

# 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



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IT-M3900B regenerative power system

| Voltage | Model             | Current    | Power        | Current | Power     | Size |
|---------|-------------------|------------|--------------|---------|-----------|------|
| 10V     | IT-M3901B-10-170  | -120~170A  | -1200~1700W  | 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   | ±80A       | ±2kW         | 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   | ±40A       | ±2kW         | 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  | ±20A       | ±2kW         | 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  | ±12A       | ±2kW         | 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   | ±8A        | ±2kW         | 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 | ±12A       | ±6kW         | 12A     | 6kW       | 1U   |

\* The above specifications are subject to update without notice

# Your Power Testing Solution

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:  $\pm 12\text{kW}$
- 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/C-C+CV/CV+CR/CR+CC/CC+CV+CW+CR
- Multiple protection: OVP /  $\pm\text{OCP}$  /  $\pm\text{OPP}$  / OTP /voltage transient drop protection/anti-islanding/power grid detection/pre-charge
- Built-in USB/CAN/LAN/digital IO interfaces, Optional GPIB/Analog&RS232

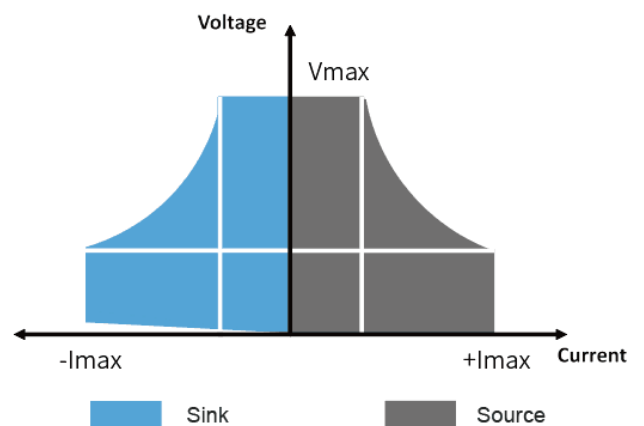
\*1 If 1U models>16, 2U models>8, pls. contact ITECH.

\*2 Not available for 10V models

## One button switch, bidirectional and regenerative

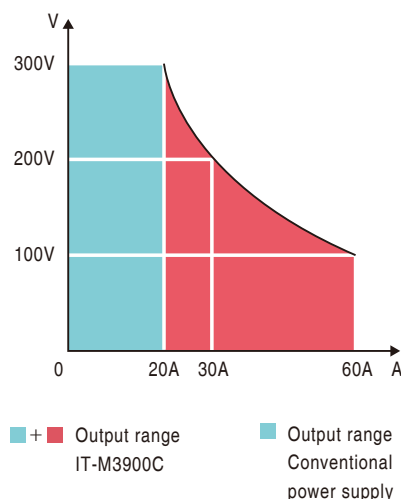
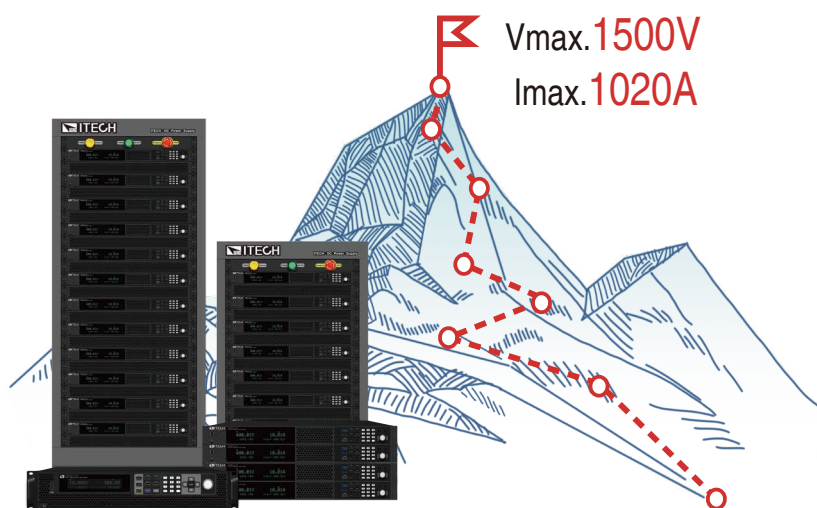
Different from other bidirectional power supplies, IT-M3900B series is a regenerative power system which combines two devices into a 1U unit. It is both a bidirectional DC power supply and also a regenerative DC electronic load. You can switch between Source and Load with one button on the front panel. 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

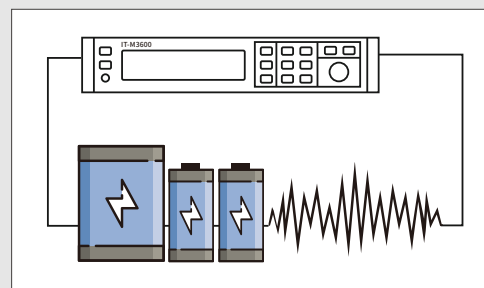
CV & CC priority helps customers effectively and flexibly solve their various tough problems in test applications request for high speed and no over-shoot power supplies. Customers can select CV or CC priority to adjust the speed of the loop circuit, to decide output with the high-speed voltage or current 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) | CO2 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                                   |

