Kewell

Product Catalog

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Contents.

HIGH PERFORMANCE POWER SUPPLY

C3000 SERIES

Low voltage version

The C3000 Series is a high-precision programmable DC power supply boasting wide current range, high dynamic performance, and ultra-high power density. Featuring auto-range output and flexible voltage & current combinations, the C3000 Series is widely used in industries such as PV, EV, and aviation.

Features

- High power density: 15kW in 3U
- Power output range: 0 ~ 15kW
- Current output range: 0 ~ 600A
- Voltage output range: 0 ~ 100V
- Parallel connection: up to 10 units
- AC voltage input: 342VAC ~ 528VAC
- PV simulation: Static MPPT, Multi-IV, EN50530, etc.
- Custom waveforms: triangle, square, and sine
- Automotive power curve: ISO16750-2, LV123, DIN40839, etc.
- RS232/LAN/USB communication interface
- Protections: OVP, OCP, OTP, OPP, etc.
- Remote voltage compensation

Model Selection

Model	Voltage	Current	Power	Resolution	Accuracy (Voltage/Current)	Size
Normal						
C3000NG-10K-0100-0400	100V	400A	10kW	0.01V/0.01A	≤0.02%F.S./≤0.1% F.S.	3U
C3000NG-15K-0100-0600	100V	600A	15kW	0.01V/0.01A	≤0.02%F.S./≤0.1% F.S.	3U
Pro						
C3000PG-10K-0100-0400	100V	400A	10kW	0.01V/0.01A	≤0.02%F.S./≤0.1% F.S.	3U
C3000PG-15K-0100-0600	100V	600A	15kW	0.01V/0.01A	≤0.02%F.S./≤0.1% F.S.	3U

Normal
Fundamental, Cost-effective

Pro
Fully-featured, Multi-scenario

Features \ Version	Normal	Pro
DC power supply	★	★
IV simulation	-	★
Automotive power curve	-	★

Note: "★" means Yes; "-" means not available.

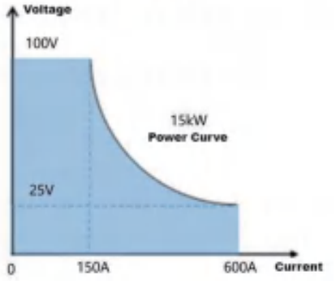
Product Applications

- Testing grid-connected PV inverters
- Testing motor controllers
- Testing DCDC converters
- Power semiconductor devices
- Automotive electronic components testing
- Air compressors
- Military industry, avionics
- Telecom power
- DC contactor test

Product Functions

DC Power Supply

Steady auto ranging output of 0-100V. The maximum power output for a single machine can reach 15kW.
C3000 supports up to 999 editable work steps, and work steps can be set in cycles.



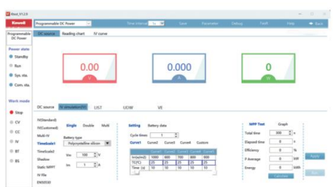
IV Simulation

The C3000 Series has a variety of IV simulation capabilities, which make the PV test closer to the real-world conditions. These include single point, double-point, multi-point settings, as well as static and dynamic MPPT, time scaling, shadow conditions, and multi-step IV function.

Photovoltaic array simulation

Static MPPT

Dynamic MPPT



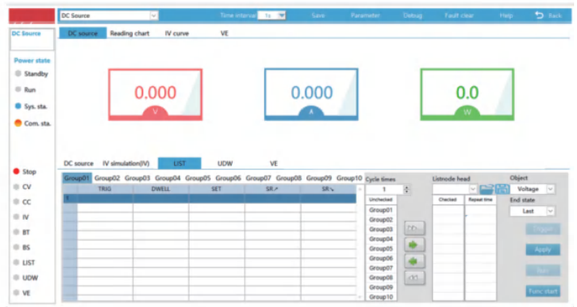
Time scaling

Shadow conditions

Multi-step IV

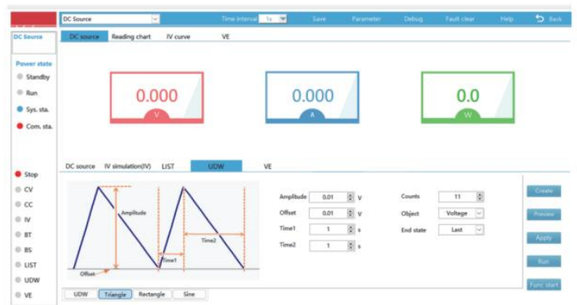
List Mode

List mode supports file programming for 10 groups, each having up to 10 arrays to be edited. Single step time can be set to 1ms at minimum.



Custom Waveforms

Built-in triangle, square and sine waveforms.



Automotive Power Curve

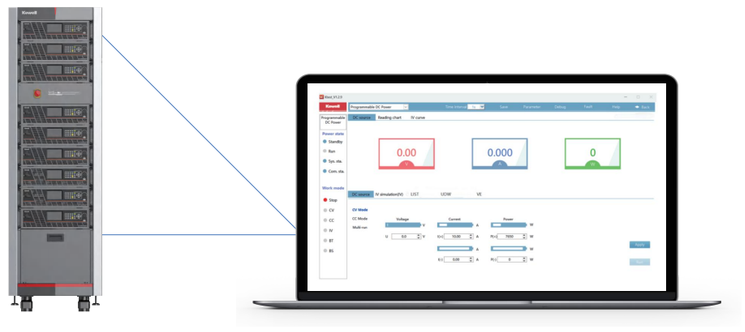
Built-in industry standards such as ISO16750-2, LV123, DIN40839, etc., one click to call.

Product Highlights

Ultra-high Efficiency

Max. power efficiency: 92%

Flexible Paralleling



The maximum power of the C3000 Series single machine is 15kW, and through the flexible parallel connection of up to 10 devices, the power output can reach 150kW. One computer can control up to 24 devices at the same time.

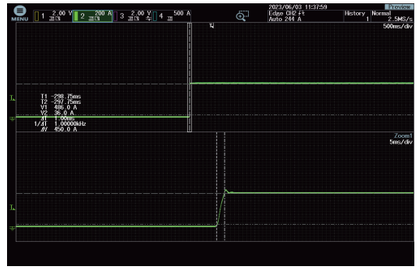
Super Dynamic Performance

- **High Voltage/Current accuracy**

The C3000PG Series accuracy can reach 0.02% F.S. and 0.1% F.S. with respect to voltage and current, respectively.

- **Rapid dynamic response**

The current slope is up to 450A/ms. Microsecond response for sudden loading/unloading, with response time as short as 500us.



Parallel Cabinet

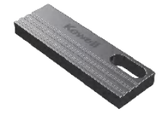
Model	Number	Dimensions (W*D*H)	Weight(Cabinet alone)
HK-15U	2~3 devices	610*1026*1006mm	130kg
HK-29U	4~6 devices	610*1026*1554mm	220kg
HK-42U	7~9 devices	610*1026*1999mm	280kg

Standard Accessories

Handles

Parallel Cable

Ethernet Cable(3m)



USB Stick(32G)①

DC protective cover

AC protective cover

Parallel Communication Module

Note: ① The USB stick contains the software package (license will be provided by Kewell free of charge).

HIGH PERFORMANCE POWER SUPPLY

C3000 SERIES

High voltage version

The C3000 Series is a high-precision programmable DC power supply boasting wide voltage range, high dynamic performance, and ultra-high power density. Featuring auto-range output and flexible voltage & current combinations, the C3000 Series is widely used in industries such as PV, EV, and aviation.

Features

- High power density design: 30kW in 3U
- Power output range: 0 ~ 30kW
- Current output range: 0 ~ 180A
- Voltage output range: 0 ~ 2000V
- Parallel connection: up to 20 units
- AC voltage input: 342VAC ~ 528VAC
- PV simulation: Static MPPT, Multi-IV, EN50530, etc.
- RS485/CAN/LAN/USB communication interface
- Protections: OVP, OCP, OTP, OPP, etc.

Model Selection

Model	Voltage	Current	Power	Resolution	Accuracy (Voltage/Current)	Size
Normal						
C3000NG-7K5-0750-0060	750V	60A	7.5kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
C3000NG-15K-0750-0120	750V	120A	15kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
C3000NG-30K-0750-0180	750V	180A	30kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
C3000NG-15K-1500-0060	1500V	60A	15kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
C3000NG-21K-2000-0060	2000V	60A	21kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
C3000NG-30K-2000-0060	2000V	60A	30kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
Pro						
C3000PG-7K5-0750-0060	750V	60A	7.5kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
C3000PG-15K-0750-0120	750V	120A	15kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
C3000PG-30K-0750-0180	750V	180A	30kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
C3000PG-15K-1500-0060	1500V	60A	15kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
C3000PG-21K-2000-0060	2000V	60A	21kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
C3000PG-30K-2000-0060	2000V	60A	30kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U

Normal
Fundamental, Cost-effective

Pro
Fully-featured, Multi-scenario

Features \ Version	Normal	Pro
DC power supply	★	★
IV simulation	-	★

Note: "★" means Yes; "-" means not available.

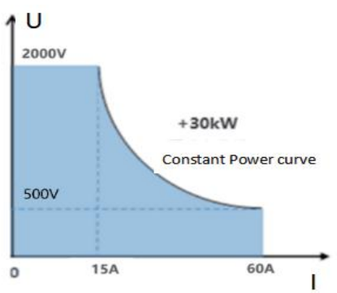
Product Applications

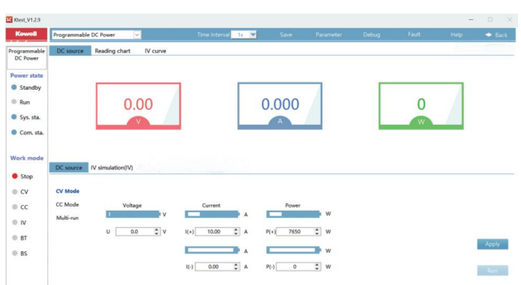
- Testing grid-connected PV inverters
- Testing motor controllers
- Testing DCDC converters
- Power semiconductor devices
- Military industry, avionics
- Telecom power
- High voltage contactors
- Air compressors

Product Functions

DC Power Supply

Steady auto ranging output of 0-2000V. The maximum power output for a single machine can reach 30kW.
C3000 supports up to 999 editable work steps, and work steps can be set in cycles.





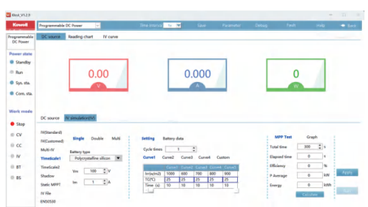
IV Simulation

The C3000 Series has a variety of IV simulation capabilities, which make the PV test closer to the real-world conditions. These include single point, double-point, multi-point settings, as well as static and dynamic MPPT, time scaling, shadow conditions, and multi-step IV function.

Photovoltaic array simulation

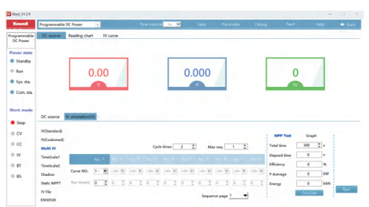
Static MPPT

Dynamic MPPT



Time scaling

Shadow conditions



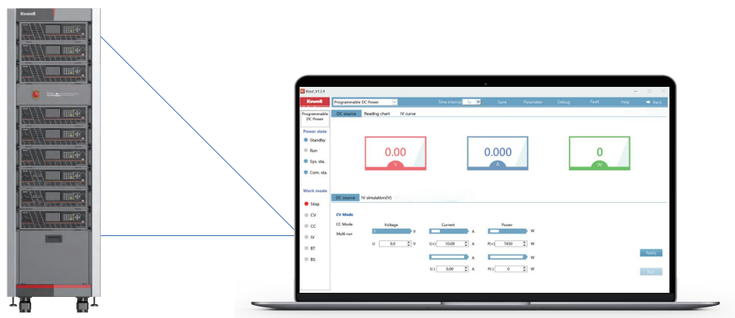
Multi-step IV

Product Highlights

Ultra-high Efficiency

Power efficiency: about 95%.

Flexible Paralleling



The maximum power of the C3000 Series single machine is 30kW, and through the flexible parallel connection of up to 20 devices, the power output can reach 600kW. One computer can control up to 12 devices at the same time.

Product Highlights

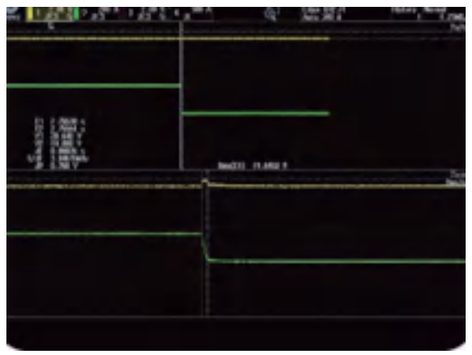
Super Dynamic Performance

- **High Voltage/Current accuracy**

The C3000PG Series accuracy can reach 0.05% F.S. and 0.1% F.S. with respect to voltage and current, respectively.

- **Rapid dynamic response**

Microsecond response for sudden loading/unloading, with response time as short as 1ms.



Parallel Cabinet

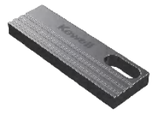
Model	Number	Dimensions (W*D*H)	Weight(Cabinet alone)
HK-15U	2~3 devices	610*1026*1006mm	130kg
HK-29U	4~6 devices	610*1026*1554mm	220kg
HK-42U	7~9 devices	610*1026*1999mm	280kg

Standard Accessories


Handles


Ethernet Cable(0.8m)


Ethernet Cable(0.25m)


USB Stick(32G)①


Ethernet Cable(3m)


DC protective cover


AC protective cover

Note: ① The USB stick contains the software package (license will be provided by Kewell free of charge).

BI-DIRECTIONAL PROGRAMMABLE DC POWER SUPPLY

S7000 SERIES

Low voltage version

The S7000 Series is a high precision, regenerative DC power source. As a DC source, it supports dual quadrant energy flow, with high conversion efficiency and high power density. It also supports parallel operation of multiple devices. HMI: Colorful touch-screen and knob.

Features

- Automatic switching of source-load function
- Power output range: 0 ~ 15kW
- Current output range: 0 ~ 600A
- Voltage output range: 0 ~ 100V
- Parallel connection: up to 10 units
- AC voltage input: 342VAC ~ 528VAC
- PV simulation: Static MPPT, Multi-IV, EN50530, etc.
- Automotive power curve: ISO16750-2, LV123, DIN40839, etc.
- Battery simulation: 6 fixed types, custom type
- Battery charging and discharging test function
- List mode, support multi-step programming
- Custom waveforms: triangle, square, and sine.
- RS232/LAN/USB communication interface
- Protections: OVP, OCP, OTP, OPP, etc.
- Remote voltage compensation

Model Selection

Model	Voltage	Current	Power	Resolution	Accuracy (Voltage/Current)	Size
Normal						
S7000NG-10K-0100-0400	100V	400A	10kW	0.01V/0.01A	≤0.02%F.S./≤0.1% F.S.	3U
S7000NG-15K-0100-0600	100V	600A	15kW	0.01V/0.01A	≤0.02%F.S./≤0.1% F.S.	3U
Pro						
S7000PG-10K-0100-0400	100V	400A	10kW	0.01V/0.01A	≤0.02%F.S./≤0.1% F.S.	3U
S7000PG-15K-0100-0600	100V	600A	15kW	0.01V/0.01A	≤0.02%F.S./≤0.1% F.S.	3U
Ultra						
S7000UG-10K-0100-0400	100V	400A	10kW	0.01V/0.01A	≤0.02%F.S./≤0.01%F.S.	3U
S7000UG-15K-0100-0600	100V	600A	15kW	0.01V/0.01A	≤0.02%F.S./≤0.1% F.S.	3U

Normal
Fundamental, Cost-effective

Pro
Fully-featured, Multi-scenario

Ultra
Ultimate experience, Lab testing-oriented

Features \ Version	Normal	Pro	Ultra
Bidirectional DC power supply	★	★	★
IV simulation	-	★	★
Battery simulation	-	★	★
Battery test	-	★	★
Automotive power curve	-	★	★
DC electronic load	-	-	★

Note: "★" means Yes; "-" means not available.

