ITECH
YOUR POWER TESTING SOLUTION

IT8700PMulti-channel Programmable DC Electronic Load

APPLICATIONS

- ATE Test System
- Civil Aviation
- Solar Cell
- Communication Test
- LED

Your Power Testing Solution

IT8700P
Multi-channel
Programmable
DC Electronic Load

IT8700P series multi-channel programmable DC electronic load has been improved and upgraded on the basis of IT8700. It keeps the original modular design. A single frame can reach 8 channels, and extended frame can reach 16 channels. It is equipped with both front and rear terminals, which can meet various testing requirements of users.

Same as IT8700, IT8700P also has the functions of slope adjustment and waveform editing. Besides, IT8700P has increased the functions including maximum current limit, PLC setting and CV loop adjustment. Users can set the automatic test function in the upgraded 7 operating modes, which is convenient for fast and accurate testing on R&D and production lines. At the same time, IT8700P series has full protection such as OVP,OCP,OPP,OTP, etc., which can prevent damage or injury caused by miss operation or environmental factors.

FEATURE

- Removable modules for easy system configurability
- Dual-channel module can display each channel data simultaneously
- Single frame up to max.8 channels, extended frame up to max.16 channels
- Dynamic power distribution function for dual channels
- Arbitrary selection of front/rear terminal
- Users can customize the left and right modules
- 7 operation modes: CC/CV/CR/CP/CV+CC/CR+C-C/CW+CC
- CV loop speed is adjustable to match different power supplies
- Resolution and high accuracy up to 0.1mV/0.01mA

- Measurement of short-circuit peak current and peak voltage
- Voltage and current measurement, up to 50kHz
- Adjustable current rise/fall slope
- Simulate various waveforms with load under List mode
- Up to 25kHz dynamic mode, 100kHz List mode setting
- Automatic test function can automatically determine whether the test results exceed the set specifications
- Simultaneously perform multiple sets of electronic load modules
- OVP/OCP/OPP/OTP/anti-reverse protection
- Built-in Ethernet/GPIB/USB/RS232 communication interface

Model	Specification
IT8731P	80V/40A/200W
IT8732P	80V/60A/400W
IT8732BP	500V/20A/300W
IT8733P	80V/120A/600W
IT8733BP	500V/30A/500W
IT8722P	80V/20A/250W*2CH
IT8722BP	500V/15A/250W*2CH
IT8723P	80V/45A/300W*2CH

Matching frame	
IT8701P	Two-load module main control unit (including four interfaces)
IT8702P	Four-load module main control unit (including four interfaces)
IT8703P	Four-load module expansion unit

*1: The total power of dual channel for IT8722P/IT8722BP is 300W, namely PCH1+PCH2≤300W
Two channels working range (0W≤PCH1/PCH2≤250W); Upper limit of two channels setting range (50W≤PCH1/PCH2≤250W)
*2：IT8700P modules should be equipped with IT8702P main frame
*3: Interfaces of main frame：RS232、USB、GPIB、Ethernet

Arbitrary selection of front/rear terminal

I T 8 7 0 0 P is equipped with both front and rear terminals. Both of them can be connected for testing. It meets different test requirements and helps to avoid operational errors as well, which lead to higher test efficiency. At the same time, IT8700P is only 4U in height, making it easy to be rack mounted, which good for system integration.
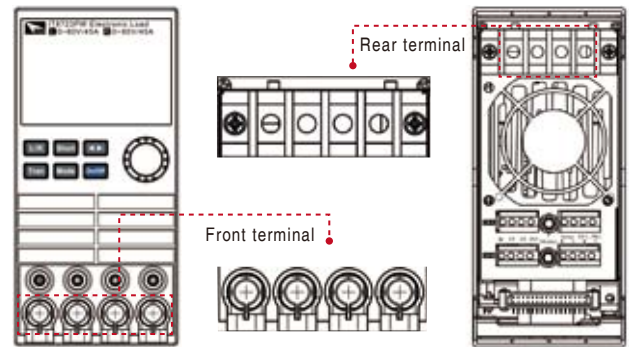
Dynamic testing and control

The operation of dynamic load is periodically switched between the two levels. the power supply The adjustment rate and instantaneous response of the power supply monitor its output voltage waveform under the mixed changes of high and low current levels, continuous time and rise/fall rates.
The dynamic test function of IT8700P series can be divided into continuous mode, pulse mode and flip transfer mode.
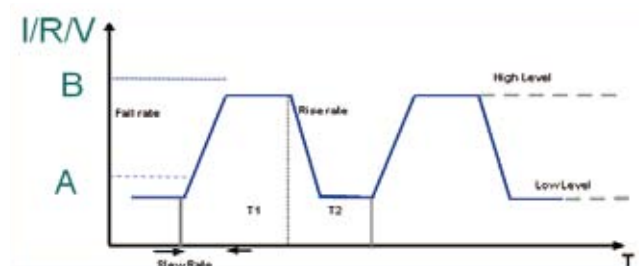
7 operation modes

