

IT8700P+

High Speed Multi-channel DC Electronic Load



Your Power Testing Solution

ITECH

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 can make the minimum rise time of current less than rising time of minimum current < 10 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, minimum current rise time < 10 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
- *1 Current is no more than 15A if connecting with front terminals

Model	Voltage	Current	Power
IT8721P+	150 V	20 A	2*100 W
IT8731P+	150 V	40 A	200 W
IT8722P+*1	CH1:150 V CH2:150 V	CH1:20A CH2:20A	CH1:250W CH2:250W
IT8723P+	150 V	45 A	2*300 W
IT8732P+	150 V	60 A	400 W
IT8733P+	150 V	120 A	600 W
IT8722BP+*1	CH1:600 V CH2:600 V	CH1:15A CH2:15A	CH1:250W CH2:250W
IT8732BP+	600 V	20A	300W
IT8733BP+	600 V	30A	500W

- 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
- · CV loop speed is adjustable to match different DUTs
- Multi channel synchronous control

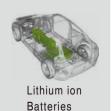
Main Frame	
IT8701P	Mainframe for 2 modules (including three interfaces)
IT8702P	Mainframe for 4 modules (including three interfaces)
IT8703P	Expansion mainframe for 4 modules

^{*1} Dynamic power allocation, the total power of two channels is 300W, and the power of one channel does not exceed 250W

Applications









power supply



DC-DC converter or PSU



High speed AC-DC converter or PSU

IT8700P+ High Speed Multi-channel DC Electronic Load

Flexible modules combination

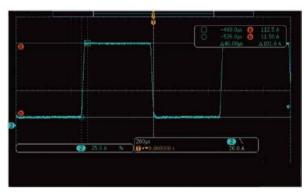
The IT8700P+ series is designed with removable modules, so that you can choose different modules according to your needs. These modules can work with the original IT8700P series modules too. There are high-performance microprocessor chips in each load module and mainframe. Parallel architecture is adopted 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 rise time is no more than 10 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) 10A~110A dynamic waveform (current slope 5A/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

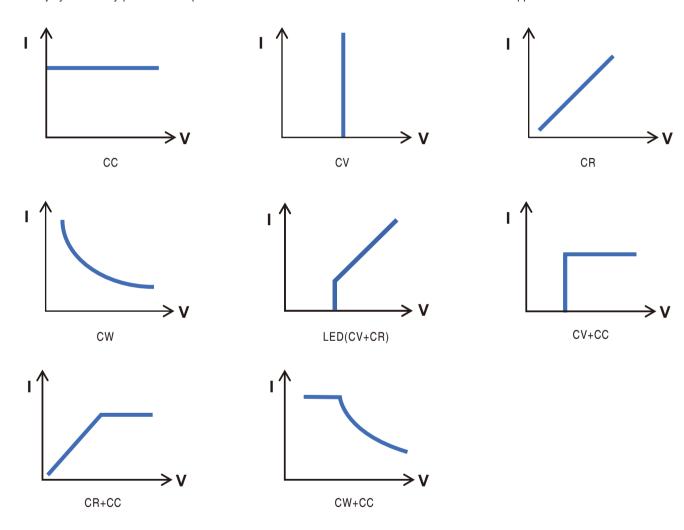
The voltage and current measurement of IT8700P+ is fast (up to 250kHz). It can be applied to various testing applications such as charging piles, automotive electronics; renewable energy and so on.



IT8700P+ High Speed Multi-channel DC Electronic Load

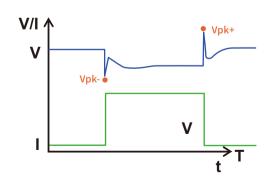
8 operation modes

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.



