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**Power Conversion System**  
EIPS-50/50  
EIPS-100/50



## About US

Headquartered in Shijiazhuang, Hebei Ecube New Energy Technology Co., Ltd., with a registered capital of 100 million yuan, is a high-tech enterprise specializing in energy storage and lithium battery system integration. Relying on the technical team of the leading enterprises in the power electronics industry, Ecube has built a core technical team with more than ten years of experience in the development and application of lithium battery and power supply products, and independently developed the industry-leading battery management system with excellent security, stability and balance capabilities.

The products cover four business sectors: Industrial and commercial energy storage system, renewable integration, uninterrupted power lithium battery system and residential energy storage system. In recent two years, the project cases have spread to key overseas markets such as South Korea, Russia, the Netherlands, Germany, the Middle East, etc

**Outstanding developers and suppliers of intelligent energy storage system.**

# Power Conversion System

## Overview

The multi-functional bi-directional converter can realize the bi-directional conversion from DC to AC and from AC to DC. It can not only convert AC into DC to charge the battery, but also convert DC into AC to supply power to the load or feed back to the grid. The system adopts advanced digital control technology, which optimizes the control performance and improves the reliability of the system. It can realize seamless switching between grid-connected discharge, grid -connected charging and off grid operation modes.



## System configuration



### AC/DC Module

Bidirectional AC / DC converter can realize the bidirectional conversion from DC to AC and AC to DC. It can not only convert AC to DC to charge battery, but also convert DC to AC to supply power to load or feed back to power grid.



### Static Transfer Switch (optional)

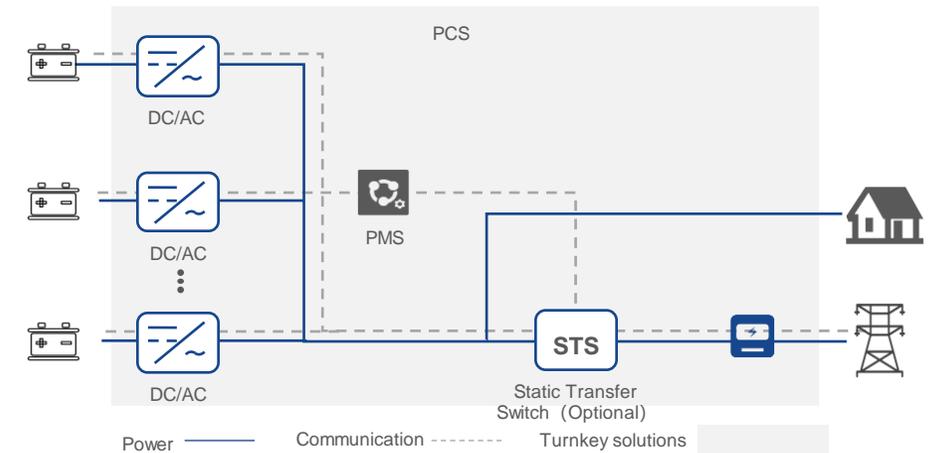
Under normal working condition, the static switch is closed. When the power supply is interrupted, the static switch is immediately disconnected. The system turns to off grid power supply, and the battery is discharged for the load.



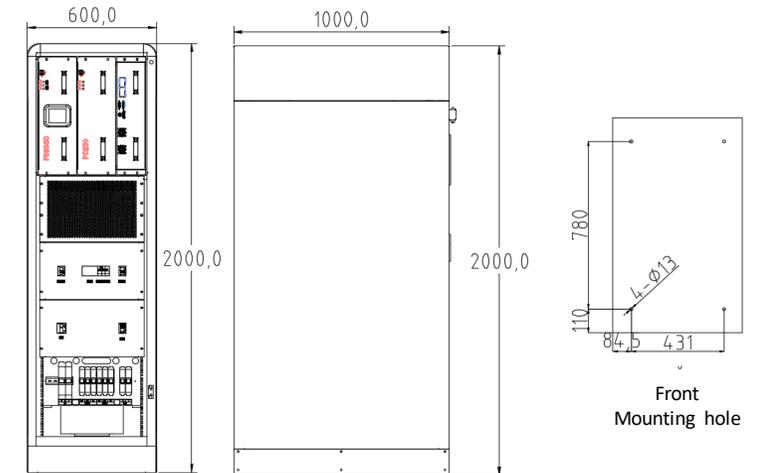
### Power Management System

System operation data monitoring, operation strategy management, historical data record, system status record, etc.