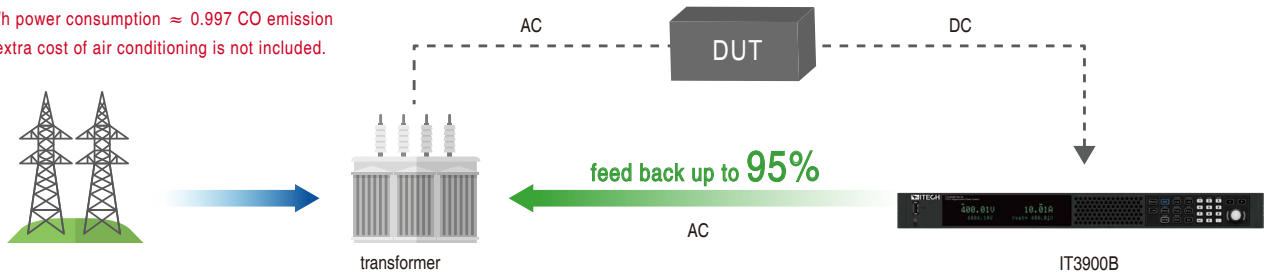
**R&D lab :** 8Hr/day x 5 work days x 52 weeks

| Power | Electricity cost saved (appr. USD/year) | CO2 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 :

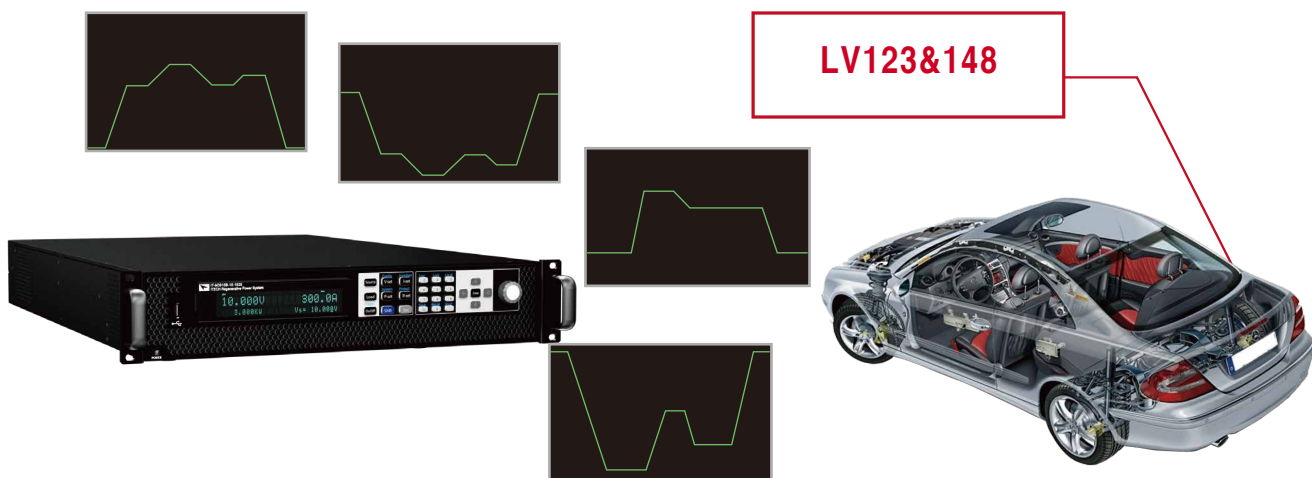
1. approximate electricity price 0.14USD/kWh for industry facility in California
2. 1kWh power consumption  $\approx$  0.997 CO emission

\* The extra cost of air conditioning is not included.



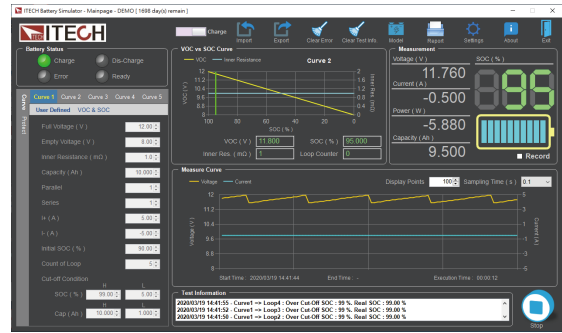
## Pre-compliant with multiple standards for EV component testing

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

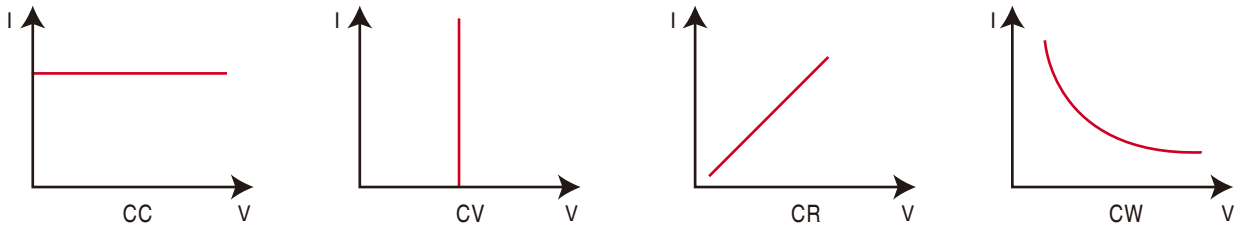
IT-M3900B unique bidirectional design and variable output impedance makes it easy for the users to set voltage/capacity/internal resistance/SOC quickly to define battery matrix quickly from the front panel, to simulate the charge/discharge characteristics of battery and assist with other tests. ITECH 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.



