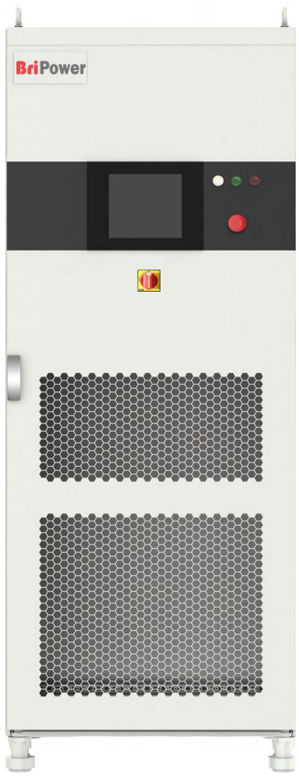
KGS Series
Programmable AC/DC Power Supply



Features

- Modular design, output power from 15KVA to 500KVA
- Bi-directional power source, seamless transition between source and sink modes
- Output: AC, DC, AC+DC
- Using true current feedback control when working in CC mode
- Frequency Range: DC~1KHz(-HF Option: DC~2KHz)
- Regenerative load function(-LD option)
- Soft start: effectively restrain the impulse current when power on
- Standard output 300V L-N (higher voltage can be customized)
- Up to 50th harmonic waveform generation, inter-harmonic generation
- Trigger out, TTL signal output for voltage or frequency change
- AC output, ON / OFF output phase angle can be programmed
- LAN/RS485 interfaces(std), RS232/Analog control interface(optional)
- Emergency stop button and indicators in front panel
- TFT-Touch panel operation
- Mod-bus/SCPI protocols
- CE conformity

Overview

The Bripower KGS series is a high-performance AC/DC power source, using SiC MOSFET PWM technology, which contains multi output power levels form 15KVA to 500KVA .with an output frequency range from DC to 2KHz (standard 1KHz, 2KHz with -HF option), standard output 300V L-N (higher voltage can be customized).

KGS series uses bi-directional design, which makes it possible to be used as grid simulator to test distributed generation systems.

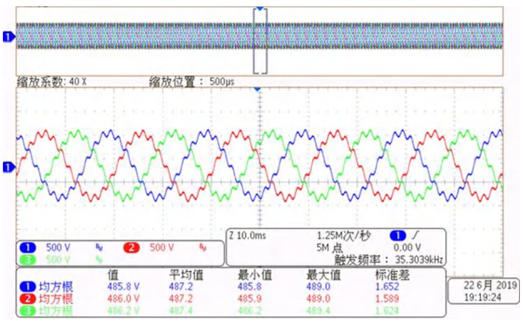
KGS Series is well suited for aerospace applications. Remote control interfaces and SCPI command language are provided for easy integration into ATE systems.

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 the most reliable power supply product in the industry.

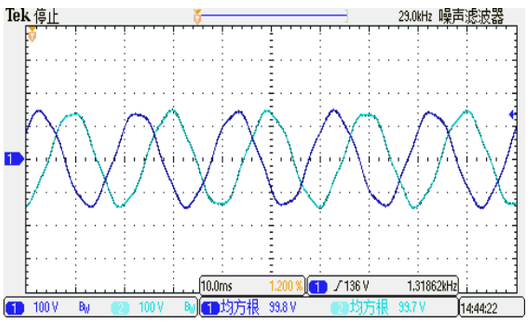
With touch panel on the front panel, users can control the power source through GUI software. System status indicators and emergency stop button are installed on the front panel. LAN and Rs485 standard interface , optional RS232 and analog control interfaces are available for automated test applications.