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+ High Speed Multi-channel DC Electronic Load

Parameter			IT8723P+			IT8732P+			
	Voltage	0.1~18V 0.1~150V			0.1~150V				
	Current	0 ∼ 0.9A	0∼4.5A	0~45A	0∼1.2A	0∼6A	0~60A		
	Power			300W	0∼96W 0-		400W		
Data de la la	Resistance	$_{ m 0}\sim 60{ m W}$		$0.05\Omega{\sim}7500\Omega$		\sim 10 Ω	$0.05\Omega\sim7500\Omega$		
Rated value	Min. resistance			15mΩ	≔50mΩ		15mΩ		
		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		
	MOV								
	Input leak current	nt 0.06mA 1mV		0.2mA		16mA	0.2mA		
	Voltage			10mV		mV	10mV		
Set resolution	Current	0.1mA 0.1mA		1mA	0.1mA	0.1mA	1mA		
Set resolution	Power		10mW			10mW			
	Resistance		16bit			16bit			
Readback	Voltage	0.1	0.1mV 1mV			1mV	1mV		
	Current	0.1mA	0.1mA	1mA	0.1mA	0.1mA	1mA		
resolution	Power		10mW			10mW			
	Voltage	±(0.025%+0.0	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)		
Set accuracy	Power *3	,	0.2%+0.2%FS	,	,	0.2%+0.2%FS	,		
201 4004.40)	Resistance*1	0.01%+0	0.08S *2	0.01%+0.0008S	0.01%	+0.08S*2	0.01%+0.0008S		
	Voltage		±(0.025%+0.025%FS)	0.017010.0000		±(0.025%+0.025%FS)	0.0170100000		
Readback	Current	±(0.1%+0.1%FS)	±(0.05%+	0.05%ES)	±(0.1%+0.1%FS)	±(0.05%+	0.05%ES)		
accuracy		1(0.17010.17010)	±(0.2%+0.2%FS)	0.00701 0)	1(0.17010.17010)	,	0.00701 0)		
Set temperature drift	Power		±(0.2%+0.2%F3) 50ppm/°C + 50ppm/°C*F	·c	±(0.2%+0.2%FS)				
coefficient(% of	Voltage				≤50ppm/°C + 50ppm/°C *FS				
Output/ C +Offset)	Current		50ppm/°C + 50ppm/°C*F	8	≤50ppm/°C +50ppm/°C*FS				
Readback Temperature Irift coefficient((% of	Voltage		ppm/C + 50ppm/C*FS		≤50ppm/°C +50ppm/°C*FS ≤50ppm/°C +50ppm/°C*FS				
Output/ C+Offset)	Current	≤:	50ppm/°C + 50ppm/°C*F	S	≤	=S			
Dynamic	Rising	0.0001~0.09A/us	0.0001~0.45A/us	0.001~4.5A/us	0.0001~0.1A/us	0.0001~0.5A/us	0.001 ∼ 5A/us		
	Falling	0.0001~0.09A/us	0.0001~0.45A/us	0.001~4.5A/us	0.0001~0.1A/us	0.0001 ~ 0.5A/us	0.001 ∼5A/us		
response *4	Min.rising time*5	≒10us	≒10us	≒10us	≒10us	≒10us	≒10us		
	Dynamic frequency	,	0.001~20KHz			0.001~20KHz			
	Voltage	1	10V ±10%or220V ±10%		11	0V ±10%or220V ±10%			
	Frequency		50/60Hz			50/60Hz			
AC parameter	Imax.		0.3A			0.3A			
	Power factor		≥0.99		≥0.99				
Set stability-30min(%	Voltage	±(0.02%+0.0		±(0.02%+0.02%FS)	$\pm (0.02\% + 0.02\% FS)$ $\pm (0.02\% + 0.$				
of Output/°C +Offset)	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	Voltage	2(0.007010.007010)	1(0.007010.007010)	1	1(0.007010.007010)	1(0.007010.007010)	1		
	_		1	1					
Output/ C +Offset)	Current		/ (0.000/ +0.000/ EQ)		7	. (0.000/ . 0.000/ FC)	/		
leadback stability-30min	Voltage	±(0.05%+0.08%FS)	±(0.02%+0.02%FS)	2 000 (FO)	. (0.0E0/ .0.000/ EC)	±(0.02%+0.02%FS)	2004 50		
% of Output/ C+Offset)	Current	±(0.05%+0.06%F3)	±(0.03%+0).03%FS)	±(0.05%+0.08%FS)	±(0.03%+	J.03%FS)		
Readback stability-8h	Voltage		,		/				
% of Output/ C +Offset)	Current		/			1			
Sense voltage			≤2V			≤2V			
Storage temperature			-20 °C ∼70 °C			-20 °C ∼70 °C			
	OPP	66W	310W	310W	100W	410W	410W		
Protection	OCP	0.99A	4.95A	49.5A	1.32A	6.6A	66A		
Frolection	OVP	18	.5V	155V	18	3.5V	85V		
	OTP		105°C		95 C				
nterfaces		Ethe	r Net, GPIB, USB, R	S232	Eth	er Net, GPIB, USB, F	IS232		
solation(output to ground)			500V/DC/1mA			500V/DC/1mA			
solation(output to ground)			1.5KV/AC/5mA			1.5KV/AC/5mA			
			≤16(channel)						
Units parallel connected			≤ ro(charmer)			≤16(channel) IP20			
Protection level									
Safety regulation			IEC 61010			IEC 61010			
Cooling			fan			fan			
Working temperature			0~40°C			0∼40℃			
Dimension(mm)		8	2mm*183mm*573mm			82mm*183mm*573mm			
N.W.			5kg			5kg			
				Jny					

