

Product

IT8000 Regenerative DC Electronic Load



Energy Regeneration



IT8000 Regenerative DC Electronic Load

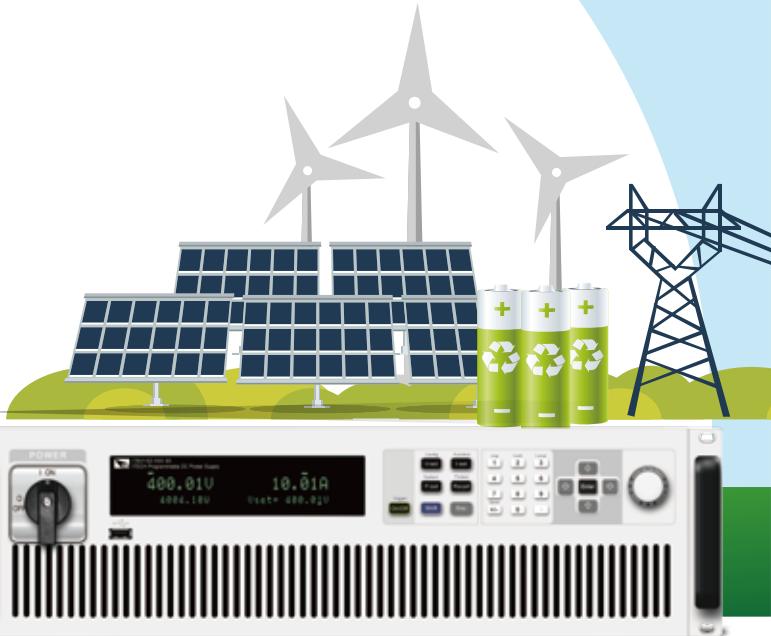
APPLICATIONS

- Batteries
- Natural energy
- Large capacity DC power supply test
- Power electronic equipments detection
- Aging test

Your Power Testing Solution

IT8000

REGENERATIVE DC ELECTRONIC LOAD



IT8000 series is a family of high power regenerative electronic loads with compact size. The highly integrated capability enables the e-load to simulate various e-load characteristics, and return the consumed energy back to the grid cleanly, saving costs related to energy consumption and cooling, meanwhile eco-friendly. With modular high power density design, IT8000 provide up to 18kW in 3U space. The power is expandable up to 1152kW by master-slave parallelling and active current sharing. If you move into application of high power UPS, storage battery, PV battery, EV, energy storage system, ITECH can help you with IT8000 series high power regenerative electronic load.

Model	Current	Power	Model	Current	Power	Model	Current	Power			
80V	IT8005-80-120	120A	5kW	500V	IT8006-500-30	30A	6kW	500V	IT8006-500-40	40A	6kW
	IT8010-80-240	240A	10kW		IT8012-500-60	60A	12kW		IT8012-500-80	80A	12kW
	IT8015-80-360	360A	15kW		IT8018-500-90	90A	18kW		IT8018-500-120	120A	18kW
	IT8030-80-720	720A	30kW		IT8036-500-180	180A	36kW		IT8036-500-240	240A	36kW
	IT8045-80-1080	1080A	45kW		IT8054-500-270	270A	54kW		IT8054-500-360	360A	54kW
	IT8060-80-1440	1440A	60kW		IT8072-500-360	360A	72kW		IT8072-500-480	480A	72kW
	IT8075-80-1800	1800A	75kW		IT8090-500-450	450A	90kW		IT8090-500-600	600A	90kW
					IT8108-500-540	540A	108kW		IT8108-500-720	720A	108kW
800V	IT8006-800-20	20A	6kW	1500V	IT8018-1500-30	30A	18kW	1500V	IT8018-1500-40	40A	18kW
	IT8012-800-40	40A	12kW		IT8036-1500-60	60A	36kW		IT8036-1500-80	80A	36kW
	IT8018-800-60	60A	18kW		IT8054-1500-90	90A	54kW		IT8054-1500-120	120A	54kW
	IT8036-800-120	120A	36kW		IT8072-1500-120	120A	72kW		IT8072-1500-160	160A	72kW
	IT8054-800-180	180A	54kW		IT8090-1500-150	150A	90kW		IT8090-1500-200	200A	90kW
	IT8072-800-240	240A	72kW		IT8108-1500-180	180A	108kW		IT8108-1500-240	240A	108kW
	IT8090-800-300	300A	90kW		IT8126-1500-210	210A	126kW		IT8126-1500-280	280A	126kW
	IT8108-800-360	360A	108kW		IT8144-1500-240	240A	144kW		IT8144-1500-320	320A	144kW
	IT8126-800-420	420A	126kW								
	IT8144-800-480	480A	144kW								
Model	Current	Power	Model	Current	Power	Model	Current	Power			
2250V	IT8018-2250-20	20A	18kW	2250V	IT8072-2250-80	80A	72kW	2250V	IT8126-2250-140	140A	126kW
	IT8036-2250-40	40A	36kW		IT8090-2250-100	100A	90kW		IT8144-2250-160	160A	144kW
	IT8054-2250-60	60A	54kW		IT8108-2250-120	120A	108kW				

