

Huawei Smart Home Energy

One-fits-all Solution for Zero-Carbon Home





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

207,000+



Brands Global Brands

86



R&D
Personnel

53.4%



R&D Investment

4



Countries

170+



Most Innovative Companies

8

How do we balance an eco-friendly lifestyle with increasing energy consumption in the modern day?



HUAWEI Smart Home Energy Reinventing Residential Electricity Usage



SMART MODULE

SUN2000-440W-IA0



Smart O&M
Module-level Visibility
Refined Management



Safety
Rapid Shutdown
(RSD)



Aesthetics
Black Module
Without Grid Lines



Higher Yields
Module-level Optimization

SUN2000-440W-IA0

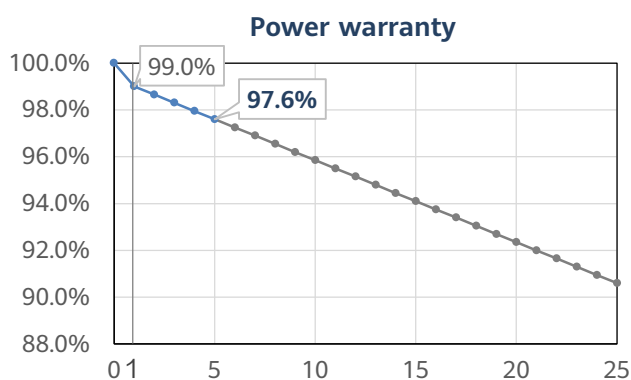
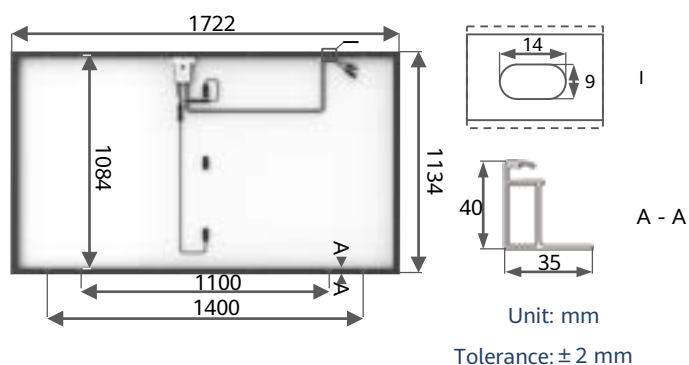
Technical Specifications

Item	SUN2000-440W-IA0
Output	
Max. module efficiency	22.58%
Max. output power @STC ¹	440 W
Uncertainty of max. power test	± 3%
Power tolerance	0-5 W
Max. system voltage	1000 V DC
Output voltage	0-40 V
Max. output current	15 A
Max. operating current	13 A
Output bypass	Yes
Output voltage/impedance in shutdown state	0 V/1 kΩ (± 10%)
Power temperature coefficient	-0.29%/°C
General Specifications	
Cell type	Monocrystalline silicon
Cell quantity	108 (6 x 18)
Dimensions (L x W x D)	1722 mm x 1134 mm x 40 mm
Net weight	22.9 kg ± 3%
Module frontsheet	Single glass, 3.2 mm coated tempered glass
Module backsheet	Highly weather-resistant backsheet
Module frame	Anodized aluminum alloy frame
Output cable	Length: 1.3 m (positive/negative); cross-sectional area: 4 mm ²
Connector type	Staubli MC4
Operating & storage temperature ²	-40°C to +85°C
Operating & storage humidity	5%-95% RH
Max. operating altitude	2000 m
Max. static load	+5,400 Pa/-2,400 Pa
IP rating of junction box	IP68
Fire-resistance rating	IEC Class C
Packing information	27 pcs/pallet
Compatible Inverters	
Compatible inverters	SUN2000-3/4/5/6KTL-L1 SUN2000-8/10K-LC0 SUN2000-5/6/8/10/12KTL-M1
Standards Compliance	
Certification	IEC 61215, IEC 61730

*1 Standard test conditions (STC): air mass = 1.5; solar irradiance = 1000 W/m²; cell temperature = 25°C.