^{*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

Parameter			IT8733P+		IT8722BP+			
	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		600W	0 ~ 120W		250W	
Datad value	Resistance	$0.05\Omega\sim10\Omega$		10Ω~7500Ω		\sim 10 Ω		
Rated value	Min. resistance	÷50mΩ		1012· = 750012	5.05Ω ≒400mΩ		$0.05\Omega\!\sim\!7500\Omega$	
	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					7mA	0.7mA	
		0.06	mV	0.3mA		mV		
	Voltage Current		1mA	10mV 10mA	0.1mA	0.1mA	10mV 1mA	
Set resolution		0.1mA		TOMA	U. IIIIA	10mW	IIIIA	
	Power		10mW					
	Resistance	0.4	16bit	41/	0	16bit	1 \	
Readback	Voltage		1 mV	1mV		1mV	1mV	
resolution	Current	0.1mA	0.1mA	1mA	0.1mA	0.1mA	1mA	
	Power		10mW			10mW	/	
	Voltage	±(0.025%+(,	±(0.025%+0.025%FS)	±(0.025%+		±(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)	
Set accuracy	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	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	0.05%FS)	
accuracy	Power		±(0.2%+0.2%FS)			±(0.2%+0.2%FS)		
Set temperature drift coefficient(% of	Voltage	≤50)ppm/°C + 50ppm/°C*FS		≤3	0ppm/℃ + 50ppm/℃*FS		
Output/ C+Offset)	Current	≤50)ppm/°C + 50ppm/°C*FS		≤50ppm/°C +50ppm/°C*FS			
Readback Temperature	Voltage	≤50)ppm/°C + 50ppm/°C*FS		≤30ppm/°C + 50ppm/°C *FS			
Irift coefficient((% of Output/ C +Offset)	Current	≤50)ppm/°C + 50ppm/°C*FS		≤5	0ppm/°C + 50ppm/°C *FS		
	Rising *4	0.0001~0.1A/us	0.0001~0.5A/us	0.001~5A/us	0.0001~0.03A/us	0.0001~0.3A/us	0.001~1.5A/us	
Dynamic	Falling*4	0.0001~0.1A/us	0.0001~0.5A/us	0.001~5A/us	0.0001~0.03A/us	0.0001~0.3A/us	0.001~1.5A/us	
response	Min.rising time*5	≒10us	≒10us	≒10us	≒10us	≒10us	≒10us	
Соронос	Dynamic frequency		0.001~20KHz	11000		0.001~20KHz		
	Voltage	1	10V ±10%or220V ±10%		11	10V ±10% or 220V ±10%		
	Frequency	·	50/60Hz			50/60Hz		
AC parameter	Imax.		0.3A			0.3A		
	Power factor		≥0.99		/			
Set stability-30min(%	Voltage	±(0.02%+0.02		±(0.02%+0.02%FS)		±(0.02%+0.02%FS)		
of Output/ C+Offset)	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	Voltage	2(0.007010.007010)	/	/	=(0.007010.007010)	/	/	
Output/ C+Offset)	Current	1	,	,	1	,	1	
Readback stability-30min	Voltage	,	±(0.02%+0.02%FS)	,	,	±(0.02%+0.02%FS)	,	
% of Output/ C +Offset)	Current	±(0.05%+0.08%FS)	,	000/ FC)	±(0.05%+0.08%FS)	,	1020/ EC)	
Readback stability-8h		±(0.0370+0.007013)	±(0.03%+0	.03%F3)	±(0.007010.007010)	±(0.03%+0	1.03%F3)	
% of Output/ C +Offset)	Voltage Current	1	, , ,	1	1	I	1	
	Current	,	<01/	/	/	≤2V	/	
Sense voltage			≤2V					
Storage temperature	ODD	405111	-20°C∼70°C	0.1011	400144	-20 °C ~70 °C	075144	
	OPP	125W	610W	610W	132W	275W	275W	
Protection	OCP	2.64A	13.2A	132A	0.33A	3.3A	16.5A	
	OVP	18	3.5V	155V	03	3V	630V	
	OTP		105°C			90℃		
nterfaces		Ethe	er Net, GPIB, USB, RS232		Ethe	er Net, GPIB, USB, R	S232	
solation(output to ground)			500V/DC/1mA			500V/DC/1mA		
solation(input to ground)			1.5KV/AC/5mA		1.5KV/AC/5mA			
Jnits 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		
			Jing	экд				