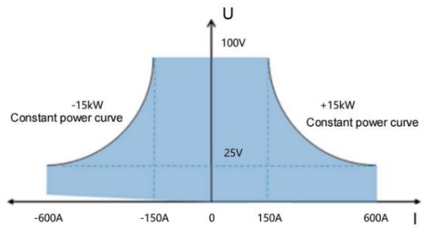
Product Applications

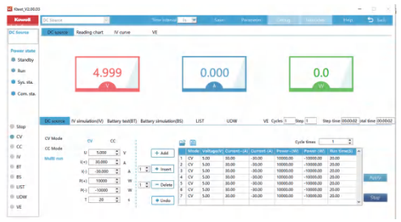
- Testing grid-connected PV inverters
- Testing PCS
- Testing PV & storage converters
- Testing on-board chargers
- Testing DC charging piles
- Testing motor controllers
- Testing UPS, EPS systems
- Testing DCDC converters
- Power semiconductor devices
- Military industry, avionics
- Telecom power
- Air compressors
- High voltage contactors

Product Functions

Bi-directional DC Power Supply

S7000 is a bi-directional power supply featuring high-speed switching between source and load modes.
S7000 supports up to 999 editable work steps, and work steps can be set in cycles.





IV Simulation

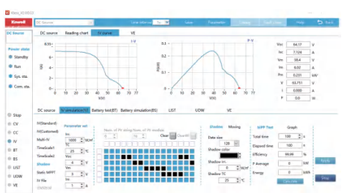
The S7000 series has a variety of IV simulation capabilities, which make the PV test closer to the real-world conditions. These include single point, double-point and multi-point settings, as well as static and dynamic MPPT, time scaling, shadow conditions, and multi-step IV function.

Photovoltaic array simulation

Static MPPT

Dynamic MPPT

Time scaling

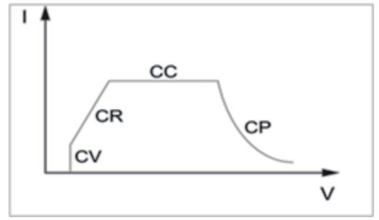


Shadow conditions

Multi-step IV

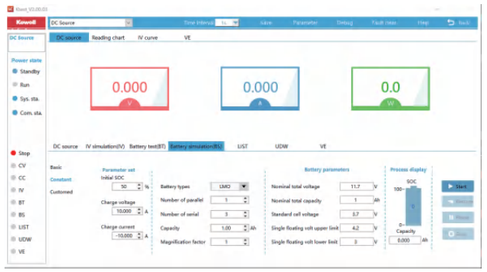
DC Electronic Load

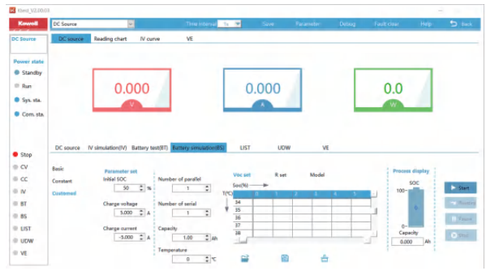
S7000 has the regenerative load function, with basic operation modes: CC, CV, CP, CR and compound operation modes: CV+CC, CV+CR, CC+CR, CV+CC+CP+CR to meet a variety of load test requirements.



Battery Simulation

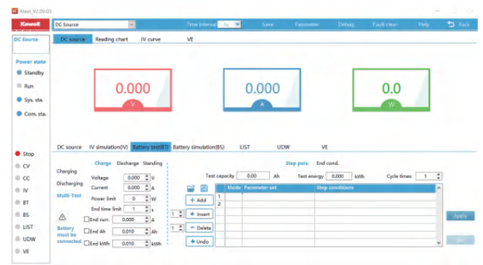
S7000 supports fixed battery types and custom battery type. For constant simulation mode, it supports fixed battery types: lithium manganese oxide, lithium cobalt oxide, lithium iron carbonate, nickel-metal hydride batteries, ternary lithium, and lithium titanate. Custom battery type: At a given temperature and SoC, fill in the open circuit voltage and internal resistance, or import the Excel file written in advance, then set other parameters and start running.





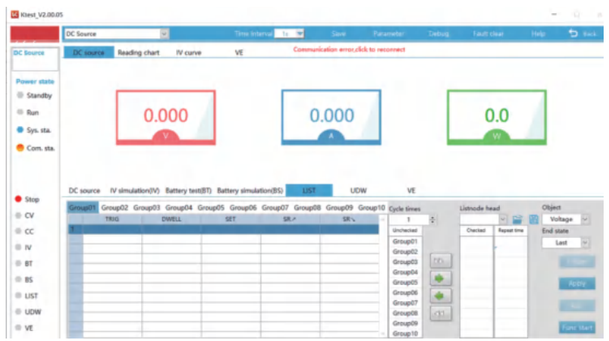
Battery Test

S7000 supports charge mode, discharge mode, and charging and discharging test in multiple modes.



List Mode

List mode supports file programming for 10 groups, each having up to 10 arrays to be edited. Single step time can be set to 1ms at minimum.

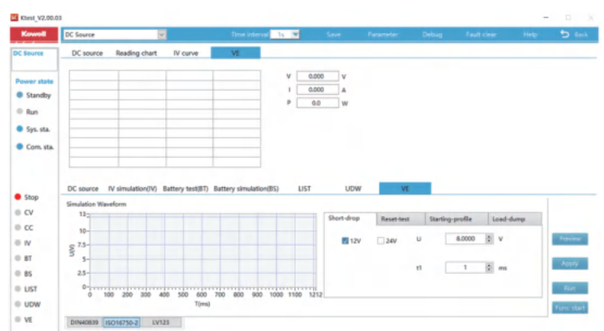


Custom Waveforms

Built-in triangle, square and sine waveforms.

Automotive Power Curve

Built-in industry standards such as ISO16750-2, LV123, DIN40839, etc., one click to call.



Product Highlights

High Efficiency

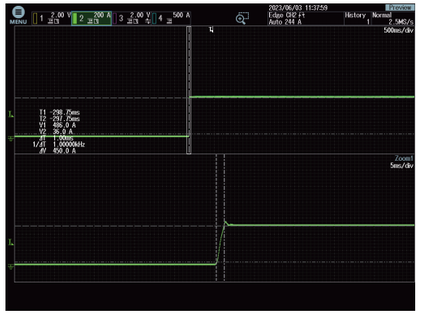
Max. power efficiency: 92%

Flexible Paralleling

The maximum power of the S7000 series single machine is 15kW, and through flexible parallel connection of up to 10 devices, the power output can reach 150kW. One computer can control up to 24 devices at the same time.

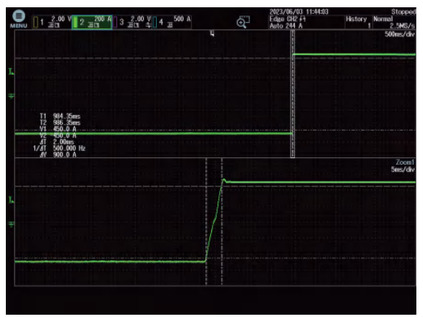
Super Dynamic Performance

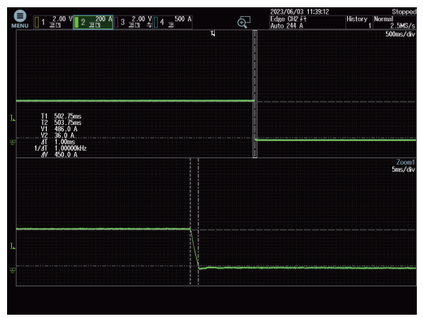
- Current slope up to 450A/ms



- High dynamic performance of DC current

The S7000 series current fall slope is adjustable from 0.001A/ms to 450A/ms. High-speed response with response time as short as 500μs.





Parallel Cabinet

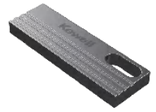
Model	Number	Dimensions (W*D*H)	Weight(Cabinet alone)
HK-15U	2~3 devices	610*1026*1006mm	130kg
HK-29U	4~6 devices	610*1026*1554mm	220kg
HK-42U	7~9 devices	610*1026*1999mm	280kg

Standard Accessories

Handles

Parallel Cable

Ethernet Cable(3m)



USB Stick(32G)①

DC protective cover

AC protective cover

Parallel Communication Module

Note: ① The USB stick contains the software package (license will be provided by Kewell free of charge).

BI-DIRECTIONAL PROGRAMMABLE DC POWER SUPPLY

S7000 SERIES

High voltage version

The S7000 Series is a high precision, regenerative DC power source. As a DC source, it supports dual quadrant energy flow, with high conversion efficiency and high power density. In 3U size, it outputs power up to 30kW and voltage up to 2000V. It supports parallel operation of multiple devices. HMI: Colorful touchscreen and knob. S7000 is applicable to testing of battery, battery storage inverter, EV, etc.

Features

- Automatic switching of source-load function
- High power density: 30kW in 3U
- Power output range: 0 ~ 30kW
- Voltage output range: 0 ~ 2000V
- Parallel connection: up to 20 units
- AC voltage input: 342VAC ~ 528VAC
- PV simulation: Static MPPT, Multi-IV, EN50530, etc.
- Battery simulation: 6 fixed types, custom type
- Battery charging and discharging test function
- RS485/CAN/LAN/USB communication interface
- Protections: OVP, OCP, OTP, OPP, etc.
- Remote voltage compensation

Model Selection

Model	Voltage	Current	Power	Resolution	Accuracy (Voltage/Current)	Size
Normal						
S7000NG-7K5-0750-0060	750V	60A	7.5kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000NG-15K-0750-0120	750V	120A	15kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000NG-30K-0750-0180	750V	180A	30kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000NG-15K-1500-0060	1500V	60A	15kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000NG-21K-2000-0060	2000V	60A	21kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000NG-30K-2000-0060	2000V	60A	30kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
Pro						
S7000PG-7K5-0750-0060	750V	60A	7.5kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000PG-15K-0750-0120	750V	120A	15kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000PG-30K-0750-0180	750V	180A	30kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000PG-15K-1500-0060	1500V	60A	15kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000PG-21K-2000-0060	2000V	60A	21kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000PG-30K-2000-0060	2000V	60A	30kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
Ultra						
S7000UG-7K5-0750-0060	750V	60A	7.5kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000UG-15K-0750-0120	750V	120A	15kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000UG-30K-0750-0180	750V	180A	30kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000UG-15K-1500-0060	1500V	60A	15kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000UG-21K-2000-0060	2000V	60A	21kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U
S7000UG-30K-2000-0060	2000V	60A	30kW	0.01V/0.01A	≤0.05%F.S./≤0.1% F.S.	3U

Normal
Fundamental, Cost-effective

Pro
Fully-featured, Multi-scenario

Ultra
Ultimate experience, Lab testing-oriented

Version / Features	Normal	Pro	Ultra
Bidirectional DC power supply	★	★	★
IV simulation	-	★	★
Battery simulation	-	★	★
Battery test	-	★	★
DC electronic load	-	-	★

Note: "★" means Yes; "-" means not available.

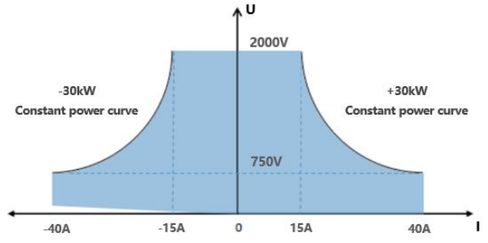
Product Applications

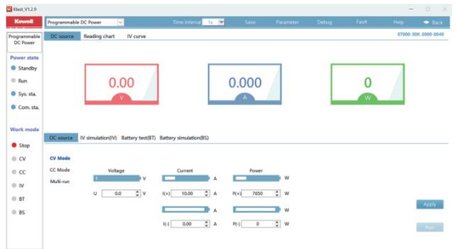
- Testing grid-connected PV inverters
- Testing PCS
- Testing PV & storage converters
- Testing on-board chargers
- Testing DC charging piles
- Testing UPS, EPS systems
- Testing motor controllers
- Testing DCDC converters
- Power semiconductor devices
- Military industry, avionics
- Telecom power
- Air compressors

Product Functions

Bi-directional DC Power Supply

S7000 is a bi-directional power supply featuring high-speed switching between source and load modes.
S7000 supports up to 999 editable work steps, and work steps can be set in cycles.





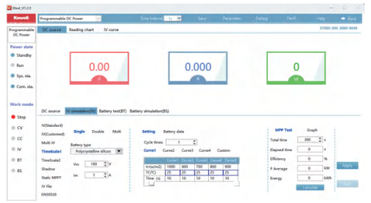
IV Simulation

The S7000 series has a variety of IV simulation capabilities, which make the PV test closer to the real-world conditions. These include single point, double-point, multi-point settings, as well as static and dynamic MPPT, time scaling, shadow conditions, and multi-step IV functions.

Photovoltaic array simulation

Static MPPT

Dynamic MPPT



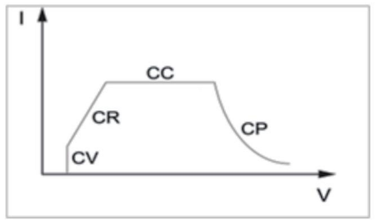
Time scaling

Shadow conditions

Multi-step IV

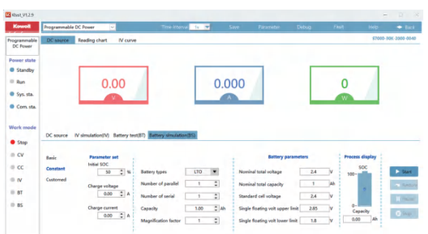
DC Electronic Load

S7000 has the regenerative load function, with basic operation modes: CC, CV, CP, CR and compound operation modes: CV+CC, CV+CR, CC+CR, CV+CC+CP+CR to meet a variety of load test requirements.



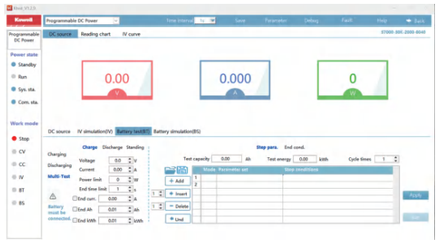
Battery Simulation

S7000 supports fixed battery type and custom battery type. For constant simulation mode, it supports fixed battery type: lithium manganese oxide, lithium cobalt oxide, lithium iron carbonate, nickel-metal hydride batteries, ternary lithium, lithium titanate.
Custom battery type: At a given temperature and SoC, fill in the open circuit voltage and internal resistance, or import the Excel file written in advance, then set other parameters and start running.



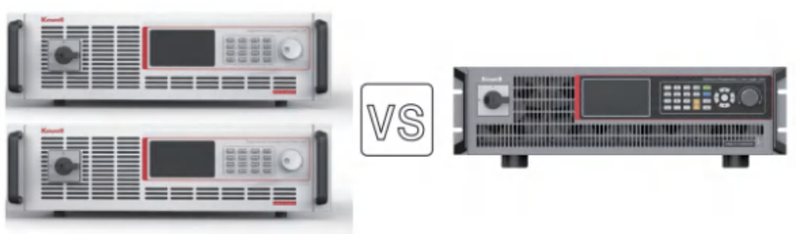
Battery Test

S7000 supports charge mode, discharge mode, and charging and discharging test in multiple modes.



Product Highlights

High Efficiency



30kW in 3U, up by 67% compared to the conventional 18kW DC power supply in the industry!

Ultra-high Efficiency

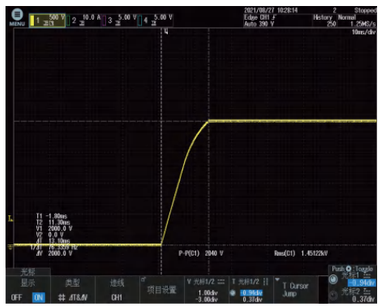
Max. efficiency: about 95%

Flexible Paralleling

The maximum power of the S7000 series single machine is 30kW, and through flexible parallel connection of up to 20 devices, the power output can reach 600kW. One computer can control up to 12 devices at the same time.

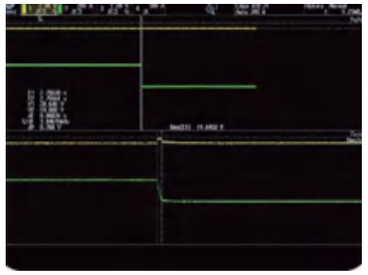
Super Dynamic Performance

- Voltage slew rate ≥ 200V/ms



- High dynamic performance of DC voltage output

The S7000 series voltage fall slew rate is adjustable from 0.001V/ms to 200V/ms. High-speed response with response time as short as 1ms.



