FT6100 series

Multi-channel electronic load array

Summary

The FT6100 series is a full-featured multi-channel programmable DC electronic load product based on highly reliable, highly integrated applications. Products are tailor-made for integrated applications and are highly cost-effective. In most integrated applications, it can replace the small power single electronic load, saving a lot of space for system construction, and significantly saving costs.

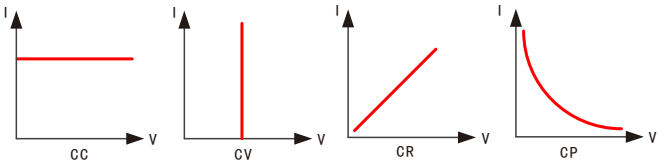
Developed specifically for embedded integrated applications, the FT6100 is a standard 19-inch chassis, equipped with RS485, LAN communication interfaces, and Modbus-RTU. Support Visual C++, C#, Delphi, Visual Basic, Labview and other most of the software platform for secondary development, users can customize their own application software according to needs.

Characteristic

- Compact structure, economical, cost-effective, and occupy small space;
- Channel modular design is small, can achieve 3U/48CH, only 1/16 of the conventional electronic load;
- Electrical isolation between channels, can be controlled separately or arbitrarily parallel;
- Each channel electronic load power range: 50W ~ 1080W, voltage specifications: 80V, 100V, 500V;
- Electronic load on-load mode: CC, CV (some models do not support), CR, CP four test modes;
- Channel support dynamic and sequence functions, load current and timing can be edited;
- With time measurement function, battery discharge function;
- OCP/OVP/OPP/OTP multiple protection;
- Standard RS485, LAN, support standard MODBUS communication protocol;
- Perfect dynamic link library, easy to secondary development;
- Standard with complete functions of the upper computer software;
- High reliability, long mean time between failures;
- LCD display, can display each channel voltage, current, power and status;
- With over voltage, over current, over power, over temperature protection;
- Standard 19 inches, can be installed in the cabinet;
- Intelligent fan design, good heat dissipation and low noise.

Constant state function

FT6100 series electronic load has four test modes of constant current, constant voltage (some models do not support), constant resistance and constant power, which can meet a wide range of test requirements. Constant current and constant resistance modes can be used to test whether the output voltage of the voltage source maintains a stable output under different load conditions. For battery chargers and adapters, constant voltage mode can change the output voltage of the charger and adapter to verify that the output current is correct



Application programming

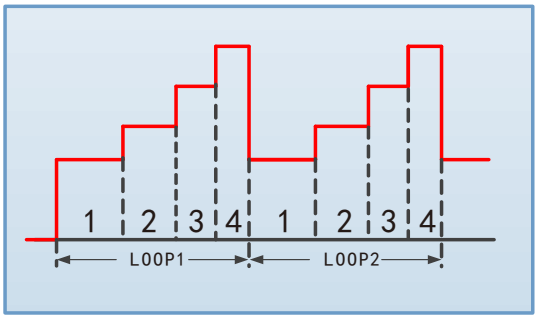
The FT6100 provides a LAN or RS485 interface for multi-machine integration and can be easily integrated into the test system. Communication adopts standard Modbus protocol and provides detailed programming manual and DLL development kit, supports C#, C++, Delph, Labview development languages, convenient secondary development. To facilitate debugging, the product comes with a Demo software, which can perform all functions of the load system, waveform display, and data saving functions. The software system is easy to operate and powerful, and users can easily use it.

Application field

- Production, aging and quality inspection of low-power power supply products such as low-power power supply, DC converter, mobile phone charger, 3C battery, BMS, etc;
- Automotive wiring harness, connectors, fuses, relays, central electrical box and other product testing;
- Battery pack, BMS protection board balanced discharge, power tool production testing, LED power board production testing and other related fields.