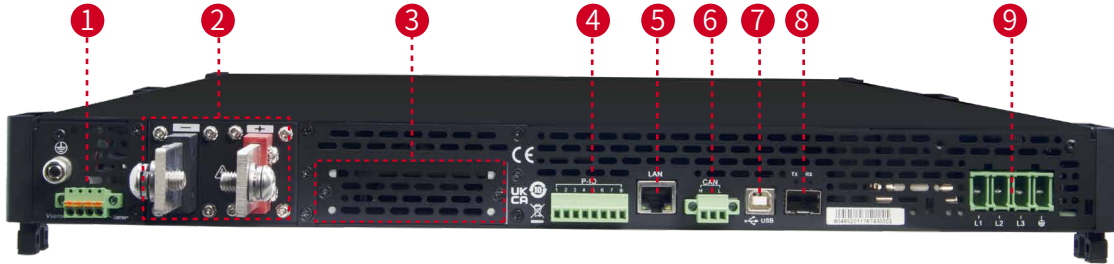
CV+CC mode can be applied to simulate battery, test charging station or car charger, the maximum loading current is limited when the CV is working.

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.

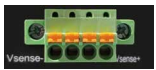
# Your Power Testing Solution

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)

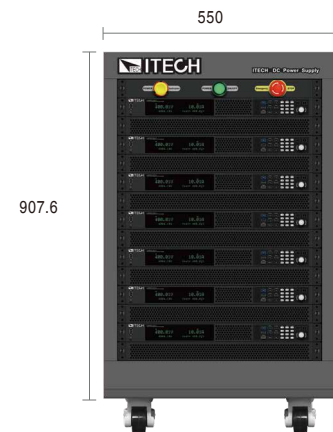


9 terminals (L1, L2, L3, and PE)