Grid Simulation

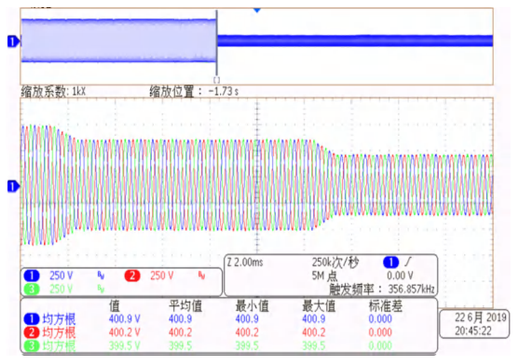
KGS series can be used as a grid simulator to test distributed generation systems, such as the electrical characteristics of energy storage PCS, PV inverter, etc, The simulation functions include voltage and frequency fluctuation, voltage drop, low/zero voltage , three-phase unbalance, harmonic and inter-harmonic etc. KGS series can meet the requirements of grid tied DG regulations testing, such as: grid voltage abnormality test , grid frequency abnormality test, low/zero voltage ride through test, anti-islanding test, etc. KGS series provides standard software that can simulate various real-world power grid operating conditions and supports multiple parameter settings.



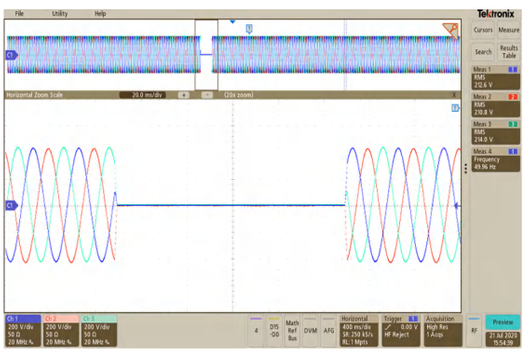
Harmonic waveform



Interharmonic waveform



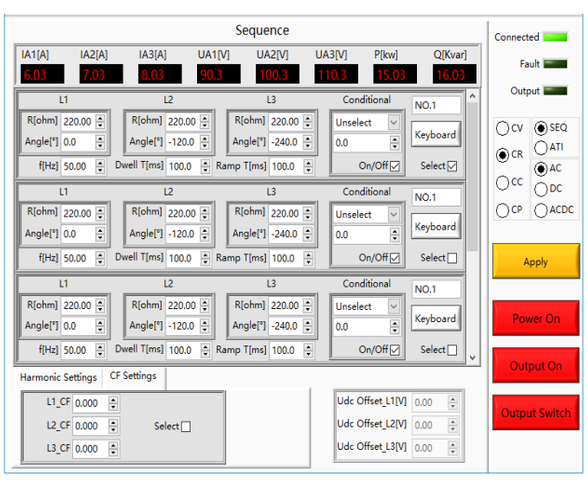
Voltage drop

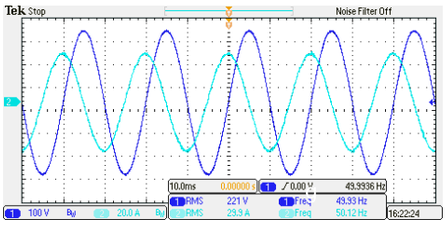


Zero voltage ride

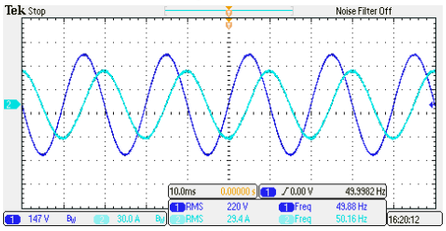
Re-generative AC Load -LD option[1]

KGS series with -LD option can be used as regenerative AC electronic load. This function consists of CR mode, Rectifier mode, CC/CP phase lead/lag mode.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(settomg range:1.414~3) parameters can be set through the panel. CC/CP phase lead/lagmode can simulate sinusoidal current, Constant current CC and constant power CP modes are available to adjust load current or power, phase angle can be set from 90° to -90° simulating the voltage and current conditions under inductive and capacitive loads.

