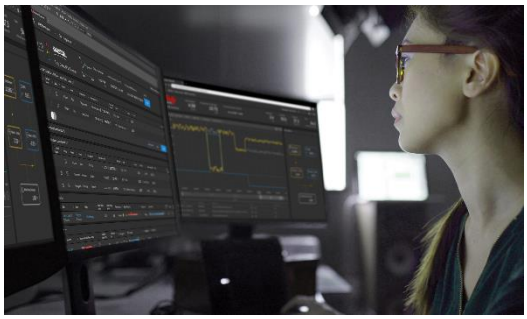
Honeywell | Energy Storage Solutions

HONEYWELL IONIC™ CONTROL AND ENERGY MANAGEMENT

Solution Note

Microgrid controls leverage all the capabilities of a fully integrated energy management system with the strength of comprehensive controls expertise to help improve business resilience, increase renewable energy use, and reduce operating and energy costs.

Introduction



As a global leader in control and automation technology, Honeywell is committed to providing fully integrated control and energy management. Our comprehensive solution is delivered as part of an end-to-end approach.

End user organizations are under pressure to use energy more efficiently, reliably and economically, while reducing environmental impact and improving safety and regulatory compliance. Assets may be geographically dispersed and often include aging infrastructure and systems lacking the ability to meet rigorous performance objectives. Many businesses utilize a variety of equipment manufacturers and control systems which may not be optimized to meet the operating demands of the current market and do not satisfy enterprise-wide data requirements. At the same time, automation solutions for energy operations are often implemented in a piecemeal fashion. Different technology suppliers provide point solutions that present integration challenges.

Honeywell's solution includes both automation controls as well as an energy management system to connect energy assets such as wind/solar and traditional fossil fuels, with a battery energy control system (BESS), as well as utility energy grids to increase energy efficiency and resilience. The solution enables capabilities such as energy demand management, peak shaving, and balancing of energy sources to better provide business continuity to operations, economic use of energy sources, as well as monitoring and controlling the electrical infrastructure of dispersed sites.

Rather than cobbling together point solutions, Honeywell uses our robust and extensive control solution and industry experience over the last 50 years to provide an integrated, vendor-agnostic system. The comprehensive solution provides data visibility, historic trends, and predictive analytics to better utilize all energy sources and storage in one solution. Honeywell's Ionic™ Control & Energy Management enables microgrids to tie together assets from traditional fossil-fuel self-generation and backup sources such as gas turbines and diesel generators, to renewable solar/wind generation, to utility grid energy to better support energy use decisions across operations.

FEATURES & BENEFITS

- Improved business continuity
- Reduced energy costs
- Peak shaving enabled
- Revenue stacking
- Reduced auto-producer backup and emissions

Honeywell's Solution

Honeywell's Ionic™ Control & Energy Management would tie everything together, supervising and optimizing the selection and timing of power sources to improve efficiency across all the managed assets. Organizations benefit by centralizing a range of functions to enhance cybersecurity functions, asset management, predictive analytics, BESS warranty tracking, and redundant critical infrastructure controls.

A complete battery energy storage system (BESS) may include a combination of battery modules, battery management systems (BMS), and subsystems such as HVAC, fire safety, and cybersecurity to provide scalable and reliable power. A BESS solution will also include a control and energy management system (EMS).

A combined controls and EMS consists of software and controllers used to monitor and control energy generation and storage assets, and historic, current and predicted energy management asset performance and energy use over single or multiple operating sites.

Honeywell offers several options for supervisory control – either software-as-a-service or an on-premises solution. Both are scalable and provide HMI to monitor and control equipment, a built-in data historian, an alarm/event server, and automatic report generation. Both ControlEdge™ RTU and ControlEdge™ PLC are available as local controllers.

