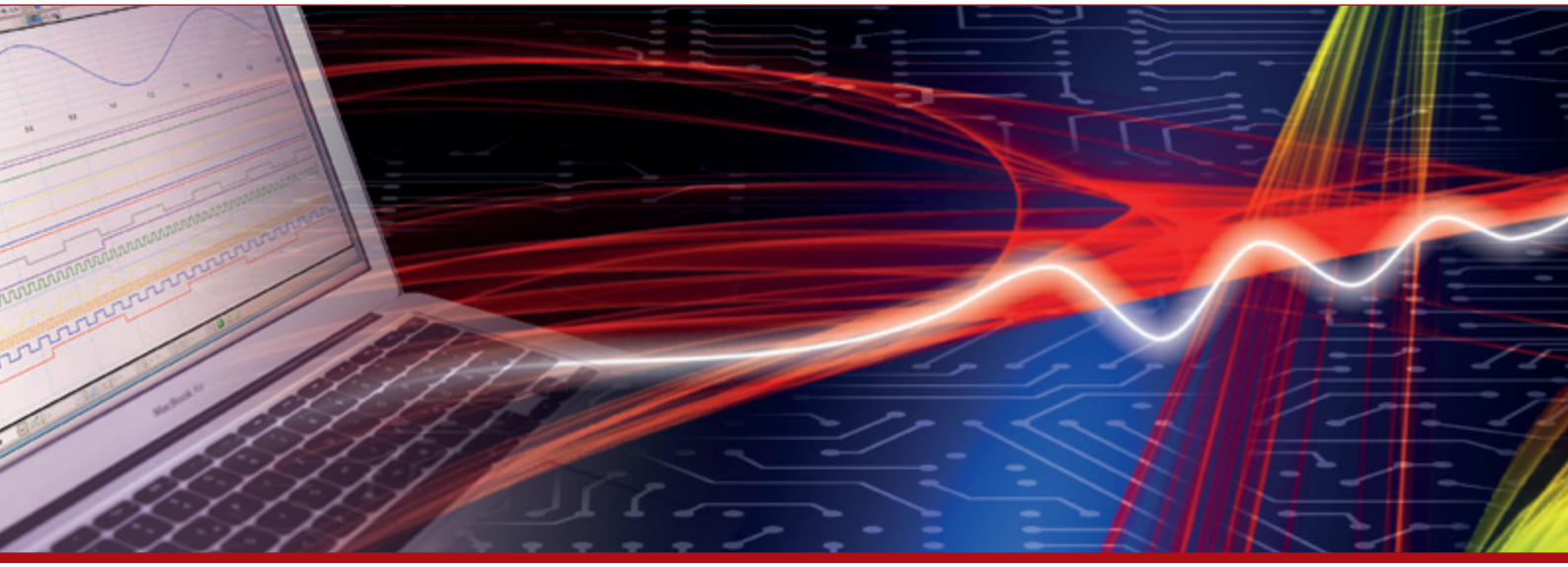
Product Datasheet - Technical Specifications



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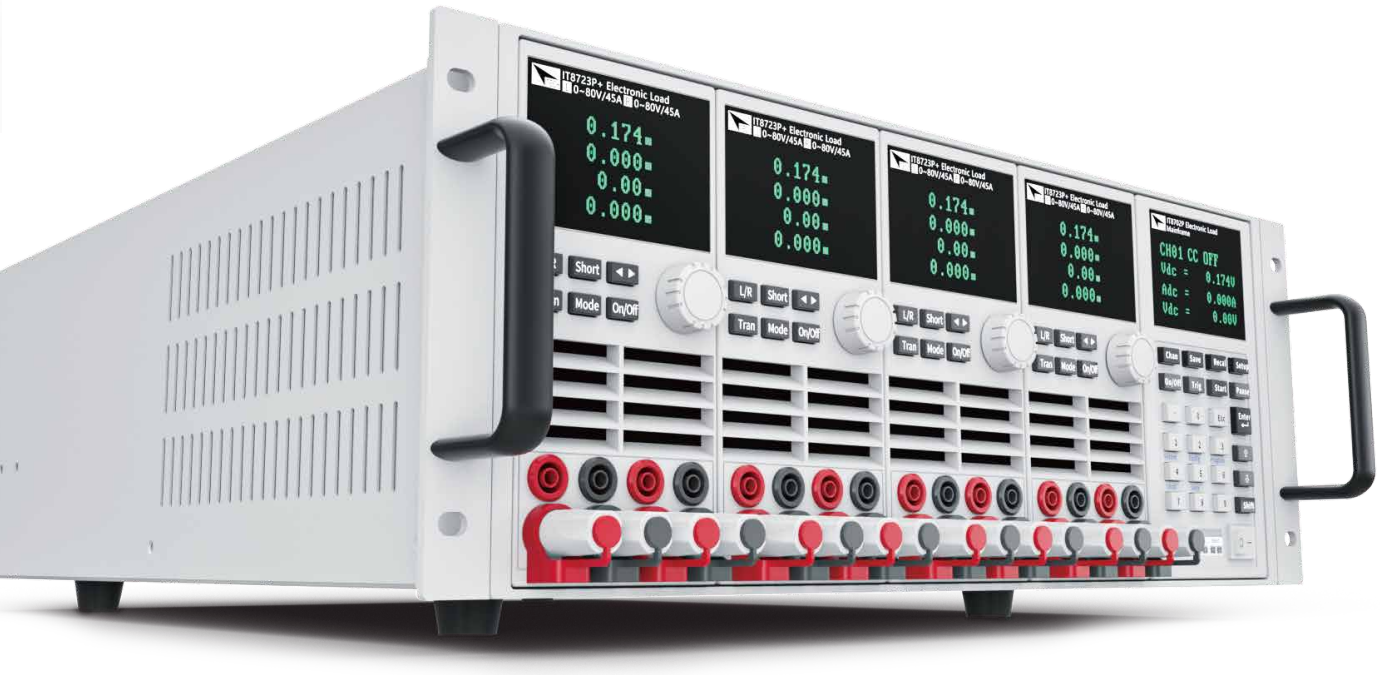
ITECH

