

## Medium-Power DC Electronic Load FT6400A

Model	FT6403A	FT6404A	FT6405A	FT6406A	FT6407A	FT6408A
Voltage	120V	500V	120V	500V	120V	500V
Current	120A	30A	180A	45A	240A	60A
Power	900W	900W	1350W	1350W	1800W	1800W
Min Operate Voltage	2.5V@120A	5V@30A	2.5V@180A	5V@45A	2.5V@240A	5V@60A
Constant Current (CC)						
Range	12A/120A	3A/30A	18A/180A	4.5A/45A	24A/240A	6A/60A
Resolution	0.2mA/2mA	0.05mA/0.5mA	0.3mA/3mA	0.8mA/8mA	0.4mA/4mA	1mA/10mA
Low Range Accuracy	0.1%+0.1%F.S.					
High Range Accuracy	0.1%+0.1%F.S.					
Constant Voltage (CV)						
Range	20V/120V	50V/500V	20V/120V	50V/500V	20V/120V	50V/500V
Resolution	0.4mV/2mV	0.9mV/9mV	0.4mV/2mV	0.9mV/9mV	0.4mV/2mV	0.9mV/9mV
Low Range Accuracy	0.05%+0.1%F.S.					
High Range Accuracy	0.05%+0.1%F.S.					
Constant Power (CP)						
Range	0～900W	0～900W	0～1350W	0～1350W	0～1800W	0～1800W
Resolution	15mW	15mW	22.5mW	22.5mW	30mW	30mW
Accuracy	1%+0.5%F.S.					
Constant Resistance (CR)						
Low Range	0.025～50Ω	0.25～500Ω	0.0167～33.3Ω	0.167～333Ω	0.0125～25Ω	0.125～250Ω
High Range	0.6～1200Ω	10～20000Ω	0.4～800Ω	6.67～1333Ω	0.3～600Ω	5～10kΩ
Resolution	16bit					
Low Range Accuracy	0.2%+0.009S	0.2%+0.0125S	0.2%+0.018S	0.2%+0.005S	0.2%+0.018S	0.2%+0.024S
High Range Accuracy	0.2%+0.002S	0.2%+160uS	0.2%+0.004S	0.2%+240uS	0.2%+0.004S	0.2%+300uS
Slew Rate						
Current Range	0～120A	0～30A	0～180A	0～45A	0～240A	0～60A
Slew Rate	0.1～5A/us	0.01～1.25A/us	0.15～7.5A/us	0.1～1.8A/us	0.2～10A/us	0.1～2.5A/us
Accuracy	(1±35%)×Set value					
Voltage Measurement						
Range	12V/120V	50V/500V	12V/120V	50V/500V	12V/120V	50V/500V
Resolution	0.2mV/2mV	0.9mV/9mV	0.2mV/2mV	0.9mV/9mV	0.2mV/2mV	0.9mV/9mV
Accuracy	0.05%+0.1%F.S.					
Current Measurement						
Range	12A/120A	3A/30A	18A/180A	4.5A/45A	24A/240A	6A/60A
Resolution	0.2mA/20mA	0.05mA/5mA	0.3mA/3mA	0.8mA/8mA	0.4mA/4mA	1mA/10mA
Accuracy	0.05%+0.1%F.S.					
Temperature						
Protection Temp	85℃					
Operation Temp	0～40℃					
Full Power Operation Temp	0～25℃					
Others						
Weight	18kg	18kg	20kg	20kg	22kg	22kg
Communication	RS232					
Display	VFD screen					
Dimension (mm)	427 (W) ×135 (H) ×460 (D)					

