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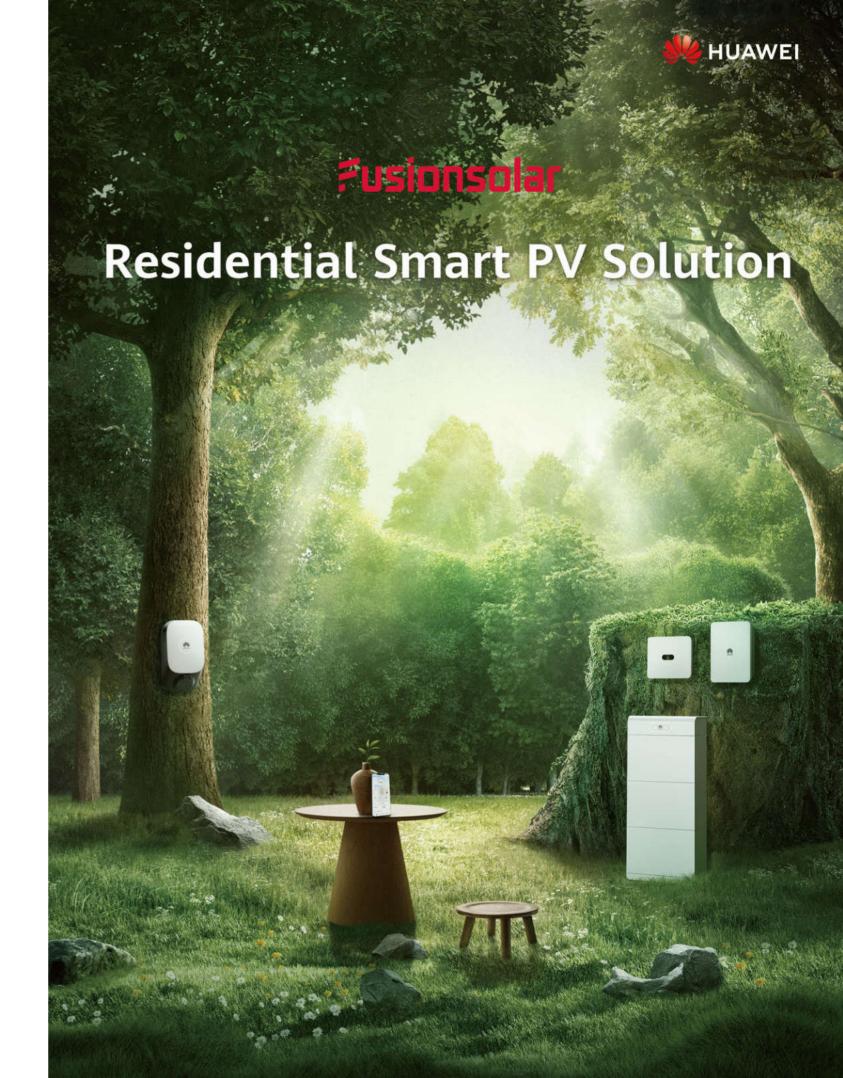
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HUAWEI DIGITAL POWER TECHNOLOGIES CO., LTD.

Antuoshan Headquarters Towers, 33 Antuoshan 6th Road, Futian District, Shenzhen, P.R.C.



A HOME THAT ALWAYS SHINES

Our Mission

FusionSolar Residential Smart PV provides a one-fits-all solution from power generation, storage, to charging and power consumption. We always maximize efficiency and safety to power more households for a better, smarter, and more sustainable future

By the end of 2024,

FusionSolar has provided clean energy for $3.9\,\mathrm{million}$ homes in over $170\,\mathrm{countries}$



ABOUT FUSIONSOLAR



Green Power Generated



CO₂ Emissions

Reduced

Million Equivalent Trees Planted



5

Centers

Technical Support

Spare Parts Operation Centers

Spare Parts Repair Centers

Spare Parts Centers

Global Technical Support and

National Spare Parts Logistics Centers

130+







5000+ Global Partners

360+

Sales Partners 100+

Service Partners 4200+

Certified Installers



Global Research

Competence Centers

12

R&D Centers

10%+

of Revenue on R&D

*Based on data available as of 2024.12



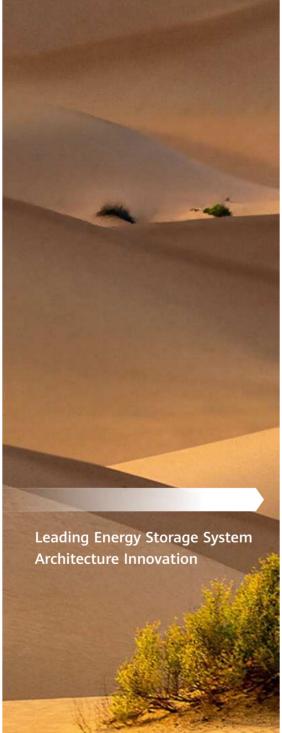




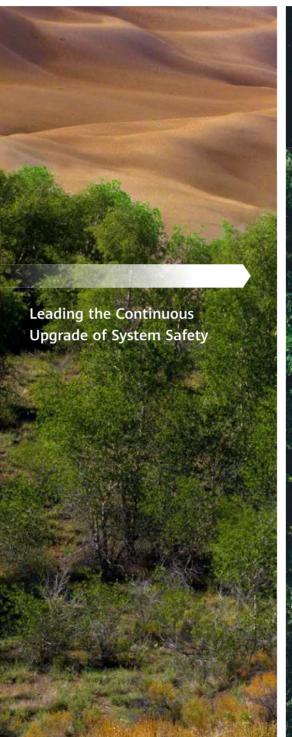


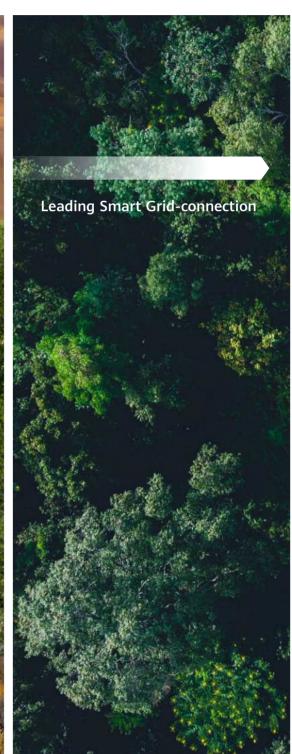
LEADING INNOVATIONS FOR THE MOST VALUABLE CREATIONS











MAKE SMART PV ACCESSIBLE TO EVERY HOME

For Artists

It's better to add a touch of green to the earth than to the canvas.

For the Seniors

66 I may be grey, but my power is green. **99**

For Professionals

Green is the new black. ""



For Young People

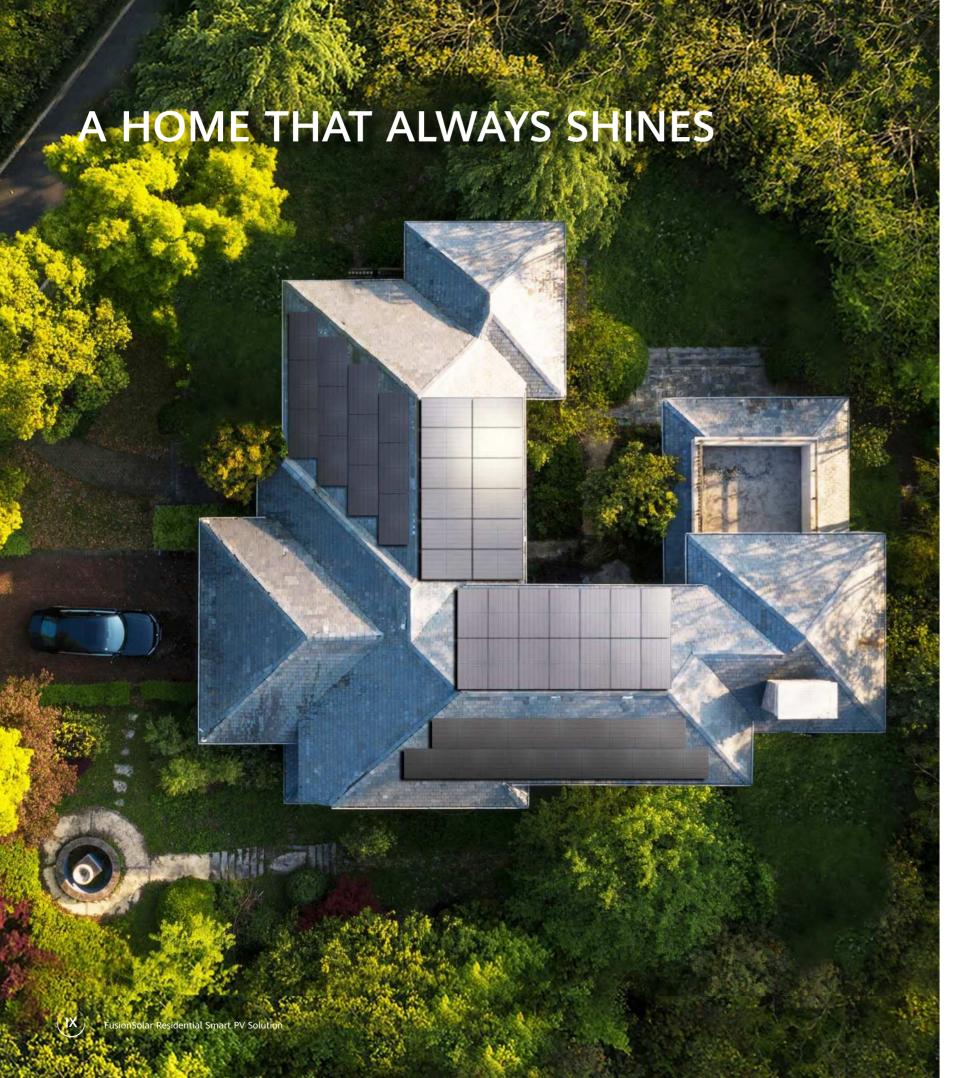
Green energy gets you energized. **11**

For Homeowners

Visibility and control of your energy on the go.

For Children

66 Future generations deserve a greener planet. **17**



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FUSIONSOLAR RESIDENTIAL SMART PV SOLUTION



mart Energy Controller

String ESS



1.09...

Energy Management Assistant

EMMA-A02





FUSIONSOLAR RESIDENTIAL SMART PV SOLUTION





SHINE ON ACTIVE SAFETY

System Safety is always our priority. FusionSolar Residential Smart PV Solution meets the highest industry standard to ensure safety with advanced technologies applied in optimizers, inverters, and energy storage system.

Safety On the Rooftop

Making DC Safety Protection a Mainstream Feature

Rapid shutdown, safe voltage





Voltage

Shutdown Time

Meets NEC 2017&2020

AFCI, active arc protection



TÜV Certification

Safety Under the Rooftop

Unique 5-layer ESS Safety Protection in the Industry









Structural Protection

Emergency Protection







Electrical Protection

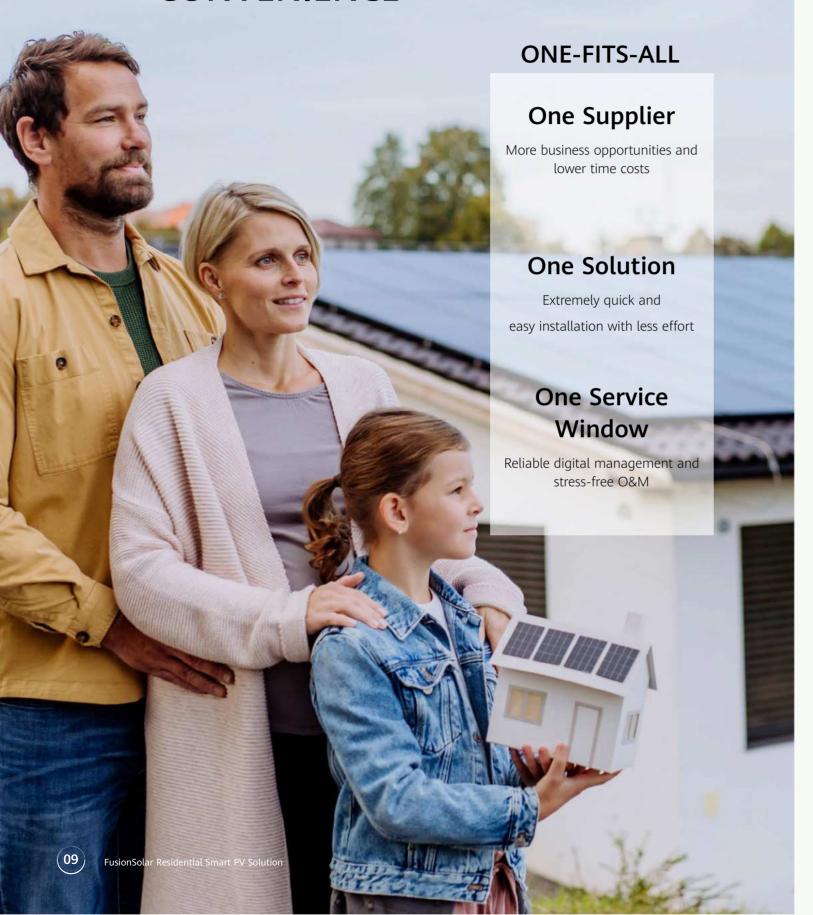
Cell-level Protection

Active Protection



FusionSolar Residential Smart PV Solution FusionSolar Residential Smart PV Solution

SHINE ON FULL JOURNEY CONVENIENCE











Storage







Optimizer

izer Inverter

Charg

Consumption

Management

One solution for all scenarios



One optimizer for all types of modules



One inverter for on-grid and off-grid scenarios







One ESS for single-phase and 3-phase inverters

One app for all functions

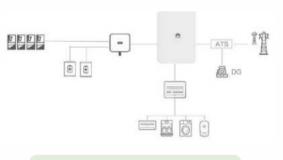
Easier Purchase, Wider Utilization

Smart Design 2.0



Design Easily, Sell Professionally

SmartGuard for whole home backup



0 Modification for Whole Home Backup

Commissioning with setup assistant



One-stop Commissioning with Setup Assistant

Remote diagnosis

PV panel Rapid dat

Disconnection detection



Rapid data refreshing

Real-time data



Intelligent Management without Site Visit



SHINE ON ENERGY-USING **PROSPECT**

FusionSolar Residential Smart PV Solution provides stable and reliable power and supports seamless on-grid/off-grid switchover







Higher energy yield

More energy storage

Seamless switchover





Intelligent management

Attractive design

The design of the product appearance integrates natural elements with technologies. All product outlines, colors, and styles are consistent. Smart charger and FusionSolar APP have won the iF Product Design Award.











