



CSE Energy & Technology Co., Ltd.

ADD: No. 777, Sizhuan Road, Shanghai, China
TEL: 021-50809880
WEB: www.solarcse.com

SMART DISTRIBUTED ENERGY SOLUTIONS

Boosting green energy to life

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Boosting Green Energy
to Life
让零碳能源走进生活



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COMPANY PROFILE

CSE Energy & Technology Co., Ltd. is a subsidiary of CSG Smart Science & Technology Co., Ltd. (stock code: 300222) and belongs to the digital energy segment which is the priority deployment of the Group. Founded in 2022 and headquartered in Songjiang District, Shanghai, it is a leading provider of distributed energy solutions, focusing on commercial & industrial and residential scenarios, providing customers with core products and integrated solutions for energy storage systems, with the mission of “leading green energy technology”. We aim to boost green energy to life and achieve safe, efficient and intelligent operation of electricity.

Since its establishment, the company insists on product-oriented and continuous innovation, and its core products now cover string PV inverters for industrial and commercial use, hybrid inverters for household use, integrated energy storage systems for industrial and commercial use, supporting battery modules and PACKs, and intelligent energy management platform.

Under the background of the New Energy Revolution, CSE persists in the scenario-based application of new energy technology and continues to research and innovate in the field of energy storage. The company will continue to launch relevant products and supporting solutions with an international vision of market expansion. Together with the grid, commercial and industrial, and community customers, we will promote the digitalization and cleanliness of energy.