YOUR POWER TESTING SOLUTION

IT8700P+

High Speed Multi-channel DC Electronic Load



Your Power Testing Solution

IT8700P+ High Speed Multi-channel DC Electronic Load

IT8700P+ series high-speed multi-channel DC electronic load is an upgraded version of the original IT8700P series with higher speed and higher precision. Its modules support master-slave paralleling connection for power extension. It's compatible with IT8700P mainframe, the new modules and old modules can work together. The IT8700P+ modules have faster dynamic response and the current rising and falling slope of a single module can reach 12A/μs. In addition, the low internal resistance makes it suitable for low-voltage loading test. Faster loop speed can accurately control current without overshoot which improves test efficiency. Furthermore, it has three current ranges for higher accuracy and lower ripple. The voltage and current measurement speed of this series has been upgraded to 250kHz. It has built-in LAN, USB and RS232 interfaces, and supports SCPI protocol. Therefore, IT8700P+ is good for system integration and is suitable for R&D and production line testing of super capacitors, fuel cells, lithium ion batteries, high-speed AC-DC and DC-DC power supplies such as computer power supplies and communication power supplies.

FEATURE

- Three-stage current range, higher accuracy and lower ripple
- Supports master-slave parallel connection of 16-channel modules, flexibly extends power
- Faster dynamic response, the current rising and falling slope of a single module can reach 12A/μs
- Stable operation down to zero volts, suitable for low-voltage capacitors, solar cells, fuel cells, and other low-voltage high current power supplies
- Faster loop speed, precise control of current without overshoot
- The voltage and current measurement speed is upgraded to 250kHz, good for system integration
- Comprehensive protection functions: OVP/OCP/OPP/OTP, Sense protection
- Compatible with IT8700P mainframe, old and new modules can be matched
- Short-circuit peak current measurement function
- Available front/rear terminals*1
- 8 operating modes: CC/ CV/ CR/ CW/ CV+CC/ CR+CC/ CW+CC/ CV+CR (CR-LED)
- Automatic test function to tell whether the test results exceed the set specifications
- Built-in LAN, USB, RS232 interfaces*2
- CV loop speed is adjustable to match different DUTs
- Multi channel synchronous control

*1 Current is no more than 15A if connecting with front terminals
*2 Models with (G) includes GPIB, please consult ITECH for details.

Model	Voltage	Current	Power
IT8721P+*2	150 V	20 A	MAX 150W*2CH
IT8731P+	150 V	40 A	200 W
IT8722P+*1	150 V	20 A	MAX 250W*2CH
IT8723P+	150 V	45 A	300W*2CH
IT8732P+	150 V	60 A	400 W
IT8733P+	150 V	120 A	600 W
IT8722BP+*1	600 V	15 A	MAX 250W*2CH
IT8732BP+	600 V	20 A	300W
IT8733BP+	600 V	30 A	500W

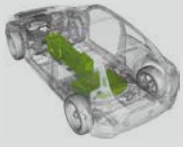
Main Frame	
IT8701P	Mainframe for 2 modules (including three interfaces)
IT8702P	Mainframe for 4 modules (including three interfaces)
IT8703P	Expansion mainframe for 4 modules

*1 It is a dual-channel dynamic power distribution module. The parameters of the two channels are the same. The maximum power of a single channel is 250W. The total power of the two channels is not more than 300W. The average power of a single channel is 150W.
*2 is a dual-channel dynamic power distribution module. The parameters of the two channels are the same. The maximum power of a single channel is 150W. The total power of the two channels is not more than 200W. The average power of a single channel is 100W.

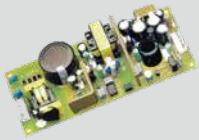
Applications


Super Capacitors


Fuel Cells


Lithium ion Batteries


Communication power supply


DC-DC converter or PSU


High speed AC-DC converter or PSU

Flexible modules combination

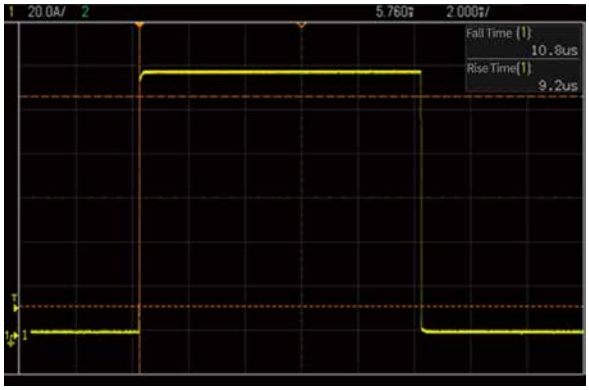
The IT8700P+ series is designed with removable modules, so that you can choose different modules according to your needs. These modules can work with the original IT8700P series modules too. There are high-performance microprocessor chips in each load module and mainframe. Parallel architecture is adopted to achieve faster testing. The load modules are controlled synchronously by the system, and the power supply with multiple outputs can also be tested synchronously.

Low voltage loading, stable operation down to zero volts

The IT8700P+ module has ultra-low on-resistance and three ranges. Under the medium and small range, the minimum load voltage is <0.1V. In the high current range, the minimum load voltage at full current is <0.5V, and lower input impedance can be obtained after parallel connection. It is suitable for testing fuel cells, supercapacitors, solar cells, DC-DC converters and other low voltage and high current electronic devices.

