

Integrated Safety Solutions: Designed for Maximum Protection

Complete Protection for an Improved Experience

Cell-level Protection



- Blade cells from a leading supplier.
- Using advanced stacking methods.
- Impact Nail test demonstrating the high levels of safety with each Blade Lithium Cells.

Structural Protection



- Full aluminium structure.
- IP65 protection rating, meets PAS 63100:2024 standards for extra safety and outdoor use.
- Better heat dissipation design.
- External circuit breaker.

Electrical protection



- Voltage Detection.
- Current Detection.
- Temperature Detection.
- Short-circuit Protection.
- Over-charge Voltage Protection.
- Over-discharge Voltage Protection.
- Under-voltage Protection.
- Over-temperature Protection.

Active protection



- Advanced Battery Monitoring in real-time ensuring battery performance and safety.
- Advanced expansion valve technology for thermal protection

Intelligent Pressure Balancing

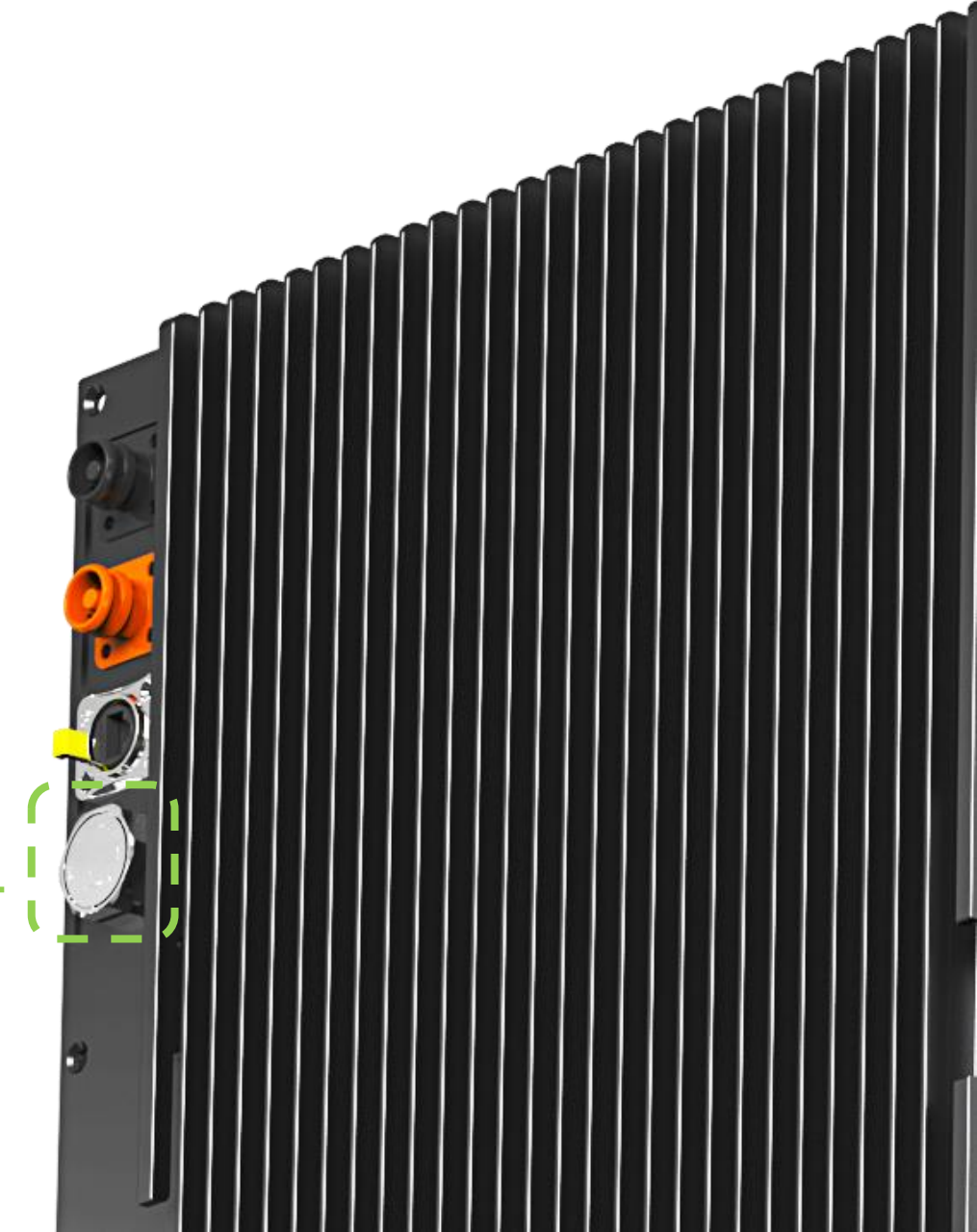
Protecting Batteries with Precision

Function

Water-Resistant Ventilation: The valve lets air in and out but keeps water from getting in. This keeps the battery pack ventilated without losing its waterproof seal.

