BriPower
POWER YOUR TEST

PRODUCT CATALOG

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BriPower

POWER YOUR TEST

PRODUCT CATALOG

Bi-Directional AC Sources

Bi-Directional DC Sources

Regenerative Loads

Custom Power Solutions

ABOUT BriPower

Nanjing Bridge New Energy Technology (Bridge Technology) was founded on Jan 12th, 2016, focusing on business of regenerative power supplies and electronic loads. We are devoted to providing high quality products and solutions for customers.
Our product brand is BriPower™

- Bi-directional AC sources
- Bi-directional DC sources
- Regenerative loads
- Custom Power Solutions





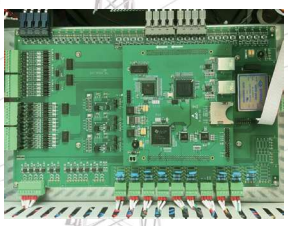


The BriPower™ AC&DC power systems are widely used in new energy and related fields.
Our Factory is on ISO Certified and The Quality Management System Confirms to the Standard GB/T19001-2016/ISO9001-2015.

Advanced Control Technology

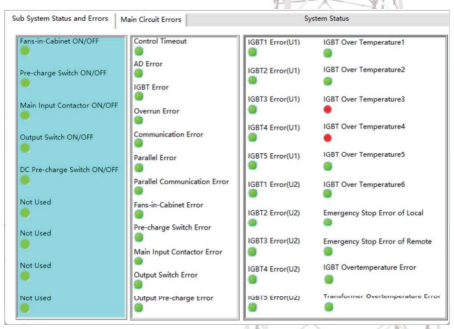
The BriPower power systems benefit from our unique control technology, which combines the advantages of DTC control technology and vector control technology, to achieve faster dynamic response performance and lower output ripple. This control technology uses intelligent neural filtering to effectively suppress the influence of external disturbances on the power supply's internal measurements, while recognizing system parameters at the microsecond level to make the optimal response.





High Reliability

The controllers inside BriPower power systems keep monitoring the key status and parameters, including the system input and output voltages and currents; the power components' voltages, currents, and temperatures, the DC- bus voltage, the communication connection status, the circuit breaker and contactor status, emergency stop status, etc.
This feature greatly improves the reliability of the power systems. And, when there is a failure, fast error locating is possible by checking the fault indicators. The troubleshooting time is nearly zero.



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> ZGX SERIES
AC/DC POWER SOURCE & LOAD



The ZGX series is a compact, modular, and fully integrated AC/DC source and electronic load. It utilizes a SiC-based, interleaved topology to achieve an effective switching frequency of 160kHz. The unit is equipped with compre hensive simulation capabilities for power electronics, in cluding grid simulation, regenerative AC/DC loading, BiPolar DC power supply operation, regenerative RLC load ing, and power amplification for Hardware-in-the-Loop (HIL) testing.

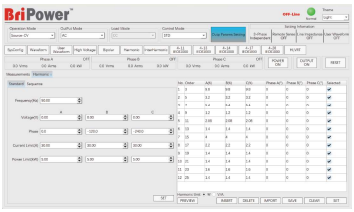
A single ZGX unit provides a maximum rated output power of 22.5kW within a compact 4U chassis with only 670mm depth design. It supports power expansion through a master-slave parallel interface. Its output ca pabilities are as follows: In AC mode, it can deliver up to 450V(L-N), 35A per phase, with a frequency range from DC to 1kHz. In DC mode, it can output 636V and 105A.

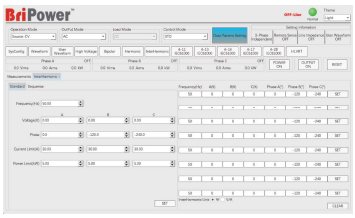
> Features

- Single-phase and selectable three-phase 208V, 230V, 380V, 400V (L-L) input
- AC, DC, and AC+DC output
- 4-Quadrant Operation
- Regenerative AC/DC source and load
- Regenerative RLC /RCD electronic load
- BiPolar DC power supply
- Single-phase/three-phase/split-phase/reverse-phase/ multi-channel output, each phase independently controllable
- Up to 100th harmonic waveform generation
- Supports low/high voltage ride-through and continuous fault ride-through
- Programmable phase angle jump
- Current-limiting output for short-circuit testing
- TTL trigger signal output with voltage or frequency changes
- Line impedance (RL) simulation
- Fast dynamic response
- High voltage output mode
- True current source
- User-defined waveforms
- Soft-start function, suppresses inrush current
- Low leakage current (<10mA)
- Compact design (67 cm depth), suitable for desktop installation
- SCPI communication
- Standard LAN interface
- USB interface on the front panel for file transfer
- Remote Sense
- Fault localization
- Remote emergency stop interface

Harmonic and inter-harmonic waveforms generation

The ZGX series utilizes a dual-DSP control architecture, delivering exceptional waveform generation capabilities that enable precise simulation of harmonics and inter-harmonics. Users can independently configure the amplitude and phase for up to the 100th harmonic relative to a 50Hz or 60Hz fundamental frequency, allowing flexible creation of various periodic distorted test waveforms. To enhance testing efficiency, the series also incorporates 30 preset harmonic distortion waveforms for quick user access, significantly streamlining the configuration process for complex test environments.

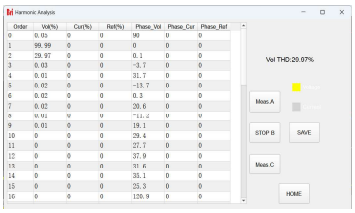






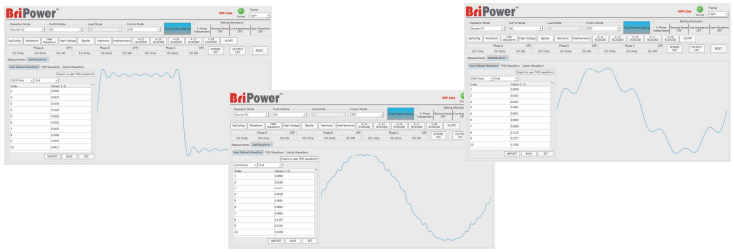
Harmonic Analysis

Supports real-time harmonic analysis of output voltage and current for each individual phase (A/B/C). The system provides precise measurements of individual harmonic content (%), phase angles, and Total Harmonic Distortion (THD).



User defined waveform

The ZGX series offers a flexible user-defined waveform function, supporting high-precision import and editing of waveforms with lengths of 1024, 2048, and 4096 points. This feature provides four waveform processing modes: full, 1/4 symmetric, symmetric, and asymmetric, and enables generation of harmonic and vector waveforms based on user-defined inputs. Edited waveform data can be saved and exported at any time, facilitating subsequent invocation and sharing.



High Voltage Mode

The ZGX series offers a High Voltage Mode that doubles the output voltage range compared to standard operation. This mode utilizes the unit's reverse phase output capability, with the phase angle between two outputs set to a 180-degree shift. In AC mode, it delivers 900V L-N from a 450V L-N range; when the frequency is set to 0, the output will be DC, and ZGX provides 1272Vdc output based on a 636Vdc range, meeting higher voltage testing requirements.

Regenerative Electronic Load

The ZGX Series power supplies integrate regenerative AC and DC elec tronic load functionality. In AC load mode, four operating modes are pro vided: Constant Resistance (CR), Constant Current (CC), Constant Power (CP), and Rectification. Constant Resistance (CR) mode can simulate three-phase resistive loads, allowing users to set resistance values for each phase individually and supporting sequence simulation function.

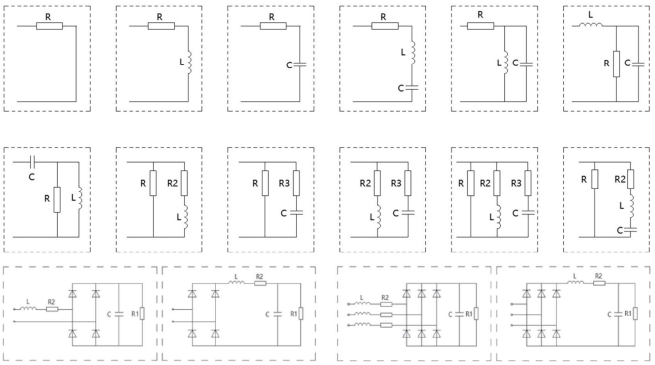
In CC Mode, it supports current and phase angle configuration, with a phase angle range of -360° to +360° to accurately simulate a full range of leading or lagging capacitive and inductive load characteristics; it also supports User-Defined Waveform input for advanced simulation of complex non-linear current loads. In CP Mode, the system utilizes a control architecture based on the independent and direct configuration of Active Power (P) and Reactive Power (Q), enabling intuitive and efficient four-quadrant power decoupled control. Rectification mode is suitable for non linear rectifier load testing, supporting pa rameter configuration under CC or CP mode, and allowing users to set the WF (waveform factor) parameter (range: 0-2.121, CF=WF*1.414)

In DC load mode, Constant Current (CC) and Constant Power (CP) operat ing modes are supported, featuring sequence simulation function, along with configurable output impedance and minimum operating voltage.

RLC/RCD Load

The ZGX series offers advanced RLC load simulation functionality, capable of accurately simulating complex impedance loads composed of resistance (R), inductance (L), and capacitance (C), thereby realistically replicating complex load conditions. The system supports 12 classic RLC topological structures and features independent per-phase programming capability, allowing R, L, and C parameters to be configured individually for each phase. Users can flexibly construct diverse load models according to testing requirements, making it suitable for a wide range of testing scenarios including three-phase power supplies, renewable energy inverters, motor drives, and grid simulation.

In addition, the ZGX provides four types of RCD nonlinear load simulation functions, designed specifically for performance testing and reliability evaluation of devices such as UPS systems, inverter power supplies, and frequency converters. It enables accurate simulation of the dynamic characteristics of nonlinear loads, comprehensively verifying the response performance and stability of the equipment under test in harsh real-world operating conditions.



BiPolar DC Power Supply

The ZGX series supports bipolar DC output functionality, offering both two-port and three-port connection modes to accommodate diverse testing and application requirements.

In two-port mode, users can flexibly select any two phases from the ABC three-phase system as output terminals and set their voltage polarity via software. For instance, phase A can be configured as the positive voltage output and phase B as the negative voltage output. The output polarity can be easily reversed by reconfiguring phase A as negative and phase B as positive, enabling rapid polarity switching.

In three-port mode, phase A serves as the positive voltage output terminal, phase B as the negative voltage output terminal, while the neutral terminals of phases A and B are connected together to serve as the protective earth (PE). This mode supports independent setting of positive and negative output voltages, allowing for either equal or unequal magnitude outputs, thus providing enhanced flexibility in voltage configuration.



High-Speed Dynamic Output Performance

The ZGX series delivers excellent dynamic output performance, with a voltage slew rate up to 3V/us and a current slew rate up to 0.4A/us, making it suitable for test applications that require stringent dynamic response.

In DC voltage mode under no-load conditions, both the rise time from 0 V to 636 V and the fall time from 636 V to 0 V are less than 200 µs. In current mode, the rise time from 0 A to 90% of full scale (FS) and the fall time from 90% FS to 0 A are each within 120 µs. The ZGX series is designed to meet the rigorous demands of high dynamic testing applications.



