ITECH

YOUR POWER TESTING SOLUTION

IT-M3900B

Regenerative Power System



Your Power Testing Solution

IT-M3900B
Regenerative power system



The IT-M3900 series combines four series of DC power supplies, bi-directional power supplies, regenerative power system and regenerative electronic load. It continues the ultra high power density design of M series, with a maximum power of 6kW, current of 510A and voltage up to 1500V in 1U, comfortable system scalability, and a small physical size could save extra space and fully meet the stringent requirements of various requests with the multi-functional, high energy-saving, high safety and high stability product design.

IT-M3900B regenerative power system feature two-in-one, which could use as a bidirectional DC power supply, also act as an independent regenerative load. One-button-switch between source and load mode, a unique and decisive feature for the user groups that works in different applications such as battery, energy storage, electric vehicle, Green energy and some ATE fields.

Application

Industrial power supply modules

Inverters, Emergency power supply modules, Bidirectional DC-DC, Rectifier

Electric Vehicles

BOBC, DC-DC Modules, Automotive Electronic Devices

Small/Medium Power Motors

Drones, Power tools, Electric Motorbikes

5G communication and data center

UPS, UPS inverter unit, HVDC power supply



01 IT-M3900B regenerative power system

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Voltage	Model		Current	Power		Current	Power	Size
10V	IT-M3901B-10-170	source	-120~170A	-1200~1700W	load	3~120A	12~1200W	1U
	IT-M3903B-10-340		-240~340A	-2400~3400W		4~240A	40~2400W	1U
	IT-M3905B-10-510		-360~510A	-3600~5100W		6~360A	60~3600W	1U
	IT-M3910B-10-1020		-720~1020A	-7200~10200W		12~720A	120~7200W	2U
32V	IT-M3902B-32-80	source	±80A	±2kW	load	80A	2kW	1U
	IT-M3904B-32-160		±160A	±4kW		160A	4kW	1U
	IT-M3906B-32-240		±240A	±6kW		240A	6kW	1U
	IT-M3912B-32-480		±480A	±12kW		480A	12kW	2U
80V	IT-M3902B-80-40	source	±40A	±2kW	load	40A	2kW	1U
	IT-M3904B-80-80		±80A	±4kW		80A	4kW	1U
	IT-M3906B-80-120		±120A	±6kW		120A	6kW	1U
	IT-M3912B-80-240		±240A	±12kW		240A	12kW	2U
300V	IT-M3902B-300-20	source	±20A	±2kW	load	20A	2kW	1U
	IT-M3904B-300-40		±40A	±4kW		40A	4kW	1U
	IT-M3906B-300-60		±60A	±6kW		60A	6kW	1U
	IT-M3912B-300-120		±120A	±12kW		120A	12kW	2U
500V	IT-M3902B-500-12	source	±12A	±2kW	load	12A	2kW	1U
	IT-M3904B-500-24		±24A	±4kW		24A	4kW	1U
	IT-M3906B-500-36		±36A	±6kW		36A	6kW	1U
	IT-M3912B-500-72		±72A	±12kW		72A	12kW	2U
800V	IT-M3902B-800-8	source	±8A	±2kW	load	8A	2kW	1U
	IT-M3904B-800-16		±16A	±4kW		16A	4kW	1U
	IT-M3906B-800-24		±24A	±6kW		24A	6kW	1U
	IT-M3912B-800-48		±48A	±12kW		48A	12kW	2U
1500V	IT-M3906B-1500-12	source	±12A	±6kW	load	12A	6kW	1U

* The above specifications are subject to update without notice

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IT-M3900B regenerative power system

FEATURE

- 2 in 1 unit - a bidirectional power supply and a regenerative load
- One button switch between source and load on front panel
- Compact design, 1U@6kW, 2U@12kW
- Voltage range: 10~1500V
- Current range: -720A~1020A
- Power range: ±12kW
- Bidirectional energy flow between the DUT and the grid, current seamless switching
- Master/slave parallel connection - keep good performance while power extension*1
- Efficient power regeneration - reduce cost of electricity and cooling
- CC/CV priority
- Adjustable output impedance

  Battery charge and discharge test
- Battery simulation
- Partial pre-compliant with LV123, LV148, DIN40839, ISO-16750-2, SAEJ1113-11,LV124 and ISO21848 automotive testing standards*2
- Slope of voltage, current and power is settable
- Simulation of dynamic driving conditions, up to 10 million points
- 8 operation modes under Source mode: CC/CV/CW/CR/CC+CV/CV+CR/CR+CC/CC+CV+CW+CR
- Multiple protection: OVP / ±OCP / ±OPP / OTP /voltage transient drop protection/anti-islanding/power grid detection/pre-charge
- Built-in USB/CAN/LAN/digital IO interfaces, Optional GPIB/Analog&RS232

*1 If 1U models>16, 2U models>8, pls. contact ITECH.

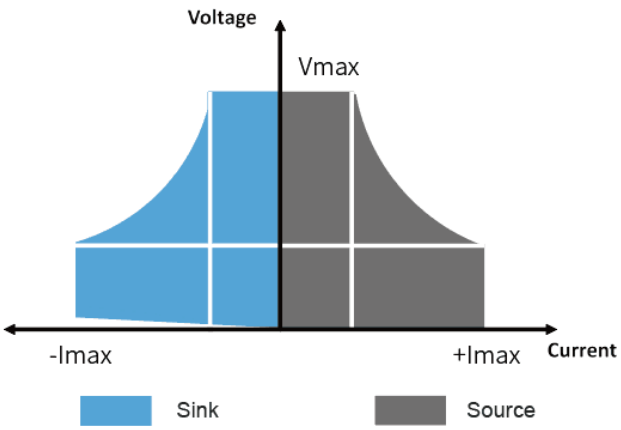
*2 Not available for 10V models

One button switch, bidirectional and regenerative

Different from other bidirectional power supplies, IT-M3900B series is a regenerative power system which combines two devices into a 1U unit. It is both a bidirectional DC power supply and also a regenerative DC electronic load. You can switch between Source and Load with one button on the front panel.IT-M3900B not only saves space and equipment purchasing cost for you, but also enables you to connect DUT easily.

