

# MOMENTUM

— S SERIES —

WIDE RANGE PROGRAMMABLE  
DC POWER SUPPLY





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Momentum S series is a single output programmable DC power supply with single phase or three phase input options, it supports universal input voltage. With high power density structure design to achieve 10kW output power in 2U model, it can meet higher power requirements through optical fiber parallel. Moreover, it adopts a wide-range output design, which expands the output range of current and voltage at full power output, making it more flexible to use.

High-end appearance with a simple UI touch interface and built-in unique test functions make them to meet the test applications such as system integration testing, battery charging and simulation, automotive electronic testing, solar panel simulation, etc..

### Product Features

- Full touch flip panel design, simple UI interaction interface, easier and faster operation.
- Universal input voltage, single/three-phase input optional.
- High power density structure design, 2U/10kW.
- Wide range output design, full power provides a wider range of voltage and current combinations.
- Optical fiber parallel communication, strong anti-interference, extremely fast transmission, unchanged performance(Optional).
- Adjustable voltage/current slew rate.
- Constant voltage (CV), constant current (CC) and constant power (CP) operation mode, CC or CV working priority setting.
- List/ Step mode programming.
- DDS arbitrary function generator.\*
- Solar panel I-V curve simulation function.\*
- Smart 3-stage charging algorithm simulation.\*
- Battery simulator function.\*
- Built-in standard automotive power network voltage curves.\*
- TTL/Analog control and monitoring(Optional).
- Supports SCPI commands, provides web GUI function.
- Full protection: OVP, OCP, OPP, OTP and SCP.
- Standard USB communication interface, optional GPIB/LAN& RS232/RS485/CAN.

\*Only professional version units support these functions.



## Quick Models Selection

| Output Voltage | ½ 2U  |       | 2U    |        |
|----------------|-------|-------|-------|--------|
|                | 3400W | 3400W | 6800W | 10000W |
| 80VDC          | 130A  | 130A  | 260A  | 390A   |
| 250VDC         | 55A   | 55A   | 110A  | 165A   |
| 500VDC         | 27A   | 27A   | 54A   | 80A    |
| 750VDC         | *     | *     | *     | 55A    |
| 1000VDC        | *     | *     | 27A   | *      |
| 1500VDC        | *     | *     | *     | 27A    |

## Supported Functions For Professional Version Only

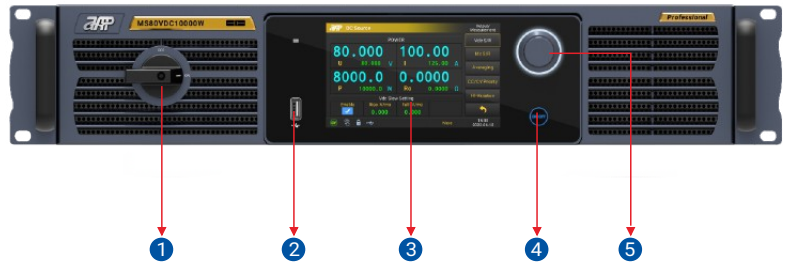
| No. | Description   | Application  |
|-----|---|--|
| 1   | DDS arbitrary function generator                          | Includes a true function generator, built-in typical functions, supports complex waveforms creation, used for testing purposes in development and production |
| 2   | Solar panel I-V curve simulation function                 | Users can set the parameters to simulate I-V curve characteristic output   |
| 3   | Smart 3-stage charging algorithm simulation               | Commonly used charging curve simulation  |
| 4   | Battery simulator function                                | Truly simulate the changes of internal resistance of battery in charging and discharging test.   |
| 5   | Built-in standard automotive power network voltage curves | Users can recall the built-in standard curve to do the DUT performance test directly.  |



## Panel Introduction

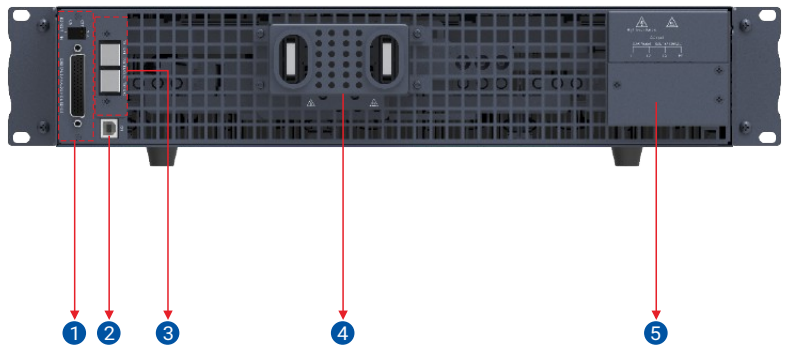
### Front Panel Description

- 1 Power switch
- 2 USB port, for data transfers and firmware
- 3 Color touch screen
- 4 Output switch
- 5 Press knob



### Rear Panel Description

- 1 GPIB communication interface (optional)/  
CAN communication interface (optional)/  
LAN&RS232 communication interface (optional)/  
RS485 communication interface & External  
TTL/Analog control interface (optional)\*
- 2 USB communication interface (standard)
- 3 SYSTEM BUS optical fiber interface (optional)
- 4 Output terminal
- 5 AC power input terminal



\*The interface option occupies the same physical slot.

## Features and Advantages

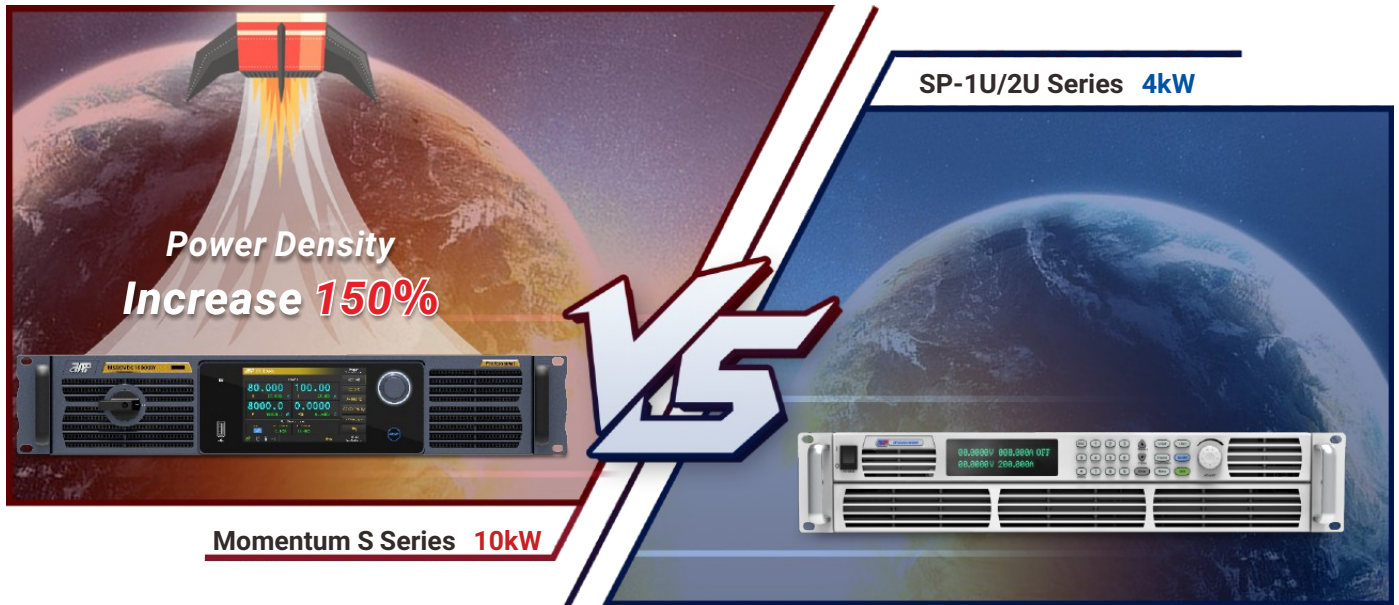
### Clear, Intuitive, Convenient Touch Screen Design, More User-friendly

This series with full touch panel design, simple UI operation interface, easy to complete parameter settings and professional programming functions. The output parameters are displayed in capital letters, the remote reading is clearer and more intuitive. Supports front panel USB data loading and unloading, supports front panel flipping function, easy to operate and use.



## Wide Output Range, High Power Density Design

Momentum S series single unit output voltage up to 1500V, output current up to 630A. The wide-range output design expands the output range of current and voltage at full power output to meet a wider range of testing needs without purchasing additional models. At the same time, it adopts high power density structure design, and achieves 10kW output power in 2U model, which is 150% higher than SP-1U/2U series power density.