Fast dynamic response

Power supplies often have high requirements for instantaneous signals and dynamic response. In order to meet faster and faster testing requirements, IT8700P+ series provides high-speed, programmable dynamic sequence control. The current rising and falling slope of a single module can reach 12A/μs, much faster than the last generation. So it can be used for high-speed dynamic test of communication power supply and computer power supply. There are three modes of the dynamic test function, namely continuous mode, pulse mode and toggle mode.



IT8733P+(150V, 120A, 600W) dynamic current curve(1A-120A), curren slew 12A/us

Master-slave parallel connection

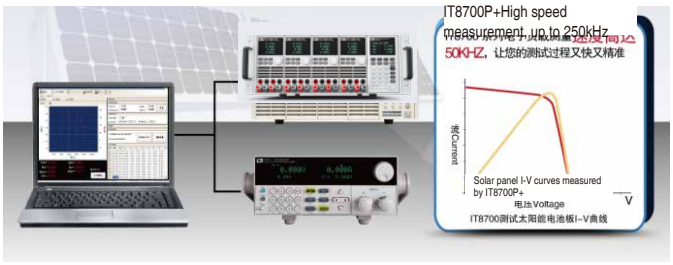
The IT8700P+ series supports master-slave parallel connection, 8 units (16 channels) at most can be connected in parallel, and the power can be extended to 4800W. The synchronization time error is 4us between paralleled units, and current equally assigning accuracy is 0.1%+0.1%F.S. Thanks to the flexible power extension , it can be used to test various DUTs and increase equipment utilization. The current sharing mode makes no sacrifice of the dynamic performance after parallel connection.

3 current ranges, well applied to Energy Star standard test for consumer electronics products

IT8700P+ provides 3 current ranges and higher measurement accuracy for DUTs that require high current accuracy like batteries. No need to build a complex test bench, the low current range of the IT8700P+ can be used for Energy Star standard testing in sleep, idle and standby modes of consumer electronics products. Actually it is suitable for almost all consumer electronics products that require precise current setting and measurement at the μA and mA levels.

Fast measurement of I-V characteristic

The voltage and current measurement of IT8700P+ is fast (up to 250kHz). It can be applied to various testing applications such as charging piles, automotive electronics; renewable energy and so on.



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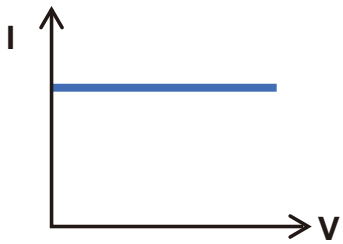
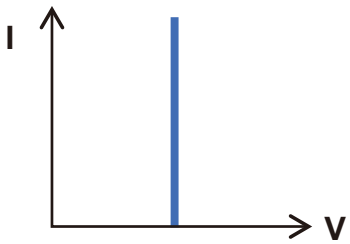
IT8700P+ High Speed Multi-channel DC Electronic Load

8 operation modes

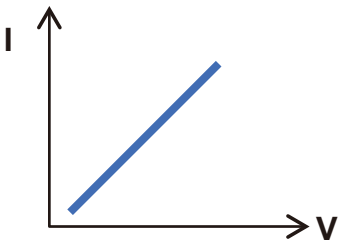
Besides the four basic operation modes of CC/CV/CR/CW, IT8700P+ provides additional 4 compound operation modes : CV/ CC/ CR+CC/CW+CC/CV+CR(CR-LED). Under CV/CR/CW operation mode, the maximum current (I-Limit) is settable.This can effectively solve the problem of instantaneous surge current during testing and avoid triggering DUT's protection, or even burning out or any other injury caused by possible misoperation or environmental factors. So it can be used in various applications.



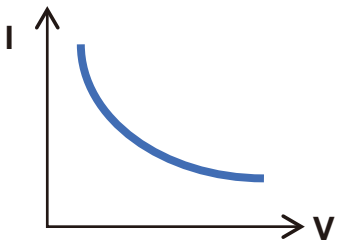
CC



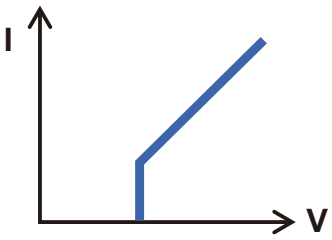
CV



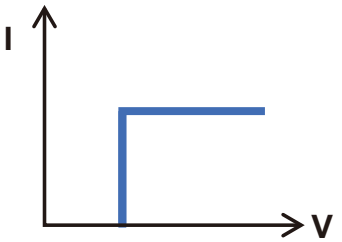
CR



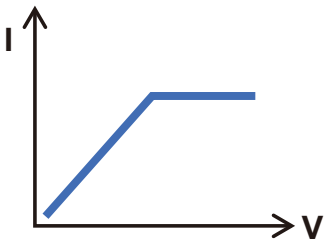
CW



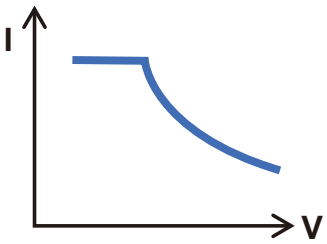
LED(CV+CR)



CV+CC



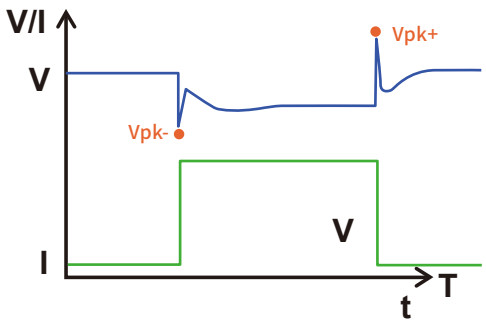
CR+CC



CW+CC

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.