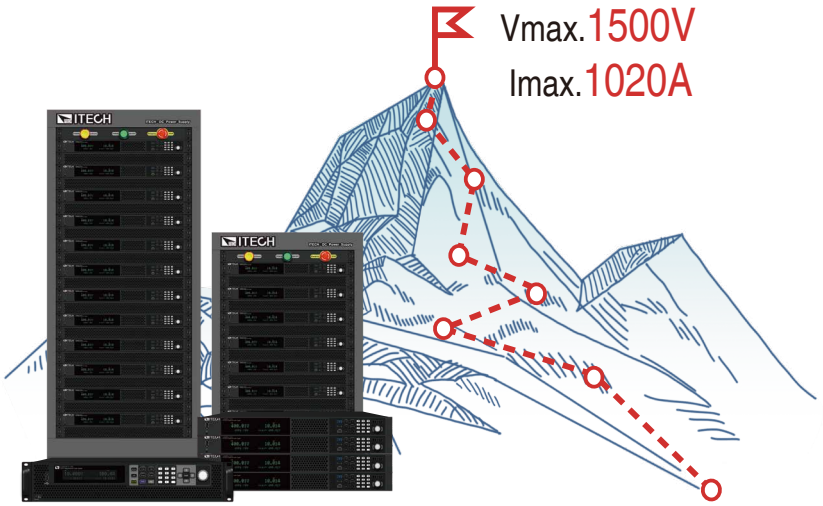


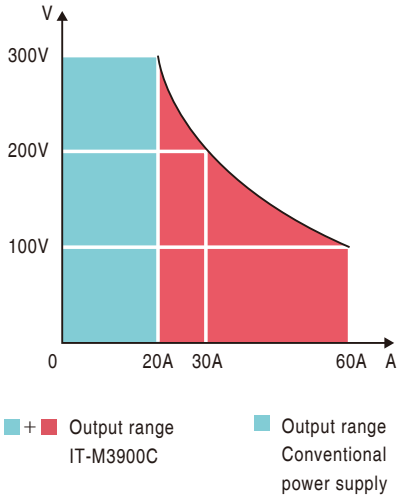
It can switch seamlessly between source and sink mode fast and continuously, which avoids voltage or current overshoot effectively. IT-M3900B can be well applied to battery test, cell packaging equipment test, battery protection board test, etc.



Wide range output

There are 25 models included in IT-M3900B series. The output voltage ranges from 10V to 1500V and the maximum output current of a single unit can reach 1020A. The wide-range output design provides more voltage and current combinations than conventional fixed-range output DC power supplies, which is more flexible. Just a single unit can cover a wide range of applications which makes it easy to build power systems and largely save room for you at the same time.





CC & CV priority

CV & CC priority helps customers effectively and flexibly solve their various tough problems in test applications request for high speed and no over-shoot power supplies. Customers can select CV or CC priority to adjust the speed of the loop circuit, to decide output with the high-speed voltage or current with no overshoot. It is applicable for high-power integrated circuit test, charging/ discharging test and the transient simulation/ characteristic test of automotive electronics.

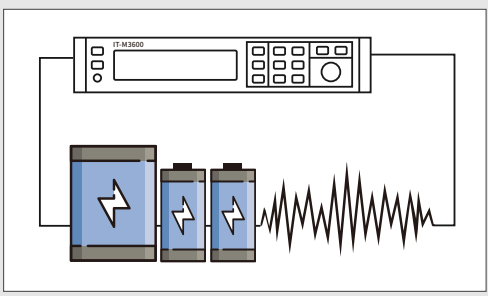
Battery charge/discharge Testing

IT-M3900B series are with unique bidirectional design, variable output impedance, and four working modes of CC/CV/CP/CR under load mode, so it can simulate battery charging and discharging characteristics, set various testing conditions and process testing data, so as to be applicable for charging and discharging testing for various kinds of portable batteries.IT-M3900B series are with unique bidirectional design, variable output impedance, and four working modes of CC/CV/CP/CR under load mode, so it can simulate battery charging and discharging characteristics, set various testing conditions and process testing data, so as to be applicable for charging and discharging testing for various kinds of portable batteries.

With optional ITS5300 battery testing software,

it can do the below testing items:

- Road conditions simulation
- Charging & discharging characteristics testing
- Cycle life testing
- Consistency testing
- DCIR testing
- Temperature testing
- Capacity testing
- Life testing
- Reliability testing
- Overcharge/over discharge endurance testing



Your Power Testing Solution

IT-M3900B regenerative power system

Power regenerative and eco-friendly

With the power regeneration function, IT-M3900B can feed back up to 95% power instead of consuming it as heat. It not only save your cost of electricity, HVAC and cooling infrastructure, but also help to reduce carbon emission and impact on the environment. In addition, IT-M3900B has the function of automatic grid detection, which can detect phase voltage and frequency in real time and synchronizes with the grid to make energy regeneration automatic and safe.

Production facility : 24Hr/day x 7 work days x 52 weeks

Power	Electricity cost saved (appr. USD/year)	CO_2 emission reduced (appr. ton/year)
6 kW	6,971	50
12 kW	13,943	99
36 kW	41,828	298
96 kW	111,541	794

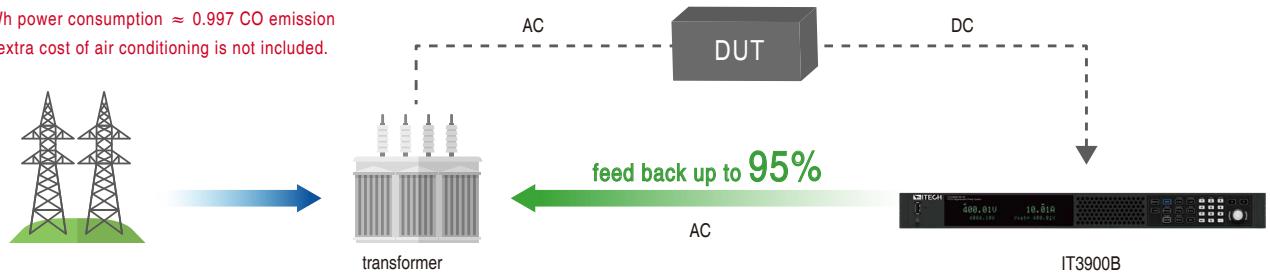
R&D lab : 8Hr/day x 5 work days x 52 weeks

Power	Electricity cost saved (appr. USD/year)	CO_2 emission reduced (appr. ton/year)
6kW	1,747	12
12 kW	3,494	24
36 kW	10,483	71
96 kW	27,955	189

* The data is based on :