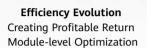


FUSIONSOLAR RESIDENTIAL SMART PV SOLUTION

SUN5000 Series







Increasing Yield by 5% to 30%



Safety Evolution Protecting Electricity Usage Safety On the Rooftop AFCI + RSD



Convenience Evolution Embracing PV Lifestyle Module-level Management Disconnection Detection and Location

Technical Specification	SUN2000-450W-P2	SUN2000-600W-P			
	Input				
Rated input DC power ¹	450 W	600 W			
Absolute max. input voltage	80 V				
MPPT operating voltage range	10-80 V				
Max. short-circuit current (Isc)	14	4.5 A			
Max. efficiency	99	9.5%			
Weighted efficiency	99	9.0%			
Overvoltage category		II			
	Output				
Max. output voltage		30 V			
Max. output current	1	5 A			
Output bypass ²		Yes			
Output voltage during standby ³	0 V				
Output impedanceduring standby	1 kΩ	2 ± 10%			
	Communication				
Communication protocol	N	1BUS			
	Standards Compliance				
Safety	IEC62109-1	(class II safety)			
RoHS		Yes			
Fire Safety	VDE-AR-E 21	00-712:2018-12			
	General Specifications				
Dimensions (W x H x D)	75 mm x 140 mm x 28 m	nm (3.0 in. x 5.5 in. x 1.1 in.)			
Weight (including cables)	0.6 kg	(1.3 lb.)			
Installation part (optional)	Frame mounting b	racket/T-shaped bolt ⁴			
Input connector	Stau	bli MC4			
nput wire length	0.15 m	(0.49 ft.)			
Output connector	Stau	bli MC4			
Output wire length	1.3 m	(4.3 ft.)			
Operating temperature/humidity range	-40°C to +8	5°C ⁵ /0%-100%			
IP rating		P68			

^{*1} The maximum power of PV module at STC shall NOT exceed the "Rated Input DC Power" of the power optimizer. PV modules with up to +5% power tolerance are allowed.

FusionSolar Residential Smart PV Solution Version No.: 01-202411

Technical Specification

Max. edificiency	Max. edificiency	Technical Specification	SUN5000-8K-MAP0	SUN5000-12K-MAP0
Surpopen weighted efficiency 98.0% 98.2%	Secommended max	May officionay	Efficiency	0.0 604
Input (PV) 22,000 Wp Max. Prop. votage 14,600 Wp 1100 V 22,000 Wp Max. Prop. votage range 160-100 V 20,000 Wp 160-100 V 20,000 Wp 160-100 V 20,000 Wp 20,000 W	Input (PV) 22,000 Wp 14,600 Wp 1100 V 22,000 Wp 14,600 Wp 1100 V 22,000 Wp 14,600 Wp 12,000 Wp 14,600 Wp 15,000 V 15,000 V 16,000 V 12,000 W 12,	Furonean weighted efficiency		
Recommended max, PV power 14,600 Wp	Recommended max, PV power 14,600 Wp 22,000 Wp 22,000 Wp 100 V 22,000 Wp 22,000 Wp			
Max. Input unitage*	Max. Input voitage 100 V	Recommended max. PV power		22,000 Wp
Startyu violage 160 V	Startup violatioge Max. input content; per MPPT Max. input content; per MPPT Max. input content; per MPPT Max. input per MPPT Max. input per MPPT Max. input per MPPT Max. input per MPPT tracker Input (DC Battery) LUNA2000-5/10/15-507 / LUNA2000-7/14/21-51 Deparatina violatage range Max. operatina distage range Max. operatina violatage Max. operational violatage Max. operation	Max. input voltage 1		
State Injust voltage	State Injust voltage			
Max. Input current per MPPT 16 A Max. short-circuit current 22 A	Max. Input current per MPPT 10. A Max. Short-Circuit current 2.2 A Mumber of MPP trackers Mumber of MPP trackers Max. Input (DC Battery) LINA2000-5/10/15-50 / LUNA2000-7/14/21-51 Deparating vortage range Max. Operating current 20. A Max. Charging power Max. Obstrating in grower Max. Obstrating in grower Max. Obstrating in grower Max. Obstrating power Max. Obstrating power			
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Number of MPP trackers 2	Number of MPP trackers			
Input (OC Battery)	Input (DC Battery) LUNA2000-5/10/15-50 / LUNA2000-7/14/21-51 Operating voltage range Max. Operating voltage range Max. Operating power Max. Departing power Max. Charling power Max. Charling power Max. Charling power Max. Operating Max. O	Number of MPP trackers		
LUNA2000-5/10/15-50 / LUNA2000-7/14/21-51	LUNA2000-5/10/15-50 / LUNA2000-7/14/21-51	Max. input per MPP tracker		1
Operating voltage range	Operating woltage range			
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Max. discharging power Sind connection	Max. charging power Sind connection Si			
12,000 W	12,000 W			
Aside connection Rated output power Rated output power Rated output power Rated output voltage Rated R	Output (On Grid) Three-phase Rated output power Asked output power Asked output power Asked output of a common of the commo			
Rated output power 8000 W 12,000 W 13,200 W 1	Saled output power 8000 W 12,000 W 13,000 W 1	3 3 1	Output (On Grid)	
Name	Rated output power 8000 W 12,000 W 13,200 VA Rated output voltage 220 V AC/380 V AC, 230 V AC/400 V AC, 240 V AC/415 V AC 3W/N + PE	Grid connection	Thre	ee-phase
220 V AC/380 V AC, 230 V AC/415 V AC 3W/N + PE	All Continuous Compatible	Rated output power	8000 W	12,000 W
Overlead capability Max. output current Max. output current Max. total harmonic distortion Compatible backup device Max. total harmonic distortion SmartGuard-63A-T0 (3 phase) 12,000 W Rated output voltage 220 V AC/380 V AC, 230 V AC/400 V AC, 240 V AC/415 V AC 3W/N + PE 110% overload 5 min (3-phase) / 5 min (Single-phase) 10 seconds Automatic switchover time Asymmetric load Protection Feature Yes, supports 100% three-phase asymmetric load nput-side disconnection device Anti-slanding protection Yes Or reverse polarity protection Yes Correverse polarity protection Yes Correverse polarity 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 AC surge protection Yes Coverurent protection Yes AC overurent protection Yes AC overuren	Overload capability Max. output current Max. output work Rated output (Inference on the Seconds of Sancting Inference on the Sancting Inference on Infere	Max. apparent power		
Rated Ac grid frequency Max. output current 13.3 A Adjustable power factor Adjustable power factor Output (Off Grid) Compatible backup device Rated output your voltage Rated output voltage 1.000 W Rated output voltage 2.0 V AC/380 V AC, 230 V AC/400 V AC, 240 V AC/415 V AC 3W/N + PE 1.000 W Rated output voltage 2.0 V AC/380 V AC, 230 V AC/400 V AC, 240 V AC/415 V AC 3W/N + PE 1.000 W Rated output voltage 2.0 V AC/380 V AC, 230 V AC/400 V AC, 240 V AC/415 V AC 3W/N + PE Continuous Continuous Continuous Continuous Sinin (3-phase) / 5 min (Single-phase) 1.0 seconds 4.0 seconds Automatic switchover time Protection Feature Protection Feature Protection Feature Raymmetric load Input-side disconnection device NYes, supports 10096 three-phase asymmetric load Input-side disconnection device NYes Continuous Protection Feature Protection Feature Protection Feature Protection Feature Protection Feature Raymmetric load NYes Oc reverse polarity protection Yes Control of three-phase asymmetric load Input-side disconnection device NYes Active reprotection Yes Control of three-phase asymmetric load Input-side disconnection device NYes Active reprotection Yes Control of three-phase asymmetric load Input-side disconnection device NYes Active reprotection Yes Control of three-phase asymmetric load Input-side disconnection device NYes Active reprotection Yes Control of three-phase asymmetric load Input-side disconnection device NYes Active reprotection Yes Control of three-phase asymmetric load Input-side disconnection device NYes Active reprotection Yes Control of three-phase asymmetric load Input-side disconnection device NYes Active reprotection Yes Control of three-phase asymmetric load Input-side disconnection device NYes Active reprotection Yes Control of three-phase asymmetric load Input-side disconnection device NYes Active reprotection Yes Control of three-phase asymmetric load Yes Control of three-phase asymmetric load Input-side dis	Sale Agrid frequency			
Max. output current	Max. output current 4.0			
Adjustable power factor Max. total harmonic distortion Compatible backup device Rated output yower Rated output yower Rated output youtput (off Grid) SmartGuard-63A-T0 (3 phase) SmartGuard-63A-T0 (3 phase) SmartGuard-63A-T0 (3 phase) SmartGuard-63A-T0 (3 phase) Rated output youtput (off Grid) SmartGuard-63A-T0 (3 phase) SmartGuard-63A-T0 (3 phase) Rated output youtput (off Grid) Rated output youtput (off Grid) Rated output youtput (off Grid) SmartGuard-63A-T0 (3 phase) Rated output youtput (off Grid) Rated output (off Crid) Rated output (off Cri	Adjustable power factor Aux total harmonic distortion Compatible backup device Rated output power Rated output votage 100% overload 100% overload SmartGuard-63A-T0 (3 phase) 12,000 W Rated output votage 20 V AC/380 V AC, 230 V AC/400 V AC, 240 V AC/415 V AC 3W/N + PE Continuous Continuous SmartGuard-63A-T0 (3 phase) 100% overload Continuous SmartGuard-63A-T0 (3 phase) Continuous Continuous SmartGuard-63A-T0 (3 phase) Smin (3-phase) / 5 min (Single-phase) In min (3-phase) / 5 min (Single-phase) 10 seconds Automatic switchover time Asymmetric load Saymmetric load Protection Feature Pess supports 100% three-phase asymmetric load Input-side disconnection device Anti-Islanding protection Protection Feature Yes Anti-Islanding protection Ves Compatible with TYPE II protection class according to EN/IEC 61643-11 AC surge protection Ves, compatible with TYPE II protection class according to EN/IEC 61643-11 Residual current detection AC overcurrent protection Yes Wes AC overcurrent protection Yes Supple receiver control Yes Supple receiver control Yes Supple receiver control Yes General Specification Yes General Specification General Specification AC Specification Specification General Specification Yes Communication Weight (incl. mounting) brackets) Dimensions (incl. mounting) brackets) Dimensions (incl. mounting) brackets) Dimensions (incl. mounting) brackets) Dimensions (incl. mounting) brackets) Communication AGO OF Compatibility Quimizer Compatibility Quimizer Compatibility Sun2000-650W-P. Standards Compliance (More Available Upon Grid Code Resolution No. 07, NRS 097-2-1, ENS 0549 VDE4105, UTE15-712-1/VFR 2019, UNE217002, NTS631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuge VSystem Design 4 SunS000-8K/126AMR0			
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Rated output power Rated output voltage 220 V AC/380 V AC, 230 V AC/400 V AC, 240 V AC/415 V AC 3WN + PE 110% overload 5 min (3-phase) / 5 min (Single-phase) 10 seconds 200% overload 10 seconds 3 min (3-phase) / 5 min (Single-phase) 10 seconds 4 Mutomatic switchover time Asymmetric load Apymetric load	1,000 W 1,00		Output (Off Grid)	
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Residual current detection AC overcurrent protection AC overvoltage protection AC fault protection AC overvoltage protection AC fault protecti	Residual current detection AC overcurrent protection AC overvoltage protection AC fault protection AC		Yes, compatible with TYPE II protect	tion class according to EN/IEC 61643-11
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AC overvoltage protection Arc fault protection Ferminal temperature detection Ripple receiver control Rattery control Rattery control Rattery control Resolution No. 07, NRS 097-2-1, ENS0549 VDE4105, UTE15-712-1/VFR 2019, UNE217002, NTS631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuge CEI 0-21:2020-12 V1, C10/C11	AC overvoltage protection Arc fault protection Yes Arc fault protection Ferminal temperature detection Ripple receiver control Rattery charging from grid RSD function Querating temperature range Relative operating humidity Rax. operating altitude Cooling Robert of the protection Ripple receiver control RSD function General Specification —25°C to +60°C (-13°F to +140°F) Relative operating humidity Relative operating humidity Relative operating altitude Cooling Robert of the protection Roise RED Indicators; Integrated WLAN + FusionSolar APP RS485; WLAN / Ethernet via Smart Dongle-WLAN-FE (Optional) RS485; WLAN / Ethernet via Smart Dongle-WLAN-FE (Optional) Rejate (incl. mounting brackets) RS485; WLAN / Ethernet via Smart Dongle-WLAN-FE (Optional) Rejate (incl. mounting brackets) Repeated by the protection of	AC overcurrent protection		
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Terminal temperature detection Ripple receiver control Ripple receiver control RSD function Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication Weight (incl. mounting brackets) Dirackets) Prating Prating Nightime power OC MBUS compatible optimizer Safety Grid connection standards Yes General Specification Yes General Specification A yes General Specification O % - 100% RH 4000 m Cooling A to 4000 m Communication A to 4000 m Coptional y Functional y Functio	Terminal temperature detection Yes (PV &Battery & Optimizer connectors)			
Ripple receiver control Rattery charging from grid RSD function General Specification Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication Weight (incl. mounting brackets) Dirackets) P rating P rating Nighttime power OC MBUS compatible optimizer Safety General Specification Yes General Specification A 90 % - 100% RH 4000 m Natural convection Natural convection Natural convection A 90 m Natural convection A 90 m Natural convection A 90 m A 100% RH A 1000 m Natural convection A 20 dB Natural convection A 90 m A 4000 m A 52 dB Optional Stanta Dongle-WLAN + FusionSolar APP Communication A 46/3G/2G via Smart Dongle-4G (Optional); EMMA (Optional) A 21 kg Dimensions (incl. mounting brackets) A 90 mm x 460 mm x 130 mm A 90 mm x	Ripple receiver control Relativery charging from grid RSD function General Specification —25°C to +60°C (-13°F to +140°F) Relative operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display LED Indicators; Integrated WLAN + FusionSolar APP RS485; WLAN / Ethernet via Smart Dongle-WLAN-FE (Optional) Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) Prating Nighttime power COMBUS compatible optimizer Standards Compliance (More Available Upon Request) Standards Grid connection standards PV System Design 4 SUN5000-8K/12K-MAPO SUN5000-8K/12K-MAPO		Yes (PV &Battery &	
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Cooling Noise	Natural convection September Standards Compatible optimizer Standards Compatible optimizer Standards Compatible optimizer Standards Compliance (More Available Upon Request) Standards Connection standards SUN5000-8K/12K-MAP0			
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RS485; WLAN / Ethernet via Smart Dongle-WLAN-FE (Optional) 4G/3G/2G via Smart Dongle-4G (Optional); EMMA (Optional) 21 kg Dimensions (incl. mounting brackets) P rating Nighttime power Optimizer Compatibility SUN2000-450W-P2, SUN2000-600W-P Standards Compliance (More Available Upon Request) FN/ECG2109-1, EN/ECG2109-2 Grid connection standards RS485; WLAN / Ethernet via Smart Dongle-WLAN-FE (Optional) 4G/3G/2G via Smart Dongle-WLAN-FE (Optional) 21 kg Physical Smart Dongle-WLAN-FE (Optional) 22 kg 490 mm x 460 mm x 130 mm PP66 < 5.5 W Optimizer Compatibility SUN2000-450W-P2, SUN2000-600W-P Standards Compliance (More Available Upon Request) FN/ECG2109-1, EN/ECG2109-2 IECG1727, IECG2116, MEA/PEA, G99/G100, Philippine Grid Code Resolution No. 07, NRS 097-2-1, EN50549 VDE4105, UTE15-712-1/VFR 2019, UNE217002, NTS631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuge CEI 0-21:2020-12 V1, C10/C11	RS485; WLAN / Ethernet via Smart Dongle-WLAN-FE (Optional) 4G/3G/2G via Smart Dongle-4G (Optional); EMMA (Optional) 21 kg Dimensions (incl. mounting brackets) Dimensions (incl. mounting brackets) P rating Prating Optimizer Compatibility DC MBUS compatible optimizer Safety Safety Grid connection standards FIG. 1727, IEC62116, MEA/PEA, G99/G100, Philippine Grid Code Resolution No. 07, NRS 097-2-1, EN50549 VDE4105, UTE15-712-1/VFR 2019, UNE217002, NTS631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuge CEI 0-21:2020-12 V1, C10/C11 PV System Design 4 SUN5000-8K/12K-MAP0	Noise		
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DC MBUS compatible optimizer 3 SUN2000-450W-P2, SUN2000-600W-P Standards Compliance (More Available Upon Request) EN/IEC62109-1, EN/IEC62109-2 IEC61727, IEC62116, MEA/PEA, G99/G100, Philippine Grid Code Resolution No. 07, NRS 097-2-1, EN50549 VDE4105, UTE15-712-1/VFR 2019, UNE217002, NTS631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuge CEI 0-21:2020-12 V1, C10/C11	SUN2000-450W-P2, SUN2000-600W-P	Nighttime power		5.5 W
Standards Compliance (More Available Upon Request) EN/IEC62109-1, EN/IEC62109-2 IEC61727, IEC62116, MEA/PEA, G99/G100, Philippine Grid Code Resolution No. 07, NRS 097-2-1, EN50549 Grid connection standards VDE4105, UTE15-712-1/VFR 2019, UNE217002, NTS631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuge CEI 0-21:2020-12 V1, C10/C11	Standards Compliance (More Available Upon Request) EN/IEC62109-1, EN/IEC62109-2 IEC61727, IEC62116, MEA/PEA, G99/G100, Philippine Grid Code Resolution No. 07, NRS 097-2-1, EN50549 VDE4105, UTE15-712-1/VFR 2019, UNE217002, NTS631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuge CEI 0-21:2020-12 V1, C10/C11 V System Design 4 SUN5000-8K/12K-MAP0	DC MRIIS compatible antimizer ³		D2 STINI2000 600W P
EN/IEC62109-1, EN/IEC62109-2 IEC61727, IEC62116, MEA/PEA, G99/G100, Philippine Grid Code Resolution No. 07, NRS 097-2-1, EN50549 VDE4105, UTE15-712-1/VFR 2019, UNE217002, NTS631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuge CEI 0-21:2020-12 V1, C10/C11	EN/IEC62109-1, EN/IEC62109-2 IEC61727, IEC62116, MEA/PEA, G99/G100, Philippine Grid Code Resolution No. 07, NRS 097-2-1, EN50549 Grid connection standards VDE4105, UTE15-712-1/VFR 2019, UNE217002, NTS631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuge CEI 0-21:2020-12 V1, C10/C11 V System Design 4 SUN5000-8K/12K-MAP0	DC IVIBUS COMPATIBLE OPTIMIZER		
IEC61727, IEC62116, MEA/PEA, G99/G100, Philippine Grid Code Resolution No. 07, NRS 097-2-1, EN50549 VDE4105, UTE15-712-1/VFR 2019, UNE217002, NT5631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuge CEI 0-21:2020-12 V1, C10/C11	IEC61727, IEC62116, MEA/PEA, G99/G100, Philippine Grid Code Resolution No. 07, NRS 097-2-1, EN50549	Safety		
	PV System Design ⁴ SUN5000-8K/12K-MAP0	Grid connection standards	IEC61727, IEC62116, MEA/PEA, G99/G100, Philippine VDE4105, UTE15-712-1/VFR 2019, UNE217002, NT	e Grid Code Resolution No. 07, NRS 097-2-1, EN50549 S631, RD244(UNE217001), PPDS, ROGA, TOR Erzeuge
	5 · · · · ·			
Min. string length (power optimizers) 6				