^{*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

 $^{^{\}star}4$ Rise/fall slew rate: 10%~90% of current rising from 0 to Max.current

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

			IT8733BP+						
	Voltage 0.1~60V 0.1~600V								
	Current	0~0.3A	0∼3A	0~30A					
	Power	0∼120W							
ated value	Resistance	0.2Ω~1	Ω 0	$10\Omega{\sim}7500\Omega$					
atou value	Min. resistance	≒500mΩ							
	MOV	0.15V at 0.3A	0.3V at 3A	3V at 30A					
	Input leak current	0.06n		0.7mA					
	Voltage	1m		10mV					
	Current	0.1mA	0.1mA	10mA					
et resolution	Power	0.11101	10mW	101101					
	Resistance								
	Voltage	1 m\	16bit	10mV					
eadback	Current	0.1mA	0.1mA	1mA					
solution	Power	U. IIIIA		IIIIA					
		(0.0050)	10mW	(0.0050/ 0.0050/ 50)					
	Voltage	±(0.025%+0.	•	±(0.025%+0.025%FS)					
	Current	±(0.1%+0.1%FS)	±(0.05%+0.05%FS)	±(0.05%+0.05%FS)					
et accuracy	Power*3		0.2%+0.2%FS						
	Resistance *1	0.01%+0.		0.01%+0.0008S					
eadback	Voltage		±(0.025%+0.025%FS)						
	Current	±(0.1%+0.1%FS)	±(0.2%+0.2%FS)						
ccuracy	Power								
t temperature drift efficient(%of	Voltage								
utput/ C+Offset)	Current		≤50ppm/°C +20ppm/°C*FS						
adback Temperature	Voltage								
ft coefficient((% of utput/ C+Offset)	Current		≤50ppm/°C + 20ppm/°C *FS						
	Rising *4	0.0001~0.02A/us	0.0001~0.2A/us	0.001 ∼ 2A/us					
ynamic	Falling*4	0.0001~0.02A/us	0.0001∼0.2A/us	0.001∼2A/us					
sponse	Min.rising time*5	≒10us	≒10us	≒10us					
зропас	Dynamic frequency		0.001~20KHz	1000					
	Voltage	110V ±10% or 220V ±10%							
	Frequency 50/60Hz								
C parameter	Imax. 0.3A								
	Power factor								
t stability-30min(%	Voltage	±(0.02%+0.02%	≥0.99	±(0.02%+0.02%FS)					
Output/ C+Offset)	Current	±(0.05%+0.08%FS)	±(0.03%+0.03%FS)	±(0.03%+0.03%FS)					
	Voltage	1(0.007010.007010)	1	1(0.007010.007010)					
tput/C+Offset)	Current	1	I	1					
adback stability-30min		,	·/O 000/ · O 000/ EQ\	1					
of Output/ C+Offset)	Voltage	/(0.059/ +0.099/ EC)	±(0.02%+0.02%FS)	1					
adback stability-8h	Current	±(0.05%+0.08%FS)	1						
of Output/ C+Offset)	Voltage		,						
	Current		/						
ense voltage			≤2V						
orage temperature	000		-20 °C ~70 °C						
	OPP	125W	510W	510W					
rotection	OCP	0.33A	3.3A	33A					
	OVP	63V		630V					
	OTP		85 ℃						
terfaces			Ether Net, GPIB, USB, RS232						
lation(output to ground)			500V/DC/1mA						
lation(input to ground)			1.5KV/AC/5mA						
its parallel connected			≤16(channel)						
rotection level			IP20						
afety regulation			IEC 61010						
ooling			fan						
orking temperature			0~40℃						
imension(mm)			82mm*183mm*573mm						
.W.			5kg						
v v .			Jny						