Parallel Cabinet

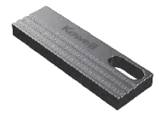
Model	Number	Dimensions (W*D*H)	Weight(Cabinet alone)
HK-15U	2~3 devices	610*1026*1006mm	130kg
HK-29U	4~6 devices	610*1026*1554mm	220kg
HK-42U	7~9 devices	610*1026*1999mm	280kg

Standard Accessories

Handles

Ethernet Cable(0.8m)

Ethernet Cable(0.25m)



USB Stick(32G)①

Ethernet Cable(3m)

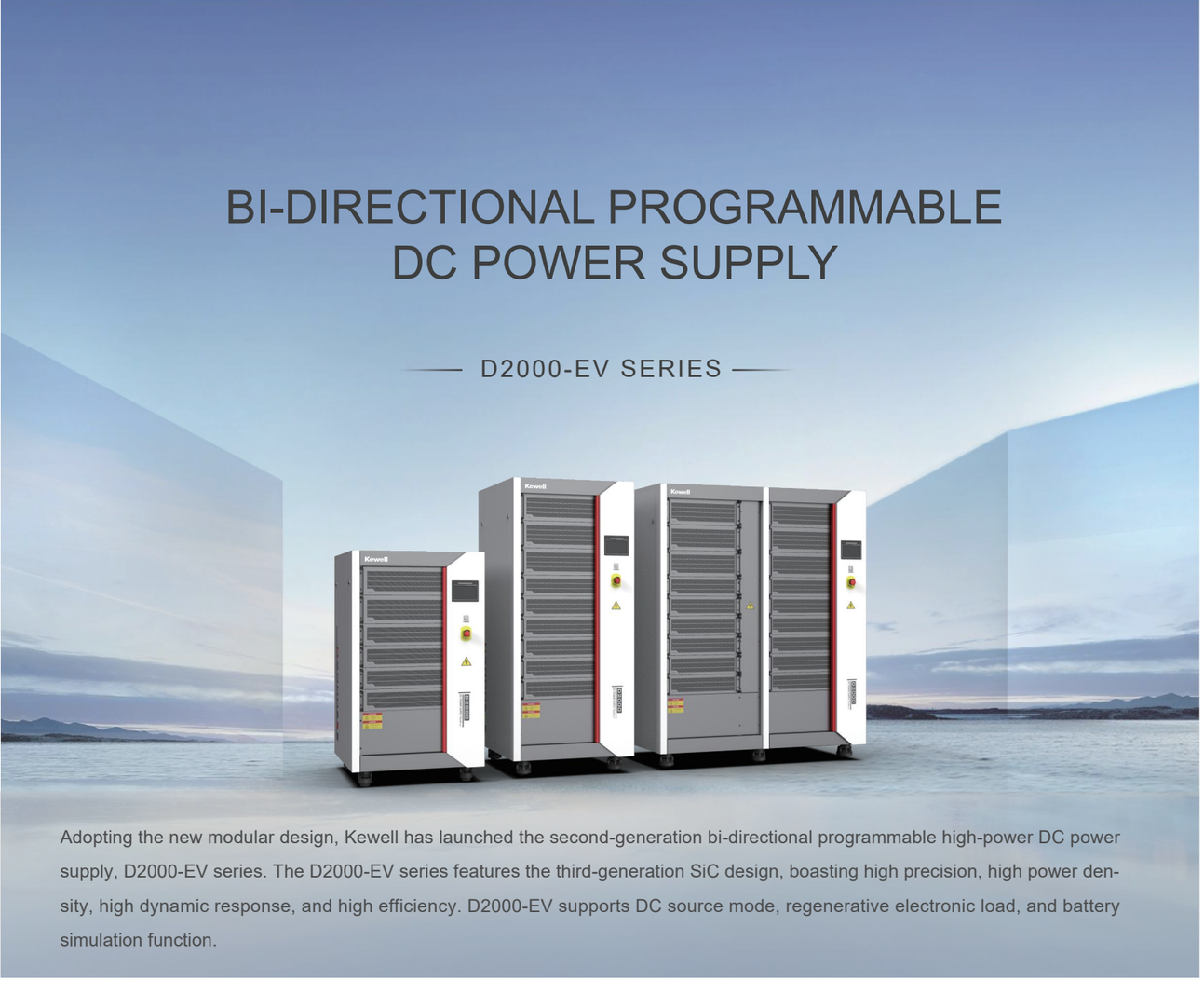
DC protective cover

AC protective cover

Note: ① The USB stick contains the software package (license will be provided by Kewell free of charge).

BI-DIRECTIONAL PROGRAMMABLE DC POWER SUPPLY

D2000-EV SERIES



Adopting the new modular design, Kewell has launched the second-generation bi-directional programmable high-power DC power supply, D2000-EV series. The D2000-EV series features the third-generation SiC design, boasting high precision, high power density, high dynamic response, and high efficiency. D2000-EV supports DC source mode, regenerative electronic load, and battery simulation function.

Features

- Third-generation SiC design
- Bi-directional DC power supply
- Regenerative electronic load
- Electrically operated switch + TFT touch screen
- Multi-step programming
- Voltage output range: 12~1200V
- Current output range: 0~1200A
- Insulation monitoring & safety relay
- Efficiency: up to 95.5%
- CV/CC/CR/CP in load mode
- 7 fixed battery types for battery simulation
- 1st/2nd/3rd order battery models
- Parallel connection to as high as 2.4MW
- Maximum power density: 176kW/m3
- Comm. interface: RS485, LAN, and CAN

Model Selection

Model	Voltage	Current	Power	Dimensions (W*D*H)	Weight
Normal					
D2000NG-100K-1200-300-EV	1200V	300A	100kW	850mm*1000mm*1500mm	530kg
D2000NG-200K-1200-600-EV	1200V	600A	200kW	850mm*1000mm*1500mm	700kg
D2000NG-300K-1200-900-EV	1200V	900A	300kW	850mm*1000mm*2000mm	885kg
D2000NG-400K-1200-1200-EV	1200V	1200A	400kW	1650mm*1000mm*2000mm	1300kg
D2000NG-500K-1200-1200-EV	1200V	1200A	500kW	1650mm*1000mm*2000mm	1630kg
Pro					
D2000PG-100K-1200-300-EV	1200V	300A	100kW	850mm*1000mm*1500mm	530kg
D2000PG-200K-1200-600-EV	1200V	600A	200kW	850mm*1000mm*1500mm	700kg
D2000PG-300K-1200-900-EV	1200V	900A	300kW	850mm*1000mm*2000mm	885kg
D2000PG-400K-1200-1200-EV	1200V	1200A	400kW	1650mm*1000mm*2000mm	1300kg
D2000PG-500K-1200-1200-EV	1200V	1200A	500kW	1650mm*1000mm*2000mm	1630kg
D2000PG-600K-1200-1200-EV	1200V	1200A	600kW	1650mm*1000mm*2000mm	1750kg
Ultra					
D2000UG-200K-1200-600-EV	1200V	600A	200kW	850mm*1000mm*1500mm	700kg
D2000UG-300K-1200-900-EV	1200V	900A	300kW	850mm*1000mm*2000mm	885kg
D2000UG-400K-1200-1200-EV	1200V	1200A	400kW	1650mm*1000mm*2000mm	1300kg
D2000UG-500K-1200-1200-EV	1200V	1200A	500kW	1650mm*1000mm*2000mm	1630kg
D2000UG-600K-1200-1200-EV	1200V	1200A	600kW	1650mm*1000mm*2000mm	1750kg

Normal
Fundamental, Cost-effective

Pro
Fully-featured, Multi-scenario

Ultra
Ultimate experience, Lab testing-oriented

Difference by Version	Normal	Pro	Ultra
Bi-directional DC power supply	★	★	★
Battery simulation	★	★	★
Manual switch	★	-	-
DC electronic load	-	★	★
Electrically operated switch	-	★	★

Note: "★" means Yes; "-" means not available.

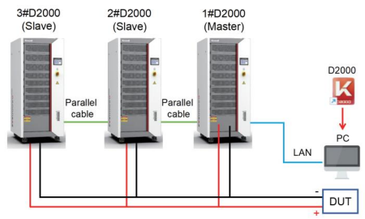
Product Applications

- Testing EV motor controllers
- Testing charging piles
- Testing PCS
- Testing UPS, EPS systems
- Simulating/Replacing battery-powered testing environment
- Simulating/Replacing high-power DC power supply and load testing environment

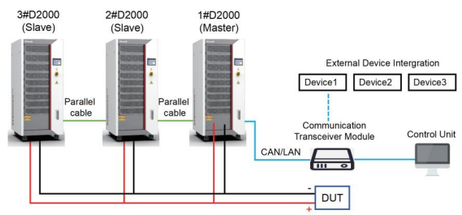
Product Functions

Flexible Parallel Connection:

The parallel connection supports high-speed communication with good anti-interference performance.
In the case of parallel connection, one master can control multiple slaves.



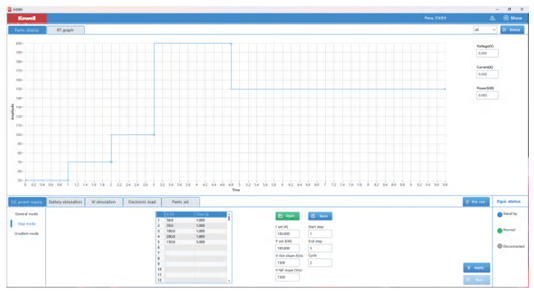
Parallel connection communication via PC software



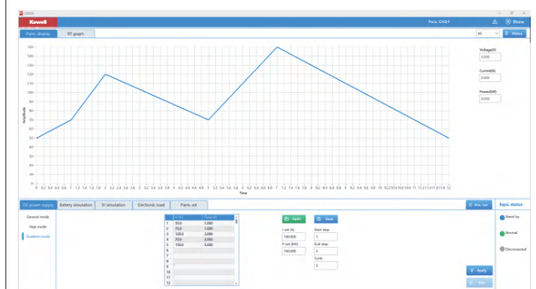
Parallel connection for external device integration

Programmable:

Users can program in Step mode and Gradient mode. D2000 allows for up to 200 programming steps and the steps can cycle up to 65535 times.
D2000 can memorize programming data, and it supports data import and export.



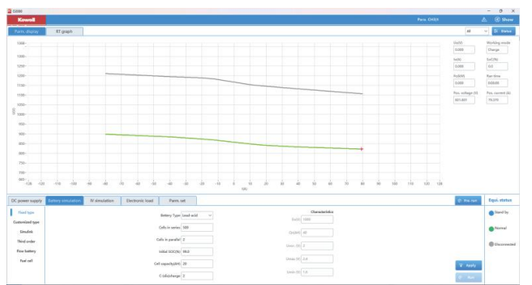
Step mode



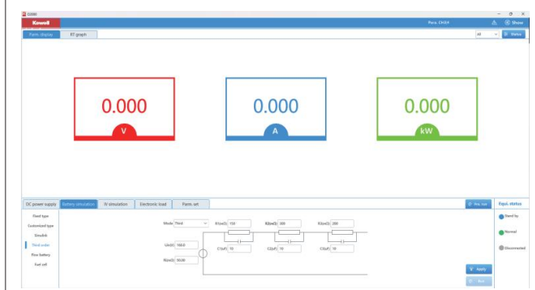
Gradient mode

Battery Simulation:

D2000 has built-in fixed battery models, user-defined battery models, and 1st/2nd/3rd order battery models.
D2000 can simulate the output of seven fixed types of batteries, including lithium manganese oxide, lithium cobalt oxide, lead-acid, lithium iron phosphate, nickel hydrogen, ternary lithium and lithium titanate batteries.
D2000 can analyze the relationship between Ri (T, Soc) and Ui (T, Soc), and supports importing battery cell model parameters to simulate the output characteristics of the corresponding battery pack.



Battery simulation mode

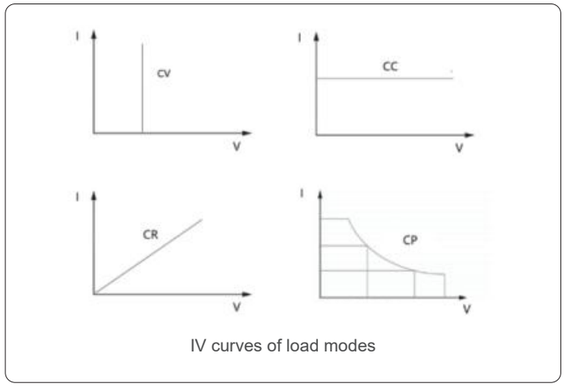


Third order battery models

Electronic Load:

D2000-EV series has multiple output modes, such as CV/CC/CR/CP. Users can select the required load mode.

Electronic load mode



IV curves of load modes

Ultra-High Efficiency:

Power efficiency up to 95.5%, improved by 3.5% compared with the IGBT version.

Efficiency
95.5%

Test Duration
8H * 30D * 12M

Reduce CO_2 Emissions by
30150kg

Dynamic Performance:

Voltage slew rate ≥ 300V/ms.

High dynamic performance of DC voltage output.

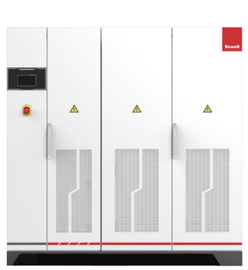
Product Highlights

New Design:

Easy replacement of faulty module Casters for easy move

Ultra-High Power Density:

Up by 112% compared with industry frequency solutions
D2000-300kW cabinet weighs: 900kg. →down by 61.9% compared with industry frequency solutions



D1000 Series DC Power Supply

VS

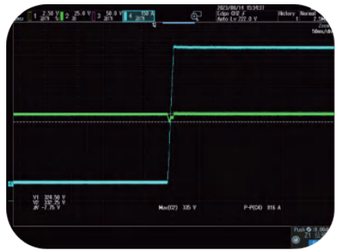
D2000 Series DC Power Supply

Power Density ↑ 112%

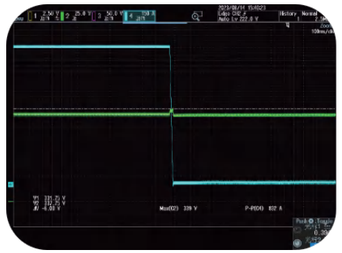
Weight ↓ 61.9%

Sudden loading at 500V, voltage fluctuation: 24V@400A

Sudden unloading at 500V, voltage fluctuation: 24V@400A



Current: 0-90%I@10ms, voltage drop＜10



Current: 90%-0I@10ms, voltage overshoot＜10V

D2000-EV Options

Name	Model	Description
Three-color Alarm Lamp	PA1070-AL-T3	Three-color(while, green, red) alarm lamp
Switching Resistor	PA1070-SR-T0	18Ω
	PA1070-SR-T1	9Ω
	PA1070-SR-T2	7.2Ω
	PA1070-SR-T3	3.6Ω
	PA1070-SR-T4	2.4Ω
Parallel Connection Kit	PA1070-PO-T0L	Parallel connection kit for 2 devices(including 2*3m optical fiber communication cable)
	PA1070-PO-T1L	Parallel connection kit for 2 devices(including 2*6m optical fiber communication cable)
	PA1070-PO-T4L	Parallel connection kit for 3 devices(including 4*3m optical fiber communication cable)
	PA1070-PO-T5L	Parallel connection kit for 3 devices(including 4*6m optical fiber communication cable)
	PA1070-PO-T6L	Parallel connection kit for 4 devices(including 4*3m optical fiber communication cable)
	PA1070-PO-T7L	Parallel connection kit for 4 devices(including 4*6m optical fiber communication cable)
Insulation Monitor (Only for models with voltage below 1500V)	PA1070-ID-T3	Insulation monitor(Bender)

Three-color Alarm Lamp

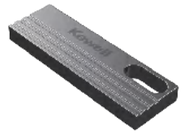
Switching Resistor

Insulation Monitor

Parallel Connection Kit

Standard Accessories

Circuit Breaker Lock①



USB Stick(32G)②

Ethernet Cable(10m)

Notes: ① The circuit breaker lock is for the NG version only.

②The USB stick contains the software package (license will be provided by Kewell free of charge).

BI-DIRECTIONAL PROGRAMMABLE DC POWER SUPPLY

D2000-IV SERIES

Adopting the new modular design, Kewell has launched the second-generation bi-directional programmable high-power DC power supply, D2000-IV series. The D2000-IV series features the third-generation SiC design, boasting high precision, high power density, high dynamic response, and high efficiency. D2000-IV supports DC source mode, IV simulation, regenerative electronic load, and battery simulation function.