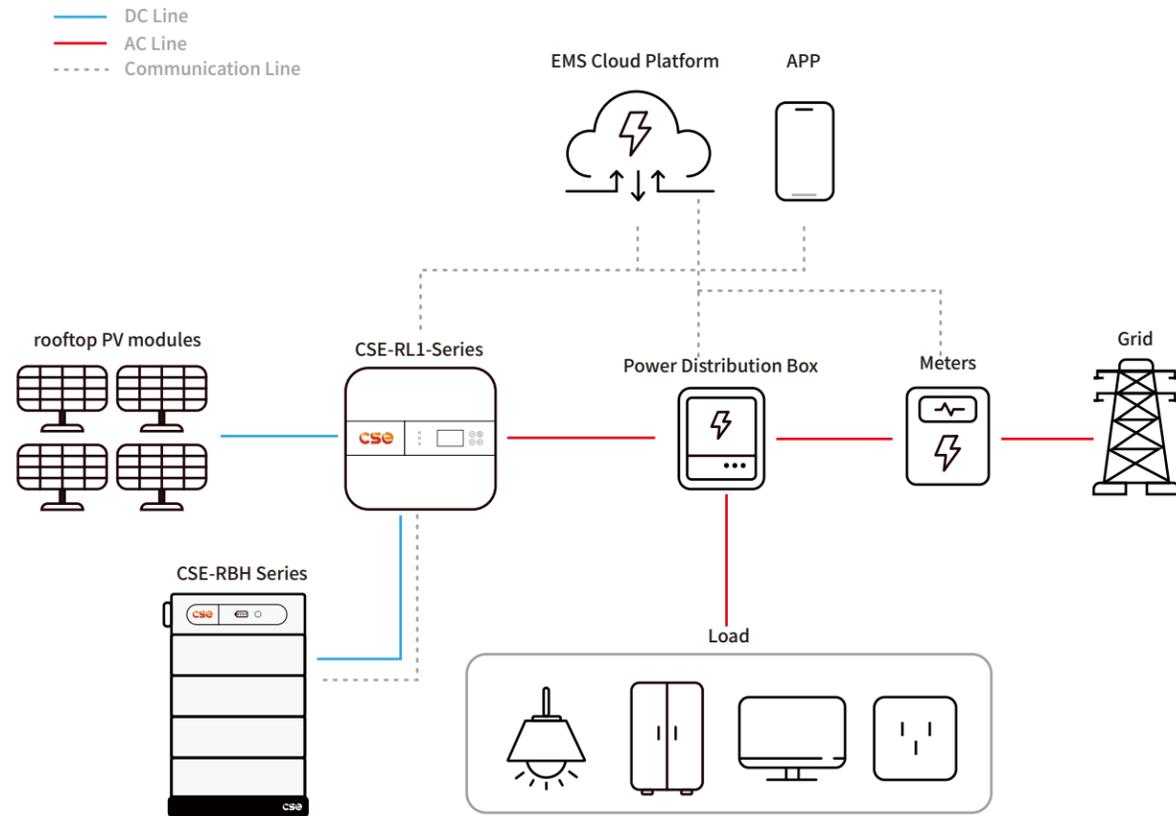
MARKET LAYOUT



SERIES SOLUTIONS



Residential side Solutions



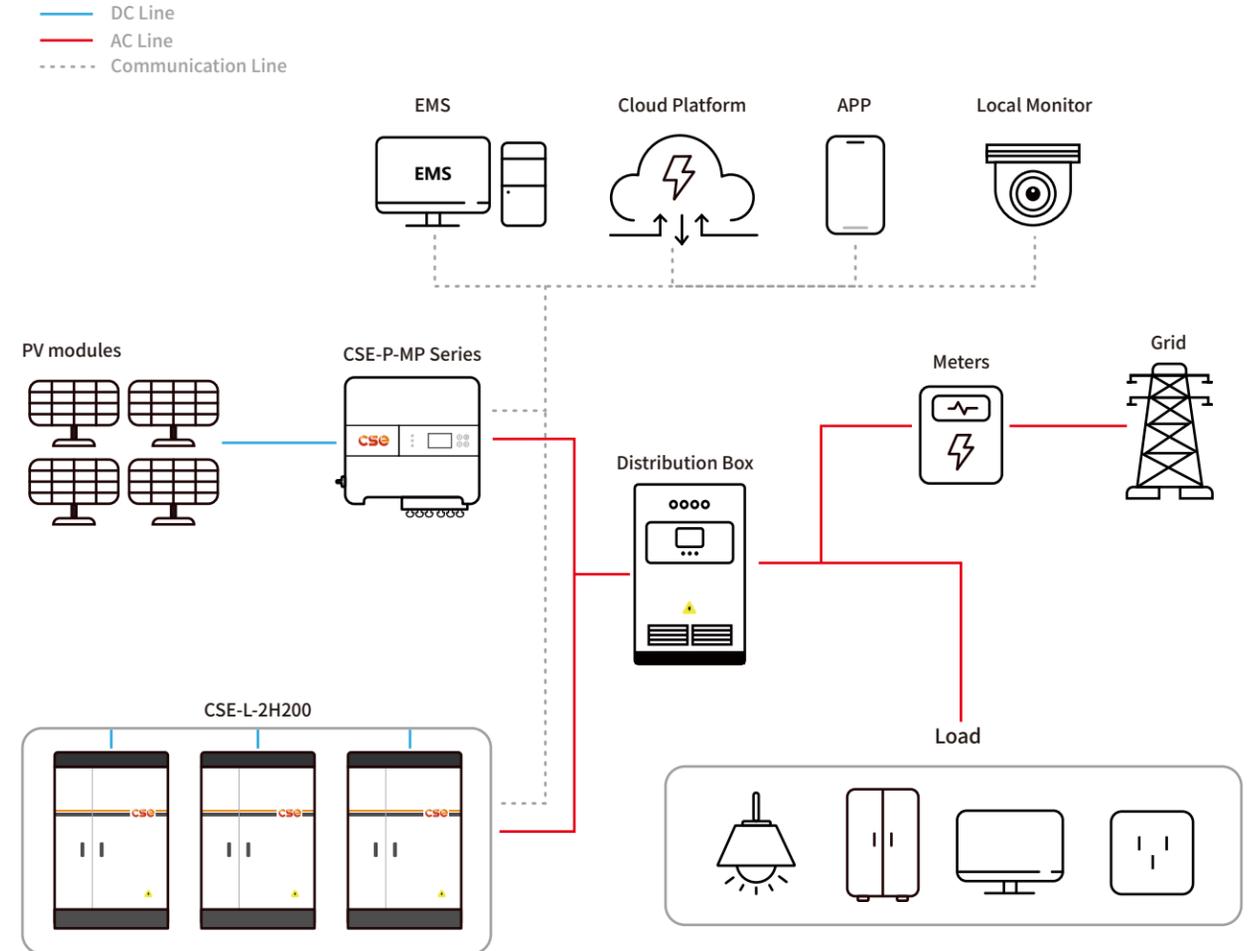
Application & Value

The system is designed for home use scenario. Combined with rooftop photovoltaic panels, the system forms a self-generation and self-consumption of photovoltaic electricity based on small buildings, providing new ideas for the economy and reliability of household electricity use.

Features of System

- Local consumption of photovoltaic power generation, maximizing the characteristics of distributed PV system.
- Equipped with energy storage system to store excess power, users can realize the peak and valley reduction of electricity price.
- The system can be used as an emergency power source in times of emergency.

Grid connected Solutions



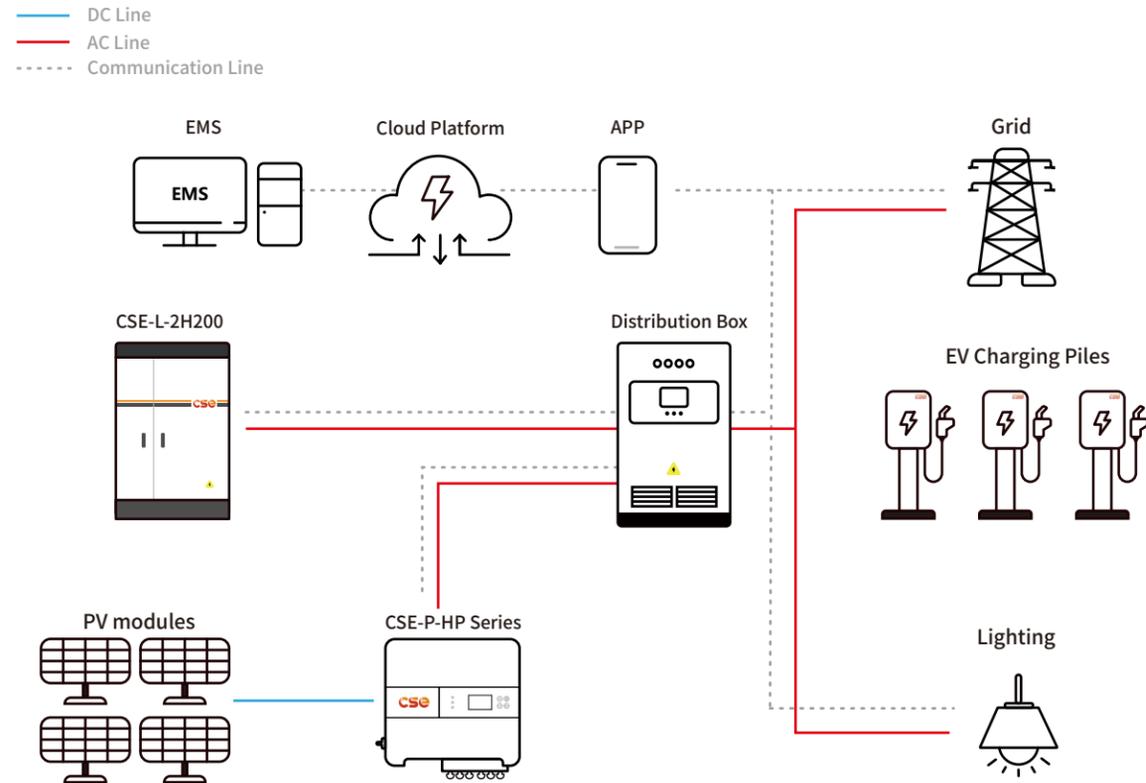
Application & Value

This solution is applicable to the areas with weak power grid or peak-valley price difference, and operates in on-grid and off-grid mode to realize self-use of PV generation, peak-valley arbitrage, and backup power supply without electricity.

Features of System

- It can realize power frequency regulation, peak shaving and valley filling.
- Predict photovoltaic and load to realize the economic operation of microgrid.
- It has two modes of grid-connected and off-grid to realize smooth switching between modes.