^{*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

Para	rameter IT8732BP+								
	Voltage		0.1~60V		0.1~600V				
	Current	0∼0.3A	3 007	0∼3A	0~20A				
	Power	0 ~ 120W		U UA	0~300W				
ated value	Resistance	5 .25	$0.2\Omega\!\sim\!10\Omega$		$10\Omega\!\sim\!7500\Omega$				
aled value	Min. resistance	≒500mΩ	0.242 1042		≒180mΩ				
	MOV	0.15V at 0.3A		0.54V at 3A	3.6V at 20A				
	Input leak current	0.15V at 0.3A		0.54V at 3A					
			0.06mA		0.7mA				
	Voltage		1mV		10mV				
et resolution	Current	0.1mA		0.1mA	10mA				
et resolution	Power			10mW					
	Resistance			16bit					
eadback	Voltage		1 mV		10mV				
esolution	Current	0.1mA		0.1mA	1mA				
Solution	Power			10mW					
	Voltage	±(0	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)				
et accuracy	Power*3	,		0.2%+0.2%FS	, i				
•	Resistance*1		0.01%+0.08S *2		0.01%+0.0008S				
	Voltage		2.31,010.000	±(0.025%+0.025%FS)	0.0.70.00000				
eadback	Current	±(0.1%+0.1%FS)		, ,	:(0.05%+0.05%FS)				
ccuracy	Power	1(0.17010.17010)			.(0.007010.007010)				
et temperature drift	Voltage	-(***********************************							
efficient(%of	· ·								
utput/ C +Offset) adback Temperature	Current		50ppm/°C + 20ppm/°C*FS						
ft coefficient((% of	Voltage			30ppm/°C + 20ppm/°C*FS					
utput/ C+Offset)	Current		≤:	50ppm/°C + 20ppm/°C*FS					
	Rising *4	0.0001 ∼ 0.02A/us		0.0001∼0.2A/us	0.001 ∼2A/us				
ynamic	Falling*4	0.0001 ∼ 0.02A/us		0.0001∼0.2A/us	0.001 ∼2A/us				
esponse	Min.rising time*5	≒10us		≒10us	≒10us				
	Dynamic frequency	0.001~20KHz							
	Voltage	110V ±10% or 220V ±10%							
	Frequency	50/60Hz							
C parameter	lmax.			0.3A					
	Power factor								
et stability-30min(%	Voltage	±(0.0)2%+0.02%FS)		±(0.02%+0.02%FS)				
Output/ C+Offset)	Current	±(0.05%+0.08%FS)		±(0.03%+0.03%FS)	±(0.03%+0.03%FS)				
	Voltage	=(0.0070.0.0070.07	1	_(0.0070.00070.0)	_(0.007,0.0007,0.00				
itput/°C+Offset)	Current	/	,	/	,				
adback stability-30min	Voltage	, , , , , , , , , , , , , , , , , , ,		±(0.02%+0.02%FS)					
of Output/ C+Offset)	Current	±(0.05%+0.08%FS)		,	(0.000/ +0.000/ FC)				
adback stability-8h		±(0.00 /0+0.00 /0F3)		±((0.03%+0.03%FS)				
of Output/ C +Offset)	Voltage	1		T					
	Current	/		.01/	I .				
ense voltage				≤2V					
torage temperature				-20°C∼70°C					
	OPP	125W		310W	310W				
rotection	OCP	0.33A		3.3A	22A				
0.00001	OVP		63V		630V				
	OTP			85°C					
terfaces			Eth	ner Net, GPIB, USB, RS232					
lation(output to ground)				500V/DC/1mA					
lation(input to ground)				1.5KV/AC/5mA					
its parallel connected				≤16(channel)					
rotection level				≤ ro(channer) IP20					
afety regulation				IEC 61010					
Cooling				fan					
Vorking temperature				0~40°C					
Dimension(mm)				82mm*183mm*573mm					
I.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