IT8700P+ Specification

Parameter		IT8721P+		
Rated value	Voltage	0.1~18V		0.1~150V
	Current	0～0.6A	0～3A	0~20A
	Power	0～30W	0~150W *7	
	Resistance	0.05Ω～10Ω		10Ω～7500Ω
	Min. resistance	≒100mΩ	≒20mΩ	
	MOV	0.09V at 0.6A	0.09V at 3A	0.6V at 20A
	Input leak current	0.06mA		0.2mA
Set resolution	Voltage	1mV		10mV
	Current	0.1mA	0.1mA	1mA
	Power	10mW		
	Resistance	16bit		
Readback resolution	Voltage	0.1mV		1mV
	Current	0.1mA	0.1mA	1mA
	Power	10mW		
Set accuracy	Voltage	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)
	Power *3	0.2%+0.2%FS		
	Resistance *1	0.01%+0.08S *2		0.01%+0.0008S
Readback accuracy	Voltage	±(0.025%+0.025%FS)		
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	
	Power	±(0.2%+0.2%FS)		
Set temperature drift coefficient(%of Output/℃+Offset)	Voltage	≤50ppm/°C + 50ppm/°C*FS		
	Current	≤50ppm/°C + 50ppm/°C*FS		
Readback Temperature drift coefficient((%of Output/℃+Offset)	Voltage	≤50ppm/°C + 50ppm/°C*FS		
	Current	≤50ppm/°C + 50ppm/°C*FS		
Dynamic response *4	Rising	0.0001～0.06A/μs	0.0001～0.3A/μs	0.001～2A/μs
	Falling	0.0001～0.06A/μs	0.0001～0.3A/μs	0.001～2A/μs
	Min.rising time *5	≒10μs	≒10μs	≒10μs
	Dynamic frequency	0.001～20kHz		
AC parameter	Voltage	110V ±10%or220V ±10%		
	Frequency	50/60Hz		
	Imax.	0.3A		
	Power factor	/		
Set stability-30min(% of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)		±(0.02%+0.02%FS)
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	±(0.03%+0.03%FS)
Set stability-8h(%of Output/℃+Offset)	Voltage	/		/
	Current	/	/	/
Readback stability-30min (%of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)		
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	
Readback stability-8h (%of Output/℃+Offset)	Voltage	/		
	Current	/	/	
Sense voltage		≤2V		
Storage temperature		-20°C～70°C		
Protection	OPP	33W	165W	165W
	OCP	0.66A	3.3A	22A
	OVP	18.5V		155V
	OTP	85°C		
Interfaces *6		LAN, USB, RS232		
Isolation(output to ground)		500V/DC/1mA		
Isolation(input to ground)		1.5KV/AC/5mA		
Units parallel connected		≤16(channel)		
Protection level		IP20		
Safety regulation		IEC 61010		
Cooling		fan		
Working temperature		0～40°C		
Dimension(mm)		82mm*183mm*573mm		
N.W.		5kg		

*1 Input voltage/current is not less than 10%FS (FS is full scale)

*2 Range of resistance readback value: (1/(1/R+(1/R)*0.01%+0.08),1/(1/R-(1/R)*0.01%-0.08))

*3 Input voltage/current is not less than 10%FS

*4 The loading current is not less than 2%FS

*5 Minimum rise time: 10%~90% of current rise time

*6 Each module does not have a separate communication interface and can be controlled through the host frame interface

*7 It is a dual-channel dynamic power distribution module. The parameters of the two channels are the same. The maximum output of a single channel is 150W. The total power of the dual channels is not more than 200W. The average power of a single channel is 100W.

Your Power Testing Solution

IT8700P+ High Speed Multi-channel DC Electronic Load

IT8700P+ Specification

		IT8731P+		
Rated value	Voltage	0.1~18V		0.1~150V
	Current	0～0.8A	0～4A	0~40A
	Power	0～60W	0~300W	
	Resistance	0.05Ω～10Ω		10Ω～7500Ω
	Min. resistance	≒75mΩ	≒20mΩ	
	MOV	0.06V at 0.8A	0.08V at 4A	0.8V at 40A
	Input leak current	0.06mA		0.3mA
Set resolution	Voltage	1mV		10mV
	Current	0.1mA	0.1mA	1mA
	Power	10mW		
	Resistance	16bit		
Readback resolution	Voltage	0.1 mV		1mV
	Current	0.1mA	0.1mA	1mA
	Power	10mW		
Set accuracy	Voltage	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)
	Power *3	0.2%+0.2%FS		
	Resistance *1	0.01%+0.08S *2		0.01%+0.0008S
Readback accuracy	Voltage	±(0.025%+0.025%FS)		
	Current	±(0.05%+0.05%FS)		
	Power	±(0.2%+0.2%FS)		
Set temperature drift coefficient(%of Output/℃+Offset)	Voltage	≤50ppm/°C + 50ppm/°C*FS		
	Current	≤50ppm/°C + 50ppm/°C*FS		
Readback Temperature drift coefficient((%of Output/℃+Offset)	Voltage	≤50ppm/°C + 50ppm/°C*FS		
	Current	≤50ppm/°C + 50ppm/°C*FS		
Dynamic response	Rising *4	0.0001～0.08A/μs	0.0001～0.4A/μs	0.001～4A/μs
	Falling *4	0.0001～0.08A/μs	0.0001～0.4A/μs	0.001～4A/μs
	Min.rising time *5	≒10μs	≒10μs	≒10μs
	Dynamic frequency	0.001～20kHz		
AC parameter	Voltage	110V ±10%or220V ±10%		
	Frequency	50/60Hz		
	Imax.	0.3A		
	Power factor	/		
Set stability-30min(% of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)		±(0.02%+0.02%FS)
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	±(0.03%+0.03%FS)
Set stability-8h(%of Output/℃+Offset)	Voltage	/		/
	Current	/	/	/
Readback stability-30min (%of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)		
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	
Readback stability-8h (%of Output/℃+Offset)	Voltage	/		
	Current	/	/	
Sense voltage		≤2V		
Storage temperature		-20°C～70°C		
Protection	OPP	65W	210W	210W
	OCP	0.88A	4.4A	44A
	OVP	18.5V		155V
	OTP	85°C		
Interfaces *6		LAN, USB, RS232		
Isolation(output to ground)		500V/DC/1mA		
Isolation(input to ground)		1.5KV/AC/5mA		
Units parallel connected		≤16(channel)		
Protection level		IP20		
Safety regulation		IEC 61010		
Cooling		fan		
Working temperature		0～40°C		
Dimension(mm)		82mm*183mm*573mm		
N.W.		5kg		

