

Power-GEN

Programmable DC Power Supply

Modular Bidirectional



In a Nutshell:

- ✓ Output power: standalone modules from 5kW to 180kW, parallel up to 1800 kW;
- ✓ Input up to 480Vac
- ✓ 18 kW / 3U high power density, standard 19" Rack design;
- ✓ Output voltage: from 80V to 2250V;
- ✓ Output current: up to $\pm 4500A$;
- ✓ Regenerative load function, regenerative efficiency up to 95%;
- ✓ Bi-directional power transfer, seamless switch between sourcing and sinking;
- ✓ Power factor 0.99, efficiency > 93%;
- ✓ Remote Sensing;
- ✓ Adjustable voltage/current slew rate;
- ✓ Voltage ramp function; charge/discharge function;
- ✓ User programmable sequence function;
- ✓ Battery simulator function (optional);
- ✓ Support PV array I-V Curve (optional);
- ✓ OVP, OCP, OPP, OTP, LVP etc. protection functions;
- ✓ CV, CC, CP, CR function;
- ✓ CV / CC priority start (prevents voltage or current overshoot with output ON);
- ✓ Standard LAN, USB (serial), optional RS485, GPIB or CAN ports, analog port (optional);
- ✓ Support SCPI, MODBUS, CAN-OPEN (optional) protocol;
- ✓ Battery simulator function;
- ✓ PV array I-V Curve simulation function

General

The POWER-GEN series is a wide-range high-power bidirectional programmable DC power supply with both DC power supply and regenerative load functions. It can not only realize the source function, but also can be used as a regenerative load to feed the absorbed energy back to the power grid to realize the two-way flow of energy.

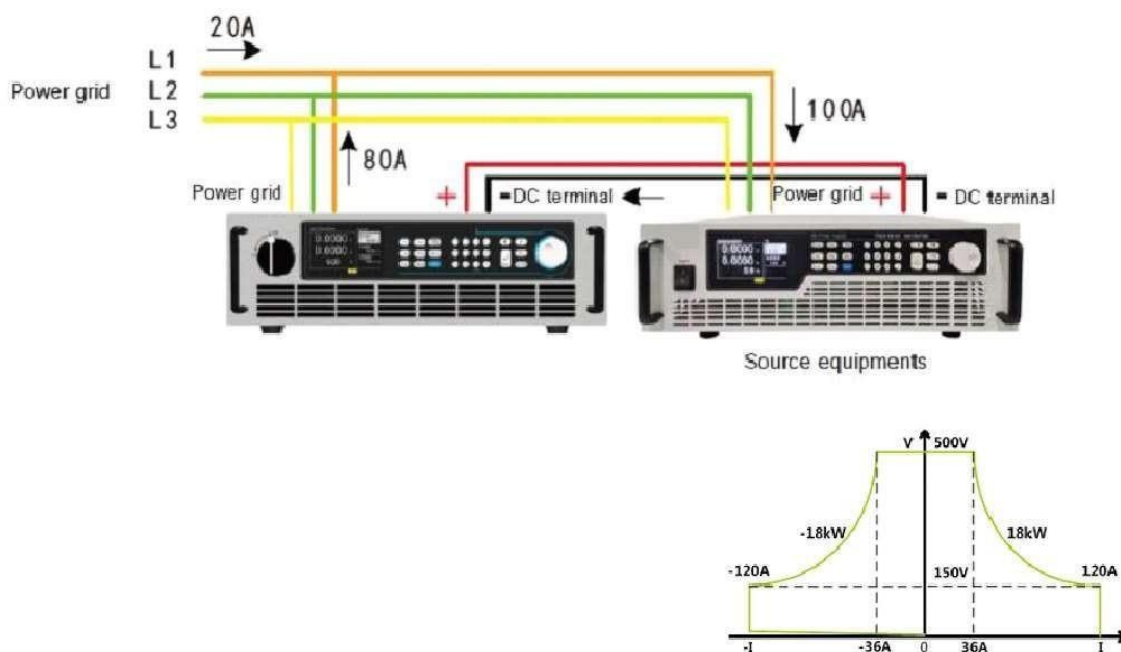
The voltage range of POWER-GEN series is from 80V to 2250V, the current of a single machine can reach 4500A, and the maximum power of a single machine is 180kW. It can achieve seamless switching between source and load dual quadrants, and has broad test functions and user-friendly HMI. It has a wide range of applications in high-power test scenarios such as automotive, renewable energy, high-speed testing, high-power testing etc ...