IT8700P+ High Speed Multi-channel DC Electronic Load

Para	meter				IT8721P+				
	Voltage		0.1~1	8V				0.1~150V	
	Current	0∼0.6A			0~3A			0~20A	
	Power	0∼30W			0 0/1	0~1	SOW	0 20/1	
Data di valua	Resistance	0 -30VV	0.05Ω~	10Ω		10Ω~7500Ω			
Rated value	Min. resistance	⇒100mΩ	0.0011			≒20mΩ			
	MOV	0.09V at 0.6A			0.09V at 3A	0.6V at 20A			
	Input leak current		0.06m	٨	0.00 V at 0/1			0.2mA	
			0.06m			10mV			
	Voltage	0.1mA	IIIIV	1	0.1mA			1mA	
Set resolution	Current	U. IIIIA			10mW			IIIA	
oct recordition	Power				16bit				
	Resistance		0.4	\ /	TODIL			4\/	
Readback	Voltage	0.44	0.1m	V	0.4 4			1mV	
resolution	Current	0.1mA			0.1mA			1mA	
	Power			10mW					
	Voltage		±(0.025%+0.0	025%FS)		±(0.025%+0.025%FS)			
	Current	±(0.1%+0.1%FS)			±(0.05%+0.05%FS)			±(0.05%+0.05%FS)	
Set accuracy	Power *3				0.2%+0.2%FS				
	Resistance*1		0.01%+0.0	08S ⁻²				0.01%+0.0008S	
Doodhast	Voltage				±(0.025%+0.025%FS)				
Readback	Current	±(0.1%+0.1%FS)				±(0.05%+0.	05%FS)		
accuracy	Power				±(0.2%+0.2%FS)				
Set temperature drift	Voltage	≤50ppm/°C+50ppm/°C*FS							
oefficient(% of Output/ C +Offset)	Current			≤:	50ppm/°C + 50ppm/°C*FS				
leadback Temperature	Voltage			≤:	50ppm/°C + 50ppm/°C*FS				
rift coefficient((% of Output/ C+Offset)	Current				50ppm/°C + 50ppm/°C*FS				
ratput © l'Olloct)	Rising	0.0001~0.06A/us			0.0001~0.3A/us			0.001~2A/us	
Ovnamic	Falling	0.0001~0.06A/us			0.0001~0.3A/us			0.001~2A/us	
esponse *4	Min.rising time*5	⇒10us			≒10us			≒10us	
	Dynamic frequency				0.001~20KHz			. 1003	
	Voltage			11	10V ±10%or220V ±10%				
	Frequency				50/60Hz				
AC parameter	Imax.				0.3A				
	Power factor				0.5A /				
et etebility 20min(0/	Voltage		±(0 020	%+0.02%FS	,			±(0.02%+0.02%FS)	
Set stability-30min(%		±(0.05%+0.08%FS)	±(0.02)	/0±0.02 /01 C	±(0.03%+0.03%FS)			±(0.03%+0.03%FS)	
f Output/ C +Offset)	Current	±(0.0370+0.00701 3)		1	±(0.0070±0.00701 0)			1(0.0370+0.03701-3)	
et stability-8h(%of	Voltage	1		1	1			1	
output/ C+Offset)	Current	,			±(0.02%+0.02%FS)			,	
eadback stability-30min	Voltage	. (0.0E0/ . 0.000/ EC)			±(0.02%+0.02%F3)	(0.000/.0	200/ 50)		
% of Output/ C+Offset)	Current	±(0.05%+0.08%FS)			1	±(0.03%+0.	J3%FS)		
eadback stability-8h	Voltage	1			7		1		
% of Output/°C +Offset)	Current	1			~ O. /		1		
Sense voltage					≤2V				
Storage temperature					-20°C∼70°C				
	OPP	33W			165W			165W	
Protection	OCP	0.66A			3.3A			22A	
. 5.000.011	OVP			18.5V				155V	
	OTP				85°C				
nterfaces				Eth	ner Net, GPIB, USB, RS232				
solation(output to ground)					500V/DC/1mA				
solation(input to ground)					1.5KV/AC/5mA				
Inits parallel connected					≤16(channel)				
Protection level					IP20				
Safety regulation					IEC 61010				
Cooling					fan				
Norking temperature					0~40°C				
, ,									
Dimension(mm) N.W.					82mm*183mm*573mm 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