PV System Design ⁴	SUN5000-8K/12K-MAP0
Min. string length (power optimizers)	6
Max. string length (power optimizers)	35
Max. DC power per string	12,000 W

^{*1} The max. input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage the 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.

FusionSolar Residential Smart PV Solution

^{*2} Any power optimizer, which is connected to an operating inverterin a PV string, will be bypassed when it fails.

^{*3} Once the power optimizer stops working, its output voltage is reduced to 0 V.

^{*4} It is for PV module frame/extruded aluminum profile racking system installation.

^{*5} When the operating temperature of the SUN2000-450W-P2/600W-P reaches 70 °C to 85 °C, it may shut down due to over-temperature protection and report an over-temperature alarm. After the temperature decreases, it can automatically resume working without causing any damage.

^{*2} Any DC input voltage beyond the operating voltage range may result in inverter malfunction.

*3 The SUN5000 Series Inverters must be fully equipped with optimizers, otherwise the system will report errors and can not work.

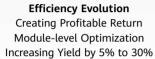
*4 SUN2000-450W-P2/600W-P, MERC-600W-PA0 can NOT be used in mixture under the same Smart Energy/PV Controller.

FUSIONSOLAR RESIDENTIAL SMART PV SOLUTION

SUN5000 Series









Safety Evolution Protecting Electricity Usage Safety On the Rooftop AFCI + RSD



Convenience Evolution Embracing PV Lifestyle Module-level Management Disconnection Detection and Location

Version No.: 01-202411

Technical Specification	SUN2000-450W-P2	SUN2000-600W-P			
	Input				
Rated input DC power ¹	450 W	600 W			
Absolute max. input voltage	80 V				
MPPT operating voltage range	10-	80 V			
Max. short-circuit current (lsc)	14.	5 A			
Max. efficiency	99	.5%			
Weighted efficiency	99	.0%			
Overvoltage category		II			
'	Output				
Max. output voltage	80) V			
Max. output current	15	5 A			
Output bypass ²	Υ	es			
Output voltage during standby ³	0 V				
Output impedanceduring standby	1 kΩ	± 10%			
	Communication				
Communication protocol	Mi	BUS			
	Standards Compliance				
Safety	IEC62109-1 (class II safety)			
RoHS	Y	es			
Fire Safety	VDE-AR-E 210	0-712:2018-12			
	General Specifications				
Dimensions (W x H x D)	75 mm x 140 mm x 28 mi	m (3.0 in. x 5.5 in. x 1.1 in.)			
Weight (including cables)	0.6 kg	(1.3 lb.)			
Installation part (optional)	Frame mounting bra	acket/T-shaped bolt ⁴			
Input connector	Staub	li MC4			
Input wire length	0.15 m	(0.49 ft.)			
Output connector	Staub	li MC4			
Output wire length	1.3 m	(4.3 ft.)			
Operating temperature/humidity range	−40°C to +85	°C ⁵ /0%-100%			
IP rating	IP	68			

^{*1} The maximum power of PV module at STC shall NOT exceed the "Rated Input DC Power" of the power optimizer. PV modules with up to +5% power tolerance are allowed.

FusionSolar Residential Smart PV Solution



Technical Specification	SUN5000-17K-MB0	SUN5000-25K-MB0		
	Efficiency			
Max. efficiency	98.4%	98.4%		
European weighted efficiency	98.1%	98.2%		
	DC Input			
Recommended max. PV power	25,500 Wp	37,500 Wp		
Max. input voltage ¹		00 V		
Max. input current per MPPT	30 A (two strings) /			
Max. short-circuit current	40 A			
Start-up voltage	20	0 V		
MPPT operating voltage range ²	200 V-	1,000 V		
Full-load MPPT voltage range	440 V-800 V	530 V-800 V		
Rated input voltage	600	0 V		
Max. number of inputs	1	4		
Number of MPP trackers	2	2		
	Smart String Energy Storage System Termi	nal		
Compatible Smart String ESS	LUNA2000-5/10/15-S0,	LUNA2000-7/14/21-S1		
Number of terminals		2		
Max. charging power	21 kW (Single string)			
Max. discharge power	18.7 kW	25.0 kW		
Max. operating current	26.25 A (J			
Operating voltage range	600 V-	-980 V		
	Output			
Rated output power	17,000 W	25,000 W		
Max. apparent power	18,700 VA	27,500 VA		
Max. active power (cosφ = 1)	18,700 W	27,500 W		
Rated output voltage		ac, 240 Vac / 415 Vac; 3 W / N + PE		
Rated output current	24.5 A / 400 Vac	36.1 A / 400 Vac		
Max. output current	28.6 A / 380 Vac	42.0 A / 380 Vac		
Rated AC grid frequency		/ 60 Hz		
Adjustable power factor	0.8 leading .			
Max. total harmonic distortion	≤3	3%		
	Feature & Protection			
Overvoltage category		/AC III		
Input-side disconnection device		es		
Anti-islanding protection		es		
AC over-current protection		es		
DC reverse-polarity protection		es Se u		
DC surge protection		PE II		
AC surge protection	Yes, compatible with TYPE II protection	3 :		
DC insulation resistance detection		es		
Residual current monitoring unit		es		
Arc fault protection		es		
RSD function		es		
	General Data	12.05, 140.05)		
Operating temperature range	-25 °C-60 °C (
Relative humidity		100 % RH		
Max. operating altitude	4,000 m (13,123 ft.) (E	•		
Cooling		r cooling		
Display	, 3	WLAN + FusionSolar APP		
Communication	RS485; WLAN / Ethernet via Sm 4G / 3G / 2G via Smart Dongle-	art Dongle-WLAN-FE (Optional) 4G (Optional); EMMA (Optional)		
Weight		kg		
Dimensions (W x H x D)		x 228 mm		
Protection level		66		
Max. number of paralleled unit		3		
(with Smart String ESS)				
	Optimizer Compatibility			
DC MBUS Compatible optimizer ³		, SUN2000-600W-P		
Contilion	Standards Compliance (More Available Upon R	•		
Certificates	EN/IEC62109-1,	EN/IEC62109-2		
PV System Design ⁴	SUN500	00-17/25K-MB0		
Min. string length (power optimizers)		6		
3 3 4				
Max. string length (power optimizers)		35		

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.

FusionSolar Residential Smart PV Solution



^{*2} Any power optimizer, which is connected to an operating inverterin a PV string, will be bypassed when it fails.

 $^{^{*}}$ 3 Once the power optimizer stops working, its output voltage is reduced to 0 V.

^{*4} It is for PV module frame/extruded aluminum profile racking system installation.