*Some voltage levels are coming soon

*This information is subject to change without notice.

Your Power Testing Solution

IT8000 Regenerative DC Electronic Load

Features

- Recover DC energy to local grid with efficiency up to 95%
- Stand-alone power up to 144kW, expandable by master-slave parallelling up to 1152kW
- Stand-alone input voltage up to 2250V
- Stand-alone input current up to 2040A
- High power density design provides 18kW in 3U space
- Built-in waveform generator, support generating arbitrary waveforms
- LIST function, support importing LIST files by USB
- Power accumulation function
- Battery test function, auto-test function, short circuit test function
- With pre-charging function, prevent DC loading current overshoot
- Full protection: OVP/OCP/OPP/OTP/UVP, Vsense anti-reverse connection protection, and voltage transient drop protection
- Built-in standard USB/CAN/LAN/digital IO interface, and optional GPIB/Analog&RS232 interfaces
- Support SCPI protocol, LabVIEW
- Operating mode:CC/CV/CP/CR/CC+CV+CR/CR+CC/CC+CV+CP+CR

*The regenerated power is for local grid purpose, not for public grid purpose.

Applications

Multiple types of batteries Charge-Discharge Testing

Lead storage battery, Lithium battery, Power battery pack, Energy storage battery



Safety testing of mechanical systems with large capacity batteries

Unmanned vans, Nursing electric chairs, etc.

Aging test (automotive high voltage motor, fuse, relay) and small motors testing



Aging life testing for AC/DC, DC/DC converters



Tests for large capacity DC power supply such as ground electrical power



Evaluation test for fuel cells and stacks



Detection and aging test for power electronic equipments

Your Power Testing Solution

IT8000 Regenerative DC Electronic Load

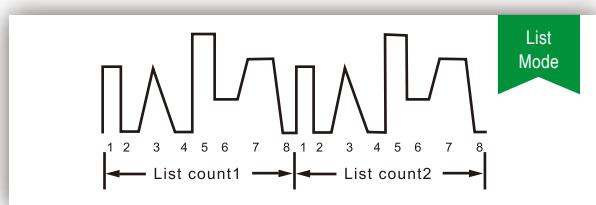
Power accumulation function

IT8000 series regenerative DC electronic load uses the power electronic transformation technology on the premise of completing test power experiment to make output energy of measured power supply regenerative recycled and reused. Through the inside fast sampling of voltage and current, the regenerative power value can be observed on the front panel of IT8000 series, including voltage, frequency and power of each phase, as well as total power, total current regenerative and total historical regenerative power, which makes the energy saving effect much easier. Re-open after power failure, IT8000 series will continue to accumulate the regenerative power value based on the last power off value.



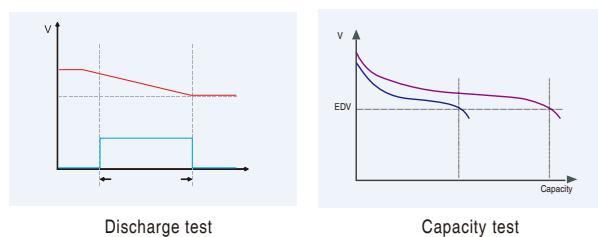
List function

IT8000 series regenerative DC electronic load provides list mode, it can complete the complex arbitrary current change mode accurately and fast, and can synchronize with internal or external signals to complete multi-level loading precision test, which greatly save cost for customers. By editing the step value, pulse width and the slope of each step, IT8000 can generate a variety of complex sequences and help users to complete various loading waveforms test. In the CC mode, IT8000 series can set rising and falling speed.