## 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



# Your Power Testing Solution

IT-M3900B regenerative power system

## Specification

| IT-M3905B-10-510                    |   |   |                             |                                   |  |
|-------------------------------------|---|---|-----------------------------|-----------------------------------|--|
| Power supply parameters             |   |   | Load parameters             |                                   |  |
| Rated value<br>(0 °C-50 °C)         | Voltage   | 0~10V   | Rated value<br>(0 °C-50 °C) | Voltage                           | 0~10V  |
|                                     | Current   | -360A~510A  |                             | Current                           | 6A~360A  |
|                                     | Power   | -3600W~5100W  |                             | Power                             | 60W~3600W  |
|                                     | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0~0.02Ω<br>0.003Ω~1Ω  |                             | Resistance                        | 0.003Ω~1Ω  |
| Setup Resolution                    | Voltage   | 0.001V  | Setup Resolution            | Min.operation voltage             | 0.6V at 360A   |
|                                     | Current   | 0.1A  |                             | Input leak current                | 0.03A  |
|                                     | Power   | 1W  |                             | Voltage                           | 0.001V   |
|                                     | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0.001Ω<br>0.001Ω  |                             | Current                           | 0.1A   |
| Readback Resolution                 | Voltage   | 0.001V  | Readback Resolution         | Power                             | 0.1W   |
|                                     | Current   | 0.1A  |                             | Resistance                        | 0.001Ω   |
|                                     | Power   | 1W  |                             | Voltage                           | 0.001V   |
| Setup Accuracy                      | Voltage   | ≤0.03% + 0.03%FS  | Setup Accuracy              | Current                           | 0.1A   |
|                                     | Current   | ≤0.1% + 0.1%FS  |                             | Power                             | 0.1W   |
|                                     | Power   | ≤0.5% + 0.5%FS  |                             | Resistance <sup>2</sup>           | Max.: 1/(1/Rset+(1/Rset)*0.1+0.008)<br>Min.: 1/(1/Rset-(1/Rset)*0.1-0.008) |
|                                     | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | ≤1%FS<br>Max.: 1/(1/Rset+(1/Rset)*0.1+0.008)<br>Min.: 1/(1/Rset-(1/Rset)*0.1-0.008) |                             | Voltage                           | ≤0.03% + 0.03%FS   |
| Readback Accuracy                   | Voltage   | ≤0.03% + 0.03%FS  | Readback Accuracy           | Current                           | ≤0.1% + 0.1%FS   |
|                                     | Current   | ≤0.1% + 0.1%FS  |                             | Power                             | ≤0.5% + 0.5%FS   |
|                                     | Power   | ≤0.5% + 0.5%FS  |                             | Rising rate                       | 120A/ms  |
| Voltage Ripple <sup>3</sup>         | ≤65mVpp(Peak value)/ ≤10mV(RMS)                                 |   | Dynamic Response Time       | Descent rate                      | 120A/ms  |
| Rise Time (no load)/(full load)     | Voltage   | ≤50ms(no load)/ ≤100ms(full load)   | Power Regulation Rate       | Dynamic frequency                 | 100Hz  |
| Fall Time (no load)/(full load)     | Voltage   | ≤100ms(no load)/ ≤50ms(full load)   |                             | Voltage                           | ≤0.05% + 0.05%FS   |
| Dynamic Response Time <sup>*1</sup> | Voltage   | ≤10ms   | Current                     | ≤0.05% + 0.05%FS                  |  |
| Power Regulation Rate               | Voltage   | ≤0.05% + 0.05%FS  | Load Regulation Rate        | Voltage                           | ≤0.002%*1 + 0.05%FS  |
|                                     | Current   | ≤0.05% + 0.05%FS  |                             | Current                           | ≤0.05% + 0.05%FS   |
| Load Regulation Rate                | Voltage   | 0.0035%*1 + 0.05%FS   | Short Circuit Test          | Current                           | 366A   |
|                                     | Current   | ≤0.05% + 0.05%FS  |                             | OCP                               | 375A   |
| Input Protection Scope              | OCP   | -370A or 520A   | Input Protection Scope      | OVP                               | 11V  |
|                                     | OVP   | 10.5V   |                             | OPP                               | 3672W  |
|                                     | OPP   | -3672W or 5202W   |                             | Remote Sense Compensation Voltage | ≤2V  |
| Remote Sense Compensation Voltage   | ≤2V   |   |                             |                                   |  |
| AC Input <sup>*4</sup>              | Voltage   | 3φ 110V~520V<br>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°C  |   |                             |                                   |  |
| Storage Temperature                 | -10°C~70°C  |   |                             |                                   |  |
| 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<br>(0 °C-50 °C)       | Voltage   | 0 ~ 32V  | Rated value<br>(0 °C-50 °C)       | Voltage               | 0 ~ 32V  |
|                                   | Current   | -240A ~ 240A   |                                   | Current               | 0 ~ 240A   |
|                                   | Power   | -6000W ~ 6000W   |                                   | Power                 | 0 ~ 6000W  |
|                                   | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0 ~ 0.2Ω<br>0.005Ω ~ 400Ω  |                                   | Resistance            | 0.005Ω ~ 400Ω  |
| Setup Resolution                  | Voltage   | 0.001V   | Setup Resolution                  | Min.operation voltage | 0.5V at 240A   |
|                                   | Current   | 0.01A  |                                   | Input leak current    | 0.01A  |
|                                   | Power   | 1W   |                                   | Voltage               | 0.001V   |
|                                   | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0.001Ω<br>0.001Ω   |                                   | Current               | 0.01A  |
| Readback Resolution               | Voltage   | 0.001V   | Readback Resolution               | Power                 | 0.1W   |
|                                   | Current   | 0.01A  |                                   | Resistance            | 0.001Ω   |
|                                   | Power   | 1W   |                                   | Voltage               | 0.001V   |
| Setup Accuracy                    | Voltage   | ≤ 0.03% + 0.03%FS  | Setup Accuracy                    | Current               | 0.01A  |
|                                   | Current   | ≤ 0.1% + 0.1%FS  |                                   | Power                 | 0.1W   |
|                                   | Power   | ≤ 0.5% + 0.5%FS  |                                   | Resistance            | 0.001Ω   |
|                                   | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | ≤ 1%FS<br>Max.: 1/(1/Rset+(1/Rset)*0.05+0.0005)<br>Min.: 1/(1/Rset-(1/Rset)*0.05-0.0005) |                                   | Resistance*2          | Max.: 1/(1/Rset+(1/Rset)*0.05+0.0005)<br>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  |