# Datasheet



Model	FT6412A	FT6413A	FT6420A	FT6421A	FT6430A	FT6431A
Voltage	150V	600V	150V	600V	150V	600V
Current	120A	30A	160A	60A	240A	90A
Power	1200W	1200W	2000W	2000W	3000W	3000W
Min Operate Voltage	2V@120A	5V@30A	2V@160A	5V@60A	2V@240A	5V@90A
Constant Current (CC)						
Range	12A/120A	3A/30A	16A/160A	6A/60A	24A/240A	9A/90A
Resolution	0.2mA/2mA	0.05mA/0.5mA	0.3mA/3mA	0.1mA/1mA	0.4mA/4mA	1.5mA/15mA
Low Range Accuracy	0.1%+0.15%F.S.					
High Range Accuracy	0.1%+0.15%F.S.					
Constant Voltage (CV)						
Range	30V/150V	120V/600V	30V/150V	120V/600V	30V/150V	120V/600V
Resolution	0.5mV/2.5mV	2mV/10mV	0.5mV/2.5mV	2mV/10mV	0.5mV/2.5mV	2mV/10mV
Low Range Accuracy	0.05%+0.1%F.S.					
High Range Accuracy	0.05%+0.1%F.S.					
Constant Power (CP)						
Range	0~1200W	0~1200W	0~2000W	0~2000W	0~3000W	0~3000W
Resolution	20mW	20mW	40mW	40mW	60mW	60mW
Accuracy	0.5%+1%F.S.					
Constant Resistance (CR)						
Low Range	0.1~75Ω	1.5~1200Ω	0.08~50Ω	0.8~600Ω	0.05~35Ω	0.55~400Ω
High Range	0.48~375Ω	7.5~6000Ω	0.4~250Ω	4~3000Ω	0.24~180Ω	2.6~2000Ω
Resolution	16bits					
Low Range Accuracy	0.35%+0.075S					
High Range Accuracy	0.1%+0.005S					
Slew Rate						
Current Range	0.003~0.24A/us	0.003~0.06A/us	0.003~0.36A/us	0.003~0.12A/us	0.003~0.54A/us	0.003~0.18A/us
Slew Rate	0.24~4.8A/us	0.06~1.2A/us	0.36~6.4A/us	0.12~2.4A/us	0.54~9.6A/us	0.18~3.6A/us
Accuracy	(1±35%)* Set value					
Voltage Measurement						
Range	30V/150V	120V/600V	30V/150V	120V/600V	30V/150V	120V/600V
Resolution	0.5mV/2.5mV	2mV/10mV	0.5mV/2.5mV	2mV/10mV	0.5mV/2.5mV	2mV/10mV
Accuracy	0.05%+0.05%F.S.					
Current Measurement						
Range	12A/120A	3A/30A	16A/160A	6A/60A	24A/240A	9A/90A
Resolution	0.2mA/2mA	0.05mA/0.5mA	0.3mA/3mA	0.1mA/1mA	0.4mA/4mA	1.5mA/15mA
Accuracy	0.1%+0.1%F.S.					
Temperature						
Protection Temp	85℃					
Operation Temp	0~40℃					
Full Power Operation Temp	0~25℃					
Others						
Weight	20kg	20kg	24kg	24kg	28kg	28kg
Communication	RS232、LAN					
Display	TFT screen					
Dimension (mm)	483 (W) ×133 (H) ×600 (D)					



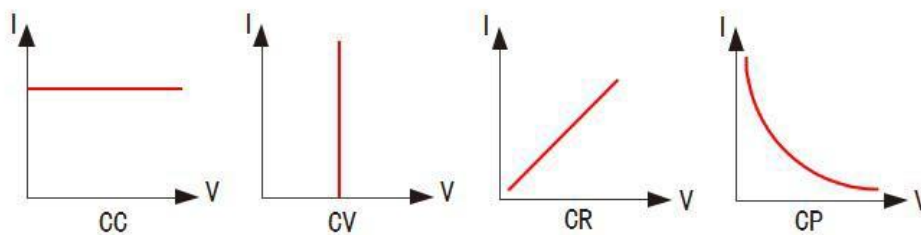
- Voltage range : 120V/150V/500V/600V/1000V;
- Current range : 30A ~ 480A;
- Power range :  
900W/1200W/1350W/1800W/2000W/3000W/6000  
W;
- Battery capacity and internal resistance test;
- Short circuit simulating;
- OCP test;
- Support analog programming;
- 20kHz dynamic test, adjustable rising/falling slew rate;
- Time measurement, (Vpk+/-) measurement;
- Sequence test support CC, CV, CP, CR, single step time up to 9999seconds;
- OVP, OCP, OPP, OTP, voltage reverse protections etc.;
- Support SCPI;
- Standard PC software;
- Air cooling;
- With RS232、LAN communication ports.