Low Leakage current

The ZGX power supply series features low leakage current. Under three-phase 220V (L-N) output conditions, the unit's ground leakage current remains below 10 mA, complying with international and domestic safety standards including IEC 60364-7-722, UL 2231, GB/T 18487.1-2023, and IEC 62752.

This characteristic makes it suitable for electric vehicle onboard charger (OBC) testing, as well as the testing and validation of various highly sensitive electrical equipment. It effectively prevents unintended tripping of RCD protection circuits, ensuring safe and stable testing operations.

Power Hardware-in-the-Loop

The ZGX series operates in four-quadrant mode with an output frequency range from DC to 1 kHz and a small-signal bandwidth of 10 kHz, featuring rapid dynamic response capabilities. An optional analog programming interface (Model: EXDA) is available, providing an output response time of less than 20 µs. Its performance meets the technical requirements for power amplifiers in Power Hardware-in-the-Loop (PHIL) testing applications, making it suitable for such scenarios.

EXDA Analog & Digital IO Extension Box

EXDA Analog & Digital IO Extension Box is an expansion interface unit designed for the BriPower ZGX series power supplies, developed to extend system capabilities in communication, control, and measurement.

The unit offers 8 analog input channels, 4 analog output channels, 4 digital input channels, 4 digital output channels, 3 LAN ports, and 2 COM communication interfaces, with support for functional customization. Analog channels provide a sampling rate of 500kHz and signal transmission delay below 20µs. All interfaces are electrically isolated to ensure signal integrity and system reliability.

In Power Hardware-in-the-Loop(PHIL) applications, EXDA amplifies analog input signals for realtime emulation, driving the ZGX power supply to reproduce corresponding voltage or current waveforms. It simultaneously monitors actual output via analog output channels, enabling closedloop test validation. The unit is suitable for realtime simulation and testing in applications such as renewable energy grid integration, motor drive emulation, and microgrid systems.





Power Expansion

The ZGX series supports master-slave parallel operation for power expansion. A single standard ZGX unit delivers up to 22.5 kW, and the system supports parallel connection of up to 10 units of the same model.Beyond the standard ZGX units (15kW, 20kW, and 22.5kW) which support parallel operation of up to 10 units, we offer factory-configured highpower systems. These systems integrate up to ten 15kW/20kW/22.5kW power modules under a single centralized controller. This architecture allows for secondary expansion, enabling up to 10 of these integrated systems to be paralleled for massive power requirements.

COMTRADE Waveform Playback

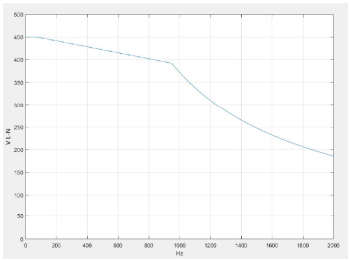
Supports importing standard COMTRADE format files (.cfg and .dat), analyzes transient waveform data and controls the power supply to output corresponding analog voltage/current signals in AC CV/CC mode. It allows users to customize the mapping between signal channels in configuration files and power output phases for flexible signal routing, and set scaling factors for waveform data - the system converts the values in COMTRADE files into voltage/current signals for output in proportion to the set factors. Features include adjustable output scaling factors/ sampling periods, waveform zoom in/out, pan, and one-click reset controls for flexible simulation requirements.

Combined Split-Phase Mode

The -CSP option for the ZGX series enables a high-efficiency power scaling mode for split-phase requirements with simplified connectivity. It aggregates the internal three-phase outputs of an individual unit for current multiplication, pairing it with a second ZGX unit at a 180° phase offset. This configuration delivers a high-power split-phase output (L1-L2-N) suitable for heavyduty testing.

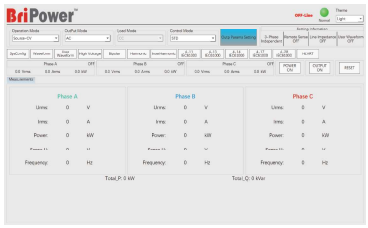
Voltage Derating vs. Frequency

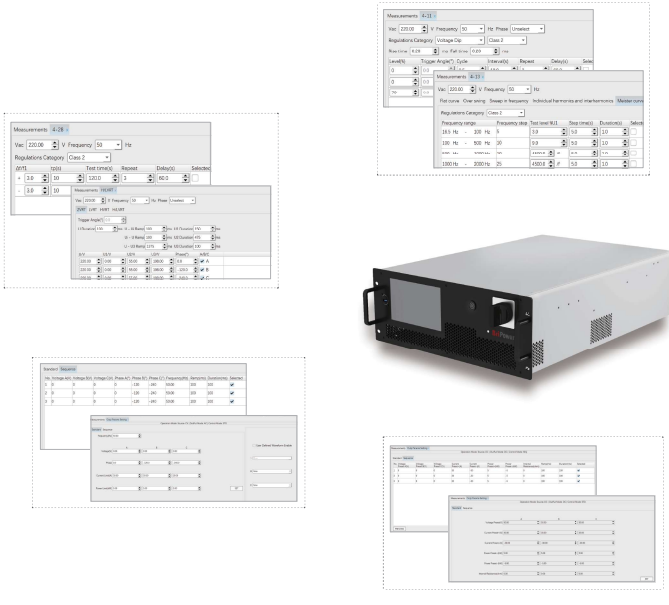
The ZGX series delivers a 450V rated output up to 100Hz, derating to 400V at 800Hz, 385V at 1kHz, and 185V at 2kHz (-HF option) as frequency increases.



User-Friendly GUI Software

The ZGX series comes standard with a graphical user interface (GUI) software that enables remote control, programming communication, and real-time monitoring. The software provides functions including system configuration, output mode and parameter settings, data measurement, and waveform display. It also integrates test items with IEC 61000-4-11, IEC 61000-4-13, IEC 61000-4-17, and IEC 61000-4-28 standards, and supports high-voltage and lowvolt-age ridethrough (HVRT/LVRT) testing.





Output Ranges

Model			ZGX 15	ZGX 20	ZGX 22.5
Output Power Range			15KW	20KW	22.5KW
Output Voltage Range	AC Source and Load		0~450V L-N@0.01~100Hz; 0~400V L-N@100~800Hz; 0~385V L-N@800~1000Hz. 0~185V L-N@1k~2kHz (-HF option)		
	DC Source and Load		0~636V		
Output Current Range	AC Source and Load	Single-Phase Mode	0~90A	0~105A	
		3-Phase Mode	0~30A/ph	0~35A/ph	
	DC Source and Load	Single Channel	-30A~30A	-35A~35A	
		Three Channels in Parallel	-90A~90A	-105A~105A	
High Voltage Mode - AC (Single-phase mode only)	Output Voltage Range		0~900V@0.01~100Hz; 0~800V@100~800Hz; 0~770V@800~1000Hz. 0~370V@1k~2kHz (-HF option)		
	Output Current Range		0~30A	0~35A	
High Voltage Mode - DC	Output Voltage Range		0~1272V		
	Output Current Range		-30A~30A	-35A~35A	
Bipolar DC Output	Output Voltage Range	Positive Voltage	636V		
		Negative Voltage	-636V		
	Output Current Range		-30A~30A	-35A~35A	

Note: In AC+DC mode, the output power, voltage, and current ranges are the same as those in DC mode.

General Specifications

AC input	
Voltage	1ø, 220VL-N, 230VL-N; 3ø, 3P+GND, 380VL-L, 400VL-L
Frequency	47-63Hz
Efficiency	≥90%
Power Factor @ Rated Power	>0.99
THDi	<1%
Output	
Output Mode	AC, DC or AC+DC
Load Regulation	0.1%FS
Line Regulation	0.10%
AC Mode	
Frequency Range	0.01 ~ 1000Hz
Phase Angle	Phase B/C relative to phase A, 0.0~360.0°
THD	<0.5% @DC~400Hz; <1% @400~1000Hz (measured at 250VL-N, Resistive Load)
Harmonic Generation	100th@50/60Hz; 25th@400Hz
Voltage Slew Rate	≤3V/us
Current Slew Rate	≤0.4A/us
Small-Signal bandwidth	10kHz
Power Accuracy	0.2%FS
Voltage Accuracy	0.1%FS
Current Accuracy	0.4%FS(<30Hz); 0.2%FS(30~350Hz); 0.3%FS(350.01~500Hz); 0.3%+(0.7%*kHz)FS(500.01~1000Hz)
Frequency Accuracy	0.01%+0.01Hz
Phase Accuracy	<1° (@50Hz)
Power Resolution	0.001kW
Voltage Resolution	0.1V
Current Resolution	0.01A
Frequency Resolution	0.01Hz (~100Hz), 0.05Hz (>100Hz)
Phase Resolution	<0.1°
Leakage Current	<10mA @230V L-N
DC Mode	
Operating Mode	CV, CC, CP, CR, Bipolar DC Output
Voltage Accuracy	0.1%FS
Voltage Resolution	0.1V
Current Accuracy	0.1%FS
Current Resolution	0.01A
Voltage Ripple	0.1%FS

Measurement	
AC Source Measurement Accuracy	0.2%FS
AC Voltage Measurement Accuracy	0.1%FS
AC Current Measurement Accuracy	0.1%FS(<30Hz); 0.2%FS(30~350Hz); 0.1%+0.3%FS(350.01~500Hz); 0.3%+(0.7%*kHz)FS(500.01~1000Hz)
DC Voltage Measurement Accuracy	0.1%FS
DC Current Measurement Accuracy	0.1%FS
Frequency Measurement Accuracy	0.01%+0.01Hz
RLC/RCD Load	
R	Range: 0.1~1000Ω. Resolution: 0.1Ω. Accuracy: ±0.1%FS
L	Range: 0.01~500mH. Resolution: 0.01mH. Accuracy: ±0.1%FS
C	Range: 0.001~50mF. Resolution: 1uF. Accuracy: ±0.1%FS
Others	
Standard Interfaces	LAN
Protection	OVP, OCP, OPP, OTP
IP Ingress protection	IP21
Cooling	Forced Air Cooling
Temperature	Operating: 0~40°C Storage: -20~85°C
Operating Humidity	20-90%RH (None Condensing)
Dimensions (W *D * H, mm)	440*670*178
Weight (kg)	ZGX 5: <40kg ZGX 15: About 47kg ZGX 20: About 50kg ZGX 22.5: About 50kg

1. When a single-phase input is used, the rated three-phase output power of the ZGX 15, ZGX 20, and ZGX 22.5 models is reduced to 5.0 kW, 6.6 kW, and 7.5 kW, respectively.
2. The optional 208/230V L-L, three-phase input is offered exclusively on the ZGX5 and ZGX15.

Options

-S	Slave Unit, only available for ZGX15 and ZGX20
-EXDA	Analog & Digital IO Extension Box
-HF	Expand the frequency to 2000Hz
-CSP	Combined Split-Phase Mode

AC Input Configuration

/380, Input Voltage 380VLL±10%, 3P+PE

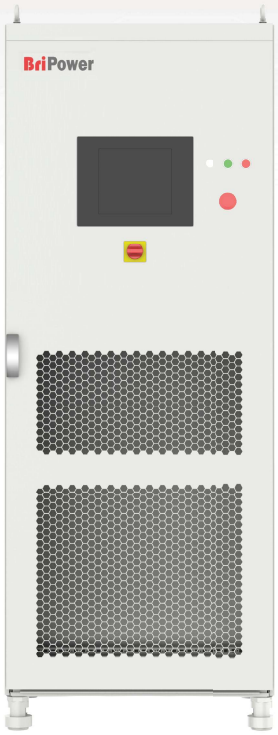
/400, Input Voltage 400VLL±10%, 3P+PE

/480, Input Voltage 480VLL±10%, 3P+PE

/208, Input Voltage 208VLL±10%, 3P+PE

/230, Input Voltage 230VLL±10%, 3P+PE

KGS SERIES
SIC AC/DC POWER SOURCE & LOAD



The BriPower KGS series is a high-performance AC/DC power source/load, using SiC MOSFET PWM technology, which contains multi output power levels from 15kVA to 1080kVA. With an output frequency range from DC to 5kHz, max output 450VL-N.