Applications Matrix

Consumer Products	Battery Packs	Electric Motors	Lighting fixtures and drivers	Avionics
EV Charging Stations	Solar chargers	PV Inverters	Wind Inverters	Hydro Inverters

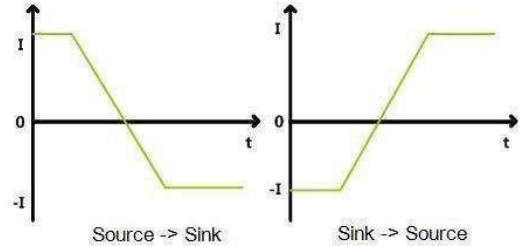
Regenerative load function

POWER-GEN series products have a regenerative load function, which can feed back the energy of the device under test to the factory intranet for direct use, instead of dissipating it in the form of thermal energy. Its energy feedback conversion efficiency is as high as 95%, which can not only greatly reduce the electricity cost of users, but also avoid the use of air conditioners and other refrigeration systems and reduce noise.



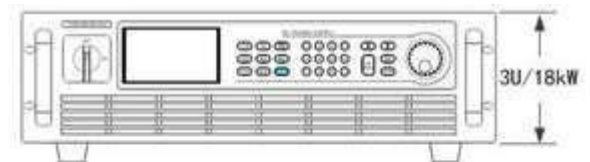
Seamless switch between sourcing and sinking

When conventional DC power supply and load switch between positive and negative currents, a short step will be generated at 0 A, resulting in discontinuous current commutation. Power-GEN not only has two-quadrant working ability, but also has high-speed current switching ability, which can realize seamless connection between positive and negative current switching, effectively avoid voltage or current overshoot, and is widely used in motors, battery packs, BMS and energy storage systems test.



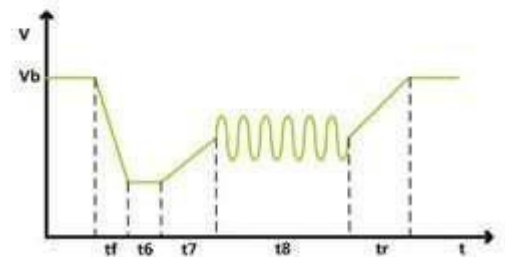
18 kW / 3U high power density

The Power-GEN series provides a high-power density of 18 kW / 3U, with features such as accurate output, fast response, and low ripple noise.



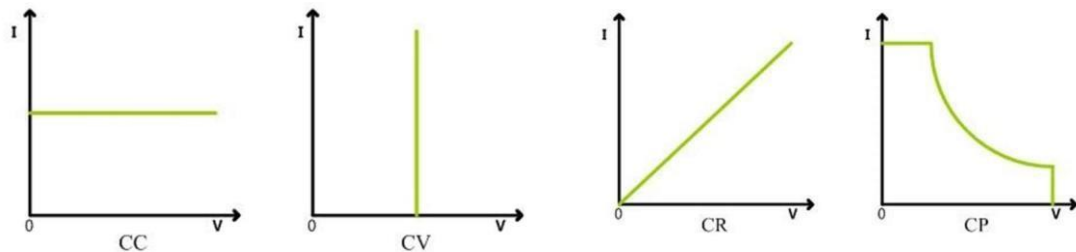
User programmable sequence function

The Power-GEN series provides users with user programmable sequence functions to simulate power interruptions, instantaneous drops, and simulating other voltage and current changes. A total of 10 sequence files, each file has 100 steps, supports loop and link to facilitate complex waveform output.



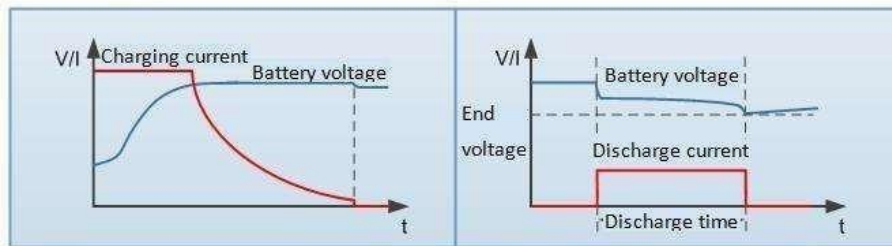
Load function

When the Power-GEN works as a regenerative load, it has four basic working modes: constant current, constant voltage, constant power, and constant resistance, which can meet a wide range of testing needs.



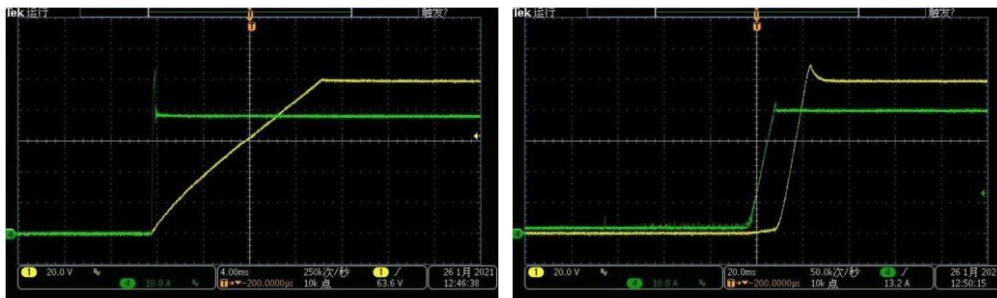
Battery charge / discharge function

Due to its unique bidirectional design, the Power-GEN series has a charge/discharge test function, and is suitable for charge/discharge tests of various batteries and energy storage devices.



