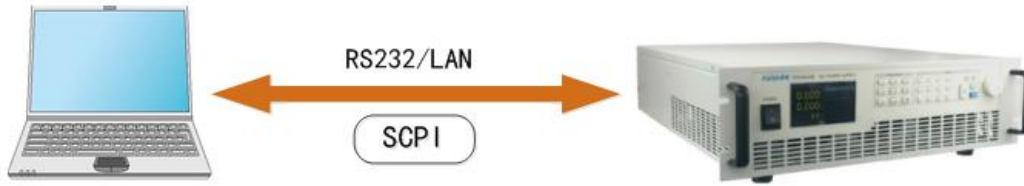


图 4-20 级联通讯与均流连接

Communication & protocol

Standard RS232, LAN, optional GPIB interface, support SCPI, ModBus protocol. It greatly facilitates applications.



Host PC software

The FTH series power supply provides a host PC software with virtual instrument function, which can read test data, generate images, export reports, print reports, etc. in real time, it is convenient for customers to use.

Model options

* Other voltage range models such as 75V/80V/120V/150V/200V are not listed here.


Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
10V	FTH040-010	400A	4kW	15V	FTH045-015	300A	4.5kW	20V	FTH050-020	250A	5kW
	FTH080-010	800A	8kW		FTH090-015	600A	9kW		FTH100-020	500A	10kW
	FTH120-010	1200A	12kW		FTH135-015	900A	13.5kW		FTH150-020	750A	15kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
30V	FTH050-030	167A	5kW	40V	FTH050-040	125A	5kW	50V	FTH050-050	100A	5kW
	FTH100-030	334A	10kW		FTH100-040	250A	10kW		FTH100-050	200A	10kW
	FTH150-030	500A	15kW		FTH150-040	375A	15kW		FTH150-050	300A	15kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
60V	FTH050-060	83.5A	5kW	100V	FTH050-100	50A	5kW	160V	FTH050-160	31.5A	5kW
	FTH100-060	167A	10kW		FTH100-100	100A	10kW		FTH100-160	62.5A	10kW
	FTH150-060	250A	15kW		FTH150-100	150A	15kW		FTH150-160	94A	15kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
250V	FTH050-250	20A	5kW	300V	FTH050-300	17A	5kW	400V	FTH050-400	12.5A	5kW
	FTH100-250	40A	10kW		FTH100-300	33.5A	10kW		FTH100-400	25A	10kW
	FTH150-250	60A	15kW		FTH150-300	50A	15kW		FTH150-400	37.5A	15kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
500V	FTH050-500	10A	5kW	600V	FTH050-600	8.5A	5kW	800V	FTH050-800	6.5A	5kW
	FTH100-500	20A	10kW		FTH100-600	17A	10kW		FTH100-800	12.5A	10kW
	FTH150-500	30A	15kW		FTH150-600	25A	15kW		FTH150-800	19A	15kW
Voltage	Model	Current	Power	Voltage	Model	Current	Power	Voltage	Model	Current	Power
1000V	FTH050-1000	5A	5kW	1200V	FTH050-1200	4.5A	5kW	1500V	FTH050-1500	3.5A	5kW
	FTH100-1000	10A	10kW		FTH100-1200	8.5A	10kW		FTH100-1500	7A	10kW
	FTH150-1000	15A	15kW		FTH150-1200	12.5A	15kW		FTH150-1500	10A	15kW

Optional accessories table 1

Item	Model name	Notes
Anti backflow current	Suffix "D"	Configurable for 50V or above models
High slew rate feature	Suffix "H"	Current high slew rate: 10V、15V、20V、30V model;

		Voltage high slew rate: 600V、1000V model; (Not applicable for other voltage models)
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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	4.0mm ²	16mm ²	25mm ²	50mm ²	50mm ²	120mm ²	150mm ²
Length	~1.5m	~2m	~2m	~2m	~4m	~2m	~2m
Shape							