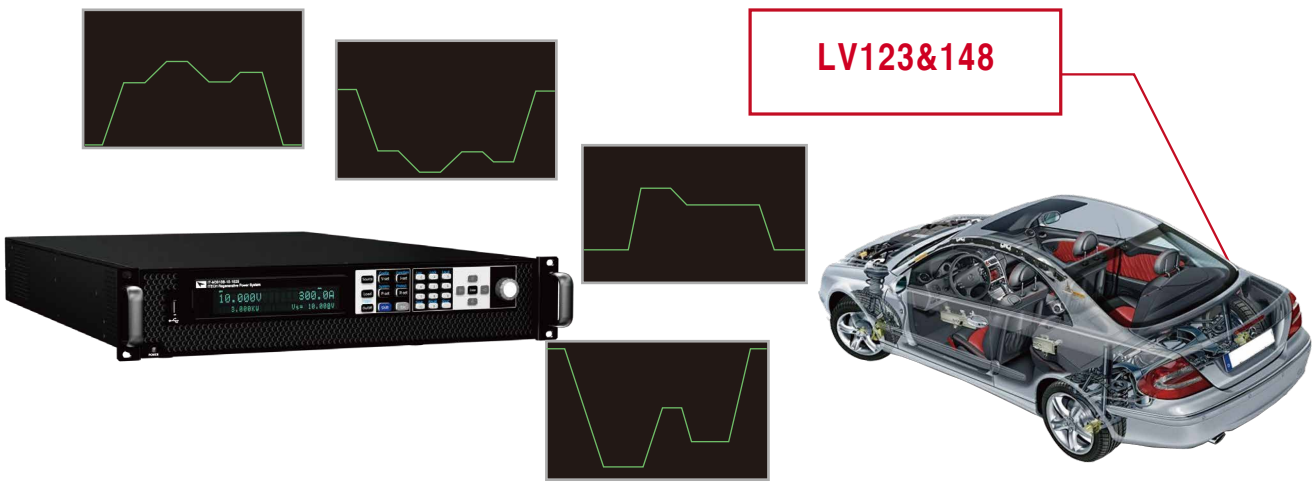
1. approximate electricity price 0.14USD/kWh for industry facility in California
2. 1kWh power consumption ≈ 0.997 CO emission

* The extra cost of air conditioning is not included.



Pre-compliant with multiple standards for EV component testing

Power transients often happen during vehicle start-up and driving. To make sure that the automotive electronic components can withstand it, it's necessary to simulate the worst conditions during the test. IT-M3900B has built in partial voltage curves of pre-compliant standard, including LV123, LV148, DIN40839, ISO-16750-2, SAEJ1113-11, LV124 and ISO21848. Users can easily recall various waveforms directly. You don't need to program by yourself or purchase any additional software.



Battery simulation function

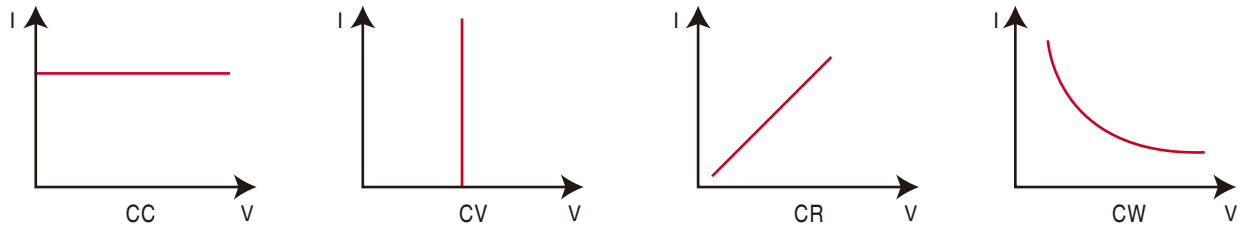
IT-M3900B unique bidirectional design and variable output impedence makes it easy for the users to set voltage/capacity/internal resistance/SOC quickly to define battery matrix quickly from the front panel, to simulate the charge/discharge characteristics of battery and assist with other tests. ITECH provides optional BSS2000 battery simulation software, then users can self-define the battery curve by setting common parameters, also can set battery initial capacity to verify the DUT characteristics under different battery status. Meanwhile, BSS2000 supports importing matlab battery matrix or CSV. file with battery charging and discharging curve, so as to simulate real battery charge and discharge characteristics.



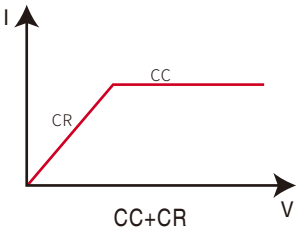
BSS2000 battery simulation software interface

Multiple operation modes

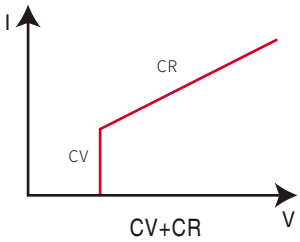
IT-M3900B provide CC/CV/CW/CR modes under source/load mode.



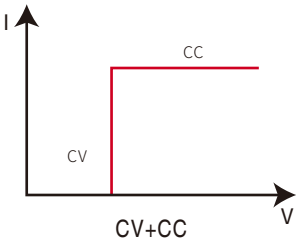
IT-M3900B also provide CC+CR/CV+CR/CV+CC/CC+CV+CW+CR four complex modes under Load mode, adapt to multiple applications.



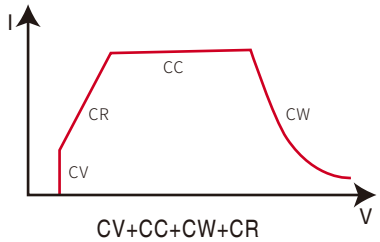
CC+CR mode can be applied to OBC feature test of voltage limit,feature test of current limit,constant voltage accuracy test,constant current accuracy test, to prevent over current protection.



CV+CR mode can be applied to simulate LED light, test LED power , LED current ripple parameters.



CV+CC mode can be applied to simulate battery, test charging station or car charger, the maximum loading current is limited when the CV is working.