^{*5} When the operating temperature of the SUN2000-450W-P2/600W-P reaches 70 °C to 85 °C, it may shut down due to over-temperature protection and report an over-temperature alarm. After the temperature decreases, it can automatically resume working without causing any damage.

 $^{^{\}star}1$ The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.

^{*2} Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

³ The SUN5000 Series Inverters must be fully equipped with optimizers, otherwise the system will report errors and can not work.

4 SUN2000-450W-P2/600W-P, MERC-600W-PA0 can NOT be used in mixture under the same Smart Energy/PV Controller.

Model: SUN2000-2/3/3.68/4/4.6/5/6KTL-L1





Active SafetyActive Arcing Protection



Higher Yields
Up to 30% More Energy
with Optimizer



Battery Ready Plug & Play, Whole-house Power Backup

SUN2000-2/3/3.68/4/4.6/5/6KTL-L1 Technical Specification

	CLINIDOOO	CLINIZOOO	CLINI2000	CLINIDOOO	CLINIDOOO	CLINI2000	CLINIDAGA	
Technical Specification	SUN2000 -2KTL-L1	SUN2000 -3KTL-L1	SUN2000 -3.68KTL-L1	SUN2000 -4KTL-L1	SUN2000 -4.6KTL-L1	SUN2000 -5KTL-L1	SUN2000 -6KTL-L1	
			Efficiency					
Max. efficiency	98.2%	98.3%	98.4%	98.4%	98.4%	98.4%	98.4%	
European weighted efficiency	96.7%	97.3%	97.3%	97.5%	97.7%	97.8%	97.8%	
			Input (PV)					
Recommended max. PV power ¹	3,000 Wp	4,500 Wp	5,520 Wp	6,000 Wp	6,900 Wp	7,500 Wp	9,000 Wp	
Max. input voltage				600 V				
Startup voltage		100 V						
MPPT operating voltage range				90-560 V				
Rated input voltage				360 V				
Max. input current per MPPT				12.5 A				
Max. short-circuit current				18 A				
Number of MPP trackers				2				
Max. inputs per MPP tracker				1				
		Inp	ut (DC Battery)					
Compatible battery			LUNA2000-5/1	0/15-S0, LUNA20	000-7/14/21-S1	1		
Operating voltage range				350-560 V DC				
Max. operating current				15 A				
Max. charge power				5,000 W				
Max. discharge power	2,200 W	3,300 W	3,680 W	4,400 W	4,600 W	5,000 W	5,000 W	
		Ou	utput (On Grid)					
Grid connection				Single-phase				
Rated output power	2,000 W	3,000 W	3,680 W	4,000 W	4,600 W	5,000 W	6,000 W	
Max. apparent power	2,200 VA	3,300 W	3,680 W	4,400 VA	5,000 VA	5,500 W	6,000 VA	
Rated output voltage			220 V	/ AC/230 V AC/24	10 V AC			
Rated AC grid frequency				50 Hz/60 Hz				
Max. output current	10 A	15 A	16 A	20 A	23 A	25 A	27.3 A	
Adjustable power factor			0.8	leading 0.8 lag	gging			
Max. total harmonic distortion				≤ 3%				
Power output				via SmartGuard-6	53A-S0)			
A control of the cont	I	Pro	otection Feature	\ <u>'</u>				
Anti-islanding protection				Yes				
DC reverse polarity protection				Yes				
Insulation monitoring		Vos	tible with TVDE !!	Yes	pecordic - t- TN	/IEC 61642 11		
DC surge protection			tible with TYPE II					
AC surge protection		res, compa	tible with TYPE II		according to EN	/IEC 01043-11		
Residual current monitoring				Yes Yes				
AC overcurrent protection								
AC even reltage protection				Yes				
AC overvoltage protection Over-heat protection				Yes				
<u>'</u>				Yes				
Arc fault protection				Yes				
Battery charging from grid	1		16 18 1	Yes				
	1		eral Specification					
Operating temperature range		-25°	°C to +60°C (Dera		@ Rated output	power)		
Relative operating humidity				0%-100% RH				
Operating altitude				m (Derated abov				
Cooling				Natural convection				
Display			LED indicators; ir			<u> </u>		
Communication	RS485, WLAN	via inverter buil	t-in WLAN modul Smar	le, Ethernet via S rt Dongle-4G (Op		LAN-FE (Optiona	ıl); 4G/3G/2G v	
Weight (incl. mounting brackets)				12.0 kg (26.5 lb				
Dimensions (incl. mounting brackets)			365 m	nm x 375 mm x 1				
IP rating				IP65				
Nighttime power				< 2.5 W				
		Optin	nizer Compatibility					
DC MBUS compatible optimizer				-450W-P2, SUN20	000-600W-P			
	Stand	dards Complianc	e (More Available					
	Jan	aaraa compilanc	•					
Safety			ENI/IEC :	62100_1 ENI/IEC				
Safety Grid connection standards	COS COO EN	505/0 1 CELO	EN/IEC (-21, VDE-AR-N-4	62109-1, EN/IEC		ITE (15 713 DE) 1600 TOP D	

^{*1} The inverter max input PV power is 10,000 Wp when long strings are designed and fully connected with optimizers.

Model: SUN2000-3/3.68/4/4.6/5/6K-LB0





Active Safety Active Arcing Protection



Higher YieldsUp to 30% More Energy with Optimizer



Battery ReadyPlug & Play Battery
Interface

SUN2000-3/3.68/4/4.6/5/6K-LB0 Technical Specification

Technical Specification	SUN2000 -3K-LB0	SUN2000 -3.68K-LB0	SUN2000 -4K-LB0 ciency	SUN2000 -4.6K-LB0	SUN2000 -5K-LB0	SUN2000 -6K-LB0
Max. efficiency	97.8%	97.8%	97.8%	97.8%	97.8%	97.8%
European weighted efficiency	96.6%	96.8%	96.8%	97.0%	97.1%	97.2%
zaropean meighted emetericy	30.070		t (PV)	37.070	37.170	37.270
Recommended max. PV power	4,500 Wp	5,520 Wp	6,000 Wp	6,900 Wp	7,500 Wp	9,000 W
Max. input voltage 1	,	.,		500 V	, , , , , , , , , , , , , , , , , , ,	, , , , ,
Start-up voltage				50 V		
MPPT operating voltage range ³				-560 V		
Rated input voltage				360 V		
Max. input current per MPPT				16 A		
Max. short-circuit current				20 A		
Number of MPP trackers				2		
Max. inputs per MPP tracker				1		
		Input (D	C Battery)			
Compatible battery				50, LUNA2000-7/14/	′21-S1	
Operating voltage range				-560 Vdc		
Max. operating current				6.5 A		
Max. charge power				000 W		
Max. discharge power	3,300 W	3,680 W	4,400 W	4,600 W	5,500 W	6,600 W
alserial ge porter	5,500 11		(On Grid)	.,555 ***	5,500 ***	3,000 11
Grid connection		Julput		le-phase		
Rated output power	3,000 W	3,680 W	4,000 W	4,600 W	5,000 W	6,000 W
Max. apparent power	3,300 W	3,680 VA	4,400 VA	5.000 VA	5,500 VA	6,600 V
Rated output voltage	3,300 **	3,000 771		0 V AC/240 V AC	3,300 V/ C	0,000 V/
Rated AC grid frequency				Hz/60 Hz		
Max. output current	15 A	16 A	20 A	23 A	25 A	30 A
Adjustable power factor	IJ A	10 A		g 0.8 lagging	23 A	30 A
Max. total harmonic distortion				g 0.8 tagging ≤ 3%		
				srtGuard-63A-S0)		
Backup power output		Drotostio		irtGuaru-03A-30)		
Anti islanding protection		Protectio	on Feature	Yes		
Anti-islanding protection DC reverse polarity protection				Yes		
Insulation monitoring				Yes		
DC surge protection		Voc. compatible	with TVDE II protect	tion class according	to ENI/IEC 61642 1	1
AC surge protection				tion class according		
Residual current monitoring		res, compatible	with TTFL II protect	Yes	to LIV/ILC 01045-1	1
AC overcurrent protection				Yes		
AC short-circuit protection				Yes		
AC overvoltage protection				Yes		
3 .						
Arc fault protection				Yes		
Battery charging from grid		Conoral C	nocification	152		
Operating temperature range		General S	pecification	C (-13°F to +140°F)		
Operating temperature range				100% RH		
Relative operating humidity					\	
Operating altitude			, ,	ated above 2000 m)	1	
Cooling		IFD		l convection	olar Ann	
Display			, ,	ed WLAN + FusionS rter built in WLAN r		
Communication				rter built in Wlan r ongle-WLAN FE (Opi		
Comariicadon				Dongle-4G (Optiona		
Weight (incl. mounting brackets)		,		15 kg		
Dimensions (incl. mounting plate)				6.5 mm x 150 mm		
IP rating				IP66		
Nighttime power				< 3 W		
5 - 1 - 1	·	Optimizer (Compatibility			
DC MBUS compatible optimizer		,		P2, SUN2000-600W	/-P	
1 22 2 2	Standard	ds Compliance (Mo	ore Available Upon			
Safety	5.03010			-1, EN/IEC 62109-2		
		G98, G99, G10		0-21, VDE-AR-N-41	105. C10/11 P140	
Grid connection standards		, ,	,	euger, IEC61727, IEC		

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

Model: SUN2000-8/10K-LC0





Active Safety AFCI, Active Arcing Protection



Higher YieldsUp to 30% More Energy with Optimizer



Battery Ready
Plug & Play, Whole-house
power backup

Version No.: 01-202411

SUN2000-8/10K-LC0

Technical Specification

Technical Specification	SUN2000-8K-LC0	SUN2000-10K-LC0
	Efficiency	
Max. efficiency	98	3.1%
European weighted efficiency	97	7.5%
	Input (PV)	
Recommended max. PV power 1	12,000 Wp	15,000 Wp
Max. input voltage		00 V
Startup voltage		50 V
MPPT operating voltage range		-560 V
Rated input voltage		60 V
Max. input current per MPPT		6 A
Max. short-circuit current	2	20 A
Max. number of inputs		3
Number of MPP trackers		3
	Input (DC Battery)	
Compatible battery	LUNA2000-5/10/15-S0	0, LUNA2000-7/14/21-S1
Operating voltage range		660 V DC
Max. operating current		25 A
Max. charge power	8,000 W	10,000 W
Max. discharge power	8,000 W	10,000 W
ivias. discharge power	,	10,000 77
Crid connection	Output (On Grid)	o nhasa
Grid connection		e-phase
Rated output power	8,000 W	10,000 W
Max. apparent power	8,800 VA	10,000 VA
Rated output voltage	220 V AC/230 V A	AC/240 V AC, L/N+PE
Max. output current	40.0 A	45.5 A
Rated AC grid frequency	50 H:	z/60 Hz
Adjustable power factor	0.8 leading	0.8 lagging
Max. total harmonic distortion		3%
Backup power output	Yes (via Smar	rtguard-63A-S0)
	Features & Protection	
Anti-islanding protection		Yes
DC reverse polarity protection		Yes
Insulation monitoring		Yes
DC surge protection		on class according to EN/IEC 61643-11
AC surge protection		on 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
sace. J charging norm grid	General Data	
Operating temperature range		(13°E to ±140°E)
Operating temperature range		(-13°F to +140°F)
Relative operating humidity		00% RH
Operating altitude	·	ted above 2000 m)
Cooling	Natural convection	Smart Air Cooling
Display		d WLAN + FusionSolar app
Communication		nart Dongle-WLAN-FE (Optional) ngle-4G (Optional), EMMA
Weight	14.5 kg	15 kg
Dimensions (W x H x D) (incl. mounting plate)		.5 mm x 150 mm
Degree of protection		P66
	Optimizer Compatibility	
Compatible optimizer	SUN2000-450W-P	2, SUN2000-600W-P
	Standards Compliance (More Available Upor	n Request)
Certificates		2920 EMC, EN 55011 EMC, ETSI EN 301-489-1 EMC, 10 3-11, EN 61000 3-12, IEC61000 2-2
	ETSTEIN SOT TOS TI LIVIC, LIN OTOO	

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

Model: SUN2000-3/4/5/6/8/10KTL-M1 (High Current Version)





