C&I BESS AC
Technical Proposal

Client Name: DMSolar
Project Name:Celec Tampico
Proposal Date: 2025-12-10
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Executive Summary

Project: Celec Acaje,Veracruz Location:

Mexico

Project Specification: 770KW / 1296KWh

BESS Configuration: Gotion C&I EDGE 507kWh

Our proposed system will include:
(4 EDGE 507 battery cabinets and 2 AC confluence cabinets housing total of 8 PCS).

Gotion is pleased to present this proposal for a 2000KWh C&I energy storage project to support BATTERY DEPOT's long-term energy goals. This solution is based on our EDGE 507kWh system, a high-capacity, containerized LFP battery storage platform engineered for durability, safety, and peak performance under large-scale operating conditions.

Scope of Supply and Services

This proposal includes the supply of 4 EDGE 507kWh energy storage cabinets for deployment. All technical specifications and system configurations are defined in the accompanying Technical Agreement.

Gotion's scope of services includes:
Direct delivery of battery containers and integrated hardware
Commissioning of the battery system, conducted by the Gotion commissioning team
Training and oversight for EPC teams during installation, with Gotion verifying that the system has been built to specification

Please note: This proposal does **not include EMS** (energy management system), **capacity augmentation, EPC, or installation labor.**

Gotion will provide support to ensure the system is properly installed and commissioned, with a focus on enabling the customer's EPC team through structured training and on-site verification.

Project Technical Proposal

The purpose of this document is to define Gotion's scope of supply and to clarify the technical features of all equipment within the scope of the supply. The technical design and scope of supply and are based on the technical discussion between **Gotion** and **DMSolar** project documentation provided. As requested by **DMSolar**, Gotion will identify scope based on the project requirements, supplied list below.

Gotion Hardware Supply Scope:

- Battery Cells and Racks
- Battery Management System (BMS)
- Thermal Management System (TMS)
- Life Safety & Fire Fighting System
- DC Cabling (connecting all the racks)
- Communication Panel
- DC Panel for Outgoing DC Power
- AC Panels for Incoming Auxiliaries
- BESS Enclosure
- PCS

DMSolar or end client supply:

- SCADA
- Medium Voltage Transformers
- EMS
- High Voltage Substation
- IT Cybersecurity
- DAS

EDGE Product Specification Sheet

ID	Item	Parameters	Notes
1	**Model**	507kWh	
2	**Product Nameplate Capacity**	507kWh	Reduced pack
3	**Recommend Battery Operating Voltage**	712.8V ~ 950.4V	95%DOD
4	**Maximum Rate of Charge/Discharge**	0.5C	
5	**Operating Temperature**	-20°C ~ 45°C	
6	**Storage Temperature Range**	-30°C ~ 60°C	Recommended 25°C
7	**Thermal Management**	Liquid Cooled	
8	**Altitude**	≤2000m	>2000m, derating would be required
9	**Communication**	CAN2.0/RS485/Ethernet	
10	**Cell balancing**	Passive	

Product Bill of Materials

Item Description	Comments/Notes/Specs	Quantity
Cabinet Dimensions (W x D x H) mm	1400 x 2400 x 2500	4
Packs, Level 1 BMS	Gotion LFP 300Ah Cell, Gotion Level 1 BMS	4*12
Racks, Level 2 BMS	253kWh String, Gotion Level 2 BMS	4*2
Fire Suppression System	Temperature/smoke detection Explosion deflagration panel PACK-level submerged fire extinguishing system Stat-X Aerosol fire extinguishing system Prefabricated water sprinkler system (optional)	4*2
Liquid Cooling System	BTMS-12B: Includes liquid-cooled unit, piping system, piping system consists of multi-stage piping and control valve set	4*3
HV & LV Wiring Harness and Accessories	Battery positive plug/Battery negative plug/DC power cable/AC power cable/Communication wires and cables/Category 5 network cable	4*3

System Configuration

This proposal is based on 2 (500**KW / 1000KWh)** project sizing and required applications. This proposal is based on a common building block of an EDGE IP55 outdoor-rated cabinet with an initial rating of **857kWh**.

Qty (**2**) *1 BESS cabinets and Qty (**1**) *1 **AC** confluence cabinet will be supplied initially, for a total battery system nameplate size of **2028KWh DC**. The Initial AC usable capacity is **1466KWh AC**.

