ITECH

YOUR POWER TESTING SOLUTION

IT-M3900C

Bidirectional Programmable DC Power Supply

Your Power Testing Solution

IT-M3900C

Bidirectional Programmable DC Power Supply

IT-M3900 series integrates the features of a DC power supply, a bi-directional power supply, a source and load system, and a regenerative electronic load in one. It keeps the advantages of high power density design of M series, power up to 6kw, current up to 510A, and voltage up to 1500V within one 1U unit, effectively reducing the equipment occupation space and cabinet time. wide-range models could meet different test requirements while matching with multi-functional, high energy-saving, high-safety, and high-stability product design, let the customer be confident to face a variety of complex testing, improving the products competition ability.

IT-M3900C is a regenerative bidirectional programmable DC power supply, it is not only a stand-alone bidirectional DC power supply but also can be used as a regenerative electronic load, to absorb the consumed energy and feedback cleanly to the grid. The high-efficiency energy feedback efficiency not only saves electricity consumption and heat dissipation costs but also does not interfere with the operation of the power grid. IT-M3900C provides high accuracy output measurement, high reliability, high safety, and abundant measurement functions. Which makes IT-M3900 meet customers' high accuracy automatic ATE testing requirements, while extensively used in aspects of automotive electronics, new energy vehicles, photovoltaic energy storage, intelligent industrial equipment, battery simulation, etc.

FEATURE

- Compact design, power up to 6kW in 1U space, power up to 12kW in 2U space
- Voltage range: 10-1500V
- Current range:-720A~1020A
- Power range:+/-12kW
- Wide range of output design, one unit can be used as multiple power supplies
- Bidirectional energy flow between the DUT and grid, seamless switching across quadrants
- With simple master/slave parallel connection, expand power while maintaining performance*1
- Efficient and environmentally friendly energy regenerative, effectively reducing the electricity and cooling costs
- CC/CV priority
- Adjustable output impedance
- Battery charging and discharging test
- Battery simulation, define the battery model
- Dynamic curve simulation function up to 10,000,000 points
- Built-in voltage curves comply with LV123, LV148, DIN40839, ISO-16750-2, SAEJ1113-11, LV124 and ISO21848 automotive standards*2
- Support photovoltaic I-V curves simulation function*3
- List function
- Support CC/CV/ CW/CR in sink mode
- Support CC/CV/CW in Source mode, and can simulate DC output internal resistance
- Multiple protection functions: OVP, ±OCP, ±OPP, OTP, power failure protection, anti-islanding protection
- Automatic detection of power grid status to realize reliable grid connection function
- Standard build-in USB/CAN/LAN/digital IO communication interface, optional GPIB/analog & RS232

*1 If 1U models>16, 2U models>8, pls. contact ITECH.Parallel connection is not recommended under PV simulation function

*2 Not available for 10V models

*3 Available for 85V and 150V models

Your Power Testing Solution

IT-M3900C Bidirectional Programmable DC Power Supply

	Model	Current	Power	Size
10V	IT-M3901C-10-170	-120~170A	-1.2~1.7kW	1U
	IT-M3903C-10-340	-240~340A	-2.4~3.4kW	1U
	IT-M3905C-10-510	-360~510A	-3.6~5.1kW	1U
	IT-M3910C-10-1020	-720~1020A	-7.2~10.2kW	2U

	Model	Current	Power	Size
80V	IT-M3902C-80-40	±40A	±2kW	1U
	IT-M3904C-80-80	±80A	±4kW	1U
	IT-M3906C-80-120	±120A	±6kW	1U
	IT-M3912C-80-240	±240A	±12kW	2U

	Model	Current	Power	Size
300V	IT-M3902C-300-20	±20A	±2kW	1U
	IT-M3904C-300-40	±40A	±4kW	1U
	IT-M3906C-300-60	±60A	±6kW	1U
	IT-M3912C-300-120	±120A	±12kW	2U

	Model	Current	Power	Size
800V	IT-M3902C-800-8	±8A	±2kW	1U
	IT-M3904C-800-16	±16A	±4kW	1U
	IT-M3906C-800-24	±24A	±6kW	1U
	IT-M3912C-800-48	±48A	±12kW	2U

	Model	Current	Power	Size
32V	IT-M3902C-32-80	±80A	±2kW	1U
	IT-M3904C-32-160	±160A	±4kW	1U
	IT-M3906C-32-240	±240A	±6kW	1U
	IT-M3912C-32-480	±480A	±12kW	2U

	Model	Current	Power	Size
85V*1	IT-M3902C-85-40SAS	±40A	±2kW	1U
	IT-M3904C-85-80SAS	±80A	±4kW	1U
	IT-M3906C-85-120SAS	±120A	±6kW	1U

	Model	Current	Power	Size
150V*2	IT-M3901C-150-25PV	±25A	±1.5kW	1U
	IT-M3903C-150-50PV	±50A	±3kW	1U

	Model	Current	Power	Size
500V	IT-M3902C-500-12	±12A	±2kW	1U
	IT-M3904C-500-24	±24A	±4kW	1U
	IT-M3906C-500-36	±36A	±6kW	1U
	IT-M3912C-500-72	±72A	±12kW	2U

	Model	Current	Power	Size
1500V	IT-M3906C-1500-12	±12A	±6kW	1U
	IT-M3912C-1500-24	±24A	±12kW	2U

*1 SAS1000L/SAS1000M software is Optional to 85V SAS modes to support PV simulation function

*2 SAS1000M software is included as a standard accessary for 150V PV models

*All specifications are subject to change without notice.