Specifications

General specification	
Item	Specification
AC Input	3 Phase input, 340VAC ~ 420VAC, 47Hz ~ 63Hz
Output Voltage	0 ~ rated voltage (Max 1500V)
Output Current	0 ~ rated current (Max 1200A)
Output Power	0 ~ rated power
Efficiency	0.87(Typical)
Line Regulation	Voltage: 0.01%F.S.; Current: 0.05%F.S.
Load Regulation	Voltage: 0.02%F.S.; Current: 0.1%F.S.
Analog Programming	V/I control; Support programming voltage: DC 0 ~ 5V/DC 0 ~ 10V input
Voltage Measurement Accuracy	0.1%+0.1%F.S.
Current Measurement Accuracy	0.1%+0.2%F.S.
Voltage & Current Monitoring	Voltage/Current monitoring output voltage: DC 0 ~ 10V
Protection	OVP/OCP/OPP/RVP/LVP/OTP
Transient Response	Typical 1ms
Voltage Temperature Coefficient	20ppm/°C
Current Temperature Coefficient	40ppm/°C
Display	4.3" TFT color LCD
Operation	Function key, number key, and knobs
Communication Ports	Standard RS232, LAN
Storage	20 groups of fast recall parameters +8 sequence files
Cooling	Air cooling
Working Temperature	0°C ~ 40°C
Storage Temperature	-20°C ~ 70°C
Altitude	<2000m

Specification - 1								
Model	FTH040-010	FTH045-015	FTH050-020	FTH050-030	FTH050-040	FTH050-050	FTH050-060	FTH050-100
Output Voltage	0~10V	0~15V	0~20V	0~30V	0~40V	0~50V	0~60V	0~100V
Current	0~400A	0~300A	0~250A	0~167A	0~125A	0~100A	0~83.5A	0~50A
Power	4kW	4.5kW	5kW					
Model	FTH080-010	FTH090-015	FTH100-020	FTH100-030	FTH100-040	FTH100-050	FTH100-060	FTH100-100
Output Voltage	0~10V	0~15V	0~20V	0~30V	0~40V	0~50V	0~60V	0~100V
Current	0~800A	0~600A	0~500A	0~334A	0~250A	0~200A	0~167A	0~100A
Power	8kW	9kW	10kW					
Model	FTH120-010	FTH135-015	FTH150-020	FTH150-030	FTH150-040	FTH150-050	FTH150-060	FTH150-100
Output Voltage	0~10V	0~15V	0~20V	0~30V	0~40V	0~50V	0~60V	0~100V
Current	0~1200A	0~900A	0~750A	0~500A	0~375A	0~300A	0~250A	0~150A
Power	12kW	13.5kW	15kW					
Voltage Ripple								
V(p-p)	55mV	60mV	60mV	65mV	75mV	75mV	115mV	135mV
V(rms)	20mV	20mV	20mV	20mV	20mV	20mV	25mV	25mV
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 or 0~10V corresponds to 0~100%F.S.							
Voltage Accuracy	0.2%F.S.							
Current Accuracy	0.5%F.S.							
Output Accuracy	0.5%F.S.							
Line Regulation								
Voltage	0.05%F.S.				0.01%F.S.			
Current	0.05%F.S.							
Load Regulation								
Voltage	0.05%F.S.				0.02%F.S.			
Current	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.							
Others								
Dimension (mm)	482.6(W)*132.5(H)*600(L)							
Weight	18.5kg/5kW; 25kg/10kW; 31.5kg/15kW							