Active Safety AFCI Active Arcing Protection



Higher Yields
Up to 30% More Energy
with Optimizer 1



Battery Ready
Plug & Play Battery
Port ²

SUN2000-3/4/5/6/8/10KTL-M1 (High Current Version) Technical Specification

Technical Specification	SUN2000 -3KTL-M1	SUN2000 -4KTL-M1	SUN2000 -5KTL-M1	SUN2000 -6KTL-M1	SUN2000 -8KTL-M1	SUN2000 -10KTL-M			
Max. efficiency	98.2%	98.3%	98.4%	98.6%	98.6%	98.6%			
European weighted efficiency	96.7%	97.1%	97.5%	97.7%	98.0%	98.1%			
		Inpu	t (PV)						
Recommended max. PV power 1	4,500 Wp	6,000 Wp	7,500 Wp	9,000 Wp	12,000 Wp	15,000 W			
Max. input voltage ²			1,10	00 V					
Operating voltage range ³			140-	980 V					
Startup voltage			20	O V					
Rated input voltage				O V					
Max. input current per MPPT				5 A					
Max. short-circuit current				5 A					
Number of MPP trackers	<u> </u>			2					
Max. input number per MPP tracker				1					
			C Battery)						
Compatible battery	<u> </u>	LUI	NA2000-5/10/15-S0,		1-S1				
Operating voltage range	<u> </u>			980 V					
Max. operating current				7 A					
Max. charge power	2200 W	4400 \\		00 W	0000 14/	10000 14			
Max. discharge power	3300 W	4400 W	5500 W	6600 W	8800 W	10000 V			
Crid connection		Output	(On Grid)	nhaca					
Grid connection	2000 14/	4000 144		-phase	8000 W	10.000 V			
Rated output power Max. apparent power	3000 W 3300 VA	4000 W	5000 W 5500 VA	6000 W 6600 VA	8000 W 8800 VA	10,000 V			
Rated output voltage	3300 VA	4400 VA	/ AC/380 V AC, 230			11,000 V			
Rated AC grid frequency		220 \	7 AC/300 V AC, 230	<u>v AC/400 v AC, 3vv,</u> /60 Hz	/N+PE				
Max. output current	5.1 A	6.8 A	8.5 A	10.1 A	13.5 A	16.9 A			
Adjustable power factor	J.1 A	0.0 A		0.8 lagging	13.3 A	10.5 A			
Max. total harmonic distortion				0.0 tagging 3%					
IVIAX. LOCAL HATTHOTIIC distortion		Output	(Off Grid)	370					
Max. apparent power	3000 VA	3300 VA	3300 VA	3300 VA	3300 VA	3300 VA			
Rated output voltage	3000 VA	3300 VA		/230 V	3300 VA	3300 V			
Max. output current	13.6 A	15 A	15 A	15 A	15 A	15 A			
Power factor range	13.071	1571		0.8 lagging	1371	1370			
, , , , , , , , , , , , , , , , , , , ,		Protectio	on Feature						
Input-side disconnection device			Y	es					
Anti-islanding protection				es					
DC reverse polarity protection			Y	es					
Insulation monitoring			Y	es					
DC surge protection		Yes, compatible v	vith TYPE II protection	n class according to	EN/IEC 61643-11				
AC surge protection		Yes, compatible v	vith TYPE II protection	n class according to	EN/IEC 61643-11				
Residual current monitoring			Y	es					
AC overcurrent protection			Y	es					
AC short-circuit protection			Y	es					
AC overvoltage protection			Y	es					
Arc fault protection			Y	es					
Ripple receiver control				es					
Battery charging from grid				es					
		General S	pecification						
				4.005 - 4.4005)					
Operating temperature range			−25°C to +60°C (-13°F to +140°F)	0%-100% RH				
Operating temperature range Relative operating humidity									
				0% RH	m)				
Relative operating humidity			0%–10 000 m (13,123 ft.) (E	0% RH	m)				
Relative operating humidity Max. operating altitude		4,0 LED I	0%–10 000 m (13,123 ft.) (E Natural c ndicators; Integrated	0% RH Derated above 2000 onvection WLAN + FusionSol	ar app				
Relative operating humidity Max. operating altitude Cooling Display Communication	RS485; \	4,0 LED I	0%–10 000 m (13,123 ft.) (E Natural c ndicators; Integrated Smart Dongle-WLAN	0% RH Derated above 2000 onvection WLAN + FusionSol I-FE; 4G/3G/2G via	ar app	Optional)			
Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets)	RS485; \	4,0 LED I WLAN/Ethernet via	0%–10 000 m (13,123 ft.) (I Natural c ndicators; Integrated Smart Dongle-WLAN 17 kg (0% RH Derated above 2000 onvection WLAN + FusionSol I-FE; 4G/3G/2G via 37.5 lb)	ar app Smart Dongle-4G (C	Optional)			
Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets)	RS485; \	4,0 LED I WLAN/Ethernet via	0%–10 000 m (13,123 ft.) (I Natural c ndicators; Integrated Smart Dongle-WLAN 17 kg (x 470 mm x 146.5 m	0% RH Derated above 2000 onvection WLAN + FusionSol I-FE; 4G/3G/2G via 37.5 lb) m (20.7 in. x 18.5 ir	ar app Smart Dongle-4G (C	Optional)			
Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) IP rating	RS485; \	4,0 LED I WLAN/Ethernet via	0%–10 000 m (13,123 ft.) (I Natural c ndicators; Integrated Smart Dongle-WLAN 17 kg (x 470 mm x 146.5 m	0% RH Derated above 2000 onvection WLAN + FusionSol I-FE; 4G/3G/2G via 37.5 lb) m (20.7 in. x 18.5 ir 65	ar app Smart Dongle-4G (C	Optional)			
Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets)	RS485; \	4,0 LED I WLAN/Ethernet via : 525 mm :	0%-10 000 m (13,123 ft.) (I Natural c ndicators; Integrated Smart Dongle-WLAN 17 kg (x 470 mm x 146.5 m IP < 5.	0% RH Derated above 2000 onvection WLAN + FusionSol I-FE; 4G/3G/2G via 37.5 lb) m (20.7 in. x 18.5 ir	ar app Smart Dongle-4G (C	Optional)			
Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) IP rating Nighttime power	RS485; \	4,0 LED I WLAN/Ethernet via : 525 mm :	0%-10 00 m (13,123 ft.) (I Natural c ndicators; Integrated Smart Dongle-WLAN 17 kg (x 470 mm x 146.5 m IP < 5. Compatibility	0% RH Derated above 2000 onvection WLAN + FusionSol I-FE; 4G/3G/2G via 37.5 lb) m (20.7 in. x 18.5 ir 65 5 W	ar app Smart Dongle-4G (C n. x 5.8 in.)	Optional)			
Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) IP rating		4,0 LED I WLAN/Ethernet via 3 525 mm 3 Optimizer 0	0%-10 00 m (13,123 ft.) (I Natural c ndicators; Integrated Smart Dongle-WLAN 17 kg (x 470 mm x 146.5 m IP < 5. Compatibility SUN2000-450W-P2	0% RH Derated above 2000 onvection WLAN + FusionSol I-FE; 4G/3G/2G via 37.5 lb) m (20.7 in. x 18.5 ir 65 5 W , SUN2000-600W-P	ar app Smart Dongle-4G (C n. x 5.8 in.)	Optional)			
Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) IP rating Nighttime power DC MBUS compatible optimizer		4,0 LED I WLAN/Ethernet via 9 525 mm 9 Optimizer 0 rds Compliance (Mo	0%-10 00 m (13,123 ft.) (I Natural c ndicators; Integrated Smart Dongle-WLAN 17 kg (x 470 mm x 146.5 m IP < 5. Compatibility SUN2000-450W-P2 ore Available Upon R	0% RH Derated above 2000 onvection WLAN + FusionSol I-FE; 4G/3G/2G via 37.5 lb) m (20.7 in. x 18.5 ir 65 5 W , SUN2000-600W-P dequest)	ar app Smart Dongle-4G (C	Optional)			
Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) IP rating Nighttime power	Standa	4,0 LED I WLAN/Ethernet via 1 525 mm 2 Optimizer (rds Compliance (Mo	0%-10 00 m (13,123 ft.) (I Natural c ndicators; Integrated Smart Dongle-WLAN 17 kg (x 470 mm x 146.5 m IP < 5. Compatibility SUN2000-450W-P2	0% RH Derated above 2000 onvection WLAN + FusionSol I-FE; 4G/3G/2G via 37.5 lb) Im (20.7 in. x 18.5 ir 65 5 W , SUN2000-600W-P dequest) EC 62109-2, IEC 621	ar app Smart Dongle-4G (C n. x 5.8 in.)				

^{*1} The inverter max input PV power is 20,000 Wp when long strings are designed and connected to SUN2000-450W-P2 or SUN2000-600W-P power optimizers.

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.

Fusion Solar Residential Smart PV Solution Version No.: 01-202411

^{*2} The max. input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage the inverter.

^{*3} Any DC input voltage beyond the operating voltage range may result in inverter malfunction.

^{*4} C10/11: 10,000

Model: SUN2000-5/6/8/10/12K-MAP0





Asymmetric Load Three-phase asymmetric output 200% overload



Active Safety AFCI & RSD (with optimizer) Connector temperature detection



Future Ready LUNA S0 or S1 Whole home backup (with SmartGuard)

Version No.: 01-202411

SUN2000-5/6/8/10/12K-MAP0 **Technical Specification**

Technical Specification ¹	SUN2000-5K- MAP0	SUN2000-6K- MAP0	SUN2000-8K- MAP0	SUN2000-10K- MAP0	SUN2000-12K- MAP0
	WATO	Efficiency	IVI/AI U	IMPAI-0	IVIAI U
Max. efficiency	98.4%	98.6%	98.6%	98.6%	98.6%
European weighted efficiency	97.5%	97.7%	98.0%	98.1%	98.2%
	37.370	Input (PV)	33.370	33.770	33.270
Recommended max. PV power ¹	9000 Wp	11,000 Wp	14,600 Wp	18,000 Wp	22,000 Wp
Max. input voltage ²	3000 119	11,000 11p	1100 V	10,000 11	22,000 110
Operating voltage range ³			160-1000 V		
Max. short-circuit current			160 V		
Startup voltage			600 V		
Max. input current per MPPT			16 A		
Max. short-circuit current			22 A		
Number of MPP trackers			2		
Max. input per MPP tracker			1		
· ·		Input (DC Batter	ν)		
Compatible battery			-5/10/15-S0 / LUNA20	00-7/14/21-S1	
Operating voltage range			600-980 V	, , ,	
Max. operating current			20 A		
Max. charging power			12,000 W		
Max. discharging power	5500 W	6600 W	8800 W	11,000 W	12,000 W
		Output (On Grid		,	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Grid connection		Sulput (On One	Three-phase		
Rated output power	5000 W	6000 W	8000 W	10,000 W	12,000 W
Max. apparent power	5500 VA	6600 VA	8800 VA	11,000 VA	13,200 VA
Rated output voltage	3300 VA	220 V AC/380 V AC, 23			
Rated AC grid frequency	-	220 V AC/300 V AC, 23	50 Hz/60 Hz	v //C/+13 V MC 3VV/N +	1 L
Max. output current	18.3 A	10.0 A	13.3 A	16.7 A	20.2 A
	10.3 A				20.2 A
Adjustable power factor		(0.8 leading 0.8 lago	Jiriy	
Max. total harmonic distortion		0	≤ 3%		
		Output (Off Gri	•	1 \	
Compatible backup device			nartGuard-63A-T0 (3 p		
Rated output power	5000 W	6000 W	8000 W	10,000 W	10,000 W
Rated output voltage		220 V AC/380 V AC, 23		v ac/415 v ac 3w/n +	PE PE
110% overload		(2.1	Continuous		
150% overload	5 mi	n (3-phase) / 5 min (Sing		1 min (3-phase)	/ 5 min (Single-phas
200% overload			10 seconds		
Automatic switchover time			ms (with SmartGuard-	·63A-T0)	
	1	Protection Featu			
Asymmetric load		Yes, support	s 100% three-phase a	symmetric load	
Input-side disconnection device			Yes		
Anti-islanding protection			Yes		
DC reverse polarity protection			Yes		
Insulation detection			Yes		
DC surge protection		Yes, compatible with TYP			
AC surge protection		Yes, compatible with TYP	E II protection class ac	cording to EN/IEC 6164	13-11
Residual current detection			Yes		
AC overcurrent protection			Yes		
AC short-circuit protection			Yes		
AC overvoltage protection			Yes		
Arc fault protection			Yes		
Connector temperature detection					
Ripple receiver control		Ye	s (PV & Battery conne	ctors)	
		Ye	s (PV & Battery conne Yes	ctors)	
Battery charging from grid			Yes Yes	ctors)	
Battery charging from grid		General Specificat	Yes Yes tion		
, , ,		General Specificat	Yes Yes tion C to +60°C (-13°F to -		
Operating temperature range		General Specificat	Yes Yes tion		
Battery charging from grid Operating temperature range Relative operating humidity Max. operating altitude		General Specificat	Yes Yes tion C to +60°C (-13°F to -		
Operating temperature range Relative operating humidity Max. operating altitude		General Specificat	Yes Yes tion °C to +60°C (–13°F to - 0 % - 100% RH	+140°F)	
Operating temperature range Relative operating humidity Max. operating altitude Cooling		General Specificat	Yes Yes tion C to +60°C (-13°F to - 0 % - 100% RH 4000 m	+140°F)	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise		General Specificat -25° LED Indicator	Yes Yes tion 'C to +60°C (-13°F to 0 % - 1000 RH 4000 m Natural convection ≤ 29 dB 's; Integrated WLAN +	+140°F) FusionSolar APP	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display		General Specificat -25° LED Indicator	Yes Yes tion 'C to +60°C (-13°F to 0 % - 1000 RH 4000 m Natural convection ≤ 29 dB 's; Integrated WLAN +	+140°F)	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display		General Specificat -25° LED Indicator RS485; WLAN / Eth	Yes Yes tion 'C to +60°C (-13°F to 0 % - 1000 RH 4000 m Natural convection ≤ 29 dB 's; Integrated WLAN +	FusionSolar APP e-WLAN-FE (Optional)	
Operating temperature range Relative operating humidity		General Specificat -25° LED Indicator RS485; WLAN / Eth	Yes Yes tion 'C to +60°C (-13°F to 0 % - 100% RH 4000 m Natural convection ≤ 29 dB 'cs; Integrated WLAN + ernet via Smart Dongle	FusionSolar APP e-WLAN-FE (Optional)	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication		General Specificat -25° LED Indicator RS485; WLAN / Eth 4G/3G/2G via Sma	Yes Yes Yes tion C to +60°C (-13°F to 0 % - 1000 RH 4000 m Natural convection ≤ 29 dB 's; Integrated WLAN + ernet via Smart Dongle art Dongle-4G (Option. 21 kg	FusionSolar APP e-WLAN-FE (Optional) al); EMMA (Optional)	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting		General Specificat -25° LED Indicator RS485; WLAN / Eth 4G/3G/2G via Sma	Yes Yes tion 'C to +60°C (-13°F to 0 % - 100% RH 4000 m Natural convection ≤ 29 dB 's; Integrated WLAN + ernet via Smart Donglent Dongle-4G (Option	FusionSolar APP e-WLAN-FE (Optional) al); EMMA (Optional)	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets)		General Specificat -25° LED Indicator RS485; WLAN / Eth 4G/3G/2G via Sma	Yes Yes Yes tion C to +60°C (-13°F to 0 % - 1000 RH 4000 m Natural convection ≤ 29 dB 's; Integrated WLAN + ernet via Smart Dongle art Dongle-4G (Option. 21 kg	FusionSolar APP e-WLAN-FE (Optional) al); EMMA (Optional)	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) IP rating		General Specificat -25° LED Indicator RS485; WLAN / Eth 4G/3G/2G via Sma	Yes Yes Yes tion C to +60°C (-13°F to 0 % - 100% RH 4000 m Natural convection ≤ 29 dB Tes; Integrated WLAN + ernet via Smart Dongle art Dongle-4G (Option- 21 kg	FusionSolar APP e-WLAN-FE (Optional) al); EMMA (Optional)	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) IP rating		General Specifical -25° LED Indicator RS485; WLAN / Eth 4G/3G/2G via Sma	Yes	FusionSolar APP e-WLAN-FE (Optional) al); EMMA (Optional)	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) IP rating Nighttime power		General Specificat -25° LED Indicator RS485; WLAN / Eth 4G/3G/2G via Sma	Yes Yes Yes tion C to +60°C (-13°F to 0 0 % - 1000 RH 4000 m Natural convection ≤ 29 dB 's; Integrated WLAN + ernet via Smart Donglert Dongle-4G (Option. 21 kg 0 mm x 460 mm x 130 IP66 < 5.5 W bility	FusionSolar APP e-WLAN-FE (Optional) al); EMMA (Optional)	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) IP rating Nighttime power	Standard	General Specificat -25° LED Indicator RS485; WLAN / Eth 4G/3G/2G via Sma 49 Optimizer Compati	Yes	FusionSolar APP e-WLAN-FE (Optional) al); EMMA (Optional)	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) Prackets) IP rating Nighttime power DC MBUS compatible optimizer	Standard	General Specifical -25° LED Indicator RS485; WLAN / Eth 4G/3G/2G via Sma 49 Optimizer Compati SUN20 Is Compliance (More Avai	Yes	FusionSolar APP e-WLAN-FE (Optional) al); EMMA (Optional) 0 mm	
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication Weight (incl. mounting brackets)		General Specifical -25° LED Indicator RS485; WLAN / Eth 4G/3G/2G via Sma 49 Optimizer Compati SUN2C Is Compliance (More Avai	Yes	FusionSolar APP e-WLAN-FE (Optional) al); EMMA (Optional) 0 mm	on No. 07, NDS 007
Operating temperature range Relative operating humidity Max. operating altitude Cooling Noise Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets) Prackets) IP rating Nighttime power DC MBUS compatible optimizer	IEC61727, IEC621	General Specifical -25° LED Indicator RS485; WLAN / Eth 4G/3G/2G via Sma 49 Optimizer Compati SUN20 Is Compliance (More Avai	Yes	FusionSolar APP e-WLAN-FE (Optional) al); EMMA (Optional) 0 mm 0-600W-P 109-2 oine Grid Code Resoluti	