APPLICATION

PV energy storage

Grid-tied inverters, Energy storage converter, Residential solar battery storage system

Super capacitor/Battery

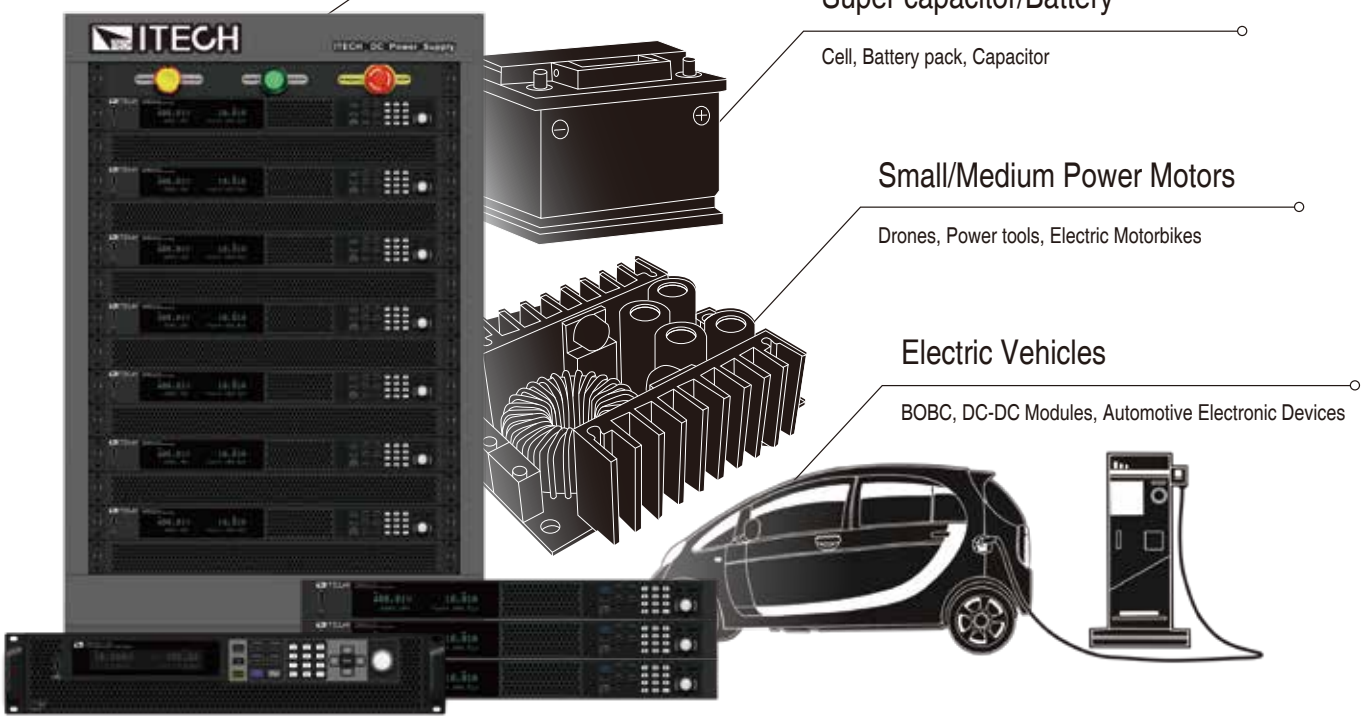
Cell, Battery pack, Capacitor

Small/Medium Power Motors

Drones, Power tools, Electric Motorbikes

Electric Vehicles

BOBC, DC-DC Modules, Automotive Electronic Devices

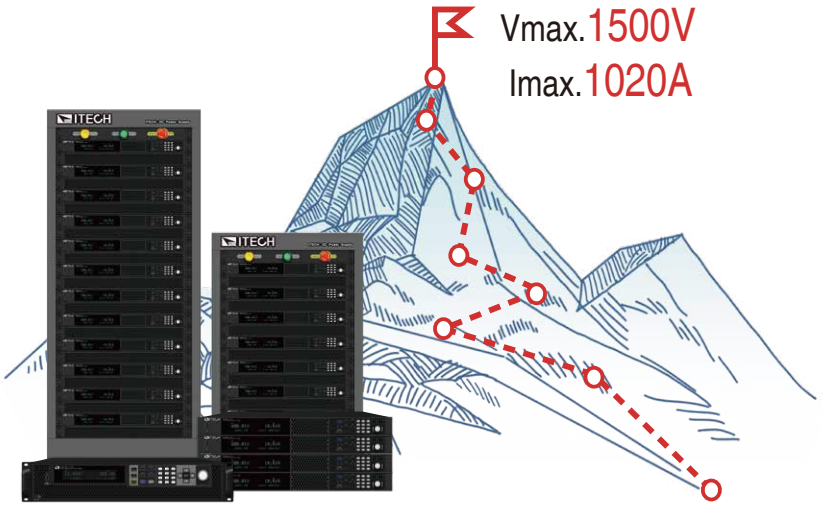


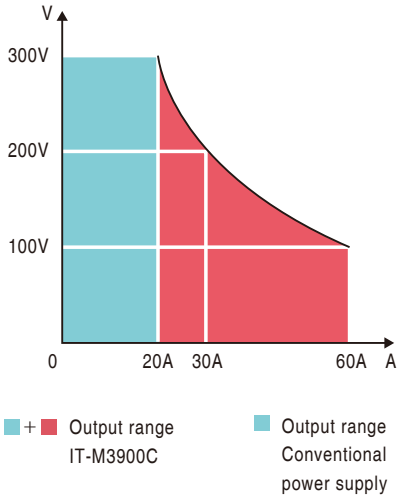
Your Power Testing Solution

IT-M3900C Bidirectional Programmable DC Power Supply

Wide range output

There are 32 models included in IT-M3900C 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.