*2 When the operating temperature of the Smart PV Optimizer for a Smart Module ranges from 70°C to 85°C, the optimizer may shut down for overtemperature protection and report an overtemperature alarm. After the operating temperature decreases, the optimizer automatically recovers with no risk of damage.

Disclaimer: All data above are theoretical values from Huawei's internal laboratories in specific test environments, and may vary slightly due to differences in products, software versions, use conditions, and environmental factors.



SMART ENERGY CONTROLLER

SUN2000-8/10K-LC0



Active Safety
Active Arcing Protection



Higher Yields
Up to 30% More Energy
with Optimizer



Battery Ready
Plug & Play, Whole-house
power backup

SUN2000-8/10K-LC0 Technical Specification

Technical Specification	SUN2000-8K-LC0	SUN2000-10K-LC0
Efficiency		
Max. efficiency	98.1%	
European weighted efficiency	97.5%	
Input (PV)		
Recommended max. PV power ¹	12,000 Wp	15,000 Wp
Max. input voltage	600 V	
Startup voltage	50 V	
MPPT operating voltage range	40 ~ 560 V	
Rated input voltage	360 V	
Max. input current per MPPT	16 A	
Max. short-circuit current	20 A	
Max. number of inputs	3	
Number of MPP trackers	3	
Input (DC Battery)		
Compatible battery	LUNA2000-5/10/15-S0, LUNA2000-7/14/21-S1	
Operating voltage range	350 ~ 560 Vdc	
Max. operating current	25 A	
Max. charge power	8,000 W	10,000 W
Max. discharge power	8,000 W	10,000 W
Output (On Grid)		
Grid connection	Single-phase	
Rated output power	8,000 W	10,000 W
Max. apparent power	8,800 VA	10,000 VA
Rated output voltage	220 Vac / 230 Vac / 240 Vac, L / N + PE	
Max. output current	40.0 A	45.5 A
Rated AC grid frequency	50 Hz/60 Hz	
Adjustable power factor	0.8 leading ... 0.8 lagging	
Max. total harmonic distortion	≤ 3%	
Backup power output	Yes (via SmartGuard-63A-S0)	
Features & Protection		
Anti-islanding protection	Yes	
DC reverse polarity protection	Yes	
Insulation monitoring	Yes	
DC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11	
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11	
Residual current monitoring unit	Yes	
AC overcurrent protection	Yes	
AC short-circuit protection	Yes	
AC overvoltage protection	Yes	
Over-heat protection	Yes	
Arc fault protection	Yes	
Battery charging from grid	Yes	
General Data		
Operating temperature range	-25°C to +60°C (-13 °F ~ 140 °F)	
Relative operating humidity	0%-100% RH	
Operating altitude	0-4,000 m (Derating above 2,000 m)	
Cooling	Natural convection	Smart Air Cooling
Display	LED indicators; integrated WLAN + FusionSolar app	
Communication	RS485, WLAN / Ethernet via Smart Dongle-WLAN-FE (Optional) 4G / 3G / 2G via Smart Dongle-4G (Optional), EMMA	
Weight	14.5 kg	15 kg
Dimensions (W x H x D) (incl. mounting plate)	425 mm x 376.5 mm x 150 mm	
Degree of protection	IP66	
Optimizer Compatibility		
Compatible optimizer	SUN2000-450W-P2, SUN2000-600W-P	
Standards Compliance (More Available Upon Request)		
Certificates	EN/IEC 62109-1, EN/IEC 62109-2	
Grid connection standards	EN 50549-1, UNE 217001/RD244, UNE 217002, NTS, VDE 0126-1-1, ABNT, P140, NRS 097-2-1, IEC 61000-2-2, PEA, MEA, G99, IEC 61727, IEC 62116, IEC 63027, IEEE 1547, PGC Resolution No.07	

*1.The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.