KGS series uses bi-directional design, which makes it possible to be used as grid simulator to test distributed generation systems. KGS Series is well suited for aerospace applications. Remote control interfaces and SCPI command language are provided for easy integration into ATE systems.

KGS series adopts dual DSP+FPGA design, with powerful calculation and control capabilities, and can display and save measured values at 10k/s sampling. The KGS series adopts optical fiber communication and performs multiple monitoring and protection of all main components, communication connections and systems. It is a reliable power supply product.

With touch panel on the front panel, users can control the power source through GUI software. System status indicators and emergency stop button are installed on the front panel. RS485, LAN and analog control interfaces are available for automated test applications.

Features

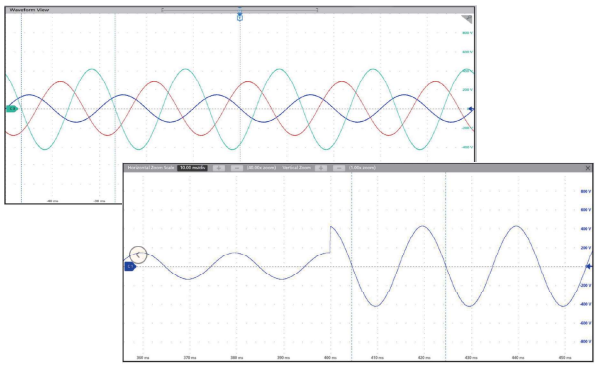
- Modular design, output power from 15kVA to 1080kVA
- Bi-directional AC/DC power source, seamless transition between source and sink modes
- Regenerative AC/DC load function
- Output: AC, DC, AC+DC
- Independent three-phase output, which can be configured as single-phase output
- Max output 450V L-N within output frequency range from DC to 5kHz
- Frequency Range: DC~ 5kHz max
- Up to 100th harmonic waveform generation,interharmonic generation
- Trigger out, TTL signal output for voltage or frequency change
- AC output, ON/OFF output phase angle can be programmed
- Using true current feedback control when working in CC mode
- RLC Load Simulation & RCD Load Simulation
- Current limit can be programmed, output can be shorted for short circuit test
- Bi-Polar DC Source (-BP option)
- Analog signal input for use as a power amplifier (delay ≤ 20μs)
- 30 Built-in harmonic waveforms
- Soft start: effectively restrain the impulse current when power on
- TFT-Touch panel operation
- Master-Slave interface
- LAN, RS485, Analog control interface
- Emergency stop button and indicators on front panel
- Mod-bus/ASCII protocols
- CE conformity
- 13 months warranty

Grid Simulation

KGS series is comprehensive, fast dynamic grid simulator for distributed generation system testing, such as the electrical characteristics of energy storage PCS, PV inverter, etc. The simulation functions include voltage and frequency fluctuation, voltage drop, high voltage ride through, low/zero voltage drop, three-phase unbalance, harmonic and inter-harmonic etc. The KGS series meets the requirements of grid tied DG regulations testing, such as: grid voltage abnormality test, grid frequency abnormality test, high voltage ride through test, low/zero voltage ride through test, anti-islanding test, etc. KGS series provides GUI software to simulate various real-world power grid operating conditions.

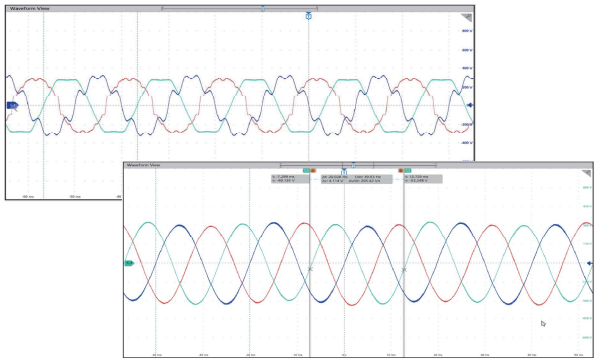
• Voltage/frequency sequence programming

The KGS series provides voltage and frequency sequence programming function. The parameters such as output voltage, frequency, slew rate, ON/ OFF output phase angle, duration time, switching time are programmable, and three phases are independent for settings.



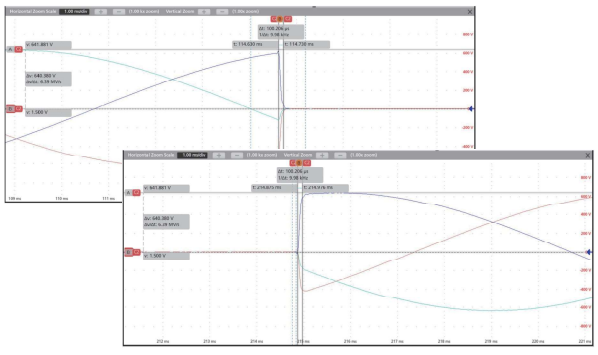
• Harmonic and inter-harmonic waveforms

Dual DSP+FPGA technology is use in KGS series to generate up to 100th harmonic. KGS series supports inter-harmonics editing. Users can program the phase angle and amplitude of the harmonic through the GUI, allowing generate three-phase harmonic/inter harmonic waveforms independently.



• Fast dynamic — Voltage drop simulation (LVRT test)

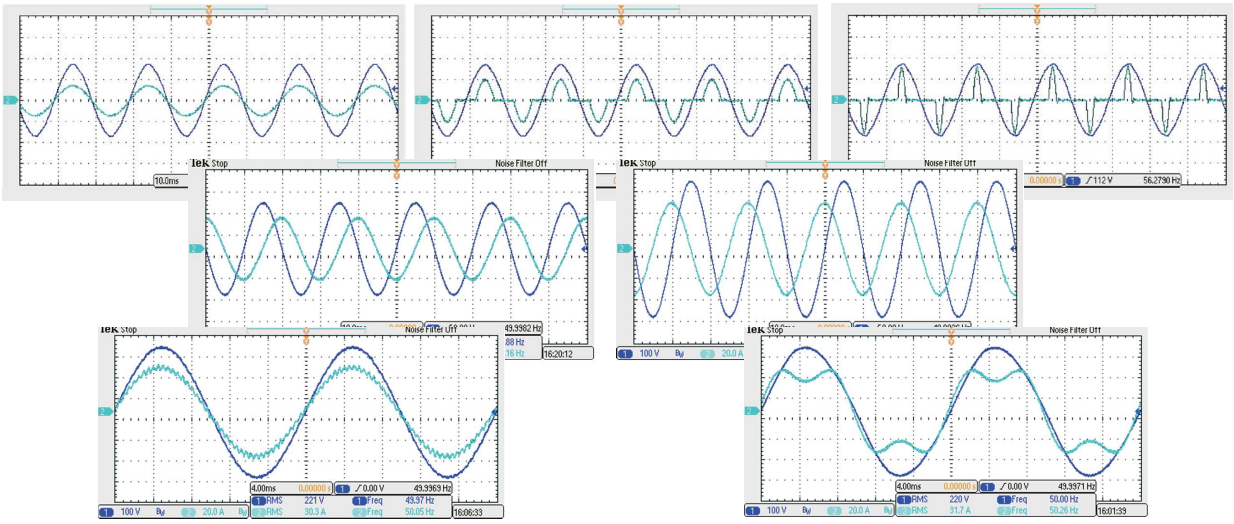
KGS series provides firmware and software support for low/zero voltage ride through tests.



Note: above test waveforms were measured under resistive load.

Re-generative AC Load[1]

In the regenerative AC load mode, CR mode, Rectifier mode, and CC/CP phase lead/lag mode are available. CR mode is used to simulate three-phase resistive loads, the CR mode and three-phase resistance parameters can be set through the panel and can realize the program of resistance sequence. Rectifier mode can be used to simulate non-linear loads, the CC/CP mode and CF (setting range: 1.414~3) parameters can be set through the panel. In CC Mode, it supports current and phase angle configuration, with a phase angle range of -360° to +360° to accurately simulate a full range of leading or lagging capacitive and inductive load characteristics; it also supports User-Defined Waveform input for advanced simulation of complex non-linear current loads. In CP Mode, the system utilizes a control architecture based on the independent and direct configuration of Active Power (P) and Reactive Power (Q), enabling intuitive and efficient four-quadrant power decoupled control.
Regenerative DC electronic load mode is also available with the KGS series, which provides CV, CC, CP, and CR operation modes.



Current Source Mode

The KGS Series uses true current feedback control when working in Current source mode. It is different from power supplies using voltage feedback with constant current mode, which is called voltage controlled current. The voltage controlled current power supplies maintain setting current value by adjusting output voltage and have relatively long response time to sudden impedance changes, which typically results in dynamic current overshoot or undershoot as the load impedance changes. KGS series working in CC mode does not have such problem and will always maintain the current at the setting value, regardless of transient load conditions.

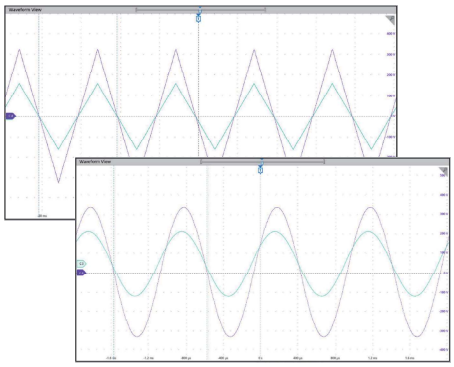
Bi-Polar DC Source (-BP option)

The KGS series supports bipolar DC output functionality, offering both two-port and three-port connection modes to accommodate diverse testing and application requirments.
In two-port mode, users can flexibly select any two phases from the ABC three-phase system as output terminals and set their voltage polarity via software. For instance, phase A can be configured as the positive voltage output and phase B as the negative voltage output. The output polarity can be easily reversed by reconfiguring phase A as negative and phase B as positive, enabling rapid polarity switching.In three-port mode, phase A serves as the positive voltage output terminal, phase B as the negative voltage output terminal, while the neutral terminals of phases A and B are connected together to serve as the protective earth (PE). This mode supports independent setting of positive and negative output voltages, allowing for either equal or unequal magnitude outputs, thus providing enhanced flexibility in voltage configuration.

1. KGS can still output a stable and reliable current waveform even when the input voltage is not pure sine wave or the sine wave has large distortion.

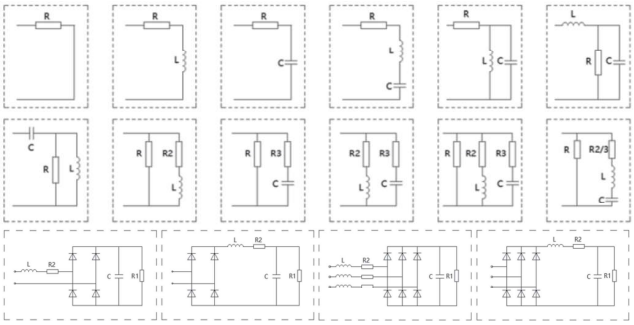
Power Amplifier Function (analog signal input)

The KGS is a power amplifier with high dynamic response and bandwidth. The delay between input external signal and power source output ≤ 20 μs.