Power regenerative and eco-friendly

With the power regeneration function, IT-M3900C 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-M3900C 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

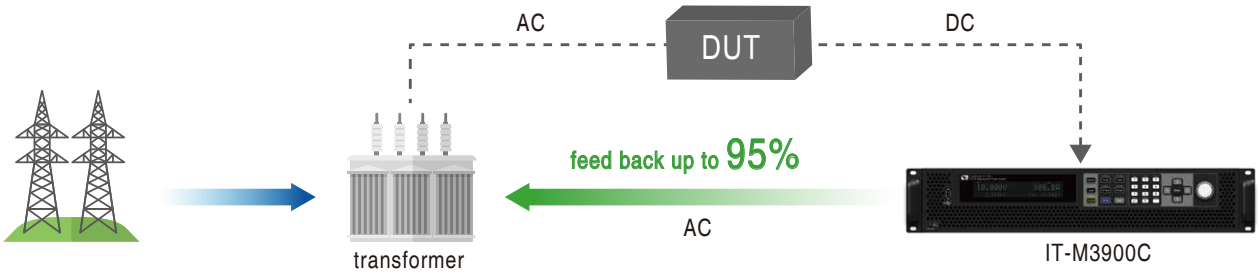
Power	Electricity cost saved (appr. USD/year)	CO_2 emission reduced (appr. ton/year)
6 kW	6,971	50
12 kW	13,943	99
36 kW	41,828	298
96 kW	111,541	794

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

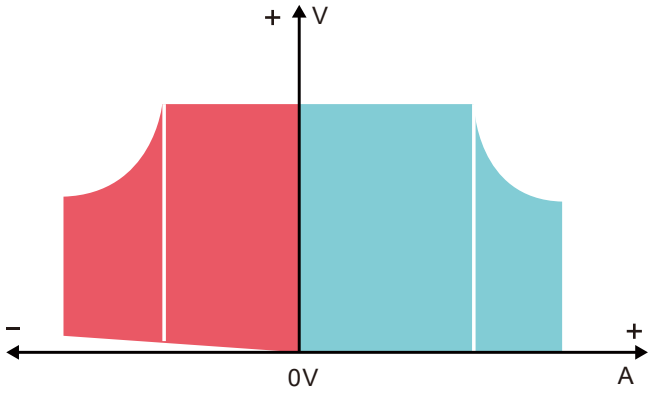
* The data is based on :
1. approximate electricity price 0.14USD/kWh for industry facility
2. 1kWh power consumption ≈ 0.997 CO emission

* The extra cost of air conditioning is not included.