Disclaimer: the preceding values are measured by an internal laboratory of Huawei in a specific environment. The actual values may vary with products, software versions, usage conditions, and environmental factors.

SMART STRING ENERGY STORAGE SYSTEM

LUNA2000-7/14/21-S1



Flexible Capacity

6.9 kWh per Battery Module

Scalable from 6.9 kWh to 20.7 kWh per Group
Max. 4 Groups with 82.8 kWh for an Inverter⁸



More Usable Energy

Module+ Architecture, Built-in Energy Optimizer
Ultra-long Service Time
100% Depth of Discharge



5-layer Safety Protection

Cell-level, Electrical-level,
Structural-level
Active Protection, Emergency Protection



Ultimate Use Experience

-20 °C to +55°C Operating Temperature
Max 10.5kW Charging & Discharging Power
per Group
Super Quiet Operation



Easy Installation

Cable Free Connection Between Modules
Horizontal Adjustment Design
Quick Commissioning



Aesthetically Pleasing Design

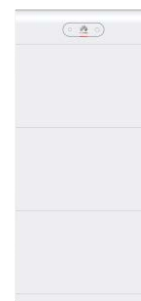
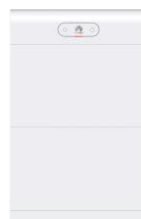
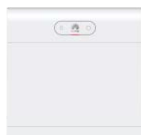
Breathing Star Ring Display
Silky Curve Design
Simplistic and Borderless

LUNA2000-7/14/21-S1 Technical Specification

LUNA2000-21-S1

LUNA2000-14-S1

LUNA2000-7-S1



Performance

Power module	LUNA2000-10KW-C1		
Number of power modules	1		
Battery module	LUNA2000-7-E1		
Battery module energy	6.9 kWh		
Number of battery modules	1	2	3
Battery usable energy ¹	6.9 kWh	13.8 kWh	20.7 kWh
Max. charging & discharging power	3.5 kW	7 kW	10.5 kW
Operating voltage range (single-phase system)	350 ~ 560 V		
Operating voltage range (three-phase system)	600 ~ 980 V		

Communication

Display	SOC status indicator, LED indicator
Communication ²	RS485/FE/CAN

General Specification

Dimensions (W x D x H)	590 mm x 255 mm x 510 mm	590 mm x 255 mm x 870 mm	590 mm x 255 mm x 1230 mm
Weight (Floor stand toolkit included)	80 kg	148 kg	216 kg
Power module dimension (W x D x H)	590 mm x 255 mm x 150 mm		
Power module weight	10 kg		
Battery module dimensions (W x D x H)	590 mm x 255 mm x 360 mm		
Battery module weight ³	68 kg		
Installation	Floor stand (standard), Wall mounting (optional)		
Operating temperature ⁴	-20°C to +55°C (-4°F to +131°F)		
Max. operating altitude ⁵	4,000 m (13,123 ft.) (Derating above 2,000 m)		
Environment ⁶	Outdoor/Indoor		
Relative humidity	5%-95%		
Cooling	Natural convection		
Protection rating	IP 66		
Noise emission	< 29 dB ⁷		
Cell technology	Lithium iron phosphate (LiFePO ₄)		
Scalability ⁸	Max. 4 systems in parallel operation		
Compatible inverters ⁹	SUN2000-12/15/17/20/25K-MB0, SUN2000-3/4/5/6/8/10KTL-M1 SUN2000-8/10K-LC0, SUN2000-2/3/3.68/4/4.6/5/6KTL-L1		

Standards Compliance (more available upon request)

Certificates	CE, RCM, CEC, VDE2510-50, IEC62619, IEC 60730, UN38.3, ISO13849, REACH, RoHS
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Ordering and Deliverable Part

Available for ordering ¹⁰	LUNA2000-7-E1, LUNA2000-10KW-C1, Wall Mounting Bracket for LUNA2000-7/14/21-S1
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1. Test conditions: 100% depth of discharge (DoD), 0.2C rate charge & discharge at 25°C, at the beginning of service life.