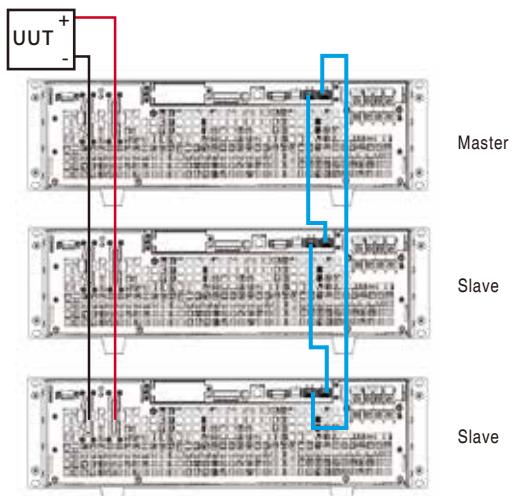
Battery test function

IT8000 series regenerative DC electronic load simulate battery discharge test under CC mode, and support settable discharge cut-off conditions, such as cut-off voltage, cut-off capacity and cut-off time. When any of the three conditions are met, the discharge test will be stopped. Moreover, the battery voltage, discharge time and the discharged capacity can be observed during the test, which reflects the reliability of the battery and its remaining life.



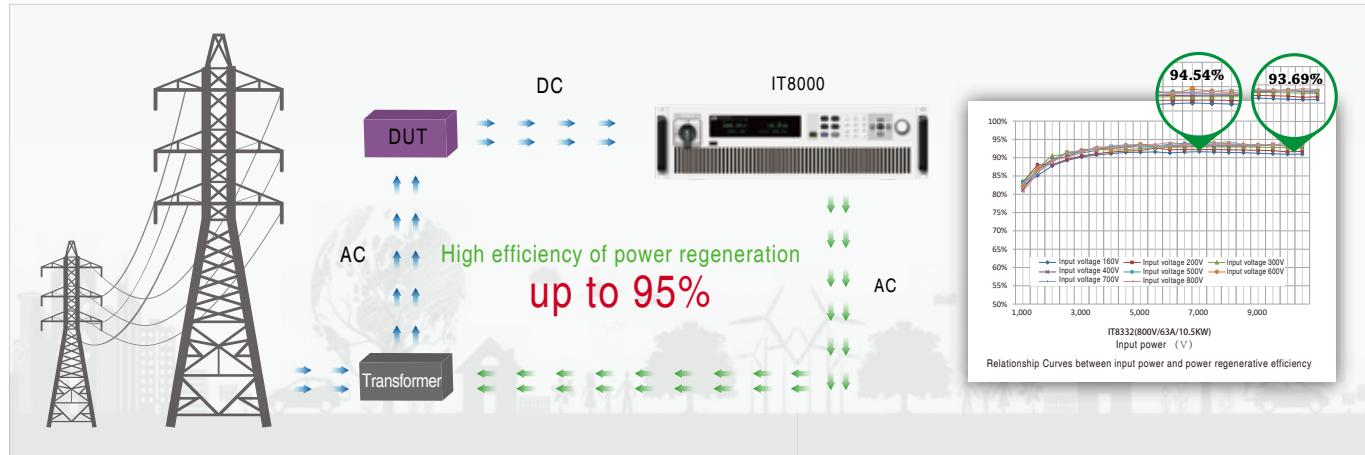
Patented parallel technology

- IT8000 has adopted ITECH parallel technology
- All the function and performance will be the same as standalone unit
- No need to calibrate after paralleling
- Fiber transmission, good for anti-interference
- Digital paralleling, fully insulated, good for protecting DUT