PV- EV Charging Station Solution



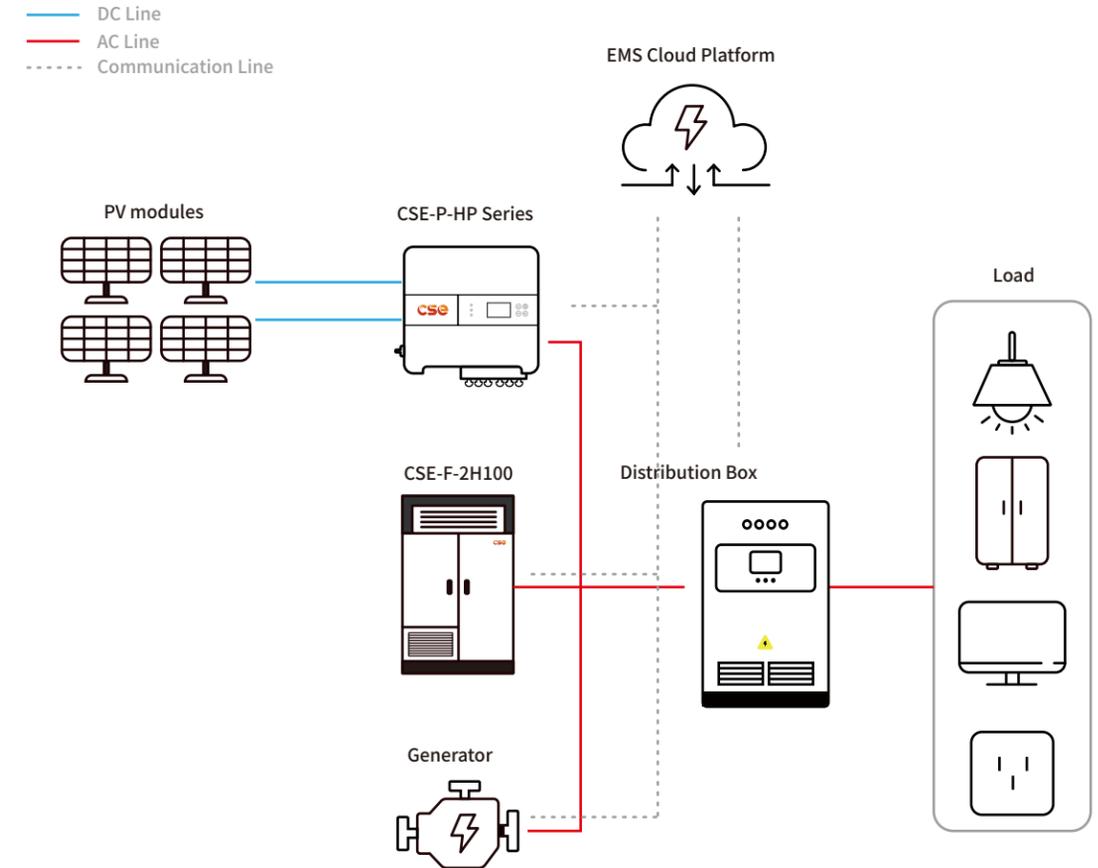
Application & Value

- During the day, the PV system is the main power supply, and the energy storage system supplements the power supply to reduce energy consumption.
- At night, the electricity price is low, and the energy storage system is charged to realize peak-valley arbitrage and increase revenue.
- Ensure the continuous work of emergency equipment when the main falls.

Features of System

- Realize the basic balance between local energy and energy load through energy storage and optimized configuration.
- Flexible interaction with the public grid and relatively independent operation, smooth switching between grid-connected and off-grid.
- Self-generated and self-consumption, surplus electricity storage.

Off-Grid Microgrid Solution



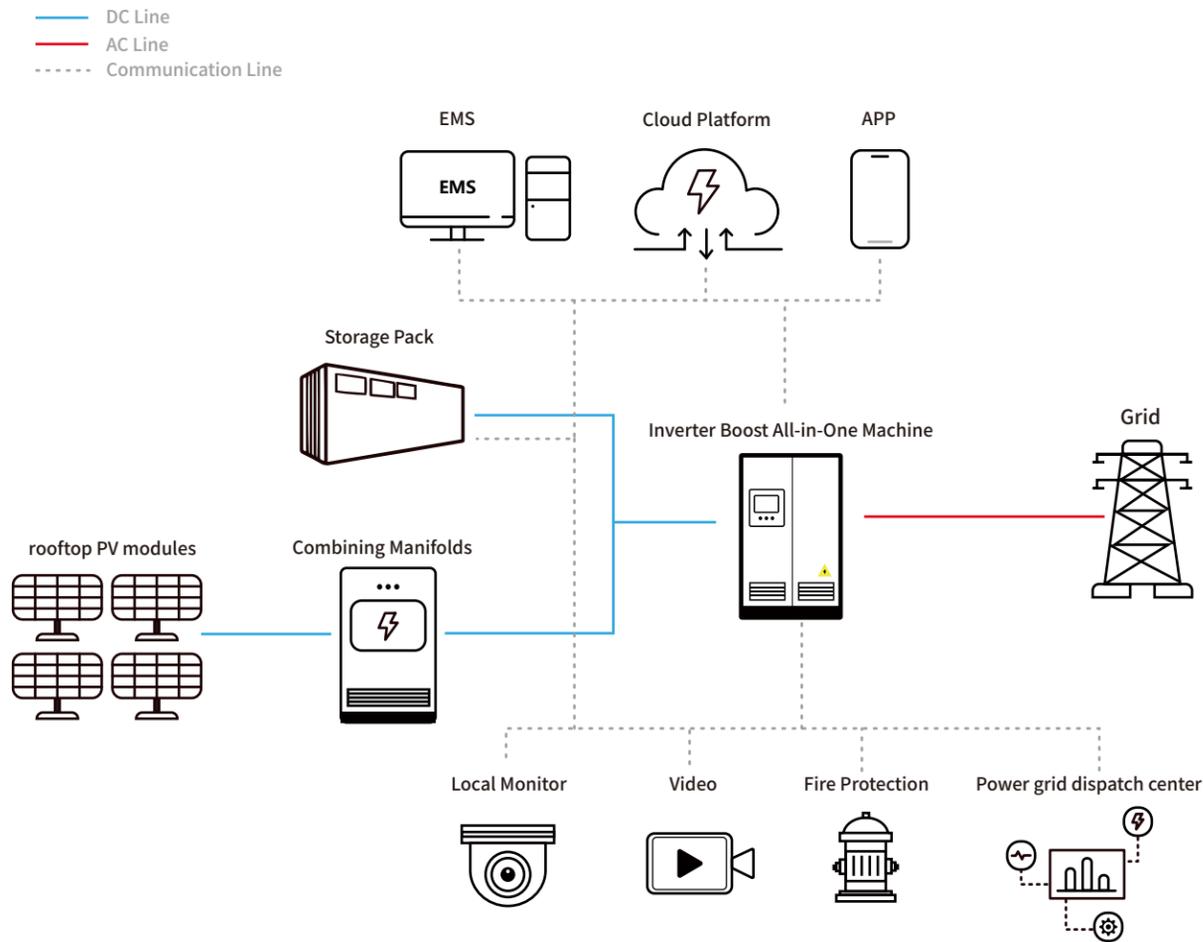
Application & Value

This solution is applicable to the areas with weak power grid or peak-valley price difference, and operates in on-grid and off-grid mode to realize self-use of PV generation, peak-valley arbitrage, and backup power supply without electricity.

Features of System

- New energy power generation in medium and large islands and remote areas without electricity.
- The wind-solar diesel storage system is independently powered, and each microgrid is dispatched by the energy management system.
- In off-grid mode, the energy storage system or diesel power generation system provides voltage and frequency support for the microgrid.

