## Europe Headquarters

SUNGO Energy Technology B.V.
Add: Weena 505, Rotterdam 3013 AL, Netherlands

## Global Headquarters

SUNGO Energy Technology (Jiangsu) Co., Ltd.
Add: Unit 01, Floor 1, NO.179 Suhong West Road, Suzhou Industrial Park, Suzhou City, Jiangsu Province, China

## Optimizer&Energy Storage Business Unit

KONKA&SUNGO Smart Energy (Zhejiang) Co., Ltd.
Add: Building 3#, Small and Micro Industrial Park, No. 69 Xingmei Avenue, Chengtan Street, Xinchang County, Shaoxing City, Zhejiang Province, China

## Nippon Division

SungoEnergy株式会社
Add: 4-16-5-206 Sekimae, Musashino City, Tokyo

## U.S.A. Division

SUNGO ENERGY TECHNOLOGY INC.
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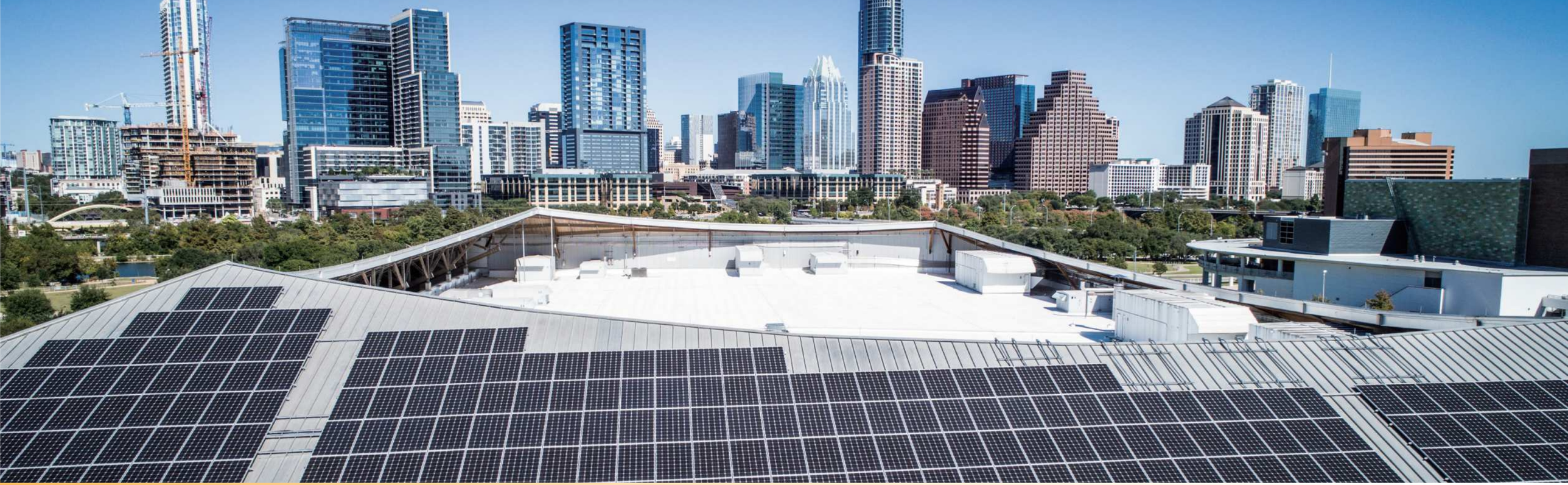
SUNGO
GO WITH SUNSHINE

# SUNGO Energy Technology B.V.

GO WITH SUNSHINE



# SUNGO Energy

SUNGO Energy Technology focuses on the R&D and application of user-side solar+storage products, and is committed to providing global clients with excellent performance, leading-edge solar+storage products and comprehensive energy solutions. We have wide range product lines, including smart optimizers, and lithium-ion battery energy storage systems, which covers the entire industrial chain to meet user needs. In the future, we will continue to increase investment in R&D, continuously improve our competitive advantages, and provide global clients with products that are more integrated, easier to install and maintain.

GO WITH SUNSHINE

**1.5 million**
Annual production capacity of smart optimizers

**2GW**
Optimizer installed capacity

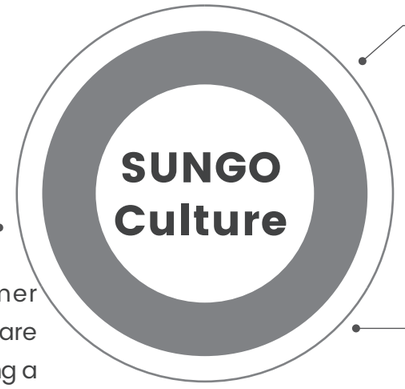
**30%**
Proportion of R&D personnel

**2GWh**
Annual production capacity of energy storage products

**500MWh**
energy storage installed capacity

**30+**
Exported countries

# Company Culture




**Vision**

GO WITH SUNSHINE

**Mission**

Adhering to customer value as the core, we are committed to becoming a reliable global provider of solar+storage solutions on the user side.