Besides the four basic operation modes of CC /C V/C R /CP, there are another 3 new compound operation modes included in IT 8700 P series : C V + CC /C R + CC /C W + CC. Under CV/CR/CW operation mode, the maximum 9/current (I-Limit) can be set. This can effectively solve the problem of instantaneous surge current during testing and avoid the protection triggering, damage of the instrument or any other injury caused by possible miss operation or environmental factors.. So it can be used in various applications.

CC mode

CV mode

CR mode

CP mode

CV+CC mode

CR+CC mode

CW+CC mode
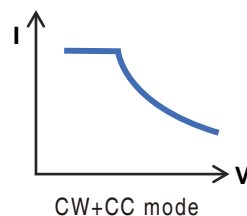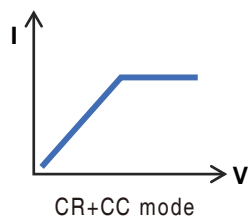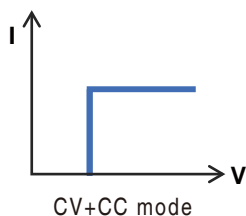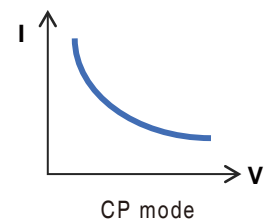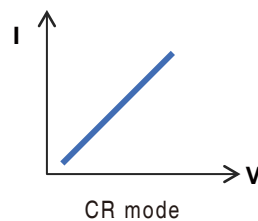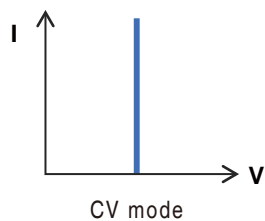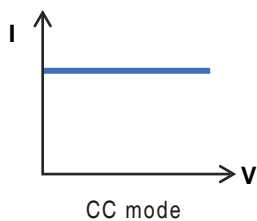
## Freely configurable modular system architecture

IT8700P adopts modular design, which has a high-performance microprocessor in every module tend mainframe. It has high measurement speed because of parallel architecture. The
mainframe controls each models synchronously and show the testing values in real time.

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IT8700P Multi-channel Programmable DC Electronic Load

Dynamic power distribution

The model of dual-channel IT8700P has dynamic power distribution function, which helps to save equipment purchasing cost. Different from traditional distribution mode, when the total power is not more than 300W and the single channel power is less than 250W, its power can be freely allocated to the two channels. The user can adjust the two-channel load power of IT8700P to the required power ratio according to the actual test requirements, so that the utilization can be optimized. For example, when you need 130W+170W or 50W+250W dual-channel load, only a single IT8700P module can fulfill the test.
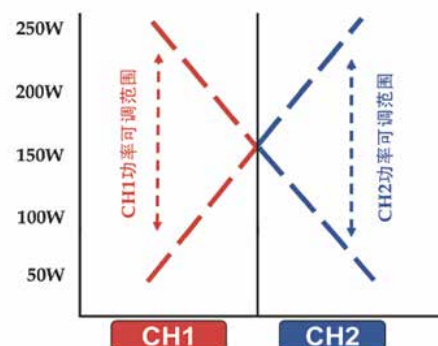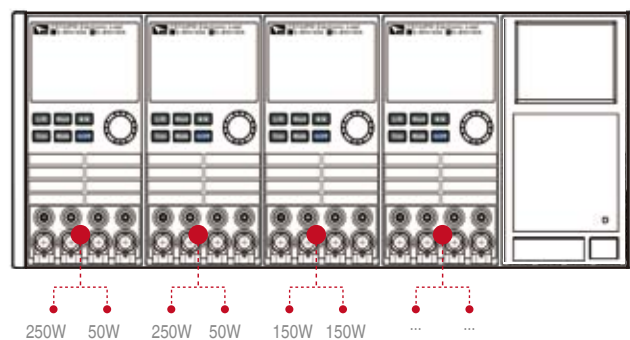

- **Application**

  PC ATX 6-channel power supply test
 -Only 3 IT8700P modules needed

  Recommended solution
  -IT8722P module 1: +12V1DC (250W) / -12VDC (50W)
  -IT8722P module 2: +12V2 DC (250W) / +5V SB (50W)
  -IT8722P module 3: +5VDC (150W) / +3.3VDC (150W)

250W   50W   250W   50W   150W   150W   ...   ...