*1 Input voltage/current is not less than 10%FS (FS is full scale)

*2 Range of resistance readback value: (1/(1/R+(1/R)*0.01%+0.08),1/(1/R-(1/R)*0.01%-0.08))

*3 Input voltage/current is not less than 10%FS

*4 Rise/fall slew rate: 10%~90% of current rising from 0 to Max.current

*5 Minimum rise time: 10%~90% of current rise time

*6 Each module does not have a separate communication interface and can be controlled through the host frame interface

IT8700P+ Specification

		IT8722P+		
Rated value	Voltage	0.1~18V		0.1~150V
	Current	0～0.6A	0～3A	0~20A
	Power	0～48W	0~250W*7	
	Resistance	0.05Ω～10Ω		10Ω～7500Ω
	Min. resistance	≒80mΩ	≒20mΩ	
	MOV	0.05V at 0.6A	0.05V at 3A	0.4V at 20A
	Input leak current	0.06mA		0.2mA
Set resolution	Voltage	1mV		10mV
	Current	0.1mA	0.1mA	1mA
	Power	10mW		
	Resistance	16bit		
Readback resolution	Voltage	0.1mV		1mV
	Current	0.1mA	0.1mA	1mA
	Power	10mW		
Set accuracy	Voltage	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)
	Power*3	0.2%+0.2%FS		
	Resistance*1	0.01%+0.08S*2		0.01%+0.0008S
Readback accuracy	Voltage	±(0.025%+0.025%FS)		
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	
	Power	±(0.2%+0.2%FS)		
Set temperature drift coefficient(%of Output/℃+Offset)	Voltage	≤50ppm/°C + 50ppm/°C*FS		
	Current	≤50ppm/°C + 50ppm/°C*FS		
Readback Temperature drift coefficient((%of Output/℃+Offset)	Voltage	≤50ppm/°C + 50ppm/°C*FS		
	Current	≤50ppm/°C + 50ppm/°C*FS		
Dynamic response	Rising*4	0.0001～0.06A/μs	0.0001～0.3A/μs	0.001～2A/μs
	Falling*4	0.0001～0.06A/μs	0.0001～0.3A/μs	0.001～2A/μs
	Min.rising time*5	≒10μs	≒10μs	≒10μs
	Dynamic frequency	0.001～20kHz		
AC parameter	Voltage	110V ±10%or220V ±10%		
	Frequency	50/60Hz		
	Imax.	0.3A		
	Power factor	/		
Set stability-30min(% of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)		±(0.02%+0.02%FS)
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	±(0.03%+0.03%FS)
Set stability-8h(%of Output/℃+Offset)	Voltage	/		/
	Current	/	/	/
Readback stability-30min (%of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)		
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	
Readback stability-8h (%of Output/℃+Offset)	Voltage	/		
	Current	/	/	
Sense voltage		≤2V		
Storage temperature		-20°C～70°C		
Protection	OPP	52.8W	275W	275W
	OCP	0.66A	3.3A	22A
	OVP	18.5V		155V
	OTP	90°C		
Interfaces*6		LAN, USB, RS232		
Isolation(output to ground)		500V/DC/1mA		
Isolation(input to ground)		1.5KV/AC/5mA		
Units parallel connected		≤16(channel)		
Protection level		IP20		
Safety regulation		IEC 61010		
Cooling		fan		
Working temperature		0～40°C		
Dimension(mm)		82mm*183mm*573mm		
N.W.		5kg		

*1 Input voltage/current is not less than 10%FS (FS is full scale)

*2 Range of resistance readback value: (1/(1/R+(1/R)*0.01%+0.08),1/(1/R-(1/R)*0.01%-0.08))

*3 Input voltage/current is not less than 10%FS

*4 Rise/fall slew rate: 10%~90% of current rising from 0 to Max.current

*5 Minimum rise time: 10%~90% of current rise time

*6 Each module does not have a separate communication interface and can be controlled through the host frame interface

*7 It is a dual-channel dynamic power distribution module. The parameters of the two channels are the same. The maximum output of a single channel is 250W. The total power of the dual channels is not more than 300W. The average power of a single channel is 150W.