Use Cases

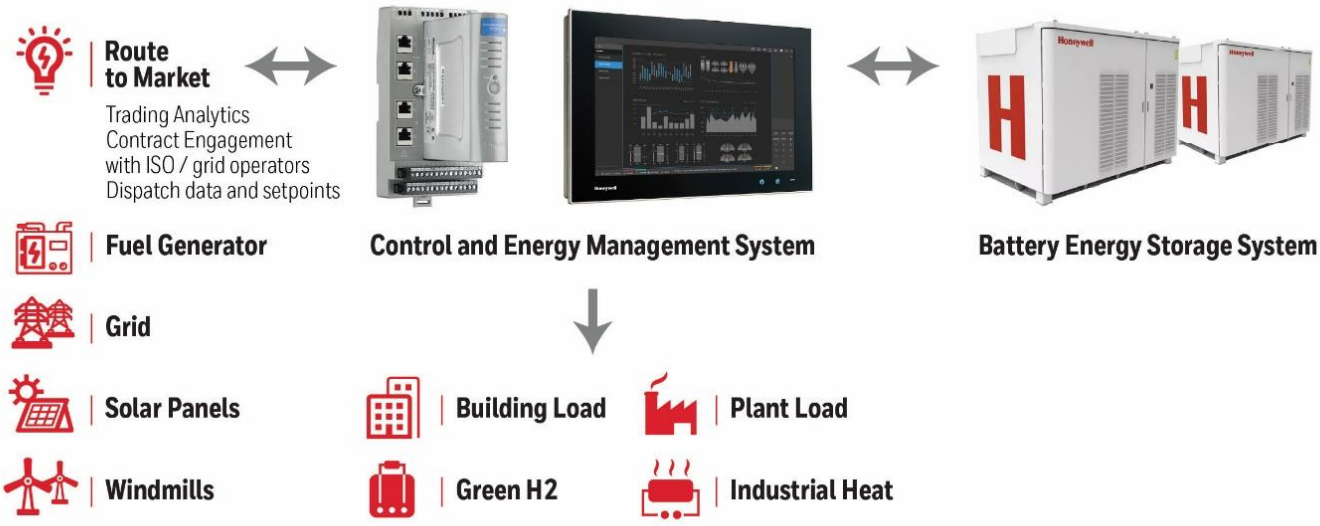
Honeywell's solution supports a variety of capabilities and use cases, including:

- Energy Resilience and Demand Management
- Peak Shaving
- Revenue Stacking
- Renewables Incorporation
- Fleet management
- Gas Turbine + BESS Solution
- Virtual Power Plant

Analytics and Services

In addition to traditional aftermarket operations and maintenance long-term service agreements, Honeywell offers a combination of end-to-end on-site or remote maintenance, repair, monitoring, reporting, predictive analytics, and digital twins to forecast, recommend actions, and manage energy use, efficiency, and trading opportunities.

A unified control and energy management platform, combined with tailored analytics and service options, provides organizations with a streamlined, cost-effective approach to achieving their operational, energy management, power resilience, and sustainability goals. Since every organization has unique needs, a tiered service model—offering options such as outsourced remote operation center services and risk-sharing arrangements tied to performance milestones—ensures the best fit. By delegating these functions, organizations can alleviate the challenge of retaining scarce skilled personnel while allowing end-users to focus on core operations and business objectives.



Complete, Integrated Energy Management

Honeywell's Battery Energy Storage Systems offer technology, software, and services to help optimize operations, reduce carbon footprint, and deliver significant cost savings to end user companies, independent power producers, and utilities. Combine new and traditional energy generation to improve redundancy and grid stability.

With over 200 patents, Honeywell offers complete, integrated solutions for energy storage including integrated BESS hardware, energy monitoring and control systems, and energy services utilizing monitoring and advanced analytics from remote operations centers (ROCs). Pretested and certified enclosures, multiple battery block and PCS-agnostic solutions, and autonomous controls can be combined with an integrated view of assets with comprehensive software providing peak prediction, frequency regulation, autonomous dispatch, and virtual power plant capabilities along with warranty tracking and operations and maintenance suggestions from our ROCs. Your Honeywell contact can provide a specification sheet.

Why Honeywell?

Honeywell has installed over 5GW of traditional power generation and over 500MWh of energy storage deployments at over 50 sites. Whatever the project size, Honeywell leverages our renowned automation platform and cybersecurity solutions combined with the largest system installed base and nearly 50 years of global experience in control automation to guide you with smart technologies and energy management best practices. With a global team of supply chain, technology, and service experts, you can rely on us for reduced risk and improved performance.

With continuous innovation and seamless on-line migration to the latest release, some of Honeywell's greatest advances are the result of our commitment to helping customers continuously evolve while maintaining their current systems. We provide lifecycle investment protection by providing smooth migration paths to the latest control system technology when the time is right.

For More Information

Learn more about Honeywell's Stationary Reserve Solution, visit BESS Solutions or contact your Honeywell Account Manager or System Integrator.

Honeywell Process Solutions

2101 CityWest Boulevard
Houston, TX 77042

Honeywell House, Skimped Hill Lane
Bracknell, Berkshire, England RG12 1EB UK

Building #1, 555 Huanke Road, Zhangjiang Hi-Tech Industrial Park, Pudong New Area, Shanghai 201203

process.honeywell.com

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