| Voltage Ripple*3                  | ≤ 80mVpp(Peak value)/ ≤ 30mV(RMS)                               |  | Dynamic Response Time             | Rising rate           | 240A/ms  |
| Rise Time (no load)/(full load)   | Voltage   | ≤ 30ms(no load)/ ≤ 60ms(full load)   |                                   | Descent rate          | 240A/ms  |
| Fall Time (no load)/(full load)   | Voltage   | ≤ 60ms(no load)/ ≤ 30ms(full load)   | Power Regulation Rate             | Dynamic frequency     | 500Hz  |
| Dynamic Response Time*1           | Voltage   | ≤ 1ms  |                                   | Voltage               | ≤ 0.02% + 0.02%FS  |
| Power Regulation Rate             | Voltage   | ≤ 0.02% + 0.02%FS  | Load Regulation Rate              | Current               | ≤ 0.05% + 0.05%FS  |
|                                   | Current   | ≤ 0.05% + 0.05%FS  |                                   | Voltage               | ≤ 0.02% + 0.02%FS  |
| Load Regulation Rate              | Voltage   | ≤ 0.02% + 0.02%FS  | Short Circuit Test                | Current               | ≤ 0.05% + 0.05%FS  |
|                                   | Current   | ≤ 0.05% + 0.05%FS  |                                   | Current               | 244.8A   |
| Input Protection Scope            | OCP   | -250A or 250A  | Input Protection Scope            | OCP                   | 250A   |
|                                   | OVP   | 33V  |                                   | OVP                   | 35V  |
|                                   | OPP   | -6120W or 6120W  |                                   | OPP                   | 6120W  |
| Remote Sense Compensation Voltage | ≤ 2V  |  | Remote Sense Compensation Voltage | ≤ 2V                  |  |
| AC Input*4                        | Voltage   | 3φ 110V~520V   |                                   |                       |  |
|                                   | Frequency   | 1φ 85V ~ 300V  |                                   |                       |  |
| 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 °C   |  |                                   |                       |  |
| Storage Temperature               | -10 °C ~ 70 °C  |  |                                   |                       |  |
| 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-80-120                  |   |  |                                   |
|-----------------------------------|---|--|-----------------------------------|
| Power supply parameters           |   | Load parameters  |                                   |
| Rated value<br>(0 °C-50 °C)       | Voltage   | 0~80V  | Rated value<br>(0 °C-50 °C)       |
|                                   | Current   | -120A~120A   |                                   |
|                                   | Power   | -6000W~6000W   |                                   |
|                                   | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0~0.3Ω<br>0.01Ω~800Ω   |                                   |
| Setup Resolution                  | Voltage   | 0.001V   | Setup Resolution                  |
|                                   | Current   | 0.01A  |                                   |
|                                   | Power   | 1W   |                                   |
|                                   | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0.001Ω<br>0.01Ω  |                                   |
| Readback Resolution               | Voltage   | 0.001V   | Readback Resolution               |
|                                   | Current   | 0.01A  |                                   |
|                                   | Power   | 1W   |                                   |
| Setup Accuracy                    | Voltage   | ≤ 0.03% + 0.03%FS  | Setup Accuracy                    |
|                                   | Current   | ≤ 0.1% + 0.1%FS  |                                   |
|                                   | Power   | ≤ 0.5% + 0.5%FS  |                                   |
|                                   | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | ≤ 1%FS<br>Max.: 1/(1/Rset+(1/Rset)*0.05+0.0005)<br>Min.: 1/(1/Rset-(1/Rset)*0.05-0.0005) |                                   |
| Readback Accuracy                 | Voltage   | ≤ 0.03% + 0.03%FS  | Readback Accuracy                 |
|                                   | Current   | ≤ 0.1% + 0.1%FS  |                                   |
|                                   | Power   | ≤ 0.5% + 0.5%FS  |                                   |
| Voltage Ripple*3                  | ≤ 200mVpp(Peak value)/ ≤ 80mV(RMS)                              |  | Dynamic Response Time             |
| Rise Time (no load)/(full load)   | ≤ 15ms(no load)/ ≤ 30ms(full load)                              |  |                                   |
| Fall Time (no load)/(full load)   | ≤ 30ms(no load)/ ≤ 15ms(full load)                              |  | Power Regulation Rate             |
| Dynamic Response Time*1           | ≤ 1ms   |  |                                   |
| Power Regulation Rate             | Voltage   | ≤ 0.01% + 0.01%FS  | Load Regulation Rate              |
|                                   | Current   | ≤ 0.05% + 0.05%FS  |                                   |
| Load Regulation Rate              | Voltage   | ≤ 0.01% + 0.01%FS  | Short Circuit Test                |
|                                   | Current   | ≤ 0.05% + 0.05%FS  |                                   |
| Input Protection Scope            | OCP   | -125A or 125A  | Input Protection Scope            |
|                                   | OVP   | 82V  |                                   |
|                                   | OPP   | -6120W or 6120W  |                                   |
| Remote Sense Compensation Voltage | ≤ 2V  |  | Remote Sense Compensation Voltage |
| AC Input*4                        | Voltage   | 3φ 110V ~ 520V<br>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 °C                         |
| Storage Temperature               |   |  | -10 °C ~ 70 °C                    |
| 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-300-60                   |   |   |                             |                                   |  |
|------------------------------------|---|---|-----------------------------|-----------------------------------|--|
| Power supply parameters            |   |   | Load parameters             |                                   |  |
| Rated value<br>(0 °C-50 °C)        | Voltage   | 0~300V  | Rated value<br>(0 °C-50 °C) | Voltage                           | 0~300V   |
|                                    | Current   | -60A~60A  |                             | Current                           | 0~60A  |
|                                    | Power   | -6000W~6000W  |                             | Power                             | 0~6000W  |
|                                    | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0~1Ω<br>0.05Ω~3000Ω   |                             | Resistance                        | 0.05Ω~3000Ω  |
| Setup Resolution                   | Voltage   | 0.01V   | Setup Resolution            | Min.operation voltage             | 3V at 60A  |
|                                    | Current   | 0.001A  |                             | Input leak current                | 0.01A  |
|                                    | Power   | 1W  |                             | Voltage                           | 0.001V   |
|                                    | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0.001Ω<br>0.01Ω   |                             | Current                           | 0.01A  |
