



# FusionSolar **Smart String ESS Solution**

[SOLAR.HUAWEI.COM](http://SOLAR.HUAWEI.COM)





## About Huawei

Huawei is a leading global provider of information and communications technology (ICT) infrastructure and smart devices. With integrated solutions across four key domains – telecom networks, IT, smart devices, and cloud services – we are committed to bringing digital to every person, home and organization for a fully connected, intelligent world. Huawei's end-to-end portfolio of products, solutions and services are both competitive and secure. Through open collaboration with ecosystem partners, we create lasting value for our customers, working to empower people, enrich home life, and inspire innovation in organizations of all shapes and sizes. At Huawei, innovation focuses on customer needs. We invest heavily in basic research, concentrating on technological breakthroughs that drive the world forward.



Employees  
**195,000+**



R&D Personnel  
**107,000+**



Countries  
**170+**



Brand Finance Global 500  
**9**

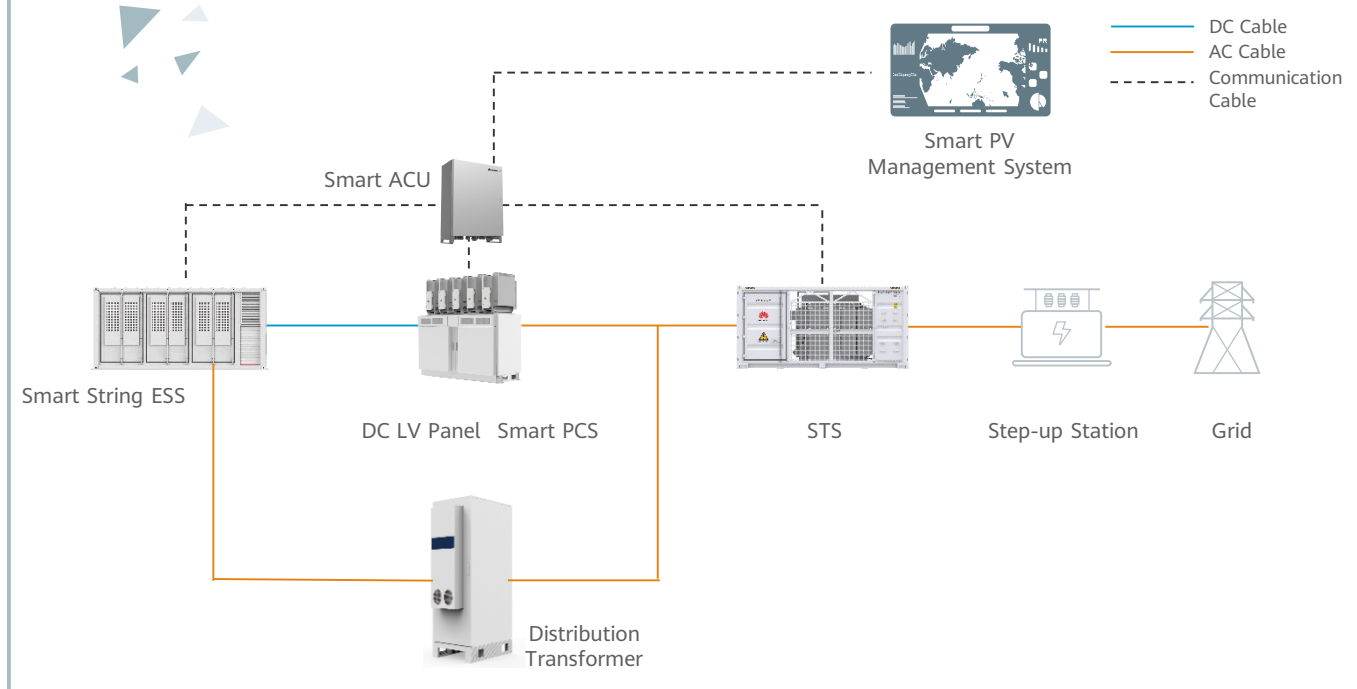


Fortune Global 500  
**44**



R&D Investment  
**2**

# FusionSolar Smart String ESS Solution



## More Energy

Pack-level Optimization  
Rack-level Optimization

## Optimal Design

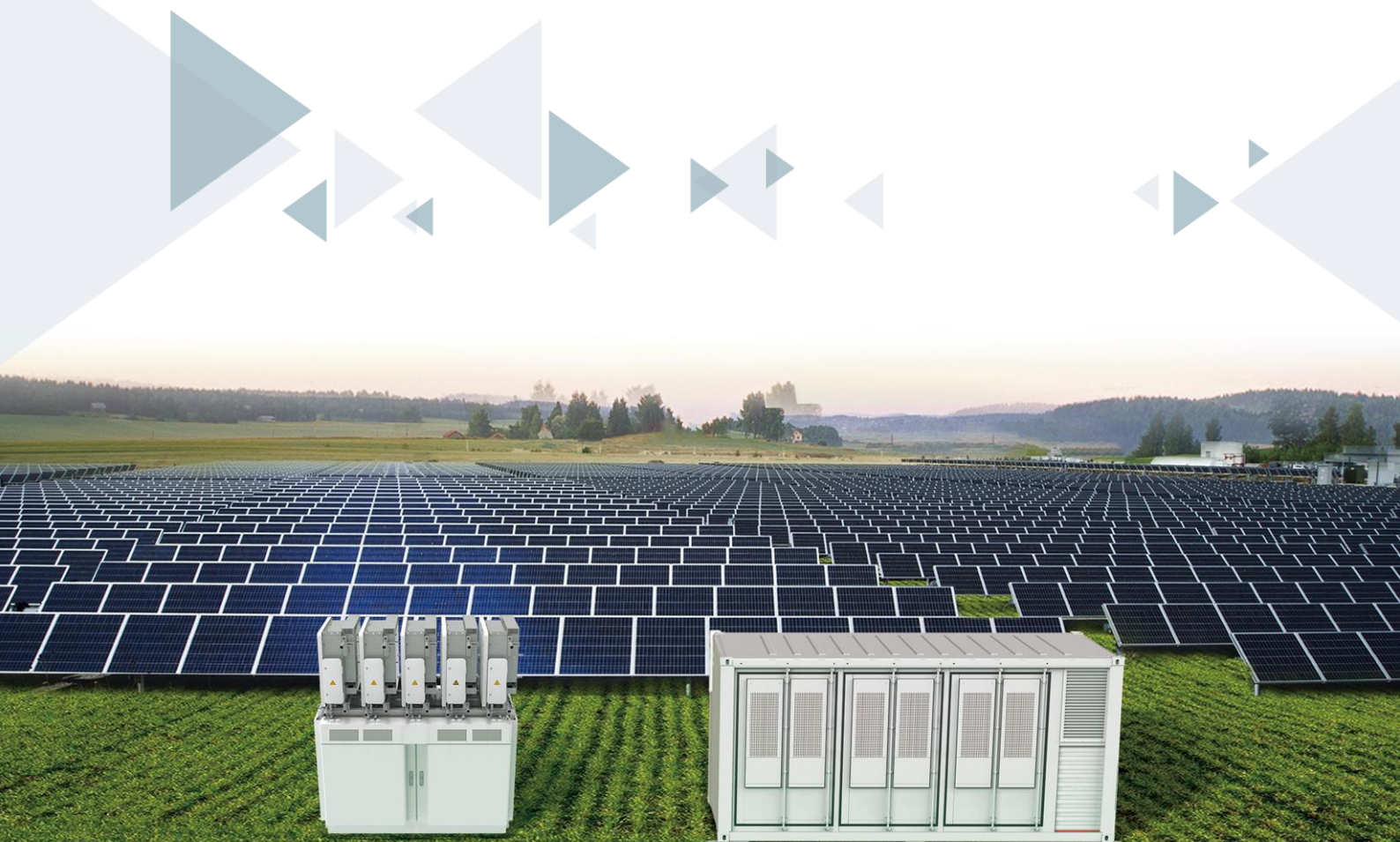
Support battery augmentation  
Reducing Initial configuration