New Energy Generation Side Solution - DC Coupling



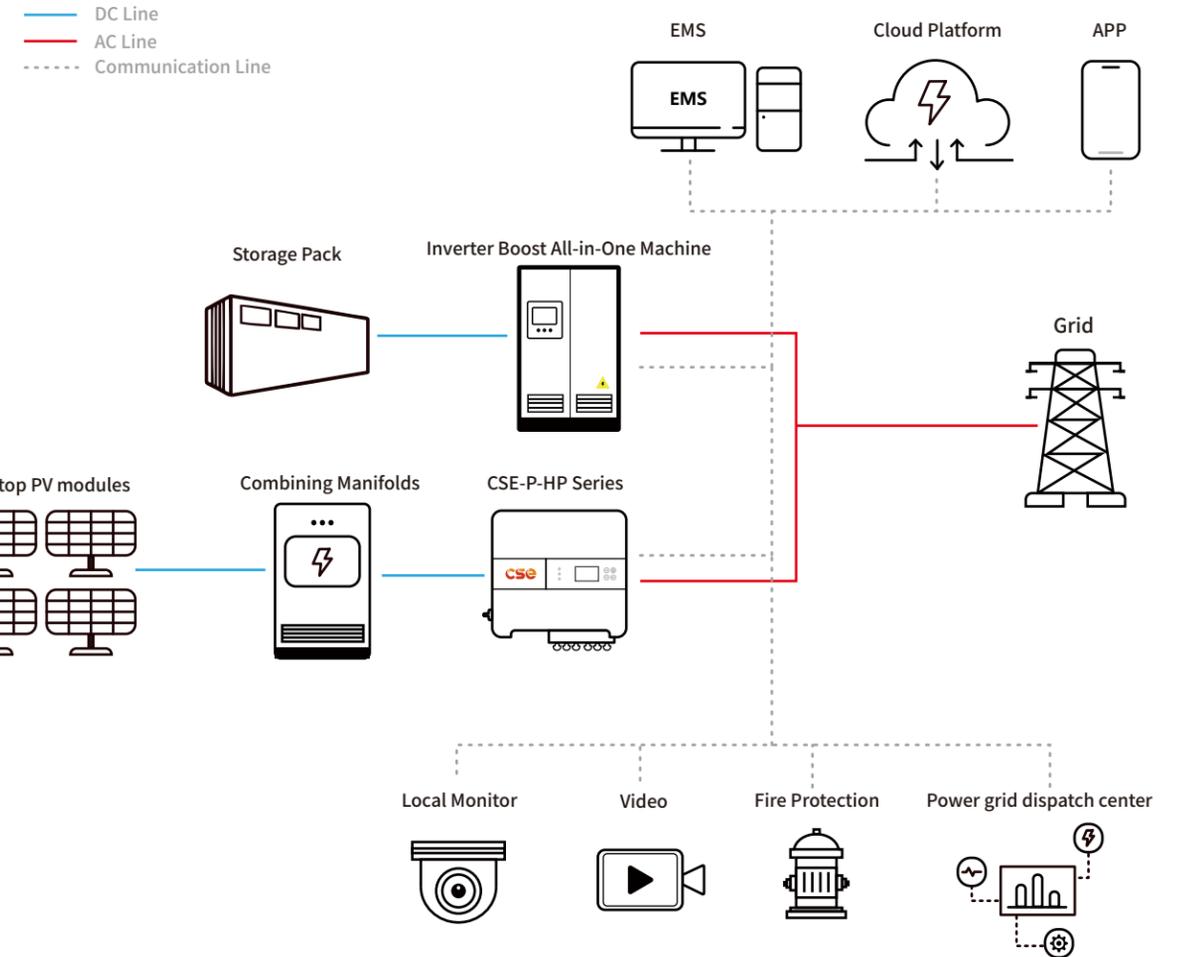
Application & Value

- Applicable Scenarios mainly for thermal power plants.
- Integration of thermal power and energy storage for frequency regulation to enhance comprehensive performance.

Features of System

- Reducing the energy consumption of thermal power units with frequent regulation, improving the availability and service life of the units.
- Fast response of energy storage system to achieve positive and negative bi-directional fast regulation.
- Cooperate with power plants for frequency regulation and peaking to strengthen the overall frequency regulation capability.

New Energy Generation Side Solution - AC Coupling



Application & Value

New energy power plant scenarios suitable for large-scale power generation (wind energy, photovoltaic, etc.). Integration of green energy generation and energy storage to achieve centralized arrangement, storage, management and unified scheduling.

Features of System

- Smoothing green energy generation output, reducing energy volatility and improving the stability of new energy generation systems.
- Precise tracking of dispatching plan with fast response range.
- Intelligent regulation of energy storage system charging and discharging power.

PRODUCTS LINE

Residential Product

Residential Single Phase Hybrid Inverter



CSE-RL1-3K
CSE-RL1-3.6K
CSE-RL1-4K
CSE-RL1-4.6K
CSE-RL1-5K
CSE-RL1-6K

Residential Three Phases Hybrid Inverter



CSE-RH3-6K
CSE-RH3-8K
CSE-RH3-10K
CSE-RH3-12K
CSE-RH3-15K

Residential Low Voltage wall-mounted battery



CSE-RBL
RBL-5.12K-48

Residential High Voltage Stackable Battery



CSE-RBH
RBH-M-2.5K-48
RBH-S-10K~20K

Energy Storage System

C&I air-cooled Module Pack



CSE-F-2H60
CSE-F-2H100
CSE-F-2H200

C&I liquid-cooled Module Pack



CSE-L-2H200

Commercial & Industrial air-cooled Power Pack



CSE-M600-215

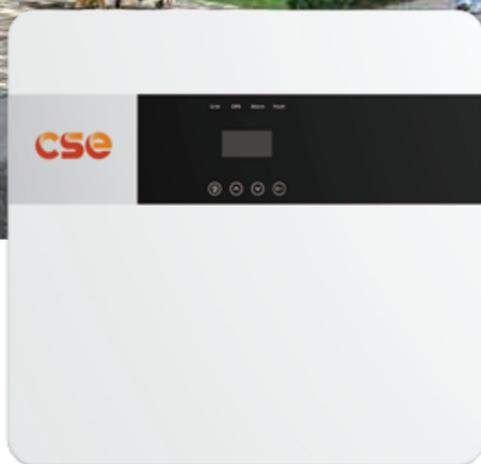
C&I air-cooled Power Pack



CSE-M500-1600

CSE-RL1 Series

3-6kW Residential Single Phase Hybrid Inverter



Easy-to-install

- Quick & easy-to-install with basic tools.
- Quick setup and commissioning with Solplanet apps.
- Compact wall mount design.

Reliable

- Smart energy management.
- UPS capability - power during blackouts.
- IP66 rated design for outdoor use.