CV / CC priority

When power supply is connected to an inductive or capacitive load, it will cause voltage or current overshoot, which may trigger the protection of the device under test, or even cause the device under test to be damaged in severe cases. This series power supply provides CC priority and CV priority function, which forces the power supply to operate in CC or CV mode at the moment the output is turned on, effectively avoids the current or voltage overshoot resulted from capacitive or inductive load.



CV Priority

CC Priority

Master-slave parallel

Power-GEN series power supply allows for master-slave parallel of up to **10 identical units**. In parallel operation, slave units inherit parameters from master unit and the current is shared automatically. Power-GEN series power supply does not support master-slave serial operation.

Analogue programming and monitoring interface

In addition to front panel and remote interface control, there is a galvanically isolated analogue interface terminal, located on the rear of the device. It offers analogue inputs to set voltage, current, power from 0...100% through control voltages of 0 V...5 V. To monitor the output voltage and current, there are analogue outputs with 0 V...5 V. Also, several inputs and outputs are available for controlling and monitoring the device status.

Digital interfaces

All models feature two galvanically isolated digital interfaces by default, these are standard LAN and USB (optional RS485, GPIB, CAN interface). USB, LAN and RS485 can be used to control and monitor the devices either with SCPI language commands or ModBus RTU protocol, while with GPIB only SCPI is supported, with CAN only CANopen is supported.

Control software

Power-GEN series provide a control software for Windows PCs, which can read test data, generate images, export reports, print reports, etc. in real time, it is convenient for customers to use.

Options

- Graphical visualization of the actual values;
- Digital interface modules for GPIB, CAN, RS485;
- Analogue programming and monitoring interface (analogue interface on the rear)

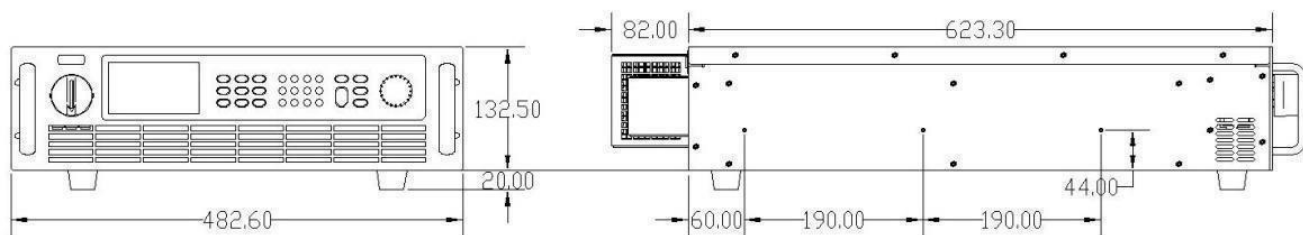
Overview

✓ Models with rated power larger than 108kW are not listed.