* When the total power is not more than 300W and the single channel power is less than 250W, its power can be freely allocated to the two channels.

Peak voltage measurement (Vpk)

When measuring the dynamic current of a switching power supply, an oscilloscope was usually necessary to capture the instantaneous voltage and current waveforms and obtain Vpk+ and Vpk- accordingly. But with digital data acquisition function, IT8700P can directly obtain the Vpk+ and Vpk- values without an oscilloscope.
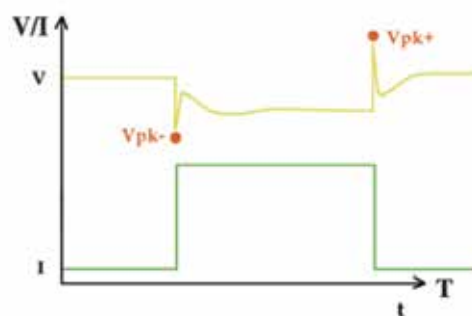
Fast measurement of I-V characteristic curve

The voltage and current measurement of IT8700P is fast (up to 50kHz). It can be applied to various testing applications such as charging piles, automotive electronics; renewable energy and so on.

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IT8722P/22BP/23P Specification
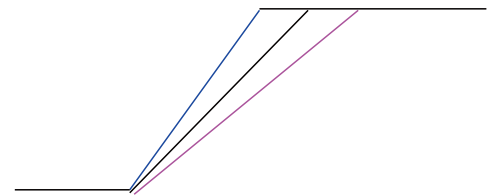
		IT8722P [*8]		IT8722BP [*8]		IT8723P [*8]	
Rated parameter (0~40℃)	Input voltage	0~80V		0~500V		0~80V	
	Input current	0~20A		0~15A		0~45A	
	Input power	250W [*1]		250W [*1]		300W	
	Min operating voltage	0.15V/3A	1.0V/20A	0.8V/3A	4.0V/15A	0.14V/4.5A	1.4V/45A
CV mode	Range	L: 0~18V; H: 0~80V		0.1~50V	0.1~500V	L: 0~18V; H: 0~80V	
	Resolution	L: 1mV; H: 10mV		L: 1mV; H: 10mV		L: 1mV; H: 10mV	
	Accuracy	±(0.05%+0.025%FS)		±(0.05%+0.05%FS)		±(0.05%+0.025%FS)	
CC mode	Range	0~3A	0~20A	0~3A	0~15A	0~4.5A	0~45A
	Resolution	L: 0.1mA; H: 1mA		L: 0.1mA; H: 1mA		L: 0.1mA; H: 1mA	
	Accuracy	±(0.05%+0.05%FS)		±(0.05%+0.05%FS)		±(0.05%+0.05%FS)	
CR mode [*2]	Range	L: 0.05Ω~10Ω; H: 10Ω~7.5KΩ		0.3Ω~10Ω	10Ω~7.5KΩ	L: 0.05Ω~10Ω; H: 10Ω~7.5KΩ	
	Resolution	16bit		16bit		16bit	
	Accuracy	0.01%+0.08S [*3]; H: 0.01%+0.0008S		0.01%+0.08S [*3]; H: 0.01%+0.0008S		0.01%+0.08S [*3]; H: 0.01%+0.0008S	
CP mode [*5]	Range	250W [*4]		250W [*4]		300W	
	Resolution	10mW		10mW		10mW	
	Accuracy	±(0.2%+0.2%FS)		±(0.2%+0.2%FS)		±(0.2%+0.2%FS)	
CC mode							
Dynamic mode	T1&T2	20μS~3600S / Res: 1μS		20μS~3600S / Res: 1μS		20μS~3600S / Res: 1μS	
	Accuracy	5μS±100ppm		5μS±100ppm		5μS±100ppm	
	Rise / fall slope [*6]	0.0001~0.2A/μS	0.001~1.6A/μS	0.0001~0.1A/μS	0.001~0.5A/μS	0.0001~0.25A/μS	0.001~2.5A/μS
	Min rise time [*7]	≒10μS		≒20μS		≒12μS	
Measuring range							
Voltage readback value	Range	0~18V	0~80V	0~50V	0~500V	0~18V	0~80V
	Resolution	L: 0.1 mV; H: 1mV		L: 1 mV; H: 10mV		L: 0.1 mV; H: 1mV	
	Accuracy	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)		±(0.025%+0.025%FS)	
Current readback value	Range	0~3A	0~20A	0~3A	0~15A	0~4.5A	0~45A
	Resolution	L: 0.01mA; H: 0.1mA		L: 0.01mA; H: 0.1mA		L: 0. 1mA; H: 1mA	
	Accuracy	±(0.05%+0.05%FS)		±(0.05%+0.05%FS)		±(0.05%+0.05%FS)	
Power readback value	Range	250W		250W		300W	
	Resolution	10mW		10mW		10mW	
	Accuracy	±(0.2%+0.2%FS)		±(0.2%+0.2%FS)		±(0.2%+0.2%FS)	
Protected range							
Over power protection		≒250W		≒260W		≒310W	
Overcurrent protection		≒3.3A	≒22A	≒3.3A	≒16.5A	≒5A	≒50A
Over voltage protection		≒82V		≒530V		≒82V	
Over temperature protection		≒85℃		≒85℃		≒85℃	
Specification							
Short circuit	Current	≒3.3/3A	≒22/20A	≒3.3/3A	≒16.5/15A	≒5/4.5A	≒50/45A
	Voltage	0V		0V		0V	
	Resistance	≒50mΩ		≒260mΩ		≒30mΩ	
Input terminal impedance		300KΩ		≒1MΩ		300KΩ	
Size(mm)		82*183*573		82*183*573		82*183*573	
Weight		5KG		5KG		5KG	