Features

- Third-generation SiC design
- Bi-directional DC power supply
- Regenerative electronic load
- Electrically operated switch + TFT touch screen
- Multi-step programming
- Voltage output range: 12~2000V
- Current output range: 0~900A
- Efficiency: up to 95.5%
- Insulation monitoring & safety relay
- CV/CC/CR/CP in load mode
- 7 fixed battery types for battery simulation
- 1st/2nd/3rd order battery models
- IV curve simulation, SAS, Sandia
- Dynamic MPPT (EN50530)
- Parallel connection to as high as 2.4MW
- Maximum power density: 176kW/m3
- Comm. interface: RS485, LAN, and CAN

Model Selection

Model	Voltage	Current	Power	Dimensions (W*D*H)	Weight
Normal					
D2000NG-100K-2000-150-IV	20-2000V	150A	100kW	850mm*1000mm*1500mm	530kg
D2000NG-200K-2000-300-IV	20-2000V	300A	200kW	850mm*1000mm*1500mm	700kg
D2000NG-300K-2000-450-IV	20-2000V	450A	300kW	850mm*1000mm*2000mm	900kg
D2000NG-400K-2000-600-IV	20-2000V	600A	400kW	1650mm*1000mm*2000mm	1460kg
D2000NG-500K-2000-750-IV	20-2000V	750A	500kW	1650mm*1000mm*2000mm	1630kg
Pro					
D2000PG-100K-1200-300-IV	12-1200V	300A	100kW	640mm*900mm*1600mm	505kg
D2000PG-200K-1200-450-IV	12-1200V	450A	200kW	640mm*900mm*1600mm	505kg
D2000PG-100K-2000-150-IV	20-2000V	150A	100kW	850mm*1000mm*1500mm	530kg
D2000PG-200K-2000-300-IV	20-2000V	300A	200kW	850mm*1000mm*1500mm	700kg
D2000PG-300K-2000-450-IV	20-2000V	450A	300kW	850mm*1000mm*2000mm	900kg
D2000PG-400K-2000-600-IV	20-2000V	600A	400kW	1650mm*1000mm*2000mm	1460kg
D2000PG-500K-2000-750-IV	20-2000V	750A	500kW	1650mm*1000mm*2000mm	1630kg
D2000PG-600K-2000-900-IV	20-2000V	900A	600kW	1650mm*1000mm*2000mm	1800kg
Ultra					
D2000UG-100K-2000-150-IV	20-2000V	150A	100kW	850mm*1000mm*1500mm	530kg
D2000UG-200K-2000-300-IV	20-2000V	300A	200kW	850mm*1000mm*1500mm	700kg
D2000UG-300K-2000-450-IV	20-2000V	450A	300kW	850mm*1000mm*2000mm	900kg
D2000UG-400K-2000-600-IV	20-2000V	600A	400kW	1650mm*1000mm*2000mm	1460kg
D2000UG-500K-2000-750-IV	20-2000V	750A	500kW	1650mm*1000mm*2000mm	1630kg
D2000UG-600K-2000-900-IV	20-2000V	900A	600kW	1650mm*1000mm*2000mm	1800kg

Normal
Fundamental, Cost-effective

Pro
Fully-featured, Multi-scenario

Ultra
Ultimate experience, Lab testing-oriented

Differences by Version	Normal	Pro	Ultra
Bi-directional DC power supply	★	★	★
IV simulation	★	★	★
Battery simulation	★	★	★
Manual switch	★	-	-
DC electronic load	-	★	★
Electrically operated switch	-	★	★

Note: "★" means Yes; "-" means not available.

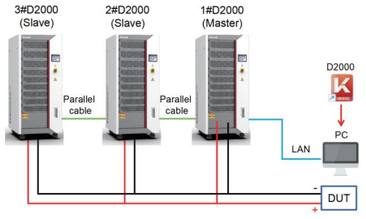
Product Applications

- Testing grid-connected PV inverters
- Testing EV motor controllers
- Testing charging piles
- Testing PCS
- Testing UPS, EPS systems
- Simulating/Replacing battery-powered testing environment
- Simulating/Replacing high-power DC power supply and load testing environment

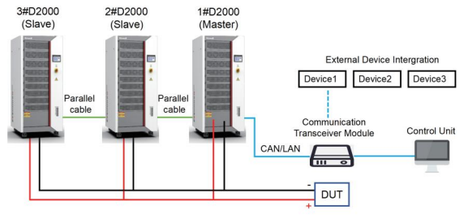
Product Functions

Flexible Parallel Connection:

The parallel connection supports high-speed communication with good anti-interference performance.
In the case of parallel connection, one master can control multiple slaves.



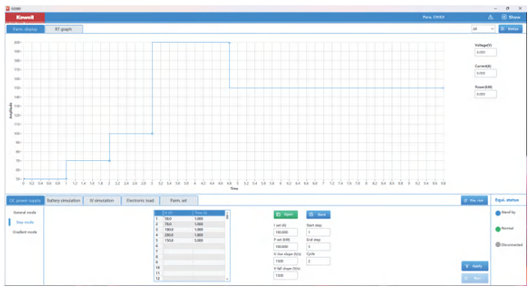
Parallel connection communication via PC software



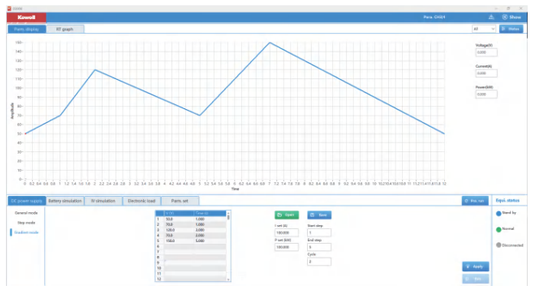
Parallel connection for external device integration

Programmable:

Users can program in Step mode and Gradient mode. D2000 allows for up to 200 programming steps and the steps can cycle up to 65535 times.
D2000 can memorize programming data, and it supports data import and export.



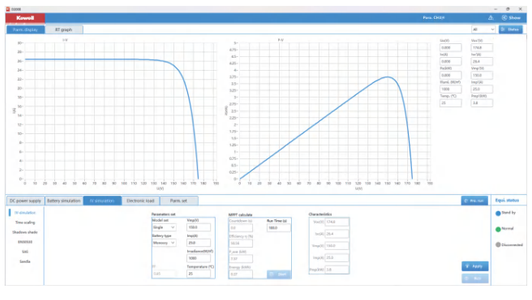
Step mode



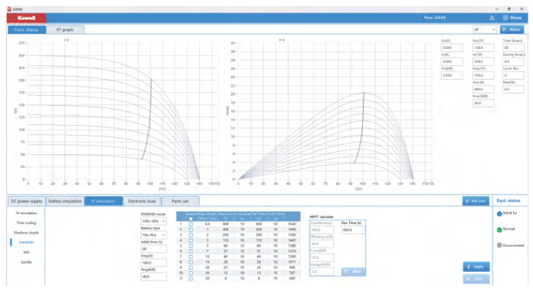
Gradient mode

IV Simulation:

D2000 can simulate the corresponding characteristics of monocrystalline, polycrystalline, and thin film solar panels, and the output of solar panels on sunny days, cloudy days, rainy days, etc.
D2000 supports static MPPT test, simulating a single output characteristic of solar cells; or dynamic MPPT test, simulating multiple output characteristics of solar cells.



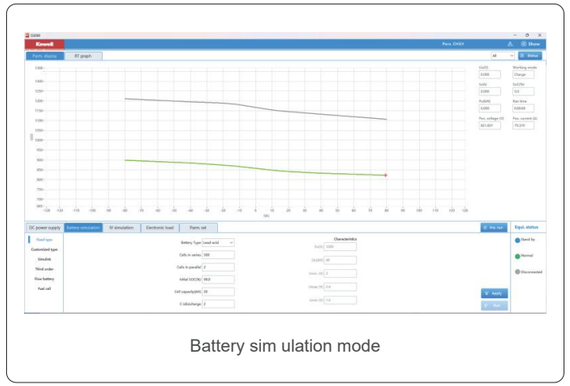
IV simulation and static MPPT



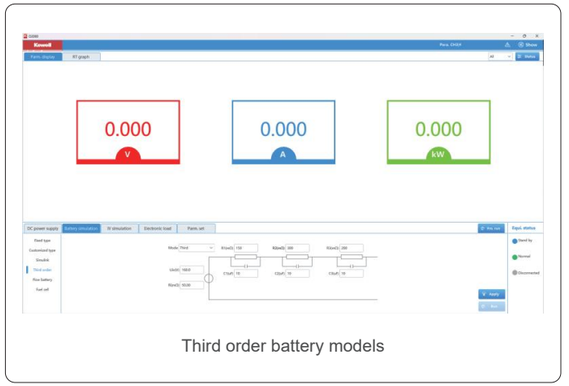
Dynamic MPPT

Battery Simulation:

D2000 has built-in fixed battery models, user-defined battery models, and 1st/2nd/3rd order battery models.
D2000 can simulate the output of seven fixed types of batteries, including lithium manganese oxide, lithium cobalt oxide, lead-acid, lithium iron phosphate, nickel hydrogen, ternary lithium and lithium titanate batteries.
D2000 can analyze the relationship between Ri (T, Soc) and Ui (T, Soc), and it supports importing battery cell model parameters to simulate the output characteristics of the corresponding battery pack.
Users can define the 1st/2nd/3rd order battery models.



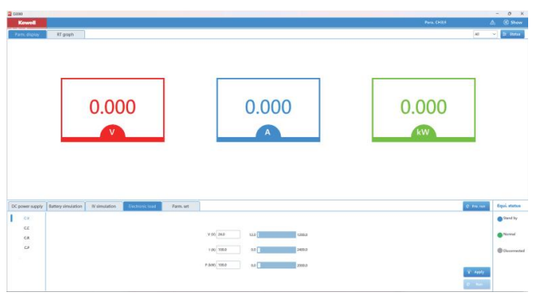
Battery sim ulation mode



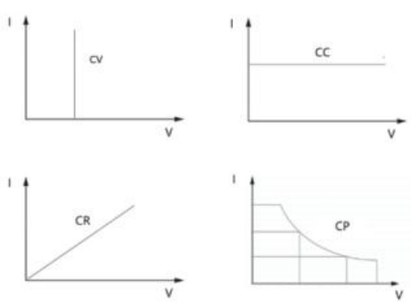
Third order battery models

Electronic Load:

D2000-IV series has multiple output modes, such as CV/CC/CR/CP. Users can select the required load mode.



Electronic load mode



IV curves of load modes

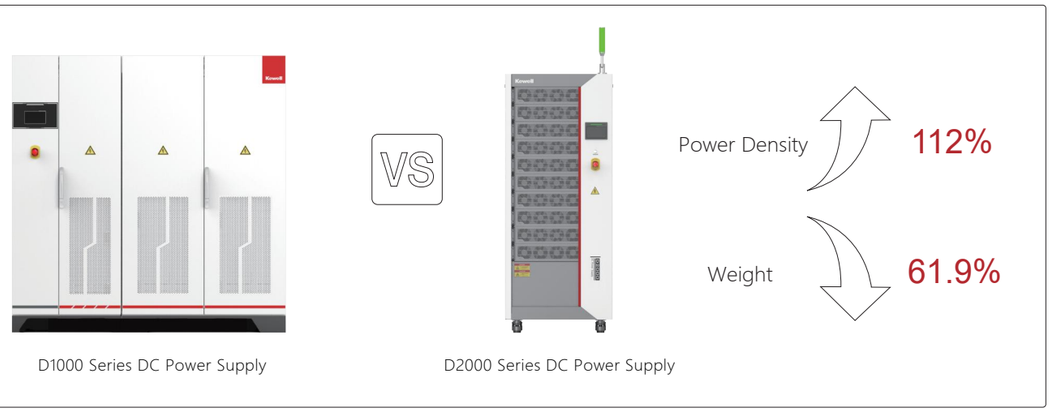
Product Highlights

New Design:

Easy replacement of faulty module
Casters for easy move

Ultra-High Power Density:

Up by 112% compared with industry frequency solutions
D2000-300kW cabinet weighs: 900kg. →down by 61.9% compared with industry frequency solutions



D1000 Series DC Power Supply

D2000 Series DC Power Supply

Ultra-High Efficiency:

Power efficiency up to 95.5%, improved by 3.5% compared with the IGBT version.

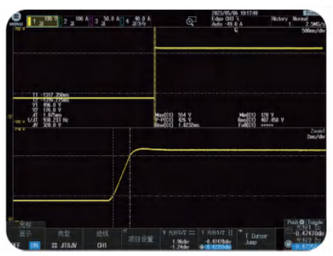
Efficiency
95.5%

Test Duration
8H *30D *12M

Reduce CO_2 Emissions by
30150kg

Dynamic Performance:

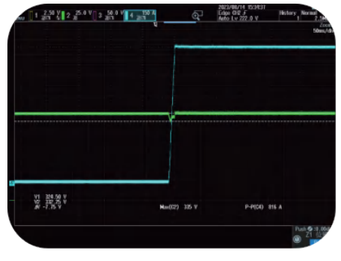
Voltage slew rate ≥ 300V/ms.



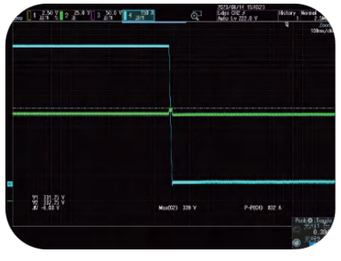
High dynamic performance of DC voltage output.

Sudden loading at 500V, voltage fluctuation: 24V@400A

Sudden unloading at 500V, voltage fluctuation: 24V@400A



Current: 0-90%I@10ms, voltage drop＜10



Current: 90%-0I@10ms, voltage overshoot＜10V

D2000-IV Options

Name	Model	Description
Three-color Alarm Lamp	PA1070-AL-T3	Three-color(while, green, red) alarm lamp
Switching Resistor	PA1070-SR-T0	18Ω
	PA1070-SR-T1	9Ω
	PA1070-SR-T2	7.2Ω
	PA1070-SR-T3	3.6Ω
	PA1070-SR-T4	2.4Ω
Parallel Connection Kit	PA1070-PO-T0L	Parallel connection kit for 2 devices(including 2*3m optical fiber communication cable)
	PA1070-PO-T1L	Parallel connection kit for 2 devices(including 2*6m optical fiber communication cable)
	PA1070-PO-T4L	Parallel connection kit for 3 devices(including 4*3m optical fiber communication cable)
	PA1070-PO-T5L	Parallel connection kit for 3 devices(including 4*6m optical fiber communication cable)
	PA1070-PO-T6L	Parallel connection kit for 4 devices(including 4*3m optical fiber communication cable)
	PA1070-PO-T7L	Parallel connection kit for 4 devices(including 4*6m optical fiber communication cable)
Insulation Monitor (Only for models with voltage below 1500V)	PA1070-ID-T3	Insulation monitor(Bender)

Three-color Alarm Lamp

Insulation Monitor

Parallel Connection Kit

Switching Resistor

Standard Accessories

Circuit Breaker Lock①

USB Stick(32G)②

Ethernet Cable(10m)

Notes: ① The circuit breaker lock is for the NG version only.
②The USB stick contains the software package (license will be provided by Kewell free of charge).

BI-DIRECTIONAL PROGRAMMABLE AC POWER SUPPLY

G6000 SERIES

The G6000 series is a four-quadrant AC power supply featuring high precision, high power density, and high dynamic performance. As a source, it supports adjustment of three phases separately, while having LIST/PULSE/STEP and other programming functions to simulate the disturbance characteristics of grid voltage and frequency. It also has waveform editing, harmonic and inter-harmonic modes, able to simulate abnormal grid conditions and test the grid tolerance of the device under test (DUT). As a load, it has built-in AC load models to simulate different load characteristics.

Features

- Automatic switching of the source-load function
- AC electronic load
- AC power output range: 0 ~ 18kVA
- AC current output range: 0 ~ 90A
- AC voltage output range: 0 ~ 450V (L-N)
- Maximum DC voltage output: 650V
- Parallel connection： up to 6 units
- Single phase or three-phase output
- Able to simulate instantaneous grid interruption of 1ms
- Built-in waveforms: triangle, square, clipped sine, trapezoid, and sawtooth.
- Harmonics and inter-harmonics superposition
- Harmonics analyzer
- Communication interfaces: RS232/LAN/USB/CAN/Digital IO/Analog IO
- Protections: OVP, OCP, OPP

Model Selection

Model	Voltage	Current	Power	Resolution	Accuracy (Voltage/Current)	Size
Pro						
G6000PG-18K-0450-0090	450V	90A	18kVA	0.01V/0.01A	≤0.05%+0.05%F.S./≤0.1%F.S.	3U
Ultra						
G6000UG-18K-0450-0090	450V	90A	18kVA	0.01V/0.01A	≤0.05%+0.05%F.S./≤0.1%F.S.	3U

Normal
Fundamental, Cost-effective

Pro
Fully-featured, Multi-scenario

Ultra
Ultimate experience, Lab testing-oriented

Features \ Version	Normal	Pro	Ultra
Four-quadrant	-	★	★
Unidirectional	★	-	-
AC	★	★	★
DC	-	★	★
AC+DC	-	★	★
List/Pulse/Step	★	★	★
Waveform editing	-	★	★
Harmonic mode	-	★	★
Inter-harmonic mode	-	★	★
Harmonic display	-	★	★
AC load(CC/CR/CP/RLC/PQ modes)	-	-	★

Note: "★" means Yes; "-" means not available.

