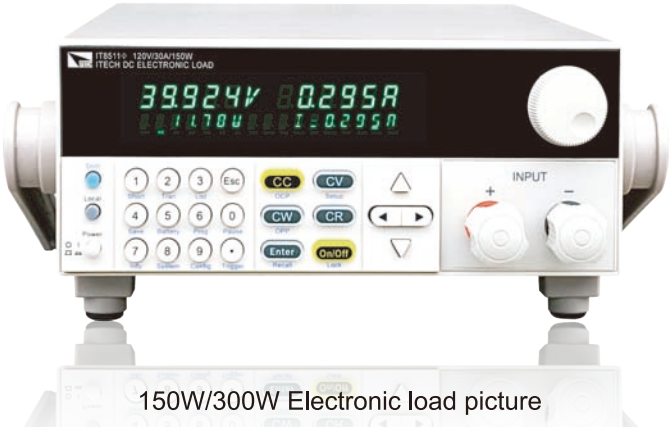
IT8500+ Electronic load



150W/300W Electronic load picture

Programmable DC electronic load

IT8500+ series is a single-channel programmable electronic load . With power ranges from 150W to 1500W . The user can perform online voltage measurements and adjustments or simulate short circuit test using the simple keypad on the front panel . It also offers a full - featured battery mode for discharging test . IT8500+ series DC loads are a versatile instrument for static and dynamic testing of power supplies , batteries , DC - DC converters , battery chargers , provides user the best testing solution.

Feature

- Highlight VFD display
- Dynamic mode:up to 10KHZ
- Resolution of voltage and current:0.1mV/0.1mA
- Four working modes:CV/CC/CR/CP
- Remote sensing function
- Battery test,automatic test,OPP test,OCP test funcitions.The load will default in the specified mode when turn it on.
- Storage for 100 sets
- Short-circuit function
- Test function
- Current monitoring funciton
- Power off memory function
- With rotary coding switch to make an easy operation
- Portable strong case equipped with non-slip feet
- Intelligent fans cooling
- Built-in Buzzer function

Constant Current

In CC mode,the electronic load will sink a constant current regardless of the changes of input voltage.

Constant Voltage

In CV mode, the electronic load will attempt to sink enough current to control the source voltage to the programmed value.

Constant Resistance

In CR mode,the module will sink a current linearly proportinal to the input voltage in accordance with the progrmmed resistance.

Constant Power

In CW mode , the electronic load will dissipate power in accordance with the progammed value . If input voltage increase , input current will decrease.

Model	Voltage	Current	Power
IT8511+	120V	30A	150W
IT8511A+	150V	30A	150W
IT8512+	120V	30A	300W
IT8512A+	150V	30A	300W
IT8512B+	500V	15A	300W
IT8512C+	120V	60A	300W
IT8513C+	120V	120A	600W
IT8514B+	500V	60A	1500W
IT8514C+	120V	240A	1500W
IT8516C+	120V	240A	3000W

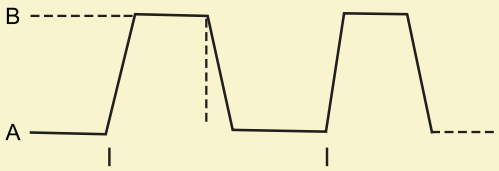
*Note:IT8514C+and IT8516C+have RS232 and USB interface

Transient Mode

Transient operation enables the module to periodically switch between two load levels, as might be required for testing power supplies . Transient operation can be turned on and off from the front panel (shift + numeric key"2") . Before you turn on the operation , you should set the parameters associated with the transient operation. The parameters include: A level, B level, frequency,duty cycle and transient testing modes. There are three different transient testing modes : continuous, pulse, and toggle.

■ Continuous Mode

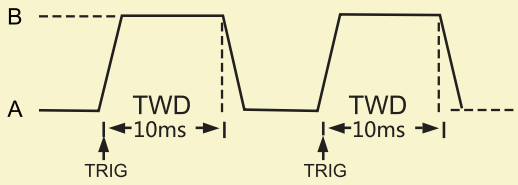
In continuous mode , the electronic load generates a repetitive pulse stream that toggles between two load levels. Load could switch the state between two value settings, A/B.