2. CAN is for communication between energy storage in parallel scenarios only. Launch time of FE communication is to be determined, please confirm with your local product manager of Huawei for final version.

3. The weight of the battery modules varies with products, with a tolerance of ±3%.

4. The output power may be affected by temperature. Please refer to the output derating curve for details.

5. The output power may be affected by altitude. Please refer to the output derating curve for details.

6. Outdoor installation is recommended. For indoor installation instructions, please refer to the user manual.

7. The data is from Huawei lab, and the test condition is 1m distance and typical working voltage.

8. Only SUN2000-12/15/17/20/25K-MB0 supports 4 energy storage systems in parallel operation.

9. For details on the timetable of compatibility with SUN2000-8/10K-LC0 and SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, please confirm with your local product manager of Huawei for final version.

10. The power module and battery modules of the storage system are separately order in the required quantity.

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SMARTGUARD

SmartGuard-63A-S0



Simple

Whole home backup,
no need of additional
switchboard



Seamless

≤20ms Ultra-fast switchover to
power backup mode



Reliable

Provide bypass mode
when a fault occurs



Intelligent

Intelligent load control with
built-in EMMA

SmartGuard-63A-S0 Technical Specifications

Technical Specification	SmartGuard-63A-S0
General Data	
Dimensions (W x H x D)	485 mm × 150 mm × 355 mm
Weight	≤14 kg
Performance	
AC Voltage (Nominal)	220/230/240V L/N+PE
Max. current (from Grid)	63 A
Max. current (from Inverter)	60 A
Max. current (to Backup Load)	63 A
Max. current (to Non-BackupLoad) ¹	63 A
Self consumption	10 W
Low-Voltage ride-through	Supported
Switchover time	≤ 20ms (in Seamless Mode)
Bypass operation mode	Manual
Interface	
Power output	9.5 ~ 13.2V @ 100mA, ≤ 3m
LAN	10 / 100Mbps, ≤ 100m
WAN	10 / 100Mbps, ≤ 100m
WLAN	AP Mode, 802.11b/g/n (2.412GHz ~ 2.484GHz)
RS485	9600 / 19200 / 115200bps, × 2, ≤ 50m
Digital input	×2, ≤ 20m
Digital output	×2, ≤ 20m
Measurement Range	
Current range	≤ 63 A
Voltage range	1P (L-N): 85 ~ 299 Vac
Energy accuracy	± 1%
Device Management	
Smart energy controllers	up to 1
Smart chargers	up to 2
Heat pump	up to 1 ²
Shelly device	up to 20
Environment	
Noise emission	≤ 29dBA
Cooling	Natural Convection
Relative humidity range	5% ~ 95% RH (non condensing)
Max. operating altitude	4000m (derating over 2000m)
Degree of protection	IP55
Operating temperature range	-25°C ~ 50°C ³
Compatible Device	
Smart energy controller	SUN2000-2-6KTL-L1 / SUN2000-8-10K-LC0
Smart charger	SCharger-7KS-S0
Heat pump	SG-ready
Shelly device	Shelly Plus Plug S, Shelly Plus 2PM, Shelly Pro 2PM ⁴

*1 The sum of the output current of the backup port and the non-backup port could not be more than 63A

*2 1 SG-ready Heat Pump can be connected directly. Others can be connected via shelly devices.