**Values**

**E**-Excellent

**S**-Smart

**S**-Stable

# Globalization


Since establishment, our products has exported to more than 30 countries and regions around the world. In order to serve clients better, we adheres to the concept of localized operation and service, and has established regional subsidiaries in Japan, Netherlands and USA. We also plan to set up sales and service branches in the UK and other countries in the future.

# Smart Factory

Our own energy storage & smart optimizer production base integrate the latest, complex processes and advanced automation solutions to greatly improve production efficiency while ensuring excellent product quality.


## Factory Tour

# R&D

SUNGO Energy Technology always believes that R&D is an important basis for the sustainable development of enterprises. With the continuous breakthrough of enterprise R&D strength, we will bring more high-quality solar+storage products and solutions to our clients.

30+ Rich experience in product development, patent achievements **30+**

15+ The team has **15 years+** of industry experience in photovoltaics, energy storage, electrical, electric power and other fields

10% R&D investment accounted for **10%** of total revenue

# Product Certification

SUNGO Energy Technology's solar+storage products have a 100% pass rate on certification needs in global mainstream market, which includes UL, CE, IEC and JIS.


TÜV SÜD intertek Total Quality. Assured. CSA GROUP DEKRA On the safe side. Test 合创检测

# Partners

**Abundant supply chain resources**
More than 100 core suppliers

**Stable supply chain cooperation**
Long-term cooperation with suppliers for more than 5 years

**High-quality supplier resources**
Industry top suppliers+small & medium-sized specialized manufacturers

Hymon
BJ JAPAN ビージーエスジャパン株式会社
株式会社エコマックスジャパン
中国华能 CHINA HUANENG
krannich
KONKA 康佳
HITHIUM
十一代
TEPCO
HUAWEI
株式会社JCU JCU CORPORATION
三峡能源

# Empowerment of KONKA

In September 2022,  One of the 97 Chinese central enterprises konka group became the shareholder of Sungo, and thus begins the journey of "Bring smart solar energy to thousands of households".

**Joint Venture**

**Credit Endorsement**

**Brand Authorized**

**Open Distribution Channels**

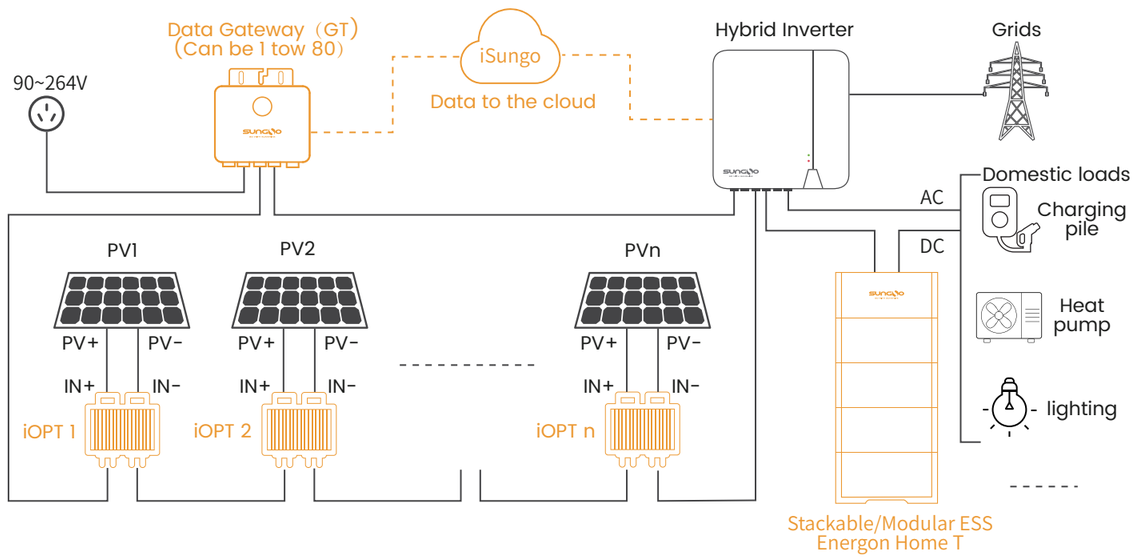
**Supply Chain Funding Support**

**Konka Industrial Park Resources**

KONKA


# Residential Scenario Solutions

Sungo's residential solar storage solutions can widely meet the needs of different residential roofs, with common capacities ranging from 3 to 50 kW. Sungol integrates PV modules, optimizers, inverters, energy storage, intelligent monitoring and other hardware and software parts to provide customers with excellent, intelligent and stable complete solutions. With the features of high efficiency power generation, safety and reliability, maximum utilization of rooftop area, intelligent operation and maintenance, Sungol's solutions provide one-stop and hassle-free services for household investors, installers and dealers.