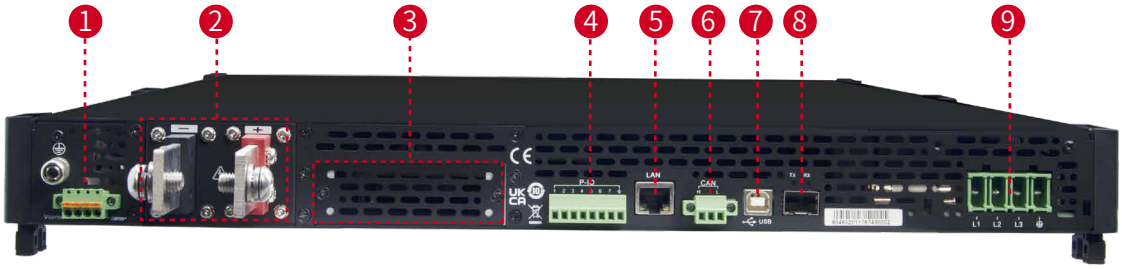


CV+CC+CW+CR mode can be applied to test lithium-ion battery charger, to gain complete V-I charging curve. In addition,when protection circuit of DUT is damaged, it can auto switch to avoid damage.

Your Power Testing Solution

IT-M3900B regenerative power system

Multiple interfaces



1 Sense terminals (Vs+, Vs-)



2 DC output terminals of the power supply



3 Interface for optional accessories



4 Digital I/O interface: P-IO



5 LAN Communication Interface



6 CAN Communication Interface



7 USB Communication Interface



8 Communication interface of outer ring optical fiber (TX and RX)



9 terminals (L1, L2, L3, and PE)



Optional Accessories

Category	Model	Specification	Description
Parallel kit	IT-E4029-15U	IT15U cabinet	800mm×550mm X907.6mm
	IT-E4029-27U	IT27U cabinet	800mm×600mm×1362.75mm
	IT-E4029-37U	IT37U cabinet	800mm×600mm×1764.35mm
	IT-E168	Optical fiber cable kit	Used for parallel connection between the units in a cabinet
	IT-E155A/B/C	Cabinet rack mount Kit	Cabinet rack mount installation
Functional Module	IT-E165A-250 *1	Anti-reverse protection unit 750V/250A	avoid reverse connection
	IT-E165A-400 *1	Anti-reverse protection unit 750V/400A	avoid reverse connection
	IT-E165A-500 *1	Anti-reverse protection unit 900V/400A	avoid reverse connection
	IT-E165B *2	Anti-EMF unit1200V/200A	avoid current back flow
Other accessories	IT-E258	5m power cord for 3U unit, CN standard	AC input power cord
	IT-E258-15U	5m power cord for 15U unit, CN standard	AC input power cord
	IT-E258-27U	5m power cord for 27U unit, CN standard	AC input power cord
	IT-E258-37U	5m power cord for 37U unit, CN standard	AC input power cord
	IT-E176	GPIB communication interface	
	IT-E177	RS232&analog communication card	



IT-E4029-15U (Dimension:mm)

*1 The voltage/current of the DUT must be within the IT-E165A rated range
*2 The voltage/current of the DUT must be within the IT-E165B rated range

Specification

IT-M3905B-10-510					
Power supply parameters			Load parameters		
Rated value (0 ℃-50 ℃)	Voltage	0～10V	Rated value (0 ℃-50 ℃)	Voltage	0～10V
	Current	-360A～510A		Current	6A～360A
	Power	-3600W～5100W		Power	60W～3600W
	Series IR(CV priority)	0～0.02Ω		Resistance	0.003Ω～1Ω
	Load resistance (CC priority mode)	0.003Ω～1Ω		Min.operation voltage	0.6V at 360A
Setup Resolution	Voltage	0.001V		Input leak current	0.03A
	Current	0.1A	Setup Resolution	Voltage	0.001V
	Power	1W		Current	0.1A
	Series IR(CV priority)	0.001Ω		Power	0.1W
	Load resistance (CC priority mode)	0.001Ω		Resistance	0.001Ω
Readback Resolution	Voltage	0.001V	Readback Resolution	Voltage	0.001V
	Current	0.1A		Current	0.1A
	Power	1W		Power	0.1W
Setup Accuracy	Voltage	≤0.03% + 0.03%FS	Setup Accuracy	Voltage	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS		Current	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS		Power	≤0.5% + 0.5%FS
	Series IR(CV priority)	≤1%FS		Resistance*2	Max.： 1/(1/Rset+(1/Rset)*0.1+0.008) Min.： 1/(1/Rset-(1/Rset)*0.1-0.008)
	Load resistance (CC priority mode)	Max.： 1/(1/Rset+(1/Rset)*0.1+0.008) Min.： 1/(1/Rset-(1/Rset)*0.1-0.008)	Readback Accuracy	Voltage	≤0.03% + 0.03%FS
Readback Accuracy	Voltage	≤0.03% + 0.03%FS		Current	≤0.1% + 0.1%FS
	Current	≤0.1% + 0.1%FS		Power	≤0.5% + 0.5%FS
	Power	≤0.5% + 0.5%FS	Dynamic Response Time	Rising rate	120A/ms
Voltage Ripple*3		≤65mVpp(Peak value)/≤10mV(RMS)		Descent rate	120A/ms
Rise Time (no load)/(full load)	Voltage	≤50ms(no load)/≤100ms(full load)		Dynamic frequency	100Hz
Fall Time (no load)/(full load)	Voltage	≤100ms(no load)/≤50ms(full load)	Power Regulation Rate	Voltage	≤0.05% + 0.05%FS
Dynamic Response Time*1	Voltage	≤10ms		Current	≤0.05% + 0.05%FS
Power Regulation Rate	Voltage	≤0.05% + 0.05%FS	Load Regulation Rate	Voltage	≤0.002%*I + 0.05%FS
	Current	≤0.05% + 0.05%FS		Current	≤0.05% + 0.05%FS
Load Regulation Rate	Voltage	0.0035%*I + 0.05%FS	Short Circuit Test	Current	366A
	Current	≤0.05% + 0.05%FS	Input Protection Scope	OCP	375A
Input Protection Scope	OCP	-370A or 520A		OVP	11V
	OVP	10.5V		OPP	3672W
	OPP	-3672W or 5202W	Remote Sense Compensation Voltage		≤2V
Remote Sense Compensation Voltage		≤2V			
AC Input*4	Voltage	3φ 110V～520V			
		1φ 85V～300V			
	Frequency	50/60Hz			
Max. AC Apparent Power		5.55kVA			
Max. AC Current		12.5Aac			
Max. Efficiency		92%			
Power Factor		0.99			
DC Component		≤0.2A			
Current Harmonic		≤3%			
Working Temperature		0～40℃			
Storage Temperature		-10℃～70℃			
Programming Response Time		0.1ms			
Withstand Voltage (DC to ground)		300Vdc			
Withstand Voltage (AC to ground)		3500Vdc			
Cooling Mode		Air			
Dimension		660mm*437mm*43.5mm			
N.W		15kg			

*1 25%-90% rated current
*2 Resistance accuracy -- current / voltage not less than 10%FS
*3 The ripple is got under three-phase AC input
*4 The AC will be limited to 12.5Aac. When the AC input is low, power will be limited. E.g:
Three-phase input, line voltage 200Vac, the power is: P=200Vac*12.5Aac*1.732=4330VA
Single-phase input, phase voltage 200Vac, the power is: P=200Vac*12.5Aac=2500VA
* This information is subject to change without notice.