Continuous Transient Operation

■ Pulse Mode

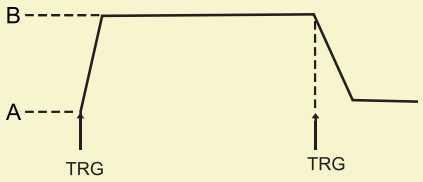
In pulse mode , the electronic load generates a transient pulse of programmable width when pulse transient operation is in effect . The load will automatically switch to A level after maintaining A width time. Then it will switch to B level. The load will not switch to A level again until the instrument receives the pulse signal.



Pulsed Transient Operation

■ Toggle Mode

In toggle mode , the electronic load will switch between A level and B level when receiving a trigger signal after the transient operation is enabled. The following picture shows the current waveform in toggle transient operation.



Toggled Transient Operation

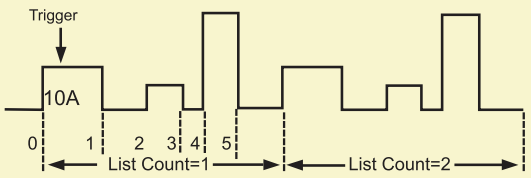
Automatic Test Function

The automatic test function of the IT8500+ series electronic load is useful for simulating various tests and allows the user to edit up to 10 groups of testing files . Each file has 10 steps and up to 100 files can be edited and saved into the EEPROM.
User can also set the default power-up mode to be Automatic test.It improves the productivity and automatically judge the product quality.

Test steps		Test methods			
	Mode	Voltage range (V)	Current range (mA)	Power(W)	Ripple wave range
Step 1	CC	5.8~6.15	210	<4	<50mVpp
Step 2	no-load	5.9~6.4	0	<1.2	
Step 3	short circuit	0	<245		
Step 4	CV	5	205~245		

List mode

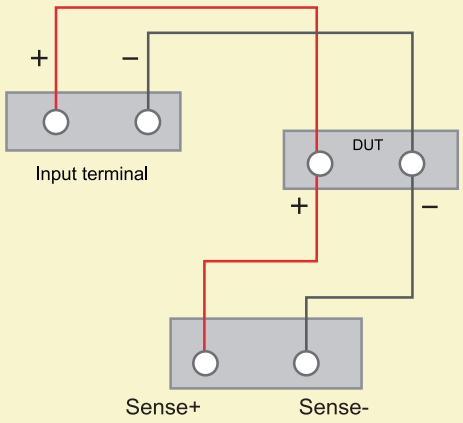
List mode allows you to generate a complex current sequence . Moreover , the mode change can be synchronized with an internal or external singal , to accomplish dynamic and precise test which can save cost for users.
Users can edit step value, pulse width and slope sequence and meet a complex test request . A list file includes following parameters : file name step counts (range 2-84) , time width of single step(0.00002s-3600s),step value and slope.The edited list file can be recalled easily . The DC load provides 7 nonvolatile regisers to save list files setting for recall later. In the list mode,the DC start to run the list file once receiving a trigger signal , continue to run until end of the operation or receiving another trigger.



List Sequence

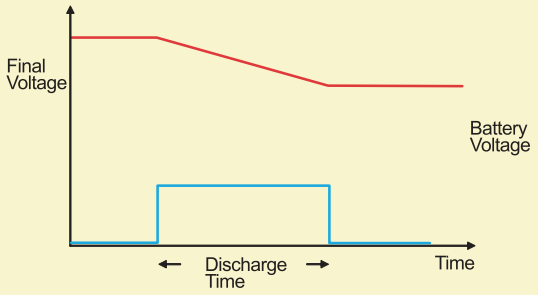
Remote Sense

When working in CC , CV , CW and CR mode , if the electronic load consumes a very large current , it will cause a voltage drop in the leads between the connected device and terminals of the electronic load . In order to ensure testing accuracy , the electronic load provides a pair of remote sensing terminals in the rear panel where users can sense the output terminal voltage of the connected device . Users should set the electronic load in REMOTE SENSE mode before using this function . By eliminating the effect of the voltage drop in the load leads , remote sensing provides greater accuracy by allowing the electronic load to regulate directly at the source's output terminals.



