Please read the instruction manual carefully before use for safety.

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- Company name and products names in this catalog are registered trademarks, trademarks and products of our company registered trademarks.

Recycle
- Lithium-ion battery used in this system is reusable.
- Please contact our service team in case that you dispose the system.

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We use recycled paper.
Creation of energy devices to be a source of excitement

What is fortelion?

Japan's First Battery with Domestic Fire Certificate
Olivine Type FP Li-ion Battery

Olivine type lithium iron phosphate used in cathode results in a battery with long life and high safety.

What does fortelion mean?

Fortelion is a mixture of 'Fort' and 'Lion'.
"Fort" means strong in various conditions, and "Lion" means strong in the environment.

01. High Safety
Maintaining high safety with a stable cathode structure

02. Long Life
Number of cycles or capacity retention rate (At room temperature: 23deg)

03. Quick Charge
Charges more than 90% in 1 hour. Instantaneously ready for the next action.

04. Life Expectancy
Lifetime prediction is possible from the usage data

*Value may differ from data depending upon usage conditions.

*This is the measured data and not the guaranteed value.
**Application**

**Usage Applications**

- **Power Generation**
  - Output leveling of renewable energy
  - Micro Grid / Off Grid System

- **Transmission & Distribution**
  - Voltage Support
  - Frequency Adjustment
  - Ancillary Services
  - System Stabilization Measures

- **Demand**
  - Measures Against Instantaneous Voltage Drop
  - Peak Cut / Peak Shift Countermeasure
  - Emergency Load Management
  - BCP Countermeasure

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**01 Instantaneous Voltage Drop**

Maintains voltage with high rate discharge even at instantaneous voltage drop

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**02 Peak Cut / Peak Shift Countermeasure**

Power is stored in the time period when the electric power is not used and supplied with balance support as necessary.

- Reduces power consumed at peak power demand by shifting the time periods of power consumption
- Battery charges at the time when consumption is low and discharges when consumption is high
- The battery is used in such a way that the peak power does not exceed the contract power amount

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**03 Emergency Lead Management**

Manage emergency power with Fortelion system

- Capacity expansion is possible according to the size of building

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**04 Measures against BCP**

Long time backup even in the event of disaster

- Minimal communication. Used as a power supply to secure information channels.
Fortelion System Configuration

**Container Package**
- Example: 40H (1.4MWh)

**Cell**
- Container
- Rack System
- DC Input / Output Board
- AC Input / Output Board
- Air Conditioning System
- Smoke / Heat Detector
- Wiring Cable (up to 3PS)

**Module**
- Package content may vary depending on specifications.

**Rack Package**
- The rack consists of the following:
  - BMU-HUB
  - Communication with higher DHS
  - Balance control between modules
  - Up to 32 BMUs can be managed

**BMU (Battery Management Unit)**
- Change / discharge control based on information of energy storage modules
- Balance control between energy storage modules
- Information transfer to upper EMS system
- Up to 32 energy storage modules can be managed

**Energy Storage Module**
- Balance control between cells
- INFORMATION transmission to BMU/DMS
  - Voltage, current, temperature

**Product Introduction**

**Energy Storage Module**

- **Standard Module (2.5kWh)**
  - Nominal Capacity: 2.5kWh (2.4kW)
  - Rated Capacity: 2.4kWh (2.4kW)
  - Nominal Voltage: 53.4V
  - Maximum Discharge Current: 50A
  - Discharge Voltage: 64.8V
  - Maximum Charge Current: 40A
  - Storage Ambient Temperature: -20°C ~ 40°C (unconditioned; storage and use at ambient temperature)
  - Operating Temperature Range: Discharge: -20°C ~ 55°C
  - Weight: 116kg
  - External Dimensions: W1125 x H1665 x D620mm

- **High Rate Module (1.55kWh)**
  - Nominal Capacity: 1.55kWh (1.5kW)
  - Rated Capacity: 1.5kWh (1.5kW)
  - Nominal Voltage: 53.4V
  - Maximum Discharge Current: 90A
  - Discharge Voltage: 56.8V
  - Maximum Charge Current: 22.5A
  - Storage Ambient Temperature: -20°C ~ 40°C (unconditioned; storage and use at ambient temperature)
  - Operating Temperature Range: 0°C ~ 40°C
  - Weight: 116kg
  - External Dimensions: W1125 x H1665 x D620mm

**Control Equipment**

- **BMU (Battery Management Unit)**
  - Operating Voltage Range: 300 ~ 1600V
  - Operating Current Range: 0 ~ 300A
  - Storage Ambient Temperature: 25°C ± 5°C (Recommended; storage and use at ambient temperature)
  - Operating Ambient Temperature: -20°C ~ 65°C (Recommended; storage and use at ambient temperature)
  - External Dimensions: W320 x H200 x D300mm

- **BMU-HUB (BMUs Upper System)**
  - Input Voltage: DC220V, DC380V
  - Storage Ambient Temperature: -20°C ~ 65°C (Recommended; storage and use at ambient temperature)
  - Operating Ambient Temperature Range: 0°C ~ 40°C (Recommended; storage and use at ambient temperature)
  - Weight: 3.4kg
  - External Dimensions: W320 x H200 x D300mm

**Safety Standard**
- EU/US Directive / EU EMC Direction
- UL / VDE / FCC Part 15 Class B
- NIST certification covers all required connections.

*Specifications and appearances may be changed without prior notice for improvement.*