Your Power Testing Solution

IT-M3900B regenerative power system

Specification

IT-M3906B-32-240					
Power supply parameters			Load parameters		
Rated value (0 ℃-50 ℃)	Voltage	0～32V	Rated value (0 ℃-50 ℃)	Voltage	0～32V
	Current	-240A～240A		Current	0～240A
	Power	-6000W～6000W		Power	0～6000W
	Series IR(CV priority)	0～0.2Ω		Resistance	0.005Ω～400Ω
	Load resistance (CC priority mode)	0.005Ω～400Ω		Min.operation voltage	0.5V at 240A
Setup Resolution	Voltage	0.001V		Input leak current	0.01A
	Current	0.01A	Setup Resolution	Voltage	0.001V
	Power	1W		Current	0.01A
	Series IR(CV priority)	0.001Ω		Power	0.1W
	Load resistance (CC priority mode)	0.001Ω		Resistance	0.001Ω
Readback Resolution	Voltage	0.001V	Readback Resolution	Voltage	0.001V
	Current	0.01A		Current	0.01A
	Power	1W		Power	0.1W
Setup Accuracy	Voltage	≤0.03% + 0.03%FS	Setup Accuracy	Voltage	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS		Current	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS		Power	≤0.5% + 0.5%FS
	Series IR(CV priority)	≤1%FS		Resistance*2	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0005) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0005)
	Load resistance (CC priority mode)	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0005) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0005)	Readback Accuracy	Voltage	≤0.03% + 0.03%FS
Readback Accuracy	Voltage	≤0.03% + 0.03%FS		Current	≤0.1% + 0.1%FS
	Current	≤0.1% + 0.1%FS		Power	≤0.5% + 0.5%FS
	Power	≤0.5% + 0.5%FS	Dynamic Response Time	Rising rate	240A/ms
Voltage Ripple*3		≤80mVpp(Peak value)/≤30mV(RMS)		Descent rate	240A/ms
Rise Time (no load)/(full load)	Voltage	≤15ms(no load)/≤30ms(full load)		Dynamic frequency	500Hz
Fall Time (no load)/(full load)	Voltage	≤30ms(no load)/≤15ms(full load)	Power Regulation Rate	Voltage	≤0.02% + 0.02%FS
Dynamic Response Time*1	Voltage	≤1ms		Current	≤0.05% + 0.05%FS
Power Regulation Rate	Voltage	≤0.02% + 0.02%FS	Load Regulation Rate	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS		Current	≤0.05% + 0.05%FS
Load Regulation Rate	Voltage	≤0.02% + 0.02%FS	Short Circuit Test	Current	244.8A
	Current	≤0.05% + 0.05%FS	Input Protection Scope	OCP	250A
Input Protection Scope	OCP	-250A or 250A		OVP	35V
	OVP	33V		OPP	6120W
	OPP	-6120W or 6120W	Remote Sense Compensation Voltage		≤2V
Remote Sense Compensation Voltage		≤2V			
AC Input*4	Voltage	3φ 110V～520V			
		1φ 85V～300V			
	Frequency	50/60Hz			
Max. AC Apparent Power		6.5kVA			
Max. AC Current		12.5Aac			
Max. Efficiency		91%			
Power Factor		0.99			
DC Component		≤0.2A			
Current Harmonic		≤3%			
Working Temperature		0～40℃			
Storage Temperature		-10℃～70℃			
Programming Response Time		0.1ms			
Withstand Voltage (DC to ground)		300Vdc			
Withstand Voltage (AC to ground)		3500Vdc			
Cooling Mode		Air			
Dimension		660mm*437mm*43.5mm			
N.W		15kg			

*1 25%-90% rated current

*2 Resistance accuracy -- current / voltage not less than 10%FS

*3 The ripple is got under three-phase AC input

*4 The AC will be limited to 12.5Aac. When the AC input is low, power will be limited. E.g:
Three-phase input, line voltage 200Vac, the power is: P=200Vac*12.5Aac*1.732=4330VA
Single-phase input, phase voltage 200Vac, the power is: P=200Vac*12.5Aac=2500VA

* This information is subject to change without notice.