## System topology



## Dimension



Side view

## Key product features and benefits

- Multiple working modes
- RS485、CAN、Ethernet communication modes;
- Functions of low voltage ride through and reactive power compensation;
- 100% unbalanced load capacity in off grid operation;
- Continuous 105% rated output power
- AC and DC dual input redundant power supply
- Modular design and flexible product
- High efficiency, high reliability
- Battery technology independence

## Applications



Industrial and commercial demand management, peak shaving



Power quality improving, and backpower supply at user side



Peak and frequency regulation, smoothing new energy generation



Building microgrid system

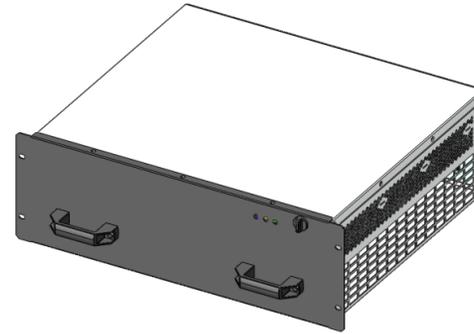
## Parameters

| Model                        | EIPS-50/50                     | EIPS-100/50                                 |               |
|------------------------------|--------------------------------|---|---------------|
| Battery interface parameters | Voltage range                  | DC700-900 /DC550V ~ DC900V with transformer |               |
|                              | Max DC channel Qty             | 1   | 2             |
|                              | Single channel maximum current | 85A   |               |
| AC grid-connected parameters | Output line                    | 3W+N+PE/3W+PE                               |               |
|                              | Rated power                    | 50KW  | 100KW         |
|                              | Rated voltage                  | AC 380V/400V/415V                           |               |
|                              | Rated Current                  | 75A   | 151A          |
|                              | Voltage range                  | -15% ~ +10%                                 |               |
|                              | Rated frequency                | 50Hz/60Hz                                   |               |
|                              | Frequency range                | ±2Hz  |               |
|                              | Power factor                   | 1   |               |
|                              | Output harmonics               | ≤3%   |               |
|                              | AC off-grid parameters         | Output line                                 | 3W+N+PE/3W+PE |
| Rated power                  |                                | 50KW  | 100KW         |
| Rated voltage                |                                | AC 380V/400V/415V                           |               |
| Rated frequency              |                                | 50Hz/60Hz                                   |               |
| Rated Current                |                                | 75A   | 151A          |
| Voltage accuracy             |                                | 1%  |               |
| Frequency accuracy           |                                | ±0.2Hz                                      |               |
| Output voltage harmonics     |                                | 3% @ linear full load                       |               |
| Unbalanced load capacity     |                                | 100%  |               |
| Overload capacity            |                                | 105-120%: running time ≥10min; >120%: stop  |               |
| Environment                  | Working temperature            | -20°C ~ 55°C (>45°C derating)               |               |
|                              | Storage temperature            | -40°C ~ 70°C (No batteries)                 |               |
|                              | Relative humidity              | 0%RH ~ 95%RH, No condensation               |               |
|                              | Working altitude               | <45°C, 2000m; 2000m ~ 4000m Derating        |               |
| Others                       | Noise                          | < 75dB                                      |               |
|                              | Communication                  | CAN/RS485                                   |               |
|                              | Isolation                      | Transformer isolation optional              |               |
|                              | Protection                     | IP20  |               |
|                              | Cooling                        | Air cooling, intelligent fan regulation     |               |
|                              | Maximum efficiency             | 98.5% (no transformer)                      |               |
|                              | Dimension W*D*H                | 600*800*2000                                |               |
| Weight                       | 300kg                          | 330kg                                       |               |

# AC/DC Module

## Overview

Bidirectional AC / DC converter can realize the bidirectional conversion from DC to AC and AC to DC. It can not only convert AC to DC to charge battery, but also convert DC to AC to supply power to load or feed back to power grid. Bidirectional AC / DC converter uses SVPWM modulation , the conversion efficiency is up to 98%, and has a wider DC voltage range, which can cover 550-900VDC, and the AC side supports 380VAC input. Bidirectional AC / DC converter uses three-level design to ensure low noise, high operation efficiency and high voltage quality.