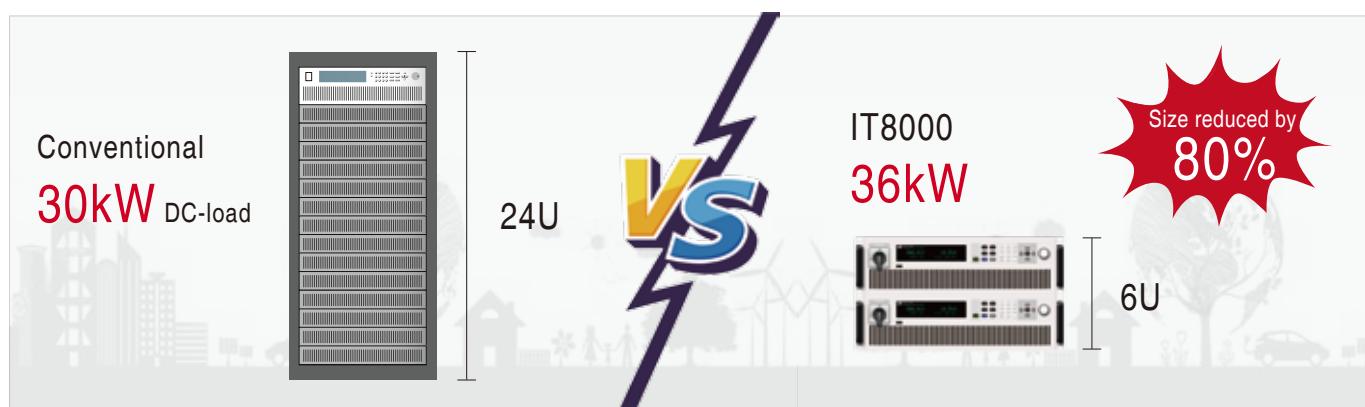
| Power regenerative efficiency up to 95%

High energy regenerative efficiency. The IT8000 series has a unique energy regenerative function that can regenerate electrical energy and then directly use it in the plant instead of consuming it in the form of heat. Its conversion efficiency can reach up to 95%, which not only will greatly reduce the user's electricity cost, but also avoid the use of air conditioning or expensive cooling systems.



| High power density

Conventional electronic loads are not only with high energy consumption, but also with very large size and weight. Energy consumption of a conventional 30kW load is at least 24U, making it difficult to transport and increasing costs. The IT8000 series regenerative DC electronic load adopts a high power density design of 18kW in only 3U height. Compared to conventional electronic loads, the size for the IT8000 series is reduced by 80% under the same output power.



| Full protection

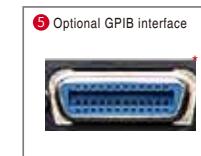
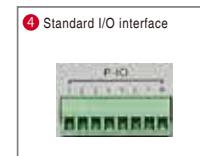
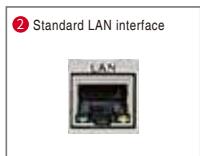
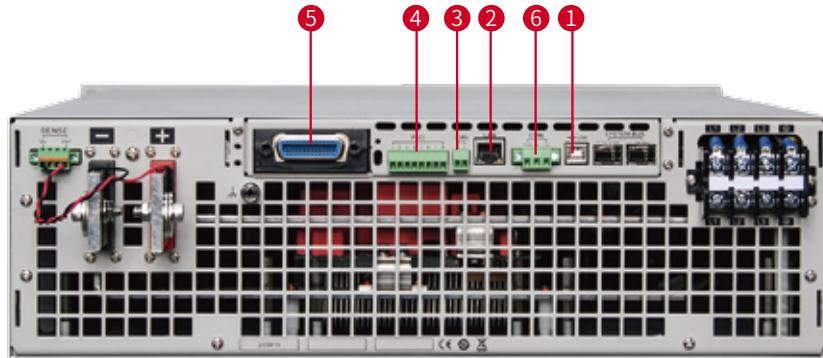
IT8000 series regenerative DC electronic load supports automatic detection of the grid state. When grid connection is suddenly disconnected or power down, IT8000 will be turned off. IT8000 series can achieve reliable on-grid function and anti-islanding protection function. IT8000 supports monitoring on DC input voltage and frequency, and supports OCP, OVP, OTP, OPP function.