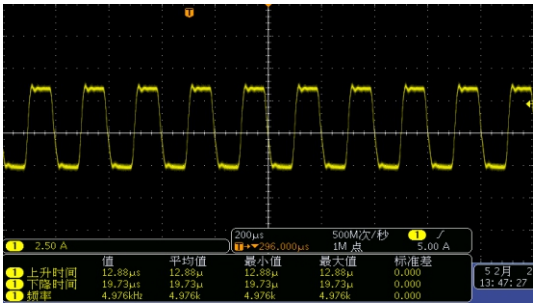
Sequence function

The FT6100 series of electronic loads provides serial testing capabilities. You can edit up to 20 test files with 100 steps each. Support CC, CV (some models do not support), CR, CP and other modes of load timing changes, and also support file link and other sequence editing functions. A maximum of 2000 timing steps can be edited. The time range of a single step is 1ms to 86400s.



Dynamic function

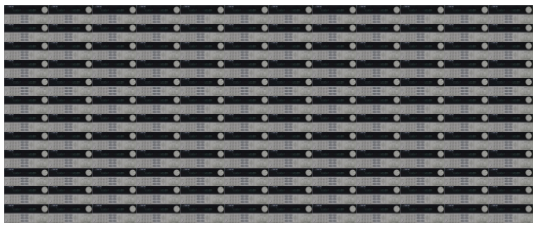
The FT6100 series of electronic loads provides programmable dynamic testing capabilities. The dynamic mode is used to simulate all kinds of on-load sudden changes and anomalies, and is suitable for testing the dynamic characteristics of power supplies. The setting range of dynamic pulse width is 50us ~ 60000m.



3U/12CH High integration

The FT6100 series adopts a highly integrated design, and a single 3U can integrate 48 electronic load channels, which is three-quarters smaller than the traditional electronic load volume, and greatly compresses the space of the integrated system. Each channel is electrically isolated, independent of each other, and can be controlled separately.

VS



Ordering information

Model	Specification	Note
FT6100	FT6100 dedicated mainframe chassis	2160W maximum power per unit, 12-channel mounting position
FT61005-80-5	Electronic load module, 80V/5A/50W*12	Occupies 12 mounting positions
FT61018-80-20	Electronic load module, 80V/20A/180W*3	Occupies 3 mounting positions
FT61036-80-20	Electronic load module, 80V/20A/360W	Occupies 2 mounting positions
FT61054-80-30	Electronic load module, 80V/30A/540W	Occupies 3 mounting positions
FT61072-80-40	Electronic load module, 80V/40A/720W	Occupies 4 mounting positions
FT61108-80-60	Electronic load module, 80V/60A/1080W	Occupies 6 mounting positions
FT61036-500-10	Electronic load module, 500V/10A/360W	Occupies 2 mounting positions
FT61054-500-15	Electronic load module, 500V/15A/540W	Occupies 3 mounting positions
FT61072-500-20	Electronic load module, 500V/20A/720W	Occupies 4 mounting positions
FT61108-500-30	Electronic load module, 500V/30A/1080W	Occupies 6 mounting positions
FT61236-100-5	Electronic load module, 100V/5A/50W*36CH	3U/36 channels*1 per unit
FT61248-100-5	Electronic load module, 100V/5A/50W*48CH	3U/48 channels*1 per unit
Note: *1, this product does not have CV function, does not support remote sampling		