## Flexible Input Mode

This series supports global universal input voltage, and can choose single/three-phase AC input to meet more test application.

| AC Input Voltage Selection | Rated Power |       |       |       |        |
|----------------------------|-------------|-------|-------|-------|--------|
|                            |             | ½ 2U  | 2U    | 2U    | 2U     |
|                            |             | 3400W | 3400W | 6800W | 10000W |
| 1P208(187-305Vac)          |             | ✓     | ✓     | ✓     |        |
| 3P208(187-305Vac)          |             | ✓     | ✓     | ✓     | ✓      |
| 3P400(340-480Vac)          |             | ✓     | ✓     | ✓     | ✓      |

## List/Program/Step Mode Programming

This series power supply provides List/Program/Step modes for output waveform programming. Users can edit the voltage/current value & the time of each step in advance and provide the power supply with a trigger signal. Then the preset sequences/waveform will be executed automatically according to the defined files. Sequence mode supports link between multiple files, the user can set the repeat times of each file and the total repeat times of the complete sequence file.

## Optical Fiber Parallel, Perfect Performance

This series supports the master-slave function, and the parallel adopts high-speed optical fiber communication capability to achieve almost zero transmission delay. All functions can be synchronized without performance degradation, which fully solves the problems of slow speed and poor accuracy existing in the traditional parallel mode, and perfectly presents the operation experience such as stand-alone testing. Multiple sizes are provided for desktop use and system integration.



## CC&CV Priority

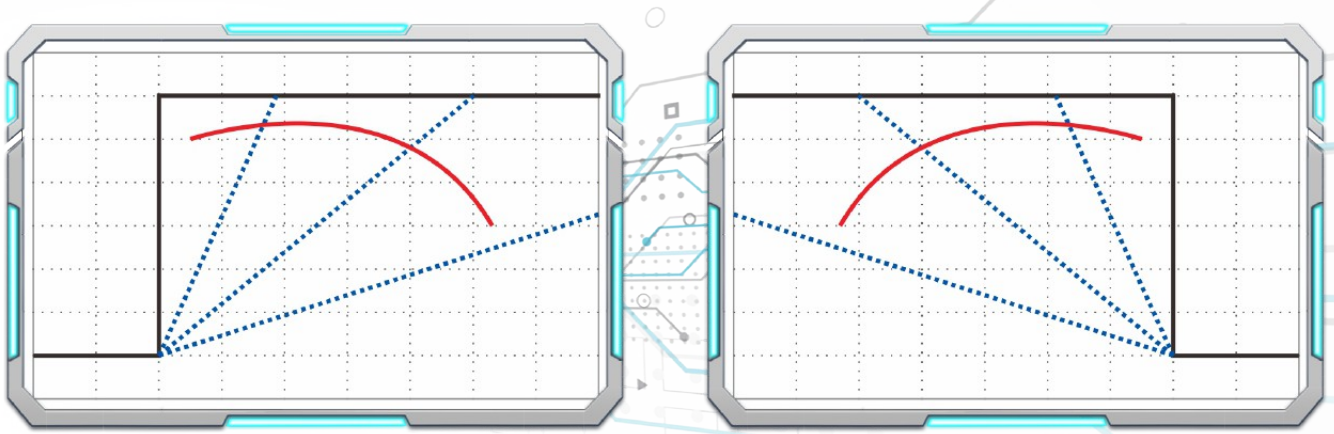
This series power supply provides CC/CV priority function allows the user to select suitable mode correspond to test requirement, let the output be voltage high speed or current no overshoot mode. Below shows an application of CC priority to avoid current overshoot during LED test. Suitable for integrated circuit test, charge and discharge test, automotive electronics power transient simulation.





## Adjustable Voltage/Current Slew Rate

This series power supply provides adjustable rise and fall time setting for voltage and current.



## TTL/Analog Control and Monitoring(Optional)

Program the output voltage or current from zero to full range by connecting the external voltage (0-5 V / 0-10 V) or the external resistance (5-10 K), and through the analog monitoring function (0V-5V / 0-10V) to monitor the output voltage and current.

# Professional Version Power Supply Function

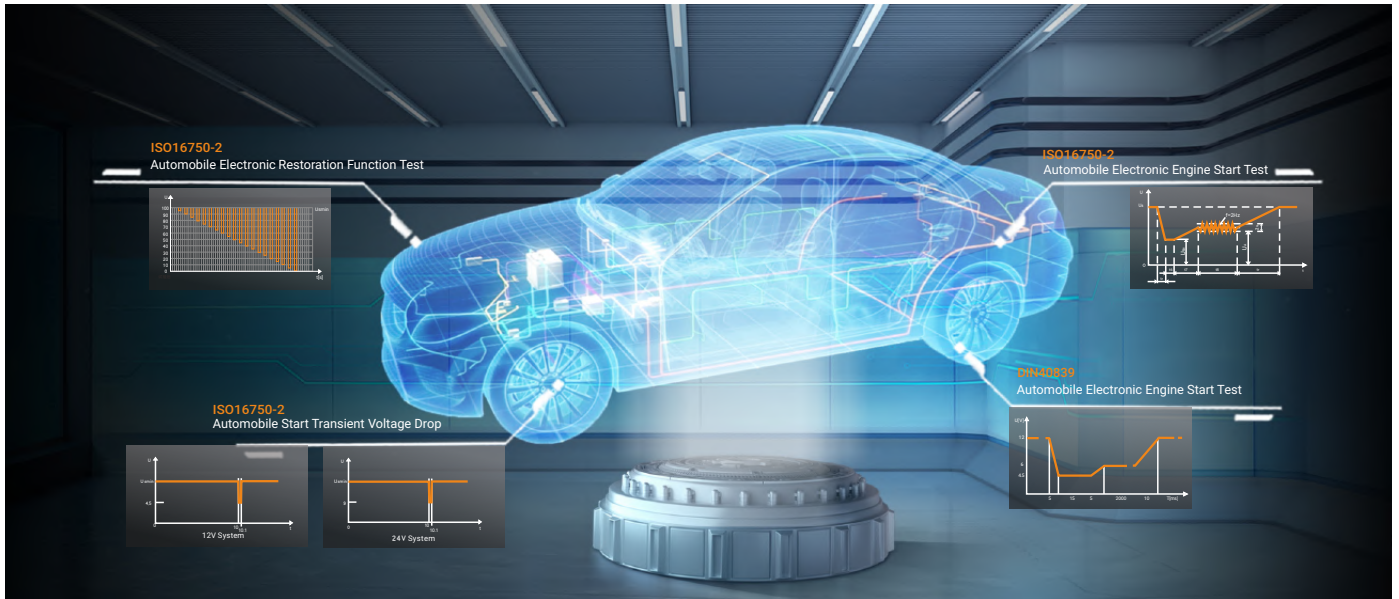
## DDS Arbitrary Function Generator

This series power supply includes a true function generator which can generate typical functions as displayed below, convenient for editing or directly recall. Additional to the standard functions, this arbitrary generator is accessible for the creation and execution of complex sets of functions, which is can be used for testing purposes in development and production.



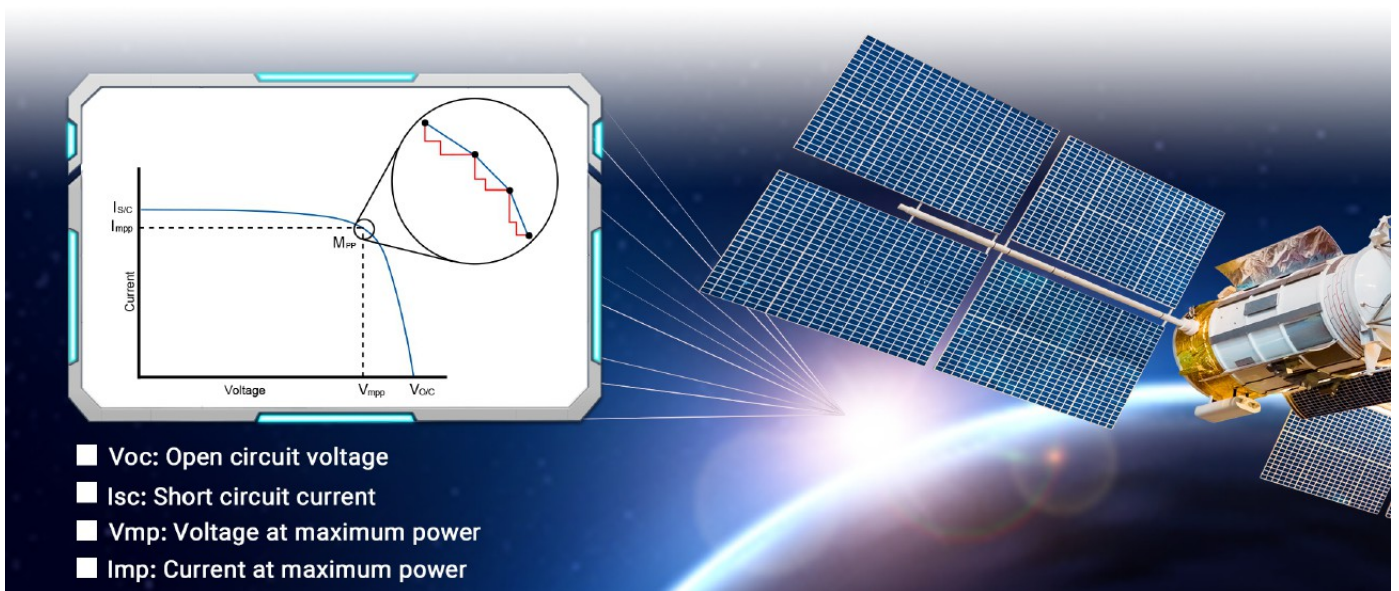
## Built-in Standard Automotive Power Network Voltage Curves

This series power supply has built-in German DIN40839 standard voltage curve for the automotive power network and the international standard ISO-16750-2 pulse waveform. The fast rise/fall response time together with arbitrary function generate ability make it can truly simulate the influence on the performance of automotive electronic equipment under different test conditions, is the preferred power testing instrument in the automotive electronics industry.