Bidirectional current, seamless switching

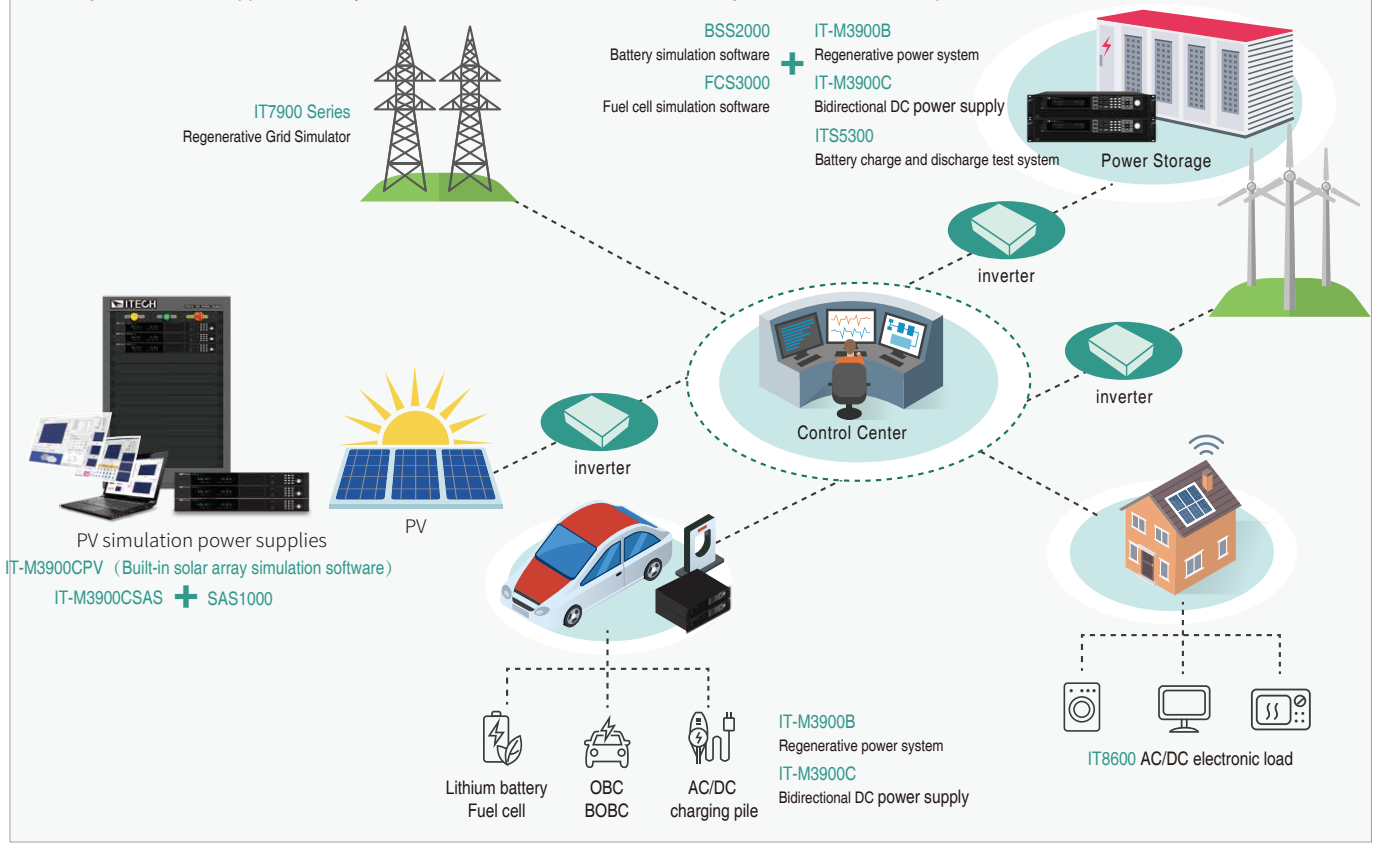
The IT-M3900C series integrates bidirectional power supply and regenerative load functional characteristics in one unit for continuous supply and absorption of current. It not only can realize the function of power source, but also capable of sink to load current, that realize the fast and continuous seamless switching between output and sink current , to effectively avoid voltage or current overshoot.
Compared with the conventional power supply and load test solutions, it not only saves the purchase cost, but also saves space and greatly simplifies the connection operation of the devices.



Application: Microgrid Testing

Microgrid can be regarded as a tiny power system, and also a typical distributed power generation function system. Therefore, whether they are equipment manufacturers or professional power grid research laboratories, it is all necessary to establish simulation test requirements.

- As a photovoltaic simulation source, IT-M3900C PV/SAS can accurately simulate the I-V curve of the solar cell array and solar panels to supply power for the inverter to test the photovoltaic inverter.
- As a battery simulator, IT-M3900C not only can simulate the battery to power up the inverter, but also meets the testing requirements of energy storage converters (PCS), various energy storage devices, and OBC/BOBC.
- IT-M3900C also has a built-in voltage curve for standard automotive power grids, including LV123/LV148 and other new energy vehicle regulations testing, which can be applied to many automotive electrical characteristics testing without the additional purchase of software.



Your Power Testing Solution

IT-M3900C Bidirectional Programmable DC Power Supply

CC&CV priority function

CC/CV priority can continue to help users solve various severe problems in long-term test applications to make applications that require high-speed power or non-overshoot more flexible.The CC&CV priority function of IT-M3900C allows the user to select the response speed and the loop working mode of the CC/CV loop to determine whether the output is high-speed voltage mode or non-overshoot current mode, which is suitable for high-power integrated circuit testing, charging and discharging testing, power transient simulation and characterization of automotive electronics, etc.