^{*1} The max. input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage the inverter.

^{*2} Any DC input voltage beyond the operating voltage range may result in inverter malfunction.

Model: SUN2000-12/15/17/20/25K-MB0





Active Safety AFCI Active Arcing Protection



Higher Yields
Up to 30% More Energy
with Optimizer ¹



Battery Ready

2 Battery Terminals; Compatible with LUNA2000-S0

© SUN2000-12/15/17/20/25K-MB0 Technical Specification

Technical Specification ¹	SUN2000-12K-	SUN2000-15K-	SUN2000-17K-	SUN2000-20K-	SUN2000-25K-
	MB0	MB0 Efficiency	MB0	MB0	MB0
Max. efficiency	98.4%	98.4%	98.4%	98.4%	98.4%
European weighted efficiency	97.9%	98.0% DC Input	98.1%	98.1%	98.2%
Recommended max. PV power Max. input voltage ²	18,000 Wp	22,500 Wp	22,500 Wp 1,100 V	30,000 Wp	37,500 Wp
Max. input current per MPPT		30 A (t	two strings) / 20 A (sing	ıle strina)	
Max. short-circuit current			40 A	,	
Start-up voltage			200 V		
MPPT operating voltage range ³	270.1/.000.1/	410.1/.000.1/	200 V-1000 V	400.1/, 000.1/	F20.1/ 000.1/
Full-load MPPT voltage range Rated input voltage	370 V-800 V	410 V-800 V	440 V-800 V 600 V	480 V-800 V	530 V-800 V
Max. number of inputs			4		
Number of MPP trackers			2		
	Smart	String Energy Storage S	System Terminal		
Compatible Smart String ESS		LUNA2000)-5/10/15-S0, LUNA200	0-7/14/21-S1	
Number of terminals			2		
Max. charging power	122114		Single string) / 25 kW (T		25.0.174
Max. discharge power Max. operating current	13.2 kW	16.5 kW	18.7 kW 26.25 A (per string)	22.0 kW	25.0 kW
Operating voltage range			600 V ~ 980 V		
- F		Output	200 . 300 7		
Rated output power	12,000 W	15,000 W	17,000 W	20,000 W	25,000 W
Max. apparent power	13,200 VA	16,500 VA	18,700 VA	22,000 VA	27,500 VA
Max. active power ($cos \phi = 1$)	13,200 W	16,500 W	18,700 W	22,000 W	27,500 W
Rated output voltage		, , , , , , , , , , , , , , , , , , , ,		AC/415 V AC; 3 W/N +	
Rated output current	18.2 A/380 V AC 17.3 A/400 V AC	22.8 A/380 V AC 21.7 A/400 V AC	25.8 A/380 V AC 24.5 A/400 V AC	30.4 A/380 V AC 28.9 A/400 V AC	38.0 A/380 V A0 36.1 A/400 V A0
Nated Output Current	16.7 A/415 V AC	20.9 A/415 V AC	23.7 A/415 V AC	27.8 A/415 V AC	34.8 A/415 V AC
	20.2 A/380 V AC	25.2 A/380 V AC	28.6 A/380 V AC	33.6 A/380 V AC	42.0 A/380 V AC
Max. output current	19.1 A/400 V AC	23.9 A/400 V AC	27.1 A/400 V AC	31.9 A/400 V AC	39.9 A/400 V AC
	18.5 A/415 V AC	23.1 A/415 V AC	26.1 A/415 V AC	30.8 A/415 V AC	38.5 A/415 V AC
Rated AC grid frequency Adjustable power factor			50 Hz/60 Hz	20	
Max. total harmonic distortion			0.8 leading 0.8 laggir ≤ 3%	ng	
Wax. total Harrionic distortion		Feature & Protect			
Overvoltage category			PV II/AC III		
Input-side disconnection device			Yes		
Anti-islanding protection			Yes		
AC over-current protection DC reverse-polarity protection			Yes		
DC surge protection			Yes TYPE II		
AC surge protection	Y	es compatible with TYP		ording to EN/IEC 61643	-11
DC insulation resistance detection		,	Yes		
Residual current monitoring unit			Yes		
Arc fault protection			Yes		
		General Specifica		1.10.05)	
Operating temperature range		-25 °	C to +60 °C (-13 °F to	140 °F)	
Relative humidity		4,000 /-	0 % RH-100 % RH	2 000 m)	
Max. operating altitude Cooling		4,000 M (13,123 ft.) (Derated abo Smart air cooling	DVE 2,000 III)	
Display		LED indicator	rs, Integrated WLAN + F	FusionSolar APP	
		RS485; WLAN/Ethe	ernet via Smart Dongle-	WLAN-FE (Optional)	
Communication			art Dongle-4G (Optiona		
Weight		F./C 100	21 kg	. 10 1 0 0 :	
Dimensions (W x H x D) Protection level		546 mm x 460	0 mm x 228 mm (21.5) IP66	(Iö. I X 9.U INCh)	
Nighttime power			< 5.5W		
Max. number of paralleled unit			3		
(with Smart String ESS)					
		Optimizer Compat	,		
Compatible optimizer				1100W-P, MERC-1300W	'-P
Cortificator	Standards	Compliance (More Avai		100.2	
Certificates	IECC4707 IECC		/IEC62109-1, EN/IEC621		DCC MATERIA
Grid connection standards	Philippine Grid Code	Resolution No. 07, NRS	097-2-1, EN50549-1, V	150, MEA/PEA, G99, IRF /DE4105, UTE15-712-1/ !1:2020-12 V1, CEI-016,	VFR 2019, UNE21700

^{*1} For Thailand, only SUN2000-12K-MB0 & SUN2000-15K-MB0 & SUN2000-20K-MB0 are available.

^{*2} The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage the inverter.

 $^{^{*}}$ 3 Any DC input voltage beyond the operating voltage range may result in inverter malfunction.

SMART STRING ENERGY STORAGE SYSTEM

Model: LUNA2000-5/10/15-S0





More Usable Energy 100% Depth of Discharge and

Pack-Level Energy Optimization

Flexible Investment 5 kWh Modular Design, Scalable from 5 to 30 kWh



Safe & Reliable 5-layer Safety Protection



Easy Installation

12 kg Power Module 50 kg Battery Module



Quick Commissioning Automatic Device Discovery by the App



Perfect Compatibility

Compatible to Single & Three Phase Inverters

LUNA2000-5/10/15-S0 Technical Specification

Technical Specification	LUNA2000-5-S0	LUNA2000-10-S0	LUNA2000-15-S0
	Performance		
Power module	Performance	LUNA2000-5KW-C0	
Number of power modules		1	
Battery module		LUNA2000-5-E0	
Battery module capacity		5 kWh	
Number of battery modules	1	2	3
Battery usable capacity ¹	5 kWh	10 kWh	 15 kWh
	2.5 kW	5 kW	5 kW
Max. output power		7 kW, 10s	7 kW, 10s
Peak output power Nominal voltage (single-phase system)	3.5 kW, 10s	450 V	7 KVV, 10S
Operating voltage (single-phase system)		350-560 V	
Nominal voltage (three-phase system)		600 V	
Operating voltage (three-phase system)		600 V	
Operating voltage range (timee phase system)	Communication	000-980 V	
Display	I .	SOC status indicator, LED indicato	or.
Communication		485/CAN (only for parallel operat	
Communication	General Specification		ion)
	670 mm x 150 mm x 600 mm	670 mm x 150 mm x 960 mm	670 mm x 150 mm x 1320 mm
Dimensions (W x D x H)	(26.4 in. x 5.9 in. x 23.6 in.)	(26.4 in. x 5.9 in. x 37.8 in.)	(26.4 in. x 5.9 in. x 60.0 in.)
Weight (Floor stand toolkit included)	63.8 kg (140.7 lb)	113.8 kg (250.9 lb)	163.8 kg (361.1 lb)
Power module dimension (W x D x H)	-	150 mm x 240 mm (26.4 in. x 5.9	
Power module weight	070 IIIII X	12 kg (26.5 lb)	III. X 5.4 III.)
Battery module dimensions (W x D x H)	670 mm v 1	50 mm x 360 mm (26.4 in. x 5.9	in v 14 0 in)
Battery module weight	070 11111 X 1	50 kg (110.2 lb) ²	III. X 14.0 III.)
Installation	Floor	stand (standard), Wall mount (op	ational)
Operating temperature		-20°C to +55°C (-4°F to +131°F)	
Max. operating altitude		m (13,123 ft.) (Derated above 2,	
Environment	4,000	Outdoor/Indoor ⁴	500 111)
Relative humidity		5%-95% RH	
Cooling		Natural convection	
IP rating		IP 66	
Noise emission ⁵		< 29 dB	
Cell technology		Lithium-iron phosphate (LiFePO4)
		6KTL-L1, SUN2000-3/3.68/4/4.6/5	,
Compatible inverters ⁶		5/6/8/10KTL-M1, SUN2000-12/15	
F - 1.000		K-MAP0, SUN5000-8/12K-MAP0,	
	Standards Compliance (More Availa		, , , , , , , , , , , , , , , , , , , ,
Certificates		EC, VDE2510-50, IEC62619, IEC 60	0730, UN38.3
	Ordering and Deliverabl		
	1		

^{*1} Test conditions: 100% depth of discharge (DoD), 0.2C rate charge & discharge at 25°C, at the beginning of life. If no PV modules are installed or the system has not detected sunlight for at least 24 hours, the minimum end-of-discharge SOC is 15%.

LUNA2000-5KW-C0, LUNA2000-5-E0, LUNA2000 Wall Mounting Bracket

Available for ordering

^{*2} The weight of the battery modules varies with products, with a tolerance of ±3%.

^{*3} Refer to battery warranty letter for conditional application.

^{*4} Outdoor installation is recommended. For indoor installation, refer to the user manual for instruction.

^{*5} Noise level (typical): < 29 dB(A) @1 m, 30°C, power on and run stably for 2 hours

^{*6} Please contact a local engineer for compatibility information.

^{*7} The power module and battery modules of the storage system are separately ordered in the required quantity.

