

### DISCOVER PRODUCTS

- 36 x 48-48-5120-H AES RACKMOUNT Battery Modules
- 6 x AES RACKMOUNT Slimline Enclosures (950-0053)
- 1 x LYNK II (950-0025)

### OTHER PRODUCTS

- 4 x Sunny Island 6048 Inverters
- 2 x Sunny Boy 6.0 Inverters + 1 x Sunny Boy 7.7 Inverter
- 1 x Kohler 14 kW Generator

### APPLICATION

AC coupled, off-grid power with grid-like performance

### REQUIREMENT

Replace lead-acid batteries and integrate into existing solar, off-grid power system



## OVERVIEW

### Discover AES RACKMOUNT 48-48-5120-H

With two geodome greenhouses, 4,500 acres of trails and ponds to explore on 4-wheelers, hiking or horses, pickle ball courts and a huge deck with an equally impressive fire table, this off-grid paradise is meant to be enjoyed all year round. When the owners of this “cabin” in Northern Utah needed to replace their failing 90 kWh of Sealed, Lead-Acid batteries, they wanted only the best.

Discover Energy System’s UL9540-certified AES RACKMOUNT Battery Modules + Slimline Enclosures were the battery of choice for Intermountain Wind and Solar, who were tasked with upgrading the batteries in this solar, off-grid power system. Once fully integrated with the 4 Sunny Island inverters in closed-loop communication with the LYNK II Gateway, the 36 AES RACKMOUNT Battery Modules in the six Slimline Enclosures offer a total 180 kWh of energy.

On the property, solar power is generated by 10.8 kW panels on the home and 7.38 kW panels on a Solar multi-pole mount. The panels are AC-coupled via the Sunny Boy inverters.

The 14 kW Kohler generator provides backup power on the occasion the batteries and solar are unable to provide power.



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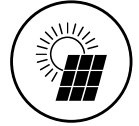
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## BACKGROUND

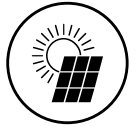
As the cells of the previously installed Sealed, Lead-Acid batteries began to fail, voltage adjustments were required on the inverter to bypass faulty cells, or an entire string of batteries had to be unhooked, until replacements could be delivered. The battery manufacturer made it difficult to buy a single cell, requiring replacement of the entire battery cell block and case, or a new battery stack entirely.

All of which lead to a cascading effect as adjacent battery cells and entire batteries began dropping off, leading to years of trying to keep the battery bank alive and healthy.

With the new AES RACKMOUNT system, even if one of the battery modules fails, you would lose just 5 kWh of capacity as you shut it off or replace it quickly and easily without affecting the rest of the system. Diagnosing issues is done by pulling data logs to evaluate the performance and health of the batteries. Software is provided to visualize, test, and evaluate all the batteries in the system.

AES RACKMOUNT batteries, when integrated with the Slimline Enclosure, have been tested to comply with UL9540, a comprehensive safety standard for Energy Storage Systems (ESS), making it the safe, logical choice to power this home.





### SUMMARY

The addition of Discover's AES RACKMOUNT batteries enabled the owners of this remote, off-grid paradise to enjoy it all year round, without any worries. They replaced their aging Sealed, Lead-Acid batteries with state-of-the-art Lithium batteries that will last for over a decade. As an added bonus, the batteries come pre-installed with a dedicated heater, so they can operate even in the coldest weather, important in cold, Utah winters. And with 180 kWh of energy available, the batteries will power many an activity, well into the night.