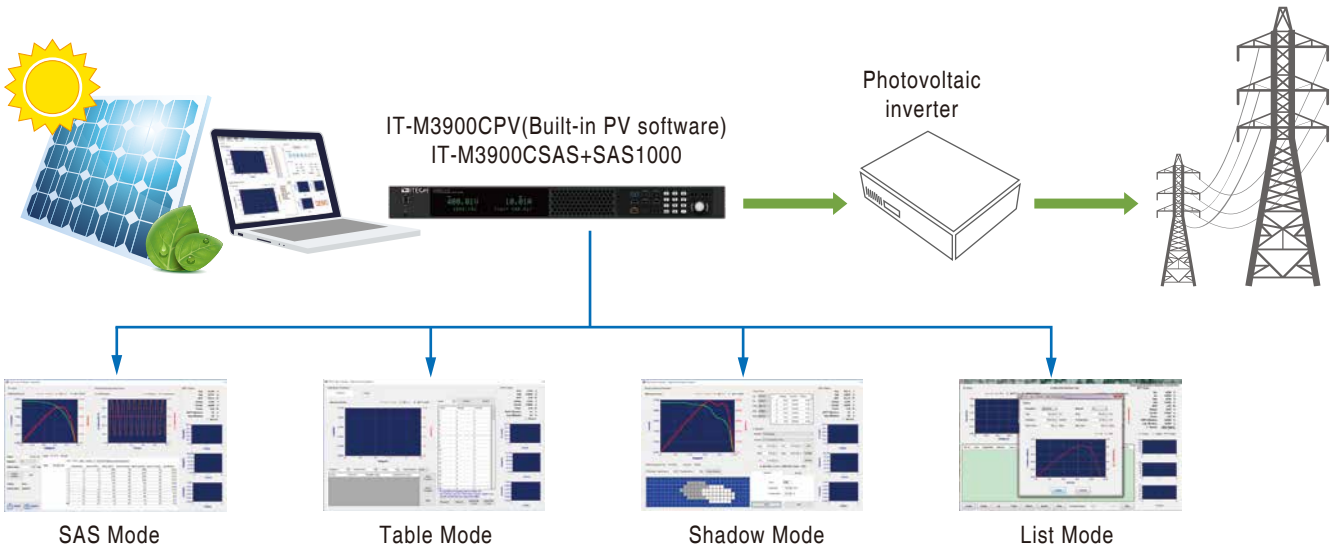
Battery simulation function

IT-M3900C series due to its unique bidirectional design and variable output impedance, the voltage, capacity, internal resistance and SOC of the battery can be set quickly through the panel to define the battery model to simulate the charging and discharging characteristics of the battery and assist in other various test. Meanwhile, users can also choose optional ITECH professional BSS2000 battery simulation software to set the common parameters of the battery pack to quickly establish the battery characteristic curve and the initial capacity of the battery, so as to verify the characteristics of the product in different battery states. The characteristics of the state. At the same time, BSS2000 supports users to import matlab battery modules or import the actual battery charge and discharge curve through csv file to make it more realistic

BSS2000 battery simulation software test UI

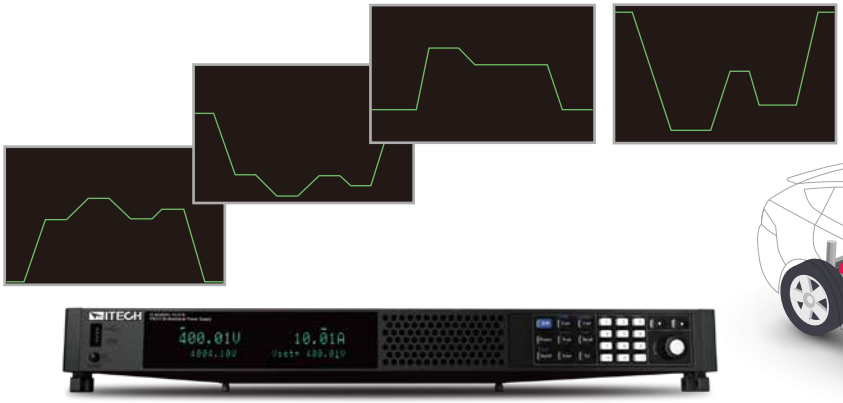
Solar array simulation

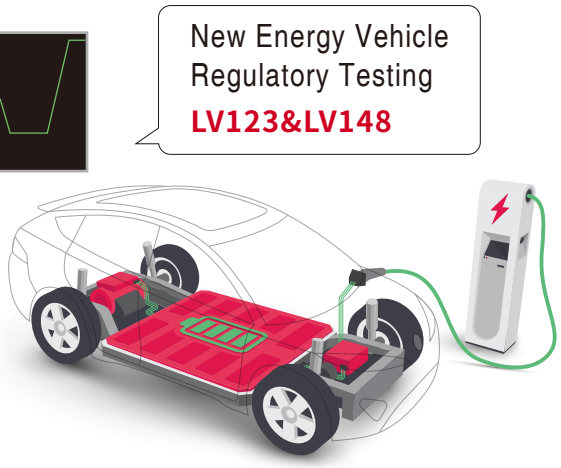
Both IT-M3900CPV and IT-M3900CSAS are PV simulation power supplies. They have a built-in MPPT function, which can simulate PV curves for MPPT testing of solar arrays/modules/batteries. The PV models are equipped with multi-channel solar array simulation software and the SAS models are equipped with SAS1000 solar array simulation software. They are used to accurately simulate the I-V curve of the solar array. Its built-in SAS models of EN50530, Sandia, NB/T32004, CGC/GF004, and CGC/GF035 can help users easily set parameters and simulate I-V curve output. Reports are then automatically generated. It is used to test the static and dynamic MPPT performance of PV inverters. Users can also edit I-V curves with up to 4096 points to achieve dynamic cloud shield effects, or store 100 I-V curves under different irradiation and temperature, and set the execution time and order of each curve to test long-term MPPT performance of the PV inverter under different climatic conditions.



Built-in a variety of standard automotive test curves

Automotive electronics may often encounter power transients during vehicle start-up and operation. To ensure that the device under test can withstand these actual transients, the tester must simulate worst-case power transient conditions during the test. According to the relevant standards of the industry, IT-M3900C had not only built-in standard automotive voltage curve DIN40839, ISO-16750-2, SAEJ1113-11 LV124 and ISO21848, but also built-in LV123, LV148 and other standards for new energy vehicles testing. Users can directly retrieve from the panel to test the performance of relevant automotive electronics, without reprogramming or purchasing additional test software, saving effort and money compared to other competitive products.





High efficiency parallel connection technology

Considering the user's convenience and versatility , IT-M3900C can use master/slave control mode to connect multiple power supplies in parallel to meet high-power testing requirements. Meanwhile ITECH fiber optic parallel technology fully solve the problems of slow speed and poor accuracy of traditional parallel methods. It is suitable for calibration and measurement, R&D lab, production line and ATE test .