## General

The FT6400A series has modular design, with strong adaptability, high reliability and high maintainability. Mainly used in power electronics testing fields such as power batteries, medium and high power DC power supplies, DC generators, etc. The FT6400A electronic load not only provides OCP, OVP, OPP, OTP, RVP but also provides Von and Voff functions and programmable protection functions for the device under test. These features can greatly improve the reliability of the product, and it is a reliable product for engineering test and automatic test system integration.

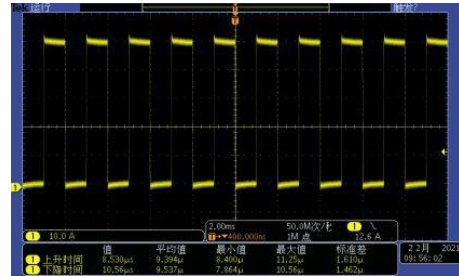
## CC, CV, CR, CP

The FT6400A series electronic load has four test modes: constant current, constant voltage, constant resistance and constant power, which can meet comprehensive test requirements.



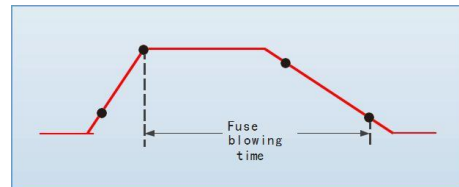
## Dynamic test

The FT6400A series programmable dc electronic loads provide high- speed programmable dynamic test functions (current dynamic and resistance dynamic testing). The dynamic test function allows users to set load high/low level, T1/T2 time and slew rate with a maximum slew rate 10A/us. It is often used to test the dynamic characteristics of the power supply. To meet the needs of different situations, the dynamic test includes three modes: continuous, pulse and flip. Continuous mode can provide up to 20kHz load frequency; in pulse and flip mode, trigger signal can be received to generate load change, allowing you to test as you want.



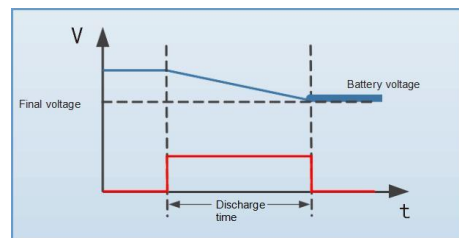
## Time measurement

The FT6400A series has time measurement feature, which can capture external switching signals, combining with voltage and current signals to test system response and action time. For pulse currents, it can test its pulse width. It is mainly used to test the switching time, holding time, rising edge and falling edge time of the power supply. It can also measure the fuse blowing time and circuit breaker response time.



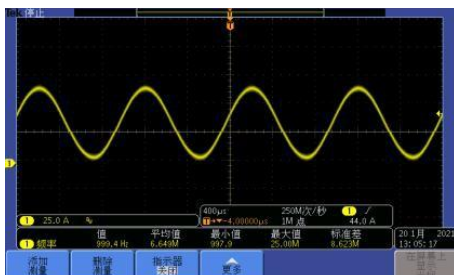
## Battery test

Battery test includes battery internal resistance test and battery capacity test. It adopts the constant current method for battery discharging process. The electronic load will records the discharge time and AH/WH automatically during the process.