RLC/RCD Load Simulation

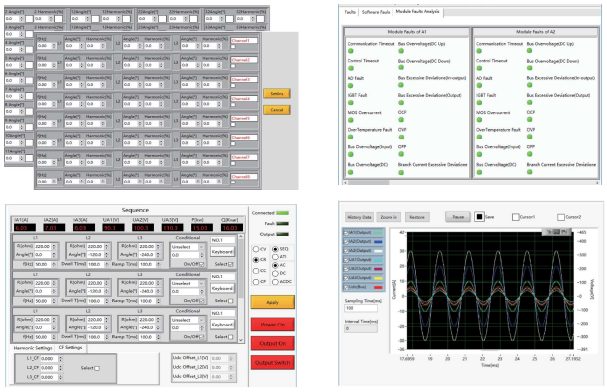
The KGS series provides RLC load simulation mode, which simulates the impedance of the combinations of R, L and C components. The three phases are independently programmable, and the R, L, C values can be set respectively. KGS provides RCD non-linear load simulation function for testing UPS power supplies, inverters, etc. The KGS has four built-in RCD electrical topologies, 3- phase independently programmable, with individually programmable R, L and C parameter values.



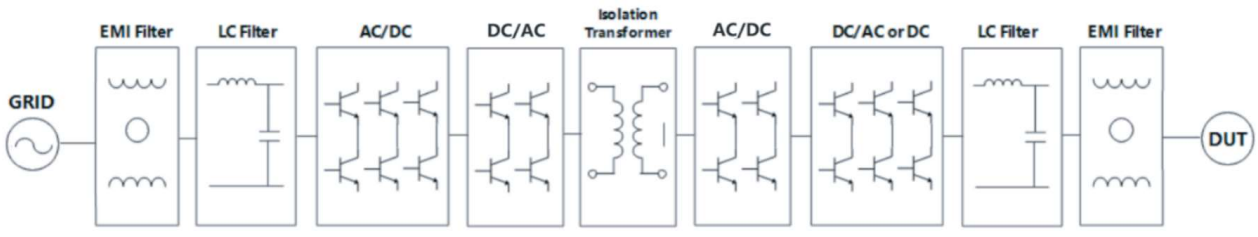
Graphical User Interface

GUI software is installed in front touch panel, which uses Windows OS. The software provides following functions:

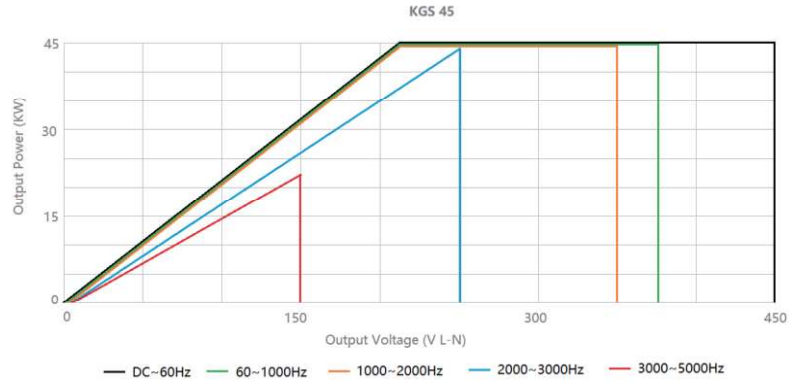
- Output limits and settings
- Sequence output settings: The output phase voltage, angle, frequency, ON/OFF phase angle, dwell time, switching time and other parameters of the power supply can be set.
- Real time display measurements: voltage, current, power, etc.
- Generate harmonic and inter-harmonic waveforms: Up to 100th harmonic waveform generation, inter-harmonic generation
- Capture, display and save output voltage and current waveforms
- Display power source faults

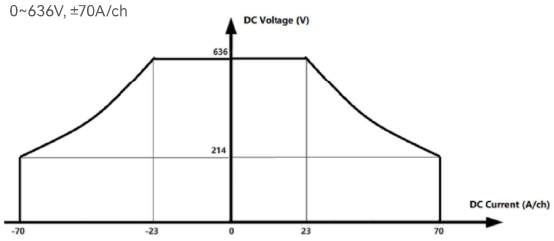


Block Diagram



General Specification

AC input	
Voltage	3P+N+PE, 380VLL±10%(std)
Frequency	47~63Hz
Efficiency	≥85%
Power Factor	0.99
THDi	<3%FS
Output	
Output Modes	AC, DC, or AC+DC
Power Level	From 15kVA to 1080kVA
Load Regulation	0.1%FS
Line Regulation	0.1%FS
AC Output	
Voltage & Current Range (max output per 15KW module)	Max 450V L-N, 70A @ DC~65Hz Max 375V L-N, 70A @ 65~1000Hz Max 350V L-N, 70A @ 1000~2000Hz Max 250V L-N, 60A @ 2000~3000Hz Max 150V L-N, 50A @ 3000~5000Hz 
Phase Angle Range	Phase B/C relative to phase A, 0.0~360.0°
Frequency Range	DC~5000Hz
Small signal bandwidth	10kHz
THD	<0.3% @15~50Hz (measured at 250V L-N, Resistive Load) <0.4% @50~500Hz (measured at 250V L-N, Resistive Load) <0.7% @500~2000Hz (measured at 250V L-N, Resistive Load) <1% @2000~4000Hz (measured at 100V L-N, Resistive Load) <2% @4000~5000Hz (measured at 100V L-N, Resistive Load)
THD	Up to 100th @50/60Hz Harmonic accuracy: 1%FS Within 50th: total harmonic content ≤ 100%; Within 100th: total harmonic content ≤ 30%
Voltage Slew Rate	≥5V/us
Current Slew Rate	≥0.5A/us
Current Peak Factor	1 ~ 3
Power Accuracy	DC~45Hz: 0.3%FS; 45~70Hz: 0.1%FS; 70~2KHz: 0.3%FS
Voltage Accuracy	DC~45Hz: 0.2%FS; 45~70Hz: 0.1%FS; 70~2KHz: 0.2%FS
Current Accuracy	DC~45Hz: 0.3%FS; 45~70Hz: 0.1%FS; 70~2KHz: 0.3%FS
Frequency Accuracy	0.01%FS+0.01Hz
Phase Angle Accuracy	DC~45Hz: <1°; 45~70Hz: <0.1°; 70~2KHz: <1°
Power Resolution	0.001kW
Voltage Resolution	0.1V
Current Resolution	0.01A
Frequency Resolution	0.01Hz (~100Hz); 0.05Hz (>100Hz)

DC Output	
Voltage & Current Range (max output per 15KW module)	0~636V, ±70A/ch 
Voltage Accuracy	0.1%FS
Current Accuracy	0.1%FS
Voltage Ripple	0.1%FS
AC+DC Mode	Max Power, Voltage and Current are the same as DC Mode
RLC/RCD Load Simulation [2]	
R	Range: 0.1~1000Ω. Resolution: 0.1Ω. Accuracy: ±0.1%FS
L	Range: 0.01~500mH. Resolution: 0.01mH. Accuracy: ±0.1%FS
C	Range: 0.001~50mF. Resolution: 1uF. Accuracy: ±0.1%FS
Others	
Standard Interface	LAN/RS485/ATI
Protection	OVP, OCP, OPP, OTP
IP Ingress protection	IP21
CE Conformity	EN 62040-1, EN 62040-2
Cooling	Forced Air Cooling
Temperature	Operating: 0~40℃ Storage: -20~85℃
Operating Humidity	20-90%RH (None Condensing)

Standard Models Specification

Model	Output Power	Max AC Output	Max DC Output	Dimension (W*D*H mm)	Weight(kg)
KGS 15	15kVA	450V L-N, 70A	0~636V, ±70A	800*900*1100	300
KGS 45	45kVA	450V L-N, 70A/ph	0~636V, ±70A	800*900*1500	460
KGS 90	90kVA	450V L-N, 140A/ph	0~636V, ±140A	900*900*2200	900
KGS 135	135kVA	450V L-N, 210A/ph	0~636V, ±210A	1600*900*1800	1050
KGS 180	180kVA	450V L-N, 280A/ph	0~636V, ±280A	1600*900*2200	1200
KGS 270	270kVA	450V L-N, 420A/ph	0~636V, ±420A	2400*900*2200	1800
KGS 360	360kVA	450V L-N, 560A/ph	0~636V, ±560A	3200*900*2200	2400
KGS 450	450kVA	450V L-N, 700A/ph	0~636V, ±700A	4000*900*2200	2900
KGS 540	540kVA	450V L-N, 840A/ph	0~636V, ±840A	4800*900*2200	3600

Note: Total weight < 1400KG, the cabinet bottom is wheel structure; otherwise, it is channel steel structure.
The current above is the 3-phase output current, when configured as single-phase output, the output current extended to 3 times.

Options

-BP	Bi-Polar DC Source
-HV900	Increase output voltage to 900V L-N, consult factory

AC Input Configuration[3]

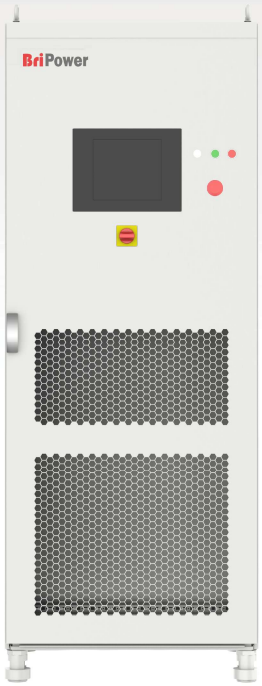
Please specify the input voltage (L-L)
/380, Input Voltage 380VLL±10%, 3P+N+PE/3P+PE
/400, Input Voltage 400VLL±10%, 3P+N+PE/3P+PE
/480, Input Voltage 480VLL±10%, 3P+N+PE/3P+PE

Model Configuration

KGS AAA-BBB/CCC
AAA: Power, kVA
BBB: Option
CCC: Input configuration

2. Measured at 50/60Hz.
3. Other AC input is available, please consult factory.

ESA SERIES HIGH-POWER AC POWER SUPPLY



The ESA Series high-power AC power supply features a modular design with optional functions, delivering highly configurable power solutions, offering flexible output performance and multiple control methods, including communication interfaces and graphical software, to meet diverse testing and power supply requirements. ESA Series is widely used in applications such as new energy testing, power electronics R&D, motor drive systems, industrial manufacturing, and scientific research.