# Smart Optimizer
# SUNGO OPT PRO

Optimize Power Generation
Fearless of Shading

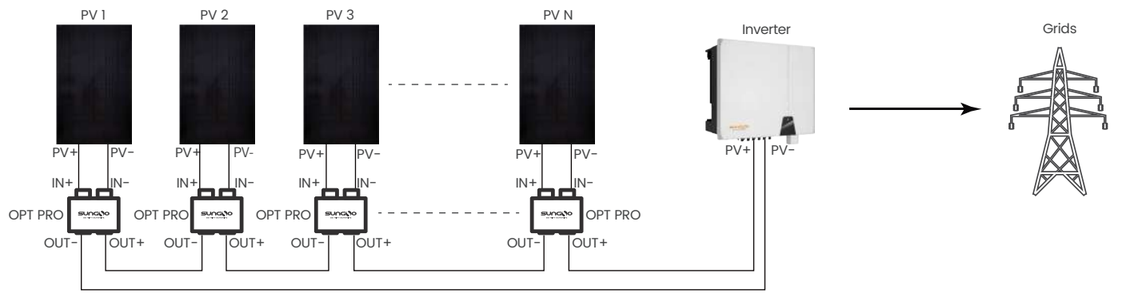


## Features

- Module-level MPPT, fearless of shading, power generation increased by **5%~30%**
- Easy to stall, wide adaptability, suitable for retrofitting existing power plants and installing new photovoltaic power plants
- Compatible with mainstream PV modules and various inverters
- 12-year standard warranty, high stability, service life over 25 years

## Technical Parameters

| Model | SUNGO OPT PRO |
|---|---|
| **DC input** | |
| Maxinput power | 800W |
| Max voltage | 70V |
| MPPT voltage range | 7~60V |
| Max continuous input current | 21A |
| Max input short-circuit current | 23A |
| Night self-consumption | 0W |
| **DC output** | |
| Rated output voltage | 58V |
| Max continuous output current | 21A |
| Max output power | 780W |
| Max system voltage | 1500V |
| **Efficiency** | |
| Peak efficiency | 99.5% |
| Power loss @5A | 0.9W |
| Power loss @8A | 1.4W |
| Power loss @12A | 2.9W |
| Power loss @15A | 4.5W |
| Power loss @20A | 7.2W |
| **General data** | |
| Dimensions (W*D*H) | 103*21.3*105.3mm |
| Weight | 0.65Kg |
| Input/output cable length | 200/1100mm |
| Input/output cable size | $4mm^2$(12AWG) / $4mm^2$(12AWG) |
| Terminals | MC4(compatible) |
| Protection rating | IP67/NEMA6 |
| Relative humidity | 0-100%RH |
| Operating temperature range | -40~+60°C |
| Cooling | Natural cooling |
| Overvoltage category | OVC II |
| Maximum altitude | ≤4000m |



# Smart Optimizer
# SUNGO iOPT 800W

Optimize Power Generation
Intelligent Management

## Features

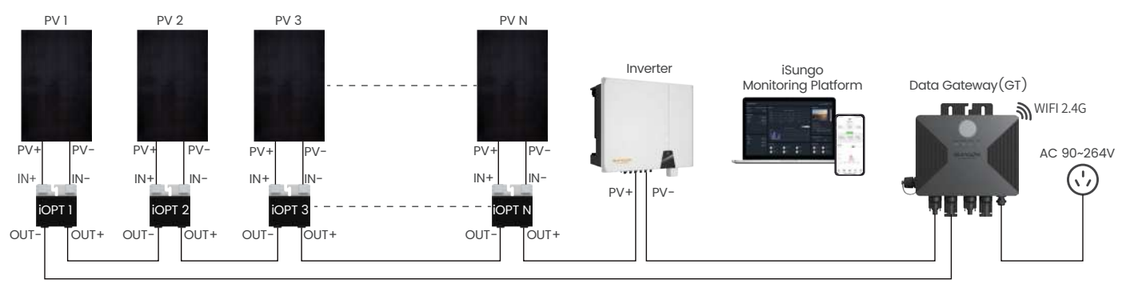
- Module-level MPPT, fearless of shading, power generation increased by **5%~30%**
- Module-level rapid shutdown, ensuring fire and maintenance safety
- Module-level data intelligent monitoring, fine management
- Fully utilize roof space to achieve system maximization
- Suitable for retrofitting existing power plants and installing new photovoltaic power plants
- 12-year standard warranty, high stability, service life over 25 years