## Simple O&M

No periodic balancing  
No experts site visit

## Safe & Reliable

Modular Design  
High Availability



# LUNA2000-2.0MWH-1H0/1H1/2H1

## Smart String ESS



**More Energy**



**Optimal Investment**



**Simple O&M**



**Safe & Reliable**

### Battery Container

Model	LUNA2000-2.0MWH-1H0	LUNA2000-2.0MWH-1H1	LUNA2000-2.0MWH-2H1
DC Rated Voltage	1,200 V	1,250 V	1,250 V
DC Max. Voltage	1,500 V	1,500 V	1,500 V
Nominal Energy Capacity	2,064 kWh	2,032 kWh	2,032 kWh
Supported Charge & Discharge Rate	≤ 1 C	≤ 1 C	≤ 0.5 C
Rated Power	344 kW * 6	338.7 kW * 6	338.7 kW * 3
Container Configuration (W x H x D)	6,058 x 2,896 x 2,438 mm	6,058 x 2,896 x 2,438 mm	6,058 x 2,896 x 2,438 mm
Container Weight	≤ 30 t	≤ 30 t	≤ 30 t
Operation Temperature Range	-30°C ~ 55°C	-30°C ~ 55°C	-30°C ~ 55°C
Storage Temperature Range	-40°C ~ 60°C	-40°C ~ 60°C	-40°C ~ 60°C
Operation Humidity Range	0 ~ 100% (Without Condensation)	0 ~ 100% (Without Condensation)	0 ~ 100% (Without Condensation)
Max. Operating Altitude	4,000 m	4,000 m	4,000 m
Cooling Method	Smart Air Cooling	Smart Air Cooling	Smart Air Cooling
Configuration of HVAC	8 HVACs	8 HVACs	6 HVACs
Fire Suppression Agent	FM-200 / Novec 1230™	FM-200 / Novec 1230™	FM-200 / Novec 1230™
Communication Interface	Ethernet / SFP	Ethernet / SFP	Ethernet / SFP
Communication Protocol	Modbus TCP / IEC104	Modbus TCP / IEC104	Modbus TCP / IEC104
Protection Degree	IP55	IP55	IP55

### Certificates (more available upon request)

Environment	RoHS6
Safety & Electrical	IEC62477-1, IEC62040-1, IEC61000-6-2, EN55011, UL9540A, IEC62619, UN3536, etc.

# LUNA2000-1.0MWH-1H1 (Preliminary)

## Smart String ESS



More Energy



Optimal Investment



Simple O&M



Safe & Reliable

Battery Container	
Model	LUNA2000-1.0MWH-1H1
DC Rated Voltage	1,250 V
DC Max. Voltage	1,500 V
Nominal Energy Capacity	1,016 kWh
Supported Charge & Discharge Rate	≤ 1 C
Rated Power	344 kW * 3
Container Configuration (W x H x D)	6,058 x 2,896 x 2,438 mm
Container Weight	≤ 20 t
Operation Temperature Range	-30°C ~ 55°C
Storage Temperature Range	-40°C ~ 60°C
Operation Humidity Range	0 ~ 100% (Without Condensation)
Max. Operating Altitude	4,000 m
Cooling Method	Smart Air Cooling
Configuration of HVAC	3 HVACs
Fire Suppression Agent	FM-200 / Novec 1230™
Communication Interface	Ethernet / SFP
Communication Protocol	Modbus TCP / IEC104
Protection Degree	IP55
Certificates (more available upon request)	
Environment	RoHS6
Safety & Electrical	IEC62477-1, IEC62040-1, IEC61000-6-2, EN55011, UL9540A, IEC62619, UN3536, etc.



