

SP4024

Integrated Inverter/Charger System



 **Silent Power**
INC.

About Silent Power, Inc.

Silent Power, Inc. (SPI) manufactures and markets easy-to-install, highly reliable, power inverters for the renewable energy and backup power markets. Our patented technology is engineered for:

- Minimizing total cost of ownership through the inclusive all-in-one design and efficient operation
- Maximizing renewable energy harvest, resulting in the best possible return on investment

Market research indicates the need for better, more reliable inverter technology with simpler installation and maintenance. As a result, SPI assembled a team of power conversion specialists to design patented inverter technology exceeding today's — and tomorrow's — rapidly expanding market requirements. This advanced patented technology is now available in our **SP4024 Integrated Inverter/Charger System**.

Silent Power, Inc. is a U.S. based company located in the beautiful "Lakes Area" of central Minnesota. Working and living here has given our specialists a deep understanding of the relationship between humanity and the environment. This awareness is portrayed in how we operate our business and is a key ingredient in the products and solutions we develop. Our mission is to provide proven innovative technologies, focusing on reliability and customer satisfaction, ultimately leading to better environmental outcomes.



*Our dedicated employees
are one of our biggest assets,
consisting of a team that
combines over 100 years of
power conversion expertise*



SP4024 – A New Breed of Inverter Technology

Our new SP4024 is a powerful 4000 watt, pure sine wave inverter designed for off-grid operation as well as back-up power system applications. SPI's advanced design has successfully combined high frequency, lightweight electronics providing a picture perfect sine wave with a patented high-surge capability. Through the use of our unique GenClean™ technology, independent battery charging electronics clean and regulate the sine wave of the backup power source (i.e., generator), allowing the batteries to provide the excess surge required to start large inductive loads such as motors and pumps. We developed the SP4024 by surveying customers and industry veterans, creating a product with built-in features customers desire. Our design strategy simplifies the installation process and reduces the need for expensive “add-on” components. This philosophy makes the SP4024 one of the industry's easiest inverter systems to install, operate, and maintain.

FEATURE & BENEFITS

- **4000 watt output power**
- **Pure sine wave output**
- **2.5X surge capability**
- **Small, quiet, and lightweight (56 lbs)**
- **120V or 240V generator input**
- **Field serviceable design**
- **Intelligent multi-stage battery charger with battery protection**
- **Suitable for 4kW to 16kW, and 240V systems** – Accomplished by stacking multiple SP4024s.
- **GenClean™ technology** – Cleans and regulates generator power providing authentic UPS operation.
- **Cost effective all in one design** – User interface, generator start controller, DC disconnect breaker, DC current shunt, AC disconnect breaker, cabinet enclosure, all included.

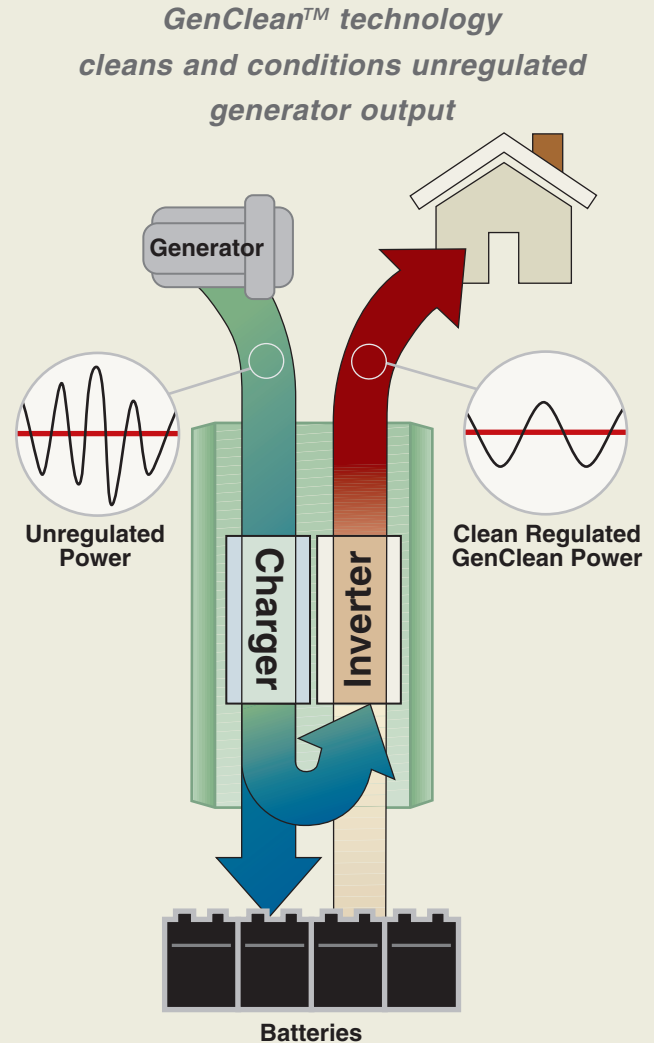


*Sleek cabinet enclosure
neatly fits all components
and designed to fit
on standard 16" studs.*