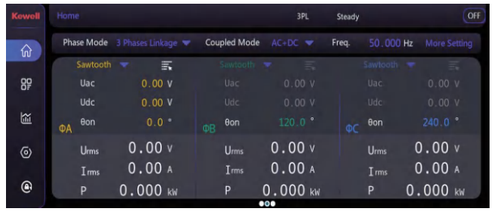
Product Applications

- Simulating the voltage change in grid
- Simulating the frequency change in grid
- Simulating grid anomalies
- LVRT/HVRT test
- Testing PV energy storage
- Testing on-board chargers
- Simulating/Replacing AC power supply and load testing environment

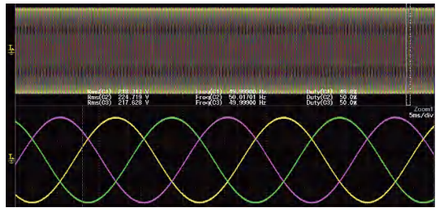
Product Functions

Sine Wave Mode

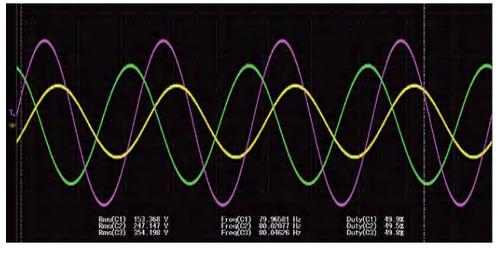
Users can set the voltage, phase, amplitude, and frequency of the output, minimum step size: 0.01V, 0.01Hz; the output mode can be three-phase sync./three-phase independent/single phase.



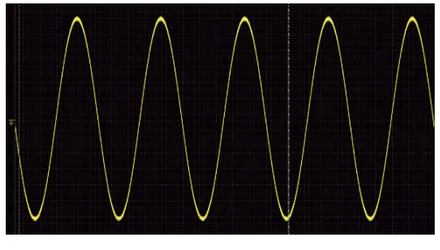
Sine wave mode



Three-phase sync. @220V, phase difference: 120°



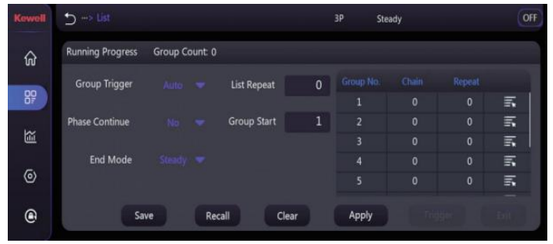
Three-phase independent @different amplitude
Phase A: 60°, Phase B: 200°, Phase C: 100°



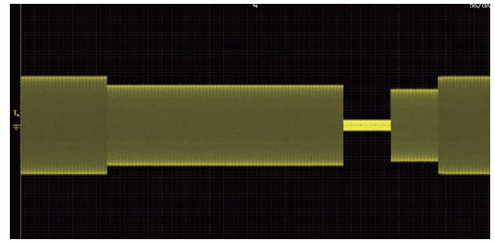
Single phase @220V

LIST/STEP/PULSE Mode

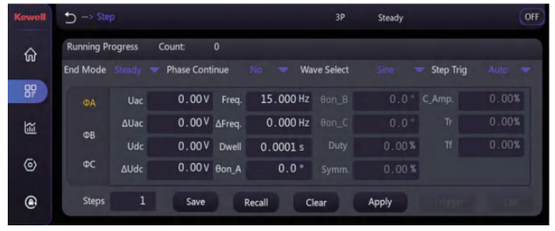
The G6000 series has multiple programming output modes such as LIST, STEP and PULSE. LIST mode supports editing of more complex test waveforms, with up to 10 groups of steps, each group having up to 20 sequences to be set. The steps can be set in cycle.



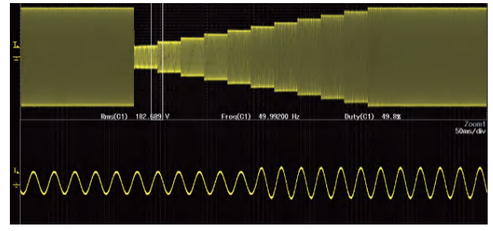
LIST mode



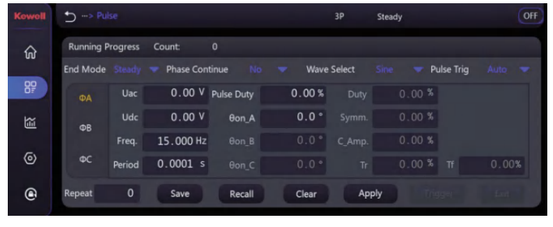
LIST mode @voltage: 220-180-20-160V step change



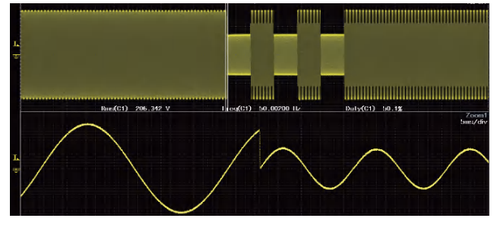
STEP mode



STEP mode @voltage: 50-220V, frequency: 45-65Hz, gradient change in 10s

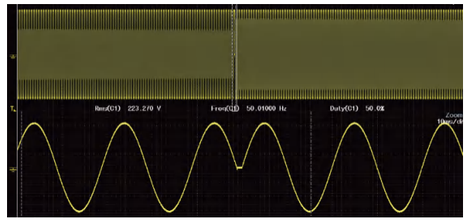


PULSE mode

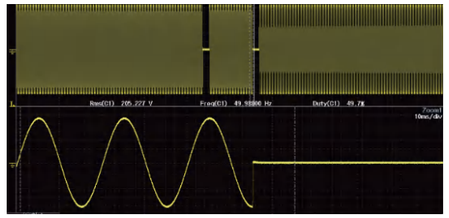


PULSE mode @total cycle of 1s, pulse time: 50%, pulse voltage: 100V, frequency: 100Hz

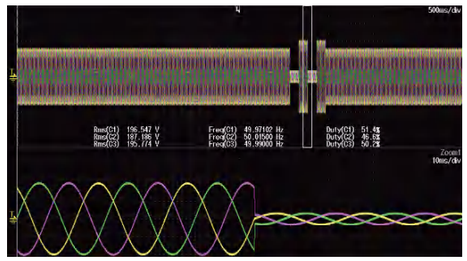
Users can also select high voltage ride through (HVRT), low voltage ride through (LVRT), and high and low voltage ride through combined test functions. The G6000 series supports single-phase, two-phase and three-phase ride through tests.

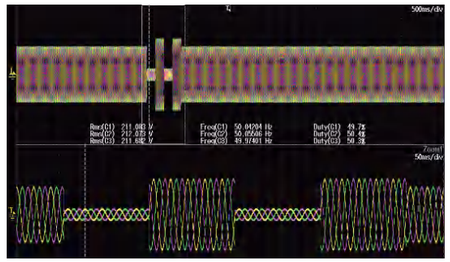


Voltage: 220V, ZVRT duration: 1ms,
phase A drop phase angle: 180°



Voltage: 220V, phase A drop phase angle: 270° (ZVRT)



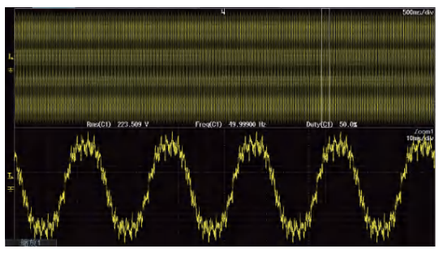


Nominal voltage: 220V, LVRT: 20%, HVRT: 130%, phase A drop phase angle: 0°

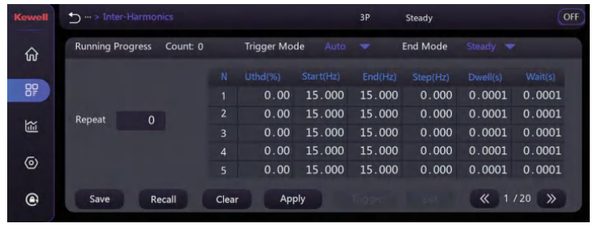
Harmonic & Inter-harmonic Mode

In harmonic superposition mode, users can set the harmonic amplitude of each voltage component to simulate abnormal grid environment and thereby test the grid withstand of the DUT. (2nd-100th harmonic superimposition, up to 99 kinds of harmonics to be superimposed simultaneously)

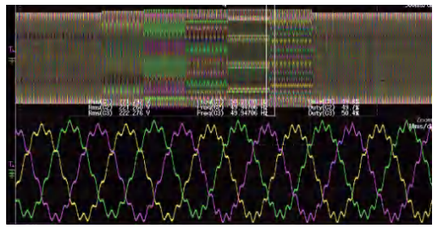
Harmonic mode



Fundamental wave @50Hz,
2nd-100th harmonics with a content of 5%-10%



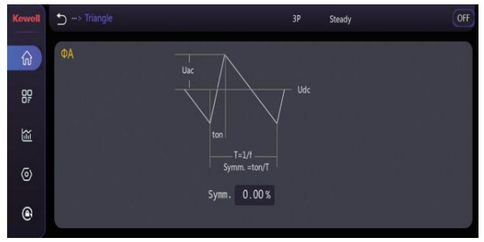
Inter-harmonic mode

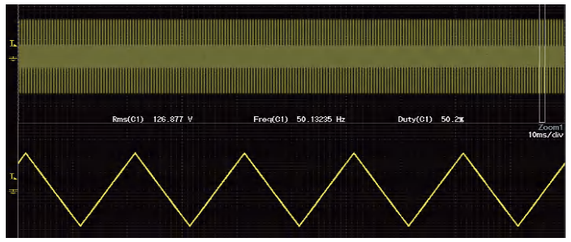


Inter-harmonic content: 10%,
frequency start @200Hz, end @600Hz

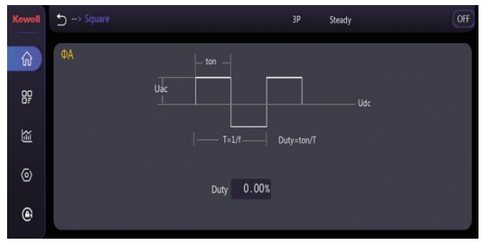
Special Waves Mode

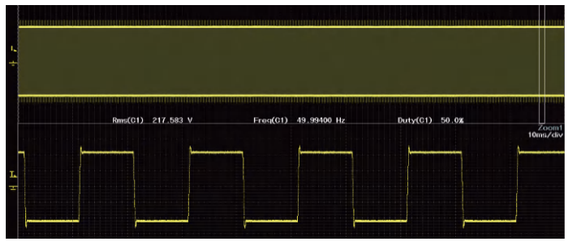
The G6000 series has different types of built-in waveforms including triangle, square, clipped sine wave, trapezoid, and sawtooth. Users may call a selected waveform via the software or the menu and display it on the LCD screen.



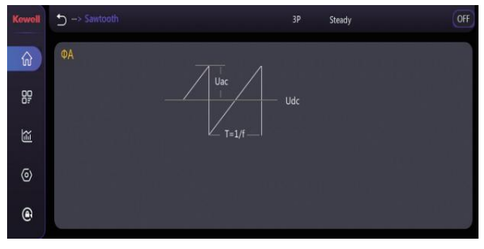


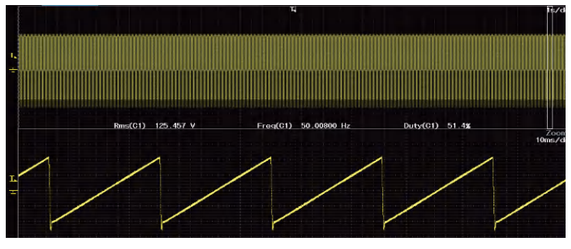
Triangle wave @phase A-220V, 50% symmetry





Square wave @phase A-220V, 50% duty cycle





Sawtooth @phase A-220V

Harmonic Display

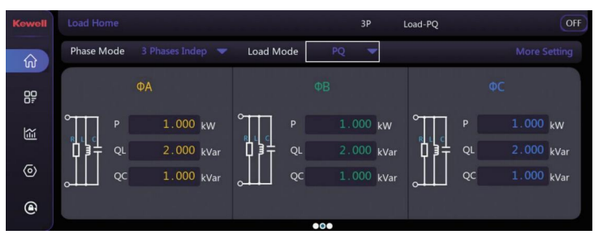
The G6000 series features harmonic analysis function that covers voltage harmonic measurements and current harmonic measurements. In harmonic mode, it tests voltage and current THD and the phase difference between harmonics and fundamental wave. In addition, it supports multiple harmonic measurements and display of the results in a list in an intuitive way.

Harmonic display

Load Function

For G6000 Ultra version, the load mode includes five steady-state load modes: CC, CR, CP, RLC and PQ. In the RLC mode, it has built-in 14 typical topology of RLC load.

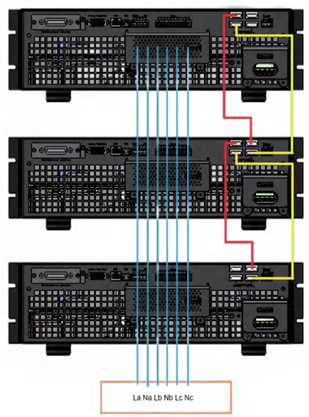
Rectifier topology in RLC mode



PQ mode

Parallel Connection

Parallel connection of multiple G6000 series units provides higher current and larger power output.



The G6000 series devices in parallel connection

Model Appearance

Model	Number	Dimensions (W*D*H)	Weight(Cabinet alone)
HK-15U	2~3 devices	610*1026*1006mm	130kg
HK-29U	4~6 devices	610*1026*1554mm	220kg

Standard Accessories

Handles

Ethernet Cable(3m)

AC protective cover

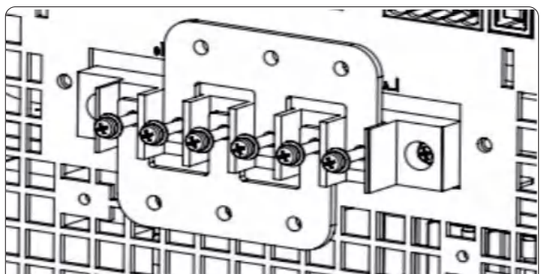
USB Stick(32G)①

AC output Protective Cover

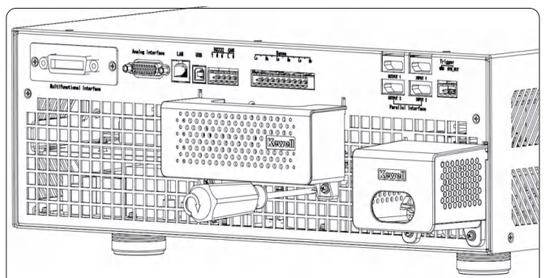
Parallel connection Cable

Short-circuiting copper busbar

Note: ① The USB stick contains the software package (license will be provided by Kewell free of charge).



Copper busbar for short-circuiting



AC protective covers

BI-DIRECTIONAL PROGRAMMABLE AC POWER SUPPLY

A2000 SERIES

The A2000 series is a Bi-directional programmable AC power supply featuring high accuracy, high dynamic response, and high efficiency. Adopting the all-new third-generation wide band-gap semiconductor material SiC, the product is highly modularized and standardized, offering industry-leading performance + experience. The A2000 series applies to PV and energy storage, new energy vehicle, AC/DC charging pile industries, as well as testing by research institutes and colleges and universities.

Features

- Third-generation SiC design
- Electrically operated switch + TFT touch screen
- Voltage output range: 30~450V(L-N)
- Current output range: 0~342A
- Frequency output range: 40-70Hz
- Efficiency: up to 92.6%
- Unbalance,flicker simulation
- Comm. interface: RS485, LAN
- External emergency stop
- Multi-step programming
- Flexible parallel connection
- LVRT/HVRT/ZVRT
- Harmonics and inter-harmonics superposition

Model Selection

Model	Voltage	Current	Power	Dimensions (W*D*H)	Weight
Normal					
A2000NG-45K-450-90	450V	90A	45kVA	620mm*900mm*970mm	270kg
A2000NG-75K-450-114	450V	114A	75kVA	620mm*900mm*970mm	270kg
A2000NG-150K-450-228	450V	228A	150kVA	620mm*900mm*1600mm	505kg
A2000NG-225K-450-342	450V	342A	225kVA	850mm*1000mm*2000mm	765kg
Pro					
A2000PG-45K-450-90	450V	90A	45kVA	620mm*900mm*970mm	270kg
A2000PG-75K-450-114	450V	114A	75kVA	620mm*900mm*970mm	270kg
A2000PG-150K-450-228	450V	228A	150kVA	620mm*900mm*1600mm	505kg
A2000PG-225K-450-342	450V	342A	225kVA	850mm*1000mm*2000mm	765kg

Normal
Fundamental, Cost-effective

Pro
Fully-featured, Multi-scenario

Features \ Version	Normal	Pro
Bi-directional AC power supply	★	★
Voltage Ride-through	★	★
Harmonic & Inter-harmonic Superposition	★	★
Three-phase Unbalance	★	★
Flicker	★	★
AC Load	-	★

Note: "★" means Yes; "-" means not available.