*1 Support dynamic distribution power, single way can reach max 250W, two   ways total power is no more than 300W, single way average power is 150w.

*2 Voltage/current input value is not less than 10% FS (FS is full scale).

*3 Resistance read-back value range: ((1/(1/R+(1/R)*0.01%+0.08),1/(1/R-(1/R)*0.01%-0.08))

*4 Support dynamic distribution power, single channel can reach max 250W, two way total power is no more than 300W

*5 Voltage/current input values are not less than 10% FS

*6 Up/down slope: 10% ~ 90% current rising slope when from 0 to maximum current

*7 The minimum rise time: 10% ~ 90% current rise time

*8   IT8722 / IT8722B are dual channel dynamic power allocation module, 2 channels' specification is the same.

*This information is subject to change without notice notice

IT8731P/32P/32BP/33BP/33P Specification

		IT8731P		IT8732P		IT8732BP		IT8733BP		IT8733P	
Rated parameter（0~40℃）	Input voltage	0~80V		0~80V		0~500V		0~500V		0~80V	
	Input current	0~40A		0~60A		0~20A		0~30A		0~120A	
	Input power	200W		400W		300W		500W		600W	
	Min operating voltage	0.12V/4A	1.2V/40A	0.15V/6A	1.5V/60A	0.72V/3A	4.8V/20A	0.54V/3A	5.4V/30A	0.24V/12A	2.4V/120A
CV mode	Range	L: 0~18V; H: 0~80V		L: 0~18V; H: 0~80V		L: 0~18V; H: 0~500V		L: 0~18V; H: 0~500V		L: 0~18V; H: 0~80V	
	Resolution	L: 1mV; H: 10mV		L: 1mV; H: 10mV		L: 1mV; H: 10mV		L: 1mV; H: 10mV		L: 1mV; H: 10mV	
	Accuracy	±(0.05%+0.025%FS)		±(0.05%+0.025%FS)		±(0.05%+0.025%FS)		±(0.05%+0.025%FS)		±(0.05%+0.025%FS)	
CC mode	Range	0~4A	0~40A	0~6A	0~60A	0~3A	0~20A	0~3A	0~30A	0~12A	0~120A
	Resolution	L: 0.1mA; H: 1mA		L: 0.1mA; H: 1mA		L: 0.1mA; H: 1mA		L: 0.1mA; H: 1mA		1mA	10mA
	Accuracy	±(0.05%+0.05%FS)		±(0.05%+0.05%FS)		±(0.05%+0.05%FS)		±(0.05%+0.05%FS)		±(0.05%+0.05%FS)	±(0.1%+0.05%FS)
CR mode[*1]	Range	L: 0.05Ω~10Ω; H: 10Ω~7.5KΩ		L: 0.05Ω~10Ω; H: 10Ω~7.5KΩ		0.25Ω~10Ω	10Ω~7.5KΩ	0.2Ω~10Ω	10Ω~7.5KΩ	L: 0.05Ω~10Ω; H: 10Ω~7.5KΩ	
	Resolution	16bit		16bit		16bit		16bit		16bit	
	Accuracy	L: 0.01+0.08S; H: 0.01+0.0008S		L: 0.01+0.08S; H: 0.01+0.0008S		L: 0.01+0.08S; H: 0.01+0.0008S		L: 0.01+0.08S; H: 0.01+0.0008S		L: 0.01+0.08S; H: 0.01+0.0008S	
CP mode[*2]	Range	200W		400W		300W		500W		600W	
	Resolution	10mW		10mW		10mW		10mW		10mW	
	Accuracy	±(0.2%+0.2%FS)		±(0.2%+0.2%FS)		±(0.2%+0.2%FS)		±(0.2%+0.2%FS)		±(0.2%+0.2%FS)	