* Parallel connection is not recommended under PV simulation function

Excellent performance after parallel operation	Calibration is not requested after parallel connection	Optical fiber transfer between master and slave, guarantee perfect performance of anti-interference	Adopt Optical fiber isolation technology, effective protection of the device and DUT

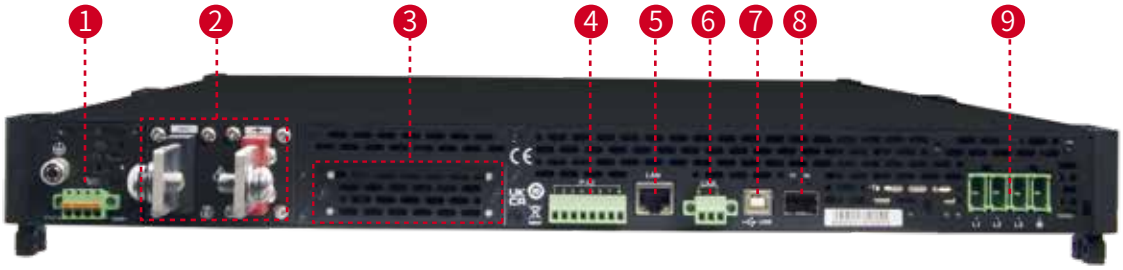
Charging/Discharging test

IT-M3900C series have unique bidirectional design, variable output impedance and CC / CV / CP / CR four operation modes under load mode, one unit IT-M3900C can simulate the charging and discharging characteristics of the battery and realize the setting of various test conditions and data processing of the battery. It is suitable for charging / discharging tests of various portable batteries.

Your Power Testing Solution

IT-M3900C Bidirectional Programmable DC Power Supply

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-E510-15U	15U unit, grey	800mm X 550mm X907.64mm
	IT-E511-15U	15U unit, black	800mm X 550mm X907.64mm
	IT-E510-27U	27U unit, grey	800mm X 600mmX 1441.41mm
	IT-E511-27U	27U unit, black	800mm X 600mmX 1441.41mm
	IT-E510-37U	37U unit, grey	800mm X 600mm X 1885.91mm
	IT-E511-37U	37U unit, black	800mm X 600mm X 1885.91mm
	IT-E168	Optical fiber cable kit	Used for parallel connection between the units in a cabinet
	IT-E155A/B/C	Rack mount kits	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-E258E	5m power cord for 1U/2U unit, EU standard	AC input power cord
	IT-E258E-15U	5m power cord for 15U unit, EU standard	AC input power cord
	IT-E258E-27U	5m power cord for 27U unit, EU standard	AC input power cord
	IT-E258E-37U	5m power cord for 37U unit, EU standard	AC input power cord
	IT-E176	GPIB communication interface	
	IT-E177	RS232&analog communication card	

*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

IT-E511-27U

Specification

		IT-M3905C-10-510	IT-M3906C-32-240	IT-M3906C-80-120
Rated value	Voltage	0～10V	0～32V	0～80V
	Current	-360A～510A	-240A～240A	-120A～120A
	Power	-3600W～5100W	-6000W～6000W	-6000W～6000W
	Series IR(CV priority)	0～0.01Ω	0～0.06Ω	0～0.3Ω
	Load resistance(CC priority mode)	0.003Ω～10Ω	0.005Ω～400Ω	0.01Ω～800Ω
Setup Resolution	Voltage	0.001V	0.001V	0.001V
	Current	0.1A	0.01A	0.01A
	Power	1W	1W	1W
	Series IR(CV priority)	0.001Ω	0.001Ω	0.001Ω
	Load resistance(CC priority mode)	0.001Ω	0.001Ω	0.001Ω
Readback Resolution	Voltage	0.001V	0.001V	0.001V
	Current	0.1A	0.01A	0.01A
	Power	1W	1W	1W
Setup Accuracy	Voltage	≤0.05% + 0.05%FS	≤0.05% + 0.05%FS	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS
	Series IR(CV priority)	≤1%FS	≤1%FS	≤1%FS
	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)	Max.: 1/(1/Rset+(1/Rset)*0.05+0.0005) Min.: 1/(1/Rset-(1/Rset)*0.05-0.0005)	Max.: 1/(1/Rset+(1/Rset)*0.05+0.0005) Min.: 1/(1/Rset-(1/Rset)*0.05-0.0005)
Readback Accuracy	Voltage	≤0.05% + 0.05%FS	≤0.05% + 0.05%FS	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS
Voltage Ripple *1	Peak value	≤65mVpp	≤80mVpp	≤200mVpp
	RMS	≤10mV	≤30mV	≤80mV
Rise Time (no load)	Voltage	≤50ms	≤30ms	≤15ms
Rise Time (full load)	Voltage	≤100ms	≤100ms	≤30ms
Fall Time (no load)	Voltage	≤100ms	≤60ms	≤30ms
Fall Time (full load)	Voltage	≤50ms	≤30ms	≤15ms
Power Regulation Rate	Voltage	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS
	Current	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS
Load Regulation Rate	Voltage	0.0035%*I + 0.05%FS	≤0.02% + 0.02%FS	≤0.01% + 0.01%FS
	Current	≤0.05% + 0.05%FS	≤0.05% + 0.05%FS	≤0.05% + 0.05%FS
Input Protection Scope	OCP	-375A or 525A	-247.2A or 247.2A	-126A or 126A
	OVP	10.5V	33V	82V
	OPP	-3672W or 5202W	-6120W or 6120W	-6120W or 6120W
Remote Sense Compensation Voltage		≤2V	≤10V	≤8V
AC Input *2	Voltage	3φ 200V～480V 1φ 100V～240V	3φ 200V～480V 1φ 100V～240V	3φ 200V～480V 1φ 100V～240V
	Frequency	50/60Hz	50/60Hz	50/60Hz
Max. AC Apparent Power		5.55kVA	6.5kVA	6.5kVA
Max. AC Current		12.5Aac	12.5Aac	12.5Aac
Max. Efficiency		89.0%	90%	92%
Power Factor		0.99	0.99	0.99
DC Component		≤0.2A	≤0.2A	≤0.2A
Current Harmonic		≤3%	≤3%	≤3%
Program Response Time		0.1ms	0.1ms	0.1ms
Withstand Voltage (DC to ground)		200Vdc	200Vdc	500Vdc
Withstand Voltage (AC to ground)		2100Vdc	2100Vdc	2100Vdc

