



GENESIS Product Family

Applications

Facility Resiliency Solutions

Emergency Response

Medical
and Healthcare

Chemical Plants
and Refineries

Educational
and Research Facilities

Utilities

Nuclear

Industrial

Law Enforcement

Telecommunications
and Data Centers

Resilient power solutions are crucial in protecting your facility and critical installations. Prolonged power outages are disruptive and there is no public opinion margin for lack of preparedness and response capabilities to protect essential infrastructure, communities, and the environment. In ensuring defense in depth response capabilities, BlackStarTech created the Genesis Product Family to mitigate risk and protect industrial facilities, essential businesses, and employees by providing first responders with rapidly deployable portable emergency power when and where it is needed most.

The Genesis family of Emergency Power Solutions provides compact rapidly deployable power delivery solutions by integrating rectifier and inverter technologies with state-of-the-art batteries. These resilient solutions can be deployed nearly anywhere in less than 30 minutes and be available for 30 days or more.

Genesis solutions rely on energy derived from specialty Lithium Iron Phosphate (LiFePO₄) batteries to initially power targeted loads for 8 to 24 hours until the integrated compact backup propane generator is connected to provide power to the equipment for greater than 30 days. The Genesis Power System provides a variety of DC and AC power supply sources (including 3-phase 480VAC and beyond) to critical controls, indications, and essential emergency system components.

The Genesis family of backup power solutions can be purchased in a comprehensive asset protection suite or as individual power assemblies to address tactical power delivery needs in a compact rapidly deployable configuration.

Whether you need to support critical equipment during the loss of AC power, perform maintenance, or improve safety response, Genesis Emergency Power Solutions deliver rapidly deployable power that enables robust, dependable, efficient, and flexible site emergency operations and accident response that saves you money and time.

Genesis Emergency Power Solutions

Feature	Benefits
Lightweight and compact, easy to carry or roll	Portable battery backup power supply solutions for rapid disaster response and equipment maintenance can be deployed anywhere in less than 30 minutes
Lithium Iron Phosphate (LiFePO ₄) batteries	Safe, reliable, higher energy density and more environmentally friendly than lead acid batteries
Propane-powered portable generators can be integrated with Genesis products	Long term power capabilities with a compact, environmentally friendly propane generator, less expensive than diesel and has a virtually infinite shelf life with very low maintenance
The majority of Genesis products can be configured as an uninterruptible power supply (UPS)	Runs on a normal 110VAC outlet and automatically swaps to battery mode when AC power is lost

LiFePO₄ Batteries: Superior To Your Current Battery

The Genesis family of products uses LiFePO₄ batteries providing twice the energy density at nearly 1/3 weight and volume of typical lead acid batteries. The LiFePO₄ batteries chemistries are safe, reliable, and more environmentally friendly than lead acid batteries. The batteries utilize an internal battery management system (BMS) that monitors battery health including cell voltage, maximum charge and discharge current, overvoltage, overcurrent, temperature, cell balancing, short circuit, and more. The BMS takes protective actions to improve reliability and safety using notification alarms or by automatically disconnecting the battery.

The chemical make-up allows the battery to maintain an expected lifespan of 15 years, which is significantly longer than lead acid. This means fewer battery replacements, less downtime, and increased reliability. Genesis also offers an optional battery health diagnosis report to measure battery life eliminating requirements to conduct battery surveillance testing.



Products in the Genesis Family

The Genesis Product Family offers portable, easy to deploy power delivery solutions by integrating rectifier and inverter technologies with state-of-the-art batteries. These resilient solutions can be implemented nearly anywhere in less than 30 minutes and be available for 30 days or much more.

The LiFePO₄ batteries utilized by Genesis are portable and lightweight but deliver higher power density. Genesis products safeguard mission-critical applications by deploying power anywhere on-site in less than 30 minutes.

Products from the Genesis Family can be purchased in a complete package or as individual power assemblies.



Genesis Packages for Single Unit or Dual Nuclear Stations

The nuclear plant asset preservation packages provide defense in depth resiliency response solutions that are available for both Single Unit and Dual Unit Nuclear Stations. These packages deliver rapidly applied portable power for beyond design basis scenarios to critical main control recorders and essential instrument controls including reactor core cooling and reactor pressure control.

Genesis Power Cart Series: 5kWhr – 50kWhr Cart Solutions

The Power Cart Series utilizes the LiFePO₄ batteries along with inverters and rectifiers to deliver a wide variety of large-scale AC and DC power sources. In each product, the battery, inverter, and integral dual charger configuration (fast charging/maintenance charging) are integrated inside a four-wheeled carbon steel powder-coated enclosed cart for ease of movement. The inverter automatically supplies AC power from the DC input. The Power Cart Series products are configured to charge the batteries and continue to carry the designated applied load when a backup AC source, such as the Genesis Defender Generator Series, is connected. These robust carts can supply large scale DC loads or a range of 120VAC or 240VAC power (3kW – 10kW) from the inverter. With this series, you have large scale portable power options that can be customized to your power and duration response requirements.