## Optimizer Technical Parameters

| Model | SUNGO iOPT 800W |
|---|---|
| **DC input** | |
| Max input power | 800W |
| Max voltage | 70V |
| MPPT voltage range | 12~60V |
| Max continuous input current | 21A |
| Max input short-circuits current | 23A |
| Night self-consumption | 0W |
| **DC output** | |
| Output voltage | 0~60V |
| Max continuous output current | 21A |
| Max output power | 780W |
| Max system voltage | 1500V |
| **DC output during shutdown** | |
| Output voltage ( without iOPT GT ) | 1±0.1V |
| **Efficiency** | |
| Peak MPPT efficiency | ≥99.5% |
| **Communication** | |
| Communication Method | PLC |
| Communication parameter | PV Voltage, Output Voltage, Output Current, Output Power, Temperature, State |
| **Advanced protection** | |
| Input overvoltage protection | >75V |
| Output overcurrent protection | >22A |
| Output overload protection | >800W |
| High temperature protection | >110°C |
| **General data** | |
| Dimensions (W*D*H) | 116*31.5*123mm |
| Input/output cable length | IN+ 200 / IN- 1100 / OUT+ 750 / IN- 750mm |
| Input/output cable size | 4mm² (12AWG) / 4mm² (12AWG) |
| Terminals | MC4(Compatible) |
| Protection rating | IP68 |
| Relative humidity | 0~100%RH |
| Operating temperature range | -40~+65°C |
| Cooling | Natural cooling |

## Data Gateway Technical Parameters

| Model | SUNGO GT |
|---|---|
| Match with | SUNGO iOPT 800W |
| **AC input parameters** | |
| AC input voltage range | 90~264V |
| AC Input frequency | 50/60Hz |
| Maximum AC input power | 5W |
| Maximum AC input current | 0.1A@90Vac |
| **PV input parameters** | |
| Terminals | MC4(Compatible) |
| Maximum system voltage | 1500V |
| Nos of input strings | 2 |
| Max current of each string | 21A |
| Max Module Nos per string | 30 |
| **Communication Method** | |
| Communication with optimizer | PLC |
| Communication with upper machine | 2.4GHz Wi-Fi / RS485 |
| **Rapid Shutdown** | |
| Initial state | 1. OFF when AC is not connected 2. ON when AC is connected |
| Switch-on | Press the button once until the Running light is on |
| Switch-on time | <5s |
| Shut-down | 1. Press the button once until the RSD indicator lights up<br>2. Controller AC power off, all indicator lights off |
| Shut-down time | <30s |
| **Standards** | |
| Electromagnetic compatibility (EMS) | IEC61000-6-1, IEC61000-6-2, IEC61000-6-3 |
| Safety | IEC62109-1 |
| RoHs | Yes |
| **Installation specification** | |
| Dimension (W*D*H) | 140*33.5*175mm |
| AC input cable length | 1m |
| Protection level | IP67 |
| Working temperature range | -40~+70°C |
| Storage temperature range | -40~+85°C |
| Cooling | Natural cooling |
| Form of installation | Wall hanging/holding, screw locking |




Optimizer Connection Diagram

# Hybrid Inverter
# SUNGO H5~H15

## Features

- One-piece design, all aluminum die-casting
- Maximum over-allocation of 50% allowed
- Maximum efficiency 98.2%
- MES+FCT+CRM Intelligent Manufacturing Management System
- Smart Energy Management
- Lightweight, quick installation