*1 The ripple is got under three-phase AC input
*2 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-M3900C Bidirectional Programmable DC Power Supply

Specification

		IT-M3906C-85-120SAS	IT-M3901C-150-25PV	IT-M3903C-150-50PV
Rated value	Voltage	0～85V	0～150V	0～150V
	Current	-120A～120A	-25A～25A	-50A～50A
	Power	-6000W～6000W	-1500W～1500W	-3000W～3000W
	Series IR(CV priority)	0～0.3Ω	0～0.5Ω	0～0.5Ω
	Load resistance(CC priority mode)	0.01Ω～800Ω	0.04Ω～1500Ω	0.02Ω～1500Ω
Setup Resolution	Voltage	0.001V	0.01V	0.01V
	Current	0.01A	0.001A	0.001A
	Power	1W	1W	1W
	Series IR(CV priority)	0.001Ω	0.001Ω	0.001Ω
	Load resistance(CC priority mode)	0.01Ω	0.01Ω	0.01Ω
Readback Resolution	Voltage	0.001V	0.01V	0.01V
	Current	0.01A	0.001A	0.001A
	Power	1W	1W	1W
Setup Accuracy	Voltage	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS
	Series IR(CV priority)	≤1%FS	≤1%FS	≤1%FS
	Load resistance(CC priority mode)	Max.: 1/(1Rset+(1/Rset)*0.05+0.0005) Min.: 1/(1/Rset-(1/Rset)*0.05-0.0005)	Max.: 1/(1/Rset+(1/Rset)*0.05+0.0005) Min.: 1/(1/Rset-(1/Rset)*0.05-0.0005)	Max.: 1/(1/Rset+(1/Rset)*0.05+0.0005) Min.: 1/(1/Rset-(1/Rset)*0.05-0.0005)
Readback Accuracy	Resolution(V-I curve)		1024	1024
	Voltage	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS
Voltage Ripple	Peak value	≤200mVpp	≤360mVpp	≤360mVpp
	RMS	≤80mV	≤50mV	≤50mV
Rise Time (no load)	Voltage	≤15ms	≤50ms	≤50ms
Rise Time (full load)	Voltage	≤30ms	≤50ms	≤50ms
Fall Time (no load)	Voltage	≤30ms	≤50ms	≤50ms
Fall Time (full load)	Voltage	≤15ms	≤50ms	≤50ms
Power Regulation Rate	Voltage	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS
	Current	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS
Load Regulation Rate	Voltage	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS
	Current	≤0.05% + 0.05%FS	≤0.05% + 0.05%FS	≤0.05% + 0.05%FS
Input Protection Scope	OCP	-126A or 126A	-26A or 26A	-52A or 52A
	OVP	86V	160V	160V
	OPP	-6120W or 6120W	-1530W or 1530W	-3060W or 3060W
Remote Sense Compensation Voltage		≤8V	≤10V	≤10V
AC Input *2	Voltage	3φ 200V～480V 1φ 100V～240V	3φ 200V～480V 1φ 100V～240V	3φ 200V～480V 1φ 100V～240V
	Frequency	50/60Hz	50/60Hz	50/60Hz
Max. AC Apparent Power		6.5kVA	1.65kVA	3.3kVA
Max. AC Current		12.5Aac	12.5Aac	12.5Aac
Max. Efficiency		92%	92%	92%
Power Factor		0.99	0.99	0.99
DC Component		≤0.2A	≤0.2A	≤0.2A
Current Harmonic		≤3%	≤3%	≤3%
Program Response Time		0.1ms	0.1ms	0.1ms
Withstand Voltage (DC to ground)		500Vdc	1600Vdc	1600Vdc
Withstand Voltage (AC to ground)		2100Vdc	2100Vdc	3500Vdc