				IT8722P+				
	Voltage		0.1~18V		0.1~150V			
	Current	0∼0.6A		0∼3A	0~20A			
	Power	0~48W		U OI	0~250W			
Rated value	Resistance	0 4011	$0.05\Omega\sim10\Omega$		10Ω~7500Ω			
i latoa valao	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			
	Voltage		1mV		10mV			
	Current	0.1mA		0.1mA	1mA			
Set resolution	Power			10mW				
	Resistance			16bit				
Daadhaal	Voltage		0.1mV		1mV			
Reauback	Current	0.1mA		0.1mA	1mA			
resolution	Power			10mW				
	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)			
Set accuracy	Power*3	,		0.2%+0.2%FS	,			
,	Resistance *1		0.01%+0.08S*		0.01%+0.0008S			
	Voltage			±(0.025%+0.025%FS)				
Readback	Current	±(0.1%+0.1%FS)		,	±(0.05%+0.05%FS)			
accuracy	Power	±(0.2%+0.2%FS)						
Set temperature drift	Voltage			≤50ppm/°C + 50ppm/°C*FS				
coefficient(%of Output/ C +Offset)	Current	≤50ppm/°C + 50ppm/°C*FS						
Readback Temperature	Voltage	≤50ppm/°C+50ppm/°C*FS						
Irift coefficient((%of Output/ C+Offset)	Current			≤50ppm/°C + 50ppm/°C*FS				
,	Rising *4	0.0001~0.06A/us		0.0001~0.3A/us	0.001~2A/us			
Dynamic	Falling*4	0.0001~0.06A/us		0.0001~0.3A/us	0.001~2A/us			
esponse	Min.rising time*5	⇒10us		≒10us	≒10us			
Соронос	Dynamic frequency			0.001~20KHz	7,000			
	Voltage			110V ±10%or220V ±10%				
	Frequency	50/60Hz						
AC parameter	Imax.			0.3A				
	Power factor			/				
Set stability-30min(%	Voltage	:	±(0.02%+0.02%FS)		±(0.02%+0.02%FS)			
of Output/ C +Offset)	Current	±(0.05%+0.08%FS)		±(0.03%+0.03%FS)	±(0.03%+0.03%FS)			
Set stability-8h(%of	Voltage		1		, ,			
Output/°C+Offset)	Current	/		/	1			
eadback stability-30min	Voltage			±(0.02%+0.02%FS)				
% of Output/ C+Offset)	Current	±(0.05%+0.08%FS)			±(0.03%+0.03%FS)			
Readback stability-8h	Voltage			1	,			
% of Output/ C+Offset)	Current	1			1			
Sense voltage				≤2V				
Storage temperature				-20°C∼70°C				
	OPP	52.8W		275W	275W			
Protection	OCP	0.66A		3.3A	22A			
FIOLECTION	OVP		18.5V		155V			
	OTP			90°C				
nterfaces				Ether Net, GPIB, USB, RS232				
solation(output to ground)				500V/DC/1mA				
solation(input to ground)				1.5KV/AC/5mA				
Jnits 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				
	the second second second second							