Project Requirements Table

Project Requirements	Value	Notes
Required Nameplate Sizing(@BOL)	2000KWh	The 2000KWh solution is the smallest we can offer to meet the 1296KWh requirement.
Required Output Power	1000KW	The 1000kW solution is the smallest we can offer to meet the 770KW requirement.
Application Rate of Charge/Discharge	0.5C	
Augmentation	No	
Assuming Cycles Per Year	365	
Resting SOC	50%	
Location	Mexico	

Project Information

System Diagram

Single-EDGE Configuration

System Configuration	500kW/1352kWh	500kW/1182kWh	500kW/1014kWh
System Configuration	4P352S (1P44S×8×4)	4P308S (1P44S×7×4)	4P264S (1P44S×6×4)
DC Voltage Range	950.4V ~ 1267.2V	831.6V ~ 1108.8V	712.8V ~ 950.4V
DC Capacity	1351.68kWh	1182.72kWh	1013.76kWh
Rated AC Power	500kW (125kW×4)	500kW (125kW×4)	500kW (125kW×4)

The solution consists of 4 blocks of 507 MWh each, and 500 kW of power delivered at the connection point at a voltage of 480 V (3P, PE) giving a total of 2028 MWh and a total power of 500 kW (POC)

Single-EDGE Configuration

Single-EDGE Configuration

BESS 1 507KWH			BESS 2 507KWH			AC Confluence Cabinet 1			
BAT PACK 6	BAT PACK 6	+	BAT PACK 6	BAT PACK 6	+	PSC 3	PSC 4	=	500KW/1014KWh
BAT PACK 5	BAT PACK 5		BAT PACK 5	BAT PACK 5					
BAT PACK 4	BAT PACK 4		BAT PACK 4	BAT PACK 4					
BAT PACK 3	BAT PACK 3		BAT PACK 3	BAT PACK 3		PSC 1	PSC 2		
BAT PACK 2	BAT PACK 2		BAT PACK 2	BAT PACK 2					
BAT PACK 1	BAT PACK 1		BAT PACK 1	BAT PACK 1					

BESS 1 507KWH			BESS 2 507KWH			AC Confluence Cabinet 1			
BAT PACK 6	BAT PACK 6	+	BAT PACK 6	BAT PACK 6	+	PSC 3	PSC 4	=	500KW/1014KWh
BAT PACK 5	BAT PACK 5		BAT PACK 5	BAT PACK 5					
BAT PACK 4	BAT PACK 4		BAT PACK 4	BAT PACK 4					
BAT PACK 3	BAT PACK 3		BAT PACK 3	BAT PACK 3		PSC 1	PSC 2		
BAT PACK 2	BAT PACK 2		BAT PACK 2	BAT PACK 2					
BAT PACK 1	BAT PACK 1		BAT PACK 1	BAT PACK 1					

TOTAL NUMBER OF DC UNITS =4
TOTAL NUMBER OF AC Confluence Cabinet =2
TOTAL NUMBER OF PCS=8

System Degradation Table

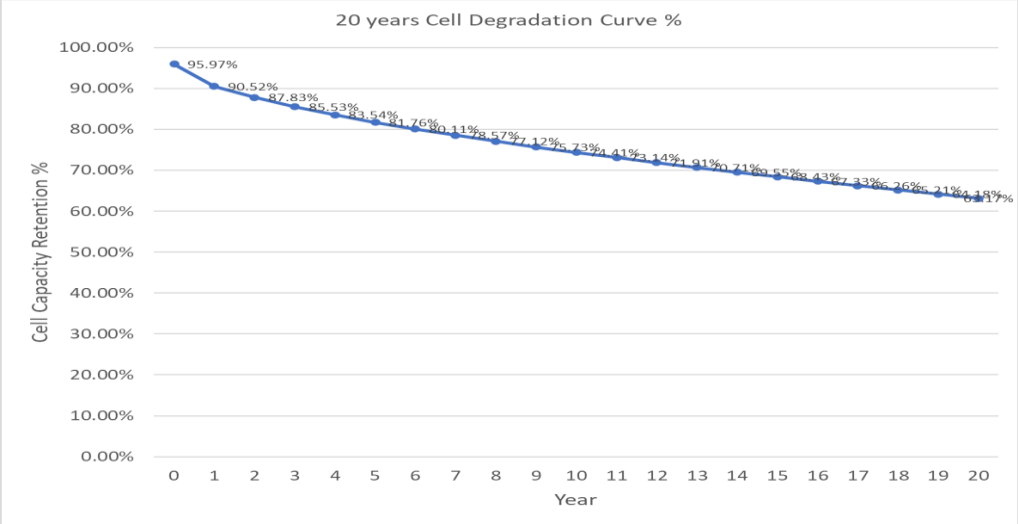
End of Year	Cell SOH % (without Calendar Degradation)	Cell SOH % (with Calendar Degradation)	DC Usable (KWh)	AC Usable (KWh)
0	1.0000	1.0000	1756.09	1466.19
1	0.9455	0.9813	1656.33	1382.89
2	0.9186	0.9750	1607.17	1341.85
3	0.8956	0.9703	1565.04	1306.67
4	0.8757	0.9664	1528.65	1276.29
5	0.8579	0.9629	1496.04	1249.07
6	0.8414	0.9597	1465.86	1223.87
7	0.8260	0.9567	1437.69	1200.35
8	0.8115	0.9538	1411.15	1178.19
9	0.7976	0.9510	1385.75	1156.98
10	0.7844	0.9482	1361.55	1136.77
11	0.7717	0.9454	1338.27	1117.34
12	0.7594	0.9427	1315.74	1098.53
13	0.7474	0.9400	1293.89	1080.29
14	0.7358	0.9374	1272.71	1062.61
15	0.7246	0.9349	1252.15	1045.44

1. The degradation curve (column: Original Cell SOH (% of Original Capacity)) is based on the configurations listed in the Configuration Table.