## Solar Panel I-V Curve Simulation Function

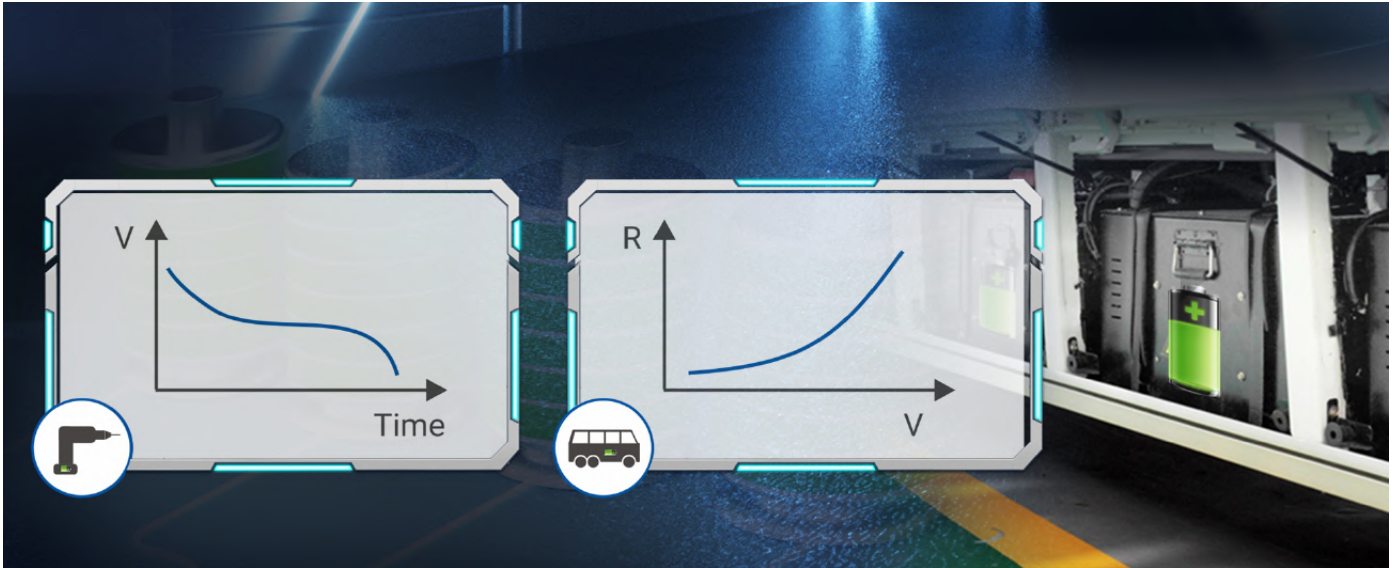
The power supply provides a unique feature to simulate the output characteristics of a solar array includes Curve Mode, User-defined Mode and SAS Mode. With Curve mode, only need to set four parameters to simulate the solar array I-V curve. With User-defined mode, user can shape an I-V curve by entering up to 4096 points to simulate dynamic cloud cover effect which is useful for MPPT performance evaluation on PV inverter device. With built-in SAS mode, user can set the parameters to simulate I-V curve characteristic output and generate reports.





## Battery Simulator Function

This series power supply built-in typical battery internal resistance curves and discharging curves can easily simulate battery behavior in real-case. It can be matched with battery simulation software, according to the change of external load current, the output voltage can be changed in real time according to the simulation curve. The software provides real-time data monitoring and data report query functions, providing real experimental data for engineers to study battery power systems.



## Smart 3-stage Charging Algorithm Simulation

This series power supply adopts 3-stage charging algorithm, built-in charging curves which is suitable for the commonly known types of batteries on the market. Users can directly recall the default curves or change the switching conditions at different charging stage according to the test requirement. Through the internal design, it improved and optimized hardware improvements, the current passing from the battery to power supply will be less than 10mA at any battery voltage when turn off the power supply. Thus avoid battery capacity loss, even when there is no anti-reverse irrigation equipment.



| MODEL                                  | MS80VDC3400W                       | MS80VDC6800W   | MS80VDC10000W                      |          |
|--|------------------------------------|--|------------------------------------|----------|
| <b>Input</b>                           |                                    |  |                                    |          |
| Voltage <sup>[1]</sup>                 | 1P220 187~305Vac                   | 1P220 187~305Vac   | /                                  |          |
|  | 2P208 187~305Vac                   | 3P208 187~305Vac   | 3P208 187~305Vac                   |          |
|  | 2P400 340~480Vac                   | 3P400 340~480Vac   | 3P400 340~480Vac                   |          |
| Current <sup>[1]</sup>                 | 1P220 L,N-21A                      | 1P220 L-21A,N-42A  | /                                  |          |
|  | 2P208 L3-0, L1,L2-21A              | 3P208 L1-37, L2,L3-21A   | 3P208 L1, L2,L3-37A                |          |
|  | 2P400 L3-0, L1,L2-12A              | 3P400 L1-21, L2,L3-12A   | 3P400 L1, L2,L3-21A                |          |
| Frequency                              | 45-65Hz                            |  |                                    |          |
| Connection                             | 1ph+PE/2ph+PE                      | 1ph+PE/3ph+PE  | 3ph+PE                             |          |
| Fuse (Internal) <sup>[1]</sup>         | 1P220 T30A*2PCS                    | 1P220 T30A*2PCS  | /                                  |          |
|  | 2P208 T30A*2PCS                    | 3P208 T30A*2PCS  | 3P208 T30A*2PCS                    |          |
|  | 2P400 T20A*2PCS                    | 3P400 T20A*2PCS  | 3P400 T20A*2PCS                    |          |
| Power Factor                           | >0.99                              |  |                                    |          |
| Input Power                            | 1P220 3.9KVAmx                     | 1P220 8KVAmx   | /                                  |          |
|  | 2P208 3.9KVAmx                     | 3P208 8KVAmx   | 3P208 11.8KVAmx                    |          |
|  | 2P400 3.8KVAmx                     | 3P400 7.85KVAmx  | 3P400 11.5KVAmx                    |          |
| Efficiency <sup>[1]</sup>              | 1P220 90.5%@80V , 1P220 86.5%@130A | 1P220 90.5%@80V , 1P220 86.5%@130A   | /                                  |          |
|  | 2P208 90.5%@80V , 2P208 86.5%@130A | 3P208 90.5%@80V , 3P208 86.5%@130A   | 3P208 90.5%@80V , 3P208 86.5%@130A |          |
|  | 2P400 92.5%@80V , 2P400 88%@130A   | 3P400 92.5%@80V , 3P400 88%@130A   | 3P400 92.5%@80V , 3P400 88%@130A   |          |
| <b>Output</b>                          |                                    |  |                                    |          |
| Voltage Range                          | 0~80V                              |  |                                    |          |
| Current Range <sup>[2]</sup>           | 0~130A                             | 0~260A   | 0~390A                             |          |
| Power Range                            | 0~3400W                            | 0~6800W  | 0~10000W                           |          |
| Max. Setup Range                       | Voltage                            | 0~80V  |                                    |          |
|  | Current                            | 0~130A   | 0~260A                             | 0~390A   |
|  | Power                              | 0~3400W  | 0~6800W                            | 0~10000W |
|  | Internal Resistance                | 0~19 Ω   | 0~9.2 Ω                            | 0~6.2 Ω  |
| Accuracy                               | Voltage                            | <0.1%Umax  |                                    |          |
|  | Current                            | <0.2%Imax  |                                    |          |
|  | Power                              | <0.5%+0.5%FS   |                                    |          |
|  | Internal Resistance                | R <2%Rmax, I < 0.3%Imax  |                                    |          |
| Line Regulation                        | Voltage                            | <0.02%Umax   |                                    |          |
|  | Current                            | <0.05%Imax   |                                    |          |
|  | Power                              | <0.05% Pmax  |                                    |          |
| Load Regulation <sup>[3]</sup>         | Voltage                            | <0.05%Umax @Rated Voltage, <0.1%Umax @Rated Current                        |                                    |          |
|  | Current                            | <0.15%Imax   |                                    |          |
|  | Power                              | <0.75% Pmax  |                                    |          |
| Rise Time                              | Voltage                            | <15ms(No Load) <50ms(Full Load)  |                                    |          |
| Drop Time                              | Voltage                            | <850ms(No Load) <15ms(Full Load)   |                                    |          |
| Transient Response Time <sup>[4]</sup> | Voltage                            | <1ms (Voltage will recover to ±0.5% when the load changes from 10% to 90%) |                                    |          |
| Set Resolution                         | Voltage                            | 0.006V   |                                    |          |
|  | Current                            | 0.01A  | 0.02A                              | 0.03A    |
|  | Power                              | 0.26W  | 0.52W                              | 0.76W    |
|  | Internal Resistance                | 0.0015Ω  | 0.0007Ω                            | 0.0005Ω  |
| Display Resolution                     | Voltage                            | 0.001V   |                                    |          |
|  | Current                            | 0.001A   |                                    |          |
|  | Power                              | 0.1W   |                                    |          |
|  | Internal Resistance                | 0.0001Ω  |                                    |          |
| Measurement Accuracy                   | Voltage                            | <0.1%Umax  |                                    |          |
|  | Current                            | <0.2%Imax  |                                    |          |
|  | Power                              | <0.5%Pmax  |                                    |          |
|  | Internal Resistance                | <0.4% Rmax   |                                    |          |