*1 The ripple is got under three-phase AC input
*2 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-M3906C-300-60	IT-M3906C-500-36	IT-M3906C-800-24
Rated value	Voltage	0～300V	0～500V	0～800V
	Current	-60A～60A	-36A～36A	-24A～24A
	Power	-6000W～6000W	-6000W～6000W	-6000W～6000W
	Series IR(CV priority)	0～0.4Ω	0～0.7Ω	0～1Ω
	Load resistance(CC priority mode)	0.05Ω～3000Ω	0.1Ω～5000Ω	0.15Ω～7500Ω
Setup Resolution	Voltage	0.01V	0.01V	0.01V
	Current	0.001A	0.001A	0.001A
	Power	1W	1W	1W
	Series IR(CV priority)	0.001Ω	0.001Ω	0.001Ω
	Load resistance(CC priority mode)	0.001Ω	0.01Ω	0.01Ω
Readback Resolution	Voltage	0.01V	0.01V	0.01V
	Current	0.001A	0.001A	0.001A
	Power	1W	1W	1W
Setup Accuracy	Voltage	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS
	Series IR(CV priority)	≤1%FS	≤1%FS	≤1%FS
	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)	Max.：1/(1/Rset+(1/Rset)*0.05+0.0001) Min.：1/(1/Rset-(1/Rset)*0.05-0.0001)	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	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS
Voltage Ripple *1	Peak value	≤300mVpp	≤500mVpp	≤1000mVpp
	RMS	≤60mV	≤100mV	≤160mV
Rise Time (no load)	Voltage	≤30ms	≤30ms	≤30ms
Rise Time (full load)	Voltage	≤60ms	≤60ms	≤60ms
Fall Time (no load)	Voltage	≤30ms	≤30ms	≤30ms
Fall Time (full load)	Voltage	≤15ms	≤15ms	≤15ms
Power Regulation Rate	Voltage	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS
	Current	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS
Load Regulation Rate	Voltage	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS
	Current	≤0.05% + 0.05%FS	≤0.05% + 0.05%FS	≤0.05% + 0.05%FS
Input Protection Scope	OCP	-63A or 63A	-37.5A or 37.5A	-25.2A or 25.2A
	OVP	303V	505V	808V
	OPP	-6120W or 6120W	-6120W or 6120W	-6120W or 6120W
Remote Sense Compensation Voltage		≤10V	≤10V	≤16V
AC Input *2	Voltage	3φ 200V～480V 1φ 100V～240V	3φ 200V～480V 1φ 100V～240V	3φ 200V～480V 1φ 100V～240V
	Frequency	50/60Hz	50/60Hz	50/60Hz
Max. AC Apparent Power		6.5kVA	6.5kVA	6.5kVA
Max. AC Current		12.5Aac	12.5Aac	12.5Aac
Max. Efficiency		93%	93%	93%
Power Factor		0.99	0.99	0.99
DC Component		≤0.2A	≤0.2A	≤0.2A
Current Harmonic		≤3%	≤3%	≤3%
Program Response Time		0.1ms	0.1ms	0.1ms
Withstand Voltage (DC to ground)		600Vdc	1000Vdc	1600Vdc
Withstand Voltage (AC to ground)		2100Vdc	2100Vdc	2100Vdc

*1 The ripple is got under three-phase AC input
*2 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-M3906C-1500-12	IT-M3912C-1500-24
Rated value	Voltage	0～1500V	0～1500V
	Current	-12A～12A	-24A～24A
	Power	-6000W～6000W	-12000W～12000W
	Series IR(CV priority)	0～1Ω	0～1Ω
	Load resistance(CC priority mode)	0.5Ω～7500Ω	0.25Ω～3750Ω
Setup Resolution	Voltage	0.01V	0.01V
	Current	0.001A	0.001A
	Power	1W	1W
	Series IR(CV priority)	0.001Ω	0.01Ω
	Load resistance(CC priority mode)	0.01Ω	0.01Ω
Readback Resolution	Voltage	0.01V	0.01V
	Current	0.001A	0.001A
	Power	1W	1W
Setup Accuracy	Voltage	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS
	Series IR(CV priority)	≤1%FS	≤1%FS
	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)	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	≤0.03% + 0.03%FS
	Current	≤0.1% + 0.1%FS	≤0.1% + 0.1%FS
	Power	≤0.5% + 0.5%FS	≤0.5% + 0.5%FS
Voltage Ripple*1	Peak value	≤1500mVpp	≤1500mVpp
	RMS	≤300mV	≤300mV
Rise Time (no load)	Voltage	≤30ms	≤30ms
Rise Time (full load)	Voltage	≤60ms	≤60ms
Fall Time (no load)	Voltage	≤30ms	≤30ms
Fall Time (full load)	Voltage	≤15ms	≤15ms
Power Regulation Rate	Voltage	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS
	Current	≤0.03% + 0.03%FS	≤0.03% + 0.03%FS
Load Regulation Rate	Voltage	≤0.01% + 0.01%FS	≤0.01% + 0.01%FS
	Current	≤0.05% + 0.05%FS	≤0.05% + 0.05%FS
Input Protection Scope	OCP	-12.5A or 12.5A	-25A or 25A
	OVP	1515V	1515V
	OPP	-6120W or 6120W	-12240W or 12240W
Remote Sense Compensation Voltage		≤30V	≤30V
AC Input *2	Voltage	3φ 200V～480V 1φ 100V～240V	3φ200V～480V
	Frequency	50/60Hz	50/60Hz
Max. AC Apparent Power		6.5kVA	13kVA
Max. AC Current		12.5Aac	25Aac
Max. Efficiency		93%	94.5%
Power Factor		0.99	0.99
DC Component		≤0.2A	≤0.2A
Current Harmonic		≤3%	≤3%
Program Response Time		0.1ms	0.1ms
Withstand Voltage (DC to ground)		2500Vdc	1800Vdc
Withstand Voltage (AC to ground)		2100Vdc	3500Vdc

*1 The ripple is got under three-phase AC input
*2 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.

ITECH Web ITECH Facebook ITECH LinkedIn