| Readback Resolution                | Voltage   | 0.01V   | Readback Resolution         | Power                             | 0.1W   |
|                                    | Current   | 0.001A  |                             | Resistance                        | 0.01Ω  |
|                                    | Power   | 1W  |                             | Voltage                           | 0.001V   |
| Setup Accuracy                     | Voltage   | ≤0.03% + 0.03%FS  | Setup Accuracy              | Current                           | 0.01A  |
|                                    | Current   | ≤0.1% + 0.1%FS  |                             | Power                             | 0.1W   |
|                                    | Power   | ≤0.5% + 0.5%FS  |                             | Resistance <sup>2</sup>           | Max.: 1/(1/Rset+(1/Rset)*0.05+0.0001)<br>Min.: 1/(1/Rset-(1/Rset)*0.05-0.0001) |
|                                    | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | ≤1%FS<br>Max.: 1/(1/Rset+(1/Rset)*0.05+0.0001)<br>Min.: 1/(1/Rset-(1/Rset)*0.05-0.0001) |                             | Voltage                           | ≤0.03% + 0.03%FS   |
| Readback Accuracy                  | Voltage   | ≤0.03% + 0.03%FS  | Readback Accuracy           | Current                           | ≤0.1% + 0.1%FS   |
|                                    | Current   | ≤0.1% + 0.1%FS  |                             | Power                             | ≤0.5% + 0.5%FS   |
|                                    | Power   | ≤0.5% + 0.5%FS  |                             | Rising rate                       | 60A/ms   |
| Voltage Ripple <sup>3</sup>        | ≤300mVpp(Peak value)/≤60mV(RMS)                                 |   | Dynamic Response Time       | Descent rate                      | 60A/ms   |
| Rise Time (no load)/(full load)    | Voltage   | ≤30ms(no load)/≤60ms(full load)   | Power Regulation Rate       | Dynamic frequency                 | 500Hz  |
| Fall Time (no load)/(full load)    | Voltage   | ≤30ms(no load)/≤15ms(full load)   |                             | Voltage                           | ≤0.01% + 0.01%FS   |
| Dynamic Response Time <sup>1</sup> | 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  |                             | OCP                               | 63A  |
| Input Protection Scope             | OCP   | -63A or 63A   | Input Protection Scope      | OVP                               | 330V   |
|                                    | OVP   | 303V  |                             | OPP                               | 6120W  |
|                                    | OPP   | -6120W or 6120W   |                             | Remote Sense Compensation Voltage | ≤3V  |
| Remote Sense Compensation Voltage  | ≤3V   |   |                             |                                   |  |
| AC Input <sup>4</sup>              | Voltage   | 3φ 110V~520V<br>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 °C   |   |                             |                                   |  |
| Storage Temperature                | -10 °C ~ 70 °C  |   |                             |                                   |  |
| 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<br>(0 °C-50 °C)       | Voltage   | 0 ~ 500V   | Rated value<br>(0 °C-50 °C)       | Voltage            | 0 ~ 500V   |
|                                   | Current   | -36A ~ 36A   |                                   | Current            | 0 ~ 36A  |
|                                   | Power   | -6000W ~ 6000W   |                                   | Power              | 0 ~ 6000W  |
|                                   | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0 ~ 1Ω<br>0.1Ω ~ 5000Ω   |                                   | Resistance         | 0.1Ω ~ 5000Ω   |
| Setup Resolution                  | Min.operation voltage   | 2.5V at 36A  | Setup Resolution                  | Input leak current | 0.003A   |
|                                   | Voltage   | 0.01V  |                                   | Voltage            | 0.01V  |
|                                   | Current   | 0.001A   |                                   | Current            | 0.001A   |
|                                   | Power   | 1W   |                                   | Power              | 0.1W   |
| Readback Resolution               | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0.01Ω<br>0.01Ω   | Readback Resolution               | Resistance         | 0.01Ω  |
|                                   | Voltage   | 0.01V  |                                   | 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)<br>Load resistance<br>(CC priority mode) | ≤ 1%FS<br>Max.: 1/(1/Rset+(1/Rset)*0.05+0.0001)<br>Min.: 1/(1/Rset-(1/Rset)*0.05-0.0001) |                                   | Resistance*2       | Max.: 1/(1/Rset+(1/Rset)*0.05+0.0001)<br>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  |
| Voltage Ripple*3                  | ≤ 500mVpp(Peak value)/ ≤ 90mV(RMS)                              |  | Dynamic Response Time             | Rising rate        | 36A/ms   |
| Rise Time (no load)/(full load)   | ≤ 30ms(no load)/ ≤ 60ms(full load)                              |  |                                   | Descent rate       | 36A/ms   |
| Fall Time (no load)/(full load)   | ≤ 30ms(no load)/ ≤ 15ms(full load)                              |  | Power Regulation Rate             | Dynamic frequency  | 500Hz  |
| Dynamic Response Time*1           | ≤ 1ms   |  |                                   | Voltage            | ≤ 0.01% + 0.01%FS  |
| Power Regulation Rate             | Voltage   | ≤ 0.01% + 0.01%FS  | Load Regulation Rate              | Current            | ≤ 0.05% + 0.05%FS  |
|                                   | Current   | ≤ 0.05% + 0.05%FS  |                                   | Voltage            | ≤ 0.01% + 0.01%FS  |
| Load Regulation Rate              | Voltage   | ≤ 0.01% + 0.01%FS  | Short Circuit Test                | Current            | ≤ 0.05% + 0.05%FS  |
|                                   | Current   | ≤ 0.05% + 0.05%FS  |                                   | Current            | 36.72A   |
| Input Protection Scope            | OCP   | -37A or 37A  | Input Protection Scope            | OCP                | 37A  |
|                                   | OVP   | 505V   |                                   | OVP                | 530V   |
|                                   | OPP   | -6120W or 6120W  |                                   | OPP                | 6120W  |
| Remote Sense Compensation Voltage | ≤ 5V  |  | Remote Sense Compensation Voltage | ≤ 3V               |  |
| AC Input*4                        | Voltage   | 3φ 110V~520V<br>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 °C   |  |                                   |                    |  |
| Storage Temperature               | -10 °C ~ 70 °C  |  |                                   |                    |  |
| 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<br>(0 °C-50 °C)        | Voltage   | 0~800V  | Rated value<br>(0 °C-50 °C) | Voltage                           | 0~800V   |
|                                    | Current   | -24A~24A  |                             | Current                           | 0~24A  |
|                                    | Power   | -6000W~6000W  |                             | Power                             | 0~6000W  |
|                                    | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0~1Ω<br>0.15Ω~7500Ω   |                             | Resistance                        | 0.15Ω~7500Ω  |
| Setup Resolution                   | Voltage   | 0.01V   | Setup Resolution            | Min.operation voltage             | 4V at 24A  |
|                                    | Current   | 0.001A  |                             | Input leak current                | 0.003A   |