User-Friendly

- User friendly app interface.
- Online monitoring via Wi-Fi and Solplanet apps.
- Easy to connect - battery and smart meter interfaces.

Technical specification:

| Technical specification | RL1-3K | RL1-3.6K | RL1-4K | RL1-4.6K | RL1-5K | RL1-6K |
|-------------------------------------|--|----------|---------|----------|----------|--------|
| Input (PV) | | | | | | |
| Max. power(kW) | 4.6 | 4.6 | 6 | 6 | 7 | 7 |
| Max. DC voltage(V) | 550 | | | | | |
| MPPT voltage range(V) | 125~500 | | | | | |
| Max.input current of single MPPT(A) | 14 | | | | | |
| MPPT tracker/strings | 2/1 | | | | | |
| AC output | | | | | | |
| Rated output power(kVA) | 3 | 3.68 | 4 | 4.6 | 5 | 6 |
| Max. output current(A) | 13 | 16 | 17.4 | 20 | 21.7 | 26 |
| Grid voltage/range(V) | 230/176~270 | | | | | |
| Frequency (Hz) | 50 /60 | | | | | |
| THDi | 0.8lagging-0.8leading | | | | | |
| PF | <3% | | | | | |
| AC output topology | L+N+PE | | | | | |
| Battery | | | | | | |
| Battery voltage range(V) | 40~58 | | | | | |
| Max. charging voltage(V) | 58 | | | | | |
| Max. charge/discharge current(A) | 95/62.2 | 95/75 | 95/83.3 | 95/95.8 | 95/104.2 | 95/110 |
| Battery type | lithium /Lead-acid | | | | | |
| Communication interface | CAN/RS485 | | | | | |
| EPS output | | | | | | |
| Rated power (kVA) | 3 | 3.68 | 4 | 4.6 | 5 | 6 |
| Rated output voltage(V) | 230 | | | | | |
| Rated output current(A) | 13 | 16 | 17.4 | 20 | 21.7 | 26 |
| Rated frequency (Hz) | 50 /60 | | | | | |
| Automatic switching time (ms) | <20 | | | | | |
| THDu | <2% | | | | | |
| Overload capacity | 110%, 30S/120%, 10S/150%, 0.02S | | | | | |
| General data | | | | | | |
| Battery chage/discharge efficiency | 95.0% | | | | | |
| DC Max. efficiency | 97.6% | | | | | |
| Europe efficiency | 97.0% | | | | | |
| MPPT efficiency | 99.9% | | | | | |
| Ingress protection | IP65 | | | | | |
| Noise emission (dB) | <35 | | | | | |
| Operation temperature | - 25°C~ 60°C | | | | | |
| Cooling | Natural | | | | | |
| Relative humidity | 0 ~95% (non-condensing) | | | | | |
| Weight (kg) W * D * H (mm) | 2,000m(>2,000 Derating) | | | | | |
| Altitude | 550*200*515 | | | | | |
| Dimensions | 25 | | | | | |
| Isolation transformer | No | | | | | |
| Self-consumption(W) | <3 | | | | | |
| Display and communication | | | | | | |
| Display | LCD | | | | | |
| Interface:RS485/Wifi/4G/CAN/DRM | Yes/ Opt/ Opt/ Yes/ Yes | | | | | |
| Safety standard | IEC/EN62109-1/-2, IEC/EN62477-1 | | | | | |
| On-grid | IEC/EN 61000-6-1, IEC/EN 61000-6-3 | | | | | |
| EMC | South Africa NRS097-2-1:2017, UK G98,G99 | | | | | |

CSE-RH3-Series

10kW Residential Three Phase Hybrid Inverter



Safe & reliable

- Passed IEC/EN 62109-1/-2, IEC/EN 62477-1, IEC/EN 61000-6-1/-6-3, European grid connection: EN50549-1, German grid connection: VDE4105/0124, UK grid connection: G99, South Africa: NRS097-2-1:2017 test certification.

Friendly & flexible

- Support diesel generator access.
- Support full power discharge, automatic management of battery charge and discharge.

Economical & practical

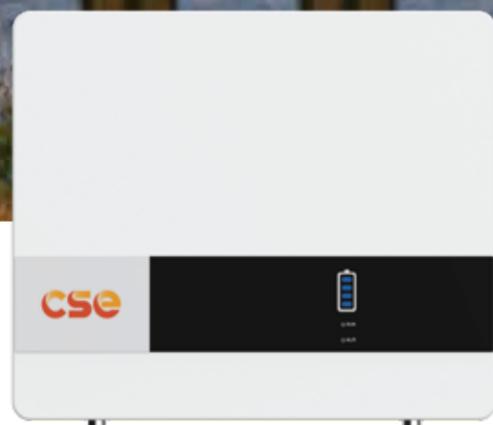
- It is more economical to support multiple operating modes.
- Can be as a UPS for the important loads when power off.

Technical specification:

| Model | RH3-6K | RH3-8K | RH3-10K | RH3-12K | RH3-15K |
|--|--|-----------|-----------|-----------|-----------|
| General data | | | | | |
| Ingress Protection | IP65 | | | | |
| Operating Temperature Range | -35~60°C | | | | |
| Relative Humidity | 0~100% | | | | |
| Operating Altitude | 4000m(Derating above 2000 m) | | | | |
| Cooling | Natural Convection | | | | |
| Noise Emission | ≤25dB | | | | |
| Installation | Wall Mounted | | | | |
| EMC | IEC/EN 61000-6-1:2019, IEC/EN 61000-6-2:2019, IEC/EN 61000-6-3:2021, IEN/EN 61000-6-4:2019, IEC/EN 61000-3-2:2019/A1:2021, EN 61000-3-3:2013/A2:2021, IEC/EN 61000-3-11:2019, EN 61000-3-12:2011 | | | | |
| Grid Regulation | Europe: EN 50549-1:2019/AC:2019, Poland:EN50549-1:2019/Rfg:2016/NC Rfg:2018/PTPIREE:2021, Germany:VDE-AR-N 4105:2018 /DIN VDE V 0124-100(VDE V 0124-100):2020, South Africa:NRS 097-2-1:2017 Edition 2.1, UK:G99/1-6:2020, Spain:UNE217001:2020 /UNE217002:2020/NTS V2.1:2021-07, IEC61727:2004/IEC62116:2014/IEC61683:1999, Hungary:EN50549-1:2019/RFG:2016/Hungary | | | | |
| Safety Regulation | IEC/EN62109-1:2010, IEC/EN62109-2:2011 | | | | |
| Interface | | | | | |
| HMI | LCD;APP | | | | |
| BMS | RS485,CAN | | | | |
| Meter | RS485 | | | | |
| Supported Communication Interface | WIFI / GPRS / 4G | | | | |
| Battery | | | | | |
| Max.Charging/Discharging Power | 6600W | 8800W | 11000W | 13200W | 16500W |
| Battery Voltage Range | 125~600V | | | | |
| Battery Working Voltage Range | 150~550V | | | | |
| Max.Charging/Discharging Current | 50A | | | | |
| Rated.Charging/Discharging Current | 40A | | | | |
| Battery Type | Lithium and Lead Acid Battery | | | | |
| Input DC (PV) | | | | | |
| Max.PV Input Power | 9000W | 12000W | 15000W | 18000W | 22500W |
| Max. PV Voltage | 1000V | | | | |
| MPPT Voltage Range | 180~850V | | | | |
| Full Power MPPT Voltage Range | 250V~850V | 330V~850V | 430V~850V | 510V~850V | 620V~850V |
| Start-up Voltage | 125V | | | | |
| Max.Input Current per MPPT | 13/13A | 13/13A | 13/13A | 13/13A | 13/13A |
| Max. Short-circuit Current | 16/16A | 16/16A | 16/16A | 16/16A | 30/30A |
| Number of MPP Trackers | 2 | | | | |
| MPPT Number/Max. Input Strings Number | 1/1 | 1/1 | 1/1 | 1/1 | 2/2 |
| Rated Input Voltage | 600V | | | | |
| AC Output Data(On-Grid) | | | | | |
| Nominal Output Power to Grid | 6000VA | 8000VA | 10000VA | 12000VA | 15000VA |
| Max. Apparent Power to Grid | 6000VA | 8000VA | 10000VA | 13200VA | 16500VA |
| Max. Apparent Power from Grid | 13200VA | 17600VA | 22000VA | 26400VA | 33000VA |
| Max. Apparent Current from Grid | 19.1A | 25A | 31.8A | 38.1A | 47.6A |
| Nominal Output Current to Grid | 8.7A | 11.5A | 14.4A | 17.3A | 21.7A |
| Max.Output Current to Grid | 9.5A | 12.7A | 15.9A | 19.1A | 23.8A |
| Nominal Grid Voltage | 380V/400V, 3W+N+PE | | | | |
| Nominal Grid Frequency | 50Hz/60Hz | | | | |
| THDI | <2% | | | | |
| AC Output Data(Back Up) | | | | | |
| Nominal Output Power | 8000VA | 8000VA | 10000VA | 12000VA | 15000VA |
| Max. Apparent Power | 8800VA | 8800VA | 11000VA | 13200VA | 16500VA |
| Nominal Output Current | 8.7A | 11.5A | 14.4A | 17.3A | 21.7A |
| Max.Output Current | 9.5A | 12.7A | 15.9A | 19.1A | 23.8A |
| Nominal Output Voltage | 400V,3W+N+PE | | | | |
| Nominal Output Frequency | 50Hz/60Hz | | | | |
| THDu | <2% | | | | |
| Max.Efficiency | 97.9% | 97.9% | 98.2% | 98.2% | 98.5% |
| Europe Efficiency | 97.2% | 97.2% | 97.5% | 97.5% | 97.6% |
| MPPT Efficiency | 99.9% | | | | |
| Max.Battery Charge/ Discharge Efficiency | 97.5% | 97.5% | 97.5% | 97.6% | 97.8% |
| Mechanical Parameters | | | | | |
| Dimensions (W*H*D) | 530*560*220mm | | | | |
| Weight | 30kg | 30kg | 31kg | 32kg | 34kg |

CSE-RBL Series

5.12kWh Residential Low Voltage Wall-mounted Battery



Reliable Safety

- IP65 protection for outdoor installation safety.
- Extensive cycle life and range of certifications.

Thoughtful Design

- Wall-mounted module with user-friendly panels.
- Support parallel to 8 packs maximum.

Intelligent Control

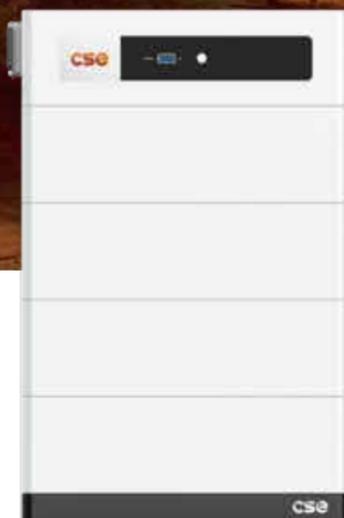
- Remote diagnosis and update.
- Supports real-time data monitoring.

Technical specification:

| Model | RBL-5.12K-48 |
|---------------------------------|--|
| Usable Capacity | 5.12kWh |
| Voltage | 51.2V |
| Charge Voltage | 58.4V |
| Discharge Voltage Rang | 45~57V |
| Max. Charging Current | 40A |
| Max. Discharging Current | 75A |
| Recommended Discharging Current | 40A |
| Max. Output Power | 3500W |
| DOD | 85% |
| Modules Connection | 1-8 in paralle |
| Communication | CAN OR RS485 |
| Cycle Life | ≥6000 25°C 0.5C |
| Working Temp. Range | Charge: 0°C~+55°C Discharge: -10°C~+55°C |
| Storage Temperature | -10°C~+35°C |
| Net Weight (kg) | 48.8 |
| Gross Weight (kg) | 51.8 |
| Product Dimension (mm) | 541.9 *467.5 *196.8 |
| Package Dimension (mm) | 595*522*252 |
| Certification | UN38.3, IEC 62619 |

CSE-RBH Series

10kWh~20kWh Residential High Voltage Stackable Battery



Reliable Safety

- IP65 protection for outdoor installation safety.
- Extensive cycle life and range of certifications.

Flexible Design

- Stackable module with user-friendly panels.
- Supports operation in series(4~8S).

Intelligent Control

- Remote diagnosis and update.
- Supports real-time data monitoring.