SMART STRING ENERGY STORAGE SYSTEM

Model: 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



Ultimate Use Experience

–20°C to +55°C Operating Temperature

Max 10.5 kW Charging & Discharging Power per Group

Super Quiet Operation



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



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

Version No.: 01-202411

LUNA2000-7/14/21-S1Technical Specification

Technical Specification	LUNA2000-7-S1	LUNA2000-14-S1	LUNA2000-21-S1		
	Performance				
Power module		LUNA2000-10KW-C1			
Number of power modules		1			
Battery module		LUNA2000-7-E1			
Battery module capacity		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	n			
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 dimensions (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 (110.2 lb) ²			
Installation	Floor	stand (standard), Wall mount (o _l			
Operating temperature ⁴		-20°C to +55°C (-4°F to +131°F)		
Max. operating altitude ⁵	4,000	m (13,123 ft.) (Derated above 2,	000 m)		
Environment ⁶		Outdoor / Indoor			
Relative humidity		5%–95%			
Cooling		Natural convection			
IP 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	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-3/3.68/4/4.6/5/6K-LB0, SUN2000-8/10K-LC0, SUN2000-3/4/5/6/8/10KTL-M1, SUN2000-5/6/8/10/12K-MAP0 SUN2000-12/15/17/20/-25K-MB0, SUN5000-8/12K-MAP0, SUN5000-17/25K-MB0				
	Standards Compliance (More Availal				
Certificates		50, IEC62619, IEC 60730, UN38.3	s, ISO13849, REACH, RoHS		
10	Ordering and Deliverabl				
Available for ordering ¹⁰	LUNA2000-7-E1, LUNA2000	-10KW-C1, Wall Mounting Bracke	et for LUNA2000-7/14/21-S1		

^{*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 ESSs in parallel scenarios only. The launch time of the FE communication version is to be determined. Please confirm with your local product manager of Huawei for information about the final version.

 $^{^{*}3}$ The weight of the battery modules varies with products, with a tolerance of $\pm 3\%$.

^{*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.

 $^{^{*}\!6 \ \}text{Outdoor installation is recommended. For indoor installation instructions, please refer to the user manual.}$

^{*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-LCO 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 ordered in the required quantity.

SMART MODULE CONTROLLER

Model: SUN2000-450W-P2/SUN2000-600W-P





Higher Yields Module-level Optimization Increases System Energy Yield by 5% to 30%



Active Safety Module-level Rapid Shutdown for worry-free firefighting



Flexible Design Easier Module Layout and 30% Higher Installed Capacity on Average



Smart O&M Module-level Visibility and Refined Management

Version No.: 01-202411

● SUN2000-450W-P2/SUN2000-600W-P **Technical Specification**

Technical Specification	SUN2000-450W-P2	SUN2000-600W-P		
	Input			
Rated input DC power ¹	450 W	600 W		
Absolute max. input voltage		80 V		
MPPT operating voltage range	10-80 V			
Max. short-circuit current (Isc)		14.5 A		
Max. efficiency		99.5%		
Weighted efficiency		99.0%		
Overvoltage category		II		
	Output			
Max. output voltage		80 V		
Max. output current		15 A		
Output bypass ²		Yes		
Output voltage during standby ³		0 V		
Output impedance during standby		1 kΩ ± 10%		
	Communication			
Communication protocol		MBUS		
	Standards Compliance			
Safety	IE	EC62109-1 (class II safety)		
RoHS		Yes		
Fire Safety	VC	DE-AR-E 2100-712:2018-12		
	General Specifications			
Dimensions (W x H x D)	75 mm x 140 r	mm x 28 mm (3.0 in. x 5.5 in. x 1.1 in.)		
Weight (including cables)		0.6 kg (1.3 lb.)		
Installation kit (optional)	Frame n	nounting bracket/T-shaped bolt ⁴		
Input connector		Staubli MC4		
Input wire length		0.15 m (0.49 ft.)		
Output connector		Staubli MC4		
Output wire length		1.3 m (4.3 ft.)		
Operating temperature/humidity range	-4	40°C to +85°C ⁵ /0%-100%		
IP rating		IP68		
Compatible inverters	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-3/3.68/4/4.6/5/6K-LB0, SUN2000-8K/10K-LC0, SUN2000-3/4/5/6/8/10KTL-M1, SUN2000-5/6/8/10/12K-MAP0, SUN2000-12/15/17/20/25KTL-M5 SUN2000-12K/15K/17K/20K/25K-MB0, SUN5000-8/12K-MAP0, SUN5000-17/25K-MB0, SUN2000-30K/36K/40K-M3			

PV System Design ⁶	SUN2000- 2~6KTL-L1	SUN2000- 3~6K-LB0	SUN2000- 8K/10K-LC0	SUN2000- 3~10KTL-M1	SUN2000- 5~2K -MAP0	SUN2000- 12~25KTL -M5	SUN2000- 12~25K-MB0	SUN5000- 8/12K-MAP0	SUN5000- 17/25K-MB0	SUN2000- 30~40K -M3
Min. string length (power optimizers)	4	4	4	6	6	6	6	6	6	6
Max. string length (power optimizers)	25	25	25	35	35	35	35	35	35	25
Max. DC power per string	6,000 W	6,000 W	6,000 W	10,000 W	12,000 W	12,000 W	12,000 W	12,000 W	12,000 W	12,000 W

^{*1} The maximum power of PV module at STC shall NOT exceed the "Rated Input DC Power" of the power optimizer. PV modules with up to +5% power tolerance are allowed.

^{*2} Any power optimizer, which is connected to an operating inverter in a PV string, will be bypassed when it fails.

 $^{^{\}star}\!3$ Once the power optimizer stops working, its output voltage is reduced to 0 V.

^{*4} It is for PV module frame/extruded aluminum profile racking system installation.

^{*5} When the operating temperature of the SUN2000-450W-P2/600W-P reaches 70 °C to 85 °C, it may shut down due to over-temperature protection and report an over-temperature alarm. After the temperature decreases, it can automatically resume working without causing any damage.

^{*6} SUN2000-450W-P2/600W-P and MERC-1100/1300W-P can NOT be used in mixture under the same Smart Energy/PV Controller.

SMART MODULE CONTROLLER

Model: MERC-1100/1300W-P





Higher Yields Module-level Optimization Increases System Energy Yield by 5% to 30%



Flexible Design Long String Design to Reduce Bos



Active Safety Firefighting and O&M Safety with Modulelevel Rapid Shutdown



Smart O&M Pinpointing OpenCircuit Fault for Quick Troubleshooting

Version No.: 01-202411

MERC-1100/1300W-P Technical Specification

echnical Specification	MERC-1100W-P	MERC-1300W-P	
	Input		
Rated input DC power ¹	1100 W	1300 W	
Absolute max. input voltage		125 V	
MPPT operating voltage range		12.5–105 V	
Max. short-circuit current (lsc)		20 A	
Max. efficiency		99.5%	
Weighted efficiency		99.0%	
Overvoltage category		II	
	Output		
Max. output voltage		80 V	
Max. output current		22 A	
Output bypass ²		Yes	
Safety output voltage ³		1 V	
	Standards Compliance		
Safety	IEC	IEC62109-1 (class II safety)	
RoHS		Yes	
	General Specification		
Dimensions (W X H X D)	149 mm x 104 m	m x 48.8 mm (5.9 in. x 4.1 in. x 1.9 in.)	
Weight (including wires)		1.0 kg (2.2 lb.)	
Installation kit (optional)	PV Modu	ule Frame Plate/T-shaped Bolt ⁴	
Input connector		Staubli MC4	
Input wire length	0.1 m (+/	/-) (short-input-cable version) ⁵	
Output connector		Staubli MC4	
Output wire length	0.1 m (+), 5.1	m (-) (short-input-cable version) ⁵	
Operating temperature		–40°C to +85°C ⁶	
Relative humidity		0%-100%	
IP rating		IP68	
Compatible inverters		JN2000-12-25KTL-M5, SUN2000-30-40KTL-M3,	
compande invercers	SUN2000-	50KTL-M3, SUN5000-150K-MG0	

PV System Design ^{7/8/9}	SUN2000- 12~25K-MB0	SUN2000- 12~25KTL-M5	SUN2000- 30~40KTL-M3	SUN2000- 50KTL-M3	SUN5000-150K-MG0
Min. string length (power optimizers)	8	8	8	8	12
Max. string length (power optimizers)	25	25	25	20	20
Max. DC power per string	20,000 W	20,000 W	20,000 W	20,000 W	20,000 W



- *1 The maximum power of PV module at STC shall NOT exceed the "Rated input DC power" of MERC-1100/1300W-P. PV Modules with up to ±10% power tolerance are allowed.
- *2 Any power optimizer, which is connected to an operating inverter in a PV string, will be bypassed when it fails.
- $^{\star}3$ When the MERC-1100/1300W-P is disconnected from inverter or when the inverter is off, its output voltage will become 1 V.
- $^{\star}4$ It is for PV module frame/extruded aluminum profile racking system installation.
- *5 Pay attention to the PV module wire length. To match PV modules with a split junction box and short output wire, the long-input-cable version (input wire: 1.3 m (+/-); output wire: 0.1m (+)/2.9m (-)) of MERC-1100/1300W-P is available upon request.
- *6 When the operating temperature of the MERC-1100/1300W-P reaches 70 °C to 85 °C, it may shut down due to over-temperature protection and report an over-temperature alarm. After the temperature decreases, it can automatically resume working without causing any damage.
- *7 Each PV module under the same inverter must be equipped with a MERC-1100/1300W-P.
- *8 SUN2000-450W-P2/600W-P and MERC-1100/1300W-P can NOT be used in mixture under the same Smart Energy/PV Controller.
- *9 It is recommended that strings under the same inverter have an equal capacity. If this is not feasible, the capacity difference between strings under the same inverter must not exceed 2 kW. Otherwise, the energy yield will be reduced.

SMART CHARGER

Model: 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 PowerPower Your Car with Solar
Make EV Even Greener



Dynamic Charging PowerAutomatic Detection and
Adjustment
No Worry about Overload



3 Ways of AuthenticationAuthentication through
Bluetooth, RFID and APP



3-Step InstallationFast Installation in 15
Minutes
Wiring-free Maintenance

Version No.: 01-202411

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	50 Hz/60 Hz ± 1 Hz				
Vehicle connection	Ту	pe 2 socket				
Cable cross-sectional area	Up	to 10 mm ²				
Network types	TN, TT, IT	TN, TT				
	User Interface & Communications					
Protocol	Modbu	us TCP, OCPP 1.6				
Communication	Wi	-Fi/Ethernet				
Charger status information	WRGI	B LED and app				
Authentication	RFID (ISO-14-	443-A), app, Bluetooth				
Remote control & monitoring		Арр				
		rmal Charge				
Working mode		duled Charge				
		ower Preferred				
		Next Trip ²				
Calda anatostica	Protection	E Laskinda ann				
Cable protection		E-Lock via app				
Residual current protection (RCD)	Type A (30 mA) + DC 6 mA integrated				
Fire class		UL94				
Overcurrent protection	IE IE	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	Out	door/Indoor				
Storage temperature	-40	0°C to +70°C				
Relative humidity	59	%-95% RH				
Altitude	≤ 2000 m (Derate	ed 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	Wa	all-mounted				
IP rating		IP54				
Impact protection level		IK10				
Standby self-consumption		< 6 W				
	Standards Compliance (More Available Upon Rec					
Safety & health	EN IEC 61851-1 2019, EN 62311 2008, EN	N IEC 62311 2020, EN 50665 2017, EN 50364 2018				
EMC		2.3 2019, EN 301 489-3 V2.1.1 2019, EN 301 489 3.2.4 2020				
Radio	ETSI EN 300 328 V2	ETSI EN 300 328 V2.2.2, ETSI EN300 330 V2.1.1				
RoHS	EN IE	C 63000:2018				
	Others					
Accessories	RF	ID Card * 2				

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

^{*2} Next Trip mode is only available with EMMA-A02

SMARTGUARD

Model: SmartGuard-63A-T0





SimpleThree-phase whole home backup supported



Seamless ≤20ms Ultra-fast switchover to power backup mode



ReliableProvide bypass mode when a fault occurs



Intelligent
Ready for DG, intelligent loads
management with EMMA

Version No.: 01-202411

SmartGuard-63A-T0

Technical Specifications

Technical Specification	SmartGuard-63A-T0	
	General Data	
Dimensions (W x H x D)	600 mm × 170 mm × 490 mm	
Weight (not including mounting plate)	17 kg	
	Performance	
AC Voltage (Nominal)	380/400/415V, 220/230/240V, L1/L2/L3/N+PE	
Max. current (from/to Grid)	63 A	
Max. current (from/to Inverter)	60 A	
Max. current (to Backup Load)	63 A	
Max. current(to Non-BackupLoad) 1	63 A	
Low-Voltage ride-through	Supported	
Switchover time	≤ 20ms (MAP0), ≤ 100ms (M1/MB0) ²	
Bypass operation mode	Manual	
DG mode	Remote control	
	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; Active port ³	
Digital output	×2, ≤ 20m	
DG Do Port	Passive Port, 1-100mA ≤24V	
ATS	Need prepare the ATS, which supports automatic control and automatic switch-in and reset.	
	Measurement Range	
Current range	≤ 63 A	
Energy accuracy	± 1%	
	Device Management	
Smart energy controllers	up to 3	
Smart chargers	up to 2	
Heat pump	up to 1 ⁴	
Shelly device	up to 20	
	Environment	
Cooling	Natural Convection	
Relative humidity range	5%-95% RH (non condensing)	
Max. operating altitude	4000m (derated over 2000m)	
Degree of protection	IP55	
Operating temperature range	-25°C-50°C ⁵	
	Compatible Device	
Smart energy controller	Max. 3 inverters supported in parallel connection (MAP0) Max. 1 inverter supported (M1/MB0)	
Smart charger	SCharger–7KS/22KT–S0	
Heat pump	SG-ready	
Shelly device	Shelly Plus Pluq S, Shelly Plus 2PM, Shelly Pro 2PM ⁶	

 $^{^{\}star}1$ The sum of the output current of the backup port and the non backup port could not be more than 63A

^{*2} Seamless switching is disabled by default and needs to be manually enabled.