| MODEL   |         | MS80VDC3400W   | MS80VDC6800W            | MS80VDC10000W           |
|---|---------|--|-------------------------|-------------------------|
| Ripple <sup>[5]</sup>   | Voltage | 150mVpp/20mVrms  |                         |                         |
|   | Current | 65mArms  | 130mArms                | 195mArms                |
| Remote Compensation   |         | 5%Umax   |                         |                         |
| <b>General</b>  |         |  |                         |                         |
| Graphic Display   |         | 5" Color touch LCD   |                         |                         |
| Operation Key Feature   |         | Flippable touch screen, Rotary knob, USB port for transfer and upgrading firmware                        |                         |                         |
| Rack Mount Handles  |         | Yes  |                         |                         |
| FAN   |         | Temperature control  |                         |                         |
| Protection  |         | OVP, UVP, OCP, UCP, OPP, RMP protection parameters and other hardware protection such as OTP can be set. |                         |                         |
| Interface   |         | USB(Standard), RS232&LAN(Optional), GPIB(Optional), CAN(Optional)  |                         |                         |
| Command Response Time   |         | <3ms   |                         |                         |
| <b>Analog Interface / Industrial communication control (Optional)</b> |         |  |                         |                         |
| Industrial communication interface                                    |         | RS485  |                         |                         |
| Set Value Inputs  |         | Analog input 0~5V/0~10V or 0~5kΩ/0~10kΩ to set 0~105% voltage, current and power                         |                         |                         |
| Actual Value Output   |         | Analog output 0~5V/0~10V to monitor the voltage and current.   |                         |                         |
| Accuracy U/I/P/R  |         | <0.2% F.S  |                         |                         |
| Actual Output U/I   |         | <0.2%  |                         |                         |
| Control Signals   |         | DC ON/OFF, External control Enable/Disable   |                         |                         |
| Status Signals  |         | CV, OVP, OTP, OCP  |                         |                         |
| Sampling Rate of Input & Output                                       |         | 45Hz   |                         |                         |
| Galvanic Isolation to the Device                                      |         | 4242VDC  |                         |                         |
| <b>Master/Slave Control</b>   |         |  |                         |                         |
| Series Output   |         | MAX 2 units  |                         |                         |
| Parallel Output   |         | MAX 100 units  |                         |                         |
| <b>Environmental</b>  |         |  |                         |                         |
| Operating Temperature <sup>[2]</sup>                                  |         | 0~40°C   |                         |                         |
| Storage Temperature   |         | -20~70°C   |                         |                         |
| Temperature coefficient of readback value                             |         | 25ppm/°C (Voltage)   |                         |                         |
|   |         | 50ppm/°C (Current)   |                         |                         |
| Temperature coefficient of setting value                              |         | 50ppm/°C (Voltage)   |                         |                         |
|   |         | 100ppm/°C (Current)  |                         |                         |
| Relative Humidity   |         | <95%RH(non-condensing)@35°C, <80%RH(non-condensing)@40°C   |                         |                         |
| Altitude  |         | <2000m@40°C  |                         |                         |
| Fan Noise   |         | 45dB Idle;<br>71dB Max;  | 45dB Idle;<br>73dB Max; | 45dB Idle;<br>75dB Max; |
| <b>Mechanical</b>   |         |  |                         |                         |
| Dimensions(WxHxD)   |         | 423x88x615mm   |                         |                         |
| Package Dimensions(WxHxD)   |         | 635x280x905mm  |                         |                         |
| Unit Weight   |         | 18kg   | 24kg                    | 30kg                    |
| Shipping Weight   |         | 25kg   | 31kg                    | 37kg                    |
| <b>Miscellaneous</b>  |         |  |                         |                         |
| Over Voltage Category   |         | II   |                         |                         |
| Protection Class  |         | I  |                         |                         |
| Pollution Degree  |         | 2  |                         |                         |
| Insulation  |         | AC input <->DC output, 4242VDC, AC input <-> PE, 2818VDC   |                         |                         |

[1] For different input voltage standard option must be specified at the time of order as they are installed at the factory prior to shipment.

[2] It is recommended that the output current is derated by 10% when the operation environment is higher than 30°C.

[3] Load transient from 0% to 100% of rated output.

[4] Test value at 100% voltage and 100% power.

[5] Vrms @ 300kHz, Vpp @ 20MHz, Arms @ 300kHz.

| MODEL                                  | MS250VDC3400W                   | MS250VDC6800W  | MS250VDC10000W                  |          |
|--|---------------------------------|--|---------------------------------|----------|
| <b>Input</b>                           |                                 |  |                                 |          |
| Voltage <sup>[1]</sup>                 | 1P220 187~305Vac                | 1P220 187~305Vac   | /                               |          |
|  | 2P208 187~305Vac                | 3P208 187~305Vac   | 3P208 187~305Vac                |          |
|  | 2P400 340~480Vac                | 3P400 340~480Vac   | 3P400 340~480Vac                |          |
| Current <sup>[1]</sup>                 | 1P220 L,N-21A                   | 1P220 L-21A,N-42A  | /                               |          |
|  | 2P208 L3-0, L1,L2-21A           | 3P208 L1-37, L2,L3-21A   | 3P208 L1, L2,L3-37A             |          |
|  | 2P400 L3-0, L1,L2-12A           | 3P400 L1-21, L2,L3-12A   | 3P400 L1, L2,L3-21A             |          |
| Frequency                              | 45-65Hz                         |  |                                 |          |
| Connection                             | 1ph+PE/2ph+PE                   | 1ph+PE/3ph+PE  | 3ph+PE                          |          |
| Fuse (Internal) <sup>[1]</sup>         | 1P220 T30A*2PCS                 | 1P220 T30A*2PCS  | /                               |          |
|  | 2P208 T30A*2PCS                 | 3P208 T30A*2PCS  | 3P208 T30A*2PCS                 |          |
|  | 2P400 T20A*2PCS                 | 3P400 T20A*2PCS  | 3P400 T20A*2PCS                 |          |
| Power Factor                           | >0.99                           |  |                                 |          |
| Input Power                            | 1P220 3.9KVAmx                  | 1P220 8KVAmx   | /                               |          |
|  | 2P208 3.9KVAmx                  | 3P208 8KVAmx   | 3P208 11.8KVAmx                 |          |
|  | 2P400 3.8KVAmx                  | 3P400 7.85KVAmx  | 3P400 11.5KVAmx                 |          |
| Efficiency <sup>[1]</sup>              | 1P220 92%@250V ,1P220 90.5%@55A | 1P220 92%@250V ,1P220 90.5%@55A  | /                               |          |
|  | 2P208 92%@250V ,2P208 90.5%@55A | 3P208 92%@250V ,3P208 90.5%@55A  | 3P208 92%@250V ,3P208 90.5%@55A |          |
|  | 2P400 92.5%@250V ,2P400 91%@55A | 3P400 92.5%@250V ,3P400 91%@55A  | 3P400 92.5%@250V ,3P400 91%@55A |          |
| <b>Output</b>                          |                                 |  |                                 |          |
| Voltage Range                          | 0~250V                          |  |                                 |          |
| Current Range <sup>[2]</sup>           | 0~55A                           | 0~110A   | 0~165A                          |          |
| Power Range                            | 0~3400W                         | 0~6800W  | 0~10000W                        |          |
| Max. Setup Range                       | Voltage                         | 0~250V   |                                 |          |
|  | Current                         | 0~55A  | 0~110A                          | 0~165A   |
|  | Power                           | 0~3400W  | 0~6800W                         | 0~10000W |
|  | Internal Resistance             | 0~136 Ω  | 0~68 Ω                          | 0~45Ω    |
| Accuracy                               | Voltage                         | <0.1%Umax  |                                 |          |
|  | Current                         | <0.2%Imax  |                                 |          |
|  | Power                           | <0.5%+0.5%FS   |                                 |          |
|  | Internal Resistance             | R <2%Rmax, I < 0.3%Imax  |                                 |          |
| Line Regulation                        | Voltage                         | <0.02%Umax   |                                 |          |
|  | Current                         | <0.05%Imax   |                                 |          |
|  | Power                           | <0.05% Pmax  |                                 |          |
| Load Regulation <sup>[3]</sup>         | Voltage                         | <0.05%Umax @Rated Voltage, <0.1%Umax @Rated Current                        |                                 |          |
|  | Current                         | <0.15%Imax   |                                 |          |
|  | Power                           | <0.75% Pmax  |                                 |          |
| Rise Time                              | Voltage                         | <15ms(No Load) <60ms(Full Load)  |                                 |          |
| Drop Time                              | Voltage                         | <600ms(No Load) <15ms(Full Load)   |                                 |          |
| Transient Response Time <sup>[4]</sup> | Voltage                         | <1ms (Voltage will recover to ±0.5% when the load changes from 10% to 90%) |                                 |          |
| Set Resolution                         | Voltage                         | 0.02V  |                                 |          |
|  | Current                         | 0.004A   | 0.008A                          | 0.012A   |
|  | Power                           | 0.26W  | 0.52W                           | 0.76W    |
|  | Internal Resistance             | 0.01Ω  | 0.005Ω                          | 0.003Ω   |
| Display Resolution                     | Voltage                         | 0.01V  |                                 |          |
|  | Current                         | 0.001A   |                                 |          |
|  | Power                           | 0.1W   |                                 |          |
|  | Internal Resistance             | 0.001Ω   |                                 |          |
| Measurement Accuracy                   | Voltage                         | <0.1%Umax  |                                 |          |
|  | Current                         | <0.2%Imax  |                                 |          |
|  | Power                           | <0.5%Pmax  |                                 |          |
|  | Internal Resistance             | <0.4% Rmax   |                                 |          |