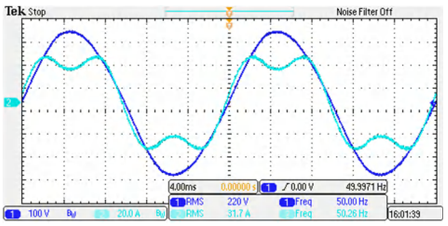




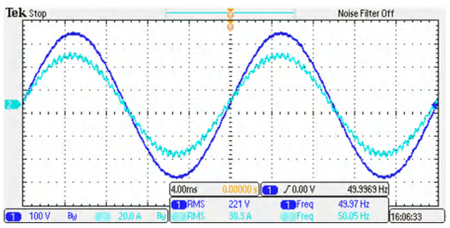
Angle=-90°



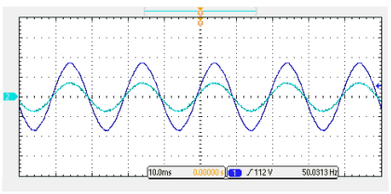
Angle=+90°



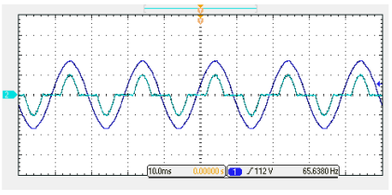
Low harmonics



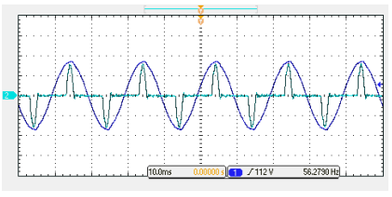
High harmonics



CF=1.414



CF=2



CF=3

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

Avinocs Power Line Simulation

The KGS series meets the requirements of avionics bus simulation, and can simulate working conditions including normal working, power interruption (conversion), abnormal power supply, emergency power supply, startup, power failure, etc. to meet the requirements of MIL-STD-704 and other test regulations. In addition, remote control interfaces and SCPI command language are provided for easy integration into ATE systems.

IEC Related Test Applications

KGS series can meet the requirements for AC power in IEC 61000 3-2,3-3,3-11,3-12,4-11,4-13 and other standard tests.

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.

Modular Design

The KGS series power supply contains one or more 15KVA power modules. Each power module is fully self-contained and forms a complete AC to AC or AC to DC converter.

Graphical User Interface

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

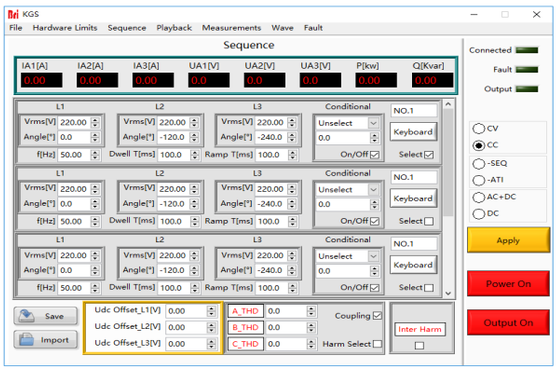
- Output limits and settings
- Sequence output settings

  The output phase voltage, angle, frequency, ON/OFF phase angle, dwell time, switching time and other parameters of the power supply can be set.

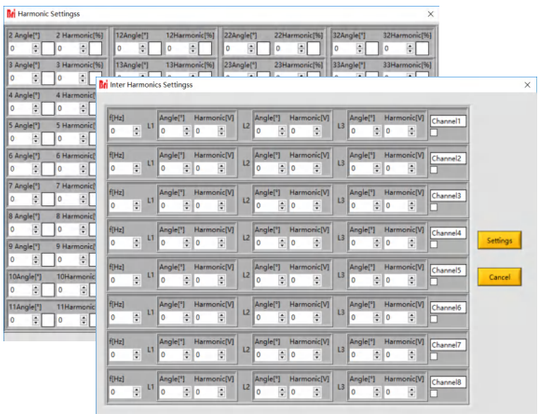
- Generate harmonic and inter-harmonic waveforms