2. For projects with more than 90 days from FAT to SAT, calendar degradation may apply. This design assumes 180 days.

3. The number of cabinets is subject to minor change between this technical proposal and the final contract

4. **The energy is considered BOL**. If the energy is required to be delivered EOL, initial oversizing is required and an argumentation process may also be required.



Calendar Life Degradation

The following is the calendar life degradation chart.

Full month from FAT to SAT	Calendar attenuation% of SOH at different temperatures (irreversible)			
	≤15℃	16~25℃	26~35℃	36~45℃
1	0.79%	1.23%	1.87%	2.75%
2	0.27%	0.41%	0.63%	0.93%
3	0.20%	0.31%	0.47%	0.70%
4	0.16%	0.25%	0.39%	0.59%
5	0.14%	0.22%	0.35%	0.54%
6	0.13%	0.20%	0.32%	0.50%
7	0.12%	0.19%	0.30%	0.49%
8	0.11%	0.18%	0.29%	0.48%
9	0.10%	0.17%	0.28%	0.48%
10	0.10%	0.16%	0.28%	0.48%
11	0.10%	0.16%	0.28%	0.48%
12	0.10%	0.15%	0.27%	0.47%

Technology Information

Gotion Battery Energy Storage System (BESS) Series

Gotion's next-generation utility-scale Battery Energy Storage System (BESS) delivers a fully integrated solution for energy storage and power management. Featuring safe, high-efficiency Lithium Iron Phosphate (LFP) batteries, the system can be customized to meet each customer's specific power and energy requirements.

Gotion's BESS solutions are compact, flexible, and cost-effective, offering proven performance alongside advanced configurable control functions. With low initial capital cost, high round-trip efficiency, and minimal maintenance expenses, the system delivers an exceptionally attractive total cost of ownership.

EDGE Battery Storage Cabinet

The EDGE battery storage system incorporates the following key features:

- High-performance LFP cells independently developed and manufactured by Gotion, offering ultra-long cycle life and superior charge/discharge capabilities.
- Large system storage capacity with high energy conversion efficiency to maximize performance.
- Proprietary Battery Management System (BMS) developed by Gotion, enabling real-time monitoring of individual cell voltage and temperature, total pack current and voltage, ambient temperature, and providing comprehensive overcharge and over-discharge protection.
- Modular architecture supporting flexible, scalable, and upgradable deployments with high system reliability.
- Advanced liquid cooling thermal management, improving energy utilization by approximately 30% compared to traditional air-cooled systems, and maintaining a maximum battery temperature variance of just 3~5°C.
- Integrated aerosol fire suppression system, combined with provisions for sound and light alarms (to be installed on-site based on customer requirements).
- Equipped with hose connection ports and external dry pipe interface.
- IP55 outdoor design ensuring strong environmental resistance.

Lithium-Iron Phosphate (LFP) Cell Overview

Gotion High-Tech's lithium-ion energy storage systems leverage advanced Lithium-Iron Phosphate (LFP) chemistry, offering exceptional thermal stability, cost-effectiveness, and industry-leading safety. Since entering the electric vehicle (EV) sector in 2006, Gotion's batteries have been deployed in over 450,000 passenger vehicles, commercial vehicles, and energy storage projects worldwide.

Lithium-Iron Phosphate (LFP) Cell

Gotion's LFP cells are engineered for durability, supporting up to 8,000 charge-discharge cycles and delivering an expected calendar life of 20 years at 25°C. Utilizing the same prismatic LFP cells across both grid storage and EV applications, Gotion ensures rigorous testing and compliance with the stringent performance demands of the automotive industry.

Advantages of Lithium-Iron Phosphate Technology:

Lithium-Iron Phosphate (LFP) batteries are ideally suited for a wide range of grid storage applications. As one of the most advanced commercially available battery technologies, LFP offers high power density, extended cycle life, minimal maintenance requirements, and superior thermal stability. Among lithium-ion chemistries, LFP stands out for delivering the longest cycle life and best- in-class thermal performance.