|                                    | Power   | 1W  |                             | Voltage                           | 0.01V  |
|                                    | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0.01Ω<br>0.01Ω  |                             | Current                           | 0.001A   |
| Readback Resolution                | Voltage   | 0.01V   | Readback Resolution         | Power                             | 0.1W   |
|                                    | Current   | 0.001A  |                             | Resistance                        | 0.01Ω  |
|                                    | Power   | 1W  |                             | Voltage                           | 0.01V  |
| Setup Accuracy                     | Voltage   | ≤0.03% + 0.03%FS  | Setup Accuracy              | Current                           | 0.001A   |
|                                    | Current   | ≤0.1% + 0.1%FS  |                             | Power                             | 0.1W   |
|                                    | Power   | ≤0.5% + 0.5%FS  |                             | Resistance <sup>2</sup>           | Max.: 1/(1/Rset+(1/Rset) <sup>0.05+0.0001</sup> )<br>Min.: 1/(1/Rset-(1/Rset) <sup>0.05-0.0001</sup> ) |
|                                    | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | ≤1%FS<br>Max.: 1/(1/Rset+(1/Rset) <sup>0.05+0.0001</sup> )<br>Min.: 1/(1/Rset-(1/Rset) <sup>0.05-0.0001</sup> ) |                             | Voltage                           | ≤0.03% + 0.03%FS   |
| Readback Accuracy                  | Voltage   | ≤0.03% + 0.03%FS  | Readback Accuracy           | Current                           | ≤0.1% + 0.1%FS   |
|                                    | Current   | ≤0.1% + 0.1%FS  |                             | Power                             | ≤0.5% + 0.5%FS   |
|                                    | Power   | ≤0.5% + 0.5%FS  |                             | Rising rate                       | 24A/ms   |
| Voltage Ripple <sup>3</sup>        | ≤800mVpp(Peak value)/≤160mV(RMS)                                |   | Dynamic Response Time       | Descent rate                      | 24A/ms   |
| Rise Time (no load)/(full load)    | Voltage   | ≤30ms(no load)/≤60ms(full load)   | Power Regulation Rate       | Dynamic frequency                 | 500Hz  |
| Fall Time (no load)/(full load)    | Voltage   | ≤30ms(no load)/≤15ms(full load)   |                             | Voltage                           | ≤0.01% + 0.01%FS   |
| Dynamic Response Time <sup>1</sup> | 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  |                             | OCP                               | 25A  |
| Input Protection Scope             | OCP   | -25A or 25A   | Input Protection Scope      | OVP                               | 850V   |
|                                    | OVP   | 808V  |                             | OPP                               | 6120W  |
|                                    | OPP   | -6120W or 6120W   |                             | Remote Sense Compensation Voltage | ≤8V  |
| Remote Sense Compensation Voltage  | ≤8V   |   |                             |                                   |  |
| AC Input <sup>4</sup>              | Voltage   | 3φ 110V~520V<br>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 °C   |   |                             |                                   |  |
| Storage Temperature                | -10 °C ~ 70 °C  |   |                             |                                   |  |
| 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<br>(0 °C-50 °C)       | Voltage   | 0 ~ 1500V  | Rated value<br>(0 °C-50 °C) | Voltage                           | 0 ~ 1500V  |
|                                   | Current   | -12A ~ 12A   |                             | Current                           | 0 ~ 12A  |
|                                   | Power   | -6000W ~ 6000W   |                             | Power                             | 0 ~ 6000W  |
|                                   | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0 ~ 1Ω<br>0.5Ω ~ 7500Ω   |                             | Resistance                        | 0.5Ω ~ 7500Ω   |
| Setup Resolution                  | Voltage   | 0.01V  | Setup Resolution            | Min.operation voltage             | 7.5V at 12A  |
|                                   | Current   | 0.001A   |                             | Input leak current                | 0.003A   |
|                                   | Power   | 1W   |                             | Voltage                           | 0.01V  |
|                                   | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | 0.01Ω<br>0.01Ω   |                             | Current                           | 0.001A   |
| Readback Resolution               | Voltage   | 0.01V  | Readback Resolution         | Power                             | 0.1W   |
|                                   | Current   | 0.001A   |                             | Resistance                        | 0.01Ω  |
|                                   | Power   | 1W   |                             | Voltage                           | 0.01V  |
| Setup Accuracy                    | Voltage   | ≤ 0.03% + 0.03%FS  | Setup Accuracy              | Current                           | 0.001A   |
|                                   | Current   | ≤ 0.1% + 0.1%FS  |                             | Power                             | 0.1W   |
|                                   | Power   | ≤ 0.5% + 0.5%FS  |                             | Voltage                           | ≤ 0.03% + 0.03%FS  |
|                                   | Series IR(CV priority)<br>Load resistance<br>(CC priority mode) | ≤ 1%FS<br>Max.: 1/(1/Rset+(1/Rset)*0.05+0.0001)<br>Min.: 1/(1/Rset-(1/Rset)*0.05-0.0001) |                             | Current                           | ≤ 0.1% + 0.1%FS  |
| Readback Accuracy                 | Voltage   | ≤ 0.03% + 0.03%FS  | Readback Accuracy           | Power                             | ≤ 0.5% + 0.5%FS  |
|                                   | Current   | ≤ 0.1% + 0.1%FS  |                             | Resistance*2                      | Max.: 1/(1/Rset+(1/Rset)*0.05+0.0001)<br>Min.: 1/(1/Rset-(1/Rset)*0.05-0.0001) |
|                                   | Power   | ≤ 0.5% + 0.5%FS  |                             | Voltage                           | ≤ 0.03% + 0.03%FS  |
| Voltage Ripple*3                  | ≤ 1500mVpp(Peak value)/ ≤ 300mV(RMS)                            |  | Dynamic Response Time       | Current                           | ≤ 0.1% + 0.1%FS  |
| Rise Time (no load)/(full load)   | Voltage   | ≤ 30ms(no load)/ ≤ 60ms(full load)   |                             | Power                             | ≤ 0.5% + 0.5%FS  |
| Fall Time (no load)/(full load)   | Voltage   | ≤ 30ms(no load)/ ≤ 15ms(full load)   | Power Regulation Rate       | Descent rate                      | 12A/ms   |
| Dynamic Response Time*1           | Voltage   | ≤ 1ms  |                             | Dynamic frequency                 | 500Hz  |
| 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  |                             | OCP                               | 12.7A  |
| Input Protection Scope            | OCP   | -12.5A or 12.5A  | Input Protection Scope      | 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<br>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 °C   |  |                             |                                   |  |
| Storage Temperature               | -10 °C ~ 70 °C  |  |                             |                                   |  |
| 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