The GenClean™ Advantage

The SP4024 Inverter Charger System with GenClean™ technology contains a number of patented features, lessening the requirements of the backup generator. These features reduce the overall cost of the system — money that can be used to buy additional solar arrays, a larger wind turbine or even add an additional bank of storage batteries expanding the home energy systems capacity.

- **Cleans and Regulates Generator Output** – Supplying a picture perfect sine wave to the home.
- **Efficiently Handles Surge Requirements of Electric Motors and Pumps** – When starting electric motors and pumps, typically a surge of power is required of the generator. Instead of purchasing a larger generator to handle the surge demands, a smaller generator may be used in conjunction with GenClean™ technology. GenClean™ technology removes surge demands from the generator and allows the batteries to augment the momentary surge requirements.
- **Charges Batteries While Supplying Conditioned Generator Power to the Home** – Unlike many inverter systems on the market today, the SP4024 with GenClean™ technology has separated the battery charging function from the inverter, allowing the generator to charge the batteries and to supply conditioned power to the home simultaneously.
- **Save Money and Improve Efficiency with a Smaller Generator** – Because of the surge handling and power conditioning features of GenClean™ technology, the typical homeowner has the option of saving thousands of dollars by purchasing and operating a smaller generator.



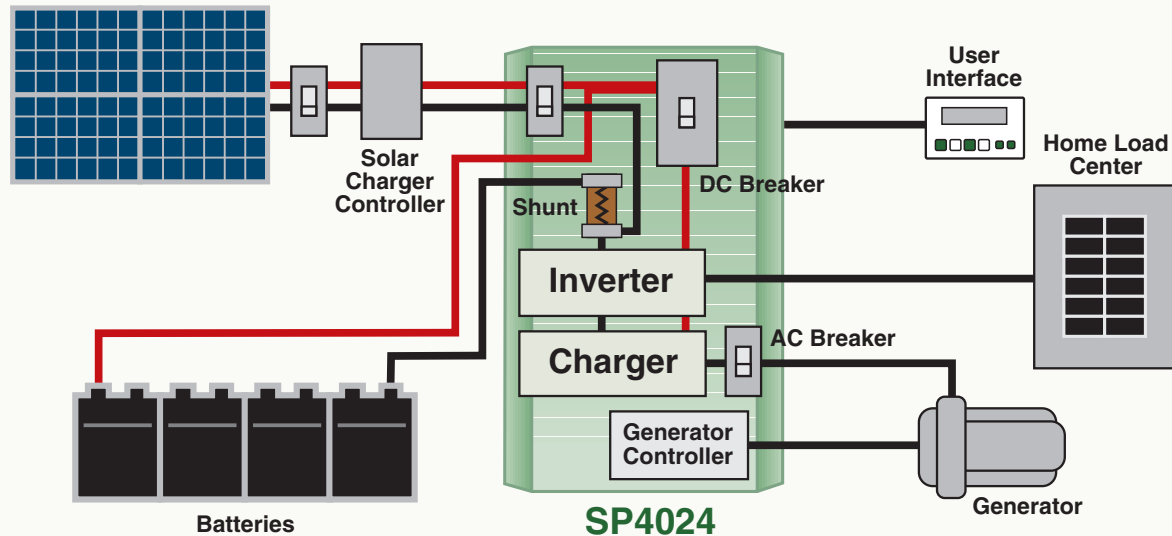
GenClean™ technology augments generator output by drawing power from the battery system during momentary surge conditions — such as starting electric motors and pumps. Allows for smaller generator to be used.

All-In-One System – Easy to Install, Operate, and Maintain

Many of the inverter systems on the market today require expensive add-on components, increasing the overall system cost and adding complexity to the installation process. The SP4024 Integrated Inverter/Charger System is one of the only systems that includes all the necessary components required for a complete system install. This makes the SP4024 one of the best values in the industry, and it's a breeze to install! With the SP4024, you get an easy installation, easy operation and easy maintenance.