Your Power Testing Solution

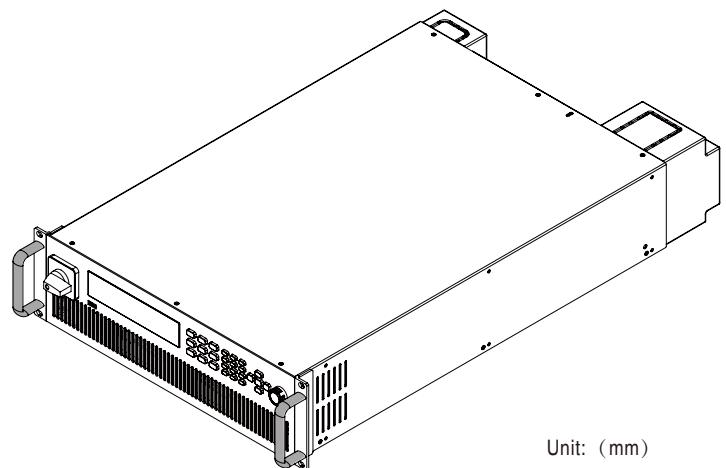
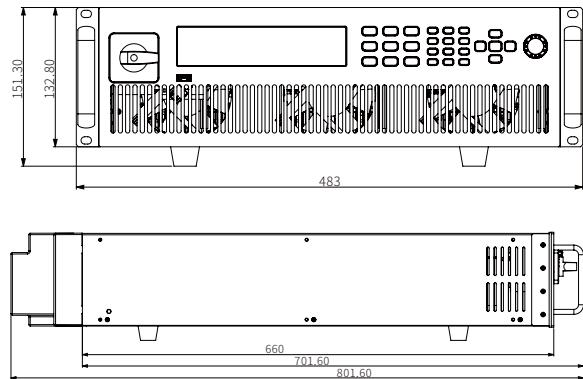
IT8000 Regenerative DC Electronic Load

Multiple interfaces



* Optional GPIB or Optional RS232 & Analog

3U/18kW Standalone unit dimension



Your Power Testing Solution

IT8000 Regenerative DC Electronic Load

Specification

		IT8006-500-30	IT8006-800-20
Rated Input Value (0 °C-40 °C)	Voltage	0~500V	0~800V
	Current	0~30A	0~20A
	Power	0~6000W	0~6000W
	Resistance	0~16667Ω	0~40000Ω
	Min.Operation Voltage	0.99V at 30A	0.66V at 20A
Input Resolution	Voltage	0.01V	0.01V
	Current	0.001A	0.001A
	Power	0.1W	0.1W
	Resistance	0.1Ω	0.1Ω
Readback Resolution	Voltage	0.01V	0.01V
	Current	0.001A	0.001A
	Power	0.1W	0.1W
	Resistance	0.1Ω	0.1Ω
Set up Accuracy within 12 mons 25°±5° ±(% of Output +Offset)	Voltage	≤0.1% + 500mV	≤0.1% + 800mV
	Current	≤0.1% + 30mA	≤0.1% + 20mA
	Power	≤1%Pmax	≤1%Pmax
	Resistance	≤2%Rmax,0~10%Rmax; ≤5%Rmax,10%~Rmax;	
Readback Accuracy within 12 mons 25°±5° ±(% of Output +Offset)	Voltage	≤0.1% + 500mV	≤0.1% + 800mV
	Current	≤0.1% + 30mA	≤0.1% + 20mA
	Power	≤1%FS	≤1%FS
	Resistance	≤2%Rmax,0~10%Rmax; ≤5%Rmax,10%~Rmax;	
Ripple (20Hz -20MHz)	Voltage	≤500mVpp	≤800mVpp
	Current	≤30mA rms	≤20mA rms
Input Drift Temperature co-efficiency (% of Output/ C +Offset)	Voltage	≤0.01% + 50mV	≤0.01% + 80mV
	Current	≤0.02% + 6mA	≤0.02% + 4mA
Readback Drift Temperature co-efficiency (% of Output/ C +Offset)	Voltage	≤0.01% + 50mV	≤0.01% + 80mV
	Current	≤0.02% + 6mA	≤0.02% + 4mA
Output Rating	Output Voltage	198V~264V (Decrease 50%) 342V~528V (3P4W)	198V~264V (Decrease 50%) 342V~528V (3P4W)
	Output Frequency	47Hz~63Hz	47Hz~63Hz
	Max. Output Current	14A	14A
	Power Factor	≥0.99	≥0.99
Set up Stability-30min (% of Output +Offset)	Harmonic Thdi	<3%	<3%
	Active Anti-islanding	Active anti-islanding	Active anti-islanding
Set up Stability-8h (% of Output +Offset)	Voltage	≤0.05% + 250mV	≤0.05% + 400mV
	Current	≤0.1% + 30mA	≤0.1% + 20mA
Readback Stability-30min (% of Output +Offset)	Voltage	≤0.05% + 250mV	≤0.05% + 400mV
	Current	≤0.1% + 30mA	≤0.1% + 20mA
Readback Stability-8h (% of Output +Offset)	Voltage	≤0.05% + 250mV	≤0.05% + 400mV
	Current	≤0.1% + 30mA	≤0.1% + 20mA
Efficiency		≈92%	≈92%
Remote Sense Compensation Voltage		≤25V	≤40V
Command Response Time		2mS	2mS
Storage Tem.		-10°C~70°C	-10°C~70°C
Isolation (output to ground)		1000V	1500V
Working Tem.		0~40°C	0~40°C
Net. Dimension (mm)		483*132.8*660mm	483*132.8*660mm
Net. Weight		28kG	28kG