Specification - 2								
Model	FTH050-160	FTH050-300	FTH050-500	FTH050-600	FTH050-800	FTH050-1000	FTH050-1200	FTH050-1500
Output Voltage	0~160V	0~300V	0~500V	0~600V	0~800V	0~1000V	0~1200V	0~1500V
Current	0~31.5A	0~17A	0~10A	0~8.5A	0~6.5A	0~5A	0~4A	0~3.5A
Power	5kW							
Model	FTH100-160	FTH100-300	FTH100-500	FTH100-600	FTH100-800	FTH100-1000	FTH100-1200	FTH100-1500
Output Voltage	0~160V	0~300V	0~500V	0~600V	0~800V	0~1000V	0~1200V	0~1500V
Current	0~62.5A	0~33.5A	0~20A	0~17A	0~12.5A	0~10A	0~8.5A	0~7A
Power	10kW							
Model	FTH150-160	FTH150-300	FTH150-500	FTH150-600	FTH150-800	FTH150-1000	FTH150-1200	FTH150-1500
Output Voltage	0~160V	0~300V	0~500V	0~600V	0~800V	0~1000V	0~1200V	0~1500V
Current	0~94A	0~50A	0~30A	0~25A	0~19A	0~15A	0~12.5A	0~10A
Power	15kW							
Voltage Ripple								
V(p-p)	175mV	200mV	350mV	350mV	500mV	650mV	750mV	850mV
V(rms)	25mV	40mV	50mV	60mV	80mV	100mV	120mV	140mV
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 or 0~10V corresponds to 0~100%F.S.							
Voltage Accuracy	0.2%F.S.							
Current Accuracy	0.5%F.S.							
Output Accuracy	0.5%F.S.							
Line Regulation								
Voltage	0.01%F.S.							
Current	0.05%F.S.							
Load Regulation								
Voltage	0.02%F.S.							
Current	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.							
Others								
Dimension (mm)	482.6(W)*132.5(H)*600(L)							
Weight	18.5kg/5kW; 25kg/10kW; 31.5kg/15kW							

Specification - 3				
Model	FTH040-010H	FTH045-015H	FTH050-020H	FTH050-030H
Output Voltage	0~10V	0~15V	0~20V	0~30V
Current/Power	0~400A/4kW	0~300A/4.5kW	0~250A/5kW	0~167A/5kW
Model	FTH080-010H	FTH090-015H	FTH100-020H	FTH100-030H
Output Voltage	0~10V	0~15V	0~20V	0~30V
Current/Power	0~800A/8kW	0~600A/9kW	0~500A/10kW	0~334A/10kW
Model	FTH120-010H	FTH135-015H	FTH150-020H	FTH150-030H
Output Voltage	0~10V	0~15V	0~20V	0~30V
Current/Power	0~1200A/12kW	0~900A/13.5kW	0~750A/15kW	0~500A/15kW
Voltage Slew Rate	0.001V/ms~5V/ms			
Current Slew Rate	0.001A/ms~150A/ms			
Voltage Ripple				
V(p-p)	55mV	60mV	60mV	65mV
V(rms)	20mV	20mV	20mV	20mV
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 or 0~10V corresponds to 0~100%F.S.			
Voltage Accuracy	0.2%F.S.			
Current Accuracy	0.5%F.S.			
Output Accuracy	0.5%F.S.			
Line Regulation				
Voltage	0.05%F.S.			
Current	0.05%F.S.			
Load Regulation				
Voltage	0.05%F.S.			
Current	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.			
Others				
Dimension (mm)	482.6(W)*132.5(H)*694.5(L)			
Weight	23kg/5kW; 30kg/10kW; 38kg/15kW			

Specification - 4			
Model		FTH050-600H	FTH050-1000H
Output Voltage		0~600V	0~1000V
Current/Power		0~8.5A/5kW	0~5A/5kW
Model		FTH100-600H	FTH100-1000H
Output Voltage		0~600V	0~1000V
Current/Power		0~17A/10kW	0~10A/10kW
Model		FTH150-600H	FTH150-1000H
Output Voltage		0~600V	0~1000V
Current/Power		0~25A/15kW	0~15A/15kW
Rise Time	50%F.S. CC Load	30ms	25ms
	No Load	30ms	25ms
Fall Time	50%F.S. CC Load	30ms	25ms
	10%F.S. CC Load	100ms	80ms
	No Load	1.2s	3s
Voltage Slew Rate		0.001V/ms - 20V/ms	0.001V/ms - 40V/ms
Current Slew Rate		0.001A/ms - 2A/ms	
Voltage Ripple			
V(p-p)		1500mV	2550mV
V(rms)		650mV	1950mV
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 or 0~10V corresponds to 0~100%F.S.	
Voltage Accuracy		0.2%F.S.	
Current Accuracy		0.5%F.S.	
Output Accuracy		0.5%F.S.	
Line Regulation			
Voltage		0.01%F.S.	
Current		0.05%F.S.	
Load Regulation			
Voltage		0.02%F.S.	
Current		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.	

Dimension