The standard SP4024 includes:

- **Advanced User Interface** – Highly intuitive setup, operation, and monitoring interface.
- **Generator Start Controller** – A highly sophisticated startup controller that launches the generator when batteries are low; works with a large variety of ignition systems.
- **DC Disconnect Breaker** – For battery energy source.
- **DC Current Shunt** – For monitoring battery status and renewable energy source.
- **AC Disconnect Breaker** – For generator energy source.
- **Sleek Cabinet Enclosure** – All components fit neatly inside; designed to mount on standard 16" studs.



The SP4024 is suitable for 4kW to 16kW, and 240V systems. This is accomplished by stacking multiple SP4024s



SP4024 Integrated Inverter/Charger System Features

Generator Input

- Proprietary GenClean™ design cleans and regulates generator power for a true UPS operation.
- Minimized generator requirements.
- Advanced generator start controller included.
- 120V or 240V generator or grid input to the charger.

Remote User Interface

- Highly intuitive installation and startup process.
- Simple operations for end user to monitor performance.
- Non-volatile memory and stored system parameters so the user does not have to re-enter the data after powering down.
- Simple menu selections with bright, easily read two-line display.



Smaller, Lighter and Quieter

- Complete integrated system in one package measuring 17"W x 25"H x 10.5"D.
- Complete system weighs less than 56 pounds; convenient shipping and installation.
- Operates in complete silence, other than air movement for cooling purposes, absolutely no annoying 60 cycle hum.

Onboard Breaker and Shunt

- Built in 250 amp breaker — no external box to mount or wire, resulting in a cleaner and quicker installation.
- 40 amp dual pole breaker for generator input included.
- Shunt included internally for charge control and data logging.

Inverter Output

- Picture perfect sine wave output to accommodate the most power-sensitive electronics.
- 4,000 watts continuous at a wide temperature range.
- 2.5X surge accommodates high-inductive loads like pumps and motors.
- Stackable design accommodates higher voltage and power needs.



Onboard Charger

- Charger is totally separate and independent of the inverter providing a truly uninterrupted power supply.
- Intelligent multi-stage charging to protect batteries from overcharging.
- Continuous output up to 136 amps to assure fast charging.
- Charger receives either 120 or 240 VAC input.

Field Serviceable Design

- Self-diagnostics determine any malfunction, eliminating long onsite technical evaluation.
- Case does not need to be demounted to accommodate access to internal components.
- Modular design accommodates quick and easy board replacements, minimizing onsite technician time.

SP4024 Integrated Inverter/Charger System Specifications

Inverter Specifications	
Input Battery Voltage Range	22 to 31 VDC
Nominal AC Output Voltage	120 VAC
Output Frequency	60 Hz ± 0.04%
Total Harmonic Distortion	< 3%
100ms Current Surge	83A AC
5 sec Surge Power (real watts)	6,000W
Continuous Power Output at 25° C	4,000W
Continuous Input Battery Current	185A
Inverter Efficiency (peak)	90%
Search Mode	6W
No Load (120 VAC output)	30W
Waveform	Pure Sine Wave
Charger Specifications	
Continuous Output at 25° C	136A DC
Input Current at Rated Output (AC amps)	32 A @ 120 VAC, 16 A @ 240 VAC
General Features and Capabilities	
Bypass Disconnect Capability	50 A, included
Five Stage Charging Capability	Bulk, Absorb, Float, Equalize, Tender
Internal Cooling	0 to 211 cfm
Over Current Protection	Yes, with redundant circuits
Over Temperature Protection	Yes, on transformer, MOSFETS, and battery
Conformal Coating on PCB's for Corrosion Protection	No
Stainless Steel Fasteners for Corrosion Protection	Yes
Listings	Designed to meet UL1741 and CSA STD No. 107.1-01
Warranty	Standard 2 Year (Optional 5 Year)
Environmental Specifications	
Operating Temperature	-20° C to +40° C
Storage Temperature	-40° C to + 70° C (-40° F to 158° F)
Operating Humidity	0 to 95% RH non condensing
Physical Specifications	
Dimensions	17"W x 25"H x 10.5"D
Mounting	Wall Mount
Weight	56 lbs
Max Operating Altitude	15,000' (4570m)



*The SP4024 is built to last.
Comes standard with a 2 year
warranty with an optional
5 year warranty*



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