Product Certifications:

Standard	UL1973	UL9540A	UL 9540	UN38.3	UN3480	NFPA 68	NFPA 855
Components Certified	Cell, Pack, Rack	Cell, Pack, Rack	Cabinet	Cell, Pack	Cabinet	Cabinet	Cabinet

Management System (BMS) Framework

The BMS architecture is shown below:

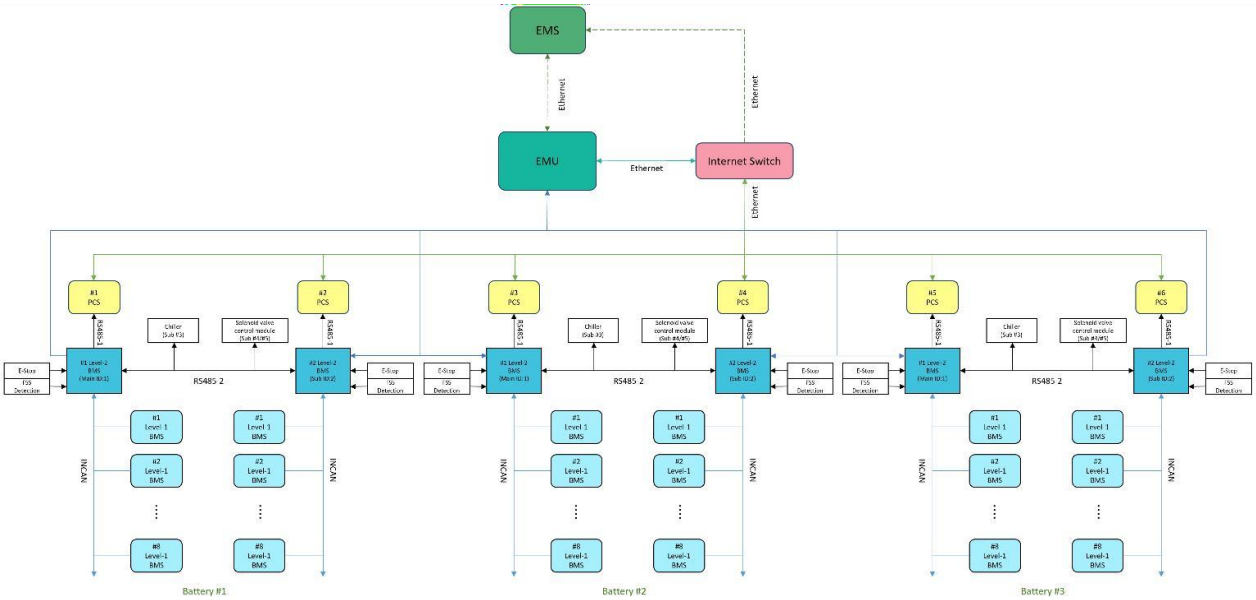


Figure 2: BMS Architecture

The battery system's protection and monitoring functions are implemented through a three-tier Battery Management System (BMS) architecture, consisting of the pack-level BMU, the rack- level BCMU, and the system-level BAMS. The primary functions of each BMS layer are as follows:

BMU (Pack Level – Integrated within the Battery Pack): Monitors the voltage and temperature of individual cells, as well as the total voltage of the battery pack. The BMU transmits this information in real time to the higher-level BMS via the CAN protocol. It also manages voltage balancing between individual cells to ensure consistent performance.

BCMU (Rack Level – Installed in the High Voltage Box): Monitors the total voltage and current of the entire battery rack, transmitting real-time data to the upper-level BMS via the CAN protocol. It provides key indicators such as the battery's State of Charge (SOC), State of Health (SOH), power prediction, and internal resistance. The BCMU also manages relay control and voltage balancing at the rack level.

EMU (System Level – Applied in Multi-Rack Configurations; Installed in the AC confluence cabinet): Collects data from multiple BCMUs and performs real-time estimation of the system's remaining capacity and health. It communicates with the host controller and external systems via RS-485, CAN, and Modbus-TCP/IP. Depending on the system's complexity, the BAMS can be integrated within the high voltage box or installed as a standalone unit.

Battery Management System Features

Analog Measurement: The BMS continuously monitors key parameters such as rack voltage, charge and discharge current, ambient temperature, individual cell voltage, and cell temperature. It also performs real-time calculations of the State of Charge (SOC) and State of Health (SOH)

for individual cells, ensuring safe, stable, and reliable operation of the battery system while extending service life.

Balancing: The BMS includes cell balancing functionality to maintain consistent voltage levels across cells. This helps to maximize usable capacity and prolong the overall life of the battery system.

Operational Alarm Function: When abnormalities such as overvoltage, undervoltage, overcurrent, high/low temperature, communication failure, or internal BMS faults are detected, the system triggers alarm signals. These alarms are reported to the PCS and the central monitoring system, enabling timely intervention and adjustment of operating strategies.

System Protection: If measured values (voltage, current, temperature, etc.) exceed safety thresholds during operation, the BMS isolates the affected rack and takes it offline to prevent system-wide impact. Protection events are simultaneously reported to the upper-level control system.

Self-Diagnosis: The BMS performs ongoing self-checks to detect issues such as communication interruptions with external systems, internal data bus errors, and sensor acquisition anomalies. Using diagnostic models, the system analyzes charge/discharge current, temperature, cell terminal voltage, internal resistance, and other parameters to assess SOC, SOH, and real-time discharge availability. All diagnostic results can be reported to the monitoring system.

Thermal Management: Lithium battery modules generate heat during charging, raising internal temperatures. The BMS monitors temperature in real time and activates thermal control equipment when preset thresholds are exceeded. If temperatures reach critical levels, the BMS can automatically shut down the affected battery pack to prevent thermal runaway.