Product Features

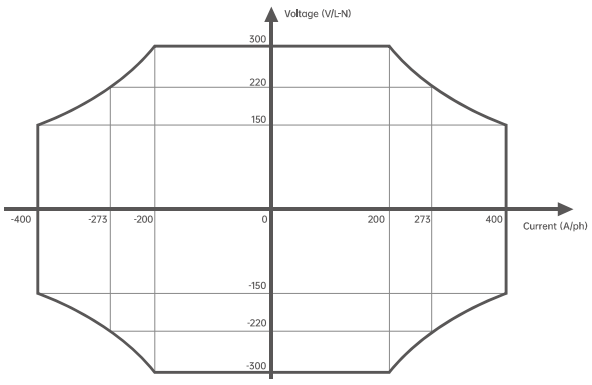
- Configurable output power, voltage, current, and frequency ranges
- Master-slave parallel operation for system expansion
- Programmable voltage/frequency sequences via GUI with controllable slew rates
- Optional DC output mode
- Built-in soft-start function to suppress inrush current
- Custom waveform output (clipped wave, rectified wave)
- Optional air-cooling or liquid-cooling configurations
- Grid simulator
- Regenerative electronic load
- RLC electronic load
- Touchscreen with GUI software
- LAN and RS485 interfaces
- Optional analog I/O interfaces
- Modbus and SCPI protocol
- Remote sense

Four-Quadrant Operation

The "-R" option provides four-quadrant operation, allowing for bidirectional energy flow.

Highly Configurable Output Performance

A core competency of the BriPower ESA series is the ability to configure output power, voltage, and current ranges according to specific customer application requirements. For applications demanding wide-range output, the systems can be tailored to enable precise control over either high-voltage/low-current or low-voltage/high-current operation.



ESA 180KVA,300V,400/ph Output IV Curve

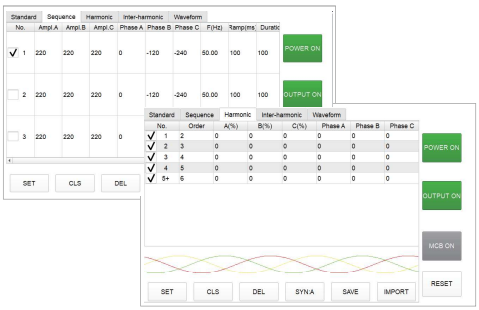
Grid Simulator

The ESA Series with the -R option functions as a grid simulator via its four-quadrant operation, capable of compliance testing for distributed generation. Key capabilities include simulating voltage and frequency fluctuations, dips, (LVRT/HVRT), three-phase unbalance, and harmonics.

- **Three-Phase Independent Output**
- **Programmable Voltage/Frequency/Phase Sequences**
- Up to 50th Harmonic Waveform Generation
- **LVRT/HVRT and continuous fault ride-through**
- **Islanding Mode:**
  RLC load simulation for anti-islanding testing
- **Programmable Phase Angle Jumps**
- **Current-Limited Output Mode:**
  Supports short-circuit testing at output terminals
- **TTL Trigger Signal Output:**
  Activates during voltage/frequency transitions
- **Line Impedance (RL) Simulation**

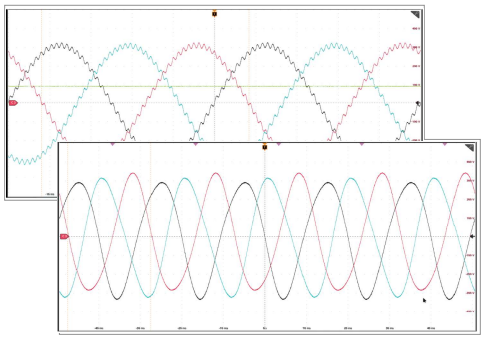
Programmable Voltage/Frequency/Phase Sequences

The GUI allows precise programming of output parameters including voltage, frequency, slew rates, and phase angles with full independent control over all three phases.

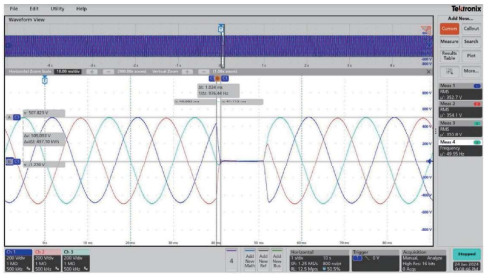


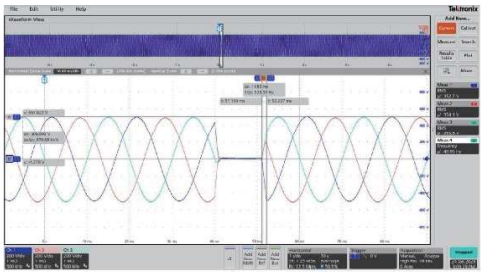
Harmonic & Interharmonic Generation

The ESA Series generates harmonics up to the 50th order and supports interharmonic editing. The GUI software allows precise programming of phase angles and amplitudes, allowing for independent three-phase waveform generation.



High/Low Voltage Ride-through





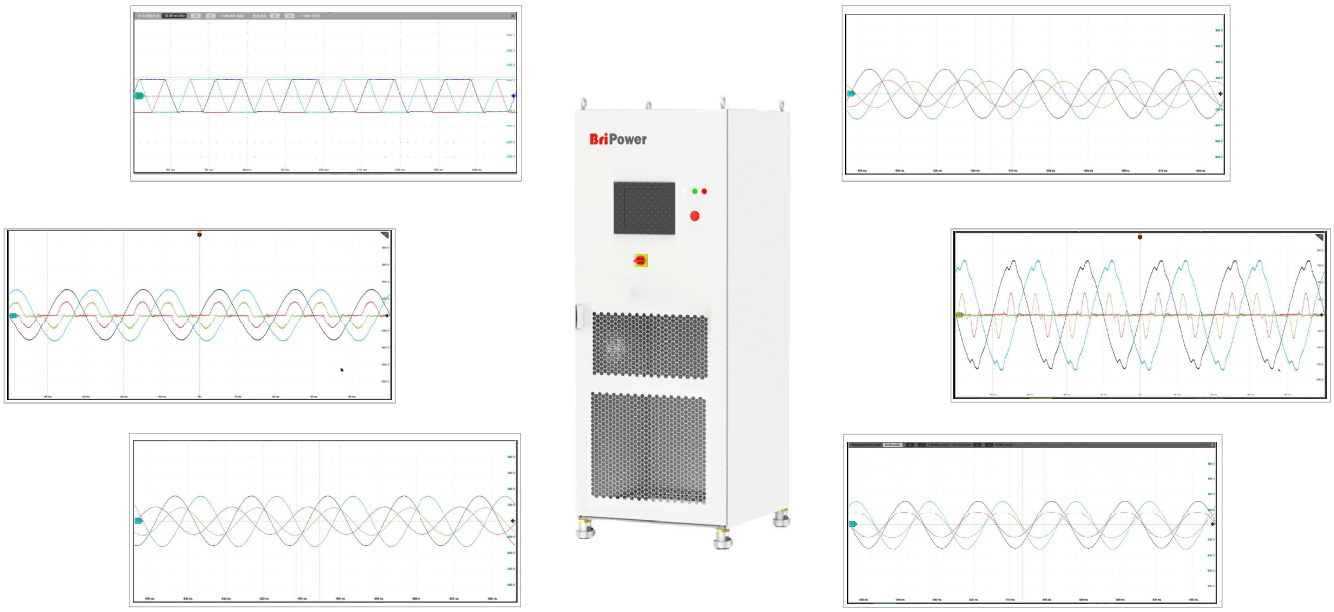
Re-generative AC Load (-LD option) [1,2]

With the -LD option, the ESA Series operates as a regenerative AC load, featuring four operational modes:

Constant Resistance (CR) Mode: Simulates three-phase resistive loads. Users can configure CR mode and set three-phase resistance parameters , enabling resistance sequence simulation.

Constant Current (CC) & Constant Power (CP) Modes: Simulate sinusoidal current loads. Users can adjust load current/power and phase angle (adjustable from90° to -90°), replicating leading/lagging voltage-current phase relationships in inductive/capacitive loads.

Rectifier Load Simulation Mode: Designed for nonlinear rectifier load testing. Users can configure CC/CP modes and set waveform parameters (e.g., Waveform Factor:0-2.121, CF=WF*1.414) .



Extends to Independent DC output (-DC option)

DC output mode is available with the -DC option. The output will be DC and AC 0~100Hz. There is up to 50% output power and current derating below 30Hz.

Line impedance (RL) Simulation (-IMP option)

-IMP option is designed to simulate line impedance by setting R and L value. The setting range is: Rmax=0.2Urated/Irated; Lmax=Rmax/314

1. ESA-LD as regenerative eLoad is design for sine waveform input, if the input is not a pure sine waveform, the output current waveform could be distorted. The -LD option must be used in combination with the -R option.
2. When WF=1, the output waveform is a sine wave; when WF<1, the output waveform is a clipped wave; when WF>1, the output waveform is a rectified wave.

PQ Control Mode (Active / Reactive Power Control)

The PQ mode enables independent decoupled control of Active Power (P) and Reactive Power (Q), allowing for precise bi-directional energy flow and power dispatching across all four quadrants. This functionality is engineered for highlevel power system research and equipment validation:

- **Distributed Energy Resource (DER) Simulation:**
  By configuring high-precision power schedule curves, the system authentically replicates the dynamic output fluctuations of solar or wind power caused by environmental variables.
- **Flexible Distribution & Microgrid Interconnection:**
  Specifically designed for testing Solid State Transformers (SST) and Soft Open Points (SOP), the mode accurately simulates power transfer and load balancing between different grid sectors.
- **Uninterrupted Operation Under Grid Faults:**
  The system demonstrates superior grid resilience, maintaining continuous operation without tripping even if a single-phase metallic grounding fault occurs at either the input or output grid terminals, ensuring the integrity of long-term testing data.

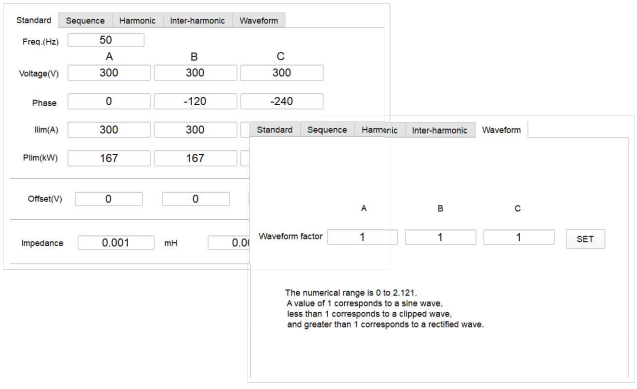
Fixed Phase Difference Mode

The MVGS series includes a specialized Fixed Phase Difference Mode optimized for grid simulation, where the output terminal serves as a simulated grid environment:

- **Precision Phase Tracking:**
  The output voltage phase dynamically tracks the input voltage phase, maintaining a stable and constant angle difference.
- **Operational Stability:**
  The system ensures this precise phase relationship is maintained regardless of the transferred power, guaranteeing that the Equipment Under Test (EUT) operates reliably during power transfer simulations between different grid segments.
- **Advanced Fault Robustness:**
  The system is designed for high reliability and will remain operational without tripping, even in the event of a single-phase grounding fault on either the connected input or output grid lines.

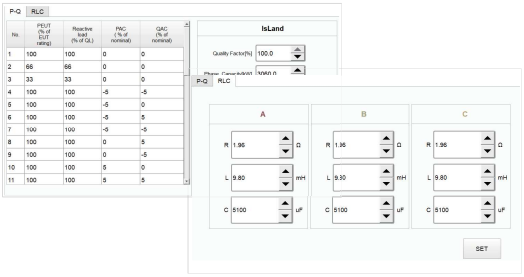
Custom waveform

Custom waveforms including clipped sine wave and rectified wave are available with ESA series. The waveform is programmable by modifying waveform factor. Waveform factor (WF) refers to the ratio of the peak value of a custom waveform to that of standard sine wave. When WF=1, the output waveform is a sine wave; when WF<1, the output waveform is a clipped wave; when WF>1, the output waveform is a rectified wave.This function is available in CV mode when ESA is used as source, and also in rectifier mode when ESA is used as eLoad.