*Some voltage levels are coming soon

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Your Power Testing Solution

IT8000 Regenerative DC Electronic Load

Specification

		IT8012-500-60	IT8012-800-40
Rated Input Value (0 °C-40 °C)	Voltage	0~500V	0~800V
	Current	0~60A	0~40A
	Power	0~12000W	0~12000W
	Resistance	0~8333Ω	0~20000Ω
	Min.Operation Voltage	1.98V at 60A	1.32V at 40A
Input Resolution	Voltage	0.01V	0.01V
	Current	0.001A	0.001A
	Power	0.1W	0.1W
	Resistance	0.1Ω	0.1Ω
Readback Resolution	Voltage	0.01V	0.01V
	Current	0.001A	0.001A
	Power	0.1W	0.1W
	Resistance	0.1Ω	0.1Ω
Set up Accuracy within 12 mons 25°±5° ±(% of Output +Offset)	Voltage	≤0.1% + 500mV	≤0.1% + 800mV
	Current	≤0.1% + 60mA	≤0.1% + 40mA
	Power	≤1%Pmax	≤1%Pmax
	Resistance	≤2%Rmax,0~10%Rmax; ≤5%Rmax,10%~Rmax;	
Readback Accuracy within 12 mons 25°±5° ±(% of Output +Offset)	Voltage	≤0.1% + 500mV	≤0.1% + 800mV
	Current	≤0.1% + 60mA	≤0.1% + 40mA
	Power	≤1%FS	≤1%FS
	Resistance	≤2%Rmax,0~10%Rmax; ≤5%Rmax,10%~Rmax;	
Ripple (20Hz -20MHz)	Voltage	≤500mVpp	≤800mVpp
	Current	≤60mA rms	≤40mA rms
Input Drift Temperature co-efficiency (% of Output/ C +Offset)	Voltage	≤0.01% + 50mV	≤0.01% + 80mV
	Current	≤0.02% + 12mA	≤0.02% + 8mA
Readback Drift Temperature co-efficiency (% of Output/ C +Offset)	Voltage	≤0.01% + 50mV	≤0.01% + 80mV
	Current	≤0.02% + 12mA	≤0.02% + 8mA
Output Rating	Output Voltage	198V~264V (Decrease 50%) 342V~528V (3P4W)	198V~264V (Decrease 50%) 342V~528V (3P4W)
	Output Frequency	47Hz~63Hz	47Hz~63Hz
	Max. Output Current	14A	14A
	Power Factor	≥0.99	≥0.99
	Harmonic Thdi	<3%	<3%
	Active Anti-islanding	Active anti-islanding	
Set up Stability-30min (% of Output +Offset)	Voltage	≤0.05% + 250mV	≤0.05% + 400mV
	Current	≤0.1% + 60mA	≤0.1% + 40mA
Set up Stability-8h (% of Output +Offset)	Voltage	≤0.05% + 250mV	≤0.05% + 400mV
	Current	≤0.1% + 60mA	≤0.1% + 40mA
Readback Stability-30min (% of Output +Offset)	Voltage	≤0.05% + 250mV	≤0.05% + 400mV
	Current	≤0.1% + 60mA	≤0.1% + 40mA
Readback Stability-8h (% of Output +Offset)	Voltage	≤0.05% + 250mV	≤0.05% + 400mV
	Current	≤0.1% + 60mA	≤0.1% + 40mA
Efficiency	≈92%	≈92%	
Remote Sense Compensation Voltage	≤25V	≤40V	
Command Response Time	2ms	2ms	
Storage Tem.	-10°C~70°C	-10°C~70°C	
Isolation (output to ground)	1000V	1500V	
Working Tem.	0~40°C	0~40°C	
Net. Dimension (mm)	483*132.8*660mm	483*132.8*660mm	
Net. Weight	34kg	34kg	