Local Status Display and Data Logging: The BMS provides local display of system operating status, including real-time analog data, alarms, and protection events. Historical data such as configuration changes, alarm records, protection actions, and charge/discharge timestamps are logged with power-off retention capability. Alarm logs include threshold values, triggered parameters, timestamps, and peak readings during alarm periods.

Operation Authority Management: The system supports role-based access control through password-protected operation rights. Any modification to operational modes or parameters requires authorization to ensure security and traceability

Fire Fighting System (FFS) Description (UL Certified)

The fire protection design of the energy storage system emphasizes fire suppression rather than explosion prevention. It utilizes a multi-tiered fire suppression strategy, combining battery pack-level immersion protection, aerosol fire extinguishing systems, traditional sprinkler systems, and deflagration panels for pressure relief. The system components include early warning devices, automatic fire extinguishing units, exhaust systems, and sprinkler systems.

The fire safety strategy includes the following key elements:

- Each battery module is equipped with cell-level temperature sensors, enabling early warning capabilities through real-time monitoring and BMS linkage management.
- If the battery pack temperature becomes excessively high, two or more cells exceed the over-temperature threshold of approximately 80°C, and the overall pack temperature rise rate surpasses 24°C within 9 seconds (detected every 3 seconds and sustained for 3 or more consecutive times), the battery pack's immersion fire suppression system is activated, initiating liquid injection to mitigate the early stage of thermal runaway.
- Each protected area is equipped with dual independent detection circuits, featuring smoke and temperature detectors with dry contact outputs. Upon simultaneous activation of both detectors, the system issues a fire alarm to the main control system located in the high voltage box, immediately halts all charging and discharging activities, sends a dry contact shutdown signal to the PCS, and disconnects the rack contactors after a one-second delay. If the local temperature reaches the aerosol fire extinguishing device's activation point, the extinguishing agent is deployed, and a confirmation signal is sent to the BMS.
- The cabinet includes a pre-installed DN25 external threaded pipe capped at the outdoor cabinet's exterior wall. During site installation, the cap is removed, and the pipe is extended to connect to an external firefighting valve. Upon valve activation, water flows through the piping network to closed-head sprinkler nozzles. The sprinklers, equipped with heat-sensitive elements, automatically activate in the presence of fire or high- temperature airflow, rupturing to discharge water for fire suppression.

Aerosol Fire Extinguishing Systems

The cabinet-level fire protection solution in this design utilizes an aerosol-based automatic fire extinguishing system. The fire control panel and sound and light alarm devices are not pre-installed; they will be provided and installed on-site according to customer requirements. These components can be installed either inside or externally on the AC confluence cabinet. Communication between the fire control unit and the energy storage system can be integrated into the BMS network or configured to operate independently. Each energy storage station cabinet is equipped with dedicated pressure relief ports to safely discharge excess air pressure and aerosol extinguishing agents during fire suppression activation.

Items	Configuration
Power Supply	AC220V/DC24V

Fire Control Panel	To be installed on-site based on customer requirements
User Switch	Force start switch
	Emergency button
	Automatic manual switch
Fire Extinguisher	Aerosol Fire Extinguishing Systems
Detector	Thermal runaway fire detection, heat-sensitive activation
Site Warning	Sound and light alarm (on-site installation as per customer requirements)
Pressure Relief Device	Deflagration panel

Table 1: Fire Suppression System Configuration

System working mode

1. Alarm and Delayed Activation

To ensure personnel safety before the aerosol fire extinguishing system is activated, the system is configured with a delay mechanism.

When a fire alarm signal is detected, the system immediately triggers the in-station and off- station sound and light alarms. After a 30-second delay, if no emergency stop is triggered, the aerosol fire extinguisher is activated.

2. Automatic manual mode

The fire suppression system supports two operational modes: Automatic Mode and Manual Mode, switchable via the "Automatic/Manual" selector.

- Automatic Mode: When a fire alarm is detected, the system automatically triggers the alarms and activates the aerosol fire extinguisher after the delay period.
- Manual Mode: In Manual Mode, upon fire detection, the system only triggers the sound and light alarms. The fire extinguisher will not activate automatically; manual intervention is required if necessary.

Operators should select Manual Mode during personnel presence inside the station and return to Automatic Mode after personnel exit.

3. Forced Start and Emergency Stop

Forced Start: In either Automatic or Manual Mode, pressing the Forced Start button immediately triggers the in-station and off-station sound and light alarms. After a 30-second delay, the aerosol fire extinguisher is activated.

Emergency Stop: Pressing the Emergency Stop button during the delay cancels the fire extinguishing sequence and silences all alarms. In addition, the system will execute protective

actions: delaying 2 seconds to disconnect each rack contactor, issuing PCS shutdown commands, and isolating the affected systems according to emergency protocols.

