

PROTECT ENERGY STORAGE, WHEREVER IT'S NEEDED

Make Battery Energy Storage Safe, 24/7

Application Guide

Honeywell

A HOLISTIC FIRE SAFETY SOLUTION FOR BATTERY ENERGY STORAGE

Battery energy storage systems (BESSs) are essential components of a low-carbon economy. A holistic fire safety solution helps you protect this critical infrastructure, enabling the transition to a fully renewable power grid.

HONEYWELL'S COMPLETE FIRE SAFETY ARCHITECTURE FOR BESSs

Honeywell has developed a complete architecture for BESS fire safety that helps you

- Prevent fires through early warning of impending battery failure
- Detect fires early through advanced smoke and gas detection
- Control the automatic response to an incident
- Connect to the cloud for remote support

Each technology integrates seamlessly with the other components to create an effective safety architecture.



AUTOMATED REMOTE RESPONSE

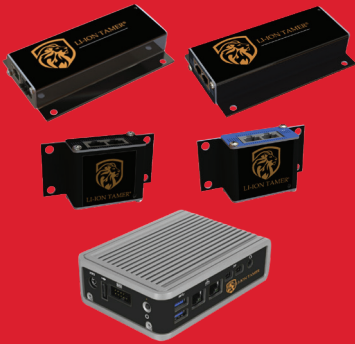
Many BESS sites are unmanned and located in remote areas near renewable energy sources like wind farms. Honeywell's holistic fire safety architecture centered around CLSS enables you to gain 24/7 real-time visibility of your assets - from anywhere in the world - while automatically responding to immediate fire threats.

LI-ION TAMER

Li-ion Tamer monitors lithium-ion (Li-ion) BESS racks and provides an alert to the initial venting of electrolyte solvent vapors. This early warning prevents fires by allowing time to shut down the affected rack before the incident progresses to thermal runaway.

Key Features and Benefits:

- Single-cell failure detection with automatic isolation of affected rack
- False positive elimination thanks to reference sensors
- Easy installation and compatibility with all Li-ion battery form factors and chemicals



VESDA-E ASPIRATING SMOKE DETECTION

The VESDA-E VES system provides reliable very-early-warning smoke detection with excellent nuisance alarm rejection. This aspirating smoke detector (ASD) enables you to identify and address fire threats before they escalate into disaster, minimizing damage to your BESS and downtime.

Key Features and Benefits:

- Early detection of concealed and dispersed smoke thanks to advanced ultrasonic flow sensing technology coupled with an extensive sampling pipe network
- Nuisance alarm elimination thanks to reference reading of background smoke and pollutant levels
- Simple installation and maintenance to minimize time on-site, thanks to customizable pipe networks, intuitive design software, advanced remote diagnostics, and more



FIRE ALARM CONTROL PANEL

Fire alarm control panels like the Esser FlexES, Notifier, or HS81 offer modular and flexible solutions for a wide range of BESS applications. These panels help you connect and control multiple Li-ion Tamer monitors, VESDA-E detectors, and other life safety devices...effortlessly. This way, you can minimize time on-site and maximize uptime in remote BESS sites.

Key Features and Benefits:

- Effortless control of multiple detection devices and the battery management system from one location thanks to a user-friendly operating display and remote touchscreen options
- Minimal time on-site thanks to easy-to-install and replace plug-and-play modules, flexible connection options, and backward compatibility
- Maximum uptime thanks to integrated emergency redundancy safeguarding critical functions even if the master CPU fails



CONNECTED LIFE SAFETY SERVICES (CLSS)

CLSS is an all-in-one cloud platform that maximizes the performance offered by Honeywell's trusted detection and alarm systems. It enables timely and data-based decisions when personnel is far removed from remote BESS locations.

Key Features and Benefits:

- Real-time visibility of fire safety systems across multiple BESSs in remote locations
- Push notification of events to mobile devices provide staff with reminders of maintenance schedules or alert them to respond to an incident
- Log of device tests and service activities for compliance reporting

A SOLUTION FOR A GREENER FUTURE

With the BESS industry expanding rapidly, today's fire safety solutions must be future-proof. Several features of the Honeywell technology for BESS fire safety make this solution future ready:

CONNECTIVITY

The connectivity of the components in the Honeywell solution means that information is visible to anyone who needs it, anywhere. This way, BESS operators can move their people wherever the organizational needs demand while focusing on the safety of their assets.

SCALABILITY

Containerized BESS solutions are popular because of their scalability as renewable energy sources expand. The scalability of the Honeywell solution means that fire safety can expand with the operation seamlessly.

EASE OF INTEGRATION

Building a fire safety architecture using different technologies from different vendors makes integration challenging. Honeywell's solution offers the benefits of being built to work together so that the system works as an integrated whole.



For more information
www.honeywell.com

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