Dynamic mode		CC mode								CC mode	
	T1&T2	20μs~3600s / Res: 1μs		20μs~3600s / Res: 1μs		20μs~3600s / Res: 1μs		20μs~3600s / Res: 1μs		20μs~3600s / Res: 1μs	
	Accuracy	5μs±100ppm		5μs±100ppm		5μs±100ppm		5μs±100ppm		5μs±100ppm	
	Rise / fall slope	0.0001~0.2A/μs	0.001~2A/μs	0.0001~0.25A/μs	0.001~2.5A/μs	0.0001~0.1A/μs	0.001~0.8A/μs	0.0001~0.08A/μs	0.001~0.8A/μs	0.001~0.25A/μs	0.01~2.5A/μs
	Min rise time	≒15μS		≒15μS		≒20μS		≒25μS		≒35μS	
Voltage readback value	Range	0~18V	0~80V	0~18V	0~80V	0~18V	0~500V	0~18V	0~500V	0~18V	0~80V
	Resolution	L: 0.1 mV; H: 1mV		L: 0.1 mV; H: 1mV		L: 1 mV; H: 10mV		L: 1 mV; H: 10mV		L: 0.1 mV; H: 1mV	
	Accuracy	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)		±(0.025%+0.025%FS)		±(0.025%+0.025%FS)		±(0.025%+0.025%FS)	
Current readback value	Range	0~4A	0~40A	0~6A	0~60A	0~3A	0~20A	0~3A	0~30A	0~12A	0~120A
	Resolution	L: 0.1mA; H: 1mA		L: 0.1mA; H: 1mA		L: 0.01mA; H: 0.1mA		L: 0.01mA; H: 0.1mA		L: 0.1mA; H: 1mA	
	Accuracy	±(0.05%+0.05%FS)		±(0.05%+0.05%FS)		±(0.05%+0.05%FS)		±(0.05%+0.05%FS)		±(0.05%+0.05%FS)	
Power readback value	Range	200W		400W		300W		500W		600W	
	Resolution	10mW		10mW		10mW		10mW		10mW	
	Accuracy	±(0.2%+0.2%FS)		±(0.2%+0.2%FS)		±(0.2%+0.2%FS)		±(0.2%+0.2%FS)		±(0.2%+0.2%FS)	
Protected range											
Over power protection		≒210W		≒410W		≒310W		≒510W		≒610W	
Overcurrent protection		≒4.4A	≒44A	≒6.6A	≒66A	≒3.3A	≒22A	≒3.3A	≒33A	≒13.2A	≒132A
Over voltage protection		≒82V		≒82V		≒530V		≒530V		≒82V	
Over temperature protection		≒85℃		≒85℃		≒85℃		≒85℃		≒85℃	
Specification											
Short circuit	Current	≒4.4/4A	≒44/40A	≒6.6/6A	≒66/60A	≒3.3/3A	≒22/20A	≒3.3/3A	≒33/30A	≒13.2/12A	≒132/120A
	Voltage	0V		0V		0V		0V		0V	
	Resistance	≒30mΩ		≒25mΩ		≒240mΩ		≒180mΩ		≒20mΩ	
Input terminal impedance		300KΩ		300KΩ		1MΩ		1MΩ		300KΩ	
Size(mm)		82*183*573		82*183*573		82*183*573		82*183*573		82*183*573	
Weight		5KG		5KG		5KG		5KG		5KG	
AC Input	Voltage	220V ±10%/110V ±10%		220V ±10%/110V ±10%		220V ±10%/110V ±10%		220V ±10%/110V ±10%		220V ±10%/110V ±10%	
	Frequency	50Hz/60Hz		50Hz/60Hz		50Hz/60Hz		50Hz/60Hz		50Hz/60Hz	

*1：Accuracy refers to specifications is %+n%FS (Full Scale) of set value

*2：When input voltage and current value＞＝10% of FS

*This information is subject to change without notice notice

YOUR POWER
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