Island mode for IEC 62116 anti-island test(-62116 Option)[3]

Island mode of ESA simulates RLC load behavior for anti-island test. Two simulation modes are provided, which are setting parameters of PAC, QAC, PEUT and QL in mode 1, and setting R, L, C Value in mode 2.



Independent frequency control for all three phases(-IPF Option)[4]

The -IPF option unlocks full decoupling control across all three phases of the ESA Series. It allows users to program and vary the output frequency of Phase A, B, and C completely independently, transforming the system into three standalone single-phase programmable AC sources managed via a unified platform.

Grid & Microgrid Simulation: Authentically replicates multi-source frequency disturbances, severe phase drifts, and unbalanced grid irregularities to evaluate the tracking stability of Phase-Locked Loops (PLLs) and modern DER grid-tied inverters.

Multi-Bus System Testing: Simulates independent power distribution lines in aerospace and rail transit systems, enabling cross-zone power transfer and common-ground loop testing.

Graphical User Interface

GUI software is installed in front touch panel, which uses Windows OS. The software provides following functions:

-Output settings and limits

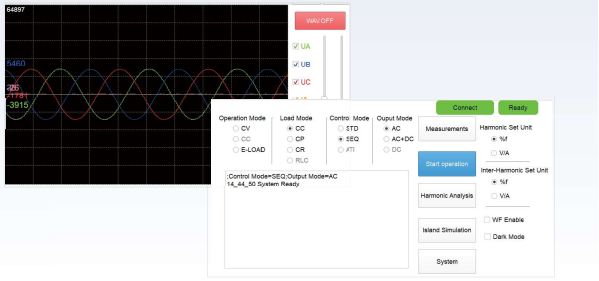
-Sequence output settings

-Generate harmonic and inter-harmonic waveforms

-Display measurements: voltage, current, power, etc

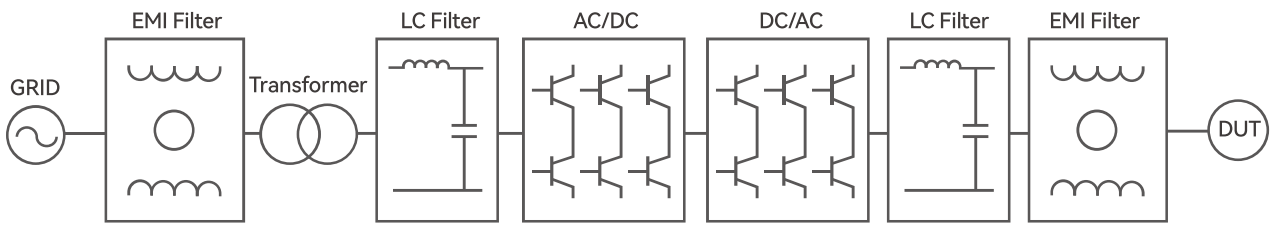
-Capture, display and save output voltage and current waveforms

-Display power source faults



Block Diagram

The topology of standard ESA is shown in Figure. The transformer for isolation and phase-shift is on the front by default, and then the 3-phase AC input is rectified by four quadrant PWM converters for DC bus, which is followed by DC/AC power modules. Three channels of DC/AC power modules are used for independent 3-phase AC output.



Note: The ESA series AC power supply topology with -TR option is different from the above figure.

3. ESA-62116 can only simulate RLC load for sine waveform, 50/60Hz input.
4.When -IPF mode is active and the frequencies of the three phases are programmed to be different, the output must not be directly connected to coupled three-phase inductive loads (e.g., standard three-phase AC motors) to prevent magnetic field distortion or hardware damage.

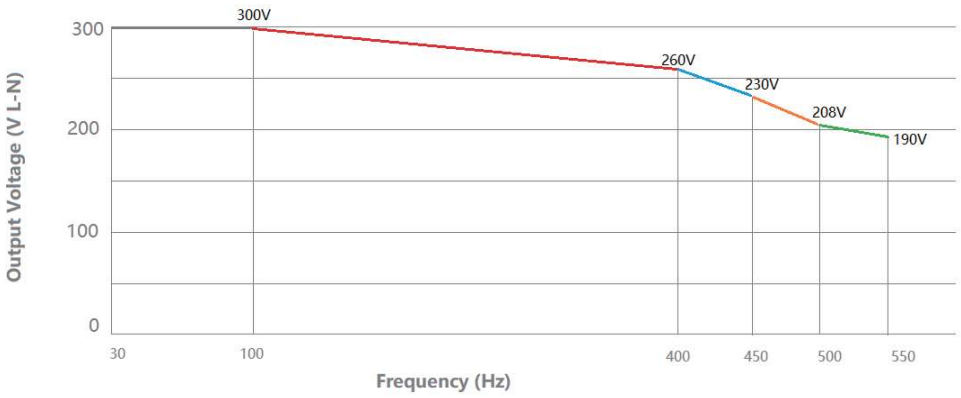
General Specification (customized unit specification will be shown in the proposal)

Input	
AC input Voltage	3P+N+PE, 380VLL±10%(std)
Frequency	47-63Hz
Efficiency	≥90%
Power Factor	0.95
THDi	≤3%
Output	
Output Mode	AC (std),DC,AC+DC (-DC option)
Power Range	Configurable, from 30KVA~10MVA
Voltage Range	Configurable, 0~300V L-N (std), 50kV L-N (max)
Current Range	Configurable, up to 10kA/ph
Frequency range	30-100Hz (std), 40-70Hz (TR option)
Phase output	Phase B/C relative to phase A, 0.0~360.0°
Voltage Rise Time (0%~90%)	<1ms (std), <2ms (TR option)
Voltage Fall Time (90%~0%)	<1ms (std), <2ms (TR option)
Harmonic Generation	Up to 50th
Load Regulation	0.2%FS
Line Regulation	0.1%FS
Output Voltage THD	<1%FS (Resistive Load, @50/60Hz)
Power Accuracy	0.3%FS
Voltage Accuracy	0.1%FS (std), 0.2%FS (TR option)
Current Accuracy	0.2%FS
Frequency Accuracy	0.01Hz
Phase accuracy	±0.3° @50Hz
Power Resolution	0.1kW
Voltage Resolution	0.01V
Current Resolution	0.1A
Frequency Resolution	0.01Hz
Phase Resolution	0.1°
Measurements	
Power Accuracy	0.3%FS
Voltage Accuracy	0.1%FS(std), 0.2%FS (TR option)
Current Accuracy	0.2%FS
Frequency Accuracy	0.01Hz
Phase accuracy	±0.3° @50Hz
Others	
Standard Interface	LAN/RS485
Optional Interface	ATI/RS232
Protection	OVP, OCP, OPP, OTP
CE Conformity	EN 62040-1, EN 62040-2
Cooling	Forced Air Cooling
Temperature	Operating: 0~40°C Storage: -20~85°C
Operating Humidity	20-90%RH (None Condensing)

Standard Models Specification

Model	Power	Voltage	Current	Dimension (W*D*H mm)	Weight(kg)
ESA 45-300-68	45kVA	300V	69A	800*800*2000	770
ESA 60-300-91	60kVA	300V	91A	800*800*2100	980
ESA 120-300-182	120kVA	300V	182A	1600*900*1700	1400
ESA 180-300-273	180kVA	300V	273A	1600*900*2100	1800
EAS 240-300-364	240kVA	300V	364A	1800*900*2100	2100
ESA 300-300-455	300kVA	300V	455A	2000*1000*2100	2700

-232	RS232 program interface
-LD	Regenerative AC load function
-R	Regenerative mode
-ATI	Analog control interface (0~5V)
-DC	Extend to Independent DC output (&-1P 3-ph output DC in parallel)
-1P	Add single phase output
-IMP	Line impedance (RL) simulation
-W	Use water-cooling
-TR	Change to transformer output topology
-62116	Island mode for IEC 62116 anti-island test
-HFXXX[5]	AC output frequency extended to XXXHz (only for CV mode)
-FHR	Frequency resolution 0.005Hz (max frequency: 70Hz)
-PQ	PQ mode
-FPD	Fixed phase difference
-IPF	Independent frequency control for all three phases



AC Input Configuration[6]

Please specify the input voltage (L-L)

/380, Input Voltage 380VLL±10%, 3P+N+PE/3P+PE

/400, Input Voltage 400VLL±10%, 3P+N+PE/3P+PE

/480, Input Voltage 480VLL±10%, 3P+N+PE/3P+PE

5. Max VF Derating 300V L-N Range
6. Other AC input is available, please consult factory.

Model Configuration

ESA AAA-BBB-CCC-DDD/EEE

AAA: Power, KVA

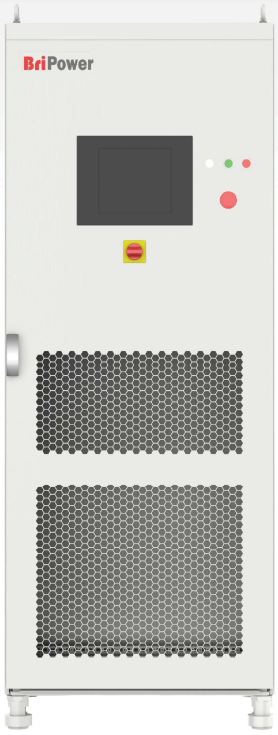
BBB: Voltage (L-N), V (std, 300V L-N)

CCC: Current (per Phase), A

DDD: Option

EEE: Input configuration

ESD SERIES HIGH-POWER DC POWER SUPPLY



The ESD Series is an IGBT-based, PWM switching DC power supply, offering fully configurable output power, voltage, and current ranges.

Delivering up to 10MW and 50kV, the ESD Series meets the needs of highpower applications and, the bidirectional -R option enables battery simulation for new energy testing. The Dual DSP+FPGA design enables both high precision and rapid response. It provides a fine control resolution of 0.1ms for precise output adjustment, coupled with fast dynamic performance.

The ESD Series ensures high reliability through multi-level monitoring and protection for key components, communication, and the over all system.

Features

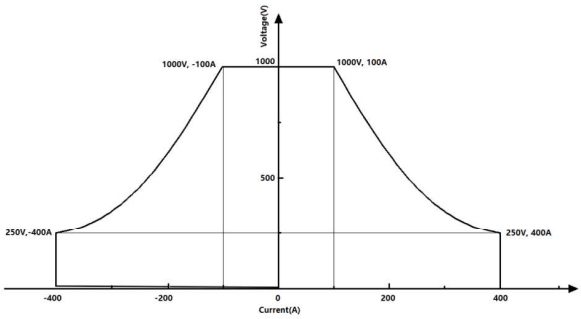
- Configurable power, voltage and current ranges
- Maximum output power: 10 MW
- Maximum output voltage: 50 KV
- Master-slave parallel for power expansion
- Operating Modes: Constant Current (CC), Constant Voltage (CV), Constant Power (CP), and Constant Resistance (CR)
- Voltage and current sequences programmable via GUI
- Built-in soft-start function effectively suppresses inrush current during startup
- Configurable as a bidirectional DC power supply (-R option), operating in two quadrants for new energy testing (e.g.battery simulation)
- Configurable for fast dynamic response: Current rise time (0%-90%) < 1 ms
- Configurable as an energy regenerative DC load function (-LD option)
- PV simulation (-PV option)
- Low-voltage operation mode (-ZV option): Capable of full current output down to 0.4 V
- Optional air cooling or water cooling for heat dissipation
- Configurable output insulation monitoring function(-INS option)
- Standard interfaces: LAN and RS485
- Optional interfaces: CAN, Analog Input/Output
- Communication protocols: Modbus/SCPI
- Output terminal equipped with output switch
- Remote sensing function

Highly Configurable Output Performance

A core competency of the BriPower ESD series is the ability to configure output power, voltage, and current ranges according to specific customer application requirements. For applications demanding wide-range output, the systems can be tailored to enable precise control over either high-voltage/low-current or low-voltage/high-current operation.