Genesis Power Cart 125 (VDC)



Genesis Power Cart 250 (VDC)



Genesis Power Cart 125/250 Dual (VDC)



Genesis Power Cart 3-Phase (VAC)



Genesis Nano-Grid 3-5kW (VAC/VDC)

Genesis Sentinel Power Pack Series: Up to 3kWhr Hand-Carried Solutions

BlackStarTech delivers a variety of rapidly deployable Sentinel Power Pack Series for a diverse set of applications requiring very lightweight, portable battery backup power solutions that can easily be quickly utilized when and where you need them most. These solutions redefine portable power and are meant for “grab and go” applications providing a variety of DC and 120VAC Power Solutions. Even small scale 3-Phase 480VAC/600VAC power solutions are available redefining hand held power options and capabilities.

Genesis Sentinel power packs can be easily applied to refineries and chemical plants, nuclear stations, field technicians, emergency planning, and emergency responders, as well as power for a variety of testing and control power needs. In this series, you can choose from the following products:



Sentinel MOV Power Pack



Sentinel AOV Power Pack



Sentinel Portable Power Pack



Sentinel Tactical Rapid Deployment Pack



Sentinel Mobile Power Pack



Sentinel Mobile Power Pack Extreme

Genesis Defender Generator Series

The Defender Generator Series products run on dual fuel tanks that can last up to 7.5 hours on a full tank of gas, or 14.5 hours on two 20-pound propane tanks on the 3.5kW generators. Utilizing the 9.5kW generator allows you to run up to 12 hours on gasoline and 14.5 hours on two propane tanks. Utilize the economy mode for quieter operation, more fuel savings, and longer engine life. Each unit has a front control panel that gives easy access to the outlets, main breaker, voltage output frequency meter, USB ports, and more.

The Defender Generator Series is environmentally safe, cost-effective, and integrates with a variety of other BlackStarTech products to create a reliable UPS system. This propane-powered generator can be a backup source to power any component. This compact, portable generator is air cooled and has low oil shut-off, electric and recoil start, and a heavy-duty engine for durability. The Defender Series Generators now available include:



Defender 3.5kW Generator
(120VAC)



Defender 3.5kW Generator
(120VAC/125VDC)



Defender 9.5kW Generator
(240VAC)

Consulting Services

BlackStarTech's team of experts can work with your facility to devise a plan to effectively implement resilient portable power solutions to improve emergency margins and overall risk profiles. We provide technical support and implementation strategies to exceed expectations for defense in depth contingent power solutions for a wide variety of emergency response situations and facility resiliency hardening solutions.

Consulting Options

Our consulting options include helping your engineering team with implementation, training, and staging to best utilize the BlackStarTech Genesis portable power solutions for your facility.

We can support your successful utilization of Genesis products across a variety of applications including emergency response, medical and healthcare, chemical plants and refineries, utilities, nuclear, industrial, law enforcement, and educational and research facilities.

"Risk Informed" Custom Consulting Solutions

BlackStarTech's Risk Informed Custom Consulting Solutions is a service specifically for nuclear facilities where our team can facilitate risk reviews, PRA analysis, and application response opportunities utilizing products from the Genesis family to significantly decrease the risk profile for your station and potentially aid in increasing risk margins to provide operational flexibility. An example of this would be attaining a 50.69 Risk Level to implement risk informed technical specifications.

We can work with your organization's PRA group or PRA Engineers to successfully implement the BlackStarTech solution to effectively realize PRA and 50.69 benefits. Our Custom Consulting Solutions reduce risk and increase margins with the specific PRA models at each plant including full power internal events models, fire models, and external wind and flooding models.

BlackStarTech's custom consulting services review facility risk models, which allow us to identify where BlackStarTech's equipment can be best applied including critical equipment and components. Our team can determine which significant accident scenarios would be the best targets, and what specific procedural actions benefit your site. Although some of these will be common (e.g., alternate DC power for RCIC and HPCI valves and SRVs), these can be different for each plant. PRA models are also used to decide how best to deploy the BlackStarTech equipment such as via operator actions to hook it up and how to structure the associated procedures so that the deployment is as simple (and error-free) as possible. Once we advise upon the where, how, and when we will use BlackStarTech equipment, we assist in staging plans, procedure instructions, and incorporate it into the PRA models.



For more information on standard or customized products, contact us at 1-844-585-6439 and info@blackstartech.com.

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