

DETECTION SENSORS FOR THERMAL RUNAWAY PREVENTION

Ensuring safe battery storage

A thermal runaway is a rare phenomenon observed in high-energy systems, with batteries being a prominent example. It unfolds as an uncontrollable surge in temperature, typically stemming from internal triggers such as short circuits, overcharging, or physical damage. This initiates a self-perpetuating loop where heat generation intensifies the temperature further, potentially resulting in hazardous outcomes like explosions or fires.

Managing and preventing thermal runaway holds paramount importance, especially during the transportation and storage of EV batteries where the consistent health of these systems is imperative for overall safety and functionality.

DHL IoT solutions ensure the safe and compliant storage and transportation of highly dangerous goods including damaged batteries with full visibility of its location and health.

Potential solution

Gas sensor for thermal runaway prevention



CHALLENGE

- Safety concerns issues due to risk of thermal runaway triggered by high temperature & overcharging
- Lacked robust monitoring and detection technologies during storage and transport



SOLUTION

- Gas detection for off gases such as battery electrolyte solvent vapor, Co₂, H₂ which are produced early in the battery cell decomposition process
- Plug and play solution



BENEFITS

- Prevent thermal runaway with mitigating action
- Single cell failure detection
- Reduction of false positives



Gas detection sensors

Li-ion Batteries