Battery mode

A battery test mode is provided that will measure the ampere*hour (A*hr) characteristic of a battery.It measures the time it takes for a battery voltage to drop to a specified value while drawing a constant current from the battery.
There are three stop conditions for IT8500 + series loads : Time , capacity and voltage . In addition, user can make any combination of stop conditions to achieve “ And ” , “ Or ” relationship . When one or more stop conditions are satisfied , the test is ended and the discharging time , capacity in ampere * hours (A*hrs) of the battery is calculated and displayed on the front panel.



Battery discharge function

IT8500+Specification

		IT8511+		IT8512+		IT8512B+	
Input Rating	Voltage	0~120V		0~120V		0~500V	
	Current	0~3A	0~30A	0~3A	0~30A	0~3A	0~15A
(0~40℃)	Power	150 W		300W		300W	
	Minimum operating voltage	0.14V at 3A	1.4V at 30A	0.12V at 3A	1.2V at 30A	0.6V at 3A	3V at 15A
CV Mode	Range	0~18V	0~120V	0~18V	0~120V	0~50V	0~500V
	Resolution	1mV	10mV	1mV	10mV	1mV	10mV
	Accuracy	±(0.05%+0.02%FS)	±(0.05%+0.025%FS)	±(0.05%+0.02%FS)	±(0.05%+0.025%FS)	±(0.05%+0.02%FS)	±(0.05%+0.025%FS)
CC Mode	Range	0~3A	0~30A	0~3A	0~30A	0~3A	0~15A
	Resolution	0.1mA	1mA	0.1mA	1mA	0.1mA	1mA
	Accuracy	±(0.05%+0.05%FS)					
CR Mode	Range	0.05Ω~10Ω	10Ω~7.5KΩ	0.05Ω~10Ω	10Ω~7.5KΩ	0.3Ω~10Ω	10Ω~7.5KΩ
	Resolution	16bit					
	Accuracy	0.01%+0.08S	0.01%+0.0008S	0.01%+0.08S	0.01%+0.0008S	0.01%+0.08S	0.01%+0.0008S
CP Mode	Range	150W		300W		300W	
	Resolution	10mW					
	Accuracy	0.1%+0.1%FS		0.1%+0.1%FS		0.1%+0.1%FS	
		Dynamic mode					
		CC model		CC model		CC model	
Dynamic mode	T1&T2	50uS~3600S /Res:1uS					
	Accuracy	5uS±100ppm					
	Rising / falling slope	0.0001~0.3A/uS	0.001~1.5A/uS	0.0001~0.3A/uS	0.001~1.5A/uS	0.0001~0.3A/uS	0.001~0.8A/uS
		Measurement range					
V Measurement	Range	0~18V	0~120V	0~18V	0~120V	0~50V	0~500V
	Resolution	0.1mV	1mV	0.1mV	1mV	1mV	10mV
	Accuracy	±(0.025%+0.025%FS)					
I Measurement	Range	0~3A	0~30A	0~3A	0~30A	0~3A	0~15A
	Resolution	0.1mA	1mA	0.1mA	1mA	0.1 mA	1mA
	Accuracy	±(0.05%+0.05%FS)					
W Measurement	Range	150W		300W		300W	
	Resolution	10mW					
	Accuracy	±(0.1%+0.1%FS)		±(0.1%+0.1%FS)		±(0.1%+0.1%FS)	
		Protection range					
	Over power protection	≒160W		≒320W		≒320W	
	Over current protection	≒3.3A	≒33A	≒3.3A	≒33A	≒3.3A	≒16A
	Over voltage protection	≒125V				≒530V	
	Over temperature protection	≒85℃				≒85℃	
		Specification					
Short circuit	Current(CA)	≒3.3/3A	≒33/30A	≒3.3/3A	≒33/30A	≒3.3/3A	≒16/15A
	Voltage(CV)	0V					
	Resistance(CR)	≒45mΩ		≒40mΩ		≒180mΩ	
	Input impedance	150KΩ					
Dimention (W*D*H)		214.5mm*354.6mm*88.2mm				214.5mm*354.6mm*88.2mm	