| MODEL   |         | MS250VDC3400W  | MS250VDC6800W           | MS250VDC10000W          |
|---|---------|--|-------------------------|-------------------------|
| Ripple <sup>[5]</sup>   | Voltage | 250mVpp/60mVrms  |                         |                         |
|   | Current | 27mArms  | 55mArms                 | 82mArms                 |
| Remote Compensation   |         | 5%Umax   |                         |                         |
| <b>General</b>  |         |  |                         |                         |
| Graphic Display   |         | 5" Color touch LCD   |                         |                         |
| Operation Key Feature   |         | Flippable touch screen, Rotary knob, USB port for transfer and upgrading firmware                        |                         |                         |
| Rack Mount Handles  |         | Yes  |                         |                         |
| FAN   |         | Temperature control  |                         |                         |
| Protection  |         | OVP, UVP, OCP, UCP, OPP, RMP protection parameters and other hardware protection such as OTP can be set. |                         |                         |
| Interface   |         | USB(Standard), RS232&LAN(Optional), GPIB(Optional), CAN(Optional)  |                         |                         |
| Command Response Time   |         | <3ms   |                         |                         |
| <b>Analog Interface / Industrial communication control (Optional)</b> |         |  |                         |                         |
| Industrial communication interface                                    |         | RS485  |                         |                         |
| Set Value Inputs  |         | Analog input 0~5V/0~10V or 0~5kΩ/0~10kΩ to set 0~105% voltage, current and power                         |                         |                         |
| Actual Value Output   |         | Analog output 0~5V/0~10V to monitor the voltage and current.   |                         |                         |
| Accuracy U/I/P/R  |         | <0.2% F.S  |                         |                         |
| Actual Output U/I   |         | <0.2%  |                         |                         |
| Control Signals   |         | DC ON/OFF, External control Enable/Disable   |                         |                         |
| Status Signals  |         | CV, OVP, OTP, OCP  |                         |                         |
| Sampling Rate of Input & Output                                       |         | 45Hz   |                         |                         |
| Galvanic Isolation to the Device                                      |         | 4242VDC  |                         |                         |
| <b>Master/Slave Control</b>   |         |  |                         |                         |
| Series Output   |         | MAX 2 units  |                         |                         |
| Parallel Output   |         | MAX 100 units  |                         |                         |
| <b>Environmental</b>  |         |  |                         |                         |
| Operating Temperature <sup>[2]</sup>                                  |         | 0~40°C   |                         |                         |
| Storage Temperature   |         | -20~70°C   |                         |                         |
| Temperature coefficient of readback value                             |         | 25ppm/°C (Voltage)   |                         |                         |
|   |         | 50ppm/°C (Current)   |                         |                         |
| Temperature coefficient of setting value                              |         | 50ppm/°C (Voltage)   |                         |                         |
|   |         | 100ppm/°C (Current)  |                         |                         |
| Relative Humidity   |         | <95%RH(non-condensing)@35°C, <80%RH(non-condensing)@40°C   |                         |                         |
| Altitude  |         | <2000m@40°C  |                         |                         |
| Fan Noise   |         | 45dB Idle;<br>71dB Max;  | 45dB Idle;<br>73dB Max; | 45dB Idle;<br>75dB Max; |
| <b>Mechanical</b>   |         |  |                         |                         |
| Dimensions(WxHxD)   |         | 423x88x615mm   |                         |                         |
| Package Dimensions(WxHxD)   |         | 635x280x905mm  |                         |                         |
| Unit Weight   |         | 18kg   | 24kg                    | 30kg                    |
| Shipping Weight   |         | 25kg   | 31kg                    | 37kg                    |
| <b>Miscellaneous</b>  |         |  |                         |                         |
| Over Voltage Category   |         | II   |                         |                         |
| Protection Class  |         | I  |                         |                         |
| Pollution Degree  |         | 2  |                         |                         |
| Insulation  |         | AC input <->DC output, 4242VDC, AC input <-> PE, 2818VDC   |                         |                         |

[1] For different input voltage standard option must be specified at the time of order as they are installed at the factory prior to shipment.

[2] It is recommended that the output current is derated by 10% when the operation environment is higher than 30°C.

[3] Load transient from 0% to 100% of rated output.

[4] Test value at 100% voltage and 100% power.

[5] Vrms @ 300kHz, Vpp @ 20MHz, Arms @ 300kHz.