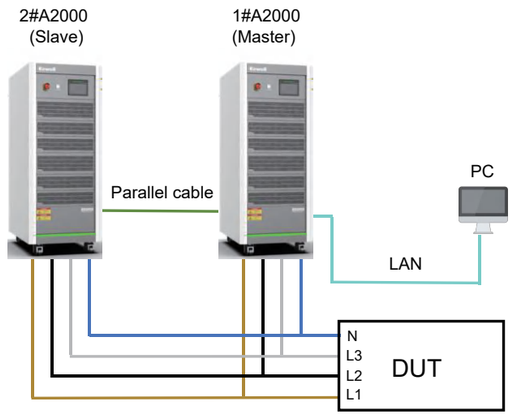
Product Applications

- Testing AC charging piles
- Testing ESS (Energy Storage System)
- Testing power conversion system (PCS)
- Testing AC-DC converters
- Testing PV inverters
- Testing OBC (On-board Chargers)
- Simulating/Replacing AC power supply and load testing environment

Product Functions

Flexible Parallel Connection:

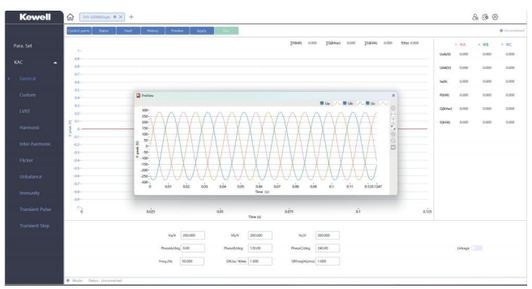
The parallel connection supports high-speed communication with good anti-interference performance.
In the case of parallel connection, one master can control multiple slaves.



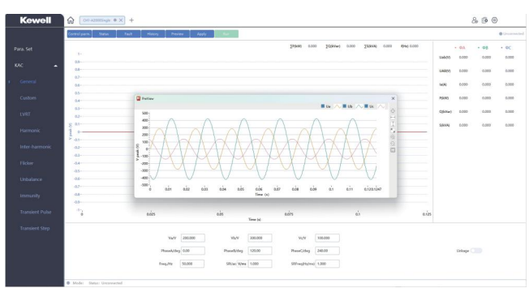
Parallel connection communication via PC software

General Modes:

This covers three-phase linkage and three-phase independent operation. It supports independent output of single phase, two phases or three phases, to simulate a variety of unbalanced and abnormal grid conditions.



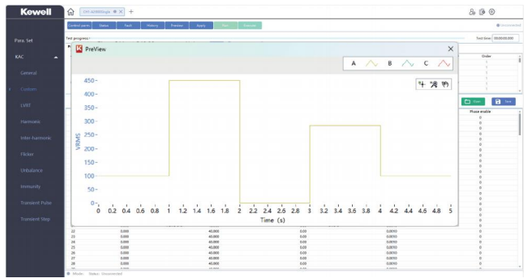
Three-phase linkage



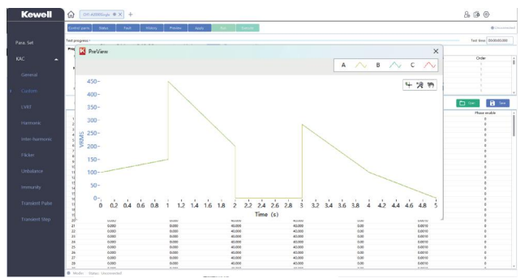
Three-phase independent

Programming Modes:

LIST mode supports up to 200 groups of steps to be edited, steps can be set to run in cycle and to simulate complex waveforms such as voltage dips, interruptions and variations.
STEP mode supports single or multi-step voltage variation to simulate power supply disturbances such as cyclic dips, instantaneous high voltage, and gradient voltage drop.



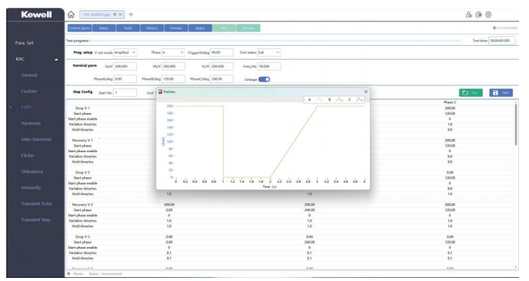
LIST mode @100-450-0-285-100V step change of voltage



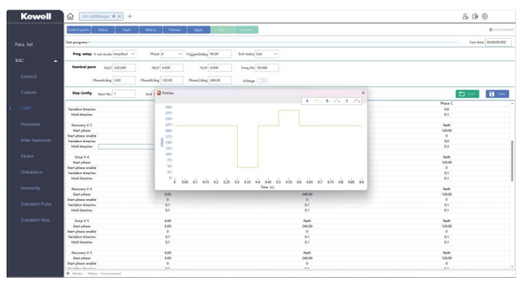
STEP mode @voltage: 0-450V, frequency: 40-70Hz

Voltage Ride-through:

A2000 series features HVRT, LVRT, and combined HVRT&LVRT tests. It supports single-phase, two-phase, three-phase ride-through tests.



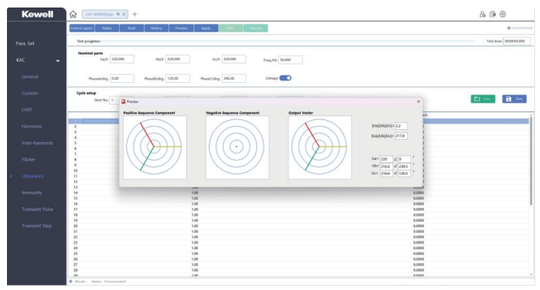
Harmonic superposition, frequency @50Hz

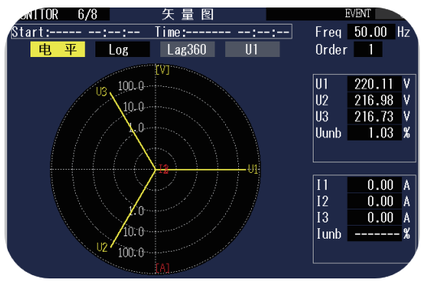


Inter-harmonic content =10%, frequency @625Hz

Three-phase Unbalance:

Set the voltage three-phase unbalance to simulate the characteristics of grid unbalance. This applies to testing of inverters and other DUTs for adaptability to grid voltage imbalance.

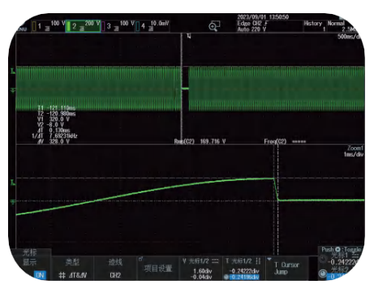




1% unbalance

Great Dynamic Performance:

The A2000 series boasts great dynamic performance, with voltage slew rate ≥ 1V/μs and dynamic response (10%-90%Umax) < 800μs.



Instantaneous Interruption:

Support simulation of grid interruption of 1ms, in line with the requirements of relevant standards.

Product Highlights

New Design:

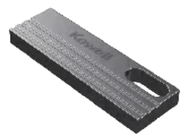
Easy replacement of faulty module
One button to Power ON, One button to Emergency Stop
Casters for easy move
The self-developed 7-inch TFT touch screen provides a smooth operating experience.

Note: The picture is for reference of the modular design only.

All-round Protections:

All-round protections at both software and hardware levels.
Equipped with input over-voltage, over-current, and out-phase protection functions.
Equipped with output over-voltage, over-current.
Equipped with protections against abnormal operating conditions such as over-temperature and over-power, and also with emergency stop.
Fault query, historical fault query, and fault reset.

A2000 Accessories



USB Stick(32G)①

Ethernet Cable(10m)

Note: ① The USB stick contains the software package (license will be provided by Kewell free of charge).

A2000 Options

Item	Description
Parallel connection kit	Parallel connection kit for 2 devices (including parallel communication cables, network cables, and switch)

Parallel Connection Kit

PROGRAMMABLE DC ELECTRONIC LOAD

E5000 SERIES

E5000 Series is a compact, high-power DC electronic load featuring wide operating range and high dynamic frequency. In 4U size, it powers up to 6.6kW and outputs voltage up to 1200V. It supports at most 10 E5000 devices in parallel operation.

Features

- High power density: 6.6kW in 4U
- Power output range: 6.6kW
- Voltage output range: 0 ~ 150V, 0 ~ 600V, 0 ~ 1200V
- A variety of modes: CC, CV, CR, CP, CCD, and CRD
- Three voltage levels + three current ranges
- Automatic GO/NG detection
- Remote voltage compensation
- Dynamic current/resistance load of 25kHz
- Analysis of fuel cell impedance
- RS485/CAN/LAN/USB communication
- Optional GPIB
- Protections: OVP, OCP, OTP, OPP, etc.
- Dynamic frequency of 50kHz
- Up to 255 groups of programmable sequences

Model Selection

Model	Voltage	Current	Power	Resolution	Voltage Accuracy	Current Accuracy	Size
Normal							
E5000NG-2K2-0150-0200	150V	200A	2.2kW	0.001V/0.002A/0.05W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000NG-4K4-0150-0400	150V	400A	4.4kW	0.001V/0.004A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000NG-6K6-0150-0600	150V	600A	6.6kW	0.001V/0.005A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000NG-13K2-0150-1200	150V	1200A	13.2kW	0.001V/0.01A/0.2W	0.05%+0.025%F.S.	0.1%+0.1%F.S	7U
E5000NG-19K8-0150-1800	150V	1800A	19.8kW	0.001V/0.02A/0.4W	0.05%+0.025%F.S.	0.1%+0.1%F.S	10U
E5000NG-2K2-0600-0140	600V	140A	2.2kW	0.005V/0.002A/0.05W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000NG-4K4-0600-0280	600V	280A	4.4kW	0.005V/0.004A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000NG-6K6-0600-0420	600V	420A	6.6kW	0.005V/0.004A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000NG-13K2-0600-0840	600V	840A	13.2kW	0.005V/0.01A/0.2W	0.05%+0.025%F.S.	0.1%+0.1%F.S	7U
E5000NG-19K8-0600-1260	600V	1260A	19.8kW	0.005V/0.01A/0.4W	0.05%+0.025%F.S.	0.1%+0.1%F.S	10U
E5000NG-2K2-1200-0080	1200V	80A	2.2kW	0.01V/0.001A/0.05W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000NG-4K4-1200-0160	1200V	160A	4.4kW	0.01V/0.002A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000NG-6K6-1200-0240	1200V	240A	6.6kW	0.01V/0.002A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000NG-13K2-1200-0480	1200V	480A	13.2kW	0.01V/0.004A/0.2W	0.05%+0.025%F.S.	0.1%+0.1%F.S	7U
E5000NG-19K8-1200-0720	1200V	720A	19.8kW	0.01V/0.005A/0.4W	0.05%+0.025%F.S.	0.1%+0.1%F.S	10U
Pro							
E5000PG-2K2-0150-0200	150V	200A	2.2kW	0.001V/0.002A/0.05W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000PG-4K4-0150-0400	150V	400A	4.4kW	0.001V/0.004A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000PG-6K6-0150-0600	150V	600A	6.6kW	0.001V/0.005A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000PG-13K2-0150-1200	150V	1200A	13.2kW	0.001V/0.01A/0.2W	0.05%+0.025%F.S.	0.1%+0.1%F.S	7U
E5000PG-19K8-0150-1800	150V	1800A	19.8kW	0.001V/0.02A/0.4W	0.05%+0.025%F.S.	0.1%+0.1%F.S	10U
E5000PG-2K2-0600-0140	600V	140A	2.2kW	0.005V/0.002A/0.05W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000PG-4K4-0600-0280	600V	280A	4.4kW	0.005V/0.004A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000PG-6K6-0600-0420	600V	420A	6.6kW	0.005V/0.004A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000PG-13K2-0600-0840	600V	840A	13.2kW	0.005V/0.01A/0.2W	0.05%+0.025%F.S.	0.1%+0.1%F.S	7U
E5000PG-19K8-0600-1260	600V	1260A	19.8kW	0.005V/0.01A/0.4W	0.05%+0.025%F.S.	0.1%+0.1%F.S	10U
E5000PG-2K2-1200-0080	1200V	80A	2.2kW	0.01V/0.001A/0.05W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000PG-4K4-1200-0160	1200V	160A	4.4kW	0.01V/0.002A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000PG-6K6-1200-0240	1200V	240A	6.6kW	0.01V/0.002A/0.1W	0.05%+0.025%F.S.	0.1%+0.1%F.S	4U
E5000PG-13K2-1200-0480	1200V	480A	13.2kW	0.01V/0.004A/0.2W	0.05%+0.025%F.S.	0.1%+0.1%F.S	7U
E5000PG-19K8-1200-0720	1200V	720A	19.8kW	0.01V/0.005A/0.4W	0.05%+0.025%F.S.	0.1%+0.1%F.S	10U

Note: E5000 series will launch 29U for 26.4kW, 33kW, 39.6kW; and 42U for 46.2kW, 52.8kW, 59.4kW gradually.

Normal
Fundamental, Cost-effective

Pro
Fully-featured, Multi-scenario

Features \ Version	Normal	Pro
Basic mode(CC/CV/CR/CP/CCD)	★	★
Battery discharge	★	★
Short-circuit simulation	★	★
LIST mode	★	★
Dynamic resistance load (CRD)	-	★
Composite modes(CVCC/CRCCICVCRIAUTO)	-	★
Sine wave mode(SWD)	-	★
Dynamic load sweep(SWP)	-	★
OCP/OPP threshold setting	-	★

Note: "★" means Yes; "-" means not available.

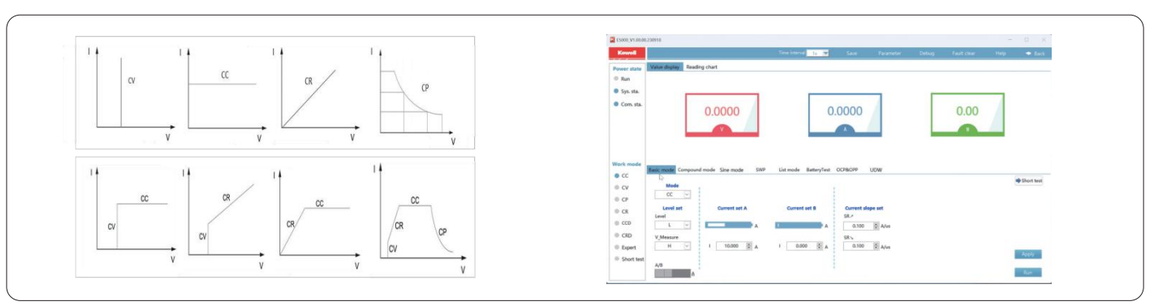
Product Applications

- Battery discharge test
- Fuel cell test
- Testing DC charging modules
- Testing on-board chargers
- Testing DC charging piles
- Testing DCDC converters
- Power semiconductor devices
- Military industry, avionics
- High voltage contactors
- Testing UPS, SMPS systems

Product Functions

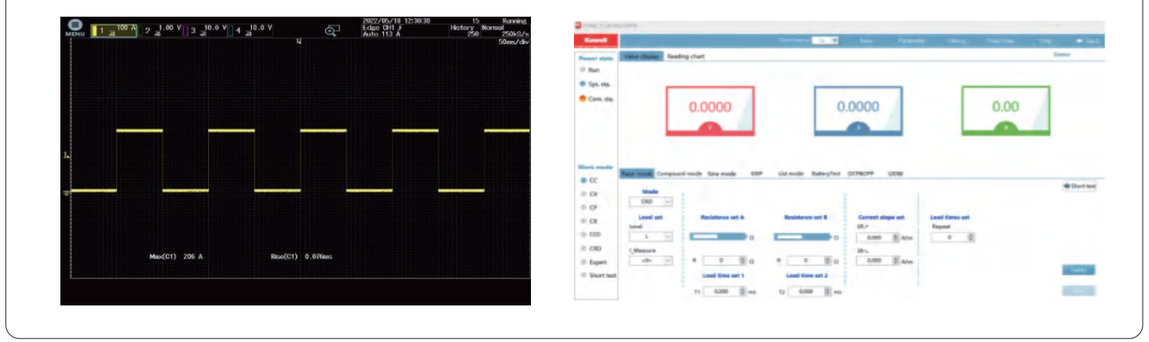
DC Electronic Load

The E5000 series supports a variety of operation modes meeting a wide range of test requirements. These include basic operation modes: CC, CV, CP and CR and combined modes: CV+CC, CV+CR, CC+CR, and CV+CC+CP+CR (AUTO).