		IT8512C+		IT8513C+		IT8514C+	
Input Rating	Voltage	0~120V		0~120V		0~120V	
	Current	0~6A	0~60A	0~12A	0~120A	0~24A	0~240A
(0~40℃)	Power	300W		600W		1500W	
	Minimum operating voltage	0.25V at 6A	2.5V at 60A	0.2V at 12A	2V at 120A	0.25V at 24A	2.5V at 240A
CV Mode	Range	0~18V	0~120V	0~18V	0~120V	0~18V	0~120V
	Resolution	1mV	10mV	1mV	10mV	1mV	10mV
	Accuracy	±(0.05%+0.02%FS)	±(0.05%+0.025%FS)	±(0.05%+0.02%FS)	±(0.05%+0.025%FS)	±(0.05%+0.02%FS)	±(0.05%+0.025%FS)
CC Mode	Range	0~6A	0~60A	0~12A	0~120A	0~24A	0~240A
	Resolution	0.1mA	1mA	1mA	10mA	1mA	10mA
	Accuracy	±(0.05%+0.05%FS)					
CR Mode	Range	0.05Ω~10Ω	10Ω~7.5KΩ	0.05Ω~10Ω	10Ω~7.5KΩ	0.05Ω~10Ω	10Ω~7.5KΩ
	Resolution	16bit					
	Accuracy	0.01%+0.08S	0.01%+0.0008S	0.01%+0.08S	0.01%+0.0008S	0.01%+0.08S	0 01%+0 0008S
CW Mode	Range	300W		600W		1500W	
	Resolution	10mW					
	Accuracy	0.1%+0.1%FS		0.2%+0.2%FS		0.2%+0.2%FS	
		Dynamic mode					
		CC model		CC model		CC model	
Dynamic mode	T1&T2	20uS~3600S /Res:1uS		100uS~3600S /Res:1 uS		100uS~3600S /Res:1 uS	
	Accuracy	2uS±100ppm		10uS±100ppm		10uS±100ppm	
	Rising / falling slope	0.0001~0.3A/uS	0.001~3A/uS	0 001~0.2A/uS	0.01~1.6A/uS	0.001~0.3A/uS	0.01~3.2A/uS
		Measurement range					
V Measurement	Range	0~18V	0~120V	0~18V	0~120V	0~18V	0~120V
	Resolution	1mV	10mV	0.1mV	1 mV	0.1mV	1 mV
	Accuracy	±(0.025%+0.025%FS)				±(0.025%+0.025%FS)	
I Measurement	Range	0~6A	0~60A	0~12A	0~120A	0~24A	0~240A
	Resolution	0.1mA	1 mA	1mA	10mA	1mA	10mA
	Accuracy	±(0.05%+0.05%FS)				±(0.05%+0.05%FS)	
W Measurement	Range	300W		600W		1500W	
	Resolution	10mW					
	Accuracy	±(0.1%+0.1%FS)		±(0.2%+0.2%FS)		±(0.2%+0.2%FS)	
		Protection range					
	Over power protection	≒320W		≒620W		≒1500W	
	Over current protection	≒6.5A	≒65A	≒13A	≒130A	≒26.7A	≒267A
	Over voltage protection	≒125V					
	Over temperature protection	≒85℃		≒95℃		≒85℃	
		Specification					
Short circuit	Current(CA)	≒6.5/6A	≒65/60A	≒13/12A	≒130/120A	≒26.7/24A	≒267/240A
	Voltage(CV)	0V					
	Resistance(CR)	≒40mΩ		≒15mΩ		≒8mΩ	≒8mΩ
	Input impedance	150KΩ					
Dimention (W*D*H)		214.5mm*354.6mm*88.2mm		214.5mm*453.5mm*88.2mm		436.5mm*463.5mm*88.2mm	