| MODEL                                  | MS500VDC3400W                   | MS500VDC6800W  | MS500VDC10000W                  |          |
|--|---------------------------------|--|---------------------------------|----------|
| <b>Input</b>                           |                                 |  |                                 |          |
| Voltage <sup>[1]</sup>                 | 1P220 187~305Vac                | 1P220 187~305Vac   | /                               |          |
|  | 2P208 187~305Vac                | 3P208 187~305Vac   | 3P208 187~305Vac                |          |
|  | 2P400 340~480Vac                | 3P400 340~480Vac   | 3P400 340~480Vac                |          |
| Current <sup>[1]</sup>                 | 1P220 L,N-21A                   | 1P220 L-21A,N-42A  | /                               |          |
|  | 2P208 L3-0, L1,L2-21A           | 3P208 L1-37, L2,L3-21A   | 3P208 L1, L2,L3-37A             |          |
|  | 2P400 L3-0, L1,L2-12A           | 3P400 L1-21, L2,L3-12A   | 3P400 L1, L2,L3-21A             |          |
| Frequency                              | 45-65Hz                         |  |                                 |          |
| Connection                             | 1ph+PE/2ph+PE                   | 1ph+PE/3ph+PE  | 3ph+PE                          |          |
| Fuse (Internal) <sup>[1]</sup>         | 1P220 T30A*2PCS                 | 1P220 T30A*2PCS  | /                               |          |
|  | 2P208 T30A*2PCS                 | 3P208 T30A*2PCS  | 3P208 T30A*2PCS                 |          |
|  | 2P400 T20A*2PCS                 | 3P400 T20A*2PCS  | 3P400 T20A*2PCS                 |          |
| Power Factor                           | >0.99                           |  |                                 |          |
| Input Power                            | 1P220 3.9KVAmx                  | 1P220 8KVAmx   | /                               |          |
|  | 2P208 3.9KVAmx                  | 3P208 8KVAmx   | 3P208 11.8KVAmx                 |          |
|  | 2P400 3.8KVAmx                  | 3P400 7.85KVAmx  | 3P400 11.5KVAmx                 |          |
| Efficiency <sup>[1]</sup>              | 1P220 92.5%@500V ,1P220 91%@27A | 1P220 92.5%@500V ,1P220 91%@27A  | /                               |          |
|  | 2P208 92.5%@500V ,2P208 91%@27A | 3P208 92.5%@500V ,3P208 91%@27A  | 3P208 92.5%@500V ,3P208 91%@27A |          |
|  | 2P400 94%@500V ,2P400 92.5%@27A | 3P400 94%@500V ,3P400 92.5%@27A  | 3P400 94%@500V ,3P400 92.5%@27A |          |
| <b>Output</b>                          |                                 |  |                                 |          |
| Voltage Range                          | 0~500V                          |  |                                 |          |
| Current Range <sup>[2]</sup>           | 0~27A                           | 0~54A  | 0~80A                           |          |
| Power Range                            | 0~3400W                         | 0~6800W  | 0~10000W                        |          |
| Max. Setup Range                       | Voltage                         | 0~500V   |                                 |          |
|  | Current                         | 0~27A  | 0~54A                           | 0~80A    |
|  | Power                           | 0~3400W  | 0~6800W                         | 0~10000W |
|  | Internal Resistance             | 0~556 Ω  | 0~278 Ω                         | 0~188 Ω  |
| Accuracy                               | Voltage                         | <0.1%Umax  |                                 |          |
|  | Current                         | <0.2%Imax  |                                 |          |
|  | Power                           | <0.5%+0.5%FS   |                                 |          |
|  | Internal Resistance             | R <2%Rmax, I < 0.3%Imax  |                                 |          |
| Line Regulation                        | Voltage                         | <0.02%Umax   |                                 |          |
|  | Current                         | <0.05%Imax   |                                 |          |
|  | Power                           | <0.05% Pmax  |                                 |          |
| Load Regulation <sup>[3]</sup>         | Voltage                         | <0.05%Umax @Rated Voltage, <0.1%Umax @Rated Current                        |                                 |          |
|  | Current                         | <0.15%Imax   |                                 |          |
|  | Power                           | <0.75% Pmax  |                                 |          |
| Rise Time                              | Voltage                         | <15ms(No Load) <80ms(Full Load)  |                                 |          |
| Drop Time                              | Voltage                         | <1500ms(No Load) <15ms(Full Load)  |                                 |          |
| Transient Response Time <sup>[4]</sup> | Voltage                         | <1ms (Voltage will recover to ±0.5% when the load changes from 10% to 90%) |                                 |          |
| Set Resolution                         | Voltage                         | 0.04V  |                                 |          |
|  | Current                         | 0.002A   | 0.004A                          | 0.006A   |
|  | Power                           | 0.26W  | 0.52W                           | 0.76W    |
|  | Internal Resistance             | 0.04Ω  | 0.02Ω                           | 0.015Ω   |
| Display Resolution                     | Voltage                         | 0.01V  |                                 |          |
|  | Current                         | 0.001A   |                                 |          |
|  | Power                           | 0.1W   |                                 |          |
|  | Internal Resistance             | 0.001Ω   |                                 |          |
| Measurement Accuracy                   | Voltage                         | <0.1%Umax  |                                 |          |
|  | Current                         | <0.2%Imax  |                                 |          |
|  | Power                           | <0.5%Pmax  |                                 |          |
|  | Internal Resistance             | <0.4% Rmax   |                                 |          |



| MODEL   |         | MS500VDC3400W  | MS500VDC6800W           | MS500VDC10000W          |
|---|---------|--|-------------------------|-------------------------|
| Ripple <sup>[5]</sup>   | Voltage | 500mVpp/150mVrms   |                         |                         |
|   | Current | 13mArms  | 27mArms                 | 40mArms                 |
| Remote Compensation   |         | 5%Umax   |                         |                         |
| <b>General</b>  |         |  |                         |                         |
| Graphic Display   |         | 5" Color touch LCD   |                         |                         |
| Operation Key Feature   |         | Flippable touch screen, Rotary knob, USB port for transfer and upgrading firmware                        |                         |                         |
| Rack Mount Handles  |         | Yes  |                         |                         |
| FAN   |         | Temperature control  |                         |                         |
| Protection  |         | OVP, UVP, OCP, UCP, OPP, RMP protection parameters and other hardware protection such as OTP can be set. |                         |                         |
| Interface   |         | USB(Standard), RS232&LAN(Optional), GPIB(Optional), CAN(Optional)  |                         |                         |
| Command Response Time   |         | <3ms   |                         |                         |
| <b>Analog Interface / Industrial communication control (Optional)</b> |         |  |                         |                         |
| Industrial communication interface                                    |         | RS485  |                         |                         |
| Set Value Inputs  |         | Analog input 0~5V/0~10V or 0~5kΩ/0~10kΩ to set 0~105% voltage, current and power                         |                         |                         |
| Actual Value Output   |         | Analog output 0~5V/0~10V to monitor the voltage and current.   |                         |                         |
| Accuracy U/I/P/R  |         | <0.2% F.S  |                         |                         |
| Actual Output U/I   |         | <0.2%  |                         |                         |
| Control Signals   |         | DC ON/OFF, External control Enable/Disable   |                         |                         |
| Status Signals  |         | CV, OVP, OTP, OCP  |                         |                         |
| Sampling Rate of Input & Output                                       |         | 45Hz   |                         |                         |
| Galvanic Isolation to the Device                                      |         | 4242VDC  |                         |                         |
| <b>Master/Slave Control</b>   |         |  |                         |                         |
| Series Output   |         | MAX 2 units  |                         |                         |
| Parallel Output   |         | MAX 100 units  |                         |                         |
| <b>Environmental</b>  |         |  |                         |                         |
| Operating Temperature <sup>[2]</sup>                                  |         | 0~40°C   |                         |                         |
| Storage Temperature   |         | -20~70°C   |                         |                         |
| Temperature coefficient of readback value                             |         | 25ppm/°C (Voltage)   |                         |                         |
|   |         | 50ppm/°C (Current)   |                         |                         |
| Temperature coefficient of setting value                              |         | 50ppm/°C (Voltage)   |                         |                         |
|   |         | 100ppm/°C (Current)  |                         |                         |
| Relative Humidity   |         | <95%RH(non-condensing)@35°C, <80%RH(non-condensing)@40°C   |                         |                         |
| Altitude  |         | <2000m@40°C  |                         |                         |
| Fan Noise   |         | 45dB Idle;<br>71dB Max;  | 45dB Idle;<br>73dB Max; | 45dB Idle;<br>75dB Max; |
| <b>Mechanical</b>   |         |  |                         |                         |
| Dimensions(WxHxD)   |         | 423x88x615mm   |                         |                         |
| Package Dimensions(WxHxD)   |         | 635x280x905mm  |                         |                         |
| Unit Weight   |         | 18kg   | 24kg                    | 30kg                    |
| Shipping Weight   |         | 25kg   | 31kg                    | 37kg                    |
| <b>Miscellaneous</b>  |         |  |                         |                         |
| Over Voltage Category   |         | II   |                         |                         |
| Protection Class  |         | I  |                         |                         |
| Pollution Degree  |         | 2  |                         |                         |
| Insulation  |         | AC input ↔DC output, 4242VDC, AC input ↔ PE, 2818VDC   |                         |                         |

[1] For different input voltage standard option must be specified at the time of order as they are installed at the factory prior to shipment.

[2] It is recommended that the output current is derated by 10% when the operation environment is higher than 30°C.

[3] Load transient from 0% to 100% of rated output.

[4] Test value at 100% voltage and 100% power.

[5] Vrms @ 300kHz, Vpp @ 20MHz, Arms @ 300kHz.