Right: Output I/V curve of ESD100-1000-400-R (ESD Series).

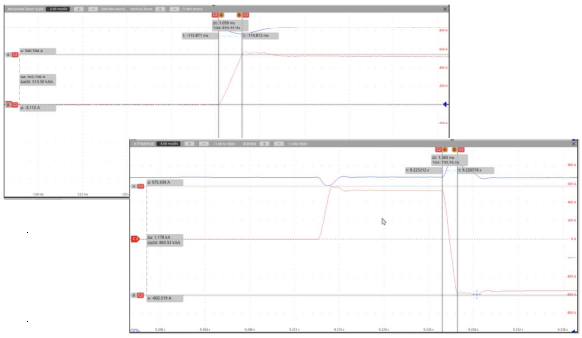
Output rating: 100 kW, 5~1000 V, ±400 A



Fast current rising

ESD Series has excellent dynamic performance of current rising, which makes it ideal for battery test and battery simulation. Two versions are provided, and current rise time of each version is different (below waveforms are take ESD 200-600-600-R-BSS for example).

Current Rise Time (0~90%)	<3ms (std), <1ms (BSS Option), <10ms (HPD Option)
Current Rise Time (-90~90%)	<5ms (std), <2ms (BSS Option) , <20ms (HPD Option)
Voltage Regulation Time(0-100% Load change)	<3ms (std), <1.5ms (BSS Option), <10ms (HPD Option)



Bi-Directional (Re-generative) (-R option)

With the -R option, the unit can operate in source and sink mode. It has the capability to return the energy fully back to the grid.

Re-generative DC Load (-LD option) [1]

ESD series with -LD option can be used as regenerative DC electronic load. DC load simulation includes constant current, constant resistance, constant voltage, and constant power modes.

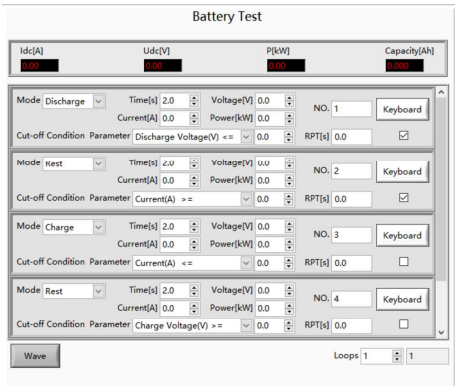
Low Voltage Operation Mode (-ZV option)

ESD series DC electronic load with -ZV option can produce large current that meets the requirements under the input condition close to 0.4V, which can evaluate the electrical characteristics of the fuel cell (such as VI), etc.

1. The -LD option must be used in combination with the -R option.

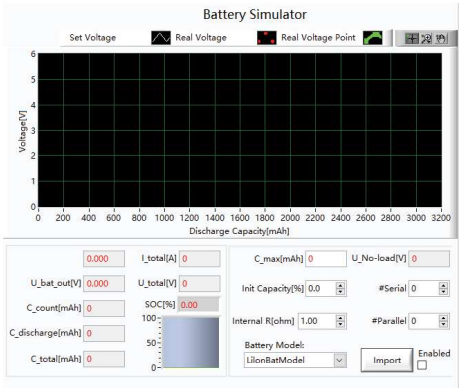
Battery Test

ESD series DC power supply can be used for characterization of power battery packs. It is used to test the charging and discharging performance, temperature rise characteristics, and cycle life of the power battery pack. Through the GUI software, different charging and discharging profiles can be programmed, and test results are displayed in real time.



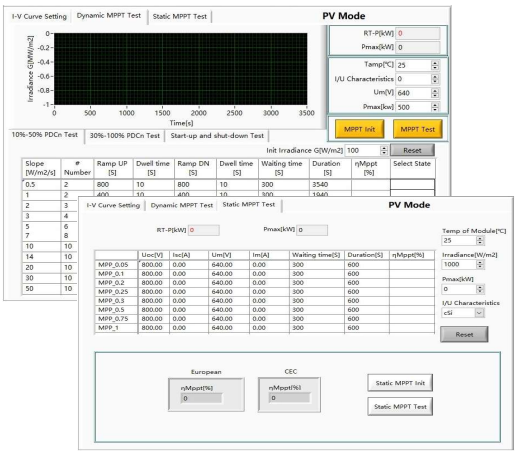
Battery Simulation (-BSS option)

ESD Series DC power supplies provides GUI software to simulate the charging and discharging characteristics of the power battery pack/package and it provides battery simulation software, which can simulate different types of batteries, lithium-ion batteries, etc., supporting multiple parameter settings, including: battery capacity, the number of cells in series and parallel, the state of charge, etc.



PV Simulation (-PV Option)

With -PV option, ESD series power supplies can be used to simulate IV curves of various solar panels, under various temperature and irradiance condition, and conduct static and dynamic MPPT tests according to EN 50530:2010. MPP update rate: 200Hz. Irradiance levels: 0 ~1500W/m^2. Temperature: -10~+100°C. Temperature coefficient: +1%~-1%/°C.



Isolated dual channels output (-2X option)

The output consists of two isolated channels, which operate as independent channels. The dual channels support parallel connection, series connection, or function as a three-port bidirectional DC source.

Graphical User Interface

GUI software is installed in front touch panel, which uses Windows OS. The software provides following functions:

- Output settings and limits
- Sequence output settings
- Display measurements: voltage, current, power, etc.
- Capture, display and save output voltage and current waveforms
- Display power source faults



General Specification (customized unit specification will be shown in the proposal)

Input	
AC input Voltage	3P+N+PE, 380VLL±10%(std)
Frequency	47-63Hz
Efficiency	≥90%
Power Factor	0.95
THDi	≤3%
Output	
Output Modes	CV,CC,CP and CR
Power Level	Up to 500kW in single controller, customized to 4MW and above
Voltage Ranges	Up to 2000V
Current Ranges	Please refer to the Standard Models Specification
Load Regulation	0.1%FS
Line Regulation	0.1%FS
Voltage Ripple	0.1%FS；0.05%FS@2000V; 0.2%FS (HPD Option)
Stability	0.1%FS
Current Rise Time (0~90%)	<3ms (Std),<1ms (BSS Option),<10ms (HPD Option)
Current Rise Time (-90~90%)	<5ms (Std),<2ms (BSS Option),<20ms (HPD Option)
Voltage Regulation Time (0-100% Load change)	<3ms (Std),<1.5ms(BSS Option),<10ms (HPD Option)
Power Accuracy	0.3%FS
Voltage Accuracy	0.1%FS
Current Accuracy	0.1%FS
Power Resolution	0.02KW (~100KW), 0.1KW (100KW~500KW)
Voltage Resolution	0.05V (~800V), 0.1V (800V~2000V)
Current Resolution	0.05A (~800A), 0.1A (800A~1600A), 0.2A (1600A~3200A）
Over Current	120%，60 seconds

Measurements	
Measurement accuracy Power	0.3%FS
Measurement accuracy Voltage	0.1%FS
Measurement accuracy Current	0.1%FS
Others	
Standard Interface	LAN/RS485
Optional Interface	CAN/ATI/RS232
Protection	OVP, OCP, OPP, OTP
CE Conformity	EN 62040-1, EN 62040-2
Cooling	Air Cooling
Temperature	Operating: 0~40°C Storage: -20~85°C
Operating Humidity	20-90%RH (None Condensing)

Note: Other Power/Voltage Level can be offered. Please consult factory
Total weight < 1400KG, the cabinet bottom is wheel structure; otherwise, it is channel steel structure

Options

-232	RS232 program interface
-LD	Regenerative DC load function
-R	Regenerative mode
-ATI	Analog control interface (0~5V)
-BSS	Hardware and software for Battery simulation
-CAN	CAN-bus program interface
-PV	Hardware and software for PV simulation
-ZV	Low Voltage Operation Mode
-MS	Master-Slave interface
-INS	Output terminal insulation monitoring function
-CH(X)	x channels output
-2X	Isolated dual channels output

AC Input Configuration[2]

Please specify the input voltage (L-L)

/380, Input Voltage 380VLL±10%, 3P+N+PE/3P+PE

/400, Input Voltage 400VLL±10%, 3P+N+PE/3P+PE

/480, Input Voltage 480VLL±10%, 3P+N+PE/3P+PE

2. Other AC input is available, please consult factory.

Model Configuration

ESD AAA-BBB-CCC-DDD/EEE

AAA: Power, kW

BBB: Voltage range, V

CCC: Current range, A

DDD: Option

EEE: Input configuration

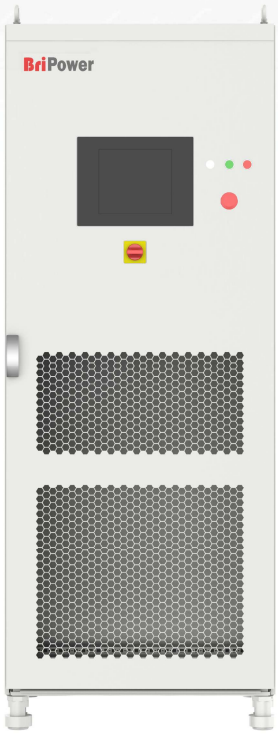
BSL SERIES
HIGH POWER DC SOURCE & LOAD

The BSL series 100kW/150kW/200kW/250kW/300kW for single system, up to 4 individual systems can be paralleled to up to 1.2MW system. BSL series has an auto-ranging output function. BSL standard models provide 1000V/1500V/2000V voltage and x2/x3/x4 current.

BSL series uses bi-directional design, which can be used as DC power source or regenerative DC load. CV/CC/CP/CR operation modes are available for both sourcing and sinking.

The BSL series incorporates a hardware architecture based on dual DSP and FPGA, delivering powerful processing and precise control. This platform enables real-time data sampling, and storage. The waveforms are displayed at a sampling rate of 10 k/s. BSL series provides comprehensive monitoring and protection for all critical components and communication links. This integrated design ensures system stability and reliability, making the BSL series a high-performance power solution for demanding industrial applications.

With touch panel on the front panel, users can control the power source through GUI software. System status indicators and emergency stop button are installed on the front panel. RS485 and LAN interfaces are available for automated test applications.