*3 On-grid Mode: 25~30 °C, no derating; 30~40 °C, linear derating from 63A to 50A; 40~50 °C, linear derating from 50A to 40A
 Off-grid Mode: 25~40 °C, no derating; 40~50 °C, linear derating from 54.5A to 50A

*4 The supported firmware version of shelly devices can be found in user manual

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SMART CHARGER

SCharger-7KS-S0/SCharger-22KT-S0



Single-Phase

7.4 kW/32 A
SCharger-7KS-S0

Three-Phase

22 kW/32 A
SCharger-22KT-S0

*Available in specific regions only



PV Power

Power Your Car with Solar
Make EV Even Greener



Dynamic Charging Power

Automatic Detection and
Adjustment
No Worry about Overload



3 Ways of Authentication

Authentication Through
Bluetooth, RFID and APP



3-Step Installation

Fast Installation in 15
Minutes
Wiring-free Maintenance

SCharger-7KS-S0/SCharger-22KT-S0 Technical Specifications

Technical Specification	SCharger-7KS-S0	SCharger-22KT-S0
Inputs and Outputs		
Charge power (configurable)	1.4 kW to 7.4 kW	1.4 kW ¹ to 22 kW
Nominal voltage	230 V ± 20% (1-phase)	400 V ± 20% (3-phase)
Nominal current (configurable)	6-32 A (1-phase)	6-32 A (3-phase or 1-phase)
Nominal frequency	50 Hz/60 Hz ± 1 Hz	
Vehicle connection	Type 2 socket	
Cable cross-sectional area	Up to 10 mm ²	
Network types	TN, TT, IT	TN, TT
User Interface & Communications		
Protocol	Modbus TCP, OCPP 1.6 ²	
Communication	Wi-Fi/Ethernet	
Charger status information	WRGB LED and app	
Authentication	RFID (ISO-14443-A), app, Bluetooth	
Remote control & monitoring	App	
Working mode	Normal Charge Scheduled Charge PV Power Preferred Next Trip ³	
Protection		
Cable protection	Cable E-Lock via app	
Residual current protection (RCD)	Type A (30 mA) + DC 6 mA integrated	
Fire class	UL94	
Overcurrent protection	IEC 61851-1	
Over-temperature protection	Yes	
Surge protection	CAT II	
General Specification		
Operating temperature range	-35°C to +45°C	-35°C to +50°C @ 16A -35°C to +40°C @ 32A
Application environment	Outdoor/Indoor	
Storage temperature	-40°C to +70°C	
Relative humidity	5% ~ 95% RH	
Altitude	≤ 2000 m (derating between 2000~4000 m)	
Dimensions (H x W x D)	335 mm x 180 mm x 145 mm	
Weight	3 kg	3.1 kg
Installation mode	Wall-mounted	
IP rating	IP54	
Impact protection level	IK10	
Standby self-consumption	< 6 W	
Standards Compliance (More Available Upon Request)		
Safety & Health	EN IEC 61851-1 2019, EN 62311 2008, EN IEC 62311 2020, EN 50665 2017, EN 50364 2018	
EMC	EN IEC 61851-21-2 2021, EN 301 489-1 V2.2.3 2019, EN 301 489-3 V2.1.1 2019, EN 301 489-17 V3.2.4 2020	
Radio	ETSI EN 300 328 V2.2.2, ETSI EN300 330 V2.1.1	
RoHS	EN IEC 63000:2018	
Others		
Accessories	RFID Card * 2	

*1 1.4 kW for 1-phase charging and 4. 2 kW for 3-phase charging

*2 OCPP is planned to be available via software upgrade in 2023.Q4

*3 Next Trip mode is only available with EMMA-A02

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Technologically Advanced and Eco-friendly Concept

Owner Voice: Lucid waters and lush mountains are invaluable assets. It's my honor and duty to contribute to a greener world.



Life Goes On, Heat or Typhoon

Last summer, power outages spoiled my wine due to high temperatures. Now, with solar PV and battery storage, I have a reliable power supply that prevents such issues



Stress-free Electricity Costs

Owner Voice: The solar power generates clean electricity, ensuring we can use air conditioner, refrigerator all the day without worry on electricity bill



Technology Meets Aesthetics

Huawei Smart Home Energy combines advanced technology with art. As a solar supplier, it consistently provides stable green power. It integrates seamlessly as a decorative element.



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