  Up to 50th harmonic waveform generation, inter-harmonic generation

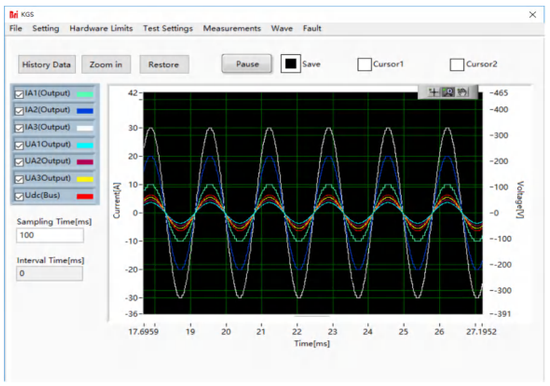
- Real time display measurements: voltage, current, power, etc.
- Capture, display and save output voltage and current waveforms.
- Display power source faults



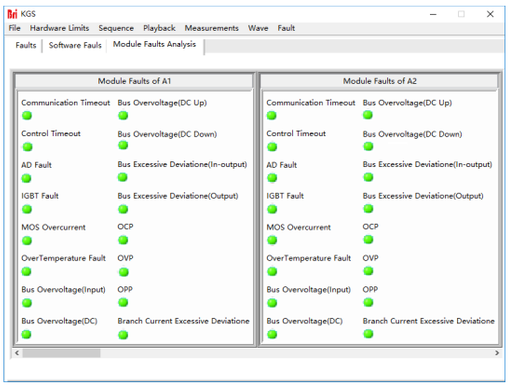
Sequence Mode



Monic and inter-harmonic generation

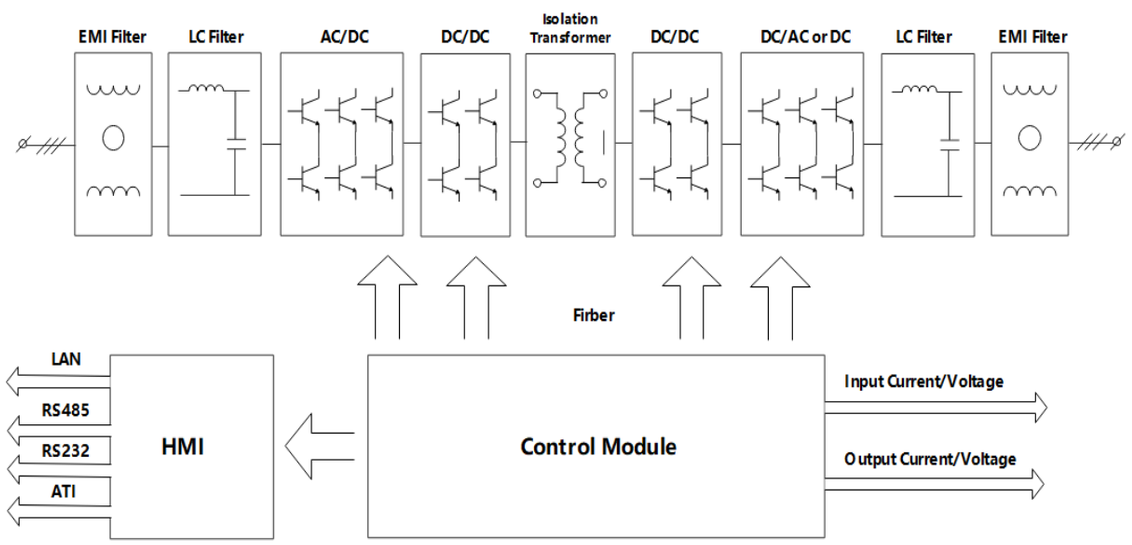


Waveform Display



Fault Display

Block Diagram



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

AC Input	
Voltage	3P+N+PE,380VLL±10%（std)
Frequency	47-36HZ
Efficiency	≥85%
Power Factor	0.95
Output	
Output Modes	AC, DC, or AC+DC
Power Level	From 15KVA to 500KVA
Output Voltage Load Regulation	0.2%FS
Output Voltage Line Regulation	0.1% (10% input line change)
AC Output	
Voltage Range (L-N)	0-300V (std), 0-375V (-HV1 option), higher voltage (-HV2 option)
Current Range	Max 50A per 15KVA module
Phase Angle Range	Phase B/C relative to phase A, 0.0~360.0°
Frequency Range	DC -1000HZ (std), DC -2000HZ (-HF option)
THD	＜1%（Resistive Load）
Harmonic Generation	Up to 50th
Voltages Slew Rate	5V/us
Power Accuracy	0. 5%FS
Voltage Accuracy	0.3%FS
Current Accuracy	0.3%F
Frequency Accuracy	0.01%FS+0.01HZ
Phase Angle Accuracy	＜1. 2° （@50HZ）
Power Resolution	0. 1KW
Voltage Resolution	0. 1V
Current Resolution	0. 1A
Frequency Resolution	0.01HZ(~100HZ), 0.05HZ(＞100HZ）
DC Output	
Voltage Range	0-550V（std), customized voltage up to 1125V
Current Range	Max 25A per 15KVA module
Voltage Accuracy	0. 2%FS
Current Accuracy	0. 1%FS
Voltage Ripple	0. 1%FS
AC+DC Mode	Max Power, Voltage Current are the same as DC Mode
AC Voltage Measurement Accuracy	0.3%FS
AC Current Measurement Accuracy	0.3%FS
DC Voltage Measurement Accuracy	0.2%FS
DC Current Measurement Accuracy	0.1%FS
Frequency Measurement Accuracy	0. 01%+0. 01HZ
Others	
Protection	OVP, OCP, OTP
CE Conformity	EN 61010, EN 61326
Cooling	Forced Air Cooling
Temperature	Operating: 0~40℃,Storage: -20~85℃
Operating Humidity	20-90%RH (None Condensing)

Standard Models Specificatiom