^{*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

				IT8731P+				
	Voltage		0.1~18V			0.1~150V		
	Current	0∼0.8A		0~4A		0~40A		
	Power	0~60W		0 4/1	0~300W	0.40/1		
Rated value	Resistance	0. 0000	0.05Ω~10Ω		U~300VV	10Ω~7500Ω		
hateu value	Min. resistance	≒75mΩ	0.0012		⇒20mΩ	1015 700015		
	MOV	0.06V at 0.8A		0.08V at 4A	2011142	0.8V at 40A		
	Input leak current	0.00V at 0.0A	0.06mA	0.00V at 4A				
	Voltage		1mV			0.3mA 10mV		
	•	0.1 = 4	IIIIV	0.1 1				
Set resolution	Current	0.1mA		0.1mA 10mW		10mA		
	Power							
	Resistance		0.4 \/	16bit		4.17		
Readback	Voltage		0.1 mV			1mV		
esolution	Current	0.1mA		0.1mA		1mA		
	Power			10mW				
	Voltage		±(0.025%+0.025%	· · · · · · · · · · · · · · · · · · ·		±(0.025%+0.025%FS)		
	Current	±(0.1%+0.1%FS)		±(0.05%+0.05%FS)		±(0.05%+0.05%FS)		
Set accuracy	Power*3			0.2%+0.2%FS				
	Resistance *1		0.01%+0.08\$			0.01%+0.0008\$		
Readback	Voltage			±(0.025%+0.025%FS)				
	Current			±(0.05%+0.05%FS)				
accuracy	Power	±(0.2%+0.2%FS)						
Set temperature drift oefficient(% of	Voltage			≤50ppm/°C + 50ppm/°C*FS				
Output/ C +Offset)	Current		≤50ppm/°C+50ppm/°C*FS					
Readback Temperature	Voltage	≤50ppm/°C + 50ppm/°C*FS						
rift coefficient((% of Output/ C +Offset)	Current	≤50ppm/°C + 50ppm/°C*FS						
Jupus C (Ollock)	Rising *4	0.0001~0.08A/us		0.0001~0.4A/us		0.001~4A/us		
Ovnamic	Falling*4	0.0001~0.08A/us		0.0001~0.4A/us		0.001~4A/us		
,	Min.rising time*5	÷10us		≒10us		≒10us		
esponse	Dynamic frequency	. 1003		0.001~20KHz		→ Tous		
	Voltage			110V ±10%or220V ±10%				
	Frequency							
C parameter	Imax.	50/60Hz						
•	Power factor	0.3A						
			· (0.000/ · 0.000/ F0)	/		(0.000/ 0.000/ 50)		
Set stability-30min(%	Voltage		±(0.02%+0.02%FS)			±(0.02%+0.02%FS)		
f Output/ C +Offset)	Current	±(0.05%+0.08%FS)		±(0.03%+0.03%FS)		±(0.03%+0.03%FS)		
	Voltage	,	/	,		/		
Output/ C+Offset)	Current	/				/		
eadback stability-30min	Voltage			±(0.02%+0.02%FS)				
% of Output/ ℃ +Offset)	Current	±(0.05%+0.08%FS)			±(0.03%+0.03%FS)			
eadback stability-8h	Voltage							
% of Output/ C+Offset)	Current	/			/			
Sense voltage				≤2V				
Storage temperature				-20°C∼70°C				
	OPP	65W		210W		210W		
Protection	OCP	0.88A		4.4A		44A		
TOTOCION	OVP		18.5V			155V		
	OTP			85°C				
nterfaces				Ether Net, GPIB, USB, RS232				
colation(output to ground)				500V/DC/1mA				
solation(input to ground)				1.5KV/AC/5mA				
Inits parallel connected				≤16(channel)				
Protection level				≤ ro(channer)				
Safety regulation				IEC 61010				
Cooling				fan				
Working temperature				0~40°C				
Dimension(mm)				82mm*183mm*573mm				
N.W.				5kg				

 $^{^{\}star}1$ 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



This information is subject to change without notice. For more information, please contact ITECH.

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