# Smart String ESS Battery Pack & Smart Rack Controller



## Battery Pack

### General

Model	LUNA2000-2.0MWH-1H0	LUNA2000-2.0MWH-1H1 LUNA2000-1.0MWH-1H1 (Preliminary)	LUNA2000-2.0MWH-2H1
Cell Material	LFP	LFP	LFP
Pack Configuration	16S 1P	18S 1P	18S 1P
Rated Voltage	51.2 V	57.6 V	57.6 V
Nominal Capacity	320 Ah / 16.38 kWh	280 Ah / 16.13 kWh	280 Ah / 16.13 kWh
Supported Charge & Discharge Rate	$\leq 1$ C	$\leq 1$ C	$\leq 0.5$ C
Weight	$\leq 140$ kg	$\leq 140$ kg	$\leq 140$ kg
Dimensions (W x H x D)	442 x 307 x 660 mm	442 x 307 x 660 mm	442 x 307 x 660 mm



## Smart Rack Controller

### Efficiency

Model	LUNA2000-2.0MWH-1H0	LUNA2000-2.0MWH-1H1 LUNA2000-1.0MWH-1H1	LUNA2000-2.0MWH-2H1
Max. Efficiency	99.0%	99.0%	99.0%

### Battery Side

Rated Voltage	1,075.2 V	1,209.6 V	1,209.6 V
Operating Voltage Range	40 V ~ 1,400 V	40 V ~ 1,400 V	40 V ~ 1,400 V
Rated Power Voltage Range	1,075 V ~ 1,320 V	1,075 V ~ 1,320 V	1,075 V ~ 1,320 V
Min. Start Voltage	350 V	350 V	350 V

### Bus Side

Max. DC Voltage	1,500 V	1,500 V	1,500 V
Rated Voltage	1,200 V	1,250 V	1,250 V
Rated Current	286.7 A	275.2 A	275.2 A
Rated Power	344,000 W	344,000 W	344,000 W

### General

Dimensions (W x H x D)	600 x 270 x 820 mm	600 x 270 x 820 mm	600 x 270 x 820 mm
Weight	$\leq 90$ kg	$\leq 90$ kg	$\leq 90$ kg
Cooling Method	Smart Air Cooling	Smart Air Cooling	Smart Air Cooling
Protection Degree	IP66	IP66	IP66

# LUNA2000-200KTL-H0

## Smart PCS



Max. Efficiency 99%



Modular Design



IP66 Protection



Surge Arresters for  
DC & AC

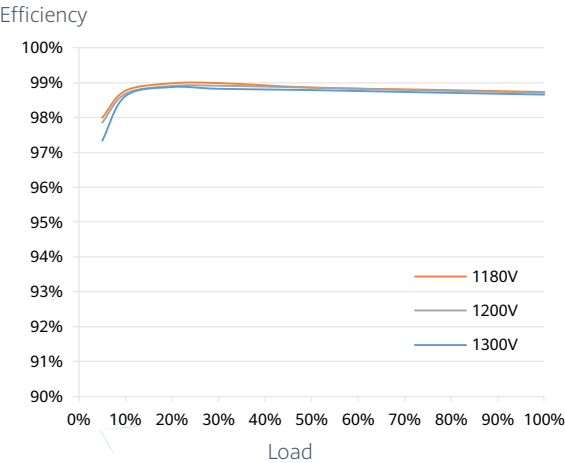


Ethernet  
Communication

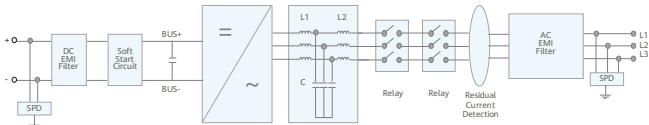


Smart Grid  
Algorithm

Efficiency Curve



Circuit Diagram



LUNA2000-200KTL-H0

# LUNA2000-200KTL-H0

## Technical Specifications

Efficiency	
Max. Efficiency	99.0%
DC Side	
Rated DC Voltage	1,180 V
Max. DC Voltage	1,500 V
Operating DC Voltage Range	1,180 V ~ 1,500 V
Max. DC Current	207.6 A
Max. Number of Inputs	1
AC Side	
Rated AC Active Power	200,000 W @40°C
Rated AC Voltage	800 V
Rated AC Grid Frequency	50 Hz / 60 Hz
Max. AC Current	173.2 A
Adjustable Power Factor Range	-1 ... +1
Max. Total Harmonic Distortion	< 3%
Protection	
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
Insulation Resistance Detection	Yes
Residual Current Protection	Yes
DC Surge Protection <sup>1</sup>	Type II
AC Surge Protection <sup>1</sup>	Type II
Communication	
Display	LED Indicators, WLAN + APP
USB	Yes
Ethernet	Yes
General	
Dimensions (W x H x D)	875 x 820 x 365 mm
Weight	< 95 kg
Operating Temperature Range	-25°C ~ 60°C
Cooling Method	Smart Air Cooling
Max. Operating Altitude without Derating	4,000 m
Relative Humidity	0 ~ 100%
DC Connector	OT/DT Terminal
AC Connector	OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless

1: Compatible Type II protection class according to IEC / EN 61643-11

# DCBOX-9/5-H0

## DC LV Panel



Electrical	
Max. Input Voltage	1,500 V
Nominal Input Voltage	1,200 V
Max. Branch Current for Battery Rack Side	321 A
Max. Branch Current for PCS Side	193 A
Number of DC Circuit Breaker	14
Max. Input Number of Battery Rack	9
Max. Input Number of PCS	5
Max. Convergence Capacity	5 x 193 A
Protection	
DC Overcurrent Protection	Yes
Environment	
Operating Temperature Range	-30°C ~ 60°C
Relative Humidity	0 ~ 100%
Max. Operating Altitude	4,000 m
General	
Cable Entries	Top in for PCS & Bottom in for Battery Rack
Dimensions (W x H x D)	2,040 x 1,415 x 975 mm
Weight (Without Smart PCS)	≤ 750 kg
DC Connector / AC Connector	OT Terminal
Protection Degree	IP55
Installation Options	Grounding



# SmartACU2000D

## Smart Array Controller



### Smart

Support one-click commissioning  
Patented anti-PID module



### Simple

SmartPID2000 & Smartlogger3000B  
pre-installed with multiple interfaces



### Reliable

Industrial-level application  
and high reliability

Technical Specifications	SmartACU2000D-D-00
<b>Configuration</b>	
SmartLogger	SmartLogger3000B x 1
SmartModule1000A	Optional
RS485	Supported
Number of MBUS Module <sup>1</sup>	1
Number of SmartPID2000 Module	0
<b>Environment</b>	
Operating Temperature Range	-40°C ~ 60°C (-40°F ~ 140°F)
Relative Humidity	4% ~ 100%
Max. Operating Altitude	4,000 m (13,123 ft.)
<b>Electrical</b>	
AC Input Voltage for Cabinet	100 V ~ 240 V, L / N (L)+ PE
AC Input Voltage for MBUS	380 V ~ 800 V, 3Ph
AC Input Voltage for PID	380 V ~ 800 V, 3Ph + FE (Functional Earth)
AC Input Frequency	50 Hz / 60 Hz
Power Supply	Standard: 12 V DC, Optional: 24 V DC <sup>2</sup>
<b>Mechanical</b>	
Cable Entries	Bottom in & out
Maintenance	Front
Dimensions (W x H x D)	640 x 770 x 315 mm (25.2 x 30.3 x 12.4 inch)
Weight	29 kg (63.9 lb.)
Protection Degree	IP65
Installation Options	Wall Mounting, Rack Mounting, Pole Mounting

<sup>1</sup> - Compatible with communication mode of PLC (Power Line Communication).



<sup>2</sup> - 24V DC power supply is optional to power devices that require 24Vdc input and output.



Copyright © Huawei Technologies Co., Ltd. 2022. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

#### Trademark Notice

 , HUAWEI, and  are trademarks or registered trademarks of Huawei Technologies Co., Ltd. Other trademarks, product, service and company names mentioned are the property of their respective owners.

#### General Disclaimer

The information in this document may contain predictive statements including, without limitation, statements regarding the future financial and operating results, future product portfolio, new technology, etc. There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied in the predictive statements. Therefore, such information is provided for reference purpose only and constitutes neither an offer nor an acceptance. Huawei may change the information at any time without notice.

#### HUAWEI TECHNOLOGIES CO., LTD.

Huawei Industrial Base, Bantian Longgang  
Shenzhen 518129, P.R. China  
Tel: 400-822-9999  
Solar.Huawei.com