Features

- Output Power: 100kW/150kW/200kW/250kW/300kW
- Output Voltage: 1000V/1500V/2000V
- Output Current: *2 / *3 / *4
- Auto-Ranging Output
- Soft start: effectively restrain the impulse current when power on
- Seamless transition between source and sink modes
- Current rise time (0% -90%) <5ms
- CC/CV/CP/CR mode available
- Regenerative DC load function
- Master-Slave interface
- LAN/RS485 interfaces
- Emergency stop button and indicators on front panel
- TFT-Touch panel operation
- Mod-bus protocol
- Output contactor
- Remote sense
- CE conformity
- 13 months Warranty

Bi-Directional (Re-generative)

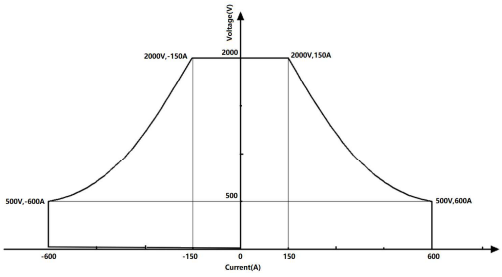
BSL series can operate in source and sink mode. It has the capability to return the energy fully back to the grid.

Re-generative DC Load

BSL series can be used as regenerative DC electronic load. DC load simulation includes constant current, constant resistance, constant voltage, and constant power modes.

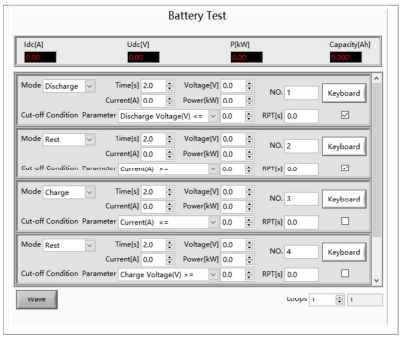
Automatic wide range output

BSL series has an automatic wide-range output function, such as: high-voltage small current or low-voltage large current (also applicable in sink power mode). The same model of power supply can cover a wider range of power applications.



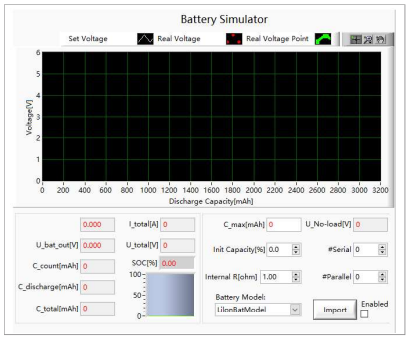
Battery Test

BSL series provides battery test software and can be used for characterization of power battery packs. It is used to test the charging and discharging performance, temperature rise characteristics, and cycle life of the power battery pack. Through the GUI software, different charging and discharging profiles can be programmed, and test results are displayed in real time.



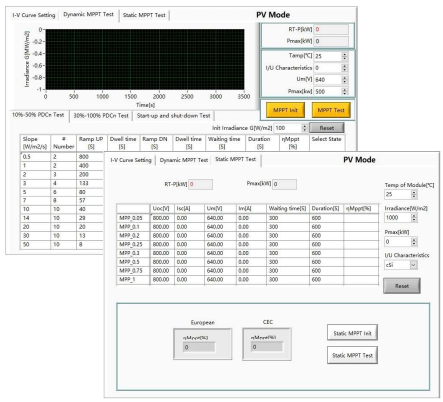
Battery Simulation

BSL Series provides battery simulation software and can simulate the charging and discharging characteristics of the power battery pack/package and provide a convenient and efficient testing method for the development and testing of new energy vehicle motors etc.

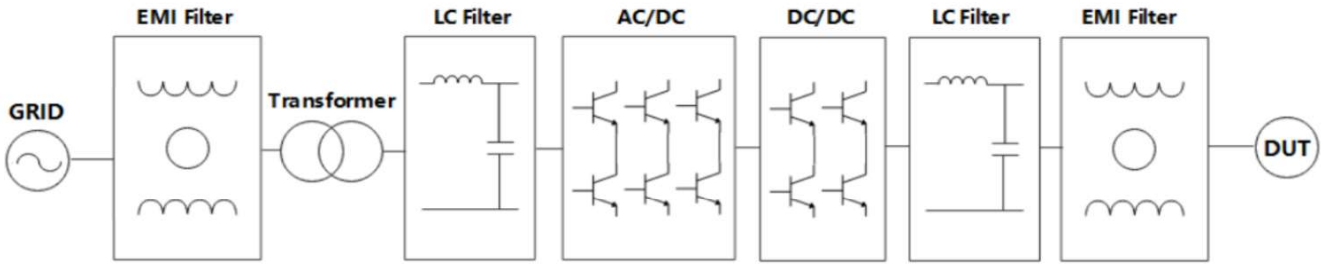


PV Simulation

BSL series provides PV simulation software and can be used to simulate IV curves of various solar panels, under various temperature and irradiance condition, and conduct static and dynamic MPPT tests according to EN 50530:2010. MPP Update Rate: 200Hz. Irradiance levels: 0 ~ 1500 W/m2. Temperature: -10 ~ +100°C. Temperature coefficient: +1% ~ -1%/°C.



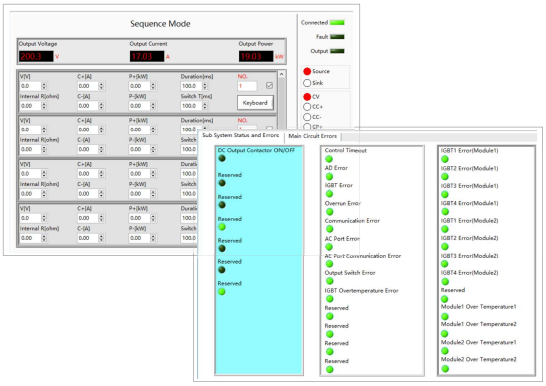
Block Diagram



Graphical User Interface

GUI software is installed in front touch panel, which uses Windows OS. The software provides following functions:

- Output settings and limits
- Sequence output settings
- Display measurements: voltage, current, power, etc.
- Capture, display and save output voltage and current waveforms
- Display power source faults



Output Ranges

AC Input	
AC input Voltage	3P+N+PE, 380VLL±10%(std)
Frequency	47-63Hz
Efficiency	≥90%
Power Factor	0.95
THDi	≤3%
Output	
Output Modes	CV, CC, CP and CR
Load Regulation	0.1%FS
Line Regulation	0.1%FS
Voltage Ripple	0.2%FS
Stability	0.2%FS
Current Rise Time (0%~90%)	<5ms
Current Rise Time(-90%~90%)	<10ms
Voltage Regulation Time (0-100% Load change)	<5ms
Power Accuracy	0.3%FS
Voltage Accuracy	0.1%FS
Current Accuracy	0.1%FS
Power Resolution	0.1kw
Voltage Resolution	0.1V
Current Resolution	0.1A
Measurements	
Measurement accuracy Power	0.3%FS
Measurement accuracy Voltage	0.1%FS
Measurement accuracy Current	0.1%FS
Others	
Standard Interface	LAN/RS485
Protection	OVP,OCP,OPPOTP
CE Conformity	EN 62040-1,EN 62040-2
Protection Leve	IP21
Cooling	Forced Air Cooling
Temperature	Operating: 0~40°C,Storage:-20~85°C
Operating Humidity	20-90%RH(None Condensing)

Standard Models Specification

Model	Power	Voltage	Current	Dimension (W*D*H mm)	Weight(kg)
BSL 100-1000-200	100kW	1000V	200A	800*900*1900	1200
BSL 100-1000-300	100kW	1000V	300A	800*900*2100	1300
BSL 100-1000-400	100kW	1000V	400A	800*900*2100	1400
BSL 100-1500-133	100kW	1500V	133A	800*900*2100	1150
BSL 100-1500-200	100kW	1500V	200A	800*900*2100	1200
BSL 100-1500-266	100kW	1500V	266A	900*900*2100	1300
BSL 100-2000-100	100kW	2000V	100A	800*900*2100	1150
BSL 100-2000-150	100kW	2000V	150A	800*900*2100	1200
BSL 100-2000-200	100kW	2000V	200A	900*900*2100	1300
BSL 150-1000-300	150kW	1000V	300A	1000*900*1900	1400
BSL 150-1000-450	150kW	1000V	450A	1000*900*2100	1500
BSL 150-1000-600	150kW	1000V	600A	1000*900*2100	1600
BSL 150-1500-200	150kW	1500V	200A	1000*900*1900	1300
BSL 150-1500-300	150kW	1500V	300A	1000*900*2100	1400
BSL 150-1500-400	150kW	1500V	400A	1000*900*2100	1500
BSL 150-2000-150	150kW	2000V	150A	1000*900*1900	1300
BSL 150-2000-225	150kW	2000V	225A	1000*900*1900	1300
BSL 150-2000-300	150kW	2000V	300A	1000*900*2100	1400
BSL 200-1000-400	200kW	1000V	400A	1800*900*1800	1700
BSL 200-1000-600	200kW	1000V	600A	1800*900*2000	1850
BSL 200-1000-800	200kW	1000V	800A	1800*900*2100	2000
BSL 200-1500-266	200kW	1500V	266A	1800*900*1800	1600
BSL 200-1500-400	200kW	1500V	400A	1800*900*1800	1700
BSL 200-1500-533	200kW	1500V	533A	1800*900*2000	1800
BSL 200-2000-200	200kW	2000V	200A	1800*900*1800	1600
BSL 200-2000-300	200kW	2000V	300A	1800*900*1800	1680
BSL 200-2000-400	200kW	2000V	400A	1800*900*1800	1700
BSL 250-1000-500	250kW	1000V	500A	1800*900*2000	1900
BSL 250-1000-750	250kW	1000V	750A	1800*900*2100	2100

Model	Power	Voltage	Current	Dimension (W*D*H mm)	Weight(kg)
BSL 250-1000-1000	250kW	1000V	1000A	1800*900*2100	2300
BSL 250-1500-333	250kW	1500V	333A	1800*900*1800	1800
BSL 250-1500-500	250kW	1500V	500A	1800*900*2000	1900
BSL 250-1500-666	250kW	1500V	666A	1800*900*2100	2100
BSL 250-2000-250	250kW	2000V	250A	1800*900*1800	1800
BSL 250-2000-375	250kW	2000V	375A	1800*900*1800	1800
BSL 250-2000-500	250kW	2000V	500A	1800*900*2000	1900
BSL 300-1000-600	300kW	1000V	600A	1900*1000*2100	2400
BSL 300-1000-900	300kW	1000V	900A	2800*1000*2100	2600
BSL 300-1000-1200	300kW	1000V	1200A	2800*1000*2100	2800
BSL 300-1500-400	300kW	1500V	400A	1900*1000*2100	2300
BSL 300-1500-600	300kW	1500V	600A	1900*1000*2100	2400
BSL 300-1500-800	300kW	1500V	800A	2800*1000*2100	2550
BSL 300-2000-300	300kW	2000V	300A	1900*1000*2100	2300
BSL 300-2000-450	300kW	2000V	450A	1900*1000*2100	2300
BSL 300-2000-600	300kW	2000V	600A	1900*1000*2100	2400

Note: Total weight < 1400KG, the cabinet bottom is wheel structure; otherwise, it is channel steel structure.

AC Input Configuration[1]

Please specify the input voltage (L-L)

/380, Input Voltage 380VLL±10%, 3P+N+PE/3P+PE

/400, Input Voltage 400VLL±10%, 3P+N+PE/3P+PE

/480, Input Voltage 480VLL±10%, 3P+N+PE/3P+PE

1. Other AC input is available, please consult factory.

Model Configuration

BSL AAA-BBB-CCC/DDD

AAA: Power, kW

BBB: Voltage range, V

CCC: Current range, A

DDD: Input configuration

Notes