Module Technical Specifications:

| Model | RBH-M-2.5K-48 |
|---------------------------|---|
| Nominal Capacity | 2.5kWh |
| Nominal Voltage | 48V |
| Charging Voltage | 53.25V |
| Discharging Voltage Range | 38.25~53.25V |
| Max. Charging Current | 35A |
| Charging Current | 25A |
| Max. Discharging Current | 35A |
| Discharging Current | 25A |
| Max. Power | 2500W |
| DOD | 90% |
| Scalability | 4-8 Modules in series |
| Communication | CAN |
| Cycle Life | ≥6000@25°C 0.5C |
| Operate Temperature | Charge: 0°C~+55°C, Discharge: -10°C~+55°C |
| Storage Temperature | -10°C~+35°C |
| Weight | ~24Kg |
| IP Rate | IP65 |
| Transportation SOC | 30% |
| Dimension | 220mm*606mm*170mm |
| Installation | Floor mounted |
| Certification | UN38.3, IEC 62619 |

Battery System Technical Specifications:

| High Voltage Stackable Energy Storage Battery | | | | | |
|---|--|--------------|--------------|----------------|--------------|
| Module Number | 4 | 5 | 6 | 7 | 8 |
| Model | RBH-S-10K | RBH-S-12.5K | RBH-S-15K | RBH-S-17.5K | RBH-S-20K |
| Capacity | 52Ah | | | | |
| Nominal Voltage | 192V | 240V | 288V | 336V | 384V |
| Battery Type | LFP | | | | |
| Connection | 1P60S | 1P75S | 1P90S | 1P105S | 1P120S |
| Operate Voltage Range | 153~213V | 191.2~266.2V | 229.5~319.5V | 267.75~372.75V | 306~426V |
| Working Temperature | Charge: 0°C~55°C Discharge: -10°C~55°C | | | | |
| Nominal Energy (kWh) | 9.984 | 12.48 | 14.97 | 17.47 | 19.97 |
| Max. Charge Current | 35A | | | | |
| Max. Discharge Current | 35A | | | | |
| Weight (Kg) | ~105 | ~129 | ~152.3 | ~176.2 | ~199.5 |
| Dimension(mm) | 220*606*900 | 220*606*1070 | 220*606*1240 | 220*606*1410 | 220*606*1580 |
| IP Rate | IP65 | | | | |
| Transportation SOC | 30% | | | | |
| Storage Temperature | -10°C~+35°C | | | | |
| Cycle Life | ≥6000@25°C, 0.5C, 90%DOD | | | | |
| Installation | Floor Mounted | | | | |
| Certification | IEC62619, UN38.3 | | | | |

CSE-F-2H60~200

Commercial & Industrial air-cooled Module Pack



Reliable safety

- Efficient air-cooled heat dissipation providing long cycle life.
- IP65 protection level for the whole system.
- AI health monitoring for pack-level immersion fire protection.

Flexible installation

- Highly integrated energy storage system components to achieve "plug and play".
- Independent control of single cabinet, parallel connection of multiple cabinets to achieve flexible expansion of energy storage.

Intelligent control

- with one key start, Automatic operation and remote maintenance can be achieved.
- Built-in EMS, multiple operation modes can be selected flexibly to improve revenue.

Technical specification:

| Model | CSE-F-2H60 | CSE-F-2H100 | CSE-F-2H200 |
|-------------------------------------|--|--|--|
| Battery parameters | | | |
| Battery type | Lithium iron phosphate | Lithium iron phosphate | Lithium iron phosphate |
| Cell spec | 3.2V/120Ah | 3.2V/120Ah | 3.2V/280Ah |
| String configuration | 1P168S | 1P264S | 1P240S |
| Rated energy capacity | 64.51kWh | 101.37kWh | 215.04kWh |
| Rated voltage | DC537.6V | DC844.8V | DC768 |
| voltage range | DC470.4~604.8V | DC739.2~950.4V | DC672~864V |
| The rated charge and discharge rate | 0.5C | 0.5C | 0.5C |
| Depth of discharge | 90% | 90% | 90% |
| Cooling | Intelligent air cooling | Intelligent air cooling | Intelligent air cooling |
| AC parameters | | | |
| Rated power (kW) | 30 | 50 | 100 |
| Rated current (A) | 43.3 | 72 | 144.3 |
| Rated voltage | 400V AC | 400V AC | 400V AC |
| AC output | 3P+N+PE | 3P+N+PE | 3P+N+PE |
| Rated grid frequency | 50Hz±2.5Hz | 50Hz±2.5Hz | 50Hz±2.5Hz |
| AC PF | 0.1~1 leading or lagging (Controllable) | 0.1~1 leading or lagging (Controllable) | 0.1~1 leading or lagging (Controllable) |
| System parameters | | | |
| life cycle | ≥6000 | ≥6000 | ≥6000 |
| Max. efficiency | ≥85% | ≥85% | ≥85% |
| Degree of protection | Battery systemIP65, Electrical cabinIP54 | Battery systemIP65, Electrical cabinIP54 | Battery systemIP65, Electrical cabinIP54 |
| Noise emission (dB) | <70 | <70 | <70 |
| Anti-corrosion rating | C3 | C3 | C3 |
| Operating temperature range | -30 to 50°C (> 45°C Derating) | -30 to 50°C (> 45°C Derating) | -30 to 50°C (> 45°C Derating) |
| Storage temperature range | -20°C~50°C(short term),0°C~35°C(long-term) | -20°C~50°C(short term),0°C~35°C(long-term) | -20°C~50°C(short term),0°C~35°C(long-term) |
| Relative humidity | 0~95% (non-condensing) | 0~95% (non-condensing) | 0~95% (non-condensing) |
| weight (kg) | ≤900 | ≤900 | ≤900 |
| Degree of Protection | IP54 | IP54 | IP54 |
| Fire configuration | aerosol | aerosol | aerosol |
| Working altitude | standard2000m (utmost4000m) | standard2000m (utmost4000m) | standard2000m (utmost4000m) |
| Dimension (WxDxH) | 700*900*2200mm | 1200*900*2200mm | 1200*900*2200mm |
| Installation location | outdoors | outdoors | outdoors |
| Communication interface | RS485, Ethernet | RS485, Ethernet | RS485, Ethernet |
| Certifications | UL1973, UL9540A, IEC62619, CE, UN38.3 | UL1973, UL9540A, IEC62619, CE, UN38.3 | UL1973, UL9540A, IEC62619, CE, UN38.3 |

CSE-L-2H200

Commercial & Industrial liquid-cooled Module Pack



Technical specification:

| Model | CSE-L-2H200 |
|-------------------------------------|--|
| Battery parameters | |
| Battery type | Lithium iron phosphate |
| Cell spec | 3.2V/300Ah |
| String configuration | 1P264S |
| Rated energy capacity | 253.44kWh |
| Rated voltage | DC844.8V |
| voltage range | DC739.2~950.4V |
| The rated charge and discharge rate | 0.4C |
| Depth of discharge | 90% |
| Cooling | Liquid cooling |
| AC parameters | |
| Rated power (kW) | 100 |
| Rated current (A) | 152 |
| Rated voltage | 380V AC |
| AC output | 3P+N+PE |
| Rated grid frequency | 50/60Hz |
| AC PF | 0.1~1 leading or lagging (Controllable) |
| System parameters | |
| life cycle | ≥6000 |
| Max. efficiency | ≥85% |
| Degree of protection | IP65 |
| Noise emission (dB) | <70 |
| Anti-corrosion rating | C3 |
| Operating temperature range | -30 to 50°C (> 45°C Derating) |
| Storage temperature range | -20°C~50°C (short term) , 0°C~35°C (long-term) |
| Relative humidity | 0~95% (non-condensing) |
| weight (kg) | ≤2500 |
| | FM200 |
| | NOVEC1230 |
| Fire Suppression | IG541(Optional) |
| | Water spray |
| Working altitude | standard2000m (utmost4000m) |
| Dimension (WxDxH) | 1300*1500*2200mm |
| Installation location | outdoors |
| Communication interface | RS485、Ethernet |
| Certifications | UL1973, UL9540A, IEC62619, CE, UN38.3 |

Reliable safety

- Intelligent liquid cooling for ultra-long cycle life.
- IP65 protection level for the whole system.
- AI health monitoring for pack-level immersion fire protection.