| MODEL                                  |  | MS750VDC10000W   |
|--|--|--|
| <b>Input</b>                           |  |  |
| Voltage <sup>[1]</sup>                 | 3P208 187~305Vac<br>3P400 340~480Vac                               |  |
| Current <sup>[1]</sup>                 | 3P208 L1, L2, L3-37A<br>3P400 L1, L2, L3-21A                       |  |
| Frequency                              | 45-65Hz  |  |
| Connection                             | 3ph+PE   |  |
| Fuse (Internal) <sup>[1]</sup>         | 3P208 T30A*2PCS<br>3P400 T20A*2PCS                                 |  |
| Power Factor                           | >0.99  |  |
| Input Power                            | 3P208 11.8KVAmx<br>3P400 11.5KVAmx                                 |  |
| Efficiency <sup>[1]</sup>              | 3P208 92%@750V ,3P208 90.5%@55A<br>3P400 92.5%@750V ,3P400 91%@55A |  |
| <b>Output</b>                          |  |  |
| Voltage Range                          | 0~750V   |  |
| Current Range <sup>[2]</sup>           | 0~55A  |  |
| Power Range                            | 0~10000W   |  |
| Max. Setup Range                       | Voltage  | 0~750V   |
|  | Current  | 0~55A  |
|  | Power  | 0~10000W   |
|  | Internal Resistance  | 0~409 Ω  |
| Accuracy                               | Voltage  | <0.1%Umax  |
|  | Current  | <0.2%Imax  |
|  | Power  | <0.5%+0.5%FS   |
|  | Internal Resistance  | R <2%Rmax, I< 0.3%Imax   |
| Line Regulation                        | Voltage  | <0.02%Umax   |
|  | Current  | <0.05%Imax   |
|  | Power  | <0.05% Pmax  |
| Load Regulation <sup>[3]</sup>         | Voltage  | <0.05%Umax @Rated Voltage, <0.1%Umax @Rated Current                        |
|  | Current  | <0.15%Imax   |
|  | Power  | <0.75% Pmax  |
| Rise Time                              | Voltage  | <15ms(No Load) <80ms(Full Load)  |
| Drop Time                              | Voltage  | <800ms(No Load) <15ms(Full Load)   |
| Transient Response Time <sup>[4]</sup> | Voltage  | <1ms (Voltage will recover to ±0.5% when the load changes from 10% to 90%) |
| Set Resolution                         | Voltage  | 0.02V  |
|  | Current  | 0.004A   |
|  | Power  | 0.76W  |
|  | Internal Resistance  | 0.03Ω  |
| Display Resolution                     | Voltage  | 0.01V  |
|  | Current  | 0.001A   |
|  | Power  | 0.1W   |
|  | Internal Resistance  | 0.001Ω   |
| Measurement Accuracy                   | Voltage  | <0.1%Umax  |
|  | Current  | <0.2%Imax  |
|  | Power  | <0.5%Pmax  |
|  | Internal Resistance  | <0.4% Rmax   |
| Ripple <sup>[5]</sup>                  | Voltage  | 800mVpp/180mVrms   |
|  | Current  | 27mArms  |
| Remote Compensation                    | 5%Umax   |  |

| MODEL   | MS750VDC10000W   |
|---|--|
| <b>General</b>  |  |
| Graphic Display   | 5" Color touch LCD   |
| Operation Key Feature   | Flippable touch screen, Rotary knob, USB port for transfer and upgrading firmware                        |
| Rack Mount Handles  | Yes  |
| FAN   | Temperature control  |
| Protection  | OVP, UVP, OCP, UCP, OPP, RMP protection parameters and other hardware protection such as OTP can be set. |
| Interface   | USB(Standard), RS232&LAN(Optional), GPIB(Optional), CAN(Optional)  |
| Command Response Time   | <3ms   |
| <b>Analog Interface / Industrial Communication Control (Optional)</b> |  |
| Industrial communication interface                                    | RS485  |
| Set Value Inputs  | Analog input 0~5V/0~10V or 0~5kΩ/0~10kΩ to set 0~105% voltage, current and power                         |
| Actual Value Output   | Analog output 0~5V/0~10V to monitor the voltage and current.   |
| Accuracy U/I/P/R  | <0.2% F.S  |
| Actual Output U/I   | <0.2%  |
| Control Signals   | DC ON/OFF, External control Enable/Disable   |
| Status Signals  | CV, OVP, OTP, OCP  |
| Sampling Rate of Input & Output                                       | 45Hz   |
| Galvanic Isolation to the Device                                      | 4242VDC  |
| <b>Master/Slave Control</b>   |  |
| Series Output   | MAX 2 units  |
| Parallel Output   | MAX 100 units  |
| <b>Environmental</b>  |  |
| Operating Temperature [2]   | 0~40°C   |
| Storage Temperature   | -20~70°C   |
| Temperature coefficient of readback value                             | 25ppm/°C (Voltage)   |
|   | 50ppm/°C (Current)   |
| Temperature coefficient of setting value                              | 50ppm/°C (Voltage)   |
|   | 100ppm/°C (Current)  |
| Relative Humidity   | <95%RH(non-condensing)@35°C, <80%RH(non-condensing)@40°C   |
| Altitude  | <2000m@40°C  |
| Fan Noise   | 45dB Idle;<br>75dB Max;  |
| <b>Mechanical</b>   |  |
| Dimensions(WxHxD)   | 423x88x615mm   |
| Package Dimensions(WxHxD)   | 635x280x905mm  |
| Unit Weight   | 30kg   |
| Shipping Weight   | 37kg   |
| <b>Miscellaneous</b>  |  |
| Over Voltage Category   | II   |
| Protection Class  | I  |
| Pollution Degree  | 2  |
| Insulation  | AC input <->DC output, 4242VDC, AC input <-> PE, 2818VDC   |

[1] For different input voltage standard option must be specified at the time of order as they are installed at the factory prior to shipment.

[2] It is recommended that the output current is derated by 10% when the operation environment is higher than 30°C.

[3] Load transient from 0% to 100% of rated output.

[4] Test value at 100% voltage and 100% power.

[5] Vrms @ 300kHz, Vpp @ 20MHz, Arms @ 300kHz.



| MODEL                                  | MS1000VDC6800W                   |  |
|--|----------------------------------|--|
| <b>Input</b>                           |                                  |  |
| Voltage <sup>[1]</sup>                 | 1P220 187~305Vac                 |  |
|  | 3P208 187~305Vac                 |  |
|  | 3P400 340~480Vac                 |  |
| Current <sup>[1]</sup>                 | 1P220 L-21A,N-42A                |  |
|  | 3P208 L1-37, L2,L3-21A           |  |
|  | 3P400 L1-21, L2,L3-12A           |  |
| Frequency                              | 45-65Hz                          |  |
| Connection                             | 1ph+PE/3ph+PE                    |  |
| Fuse (Internal) <sup>[1]</sup>         | 1P220 T30A*2PCS                  |  |
|  | 3P208 T30A*2PCS                  |  |
|  | 3P400 T20A*2PCS                  |  |
| Power Factor                           | >0.99                            |  |
| Input Power                            | 1P220 8KVAmx                     |  |
|  | 3P208 8KVAmx                     |  |
|  | 3P400 7.85KVAmx                  |  |
| Efficiency <sup>[1]</sup>              | 1P220 92.5%@1000V ,1P220 91%@27A |  |
|  | 3P208 92.5%@1000V ,3P208 91%@27A |  |
|  | 3P400 94%@1000V ,3P400 92.5%@27A |  |
| <b>Output</b>                          |                                  |  |
| Voltage Range                          | 0~1000V                          |  |
| Current Range <sup>[2]</sup>           | 0~27A                            |  |
| Power Range                            | 0~6800W                          |  |
| Max. Setup Range                       | Voltage                          | 0~1000V  |
|  | Current                          | 0~27A  |
|  | Power                            | 0~6800W  |
|  | Internal Resistance              | 0~1111 Ω   |
| Accuracy                               | Voltage                          | <0.1%Umax  |
|  | Current                          | <0.2%Imax  |
|  | Power                            | <0.5%+0.5%FS   |
|  | Internal Resistance              | R <2%Rmax, I < 0.3%Imax  |
| Line Regulation                        | Voltage                          | <0.02%Umax   |
|  | Current                          | <0.05%Imax   |
|  | Power                            | <0.05% Pmax  |
| Load Regulation <sup>[3]</sup>         | Voltage                          | <0.05%Umax @Rated Voltage, <0.1%Umax @Rated Current                        |
|  | Current                          | <0.15%Imax   |
|  | Power                            | <0.75% Pmax  |
| Rise Time                              | Voltage                          | <15ms(No Load) <85ms(Full Load)  |
| Drop Time                              | Voltage                          | <1700ms(No Load) <15ms(Full Load)  |
| Transient Response Time <sup>[4]</sup> | Voltage                          | <1ms (Voltage will recover to ±0.5% when the load changes from 10% to 90%) |
| Set Resolution                         | Voltage                          | 0.04V  |
|  | Current                          | 0.002A   |
|  | Power                            | 0.52W  |
|  | Internal Resistance              | 0.085Ω   |
| Display Resolution                     | Voltage                          | 0.01V  |
|  | Current                          | 0.001A   |
|  | Power                            | 0.1W   |
|  | Internal Resistance              | 0.001Ω   |
| Measurement Accuracy                   | Voltage                          | <0.1%Umax  |
|  | Current                          | <0.2%Imax  |
|  | Power                            | <0.5%Pmax  |
|  | Internal Resistance              | <0.4% Rmax   |