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Your Power Testing Solution

IT8000 Regenerative DC Electronic Load

Specification

		IT8018-500-90	IT8018-800-60
Rated Input Value (0 °C-40 °C)	Voltage	0~500V	0~800V
	Current	0~90A	0~60A
	Power	0~18000W	0~18000W
	Resistance	0~5556Ω	0~13333Ω
	Min.Operation Voltage	2.97V at 90A	1.98V at 60A
Input Resolution	Voltage	0.01V	0.01V
	Current	0.001A	0.001A
	Power	0.1W	0.1W
	Resistance	0.1Ω	0.1Ω
Readback Resolution	Voltage	0.01V	0.01V
	Current	0.001A	0.001A
	Power	0.1W	0.1W
	Resistance	0.1Ω	0.1Ω
Set up Accuracy within 12 mons 25°±5° ±(% of Output +Offset)	Voltage	≤0.1% + 500mV	≤0.1% + 800mV
	Current	≤0.1% + 90mA	≤0.1% + 60mA
	Power	≤1%Pmax	≤1%Pmax
	Resistance	≤2%Rmax,0~10%Rmax; ≤5%Rmax,10%~Rmax;	
Readback Accuracy within 12 mons 25°±5° ±(% of Output +Offset)	Voltage	≤0.1% + 500mV	≤0.1% + 800mV
	Current	≤0.1% + 90mA	≤0.1% + 60mA
	Power	≤1%FS	≤1%FS
	Resistance	≤2%Rmax,0~10%Rmax; ≤5%Rmax,10%~Rmax;	
Ripple (20Hz -20MHz)	Voltage	≤500mVpp	≤750mVpp
	Current	≤90mA rms	≤60mA rms
Input Drift Temperature co-efficiency (% of Output/ C +Offset)	Voltage	≤0.01% + 50mV	≤0.01% + 80mV
	Current	≤0.02% + 18mA	≤0.02% + 12mA
Readback Drift Temperature co-efficiency (% of Output/ C +Offset)	Voltage	≤0.01% + 50mV	≤0.01% + 80mV
	Current	≤0.02% + 18mA	≤0.02% + 12mA
Output Rating	Output Voltage	198V~264V (Decrease 50%) 342V~528V (3P4W)	198V~264V (Decrease 50%) 342V~528V (3P4W)
	Output Frequency	47Hz~63Hz	47Hz~63Hz
	Max. Output Current	24A	29A
	Power Factor	≥0.99	≥0.99
	Harmonic Thdi	<3%	<3%
	Active Anti-islanding	Active anti-islanding	Active anti-islanding
Set up Stability-30min (% of Output +Offset)	Voltage	≤0.05% + 250mV	≤0.05% + 400mV
	Current	≤0.1% + 90mA	≤0.1% + 60mA
Set up Stability-8h (% of Output +Offset)	Voltage	≤0.05% + 250mV	≤0.05% + 400mV
	Current	≤0.1% + 90mA	≤0.1% + 60mA
Readback Stability-30min (% of Output +Offset)	Voltage	≤0.05% + 250mV	≤0.05% + 400mV
	Current	≤0.1% + 90mA	≤0.1% + 60mA
Readback Stability-8h (% of Output +Offset)	Voltage	≤0.05% + 250mV	≤0.05% + 400mV
	Current	≤0.1% + 90mA	≤0.1% + 60mA
Efficiency		≈92%	≈92%
Remote Sense Compensation Voltage		≤25V	≤40V
Command Response Time		2mS	2mS
Storage Tem.		-10°C~70°C	-10°C~70°C
Isolation (output to ground)		1000V	1000V
Working Tem.		0~40°C	0~40°C
Net. Dimension (mm)		483*132.8*660mm	483*132.8*660mm
Net. Weight		40KG	40KG