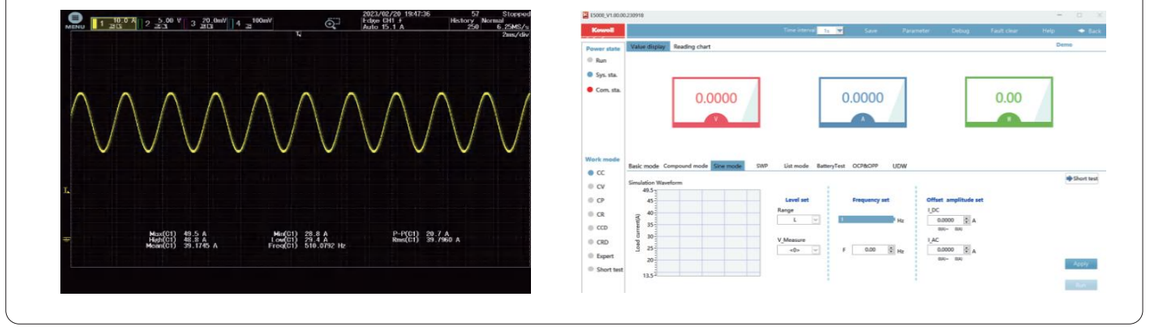
Dynamic Load

The E5000 series supports high-speed, programmable dynamic load mode (dynamic current load CCD and dynamic resistance load CRD), frequency sweep mode, etc. Users can also set high/low level of current, T1/T2, rise/fall slew rate and number of executions. In cases of continuous changes in load current, the internal monitoring mechanism and circuits are able to minimize current waveform distortion; the minimum current rise time of the load at 150V is 15μs, with dynamic change up to 25kHz.



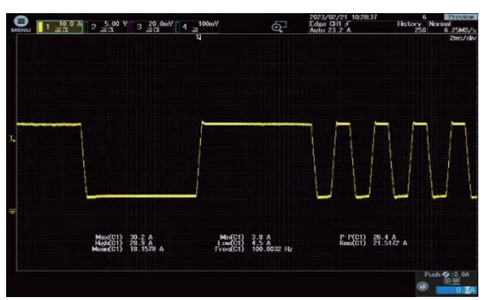
Sine Wave Dynamic

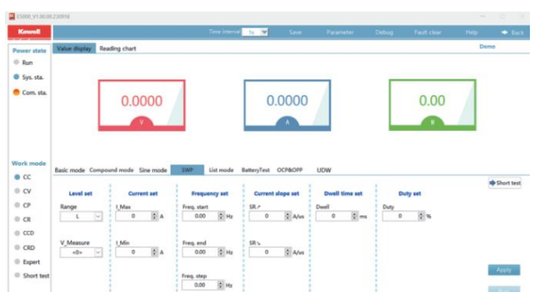
The E5000 series is equipped with SWD function, where output current bias (I@DC), sine wave (I@AC) and sinusoidal frequency can be set. The sinusoidal frequency can be set up to 20kHz.



Dynamic Load Sweep

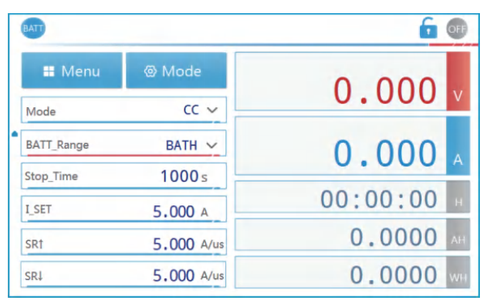
It supports linearly varying the frequency of the load current to as high as 50kHz.This mode tests the maximum/minimum voltage peak of the DUT under worst-case conditions. This dynamic frequency sweep function has a sampling rate of 500kHz. Dynamic load sweep mode can simulate a variety of load conditions, which meets the needs of most customers.

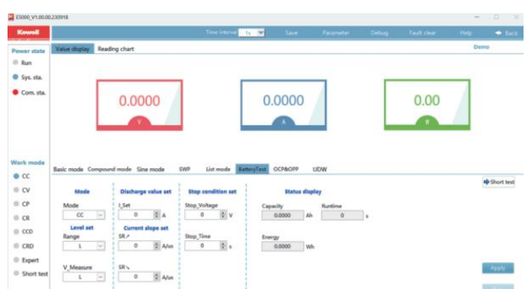




Battery Test Mode

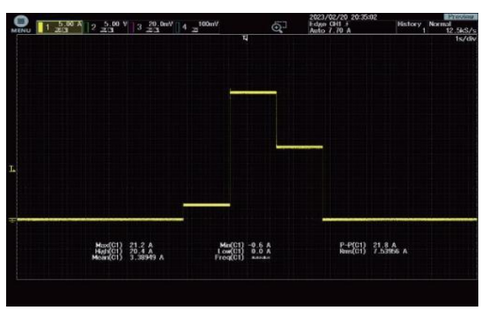
This mode features battery discharge function and supports discharge test under constant current/ constant resistance/ constant power conditions. Users may set discharge cut-off conditions including cut-off voltage and discharge time, and the discharge will stop when either one is reached. Battery voltage, time and discharge capacity can be observed during the test.

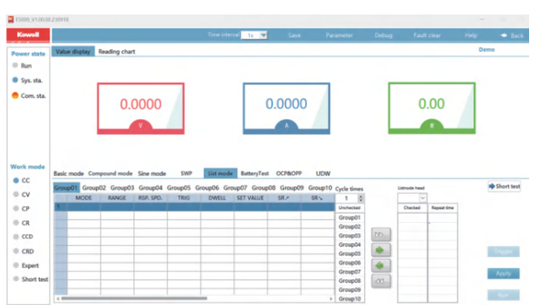




LIST Function

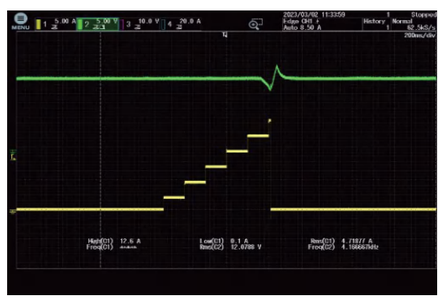
The E5000 series also has an output mode that supports multi-step programming, with up to 10 test files to be edited, each containing 200 sequences. The time of a single step ranges 0.1ms~30s. In this mode, the temporal changes of load under CC/CV/CP/CR conditions are simulated. It also supports nested loops, and step cycle up to 65535 times.

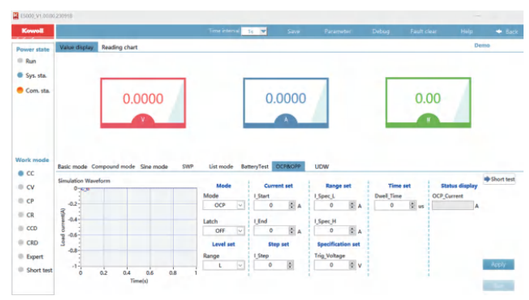




Determination of OCP/OPP Points

The E5000 electronic load provides customer-defined overcurrent/overpower protection function to avoid damage to the DUT caused by mis-operation. Users may define current protection threshold as needed for different DUTs.



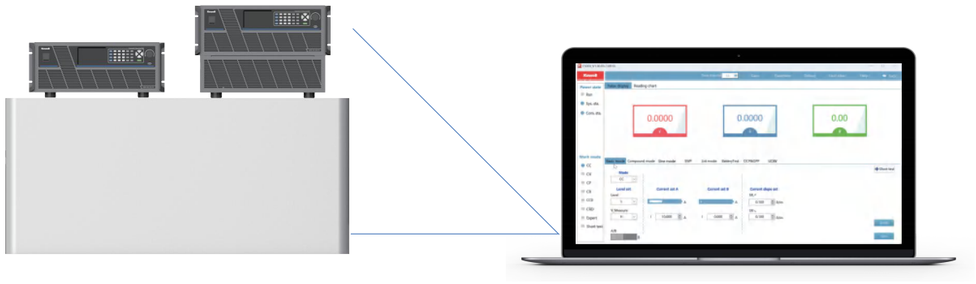


Product Highlights

Ultra-High Power Density

Up to 4U/6.6kW per device, compact, lightweight, and space-efficient

Flexible Paralleling

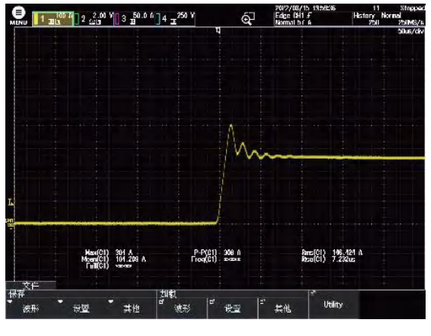


E5000 can output 6.6kw in 4U size. An integrated cabinet of 42U can output 59.4kw at max. It supports flexible parallel connection of at most 9 devices.

Super Dynamic Performance

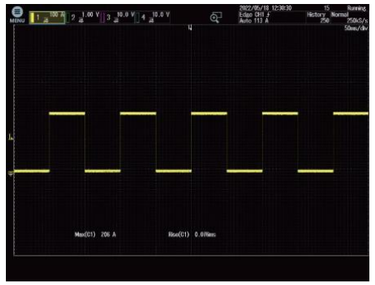
- **Current slope up to 6V/μs**

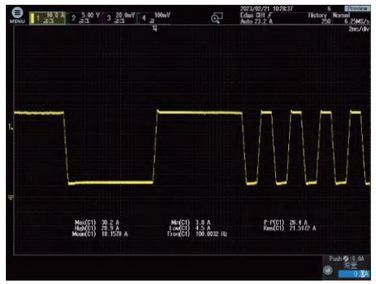
The minimum current rise time of load at 150V is 15μs, with dynamic change up to 25kHz



- **Rapid dynamic response**

E5000 supports linearly varying the frequency of the load current to as high as 50kHz.





Model Appearance

Model	Power	Dimensions (W*D*H)
4U	2.2kW/4.4kW/6.6kW	610*1026*1006mm
7U	13.2kW	610*1026*1554mm
10U	19.8kW	610*1026*1999mm

Standard Accessories

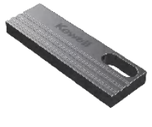
Handles

Parallel Cable

Ethernet Cable（3m）

DC Protective Cover

Power Supply Cable①



USB Stick(32G)②

Note:
① The pictures are for reference only. The actual plug will conform to the local plug type and will be provided by the local service provider.
② The USB stick contains the software package (license will be provided by Kewell free of charge).

CELL CHARGE-DISCHARGE TEST SYSTEM

B2000-EC SERIES

The B2000-EC series is a cell charge-discharge test system featuring high accuracy, high dynamic performance, high efficiency, and bi-directional flow of energy. Based on the modular design, it integrates data acquisition and monitoring during the charging and discharging process, as well as current ripple injection, overcharge, negative voltage discharge, multi-channel parallel connection and other functions. The series is widely applicable to the R&D and EOL testing of cells for traction battery and energy storage battery by institutes and businesses.

Features

- Voltage output range: -6V~6V (optional: -10~10V)
- Current output range: 0~800A
- Min. operating condition interval: 10ms
- Data logging time: 1ms
- Current response: 1ms@10%~90%
- Voltage accuracy: ±0.02%F.S.
- Current accuracy: ±0.02%F.S.
- Temperature sampling: K-type, T-type(-50°C~200°C)
- CV, CC, CP, CR, CCCV, pulse current, pulse power, ramp current, ramp power
- Flexible paralleling: Up to 4800A
- Current switch: 2ms@-90%~90%
- Matrix mode (LUT)
- All-round protection
- Four current ranges
- Real-time monitoring, data and curves
- Negative voltage discharge
- Ripple injection (optional)
- Comm. interface(peripherals): LAN, RS485, CANFD

Product Portfolio

Product Model	Voltage	Current	Channel	Normal	Pro
B2000N/PG-2K-6-100-4-EC B2000N/PG-4K-6-100-8-EC B2000N/PG-6K-6-100-12-EC B2000N/PG-8K-6-100-16-EC	0~6V -6V~6V	100A	4CH/8CH/12CH/16CH	●	●
B2000N/PG-4K-6-200-4-EC B2000N/PG-8K-6-200-8-EC B2000N/PG-12K-6-200-12-EC B2000N/PG-16K-6-200-16-EC	0~6V -6V~6V	200A	4CH/8CH/12CH/16CH	●	●
B2000N/PG-6K-6-300-4-EC B2000N/PG-12K-6-300-8-EC B2000N/PG-18K-6-300-12-EC B2000N/PG-24K-6-300-16-EC	0~6V -6V~6V	300A	4CH/8CH/12CH/16CH	●	●
B2000N/PG-8K-6-400-4-EC B2000N/PG-16K-6-400-8-EC B2000N/PG-24K-6-400-12-EC B2000N/PG-32K-6-400-16-EC	0~6V -6V~6V	400A	4CH/8CH/12CH/16CH	●	●
B2000N/PG-10K-6-500-4-EC B2000N/PG-15K-6-500-6-EC B2000N/PG-20K-6-500-8-EC	0~6V -6V~6V	500A	4CH/6CH/8CH	●	●
B2000N/PG-12K-6-600-4-EC B2000N/PG-18K-6-600-6-EC B2000N/PG-24K-6-600-8-EC	0~6V -6V~6V	600A	4CH/6CH/8CH	●	●
B2000N/PG-14K-6-700-4-EC B2000N/PG-21K-6-700-6-EC B2000N/PG-28K-6-700-8-EC	0~6V -6V~6V	700A	4CH/6CH/8CH	●	●
B2000N/PG-16K-6-800-4-EC B2000N/PG-24K-6-800-6-EC B2000N/PG-32K-6-800-8-EC	0~6V -6V~6V	800A	4CH/6CH/8CH	●	●

Normal
Fundamental, Cost-effective

Pro
Fully-featured, Multi-scenario

Features \ Version	Normal	Pro
Discharge voltage range	0.5~6V	-6~6V (optional: -10~10V)
Voltage & current accuracy	0.05%F.S.	0.02%F.S.
Current response	2ms @10~90% 4ms @-90% ~ +90%	1ms @10~90% 2ms @-90% ~ +90%
Min. operating condition interval	20ms	10ms
Data logging time	10ms	1ms
Ripple injection (optional)	×	√

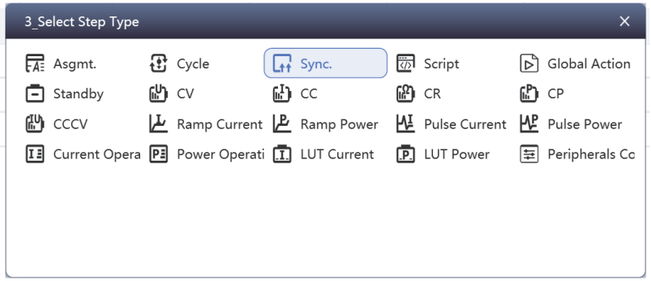
Typical Test Items

- Cycle life test
- DCIR test
- OCV test
- Real situation simulation (LUT)
- Capacity test
- HPPC (Hybrid pulse power characterization) test
- Road spectrum test

Software Functions

Operating Modes

The system supports constant voltage (CV), constant current (CC), constant resistance (CR), CC+CV, pulse current, pulse power, ramp current, operating condition simulation and other steps of charge and discharge.



Operating mode selection

Management of Test Sequences

This function supports definition of step execution logic, test protection logic, and test data logging logic in specific formats. Users can customize the test logic by scripting, or edit the process file through the defined, visualized test logic system.