| MODEL   |         | MS1000VDC6800W   |
|---|---------|--|
| Ripple <sup>[5]</sup>   | Voltage | 1000mVpp/300mVrms  |
|   | Current | 27mArms  |
| Remote Compensation   |         | 5%Umax   |
| <b>General</b>  |         |  |
| Graphic Display   |         | 5" Color touch LCD   |
| Operation Key Feature   |         | Flippable touch screen, Rotary knob, USB port for transfer and upgrading firmware                        |
| Rack Mount Handles  |         | Yes  |
| FAN   |         | Temperature control  |
| Protection  |         | OVP, UVP, OCP, UCP, OPP, RMP protection parameters and other hardware protection such as OTP can be set. |
| Interface   |         | USB(Standard), RS232&LAN(Optional), GPIB(Optional), CAN(Optional)  |
| Command Response Time   |         | <3ms   |
| <b>Analog Interface / Industrial communication control (Optional)</b> |         |  |
| Industrial communication interface                                    |         | RS485  |
| Set Value Inputs  |         | Analog input 0~5V/0~10V or 0~5kΩ/0~10kΩ to set 0~105% voltage, current and power                         |
| Actual Value Output   |         | Analog output 0~5V/0~10V to monitor the voltage and current.   |
| Accuracy U/I/P/R  |         | <0.2% F.S  |
| Actual Output U/I   |         | <0.2%  |
| Control Signals   |         | DC ON/OFF, External control Enable/Disable   |
| Status Signals  |         | CV, OVP, OTP, OCP  |
| Sampling Rate of Input & Output                                       |         | 45Hz   |
| Galvanic Isolation to the Device                                      |         | 4242VDC  |
| <b>Master/Slave Control</b>   |         |  |
| Series Output   |         | Not supported  |
| Parallel Output   |         | MAX 100 units  |
| <b>Environmental</b>  |         |  |
| Operating Temperature <sup>[2]</sup>                                  |         | 0~40°C   |
| Storage Temperature   |         | -20~70°C   |
| Temperature coefficient of readback value                             |         | 25ppm/°C (Voltage)   |
|   |         | 50ppm/°C (Current)   |
| Temperature coefficient of setting value                              |         | 50ppm/°C (Voltage)   |
|   |         | 100ppm/°C (Current)  |
| Relative Humidity   |         | <95%RH(non-condensing)@35°C, <80%RH(non-condensing)@40°C   |
| Altitude  |         | <2000m@40°C  |
| Fan Noise   |         | 45dB Idle;<br>73dB Max;  |
| <b>Mechanical</b>   |         |  |
| Dimensions(WxHxD)   |         | 423x88x615mm   |
| Package Dimensions(WxHxD)   |         | 635x280x905mm  |
| Unit Weight   |         | 24kg   |
| Shipping Weight   |         | 31kg   |
| <b>Miscellaneous</b>  |         |  |
| Over Voltage Category   |         | II   |
| Protection Class  |         | I  |
| Pollution Degree  |         | 2  |
| Insulation  |         | AC input <->DC output, 4242VDC, AC input <-> PE, 2818VDC   |

[1] For different input voltage standard option must be specified at the time of order as they are installed at the factory prior to shipment.

[2] It is recommended that the output current is derated by 10% when the operation environment is higher than 30°C.

[3] Load transient from 0% to 100% of rated output.

[4] Test value at 100% voltage and 100% power.

[5] Vrms @ 300kHz, Vpp @ 20MHz, Arms @ 300kHz.

| MODEL                                  |  | MS1500VDC10000W  |
|--|--|--|
| <b>Input</b>                           |  |  |
| Voltage <sup>[1]</sup>                 | 3P208 187~305Vac<br>3P400 340~480Vac                                 |  |
| Current <sup>[1]</sup>                 | 3P208 L1, L2,L3-37A<br>3P400 L1, L2,L3-21A                           |  |
| Frequency                              | 45-65Hz  |  |
| Connection                             | 3ph+PE   |  |
| Fuse (Internal) <sup>[1]</sup>         | 3P208 T30A*2PCS<br>3P400 T20A*2PCS                                   |  |
| Power Factor                           | >0.99  |  |
| Input Power                            | 3P208 11.8KVAmx<br>3P400 11.5KVAmx                                   |  |
| Efficiency <sup>[1]</sup>              | 3P208 92.5%@1500V ,3P208 91%@27A<br>3P400 94%@1500V ,3P400 92.5%@27A |  |
| <b>Output</b>                          |  |  |
| Voltage Range                          | 0~1500V  |  |
| Current Range <sup>[2]</sup>           | 0~27A  |  |
| Power Range                            | 0~10000W   |  |
| Max. Setup Range                       | Voltage  | 0~1500V  |
|  | Current  | 0~27A  |
|  | Power  | 0~10000W   |
|  | Internal Resistance  | 0~1666 Ω   |
| Accuracy                               | Voltage  | <0.1%Umax  |
|  | Current  | <0.2%Imax  |
|  | Power  | <0.5%+0.5%FS   |
|  | Internal Resistance  | R <2%Rmax, I < 0.3%Imax  |
| Line Regulation                        | Voltage  | <0.02%Umax   |
|  | Current  | <0.05%Imax   |
|  | Power  | <0.05% Pmax  |
| Load Regulation <sup>[3]</sup>         | Voltage  | <0.05%Umax @Rated Voltage, <0.1%Umax @Rated Current                        |
|  | Current  | <0.15%Imax   |
|  | Power  | <0.75% Pmax  |
| Rise Time                              | Voltage  | <15ms(No Load) <90ms(Full Load)  |
| Drop Time                              | Voltage  | <1800ms(No Load) <15ms(Full Load)  |
| Transient Response Time <sup>[4]</sup> | Voltage  | <1ms (Voltage will recover to ±0.5% when the load changes from 10% to 90%) |
| Set Resolution                         | Voltage  | 0.04V  |
|  | Current  | 0.002A   |
|  | Power  | 0.76W  |
|  | Internal Resistance  | 0.15Ω  |
| Display Resolution                     | Voltage  | 0.01V  |
|  | Current  | 0.001A   |
|  | Power  | 0.1W   |
|  | Internal Resistance  | 0.001Ω   |
| Measurement Accuracy                   | Voltage  | <0.1%Umax  |
|  | Current  | <0.2%Imax  |
|  | Power  | <0.5%Pmax  |
|  | Internal Resistance  | <0.4% Rmax   |
| Ripple <sup>[5]</sup>                  | Voltage  | 1500mVpp/450mVrms  |
|  | Current  | 40mArms  |
| Remote Compensation                    | 5%Umax   |  |



| MODEL   | MS1500VDC10000W  |
|---|--|
| <b>General</b>  |  |
| Graphic Display   | 5" Color touch LCD   |
| Operation Key Feature   | Flippable touch screen, Rotary knob, USB port for transfer and upgrading firmware                        |
| Rack Mount Handles  | Yes  |
| FAN   | Temperature control  |
| Protection  | OVP, UVP, OCP, UCP, OPP, RMP protection parameters and other hardware protection such as OTP can be set. |
| Interface   | USB(Standard), RS232&LAN(Optional), GPIB(Optional), CAN(Optional)  |
| Command Response Time   | <3ms   |
| <b>Analog Interface / Industrial Communication Control (Optional)</b> |  |
| Industrial communication interface                                    | RS485  |
| Set Value Inputs  | Analog input 0~5V/0~10V or 0~5kΩ/0~10kΩ to set 0~105% voltage, current and power                         |
| Actual Value Output   | Analog output 0~5V/0~10V to monitor the voltage and current.   |
| Accuracy U/I/P/R  | <0.2% F.S  |
| Actual Output U/I   | <0.2%  |
| Control Signals   | DC ON/OFF, External control Enable/Disable   |
| Status Signals  | CV, OVP, OTP, OCP  |
| Sampling Rate of Input & Output                                       | 45Hz   |
| Galvanic Isolation to the Device                                      | 5250VDC  |
| <b>Master/Slave Control</b>   |  |
| Series Output   | Not supported  |
| Parallel Output   | MAX 100 units  |
| <b>Environmental</b>  |  |
| Operating Temperature [2]   | 0~40°C   |
| Storage Temperature   | -20~70°C   |
| Temperature coefficient of readback value                             | 25ppm/°C (Voltage)   |
|   | 50ppm/°C (Current)   |
| Temperature coefficient of setting value                              | 50ppm/°C (Voltage)   |
|   | 100ppm/°C (Current)  |
| Relative Humidity   | <95%RH(non-condensing)@35°C, <80%RH(non-condensing)@40°C   |
| Altitude  | <2000m@40°C  |
| Fan Noise   | 45dB Idle;<br>75dB Max;  |
| <b>Mechanical</b>   |  |
| Dimensions(WxHxD)   | 423x88x615mm   |
| Package Dimensions(WxHxD)   | 635x280x905mm  |
| Unit Weight   | 30kg   |
| Shipping Weight   | 37kg   |
| <b>Miscellaneous</b>  |  |
| Over Voltage Category   | II   |
| Protection Class  | I  |
| Pollution Degree  | 2  |
| Insulation  | AC input ↔DC output, 5040VDC, AC input ↔ PE, 2818VDC   |

[1] For different input voltage standard option must be specified at the time of order as they are installed at the factory prior to shipment.

[2] It is recommended that the output current is derated by 10% when the operation environment is higher than 30°C.

[3] Load transient from 0% to 100% of rated output.

[4] Test value at 100% voltage and 100% power.

[5] Vrms @ 300kHz, Vpp @ 20MHz, Arms @ 300kHz.

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