## Key product features

- Standard modular, rack-mounted design, easy to install, easy to maintain
- The highest efficiency is 98.5%
- Wide range of input voltage, small temperature rise, high efficiency and stable output
- High performance in any climate
- Complete digital control, high performance
- Intelligent fan regulation, high reliability
- Perfect protection function, over temperature protection, short circuit protection, overload protection, input anti reverse protection
- Remote emergency shutdown (REPO)
- Multiple communication modes, CAN bus communication convenient for remote control

## Parameters

|                              | Model                          | PCM50                                     | PCM100      |
|------------------------------|--------------------------------|---|-------------|
| Battery interface parameters | Voltage range                  | DC550V ~ DC900V                           |             |
|                              | Rated power                    | 50KW                                      | 100KW       |
|                              | Single channel maximum current | 85A                                       | 170A        |
| AC grid-connected parameters | Output line                    | 3W+N+PE/3W+PE                             |             |
|                              | Rated power                    | 50KW                                      | 100KW       |
|                              | Rated voltage                  | AC 380V/400V/415V                         |             |
|                              | Rated Current                  | 75A                                       | 151A        |
|                              | Voltage range                  | -15% ~ +10%                               |             |
|                              | Rated frequency                | 50Hz/60Hz                                 |             |
|                              | Frequency range                | ±2Hz                                      |             |
|                              | Power factor                   | 1   |             |
|                              | Output harmonics               | ≤3%                                       |             |
| AC off-grid parameters       | Output line                    | 3W+N+PE/3W+PE                             |             |
|                              | Rated power                    | 50KW                                      | 100KW       |
|                              | Rated voltage                  | AC 380V/400V/415V                         |             |
|                              | Rated frequency                | 50Hz/60Hz                                 |             |
|                              | Rated Current                  | 75A                                       | 151A        |
|                              | Voltage accuracy               | 1%  |             |
|                              | Frequency accuracy             | ±0.2Hz                                    |             |
|                              | Output voltage harmonics       | 3% @ linear full load                     |             |
|                              | Unbalanced load capacity       | 100%                                      |             |
| Environment                  | Overload capacity              | 105-120%: running time≥10min; >120%: stop |             |
|                              | Working temperature            | -20°C ~ 55°C (>45°Cderating)              |             |
|                              | Storage temperature            | -40°C ~ 70°C (No batteries)               |             |
|                              | Relative humidity              | 0%RH ~ 95%RH, No condensation             |             |
|                              | Working altitude               | 45°C, 2000m; 2000m ~ 4000m Derating       |             |
|                              | Noise                          | < 75dB                                    |             |
| Others                       | Comminication                  | CAN/RS485                                 |             |
|                              | Isolation                      | no  |             |
|                              | Protection                     | IP20                                      |             |
|                              | Cooling                        | Air cooling, intelligent fan regulation   |             |
|                              | Maximum efficiency             | 98.5%                                     |             |
|                              | Dimension W*D*H                | 560*530*133                               | 560*530*177 |
| Weight                       | 30kg                           | 50kg                                      |             |

# Static Transfer Switch

## Overview

The static switch can realize fast switching within 10ms from on to off grid state. Under the normal working state, the static switch is closed, and when the mains power is interrupted, the static Transfer switch is immediately disconnected, and the system turns to off grid power supply, and the battery is discharged for the load. The static transfer switch is controlled by silicon controlled rectifier, which has the characteristics of fast action, long service life and strong reliability.