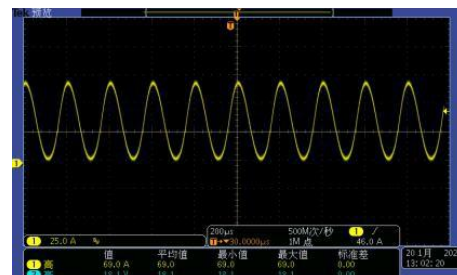


## External analog programming

Other devices can continuously control the load through an external voltage signal (DC or AC). The external voltage signal of 0~10V corresponds to 0~100% full-scale load current. This function is also suitable for various complex load waveforms test.



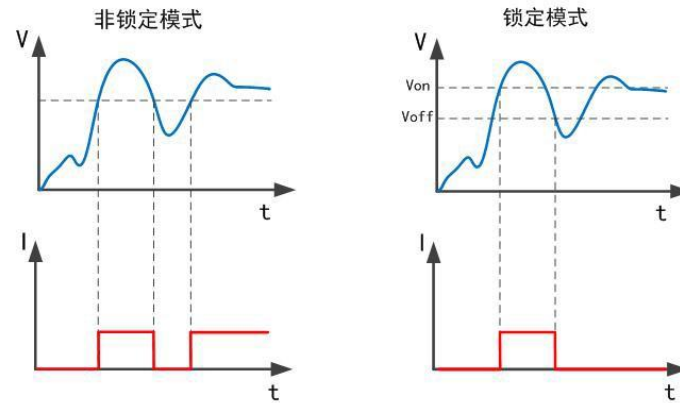
1kHz sine wave



5kHz sine wave

## Protections

The FT6400A series provides OVP, OCP, OPP, OTP, voltage inversion protections, etc. In addition, users can set voltage, current, and power protection values as needed. When the output voltage of the device under test rises or falls slowly, the Von and Voff functions can be turned on. To meet more test requirements, the Von load voltage supports locking or non-locking.



## Host PC software

The FT6400 series 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

Model	Specification	Size	Model	Specification	Size
FT6403A	120V/120A/900W	3U	FT6412A	150V/120A/1200W	3U
FT6404A	500V/30A/900W	3U	FT6413A	600V/30A/1200W	3U
FT6405A	120V/180A/1350W	3U	FT6420A	150V/160A/2000W	3U
FT6406A	500V/45A/1350W	3U	FT6421A	600V/60A/2000W	3U
FT6407A	120V/240A/1800W	3U	FT6430A	150V/240A/3000W	3U
FT6408A	500V/60A/1800W	3U	FT6431A	600V/90A/3000W	3U

## Options

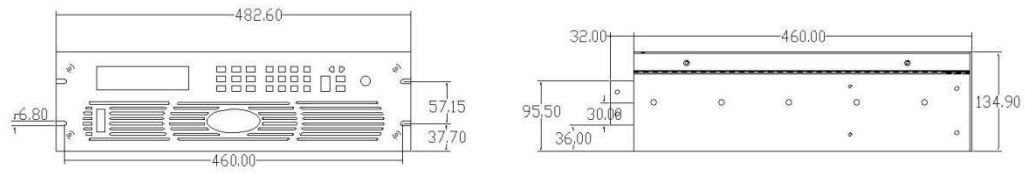
Specification	DC2-2P15M	DC16-2P20M	DC25-2P25M	DC50-2P20M	DC50-2P40M	DC120-2P20M	DC150-2P20M
Max voltage	750V						
Max current	10A	60A	100A	200A	200A	300A	400A
Terminal	M8/Alligator	M8/M8	M8/M8	M8/M8	M8/M8	M8/M8	M10/M10
Cross-sectional area	4.0mm <sup>2</sup>	16mm <sup>2</sup>	25mm <sup>2</sup>	50mm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

# Datasheet



## Dimension

FT6403~FT6408 Model dimension



FT6412~FT6431 Model dimension