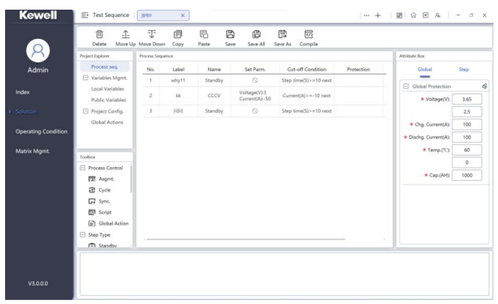
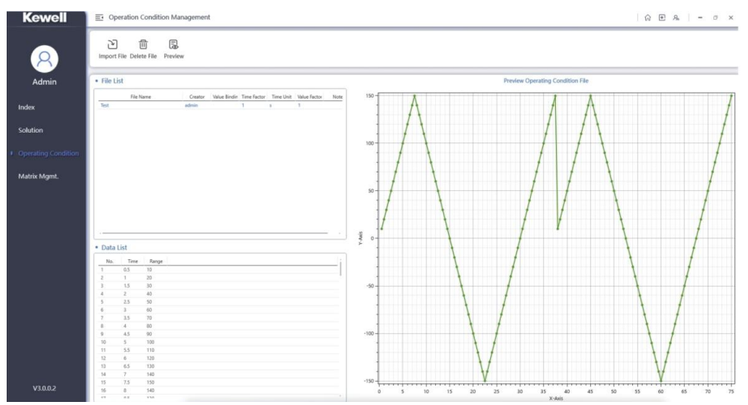


Table of test sequences

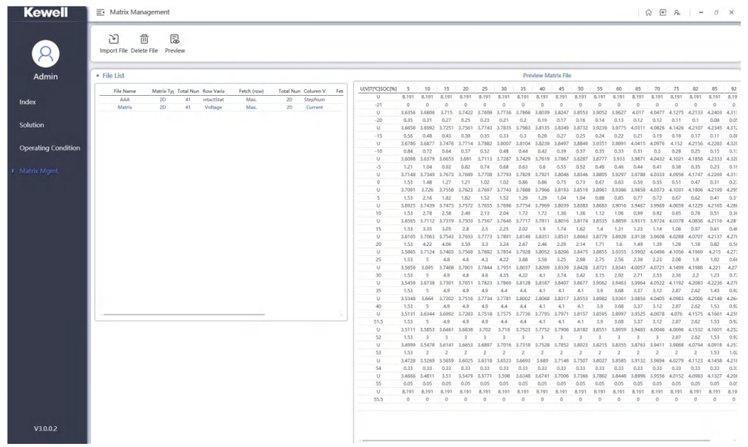
Simulation of Operating Conditions

Operating condition file: Simulation of operating conditions supports cycling test of EV driving in line with industry standards such as NEDC, WLTC and WLTP. Users can also import real-time data of operating conditions in excel, .csv and other formats.



Operating condition simulation

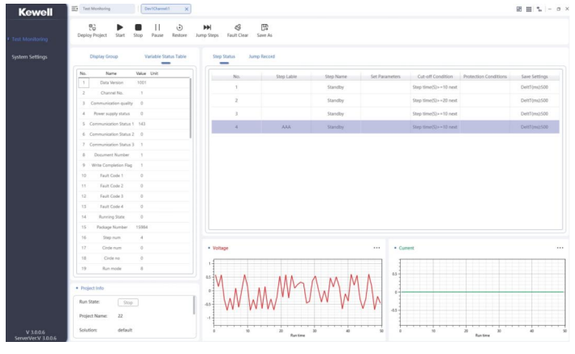
Matrix file: Users can import the operation data of two 2D matrices in advance. When the equipment is running, the external variables are read in real time, based on which it will run real-time table look-up. Here, the table look-up values from the matrices can be used directly as the operating parameters of the equipment, or they can be first compared and then used as the operating parameters.



Matrix file

Data Processing

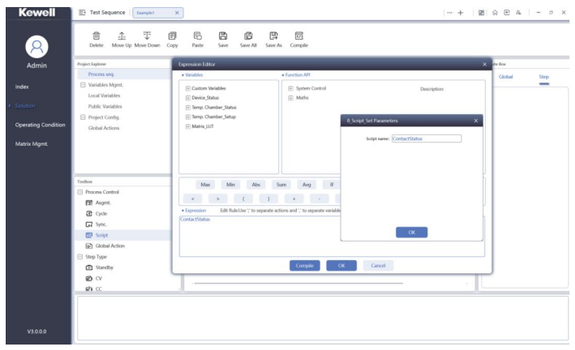
- Real-time data display, dynamic analysis of test waveforms.
- Real-time recording of test process and data, tracking throughout the process.
- Test data export in Excel and CSV formats, the same project can be split into multiple data sheets for the convenience of users.



Data processing

Script Editing

Users can write the test using Lua scripting language. Users may define the execution logic of each step, the test protection logic, data logging logic, control of system peripherals, and test-related custom algorithms.



Script editing

Product Highlights

Four Current Ranges

Support four current ranges.

Normal version

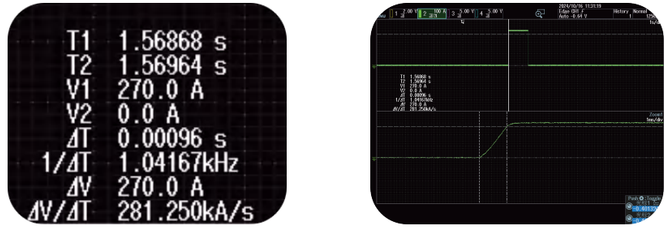
Current accuracy	100A	200A	300A	400A
0.05%F.S.	0-40A@0.05%F.S. 40-100A@0.05%F.S.	0-40A@0.05%F.S. 40-100A@0.05%F.S. 100-200A@0.05%F.S.	0-40A@0.05%F.S. 40-100A@0.05%F.S. 100-200A@0.05%F.S. 200-300A@0.05%F.S.	0-40A@0.05%F.S. 40-100A@0.05%F.S. 100-200A@0.05%F.S. 200-400A@0.05%F.S.
Current accuracy	**500A**	**600A**	**700A**	**800A**
0.05%F.S.	0-80A@0.05%F.S. 80-200A@0.05%F.S. 200-400A@0.05%F.S. 400-500A@0.05%F.S.	0-80A@0.05%F.S. 80-200A@0.05%F.S. 200-400A@0.05%F.S. 400-600A@0.05%F.S.	0-80A@0.05%F.S. 80-200A@0.05%F.S. 200-400A@0.05%F.S. 400-700A@0.05%F.S.	0-80A@0.05F.S. 80-200A@0.05%F.S. 200-400A@0.05%F.S. 400-800A@0.05%F.S.

Pro version

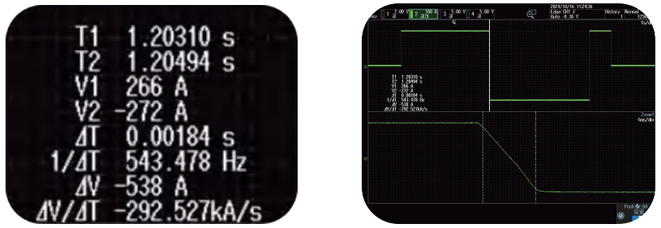
Current accuracy	100A	200A	300A	400A
0.02%F.S.	0-40A@0.03%F.S. 40-100A@0.02%F.S.	0-40A@0.03%F.S. 40-100A@0.02%F.S. 100-200A@0.02%F.S.	0-40A@0.03%F.S. 40-100A@0.02%F.S. 100-200A@0.02%F.S. 200-300A@0.02%F.S.	0-40A@0.03%F.S. 40-100A@0.02%F.S. 100-200A@0.02%F.S. 200-400A@0.02%F.S.
Current accuracy	**500A**	**600A**	**700A**	**800A**
0.02%F.S.	0-80A@0.03%F.S. 80-200A@0.02%F.S. 200-400A@0.02%F.S. 400-500A@0.02%F.S.	0-80A@0.03%F.S. 80-200A@0.02%F.S. 200-400A@0.02%F.S. 400-600A@0.02%F.S.	0-80A@0.03%F.S. 80-200A@0.02%F.S. 200-400A@0.02%F.S. 400-700A@0.02%F.S.	0-80A@0.03%F.S. 80-200A@0.02%F.S. 200-400A@0.02%F.S. 400-800A@0.02%F.S.

Fast Dynamic Response

Excellent dynamic response, the time of 10-90% sudden loading of current is ≤1ms, and that of -90% ~ +90% current switching is ≤2ms. The output current reaches the set value in a short time without overshoot in the current curve.



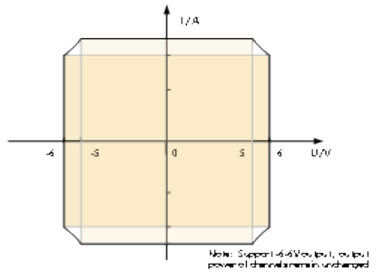
Response time ≤1ms (10-90% sudden loading)



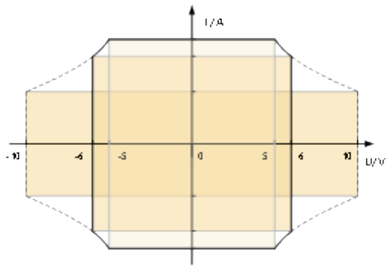
Switching time ≤2ms (-90% ~ +90% switching)

Charge and Discharge at Negative Voltage

The DC output part of the programmable power supply adopts a full bridge circuit design, which has the capability of four quadrant output and can output -6V~6V. The B2000 pro version has an optional item: voltage output of -10V~10V. It is used for cell limit testing and safety testing to understand the safety performance and electrical performance limits of the cell.



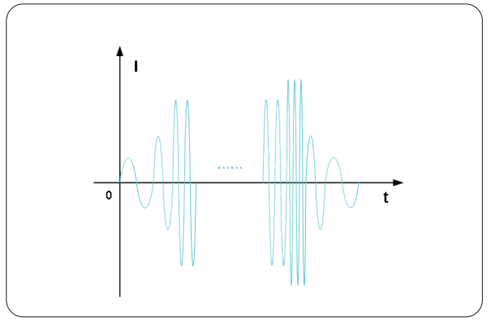
P version



Optional range of P version

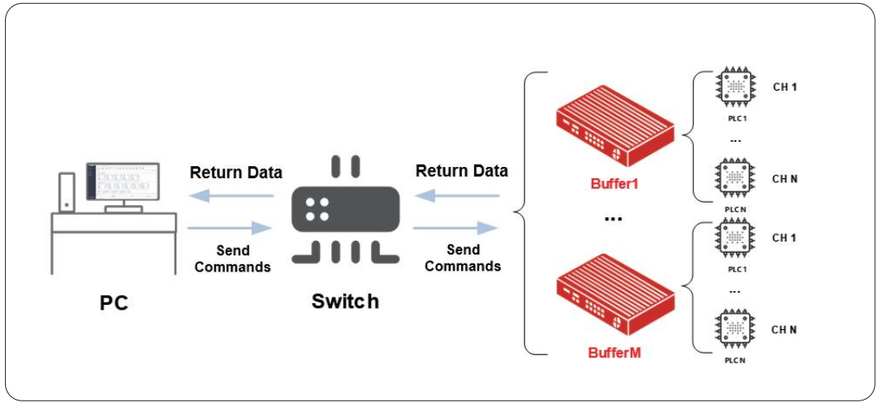
Ripple Injection

The frequency of ripple injection is 0.01Hz~2kHz. Ripple injection is used for cell heating.
Note: This function will be available from the end of April 2025.



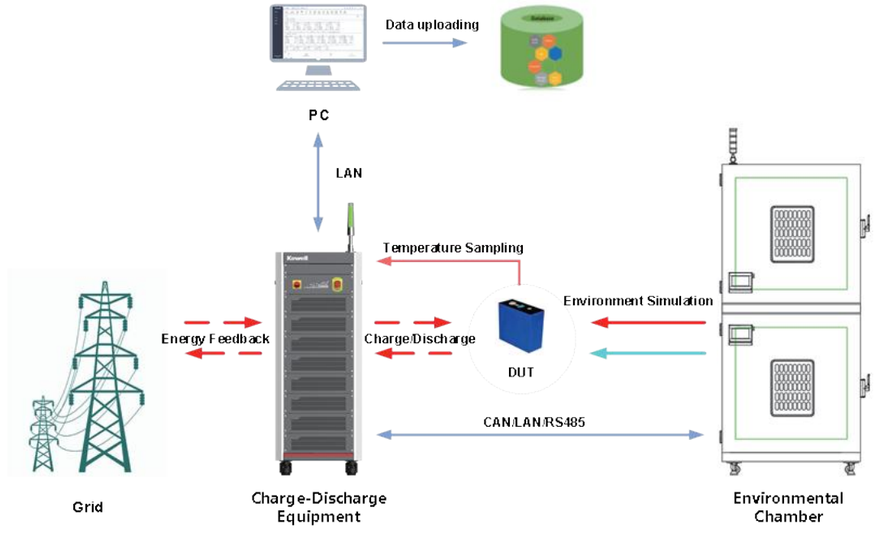
High Performance Buffer

- One buffer can simultaneously control 16 channels of cell testing.
- The PC software manages multiple buffers, with up to 128 channels under control.



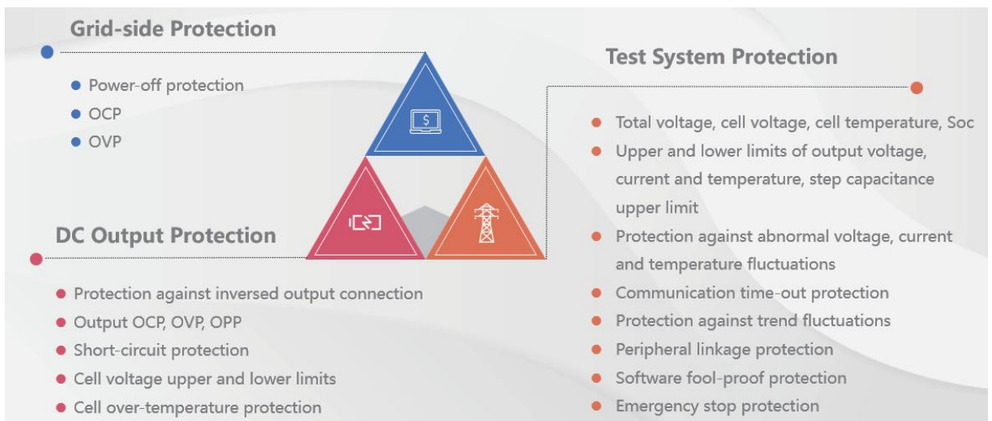
System-level Testing

The system software can communicate and exchange data with necessary testing equipment or auxiliary equipment in the platform to achieve joint commissioning. This includes auxiliary channel voltage/temperature monitoring devices, high and low temperature chambers.



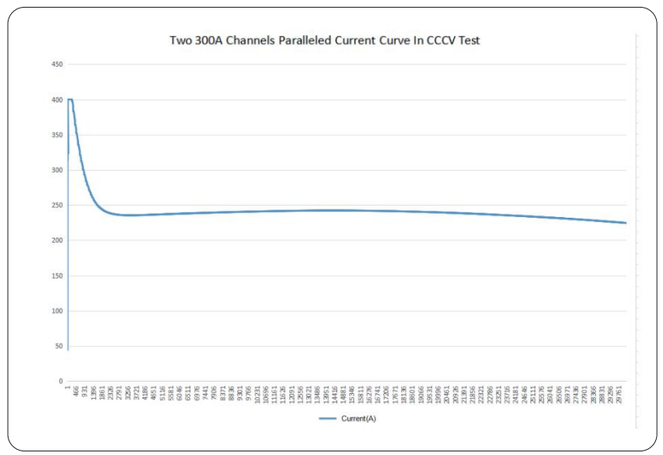
All-round Protections

There are all-round protections at both software and hardware levels for the safety and reliability of testing. Users can also check current and historical faults for tracking and analysis.



Parallel Connection

- Support a maximum of 16 channels in parallel with a maximum parallel current of 4800A.
- Allow multiple channels in a single cabinet to be connected in parallel and the number of parallel channels should be even.



B2000-EC Options

No.	Name	Description
1	Output voltage range	-10-10V, channel power remains unchanged, voltage range widens
2	Temperature monitoring device	Support integration of temperature monitoring device and temperature sampling wire
3	Computer and accessories	ADVANTECH desktop, IPC51222001-T/ AIMB-508G2/ I5 12500/ DDR4-3200 16G/ 2T/ M.2 128G/ DVDRW/ WIN11, pre-installed with Office Small Business 2024, with a 24" monitor + mouse and keyboard set
4	Main power cable	1* positive + 1* negative /channel (including voltage sensing cable, for cable length, you may refer to section 4.5)
5	Test fixture	Customizable based on cell specifications (customer to provide cell dimensions)
6	Copper busbar assembly for parallel connection	For paralleling multiple channels

Note：If you need to configure the Ethernet switch, the communication speed should be higher than 1000Mbps.


Main power cables


Temperature sampling cables


Temperature monitoring integration


Test fixture


Copper busbar assembly

B2000-EC Accessories


USB Stick (32G)


Ethernet Cable