Pressure Balancing: As the battery charges and discharges, temperature changes can cause pressure to build up inside. The valve helps balance the pressure inside and outside by letting air out while still keeping water from getting in. This keeps the internal conditions stable.

Safety Explosion Prevention: If there's a short circuit, overcharging, or impact, the battery might overheat and expand. If the pressure inside the sealed battery pack gets too high, it could explode. The valve quickly releases extra pressure when the battery's temperature or pressure gets too high, preventing explosions and keeping it safe.



Intelligent Pressure Balancing

Protecting Batteries with Precision

Principle

Active pressure release system, lowers oxygen levels and removes factors that could cause combustion

Pressure Monitoring

The valve continuously monitors internal pressure within the battery.

Automatic Activation

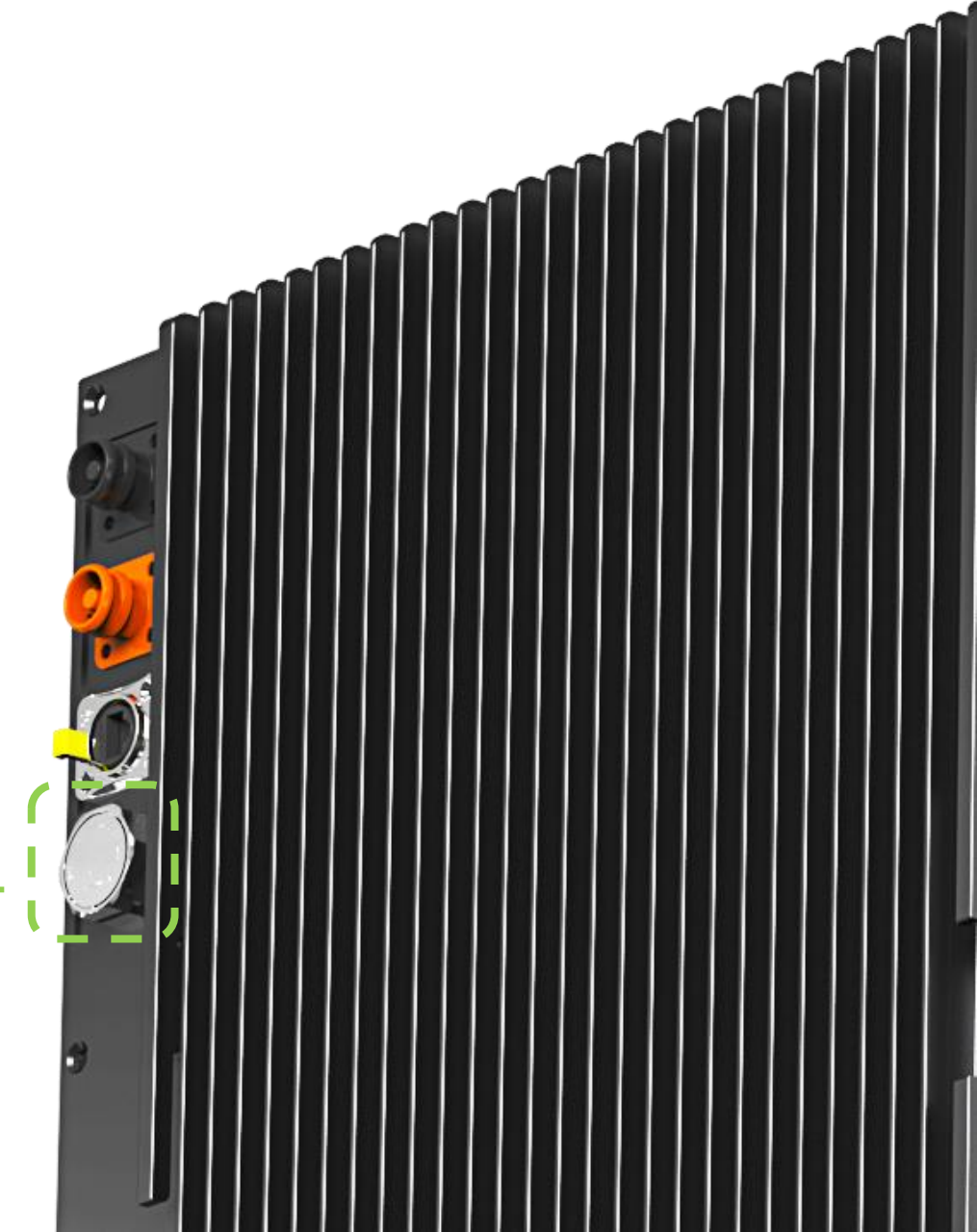
When internal pressure exceeds safe levels due to heat or gas buildup, the valve automatically opens.

Active Pressure Release

Expels oxygen to create an oxygen-free environment, while the high-strength, sealed chassis prevents combustion.

Auto Restoration

Once the pressure stabilizes to a safe level, the valve closes, maintaining a sealed environment.