Your Power Testing Solution

IT8700P+ High Speed Multi-channel DC Electronic Load

IT8700P+ Specification

Parameter		IT8723P+			IT8732P+		
Rated value	Voltage	0.1~18V		0.1~150V	0.1~18V		0.1~150V
	Current	0 ～ 0.9A	0～4.5A	0~45A	0～1.2A	0～6A	0~60A
	Power	0 ～ 60W	0~300W		0～96W	0~400W	
	Resistance	0.05Ω～ 10Ω		0.05Ω～7500Ω	0.05Ω～10Ω		0.05Ω～ 7500Ω
	Min. resistance	≒50mΩ	≒15mΩ		≒50mΩ	≒15mΩ	
	MOV	0.06V at 0.9A	0.07V at 4.5A	0.7V at 45A	0.06V at 1.2A	0.05V at 6A	0.5V at 60A
	Input leak current	0.06mA		0.2mA	0.06mA		0.2mA
Set resolution	Voltage	1mV		10mV	1mV		10mV
	Current	0.1mA	0.1mA	1mA	0.1mA	0.1mA	1mA
	Power	10mW			10mW		
	Resistance	16bit			16bit		
Readback resolution	Voltage	0.1mV		1mV	0.1mV		1mV
	Current	0.1mA	0.1mA	1mA	0.1mA	0.1mA	1mA
	Power	10mW			10mW		
Set accuracy	Voltage	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)
	Power *3	0.2%+0.2%FS			0.2%+0.2%FS		
	Resistance *1	0.01%+0.08S *2		0.01%+0.0008S	0.01%+0.08S *2		0.01%+0.0008S
Readback accuracy	Voltage	±(0.025%+0.025%FS)			±(0.025%+0.025%FS)		
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)		±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	
	Power	±(0.2%+0.2%FS)			±(0.2%+0.2%FS)		
Set temperature drift coefficient(%of Output/℃+Offset)	Voltage	≤50ppm/℃ + 50ppm/℃*FS			≤50ppm/℃ + 50ppm/℃*FS		
	Current	≤50ppm/℃ + 50ppm/℃*FS			≤50ppm/℃ + 50ppm/℃*FS		
Readback Temperature drift coefficient((%of Output/℃+Offset)	Voltage	≤50ppm/℃ + 50ppm/℃*FS			≤50ppm/℃ + 50ppm/℃*FS		
	Current	≤50ppm/℃ + 50ppm/℃*FS			≤50ppm/℃ + 50ppm/℃*FS		
Dynamic response *4	Rising	0.0001～0.09A/μs	0.0001～0.45A/μs	0.001～4.5A/μs	0.0001～0.1A/μs	0.0001～0.5A/μs	0.001～5A/μs
	Falling	0.0001～0.09A/μs	0.0001～0.45A/μs	0.001～4.5A/μs	0.0001～0.1A/μs	0.0001～0.5A/μs	0.001～5A/μs
	Min.rising time *5	≒10μs	≒10μs	≒10μs	≒10μs	≒10μs	≒10μs
	Dynamic frequency	0.001～20kHz			0.001～20kHz		
AC parameter	Voltage	110V ±10%or220V ±10%			110V ±10%or220V ±10%		
	Frequency	50/60Hz			50/60Hz		
	Imax.	0.3A			0.3A		
	Power factor	≥0.99			≥0.99		
Set stability-30min(% of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)		±(0.02%+0.02%FS)	±(0.02%+0.02%FS)		±(0.02%+0.02%FS)
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	±(0.03%+0.03%FS)	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	±(0.03%+0.03%FS)
Set stability-8h(%of Output/℃+Offset)	Voltage	/			/		/
	Current	/			/		/
Readback stability-30min (%of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)			±(0.02%+0.02%FS)		
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)		±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	
Readback stability-8h (%of Output/℃+Offset)	Voltage	/			/		
	Current	/			/		
Sense voltage		≤2V			≤2V		
Storage temperature		-20℃～70℃			-20℃～70℃		
Protection	OPP	66W	310W	310W	100W	410W	410W
	OCP	0.99A	4.95A	49.5A	1.32A	6.6A	66A
	OVP	18.5V		155V	18.5V		85V
	OTP	105°C			95℃		
Interfaces *6		LAN, USB, RS232			LAN, USB, RS232		
Isolation(output to ground)		500V/DC/1mA			500V/DC/1mA		
Isolation(input to ground)		1.5KV/AC/5mA			1.5KV/AC/5mA		
Units parallel connected		≤16(channel)			≤16(channel)		
Protection level		IP20			IP20		
Safety regulation		IEC 61010			IEC 61010		
Cooling		fan			fan		
Working temperature		0～40°C			0～40℃		
Dimension(mm)		82mm*183mm*573mm			82mm*183mm*573mm		
N.W.		5kg			5kg		

*1 Input voltage/current is not less than 10%FS (FS is full scale)

*2 Range of resistance readback value: (1/(1/R+(1/R)*0.01%+0.08),1/(1/R-(1/R)*0.01%-0.08))

*3 Input voltage/current is not less than 10%FS

*4 The loading current is not less than 2%FS

*5 Minimum rise time: 10%~90% of current rise time

*6 Each module does not have a separate communication interface and can be controlled through the host frame interface