## Technical Parameters

| Model | SUNGO H05 | SUNGO H06 | SUNGO H08 | SUNGO H10 | SUNGO H12 | SUNGO H15 |
|---|---|---|---|---|---|---|
| **AC Output/Input** | | | | | | |
| Rated output power | 5000W | 6000W | 8000W | 10000W | 12000W | 15000W |
| Max. apparent output power | 5500VA | 6600VA | 8800VA | 11000VA | 13200VA | 16500VA |
| Grid output rated active power | 10000W | 12000W | 15000W | 15000W | 18000W | 20000W |
| Max. grid input power | 11000W | 13200W | 16500W | 16500W | 20000W | 22000W |
| Rated grid voltage | 380/400V | 380/400V | 380/400V | 380/400V | 380/400V | 380/400V |
| Grid access | 3L-N-PE | 3L-N-PE | 3L-N-PE | 3L-N-PE | 3L-N-PE | 3L-N-PE |
| Rated grid frequency | 50/60Hz | 50/60Hz | 50/60Hz | 50/60Hz | 50/60Hz | 50/60Hz |
| Max. output current | 8.5A | 10A | 13.5A | 16A | 20A | 24A |
| Max. input current | 17A | 20A | 23A | 23A | 29A | 29A |
| Power factor | 0.8ind - 0.8cap | 0.8ind - 0.8cap | 0.8ind - 0.8cap | 0.8ind - 0.8cap | 0.8ind - 0.8cap | 0.8ind - 0.8cap |
| THDi(Rated power) | <3% | <3% | <3% | <3% | <3% | <3% |
| **AC Output Parameters (off-grid)** | | | | | | |
| Rated output power | 5000W | 6000W | 8000W | 10000W | 12000W | 12000W |
| Max. apparent output power | 10000VA | 12000VA | 15000VA | 15000VA | 15000VA | 15000VA |
| Rated output voltage | 380/400V | 380/400V | 380/400V | 380/400V | 380/400V | 380/400V |
| Rated output frequency | 50/60Hz | 50/60Hz | 50/60Hz | 50/60Hz | 50/60Hz | 50/60Hz |
| Max. output current | 8.5A | 10A | 13.5A | 16A | 20A | 20A |
| Switching time | <10 | <10 | <10 | <10 | <10 | <10 |
| THDV (linear load) | <3% | <3% | <3% | <3% | <3% | <3% |
| **Efficiency** | | | | | | |
| Max. efficiency | 98% | 98% | 98.2% | 98.2% | 98.2% | 98.5% |
| European efficiency | 97.3% | 97.3% | 97.3% | 97.4% | 97.4% | 97.5% |
| MPPT efficiency | 99.9% | 99.9% | 99.9% | 99.9% | 99.9% | 99.9% |
| Charging efficiency (PV <-> battery) | 98.5% | 98.5% | 98.5% | 98.5% | 98.5% | 98.5% |
| Charge/discharge efficiency (battery <-> grid/load) | 97.6% | 97.6% | 97.6% | 97.6% | 97.6% | 97.6% |

**Battery Input**

| | | | |
|---|---|---|---|
| Battery type | li-ion battery | Max. charge/discharge current | 25/25A |
| Input voltage range | 160-800V | Lithium battery charging strategy | Automatic application of BMS |

**Photovoltaic input**

| | | | | | | |
|---|---|---|---|---|---|---|
| Max. module input power | HHT-5000 | 7500W | Max. input voltage | 1000V | Maximum short-circuit current | HHT-5000-12000 20/20A |
| | HHT-6000 | 9000W | MPP voltage range | 150~850V | | HHT-15000 40/20 |
| | HHT-8000 | 12000W | Start-up voltage | 145V | | |
| | HHT-10000 | 15000W | Rated input voltage | 620V | | |
| | HHT-12000 | 18000W | Max. input current | HHT-5000-12000 15/15A | Number of MPPT channels/ Number of MPPT strings per circuit | HHT-5000-12000 2/(1/1) |
| | HHT-15000 | 22500W | | HHT-15000 30/15A | | HHT-15000 2/(2/1) |

**Protective function**

| | | | | | |
|---|---|---|---|---|---|
| Anti-islanding protection | Built-in | Residual current monitoring | Built-in | Overpressure protection | Built-in |
| Module reverse polarity protection | Built-in | Output overcurrent protection | Bbuilt-in | Surge protection | DC Class II, AC Class III |
| Insulation impedance monitoring | Built-in | Output short-circuit protection | Built-in | Reverse battery protection | Built-in |

**General parameters**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Dimensions (W*H*D) | 425*351*200mm | | AC Connection Terminal | Plug-in connector | | relative humidity | 0-100% |
| Weight | HHT-5000-12000 | 20kg | Communication interface | RS485/Wi-Fi/4G/LAN(optional) | | CT connection type | Plug-in Connector |
| | HHT-15000 | 23kg | BMS communication method | CAN,RS85 | | Max. operating altitude | 2000 (>2000 Derating) |
| Noise standard | 40dB | | Instrument communication method | RS485 | | Protection level | IP65 |
| user | LED/LCD | | Cooling method | HHT-5000-12000 Natural cooling | | Meteorological standards (IEC 60721-3-4) | 4K4H |
| DC Connection Terminal | MC4 | | | HHT-15000 Intelligent Cooling | | topological structure | Transformerless type |
| Battery Connection Terminal | SUNCLIX | | Operating temperature range | -25~+60°C | | Night Power Consumption | <13 |

# Stackable/Modular ESS
# ENERGY-CORE 1.0

## Features

- Automatic battery system configuration (set-up free)
- Intelligent Display (Key Info, Err code, SOC)
- 1 and 3 phase, on / off grid / back up support
- Slim and compact, stackable design for easy installation
- Plug-Play (Direct Connect RJ45)
- Suitable for multi-scenario applications