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Your Power Testing Solution

IT8000 Regenerative DC Electronic Load

Specification

		IT8018-1500-30	IT8018-2250-20
Rated Input Value (0 °C-40 °C)	Voltage	0~1500V	0~2250V
	Current	0~30A	0~20A
	Power	0~18000W	0~18000W
	Resistance	0~50000Ω	0~112500Ω
	Min.Operation Voltage	9V at 30A	6V at 20A
Input Resolution	Voltage	0.1V	0.1V
	Current	0.001A	0.001A
	Power	0.1W	0.1W
	Resistance	0.1Ω	0.1Ω
Readback Resolution	Voltage	0.1V	0.1V
	Current	0.001A	0.001A
	Power	0.1W	0.1W
	Resistance	0.1Ω	0.1Ω
Set up Accuracy within 12 mons 25°±5° ±(% of Output +Offset)	Voltage	≤0.1% + 1500mV	≤0.1% + 2250mV
	Current	≤0.1% + 30mA	≤0.1% + 20mA
	Power	≤1%Pmax	≤1%Pmax
	Resistance	≤2%Rmax,0~10%Rmax; ≤5%Rmax,10%~Rmax;	
Readback Accuracy within 12 mons 25°±5° ±(% of Output +Offset)	Voltage	≤0.1% + 1500mV	≤0.1% + 2250mV
	Current	≤0.1% + 30mA	≤0.1% + 20mA
	Power	≤1%FS	≤1%FS
	Resistance	≤2%Rmax,0~10%Rmax; ≤5%Rmax,10%~Rmax;	
Ripple (20Hz -20MHz)	Voltage	≤1500mVpp	≤2250mVpp
	Current	≤30mA rms	≤20mA rms
Input Drift Temperature co-efficiency (% of Output/ C +Offset)	Voltage	≤0.01% + 150mV	≤0.01% + 225mV
	Current	≤0.02% + 6mA	≤0.02% + 4mA
Readback Drift Temperature co-efficiency (% of Output/ C +Offset)	Voltage	≤0.01% + 150mV	≤0.01% + 225mV
	Current	≤0.02% + 6mA	≤0.02% + 4mA
Output Rating	Output Voltage	198V~264V (Decrease 50%) 342V~528V (3P4W)	198V~264V (Decrease 50%) 342V~528V (3P4W)
	Output Frequency	47Hz~63Hz	47Hz~63Hz
	Max. Output Current	24A	24A
	Power Factor	≥0.99	≥0.99
	Harmonic Thdi	<3%	<3%
Set up Stability-30min (% of Output +Offset)	Active Anti-islanding	Active anti-islanding	Active anti-islanding
	Voltage	≤0.05% + 750mV	≤0.05% + 1125mV
	Current	≤0.1% + 30mA	≤0.1% + 20mA
Set up Stability-8h (% of Output +Offset)	Voltage	≤0.05% + 750mV	≤0.05% + 1125mV
	Current	≤0.1% + 30mA	≤0.1% + 20mA
Readback Stability-30min (% of Output +Offset)	Voltage	≤0.05% + 750mV	≤0.05% + 1125mV
	Current	≤0.1% + 30mA	≤0.1% + 20mA
Readback Stability-8h (% of Output +Offset)	Voltage	≤0.05% + 750mV	≤0.05% + 1125mV
	Current	≤0.1% + 30mA	≤0.1% + 20mA
Efficiency	≈92%	≈92%	≈92%
Remote Sense Compensation Voltage	≤75V	≤112.5V	≤112.5V
Command Response Time	2mS	2mS	2mS
Storage Tem.	-10°C~70°C	-10°C~70°C	-10°C~70°C
Isolation (output to ground)	2000V	3000V	3000V
Working Tem.	0~40°C	0~40°C	0~40°C
Net. Dimension (mm)	483*132.8*660mm	483*132.8*660mm	483*132.8*660mm
Net. Weight	40kG	40kG	40kG

*Some voltage levels are coming soon

This information is subject to change without notice.



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

Taipei

Add: No.918, Zhongzheng Rd., Zhonghe Dist., New Taipei City
235, Taiwan
Web: www.itechate.com.tw
TEL: +886-3-6684333
E-mail: taiwan@itechate.com.tw

Xishan Factory

Add: No.108, XiShanqiao Nanlu, Nanjing city, 210039, China
TEL: +86-25-52415098
Web: www.itechate.com

Meishan Factory

Add: No.150, Yaonanlu, Meishan Cun, Nanjing city, 210039, China
TEL: +86-25-52415099
Web: www.itechate.com



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