Model	KGS 15	KGS 45	KGS 90
AC Output Mode	Single Phase	Single Phase or Three Phases	
AC Output Power	15KVA	45KVA	90KVA
AC Output Current	50A	50A/Ph	100A/Ph
DC Output Power	10KW	30KW	60KW
DC Output Current	25A	75A	150A
Dimension(w*D*H mm)	800*900*1700	800*900*1700	2*800*900*1700
Weight	<500kg	<550kg	<950kg

*other Power/Voltage Level can be offered. Please consult factory

AC Input Configuration

Please specify the input voltage (L-L)

/208, Input Voltage 208V±10%, 3-phase

/230, Input Voltage 230V±10%, 3-phase

/380, Input Voltage 380V±10%, 3-phase

/400, Input Voltage 400V±10%, 3-phase

/480, Input Voltage 480V±10%, 3-phase

Model Configuration

KGS AAA-BBB-CCC-DDD/EEE

AAA: Power, KVA

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

CCC: Current range, A

DDD: Option

EEE: Input configuration

Options

-232 RS232 program interface

-ATI Analog program interface (0~5V)

-1P Add single phase output

-HF Output frequency range up to 2KHZ

-LD Regenerative load function

-HV1 AC output voltage extended to 0~375V

-HV2 Higher output voltage consult factory

Contact us

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Technical Support: support@bridgetech.cn

Repair&Calibration: service@bridgetech.cn

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About Bripower

Bridge Technology is a company focusing on business of power supplies and test systems for new energy applications. We are devoted to providing high quality products and solutions for customers.

Bridge Technology has a top-class R&D team in China, works on modularization and standardization power supplies and systems. We have sales, technical support, R&D and manufacture in Shanghai, Nanjing and Chengdu.

Nanjing Bridge New Energy Technology was founded on Jan 12th, 2016, focusing on R&D and manufacturing Bripower brand power systems, including bi-directional AC sources for grid simulation, bi-directional DC sources for battery simulation, and regenerative loads. The Bripower AC&DC power systems are widely used in new energy and related fields.