



UNIPOWER Provides All-In-One Solution to Powering Hybrid Power Generation System

Problem

Hybrid Power Systems were needed for highly demanding locations throughout the world.

Solution

UNIPOWER Guardian Hybrid Power Solution coupled with low profile rack-mount inverters.

Three years ago, when a customer was redesigning its popular hybrid power generation systems for some of the most demanding locations on Earth, one of the most difficult tasks was to find the power components that met the company's very strict requirements. This was especially true when it came to selecting an architecture suite of inverters, rectifiers, solar chargers, controllers and related products.

The company's hybrid power, off-grid systems are used in nearly every industry and application, including, public safety, education, communications, water pumps and purification, and military installations. Its portable power systems can be found around the globe providing sustainable power to field barracks, mobile landing strips, weather stations, irrigation and crop refrigeration systems, traffic lights and entire communities.

Enter UNIPOWER, a leading provider of high-efficiency power electronics, energy conversion systems and power supplies, headquartered in Coral Springs, Fla. UNIPOWER's products have been tested and validated to meet very strict military, environmental and mechanical standards.

"Fortunately, our customer's management team was very knowledgeable about UNIPOWER and that we could supply all the equipment needed without having to bring in separate suppliers for each function used in the new system architecture - saving time and money," according to John Ely, UNIPOWER's vice president of marketing.

"One of the main challenges for our customer was to find one vendor who could supply the right form factor and enough power and charging capacity for the battery bank. They needed equipment that would regulate currents into the batteries, and controllers that could understand and monitor battery limitations," said Ely.

"Also, with UNIPOWER's complete suite of equipment they didn't have to be concerned about vendor product compatibility - all of our modules are able to integrate with one another."

Benefits of UNIPOWER's Solution

- Proven Reliability
- Interoperable
Product Suite
- Small Form
Factors
- Product
Compatibility
- 95% Efficiency
- Meet
International
Compliance
Standards

Another consideration for selecting UNIPOWER products was the system form factor. The Guardian's high charging capacity can fit into just 1RU of shelf space and onto standard EIA racks. This substantially reduces the size requirements of customer's systems.

UNIPOWER increased the efficiency of the power generators by providing energy storage for efficient generator cycling and increased fuel economy in either remote mobile or fixed locations. In addition, the backup power systems are at the ready when generators become unavailable and can optionally integrate solar energy production to reduce fuel consumption and offer extended silent operations.

When a self-contained, environmentally controlled hybrid power system is needed and must be operational in minutes after arriving at a site, the company's transportable microgrid is deployed, providing pure sine wave single-phase or three-phase power for shelters, command posts or any other site requiring continuous, clean, reliable energy.

"Our customer's decision to use UNIPOWER to meet its system power component needs is also based on UNIPOWER's reputation as one of the world leaders in its category with an installed base of more than 300,000 rectifiers, inverters and DC power systems for mission-critical applications in more than 60 countries," according to Avi Azoulai, western regional sales manager for UNIPOWER.

Among the key products selected was UNIPOWER's Guardian FMPe30.48G 60-amp rectifier featuring more than 95 percent efficiency, power density of up to 31.3W/in³, rugged input voltage range, thermal protection and its ability to hot-swap and meet international compliance standards.

"Also incorporated into the core architecture was UNIPOWER's compact 2.9kW, 48VDC 60 Amp Solar PV Converter (FPV30.48G), part of the Guardian family supporting up to 14.5kW solar arrays in a 1RU 23-inch shelf. With 2.9kW output power and rugged input voltage from 130-360VDC, it has a Maximum Power Point Tracking (MPPT) rating of more than 99 percent," said Azoulai.

In addition, the Guardian system provides a maximum energy harvest from its photovoltaic (PV) array and gives the customer a modular building block for renewable energy and hybrid sites.



Trailer Hybrid Power Generation System

"From a quality viewpoint, our customer was very satisfied with UNIPOWER's products," Ely said. "From a capability standpoint, we proved that UNIPOWER has some of the best products on the market in terms of form factor, capacity and the ability to meet demanding requirements - on time and on-spec."



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