System Functions

1. Sound and Light Alarms

The system provides early warning and fire alarm functions via acousto-optic signaling. Fire alarms are issued through in-station and off-station sound and light alarm devicesSound and light alarm (on-site installation as per customer requirements).

2. Intelligent Fire Detection and Judgment

The system utilizes integrated detectors combining smoke, temperature, and gas sensors to perform intelligent fire detection. Fire risk assessments are conducted using methods such as fixed thresholds, multi-sensor data fusion, and trend analysis. When a high-sensitivity gas sensor detects an abnormal concentration of thermal runaway gases, or a smoke sensor detects visible smoke, or multiple sensors collectively indicate abnormal conditions, an early warning is triggered. If, following the early warning, the temperature sensor detects an abnormal temperature trend with a clear upward trajectory, the system escalates the status to a fire warning.

3. Delayed Activation Sequence

The system is equipped with a strict activation sequence that ensures sufficient time for evacuation before activating the aerosol fire suppression system. Upon fire detection, sound and light alarms are triggered immediately, followed by a delay to provide station personnel adequate time to evacuate safely before fire suppression actions commence.

4. Integrated Detector

Each detector integrates smoke detection and temperature monitoring. Utilizing a "power battery thermal runaway model," the system analyzes real-time thermal parameters to assess potential thermal runaway events or fire conditions. Detectors are installed at the top section of each battery cabinet space for optimal monitoring coverage.

Figure 3: FSS Detectors

Function	Description
Multi-Parameter Monitoring	Integrates temperature and smoke sensors to monitor multiple indicators related to battery thermal runaway.
System-Wide Diagnostics	Conducts fault diagnostics across key points of the system to ensure operational accuracy and reliability.
Abnormal Data Record	In the event of an abnormal condition, the system continuously records monitoring data before the event using a built-in high-capacity storage device, serving as a black box for post-event analysis and maintenance.
Intelligent Judgment	Analyzes and processes operational data from the battery system using thermal runaway models to enhance predictive capabilities.
Early Warning	Utilizes multi-point and real-time monitoring to promptly detect abnormal fire conditions in the energy storage station, enabling automatic early warning functions.
Classified Alarm	Implements tiered alarm prioritization (strong and weak alarms) to distinguish different abnormal conditions and facilitate appropriate response actions.

Table 2: FSS Detector Functions

Cabinet Safety Features

Heat Insulation and Dust Protection

The cabinet's main external structure is fabricated from weathering steel plates, hot-rolled steel, and other materials commonly used in shipping containers. The surface is coated with a zinc-rich primer, an intermediate epoxy layer, and an acrylic topcoat. The anti-corrosion coating thickness reaches 150μm, ensuring durability in harsh cold climate conditions.

Inside the cabinet, 50 mm high-density sandwich rock wool panels are installed, providing excellent thermal insulation to maintain optimal battery operation.

Considering the impact of wind and sand in the deployment regions, cabinet doors, vents, and fans are fitted with tightly sealed structures and dust filters, effectively preventing sand and dust from entering the cabinet.

Moisture and Waterproof Protection

The battery pack is a high-voltage energy storage unit containing numerous control circuits and single cells. Ingress of liquids could cause short circuits, leakage, or corrosion of the cells, circuits, and connectors, posing significant safety risks.

It is essential to ensure that the battery pack is protected against water immersion, rain exposure, and high humidity. Immediate maintenance is required if any part of the battery pack is exposed to rain or submerged in liquid.

Considering the heavy rainfall and significant day-night temperature differences at the project site, all cabinet doors are equipped with high-performance rubber seals to prevent water ingress and moisture intrusion.

This design ensures both waterproofing and thermal insulation, minimizing the risk of condensation inside the cabinet.

UV Protection

Ultraviolet absorbers are added to the coatings on all steel plates covering the cabinet's exterior surfaces. This treatment prevents material degradation caused by UV exposure and reduces the absorption of UV-induced heat.

High-Voltage Insulation

All power connection points within the battery pack are protected by sufficient insulation measures, ensuring that neither the positive nor the negative terminals come into contact with the external housing under any circumstances, thereby preventing leakage or short-circuit hazards.

Maintenance pathways inside the cabinet are additionally covered with insulating rubber mats to enhance operational safety.

Cooling and Insulation System

The cabinet interior adopts a thermal insulation design to provide superior temperature control.

Each system has undergone comprehensive thermal flow simulation by a specialized team to optimize heat management.

A large air intake area combined with an ample air exhaust outlet forms an effective cooling system, ensuring efficient heat dissipation and maintaining system performance even under high- temperature conditions.