IT8700P+ Specification

Parameter		IT8733P+			IT8722BP+		
Rated value	Voltage	0.1~18V		0.1~150V	0.1~60V		0.1~600V
	Current	0～2.4A	0～12A	0~120A	0～0.3A	0～3A	0~15A
	Power	0～120W	0~600W		0～120W	0~250W *7	
	Resistance	0.05Ω～10Ω		10Ω～7500Ω	0.05Ω～10Ω		0.05Ω～7500Ω
	Min. resistance	≒50mΩ	≒13mΩ		≒400mΩ	≒200mΩ	
	MOV	0.12V at 2.4A	0.15V at 12A	1.5V at 120A	0.12V at 0.3A	0.6V at 3A	3V at 15A
	Input leak current	0.06mA		0.3mA	0.07mA		0.7mA
Set resolution	Voltage	1mV		10mV	1mV		10mV
	Current	0.1mA	1mA	10mA	0.1mA	0.1mA	1mA
	Power	10mW			10mW		
	Resistance	16bit			16bit		
Readback resolution	Voltage	0.1 mV		1mV	1mV		10mV
	Current	0.1mA	0.1mA	1mA	0.1mA	0.1mA	1mA
	Power	10mW			10mW		
Set accuracy	Voltage	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)
	Power *3	0.2%+0.2%FS			0.2%+0.2%FS		
	Resistance *1	0.01%+0.08S *2		0.01%+0.0008S	0.01%+0.08S *2		0.01%+0.0008S
Readback accuracy	Voltage	±(0.025%+0.025%FS)			±(0.025%+0.025%FS)		
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)		±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	
	Power	±(0.2%+0.2%FS)			±(0.2%+0.2%FS)		
Set temperature drift coefficient(%of Output/℃+Offset)	Voltage	≤50ppm/°C + 50ppm/°C*FS			≤30ppm/℃ + 50ppm/℃*FS		
	Current	≤50ppm/°C + 50ppm/°C*FS			≤50ppm/℃ + 50ppm/℃*FS		
Readback Temperature drift coefficient((%of Output/℃+Offset)	Voltage	≤50ppm/°C + 50ppm/°C*FS			≤30ppm/℃ + 50ppm/℃*FS		
	Current	≤50ppm/°C + 50ppm/°C*FS			≤50ppm/℃ + 50ppm/℃*FS		
Dynamic response	Rising *4	0.0001~0.24A/μs	0.0001~1.2A/μs	0.001~12A/μs	0.0001～0.03A/μs	0.0001～0.3A/μs	0.001～1.5A/μs
	Falling *4	0.0001~0.24A/μs	0.0001~1.2A/μs	0.001~12A/μs	0.0001～0.03A/μs	0.0001～0.3A/μs	0.001～1.5A/μs
	Min.rising time *5	≒10μs	≒10μs	≒10μs	≒10μs	≒10μs	≒10μs
	Dynamic frequency		0.001～20kHz			0.001～20kHz	
AC parameter	Voltage	110V ±10%or220V ±10%			110V ±10% or 220V ±10%		
	Frequency	50/60Hz			50/60Hz		
	Imax.	0.3A			0.3A		
	Power factor	≥0.99			/		
Set stability-30min(% of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)		±(0.02%+0.02%FS)	±(0.02%+0.02%FS)		
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	±(0.03%+0.03%FS)	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	±(0.03%+0.03%FS)
Set stability-8h(%of Output/℃+Offset)	Voltage	/		/	/		/
	Current	/	/	/	/	/	/
Readback stability-30min (%of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)			±(0.02%+0.02%FS)		
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)		±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	
Readback stability-8h (%of Output/℃+Offset)	Voltage	/			/		
	Current	/	/		/	/	
Sense voltage		≤2V			≤2V		
Storage temperature		-20°C～70°C			-20℃～70℃		
Protection	OPP	125W	610W	610W	132W	275W	275W
	OCP	2.64A	13.2A	132A	0.33A	3.3A	16.5A
	OVP	18.5V		155V	63V		630V
	OTP	105°C			90℃		
Interfaces *6		LAN, USB, RS232			LAN, USB, RS232		
Isolation(output to ground)		500V/DC/1mA			500V/DC/1mA		
Isolation(input to ground)		1.5KV/AC/5mA			1.5KV/AC/5mA		
Units parallel connected		≤16(channel)			≤16(channel)		
Protection level		IP20			IP20		
Safety regulation		IEC 61010			IEC 61010		
Cooling		fan			fan		
Working temperature		0～40°C			0～40℃		
Dimension(mm)		82mm*183mm*573mm			82mm*183mm*573mm		
N.W.		5kg			5kg		

*1 Input voltage/current is not less than 10%FS (FS is full scale)

*2 Range of resistance readback value: (1/(1/R+(1/R)*0.01%+0.08),1/(1/R-(1/R)*0.01%-0.08))

*3 Input voltage/current is not less than 10%FS

*4 Rise/fall slew rate: 10%~90% of current rising from 0 to Max.current

*5 Minimum rise time: 10%~90% of current rise time

*6 Each module does not have a separate communication interface and can be controlled through the host frame interface

*7 It is a dual-channel dynamic power distribution module. The parameters of the two channels are the same. The maximum output of a single channel is 250W. The total power of the dual channels is not more than 300W. The average power of a single channel is 150W.