Flexible installation

- Highly integrated energy storage system components to achieve "plug and play".
- Independent control of single cabinet, parallel connection of multiple cabinets to achieve flexible expansion of energy storage.

Intelligent control

- With one key start, Automatic operation and remote maintenance can be achieved.
- Built-in EMS, multiple operation modes can be selected flexibly to improve revenue.

CSE-M600-215

Commercial & Industrial air-cooled Power Pack



Technical specification:

| Model | CSE-M60-215 |
|-------------------------------------|--|
| Battery parameters | |
| Battery type | Lithium iron phosphate |
| Cell spec | 3.2V/280Ah |
| String configuration | 1P240S |
| Rated energy capacity | 215.04kWh |
| Rated voltage | DC768V |
| voltage range | DC672~864V |
| The rated charge and discharge | 0.5C |
| Depth of discharge | 90% |
| Cooling | Intelligent air cooling |
| PV Input | |
| Rated PV power | 60kW |
| Max. PV power | 72kW |
| PV voltage range | 200~900 |
| Max. PV input current | 200A |
| AC grid-connected parameters | |
| Rated power (kW) | 60 |
| Rated current (A) | 86 |
| Rated voltage | 230V/400V AC |
| AC output | 3P+N+PE |
| Rated grid frequency | 50/60Hz |
| AC PF | 0.1~1 leading or lagging |
| Isolation mode | Transformer isolation |
| AC off-grid parameters | |
| Rated power (kW) | 60 |
| Rated current (A) | 86 |
| AC side rated voltage | 230V/400V AC |
| Rated grid frequency | 50/60Hz |
| Unbalanced load capacity | 100% |
| System parameters | |
| MPPT efficiency | 99.9% |
| Europe efficiency | 96% |
| life cycle | ≥6000 |
| Max. efficiency | ≥85% |
| Degree of protection | IP54 |
| noises (dB) | 75 |
| Anti-corrosion rating | C5 |
| Operating temperature range | -30 to 50°C (> 45°C Derating) |
| Storage temperature range | -20°C~50°C (short term) , 0°C~35°C (long-term) |
| Operating humidity range | 0~95% (non-condensing) |
| weight (kg) | ≤2800 |
| Cooling method | Intelligent temperature |
| Fire configuration | aerosol |
| Working altitude | standard2000m (utmost3000m) |
| Dimension (WxDxH) | 1300*1500*2200mm |
| Installation location | outdoors |
| Communication interface | RS485、Ethernet |

Safe and reliable

- Efficient thermal management design, with system linkage to form protection.
- AI health monitoring of battery cores, dynamic active early warning of battery cores.

Economical applications Intelligent operation

- 90% DOD deep discharge, 15 years service life for standard working conditions.
- seamless switching between parallel and off-grid states, uninterrupted supply of load.
- Automatic operation and remote maintenance with one key start.
- Built-in EMS, multiple operation modes can be flexibly selected to improve the revenue.

CSE-M500-1600

Commercial & Industrial air-cooled Power Pack



Technical specification:

| Model | CSE-M500-1600 |
|--|--|
| Battery parameters | |
| Battery type | Lithium iron phosphate |
| Cell spec | 3.2V/280Ah |
| String configuration | 8*1P224S |
| Rated energy capacity | 1605kWh |
| Rated voltage | DC716.8V |
| voltage range | DC627.2~806.4V |
| The rated charge and discharge rate | 0.3C |
| Depth of discharge | 90% |
| Cooling | Intelligent air cooling |
| AC parameters | |
| Rated AC power | 500kW |
| Maximum AC power | 550kW |
| Output THDi distortion rate | <3% |
| Adjustable PF | 1(leading)-1(lagging) |
| Rated voltage | 400V/480V |
| Grid frequency range | 50/60±2.5Hz/59.5~60.5Hz |
| Isolation method | 3 Phase 4 Line Transformer |
| System parameters | |
| life cycle | ≥6000 |
| System charge and discharge efficiency | ≥85% |
| Dimension (WxDxH) | 2438x12192x2591mm |
| weight | 28t |
| Degree of protection | IP54 |
| Anti-corrosion rating | C5 |
| Operating temperature range | -30 to 50°C (> 45°C Derating) |
| Storage temperature range | -20°C~50°C (short term) , 0°C~35°C (long-term) |
| Relative humidity | 0~95% (non-condensing) |
| Fire Suppression | FM200 NOVEC1230 IG541(Optional) Water spray |
| highestWorking altitude | >3000mneedDerating |
| Communication interface | RS485、Ethernet |
| Certifications | UL1973, UL9540A, IEC62619, CE, UN38.3 |

Safety & reliability

- Efficient thermal management design to guarantee the best operating temperature range of the battery compartment.
- Containerized with protection level at IP54 for the system and IP65 for the battery components.

Economical application Intelligent operation

- 90% DOD deep discharge, 15 years of service life (under standard working conditions).
- Higher DC/AC rate, higher cycle efficiency.
- DC coupling system ensuring: higher DC/AC ratio, higher round trip efficiency.
- Self-forming system for whole machine transportation, no battery installation work on site.
- 7*24 cloud-based monitoring and operation and maintenance, ensuring background data access and remote maintenance.

ENERGY MANAGEMENT SYSTEM (EMS)

EMS is a highly integrated interactive platform self-researched and self-used by CSE. Relying on advanced technologies such as artificial intelligence and big data, the system takes energy storage as the core and covers important functions such as data collection & processing, man-machine interaction & operation monitoring, and intelligent operation & maintenance.

The combination of ESS and PV power generation system can effectively compensate and suppress the randomness, intermittency and instability of PV electricity. The significance of EMS is to optimize the overall control strategy by orderly guiding the charging and discharging of energy storage system, while accepting the grid dispatching commands. Furthermore, the energy storage system can play an important role in energy production and consumption as "transit, matching and optimization", and promote the healthy development of new energy industry.



Real-time data collection and visualization



Multi-terminal support for PC and APP



Matched Data acquisition stick