AC Confluence Cabinet Specifications

Figure: AC Confluence Cabinet Dimensions

External Interface Definitions

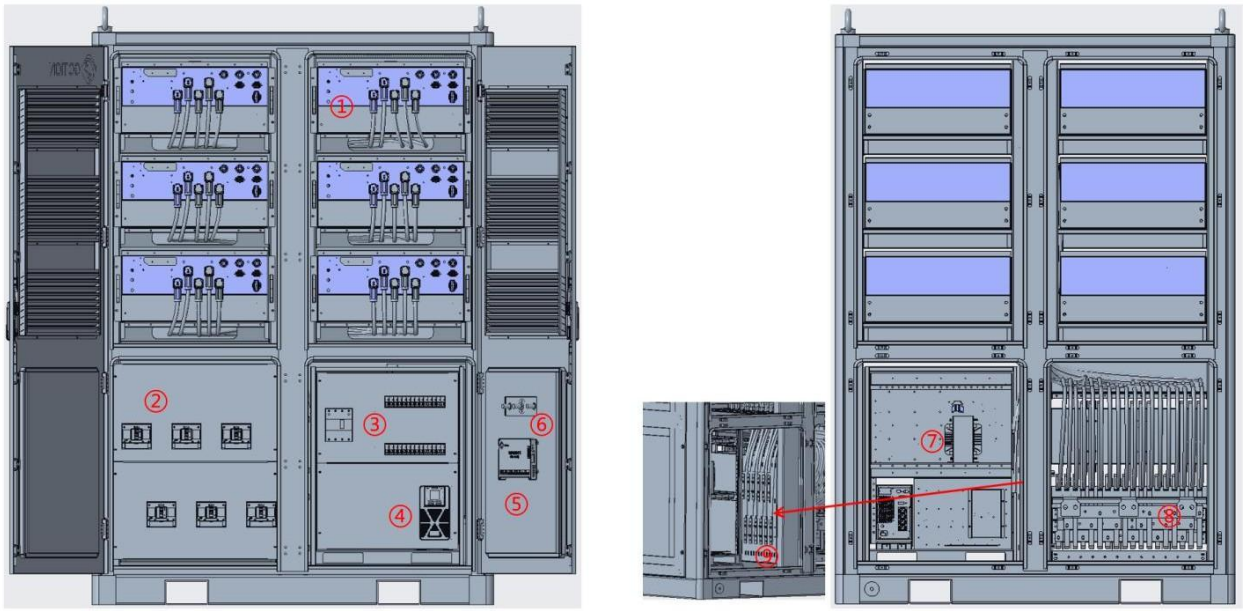


Figure: External Interface Diagram

The external interfaces for the confluence cabinet are shown in the diagram above, and the interface definitions are as follows:

No.	Component Name	Quantity / Description
①	PCS Module (125kW)	4
②	AC Circuit Breakers	6
③	Distribution Switches	1 auxiliary power main switch, 11 other breakers
④	UPS (2kVA)	1
⑤	Level 3 BMS (EMU)	1
⑥	Emergency Stop & Indicator Lights	1 emergency stop, 2 indicator lights
⑦	Transformer (2kVA)	1
⑧	AC Output Busbars	U, V, W
⑨	DC Input Busbars	6* positive, 6* negative

*Note: Total of 6 are in use.

Installation Example

Figure: EDGE cabinets + AC confluence cabinet rendered image

PCS Specifications
Kehua BCS125K-B-HM-US X2

Technical Specification

Items	BCS125K-B-HM-US X2
DC Input	
Max. DC voltage	1500Vdc
DC full load voltage range	720~1300Vdc
Max. DC current	195A
Soft start	Yes
AC output	
Rated AC output power	125kW@45°C
Max. AC output power	137.5kVA
Rated output power	480Vac 3P3W
Output voltage range	-15%~10% (settable)
Grid frequency range	60Hz
Max. output current	165.4A
Power factor	>0.99 (at rated power)
Adjustable power factor	1 (leading)~1 (lagging)
THDi	<3% (at rated power)
Efficiency	
Max. efficiency	0.988
General Data	
Topology	Non-isolated
IP rating	NEMA type 4X
Operation temperature	-35°C~60°C/-31°F~140°F
Relative humidity	0~100% (No-condensing)
Cooling type	Intelligent forced air cooling
Diminsions (WxHxD)	600x295x900mm/236.2x116.1x354.3in
Weight	95kg/209.4lb
Altitude	3000m/9843ft(>2000m/6562ft derating)
Display	LED
Communication protocol	Modbus-RTU, Modbus-TCP, SUNSPEC
Communication interface	RS485, Ethernet, CAN, Bluetooth
Installation	Rack-mounted
Parallel function	Yes
Grid-forming function	Yes
Compliance	UL1741, CS C22.2 No 107.1, IEEE1547, UL1741SB

· Specification indexes may be subject to changes without further notice.

BESS O&M Technical Support

The BESS product is comprised mostly of solid-state technology with only a few mechanical components required for operation. This system design reduces the need for major maintenance overhauls, while improving overall system availability and reliability. Gotion offers an annual Operation & Maintenance Package to cover basic maintenance requirements, which will be finalized before the project's Commercial Operation Date.