Intelligent Pressure Balancing

Protecting Batteries with Precision

Benefits

Hanchu ESS Solution

VS

Market Basic Solution

Provides both pressure relief and superior sealing.

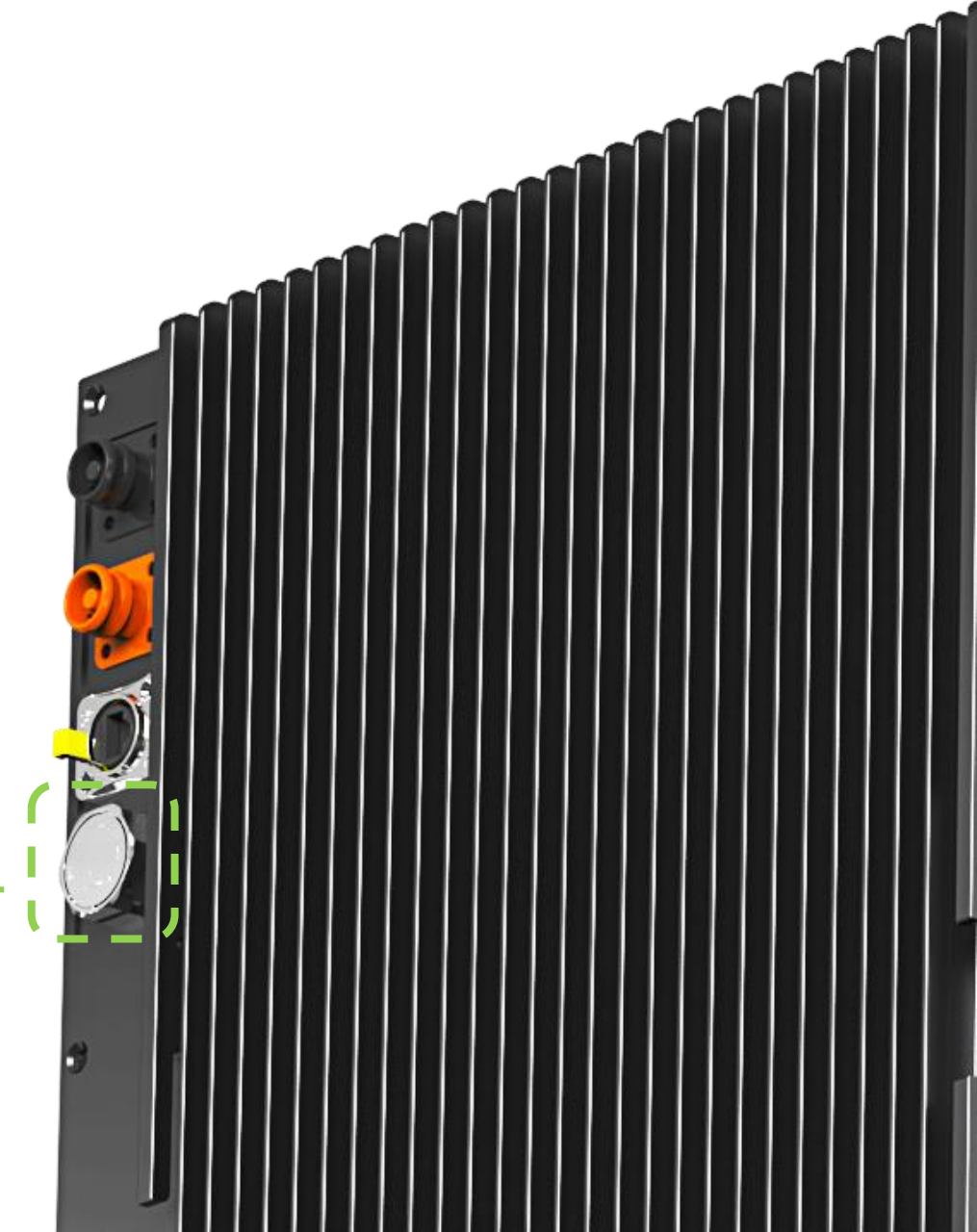
Insufficient high-strength sealing, leading to an increased risk of leakage or combustion

More durable and resistant to high temperatures and impacts.

Susceptible to melting and deformation at high temperatures, with limited durability and restricted to single-use

Higher level of waterproofing, greater breathability, and precise activation

More complicated installation, decreased waterproofing and breathability, and no automatic reset after activation.



Heat-Activated Aerosol Fire Suppression

Contain, Protect, and Minimise Damage.

- *Fast Response*
- *Effective Coverage*
- *Minimal Damage*
- *Automatic Operation*
- *Long-Term Protection*

Principle

Enables rapid control of the fire, reduces the likelihood of the fire spreading and reduces the damage caused by the fire.



Fire Detection: Sensors detect extreme high temperatures automatically.

Aerosol Release: The system releases a fine mist of thermal aerosol upon detection.

Flame Suppression: Chemicals in the aerosol reduce the flame temperature and limit oxygen.

Control and Extinguishment: The aerosol quickly controls and prevents fire spread.