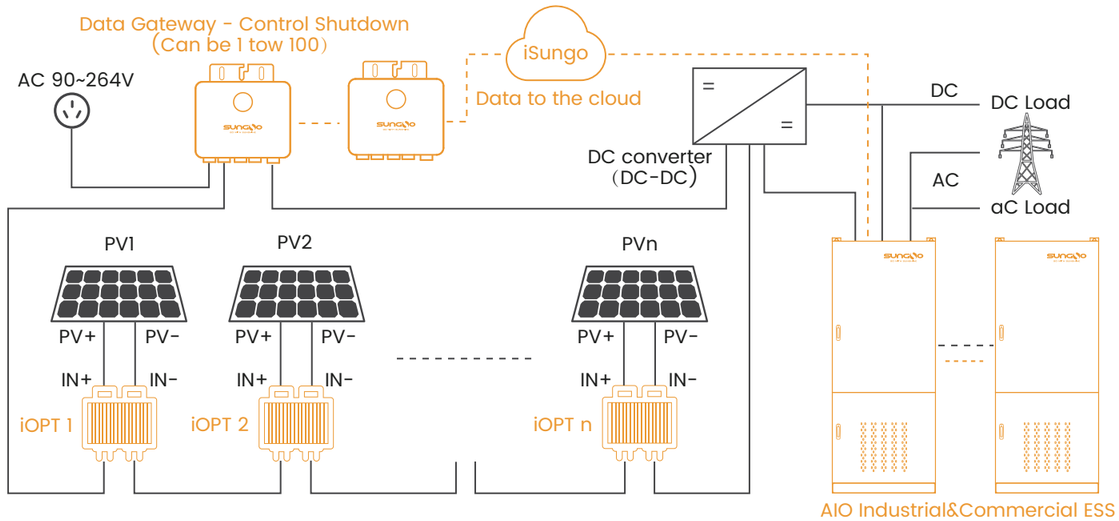

## Technical Parameters

| Model | ENERGY-CORE 1.0 | | | | | |
|---|---|---|---|---|---|---|
| Stacks | 3 | 4 | 5 | 6 | 7 | 8 |
| **BMS** | | | | | | |
| Operating voltage range | 120~600 V | | | | | |
| Max. output current | 30 A | | | | | |
| Communication | CAN 2.0 / RS 485 | | | | | |
| Dimensions (W*D*H) | 650*260*175 mm | | | | | |
| Weight | ≤ 20 kg | | | | | |
| **Battery Stack Parameters** | | | | | | |
| Cell type | LFP | | | | | |
| System capacity | 3.3 kWh | | | | | |
| Usable capacity | 3.2 kWh | | | | | |
| Rated voltage | 64 V | | | | | |
| Operating voltage range | 54~73 V | | | | | |
| Max. output current | 30 A | | | | | |
| **System parameters** | | | | | | |
| System capacity | 9.9kWh | 13.2kWh | 16.5kWh | 19.8kWh | 23.1kWh | 26.4kWh |
| Usable capacity | 9.6kWh | 12.8kWh | 16.0kWh | 19.2kWh | 22.4kWh | 25.6kWh |
| Max. output current | 30A | 30A | 30A | 30A | 30A | 30A |
| Peak output current | 50A (5s) | 50A (5s) | 50A (5s) | 50A (5s) | 50A (5s) | 50A (5s) |
| Rated voltage | 192V | 256V | 320V | 384V | 448V | 512V |
| Operating voltage range | 162~219V | 216~292V | 270~365V | 324~438V | 378~511V | 432~584V |
| Scalability | Up to 6 groups in parallel (from 9.6kWh to 153.6kWh) | | | | | |
| **General parameters** | | | | | | |
| Dimension (W*D*H) | 650*260*800mm | 650*260*975mm | 650*260*1150mm | 650*260*1325mm | 650*260*1500mm | 650*260*1675mm |
| Weight | 129.5 kg | 166kg | 202.5kg | 239kg | 275.5kg | 312kg |
| Operating temperature | -10~55 °C | | | | | |
| Protection level | IP65 | | | | | |
| Round-trip efficiency | ≥ 96 % | | | | | |
| Standards & Certifications | VDE2510-50 / IEC62619 / CEC / CE / UN38.3 | | | | | |
| Applications | ON Grid / ON Grid Backup / OFF Grid | | | | | |
| Warranty | 10 years | | | | | |

# Industrial and Commercial Scenario Solutions

## C&I Scenario Solutions

SUNGO adopts industry-leading optical storage fusion architecture to maximize the use of rooftop and photovoltaic resources to achieve higher power generation and better power storage. By directly charging the energy storage through PV, it improves efficiency and reduces loss in order to obtain a more objective return on investment. Sungrow's industrial and commercial solutions address the needs and pain points of different industries, adhere to refined management, realize component-level monitoring, and bring customer value of "high yield, high safety and easy maintenance", covering the application of industrial and commercial full scenarios.