Specification

IT-M3906B-80-120					
Power supply parameters			Load parameters		
Rated value (0 ℃-50 ℃)	Voltage	0～80V	Rated value (0 ℃-50 ℃)	Voltage	0～80V
	Current	-120A～120A		Current	0～120A
	Power	-6000W～6000W		Power	0～6000W
	Series IR(CV priority)	0～0.3Ω		Resistance	0.01Ω～800Ω
	Load resistance (CC priority mode)	0.01Ω～800Ω		Min.operation voltage	0.8V at 120A
Setup Resolution	Voltage	0.001V		Input leak current	0.01A
	Current	0.01A	Setup Resolution	Voltage	0.001V
	Power	1W		Current	0.01A
	Series IR(CV priority)	0.001Ω		Power	0.1W
	Load resistance (CC priority mode)	0.01Ω		Resistance	0.01Ω
Readback Resolution	Voltage	0.001V	Readback Resolution	Voltage	0.001V
	Current	0.01A		Current	0.01A
	Power	1W		Power	0.1W
Setup Accuracy	Voltage	≤0.03% + 0.03%FS	Setup Accuracy	Voltage	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS		Current	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS		Power	≤0.5% + 0.5%FS
	Series IR(CV priority)	≤1%FS		Resistance*2	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0005) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0005)
	Load resistance (CC priority mode)	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0005) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0005)	Readback Accuracy	Voltage	≤0.03% + 0.03%FS
Readback Accuracy	Voltage	≤0.03% + 0.03%FS		Current	≤0.1% + 0.1%FS
	Current	≤0.1% + 0.1%FS		Power	≤0.5% + 0.5%FS
	Power	≤0.5% + 0.5%FS	Dynamic Response Time	Rising rate	120A/ms
Voltage Ripple*3		≤200mVpp(Peak value)/≤80mV(RMS)		Descent rate	120A/ms
Rise Time (no load)/(full load)	Voltage	≤15ms(no load)/≤30ms(full load)		Dynamic frequency	500Hz
Fall Time (no load)/(full load)	Voltage	≤30ms(no load)/≤15ms(full load)	Power Regulation Rate	Voltage	≤0.01% + 0.01%FS
Dynamic Response Time*1	Voltage	≤1ms		Current	≤0.05% + 0.05%FS
Power Regulation Rate	Voltage	≤0.01% + 0.01%FS	Load Regulation Rate	Voltage	≤0.01% + 0.01%FS
	Current	≤0.05% + 0.05%FS		Current	≤0.05% + 0.05%FS
Load Regulation Rate	Voltage	≤0.01% + 0.01%FS	Short Circuit Test	Current	122.4A
	Current	≤0.05% + 0.05%FS	Input Protection Scope	OCP	125A
Input Protection Scope	OCP	-125A or 125A		OVP	85V
	OVP	82V		OPP	6120W
	OPP	-6120W or 6120W	Remote Sense Compensation Voltage		≤2V
Remote Sense Compensation Voltage		≤2V			
AC Input*4	Voltage	3φ 110V～520V			
		1φ 85V～300V			
	Frequency	50/60Hz			
Max. AC Apparent Power		6.5kVA			
Max. AC Current		12.5Aac			
Max. Efficiency		92%			
Power Factor		0.99			
DC Component		≤0.2A			
Current Harmonic		≤3%			
Working Temperature		0～40℃			
Storage Temperature		-10℃～70℃			
Programming Response Time		0.1ms			
Withstand Voltage (DC to ground)		300Vdc			
Withstand Voltage (AC to ground)		3500Vdc			
Cooling Mode		Air			
Dimension		660mm*437mm*43.5mm			
N.W		15kg			

*1 25%-90% rated current
*2 Resistance accuracy -- current / voltage not less than 10%FS
*3 The ripple is got under three-phase AC input
*4 The AC will be limited to 12.5Aac. When the AC input is low, power will be limited. E.g:
Three-phase input, line voltage 200Vac, the power is: P=200Vac*12.5Aac*1.732=4330VA
Single-phase input, phase voltage 200Vac, the power is: P=200Vac*12.5Aac=2500VA
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Your Power Testing Solution

IT-M3900B regenerative power system

Specification

IT-M3906B-300-60					
Power supply parameters			Load parameters		
Rated value (0 ℃-50 ℃)	Voltage	0～300V	Rated value (0 ℃-50 ℃)	Voltage	0～300V
	Current	-60A～60A		Current	0～60A
	Power	-6000W～6000W		Power	0～6000W
	Series IR(CV priority)	0～1Ω		Resistance	0.05Ω～3000Ω
	Load resistance (CC priority mode)	0.05Ω～3000Ω		Min.operation voltage	3V at 60A
Setup Resolution	Voltage	0.01V		Input leak current	0.01A
	Current	0.001A	Setup Resolution	Voltage	0.001V
	Power	1W		Current	0.01A
	Series IR(CV priority)	0.001Ω		Power	0.1W
	Load resistance (CC priority mode)	0.01Ω		Resistance	0.01Ω
Readback Resolution	Voltage	0.01V	Readback Resolution	Voltage	0.001V
	Current	0.001A		Current	0.01A
	Power	1W		Power	0.1W
Setup Accuracy	Voltage	≤0.03% + 0.03%FS	Setup Accuracy	Voltage	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS		Current	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS		Power	≤0.5% + 0.5%FS
	Series IR(CV priority)	≤1%FS		Resistance*2	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0001) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0001)
	Load resistance (CC priority mode)	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0001) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0001)	Readback Accuracy	Voltage	≤0.03% + 0.03%FS
Readback Accuracy	Voltage	≤0.03% + 0.03%FS		Current	≤0.1% + 0.1%FS
	Current	≤0.1% + 0.1%FS		Power	≤0.5% + 0.5%FS
	Power	≤0.5% + 0.5%FS	Dynamic Response Time	Rising rate	60A/ms
Voltage Ripple*3		≤300mVpp(Peak value)/≤60mV(RMS)		Descent rate	60A/ms
Rise Time (no load)/(full load)	Voltage	≤30ms(no load)/≤60ms(full load)		Dynamic frequency	500Hz
Fall Time (no load)/(full load)	Voltage	≤30ms(no load)/≤15ms(full load)	Power Regulation Rate	Voltage	≤0.01% + 0.01%FS
Dynamic Response Time*1	Voltage	≤1ms		Current	≤0.05% + 0.05%FS
Power Regulation Rate	Voltage	≤0.01% + 0.01%FS	Load Regulation Rate	Voltage	≤0.01% + 0.01%FS
	Current	≤0.05% + 0.05%FS		Current	≤0.05% + 0.05%FS
Load Regulation Rate	Voltage	≤0.01% + 0.01%FS	Short Circuit Test	Current	62A
	Current	≤0.05% + 0.05%FS	Input Protection Scope	OCP	63A
Input Protection Scope	OCP	-63A or 63A		OVP	330V
	OVP	303V		OPP	6120W
	OPP	-6120W or 6120W	Remote Sense Compensation Voltage		≤3V
Remote Sense Compensation Voltage		≤3V			
AC Input*4	Voltage	3φ 110V～520V			
		1φ 85V～300V			
	Frequency	50/60Hz			
Max. AC Apparent Power		6.5kVA			
Max. AC Current		12.5Aac			
Max. Efficiency		94.5%			
Power Factor		0.99			
DC Component		≤0.2A			
Current Harmonic		≤3%			
Working Temperature		0～40℃			
Storage Temperature		-10℃～70℃			
Programming Response Time		0.1ms			
Withstand Voltage (DC to ground)		600Vdc			
Withstand Voltage (AC to ground)		3500Vdc			
Cooling Mode		Air			
Dimension		660mm*437mm*43.5mm			
N.W		15kg			

*1 25%-90% rated current

*2 Resistance accuracy -- current / voltage not less than 10%FS

*3 The ripple is got under three-phase AC input

*4 The AC will be limited to 12.5Aac. When the AC input is low, power will be limited. E.g:
Three-phase input, line voltage 200Vac, the power is: P=200Vac*12.5Aac*1.732=4330VA
Single-phase input, phase voltage 200Vac, the power is: P=200Vac*12.5Aac=2500VA

* This information is subject to change without notice.