Specification parameters-1

Model	FT61005-80-5	FT61018-80-20	FT61036-80-20	FT61054-80-30	FT61072-80-40	FT61108-80-60
Current	5A	20A	20A	30A	40A	60A
Voltage	80V	80V	80V	80V	80V	80V
Power	50W*12	180W*3	360W	540W	720W	1080W
Full current minimum operating voltage	1V@5A	1V@20A	0.6V@20A	0.6V@30A	0.4V@40A	0. 6V@60A
Maximum number of modules per unit	1	4	6	4	3	2
Constant current						
Range	0～5A	0～20A	0～20A	0～30A	0～40A	0～60A
Resolution	1. 25mA	5mA	5mA	7. 5mA	10mA	15mA
Precision	0.1%+0.15%F.S.	0.1%+0.15%F. S.	0. 1%+0. 15%F. S.	0.1%+0. 15%F. S.	0.1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Constant voltage						
Range	0～80V	0～80V	0～80V	0～80V	0～80V	0～80V
Resolution	20mV	20mV	20mV	20mV	20mV	20mV
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0.1%+0.15%F.S.	0.1%+0.15%F.S.	0.1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Constant resistance						
Range	0. 2～4000Ω	0. 05～1000Ω	0. 05～1000Ω	0. 033～670Ω	0. 025～500Ω	0. 016～330Ω
Resolution	12bits	12bits	12bits	12bits	12bits	12bits
Precision	Vin/Rset*0. 2%+0. 3%IF. S.					
Constant power						
Range	0～50W	0～180W	0～360W	0～540W	0～720W	0～1080W
Precision	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.
Current measurement						
Range	0～5A	0～20A	0～20A	0～30A	0～40A	0～60A
Resolution	1. 25mA	5mA	5mA	7. 5mA	10mA	15mA
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Voltage measurement						
Range	0～80V	0～80V	0～80V	0～80V	0～80V	0～80V
Resolution	20mV	20mV	20mV	20mV	20mV	20mV
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Dynamic current						
Dynamic pulse width	0. 05～59. 999ms/60～60000ms					
Resolution	1us/1ms					
Precision	1us+100ppm					
Basic characteristic						
AC input	220VAC±10%，50～60Hz，120VA					
Temperature drift	50ppm/℃					

Specification parameters-2

Model	FT61036-500-10	FT61054-500-15	FT61072-500-20	FT61108-500-30
Current	10A	15A	20A	30A
Voltage	500V	500V	500V	500V
Power	360W	540W	720W	1080W
Full current minimum operating voltage	5V@10A	5V@15A	5V@20A	5V@30A
Maximum number of modules per unit	6	4	3	2
Constant current				
Range	0～10A	0～15A	0～20A	0～30A
Resolution	2. 5mA	3. 75mA	5mA	7. 5mA
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Constant voltage				
Range	0～500V	0～500V	0～500V	0～500V
Resolution	125mV	125mV	125mV	125mV
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Constant resistance				
Range	0. 6～12000Ω	0. 4～8000Ω	0. 3～6000Ω	0. 2～4000Ω
Resolution	12bits	12bits	12bits	12bits
Precision	Vin/Rset*0. 2%+0. 3%IF. S.			
Constant power				
Range	0～360W	0～540W	0～720W	0～1080W
Precision	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.
Current measurement				
Range	0～10A	0～15A	0～20A	0～30A
Resolution	2. 5mA	3. 75mA	5mA	7. 5mA
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Voltage measurement				
Range	0～500V	0～500V	0～500V	0～500V
Resolution	125mV	125mV	125mV	125mV
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Dynamic current				
Dynamic pulse width	0. 05～59. 999ms/60～60000ms			
Resolution	1us/1ms			
Precision	1us+100ppm			
Basic characteristic				
AC input	220VAC±10%，50～60Hz，120VA			
Temperature drift	50ppm/℃			

Specification parameters-3

Model	FT61236-100-5	FT61248-100-5
Current	5A	5A
Voltage	100V	100V
Power	50W	50W
Channel number	36CH	48CH
Full current minimum operating oltage	1V@5A	1V@5A
Constant current		
Range	0～5A	0～5A
Resolution	1. 25mA	1. 25mA
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Constant resistance		
Range	0. 25～5000Ω	0. 25～5000Ω
Resolution	12bits	12bits
Precision	Vin/Rset*0. 2%+0. 3%IF. S.	Vin/Rset*0. 2%+0. 3%IF. S.
Constant power		
Range	0～50W	0～50W
Precision	0. 5%+0. 5%F. S.	0. 5%+0. 5%F. S.
Current measurement		
Range	0～5A	0～5A
Resolution	1. 25mA	1. 25mA
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Voltage measurement		
Range	0～100V	0～100V
Resolution	25mV	25mV
Precision	0. 1%+0. 15%F. S.	0. 1%+0. 15%F. S.
Other characteristic		
AC input	220VAC±10%，50～60Hz，120VA	220VAC±10%，50～60Hz，120VA
Temperature drift	50ppm/℃	50ppm/℃

Dimension drawing