# AIO Industrial&Commercial ESS
# Energon AC200

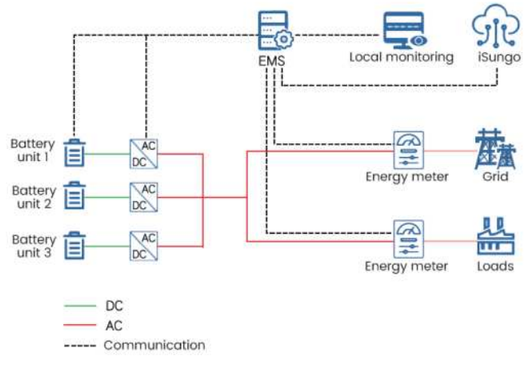
## Features

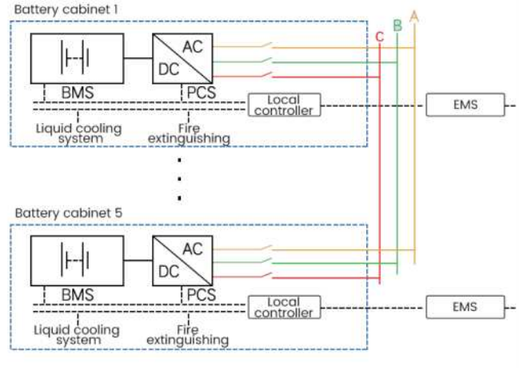
- High energy, safe and scalable
- Intelligent fire fighting system
- Best LFP battery unit
- Multi -scenario applications
- Longer service life ensured by PACK -level liquid cooling technology
- BMS ensures safty and optimal operation of battery systems
- Flexible working conditions, easy to install and expand

## Technical Parameters

| Model | Energon AC200 |
|---|---|
| **Battery parameters** | |
| Cell type | LFP |
| System configuration of cells | 240S1P |
| Capacity of Battery units | 215kWh |
| Voltage range of Battery units | 648~876Vdc |
| **AC parameters** | |
| Rated output power | 100kW |
| THDi | <3% (Rated power) |
| Direct component | <0.5% (Rated power) |
| Rated AC voltage | 400V |
| AC voltage range | 340~460V |
| Rated AC frequency | 50/60Hz |
| AC frequency range | 45~55/54~66Hz |
| AC connection | 3W+N+PE |
| **System parameters** | |
| Dimension (W*H*D) | 1340*2350*1440mm |
| Weight | 2200Kg |
| MAX efficiency | ≥90% |
| Charge/Discharge rate | 0.5C |
| DOD | 90% |
| Cycle index | >6000 (100%DOD, 80%SOH) |
| Protection | IP54 |
| Auxiliary power supply | Self-powered |
| Corrosion-proof grade | C4 |
| Operation humidity range | 5-95%, RH, without condensation |
| Operation temperature range | -25~+60°C |
| Operation altitude | 2000m |
| Cooling | Liquid cooling |
| Fire extinguishing and security | Aerosol (Perfluorohexanone or Heptafluoropropane ), temperature sensors |
| Communication | RS485/CAN |
| Standards | IEC62619 IEC62477 UN38.3 |

*——An external 200kVA transformer is needed if the grid voltage is NOT 690V.
If the product size and parameters change, the latest information shall prevail without prior notice.



# Containerized liquid-cooled ESS Center L Plus


## Product Features

### Safer
Micro Leak Detection Technology for Electrolyte and Coolant in the PACK; PACK-level source-free startup fire suppression technology

### long lifespan
System cycle life over 10000 times, Large-capacity; long-life battery cells, cluster-level energy balance management; Intelligent liquid-cooled equalization control, system temperature difference is less than 5℃

### More reliable
Dual liquid-cooled system with mutual backup for high redundancy in safe operation

### Intelligent O&M
Modularized design to enhance the convenience of operation and maintenance; Cloud Edge Collaboration and Digital Twin Technology to Realize Remote Intelligent Monitoring and Enhance the Benefits of the Whole Life Cycle of Power Plants

### More compact
Highly efficient grouped CTP technology with minimal integration of PTC technology increases system capacity by 60% and saves 35% of floor space

## Technical Parameters

| | | | |
|---|---|---|---|
| **Battery Rated Capacity** | | 280Ah | 305Ah |
| **Battery parameters** | DC side rated voltage | 1331.2V | |
| | Maximum charge/discharge ratio | 0.5CC/1CD | |
| | DC side rated capacity | 3.7MWh | 4.06MWh |
| **Performance & Safety** | DC charging and discharging efficiency | ≥95% (rated power) | |
| | Battery type | LFP | |
| | Calendar life | 20 years | |
| | Fire protection system | Gas extinguishing (water firefighting optional) | |
| | Temperature control method | Liquid cooling | |
| | Certification Standards | UL9540/UL9540A/CE/IEC/KC/KBIA/GB/T 36276 | |
| **System Parameters** | Weight | About 35 tons | About 35.4 tons |
| | Container external dimensions (W*H*D) | 6058*2896*2438mm | |
| | Container protection grade | IP54 | |
| | Operating temperature range | -40~55°C | |
| **Communication** | Communication interface | CAN,RS485,Ethernet | |
| | Communication protocols | CAN,Modbus RTU,Modbus TCP/IP | |

*Data in this table is for reference only and is subject to actual delivery.