Specification

IT-M3906B-500-36					
Power supply parameters			Load parameters		
Rated value (0 ℃-50 ℃)	Voltage	0～500V	Rated value (0 ℃-50 ℃)	Voltage	0～500V
	Current	-36A～36A		Current	0～36A
	Power	-6000W～6000W		Power	0～6000W
	Series IR(CV priority)	0～1Ω		Resistance	0.1Ω～5000Ω
	Load resistance (CC priority mode)	0.1Ω～5000Ω		Min.operation voltage	2.5V at 36A
Setup Resolution	Voltage	0.01V		Input leak current	0.003A
	Current	0.001A	Setup Resolution	Voltage	0.01V
	Power	1W		Current	0.001A
	Series IR(CV priority)	0.01Ω		Power	0.1W
	Load resistance (CC priority mode)	0.01Ω		Resistance	0.01Ω
Readback Resolution	Voltage	0.01V	Readback Resolution	Voltage	0.01V
	Current	0.001A		Current	0.001A
	Power	1W		Power	0.1W
Setup Accuracy	Voltage	≤0.03% + 0.03%FS	Setup Accuracy	Voltage	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS		Current	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS		Power	≤0.5% + 0.5%FS
	Series IR(CV priority)	≤1%FS		Resistance*2	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0001) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0001)
	Load resistance (CC priority mode)	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0001) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0001)	Readback Accuracy	Voltage	≤0.03% + 0.03%FS
Readback Accuracy	Voltage	≤0.03% + 0.03%FS		Current	≤0.1% + 0.1%FS
	Current	≤0.1% + 0.1%FS		Power	≤0.5% + 0.5%FS
	Power	≤0.5% + 0.5%FS	Dynamic Response Time	Rising rate	36A/ms
Voltage Ripple*3		≤500mVpp(Peak value)/≤90mV(RMS)		Descent rate	36A/ms
Rise Time (no load)/(full load)	Voltage	≤30ms(no load)/≤60ms(full load)		Dynamic frequency	500Hz
Fall Time (no load)/(full load)	Voltage	≤30ms(no load)/≤15ms(full load)	Power Regulation Rate	Voltage	≤0.01% + 0.01%FS
Dynamic Response Time*1	Voltage	≤1ms		Current	≤0.05% + 0.05%FS
Power Regulation Rate	Voltage	≤0.01% + 0.01%FS	Load Regulation Rate	Voltage	≤0.01% + 0.01%FS
	Current	≤0.05% + 0.05%FS		Current	≤0.05% + 0.05%FS
Load Regulation Rate	Voltage	≤0.01% + 0.01%FS	Short Circuit Test	Current	36.72A
	Current	≤0.05% + 0.05%FS	Input Protection Scope	OCP	37A
Input Protection Scope	OCP	-37A or 37A		OVP	530V
	OVP	505V		OPP	6120W
	OPP	-6120W or 6120W	Remote Sense Compensation Voltage		≤3V
Remote Sense Compensation Voltage		≤5V			
AC Input*4	Voltage	3φ 110V～520V			
		1φ 85V～300V			
	Frequency	50/60Hz			
Max. AC Apparent Power		6.5kVA			
Max. AC Current		12.5Aac			
Max. Efficiency		94.5%			
Power Factor		0.99			
DC Component		≤0.2A			
Current Harmonic		≤3%			
Working Temperature		0～40℃			
Storage Temperature		-10℃～70℃			
Programming Response Time		0.1ms			
Withstand Voltage (DC to ground)		800Vdc			
Withstand Voltage (AC to ground)		3500Vdc			
Cooling Mode		Air			
Dimension		660mm*437mm*43.5mm			
N.W		15kg			

*1 25%-90% rated current
*2 Resistance accuracy -- current / voltage not less than 10%FS
*3 The ripple is got under three-phase AC input
*4 The AC will be limited to 12.5Aac. When the AC input is low, power will be limited. E.g:
Three-phase input, line voltage 200Vac, the power is: P=200Vac*12.5Aac*1.732=4330VA
Single-phase input, phase voltage 200Vac, the power is: P=200Vac*12.5Aac=2500VA
* This information is subject to change without notice.

Your Power Testing Solution

IT-M3900B regenerative power system

Specification

IT-M3906B-800-24					
Power supply parameters			Load parameters		
Rated value (0 ℃-50 ℃)	Voltage	0～800V	Rated value (0 ℃-50 ℃)	Voltage	0～800V
	Current	-24A～24A		Current	0～24A
	Power	-6000W～6000W		Power	0～6000W
	Series IR(CV priority)	0～1Ω		Resistance	0.15Ω～7500Ω
	Load resistance (CC priority mode)	0.15Ω～7500Ω		Min.operation voltage	4V at 24A
Setup Resolution	Voltage	0.01V		Input leak current	0.003A
	Current	0.001A	Setup Resolution	Voltage	0.01V
	Power	1W		Current	0.001A
	Series IR(CV priority)	0.01Ω		Power	0.1W
	Load resistance (CC priority mode)	0.01Ω		Resistance	0.01Ω
Readback Resolution	Voltage	0.01V	Readback Resolution	Voltage	0.01V
	Current	0.001A		Current	0.001A
	Power	1W		Power	0.1W
Setup Accuracy	Voltage	≤0.03% + 0.03%FS	Setup Accuracy	Voltage	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS		Current	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS		Power	≤0.5% + 0.5%FS
	Series IR(CV priority)	≤1%FS		Resistance*2	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0001) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0001)
	Load resistance (CC priority mode)	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0001) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0001)	Readback Accuracy	Voltage	≤0.03% + 0.03%FS
Readback Accuracy	Voltage	≤0.03% + 0.03%FS		Current	≤0.1% + 0.1%FS
	Current	≤0.1% + 0.1%FS		Power	≤0.5% + 0.5%FS
	Power	≤0.5% + 0.5%FS	Dynamic Response Time	Rising rate	24A/ms
Voltage Ripple*3		≤800mVpp(Peak value)/≤160mV(RMS)		Descent rate	24A/ms
Rise Time (no load)/(full load)	Voltage	≤30ms(no load)/≤60ms(full load)		Dynamic frequency	500Hz
Fall Time (no load)/(full load)	Voltage	≤30ms(no load)/≤15ms(full load)	Power Regulation Rate	Voltage	≤0.01% + 0.01%FS
Dynamic Response Time*1	Voltage	≤1ms		Current	≤0.05% + 0.05%FS
Power Regulation Rate	Voltage	≤0.01% + 0.01%FS	Load Regulation Rate	Voltage	≤0.01% + 0.01%FS
	Current	≤0.05% + 0.05%FS		Current	≤0.05% + 0.05%FS
Load Regulation Rate	Voltage	≤0.01% + 0.01%FS	Short Circuit Test	Current	24.48A
	Current	≤0.05% + 0.05%FS	Input Protection Scope	OCP	25A
Input Protection Scope	OCP	-25A or 25A		OVP	850V
	OVP	808V		OPP	6120W
	OPP	-6120W or 6120W	Remote Sense Compensation Voltage		≤8V
Remote Sense Compensation Voltage		≤8V			
AC Input*4	Voltage	3φ 110V～520V			
		1φ 85V～300V			
	Frequency	50/60Hz			
Max. AC Apparent Power		6.5kVA			
Max. AC Current		12.5Aac			
Max. Efficiency		94.5%			
Power Factor		0.99			
DC Component		≤0.2A			
Current Harmonic		≤3%			
Working Temperature		0～40℃			
Storage Temperature		-10℃～70℃			
Programming Response Time		0.1ms			
Withstand Voltage (DC to ground)		1000Vdc			
Withstand Voltage (AC to ground)		3500Vdc			
Cooling Mode		Air			
Dimension		660mm*437mm*43.5mm			
N.W		15kg			