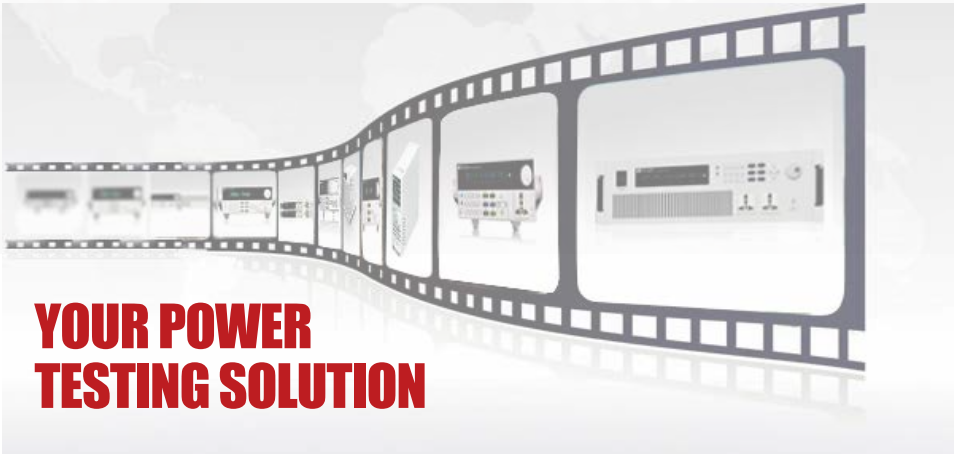
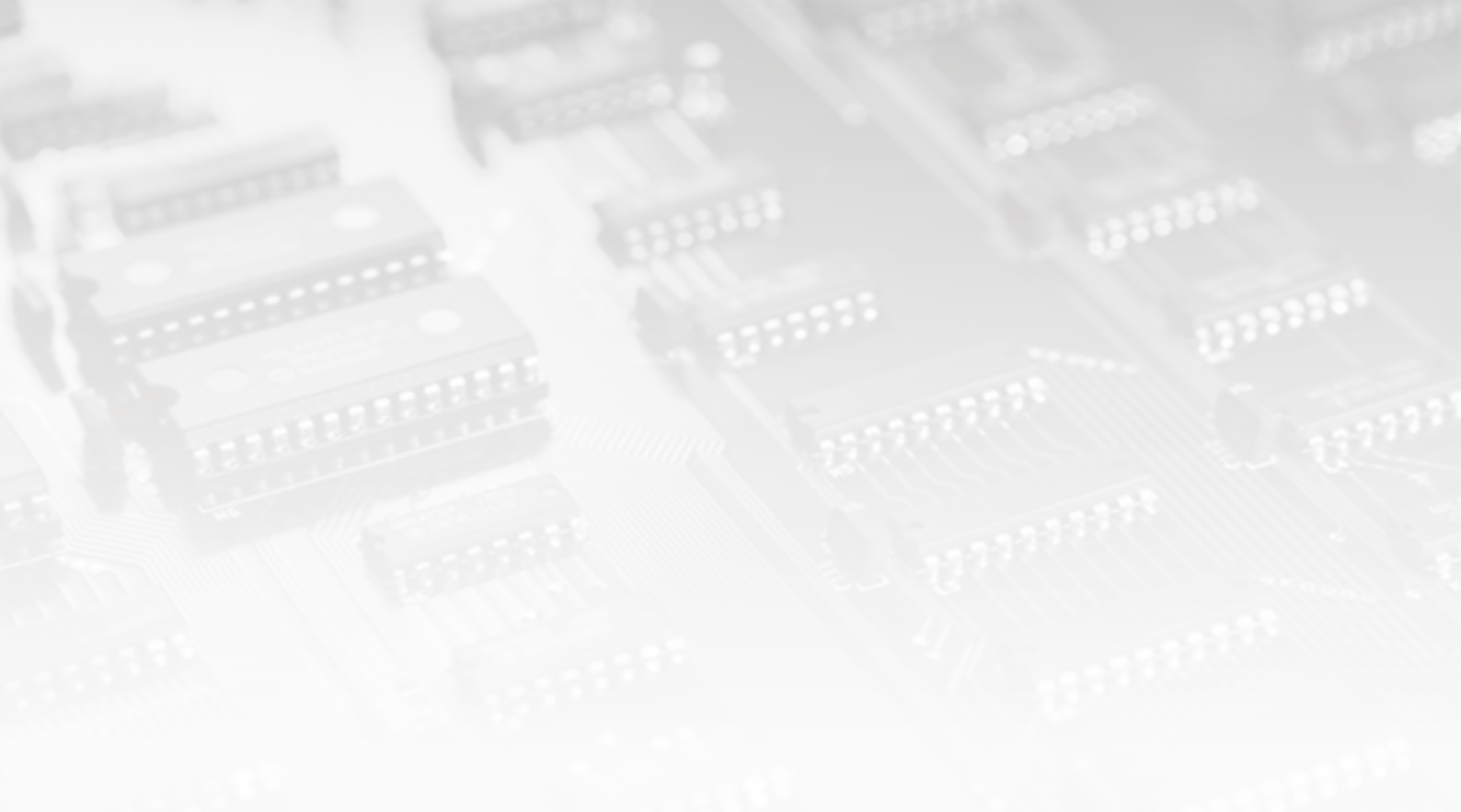
\*3 The ripple is got under three-phase AC input

\*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.



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

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