# Project Cases

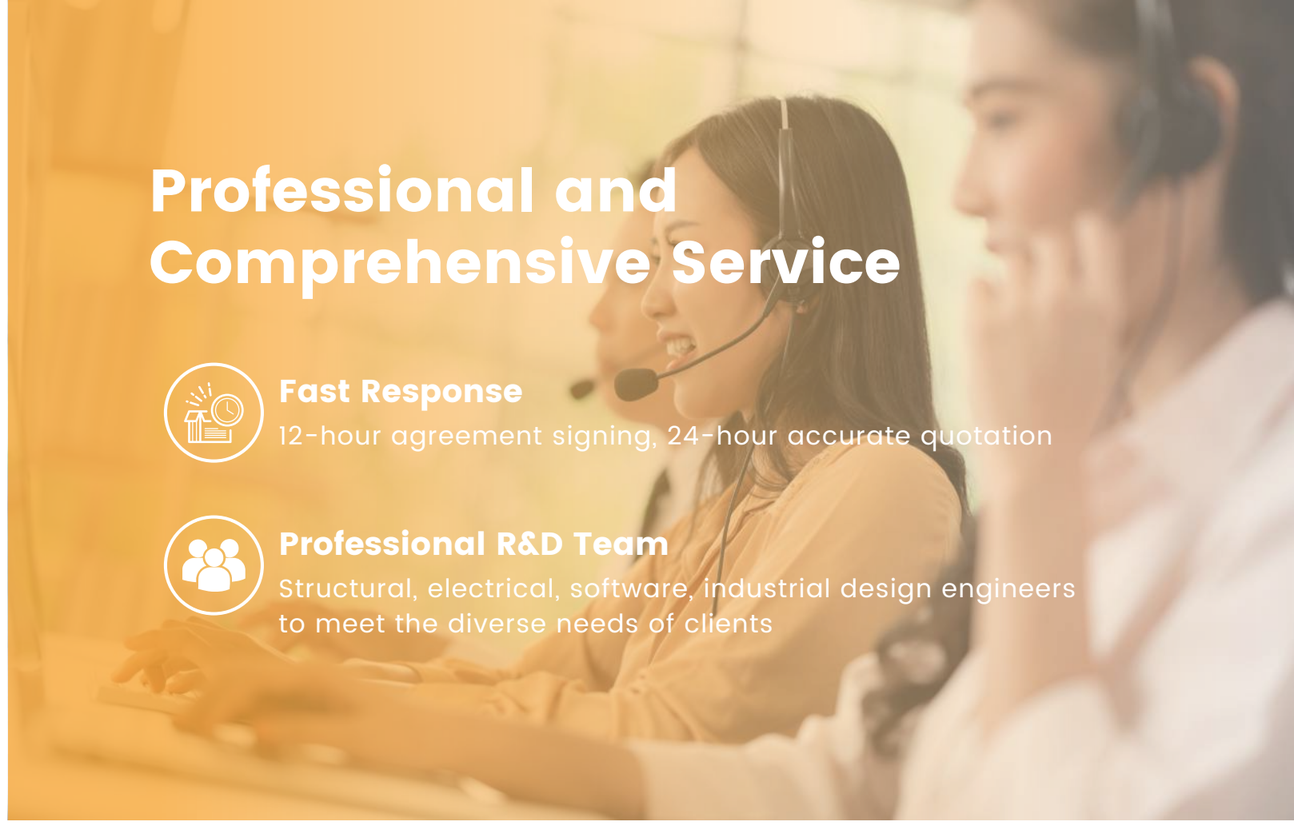
PV System Project | Hainan, China | Year: 2019

PV System Project | Suzhou, China | Year: 2020

PV System Project | Fukuoka, Japan | Year: 2021

PV System Project | Hokkaido, Japan | Year: 2022


PV & Energy Storage System Project | Wuxi, China | Year: 2023



# Professional and Comprehensive Service

**Fast Response**
12-hour agreement signing, 24-hour accurate quotation

**Professional R&D Team**
Structural, electrical, software, industrial design engineers to meet the diverse needs of clients

## After-sales service

- Remote Support: First Tier Support and Troubleshootin
- On-site support: Global projects, 24 hours arrival
- Follow up & Customer Satisfaction Survey
- Adhere to the concept of global localized operation and service