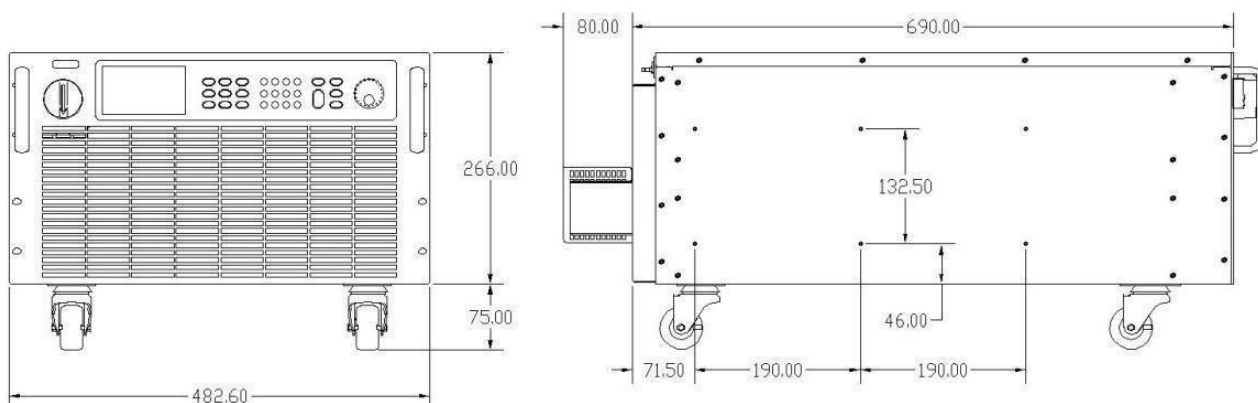
Voltage	Part Number	Current	Power	Size	Voltage	Part Number	Current	Power	Size
80V	PG-005-V0080-A0150-3U	150A	5kW	3U	300V	PG-006-V0300-A0075-3U	75A	6kW	3U
	PG-010-V0080-A0300-3U	300A	10kW	3U		PG-012-V0300-A0150-3U	150A	12kW	3U
	PG-015-V0080-A0450-3U	450A	15kW	3U		PG-018-V0300-A0225-3U	225A	18kW	3U
	PG-030-V0080-A0900-6U	900A	30kW	6U		PG-036-V0300-A0450-6U	450A	36kW	6U
	PG-045-V0080-A1350-16U	1350A	45kW	16U		PG-054-V0300-A0675-16U	675A	54kW	16U
	PG-060-V0080-A1800-16U	1800A	60kW	16U		PG-072-V0300-A0900-16U	900A	72kW	16U
	PG-075-V0080-A2250-22U	2250A	75kW	22U		PG-090-V0300-A1125-22U	1125A	90kW	22U
Voltage	Part Number	Current	Power	Size	Voltage	Part Number	Current	Power	Size
500V	PG-006-V0500-A0040-3U	40A	6kW	3U	800V	PG-006-V0800-A0025-3U	25A	6kW	3U
	PG-012-V0500-A0080-3U	80A	12kW	3U		PG-012-V0800-A0050-3U	50A	12kW	3U
	PG-018-V0500-A0120-3U	120A	18kW	3U		PG-018-V0800-A0075-3U	75A	18kW	3U
	PG-036-V0500-A0240-6U	240A	36kW	6U		PG-036-V0800-A0150-6U	150A	36kW	6U
	PG-054-V0500-A0360-16U	360A	54kW	16U		PG-054-V0800-A0225-16U	225A	54kW	16U
	PG-072-V0500-A0480-16U	480A	72kW	16U		PG-072-V0800-A0300-16U	300A	72kW	16U
	PG-090-V0500-A0600-22U	600A	90kW	22U		PG-090-V0800-A0375-22U	375A	90kW	22U
Voltage	Part Number	Current	Power	Size	Voltage	Part Number	Current	Power	Size
1000V	PG-012-V1000-A0040-3U	40A	12kW	3U	1500V	PG-012-V1500-A0025-3U	25A	12kW	3U
	PG-024-V1000-A0080-6U	80A	24kW	6U		PG-018-V1500-A0040-3U	40A	18kW	3U
	PG-036-V1000-A0120-16U	120A	36kW	16U		PG-036-V1500-A0080-6U	80A	36kW	6U
	PG-048-V1000-A0160-16U	160A	48kW	16U		PG-054-V1500-A0120-16U	120A	54kW	16U
	PG-060-V1000-A0200-22U	200A	60kW	22U		PG-072-V1500-A0160-16U	160A	72kW	16U
Voltage	Part Number	Current	Power	Size	Voltage	Part Number	Current	Power	Size
2250V	PG-018-V2250-A0025-3U	25A	18kW	3U	2250V	PG-072-V2250-A0100-16U	100A	72kW	16U
	PG-036-V2250-A0050-6U	50A	36kW	6U		PG-090-V2250-A0125-22U	125A	90kW	22U
	PG-054-V2250-A0075-16U	75A	54kW	16U		PG-108-V2250-A0150-22U	150A	108kW	22U

Dimensions

5kW ~ 18kW models



20kW ~ 36kW models



Optional Accessories

Item	Suffix Part Number	Notes
Graphical visualization of the actual values	Power-GEN SW	software for Power-GEN
GPIB interface	GB	
CAN, RS485 interface	CAN	
Analogue interface	AN	

High current test cables

Specification	W1	W2	W3	W4	W5	W6	W7
Max voltage	750V						
Max current	10A	60A	100A	200A	200A	300A	400A
Terminal	M8/Alligator	M8/M8	M8/M8	M8/M8	M8/M8	M8/M8	M10/M10
Length	~1.5m	~1.5m	~2m	~2m	~4m	~2m	~2m
Shape							

AC Input cables

Specification	CI1	CI2	CI3	CI4	CI5	CI6
For model	1 \emptyset , < 6.5kW	3 \emptyset , <= 15kW	3 \emptyset , <= 15kW	3 \emptyset , 20k-30kW	3 \emptyset , 20k-30kW	3 \emptyset , 35k-60kW
Terminal	O-Type M4	O-Type M4	O-Type M4	O-Type M5	O-Type M5	O-Type M8
Length	~ 2m	~ 2m	~ 4m	~ 2m	~ 4m	~ 3m