## Key product features

- Modular design, suitable for the whole range of energy storage converters
- It can realize fast switching within 10ms between grid connected / off grid state, and effectively protect important loads such as servers
- Cooperating with EMS and PCS, it can realize unattended automatic operation of energy storage system
- Small size, high power

## Parameters

| Model                    | STSD100                                 | STSD150 | STSD300               | STSD600               | STSD1000              |
|--------------------------|---|---------|-----------------------|-----------------------|-----------------------|
| Rated power              | 100kW                                   | 150kW   | 300kW                 | 600kW                 | 1000kW                |
| Rated grid voltage       | AC 380V/400V/415V                       |         |                       |                       |                       |
| Input voltage range      | -20% ~ +15%                             |         |                       |                       |                       |
| Output voltage range     | -20% ~ +15%                             |         |                       |                       |                       |
| Rated current            | 151A                                    | 227A    | 454A                  | 909A                  | 1515A                 |
| Overload capacity        | 110%                                    |         |                       |                       |                       |
| Rated frequency          | 50Hz/60Hz                               |         |                       |                       |                       |
| Frequency range          | ±5Hz                                    |         |                       |                       |                       |
| Switching time           | ≤10ms                                   |         |                       |                       |                       |
| Output line system       | 3W +PE                                  |         |                       |                       |                       |
| Efficiency               | 99.50%                                  |         |                       |                       |                       |
| Noise                    | < 75dB                                  |         |                       |                       |                       |
| Installation             |   |         |                       |                       |                       |
| Communication            | CAN/RS485                               |         |                       |                       |                       |
| Cooling                  | Air cooling, intelligent fan regulation |         |                       |                       |                       |
| Protection               | IP20                                    |         |                       |                       |                       |
| Dimension w * D * H (mm) | 560mm*530mm*133mm                       |         | 560mm*530mm*<br>177mm | 560mm*530mm*<br>352mm | 560mm*530mm*<br>575mm |
| Weight                   | 20kg                                    | 25kg    | 30kg                  | 50kg                  | 90kg                  |

# DC/DC PV Management Module

## Overview

The function of DC / DC module is to filter the power from photovoltaic panel, increase its voltage for bidirectional DC / AC converter or store energy for lithium battery. The low voltage terminal of DC-DC converter is connected with photovoltaic panel, and the high voltage terminal is connected with lithium battery. The module contains a photovoltaic controller, which extracts the maximum power from the photovoltaic array by using the maximum power point tracking technology to ensure the maximum utilization of solar energy.



## Key product features

- Standard modular, rack design, easy to install, easy to maintain
- Photovoltaic panel has three input channels at most, which can improve the energy efficiency and stability of photovoltaic system
- Photovoltaic seamless access, completely replace photovoltaic inverter, make ESS system design simple and flexible

## Parameters

| Model                 | PDMD50                         |   |
|-----------------------|--------------------------------|---|
| Electrical parameters | Voltage range                  | DC220V ~ DC900V                         |
|                       | Full load voltage range        | DC350V ~ DC900V                         |
|                       | Rated power                    | 50KW                                    |
|                       | Single channel maximum current | 142A                                    |
|                       | MPPT Qty                       | 1~3                                     |
|                       | Voltage stabilization accuracy | <1%                                     |
|                       | Output ripple                  | <0.5%                                   |
|                       | Overload capacity              | 105% load, long term operation          |
| Environment           | Working temperature            | -20°C ~ 55°C (>45°Cderating)            |
|                       | Storage temperature            | -40°C ~ 70°C (No batteries)             |
|                       | Relative humidity              | 0%RH ~ 95%RH, No condensation           |
|                       | Working altitude               | <45°C, 2000m; 2000m ~ 4000m Derating    |
|                       | Noise                          | < 75dB                                  |
| Others                | Communication                  | CAN/RS485                               |
|                       | Isolation                      | No                                      |
|                       | Protection                     | IP20                                    |
|                       | Cooling                        | Air cooling, intelligent fan regulation |
|                       | Maximum efficiency             | 96.5%                                   |
|                       | Dimension W*D*H                | 560*530*133                             |
|                       | Weight                         | 30kg                                    |