*1 25%-90% rated current

*2 Resistance accuracy -- current / voltage not less than 10%FS

*3 The ripple is got under three-phase AC input

*4 The AC will be limited to 12.5Aac. When the AC input is low, power will be limited. E.g:
Three-phase input, line voltage 200Vac, the power is: P=200Vac*12.5Aac*1.732=4330VA
Single-phase input, phase voltage 200Vac, the power is: P=200Vac*12.5Aac=2500VA

* This information is subject to change without notice.

Specification

IT-M3906B-1500-12					
Power supply parameters			Load parameters		
Rated value (0 ℃-50 ℃)	Voltage	0～1500V	Rated value (0 ℃-50 ℃)	Voltage	0～1500V
	Current	-12A～12A		Current	0～12A
	Power	-6000W～6000W		Power	0～6000W
	Series IR(CV priority)	0～1Ω		Resistance	0.5Ω～7500Ω
	Load resistance (CC priority mode)	0.5Ω～7500Ω		Min.operation voltage	7.5V at 12A
Setup Resolution	Voltage	0.01V		Input leak current	0.003A
	Current	0.001A	Setup Resolution	Voltage	0.01V
	Power	1W		Current	0.001A
	Series IR(CV priority)	0.01Ω		Power	0.1W
	Load resistance (CC priority mode)	0.01Ω		Resistance	0.01Ω
Readback Resolution	Voltage	0.01V	Readback Resolution	Voltage	0.01V
	Current	0.001A		Current	0.001A
	Power	1W		Power	0.1W
Setup Accuracy	Voltage	≤0.03% + 0.03%FS	Setup Accuracy	Voltage	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS		Current	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS		Power	≤0.5% + 0.5%FS
	Series IR(CV priority)	≤1%FS		Resistance*2	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0001) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0001)
	Load resistance (CC priority mode)	Max.： 1/(1/Rset+(1/Rset)*0.05+0.0001) Min.： 1/(1/Rset-(1/Rset)*0.05-0.0001)	Readback Accuracy	Voltage	≤0.03% + 0.03%FS
Readback Accuracy	Voltage	≤0.03% + 0.03%FS		Current	≤0.1% + 0.1%FS
	Current	≤0.1% + 0.1%FS		Power	≤0.5% + 0.5%FS
	Power	≤0.5% + 0.5%FS	Dynamic Response Time	Rising rate	12A/ms
Voltage Ripple*3		≤1500mVpp(Peak value)/≤300mV(RMS)		Descent rate	12A/ms
Rise Time (no load)/(full load)	Voltage	≤30ms(no load)/≤60ms(full load)		Dynamic frequency	500Hz
Fall Time (no load)/(full load)	Voltage	≤30ms(no load)/≤15ms(full load)	Power Regulation Rate	Voltage	≤0.01% + 0.01%FS
Dynamic Response Time*1	Voltage	≤1ms		Current	≤0.05% + 0.05%FS
Power Regulation Rate	Voltage	≤0.01% + 0.01%FS	Load Regulation Rate	Voltage	≤0.01% + 0.01%FS
	Current	≤0.05% + 0.05%FS		Current	≤0.05% + 0.05%FS
Load Regulation Rate	Voltage	≤0.01% + 0.01%FS	Short Circuit Test	Current	12.24A
	Current	≤0.05% + 0.05%FS	Input Protection Scope	OCP	12.7A
Input Protection Scope	OCP	-12.5A or 12.5A		OVP	1590V
	OVP	1515V		OPP	6120W
	OPP	-6120W or 6120W	Remote Sense Compensation Voltage		≤15V
Remote Sense Compensation Voltage		≤15V			
AC Input*4	Voltage	3φ 110V～520V			
		1φ 85V～300V			
	Frequency	50/60Hz			
Max. AC Apparent Power		6.5kVA			
Max. AC Current		12.5Aac			
Max. Efficiency		94.5%			
Power Factor		0.99			
DC Component		≤0.2A			
Current Harmonic		≤3%			
Working Temperature		0～40℃			
Storage Temperature		-10℃～70℃			
Programming Response Time		0.1ms			
Withstand Voltage (DC to ground)		1800Vdc			
Withstand Voltage (AC to ground)		3500Vdc			
Cooling Mode		Air			
Dimension		660mm*437mm*43.5mm			
N.W		15kg			

*1 25%-90% rated current
*2 Resistance accuracy -- current / voltage not less than 10%FS
*3 The ripple is got under three-phase AC input
*4 The AC will be limited to 12.5Aac. When the AC input is low, power will be limited. E.g:
Three-phase input, line voltage 200Vac, the power is: P=200Vac*12.5Aac*1.732=4330VA
Single-phase input, phase voltage 200Vac, the power is: P=200Vac*12.5Aac=2500VA
* This information is subject to change without notice.