The Maintenance Package centers on the manufacturer's Required Maintenance Schedule, which itemizes onsite inspections, upkeep of consumables, and minor repairs. Inclusive of the Maintenance Package, Gotion provides its customers with training in basic equipment inspections and troubleshooting, as well as for minor repair tasks, which can be performed by the customer's technicians in the event immediate on-site support is required. This training is performed by experienced Gotion engineers and technicians. A snapshot of the Required Maintenance Schedule is shown below:

BESS O&M Checklist

Service Item to be performed by PM	Service Interval: 6 months	Service Interval: 12 months
Cabinet		
Inspect cabinet appearance, seals, door lock function, grounding, and air ducts.		**X**
Information System		
Inspect equipment status/alerts and operating parameters	**X**	
Check rack/pack/cell voltage balance and emergency stop function	**X**	
BAMS data download and backup	**X**	
Confluence Cabinet (Controls)		
Temperature inspection of power line connection points (using IR camera)	**X**	
Inspect all contact integrity of wires and hardware and circuit breakers connections.		**X**
Confluence Cabinet (HV Side)		
Temperature inspection of power line connection points (using IR camera)	**X**	
Inspect all contact integrity of wires and hardware and circuit breakers connections.		**X**
Inspect all copper bar connections and check bolt torque.		**X**
PCU		
Temperature inspection of power line connection points (using IR camera)	**X**	
Inspect all contact integrity of wires and hardware and circuit breakers connections.		**X**
Battery Rack Inspection		
Temperature inspection of power line connection points (using IR camera)	**X**	
Inspect all contact integrity of wires, hardware, and wire harnesses. Rack visual inspection.		**X**
Fire Suppression System		
Fire suppressant pressure check (gage on tank)	**X**	
Inspect all contact integrity of wires, hardware, and wire harnesses. Rack visual inspection.		**X**
Simulate fire test, trigger smoke/heat sensors		**24 months**
Liquid Cooling Unit		
Visual inspection of chiller, clean and replace filters, and inspection of water coolant pipelines	**X**	
Coolant inspection/replacement		**60 months**
HVAC Equipment		
Inspection for water intrusion, cleanliness of air conditioner inlet and outlet, inspect and clean filters	**X**	

Inspect air conditioning wiring and check functionality		**X**

Company Overview

Gotion is a global battery technology leader focused on delivering safe, sustainable, and scalable energy solutions. Since 2006, Gotion has been at the forefront of lithium iron phosphate (LFP) battery innovation, serving electric vehicles, stationary energy storage, and industrial applications across markets worldwide.
With an integrated product lineup—from advanced battery cells and modules to containerized ESS solutions and energy management platforms—Gotion supports the transition to clean energy with products built to last.
Today, Gotion operates across five major global regions with 20 gigafactories, 8 R&D centers, and a growing global workforce of over 30,000 employees representing 30+ nationalities.

What We Offer
Battery cells and modules for EVs, ESS, and heavy-duty transport
Turnkey energy storage systems (ESS) for utility-scale, commercial, and residential use
Battery management systems (BMS) and integrated controls
Recycling and second-life energy solutions
Gotion's manufacturing and supply chain operations span the U.S., Morocco, Slovakia, Vietnam, and China, with continued investment in global capacity and localized delivery.

Achievements
Recognized as a Top 5 global battery manufacturer
Named Tier 1 ESS battery supplier by Bloomberg NEF (2024)
Publicly traded on the Shenzhen Stock Exchange and Swiss Stock Exchange (GDRs)
Volkswagen Group holds over 25% ownership stake as a long-term strategic partner
Over 1.2 billion kilometers driven by Gotion-powered EVs—equivalent to 48,200 Earth laps
Over 50 GWh of ESS deployed globally, powering thousands of commercial buildings and homes each day
Launched the industry's first zero-carbon LFP battery factory, certified by TÜV Rheinland

Built for the Future
From our U.S. operations headquartered in Fremont, California to our latest production lines in Illinois, Chicago, Gotion is building the infrastructure that powers tomorrow's energy landscape—cleanly, reliably, and at scale.

Global Manufacturing

Gotion builds close to where the future unfolds. With over 20 gigafactories worldwide—from Asia and Europe to North America — our global manufacturing network is designed for scale, flexibility, and proximity to our customers.

Our manufacturing footprint supports the full battery value chain, from cell and pack production to containerized ESS assembly, with facilities purpose-built to meet rising demand in electric mobility and energy storage.

U.S. Manufacturing

In the United States, we're proud to lead with our Manteno, Illinois production facility—a cornerstone of our North American strategy. This state-of-the-art plant supports containerized ESS assembly, functional testing, and quality control for utility-scale deployments. Located just outside Chicago, Manteno is strategically positioned to serve partners across the U.S. with shorter lead times and local compliance confidence. Opened in September 2023, this facility is one of the most ambitious battery manufacturing investments in the U.S. energy transition.

The first container rolled off the line in Q1 2024, marking the start of localized ESS supply from Illinois. With integrated lines for cell, pack, and system assembly, Manteno will play a central role in supporting Gotion's North American ESS customers—delivering on performance, logistics, and domestic content strategy.

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