Your Power Testing Solution

IT8700P+ High Speed Multi-channel DC Electronic Load

IT8700P+ Specification

Parameter		IT8732BP+		
Rated value	Voltage	0.1~60V		0.1~600V
	Current	0～0.3A	0～3A	0~20A
	Power	0～120W	0~300W	
	Resistance	0.2Ω～10Ω		10Ω～7500Ω
	Min. resistance	≒500mΩ	≒180mΩ	
	MOV	0.15V at 0.3A	0.54V at 3A	3.6V at 20A
	Input leak current	0.06mA		0.7mA
Set resolution	Voltage	1mV		10mV
	Current	0.1mA	0.1mA	1mA
	Power	10mW		
	Resistance	16bit		
Readback resolution	Voltage	1 mV		10mV
	Current	0.1mA	0.1mA	1mA
	Power	10mW		
Set accuracy	Voltage	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)
	Power *3	0.2%+0.2%FS		
	Resistance *1	0.01%+0.08S *2		0.01%+0.0008S
Readback accuracy	Voltage	±(0.025%+0.025%FS)		
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	
	Power	±(0.2%+0.2%FS)		
Set temperature drift coefficient(%of Output/℃+Offset)	Voltage	≤30ppm/°C + 20ppm/°C*FS		
	Current	≤50ppm/°C + 20ppm/°C*FS		
Readback Temperature drift coefficient((%of Output/℃+Offset)	Voltage	≤30ppm/°C + 20ppm/°C*FS		
	Current	≤50ppm/°C + 20ppm/°C*FS		
Dynamic response	Rising *4	0.0001～0.02A/μs	0.0001～0.2A/μs	0.001～2A/μs
	Falling *4	0.0001～0.02A/μs	0.0001～0.2A/μs	0.001～2A/μs
	Min.rising time *5	≒10μs	≒10μs	≒10μs
	Dynamic frequency	0.001～20kHz		
AC parameter	Voltage	110V ±10% or 220V ±10%		
	Frequency	50/60Hz		
	Imax.	0.3A		
	Power factor	/		
Set stability-30min(% of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)		±(0.02%+0.02%FS)
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	±(0.03%+0.03%FS)
Set stability-8h(%of Output/℃+Offset)	Voltage	/		/
	Current	/	/	/
Readback stability-30min (%of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)		
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	
Readback stability-8h (%of Output/℃+Offset)	Voltage	/		
	Current	/	/	
Sense voltage		≤2V		
Storage temperature		-20°C～70°C		
Protection	OPP	125W	310W	310W
	OCP	0.33A	3.3A	22A
	OVP	63V		630V
	OTP	85°C		
Interfaces *6		LAN, USB, RS232		
Isolation(output to ground)		500V/DC/1mA		
Isolation(input to ground)		1.5KV/AC/5mA		
Units parallel connected		≤16(channel)		
Protection level		IP20		
Safety regulation		IEC 61010		
Cooling		fan		
Working temperature		0～40°C		
Dimension(mm)		82mm*183mm*573mm		
N.W.		5kg		

*1 Input voltage/current is not less than 10%FS (FS is full scale)

*2 Range of resistance readback value: (1/(1/R+(1/R)*0.01%+0.08),1/(1/R-(1/R)*0.01%-0.08))

*3 Input voltage/current is not less than 10%FS

*4 Rise/fall slew rate: 10%~90% of current rising from 0 to Max.current

*5 Minimum rise time: 10%~90% of current rise time

*6 Each module does not have a separate communication interface and can be controlled through the host frame interface

Your Power Testing Solution

IT8700P+ High Speed Multi-channel DC Electronic Load

IT8700P+ Specification

		IT8733BP+		
Rated value	Voltage	0.1~60V		0.1~600V
	Current	0～0.3A	0～3A	0~30A
	Power	0～120W		
	Resistance	0.2Ω～10Ω		10Ω～7500Ω
	Min. resistance	≒500mΩ		
	MOV	0.15V at 0.3A	0.3V at 3A	3V at 30A
	Input leak current	0.06mA		0.7mA
Set resolution	Voltage	1mV		10mV
	Current	0.1mA	0.1mA	10mA
	Power	10mW		
	Resistance	16bit		
Readback resolution	Voltage	1 mV		10mV
	Current	0.1mA	0.1mA	1mA
	Power	10mW		
Set accuracy	Voltage	±(0.025%+0.025%FS)		±(0.025%+0.025%FS)
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)
	Power *3	0.2%+0.2%FS		
	Resistance *1	0.01%+0.08S *2		0.01%+0.0008S
Readback accuracy	Voltage	±(0.025%+0.025%FS)		
	Current	±(0.1%+0.1%FS)		
	Power	±(0.2%+0.2%FS)		
Set temperature drift coefficient(%of Output/℃+Offset)	Voltage	≤30ppm/℃ + 20ppm/℃*FS		
	Current	≤50ppm/℃ + 20ppm/℃*FS		
Readback Temperature drift coefficient((%of Output/℃+Offset)	Voltage	≤30ppm/℃ + 20ppm/℃*FS		
	Current	≤50ppm/℃ + 20ppm/℃*FS		
Dynamic response	Rising *4	0.0001～0.02A/μs	0.0001～0.2A/μs	0.001～2A/μs
	Falling *4	0.0001～0.02A/μs	0.0001～0.2A/μs	0.001～2A/μs
	Min.rising time *5	≒10μs	≒10μs	≒10μs
	Dynamic frequency	0.001～20kHz		
AC parameter	Voltage	110V ±10% or 220V ±10%		
	Frequency	50/60Hz		
	Imax.	0.3A		
	Power factor	≥0.99		
Set stability-30min(% of Output/℃+Offset)	Voltage	±(0.02%+0.02%FS)		±(0.02%+0.02%FS)
	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	±(0.03%+0.03%FS)
Set stability-8h(%of Output/℃+Offset)	Voltage	/		
	Current	/		/
Readback stability-30min (%of Output/℃+Offset)	Voltage	/	±(0.02%+0.02%FS)	/
	Current	±(0.05%+0.08%FS)	/	/
Readback stability-8h (%of Output/℃+Offset)	Voltage	/		
	Current	/		
Sense voltage		≤2V		
Storage temperature		-20℃～70℃		
Protection	OPP	125W	510W	510W
	OCP	0.33A	3.3A	33A
	OVP	63V		630V
	OTP	85℃		
Interfaces *6		LAN, USB, RS232		
Isolation(output to ground)		500V/DC/1mA		
Isolation(input to ground)		1.5KV/AC/5mA		
Units parallel connected		≤16(channel)		
Protection level		IP20		
Safety regulation		IEC 61010		
Cooling		fan		
Working temperature		0～40℃		
Dimension(mm)		82mm*183mm*573mm		
N.W.		5kg		

*1 Input voltage/current is not less than 10%FS (FS is full scale)

*2 Range of resistance readback value: (1/(1/R+(1/R)*0.01%+0.08),1/(1/R-(1/R)*0.01%-0.08))

*3 Input voltage/current is not less than 10%FS

*4 Rise/fall slew rate: 10%~90% of current rising from 0 to Max.current

*5 Minimum rise time: 10%~90% of current rise time

*6 Each module does not have a separate communication interface and can be controlled through the host frame interface