^{*3} The position feedback signal must be a passive port that works with an external circuit and can work at a current of less than or equal to 0.7 mA@12 V. The low impedance of the circuit for the position feedback signal is less than or equal to 100 ohms.

^{*4 1} SG ready Heat Pump can be connected directly. Others can be connected via shelly devices.

^{*5} On grid Mode: 25–30°C, no derating; 30–50°C, linear derating from 63A to 43A;

Off grid Mode: 25–40°C, no derating; 40–50°C, linear derating from 60A to 50A

^{*6} The supported firmware version of shelly devices can be found in user manual.

SMARTGUARD

Model: SmartGuard-63A-S0





Simple Whole home backup, no need of additional switchboard



Seamless ≤ 20 ms ultra-fast switchover to

power backup mode



Reliable Provide bypass mode when a fault occurs



Intelligent 1 Intelligent load control with built-in EMMA

Version No.: 01-202411

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)	220/230/240 V L/N+PE
Max. current (from Grid)	63 A
Max. current (from Inverter)	60 A
Max. current (to backed-up load)	63 A
Max. current	05 A
(to non-backed-up load) ²	63 A
Self consumption	10 W
Low-voltage ride-through	Supported
Switchover time	≤ 20 ms (in Seamless Mode)
	≤ 20 ms (in seamless Mode) Manual
Bypass operation mode	
	Interface
Power output	9.5–13.2V @ 100mA, ≤ 3m
LAN	10/100 Mbps, ≤ 100 m
WAN	10/100 Mbps, ≤ 100m
WLAN	AP Mode, 802.11b/g/n (2.412 GHz-2.484 GHz)
RS485	9600/19200/115200 bps,× 2, ≤ 50m
Digital input	×2, ≤ 20 m
Digital output	×2, ≤ 20 m
	Measurement Range
Current range	≤ 63 A
Voltage range	1P (L-N): 85–299 V AC
Energy accuracy	± 1%
- 3,	Device Management
Smart energy controllers	up to 1
Smart chargers	up to 2
Heat pump	up to 2 up to 1 ³
Shelly device	up to 1
Silety device	
	Environment
Noise emission	≤ 29 dBA
Cooling	Natural Convection
Relative humidity range	5%-95% RH (non condensing)
Max. operating altitude	4000m (derated over 2000m)
IP rating	IP55
Operating temperature range	-25°C-50°C ⁴
	Compatible Device
Smart energy controller	SUN2000-2-6KTL-L1, SUN2000-3/3.68/4/4.6/5/6K-LB0, 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 ⁵

^{*1} The intelligent energy scheduling feature is available for a 2-year free trial. After the trial, it will be available at no more than €99 per site per year.

 ¹¹ Ine intelligent energy scheduling feature is available for a 2-year free trial. After the trial, it will be available at no more than
 22 The sum of the output current of the backup port and the non-backup port could not be more than 63A
 31 SG-ready Heat Pump can be connected directly. Others can be connected via shelly devices
 44 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

^{*5} The supported firmware version of shelly devices can be found in user manual

ENERGY MANAGEMENT ASSISTANT

Model: EMMA-A02





Unified management

One-stop management of inverters, ESS, optimizers, chargers and appliances



More intelligent

Peak shaving, PV preference, feedin power limitation, and automatic start/stop of diesel generators.



More economical

Automatically connect to Nord Pool, supporting peak-valley price arbitrage and zero-power feed-in during negative price periods.



Open to 3rd parties

Supports Modbus-TCP and thirdparty VPP integration, enabling FCR-D frequency modulation.

Version No.: 01-202411

EMMATechnical Specifications

Technical Specification	EMMA-A02					
	General	Data				
Dimension(W \times H \times D)	108 mm × 100 mm × 65 mm					
Mounting type	DIN35 Rail					
Height requirement of cabinet	≥ 47.5 mm					
Weight	0.5 kg					
	Power S	upply				
AC Voltage	1P2W: 100 ~ 240V, 50 / 60Hz	3P3W: 346 ~ 415V, 50 / 60Hz	3P4W: 346 ~ 415V, 50 / 60Hz			
Typical power consumption		4 W				
	Interfa	ace				
Power output		9.5 ~ 13.2V @ 100mA, ≤ 3m				
LAN		10 / 100Mbps,≤ 100m				
WAN		10 / 100Mbps,≤ 100m				
WLAN	AP	+ STA, 802.11b/g/n (2.412GHz ~ 2.48	34GHz)			
RS485		9600 / 19200 / 115200bps,× 2, ≤ 50	lm			
Digital input		× 2, ≤ 20 m				
Digital output		× 2, ≤ 20 m				
	Interac	tion				
LED		LED Indicator × 3 RUN, ALM, COM	1			
Button		RST				
APP	Communication by WLAN for Commissioning					
	Measureme	nt Range				
Current range	Direct connection: ≤ 63 A, external CT ¹ : > 63 A					
Voltage range	1P (L-N): 85 ~ 299 Vac; 3P (L L): 148 ~520 Vac					
Energy accuracy		±1%				
	Device Man	agement				
Smart energy controllers	up to 3					
Smart chargers	up to 2					
Heat pump		up to 1 ²				
Shelly device		up to 20				
	Environ	ment				
Operating temperature range		-25 °C~ +60 °C				
Storage temperature range		-40 °C~ +85 °C				
Relative humidity range		5% ~ 95% RH (non condensing)				
Max. operating altitude		4000m (derating over 2000m)				
Degree of protection		IP2X				
	Compatible	e Device				
Smart energy controller	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-3/3.68/4/4.6/5/6K-LB0, SUN2000-8/10K-LC0, SUN2000-3/4/5/6/8/10KTL-M1, SUN2000-12/15/17/20/25KTL-M5, SUN2000-5/6/8/10/12K-MAP0, SUN2000-12/15/17/20/25K-MB0, SUN5000-8/12K-MAP0, SUN5000-17/25K-MB0					
Smart charger		SCharger-7KS/22KT-S0				
Heat pump		SG-ready				
Shelly device	Shelly	Plus Plug S, Shelly Plus 2PM, Shelly F	Pro 2PM ³			
Smart Scheduling ⁴	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-3/3.68/4/46/5/6K-LB0, SUN2000-8/10K-LC0, SUN2000-3/4/5/6/8/10KTL-M1, SUN2000-12/15/17/20/25KTL-M5, SUN2000-12/15/17/20/25K-MB0, SUN2000-5/6/8/10/12K-MAP0, SUN5000-8/12K-MAP0, SUN5000-17/25K-MB0+ LUNA2000-5/10/15-S0 / LUNA2000-7/14/21-S1					
Dynamic tariff	Automatically connect to Nord Pool electricity market and obtain day-ahead dynamic tariff. (Available in Sweden, Denmark, Finland, Norway, Lithuania, Estonia, Latvia, and the Netherlands.)					

^{*1.} The secondary current of an external CT connected shall be 50 mA, and the cable length can be up to 30 m.

^{*2.} A heat pump can be directly connected to EMMA-A02. More appliances can be connected through a Shelly device.

^{*3.} For the Shelly device firmware version supported, please refer to the user manual.

^{*4.} The smart scheduling function of the EMMA is offered free of charge for two years from the trial start date. After this period, we reserve the right to charge for this service.

SMART DONGLE-WLAN-FE





WLAN & Fast Ethernet (FE)
Communication, Support 3rdParty Monitoring System ¹



SimplePlug-and-play, with a
Maximum of 10 Devices
Connected



Reliable IP65 Protection

Smart Dongle-WLAN-FE Technical Specifications

Technical Specification	SDongleA-05(AP+STA)	
	General Specification	
Max. devices supported	10	
Max. inverters supported	10	
Connection interface	USB	
Ethernet interface	10/100M Ethernet	
Installation	Plug-and-play	
Indicator	LED Indicator	
Dimensions (W x H x D)	146 mm x 48 mm x 33 mm (5.1 in. x 1.9 in. x 1.3 in.)	
Weight	90 g (0.2 lb.)	
IP rating	IP65	
Power (typical)	2.5 W	
Working mode	AP + STA	
Security	Security protocol: WPA/WPA2 Encryption: TKIP/CCMP/AES	
	Radio Specification	
Supported standards & frequencies	802.11b/g/n (2.412–2.484 GHz)	
	Environment	
Operating temperature range	-30°C to +65°C (-22°F to +149°F)	
Relative humidity range	5%-95% RH	
Storage temperature range	-40°C to +70°C (-40°F to +158°F)	
Max. operating altitude	4,000 m (13,123 ft.)	
	Standards Compliance (More Available Upon Request)	
Certificate	SRRC, CE, RCM	
	Inverter Compatibility	
SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-3/3.68/4/4.6/5/6K-LB0, SUN2000-8/10 SUN2000-3/4/5/6/8/10KTL-M1, SUN2000-12/15/17/20/25KTL-M5, SUN2000-12/15/17/20/25K-MB0, SUN2000-5/6/8/10/12K-MAP0, SUN5000-8/12K-MAP0, SUN5000-17/25K-MB0		

^{1: 3}rd-party management system shall support the communication protocol used on Huawei Smart Dongle.

SMART DONGLE-4G





Smart4G Communication ¹
Support for 3rd-party ²
Monitoring System



SimplePlug-and-play WLAN-AP
Local Deployment ³



Reliable IP65 Auto Reconnection

Smart Dongle-4G Technical Specifications

Technical Specification	SDongleB-06-EU	SDongleB-06-AU	SDongleB-06-NH			
	General	Specification				
Max. devices supported	10					
Max. inverters supported		10				
Connection interface		USB				
Installation		Plug-and-play				
Indicator		LED indicator				
Dimensions (W x H x D)		162 mm x 48 mm x 28 mm				
IP rating		IP65				
Power (typical)		3.5 W				
	Wireles	s Parameter				
SIM card type		Mini-SIM (15 mm x 25 mm)				
Supported standards & frequencies ⁴	LTE-FDD: B1/B3/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 GSM: 850/900/1800/1900 MHz	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28 LTE-TDD: B40 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900 MHz	LTE-FDD: B1/B3/B8/B18/B19/B2 LTE-TDD: B41 WCDMA: B1/B6/B8/B19			
Wi-Fi operation mode		AP				
Supported standards & frequencies		802.11b/g/n (2.412–2.484 GHz)				
	Envi	ronment				
Operating temperature range		-30°C to +65°C (-22°F to +149°F)				
Relative humidity range		5%-95% RH				
Storage temperature range		-40°C to +70°C (-40°F to +158°F)				
Max. operating altitude		4,000 m (13,123 ft.)				
	Standards Compliance (N	More Available Upon Request)				
Certificate	CE	RCM	TELEC			
	Inverter	Compatibility	I			
Inverter model	SUN2000-3/4/5/6/8/10KTL-N SUN2000-5/6/8/1	6/5/6KTL-L1, SUN2000-3/3.68/4/4.6/5/6K M1, SUN2000-12/15/17/20/25KTL-M5, SU 0/12K-MAP0, SUN5000-8/12K-MAP0, SUI 'L-JPL1, SUN2000-4.95KTL-NHL2, SUN200	N2000-12/15/17/20/25K-MB0, N5000-17/25K-MB0,			

^{1:} To ensure stable data transmission, Huawei recommends that a 4G Dongle be installed in areas with stable mobile signal (2G signal ≥4 bars, 3G/4G signal ≥3 bars).

^{2: 3}rd-party management system shall support the communication protocol used on Huawei Smart Dongle.

^{3:} When all inverters support WLAN hotspot, hotspot of Dongle will be disabled by default.

^{4:} For recommended carriers list and details on supported frequencies, please contact local distributors.

SMART POWER SENSOR

Model: SmartPS-100A-S0





Accurate Class | Measurement Accuracy



Simple & Easy LCD Display, Easy to Set and Check



Energy Efficient Overall Power Consumption ≤ 1.5 W

Version No.: 01-202411

SmartPS-100A-S0

Technical Specifications

	SmartPS-100A-S0					
Technical Specification	DDSU666-H	YDS70-C16	DDSU1079-CT	DDSU71		
	General Specification					
Dimensions (H x W x D)	100mm x 36mm x 65.5mm	101mm x 36mm x 66mm	99mm × 36mm × 66 mm	99mm × 36mm × 66 mm		
Mounting type		DIN	35 Rail			
Weight (including cables)	0.2kg	0.133kg	0.15kg	0.196kg		
		Power Supply				
Power grid type		16	22W			
Input voltage (phase voltage)		23	30V			
Power consumption		<1	.5W			
		Measurement Range				
Line voltage		/				
Phase voltage		176VAC	2–288VAC			
Current		0.5-100A				
		Measurement Accuracy				
Current/Voltage	±0.5%					
Power/Energy		±	1%			
Frequency		±0.0)1 Hz			
		Communication				
Interface		RS	485			
Baud rate		4800/9600(Defa	ult)/19200/115200			
Communication protocol		Modbus-RTU				
		Environment				
Operating temperature range	-25°C to +60°C	−35°C to +70°C	−25°C to +60°C	−25°C to +60°C		
Storage temperature range	-35°C to +70°C	−40°C to +85°C	−35°C to +70°C	-40°C to +85°C		
Operating humidity		5% RH-95% RH	(non-condensing)			
	Others					
Accessories	RS485 Cable (10 m / 33 ft.)					
		1 CT 100) A/40 mA			

SMART POWER SENSOR

Model: SmartPS-250A-T0

DTSU666-H 250A/50mA



YDS60-C24



DTSU71



DHSU1079-CT





Accurate
Class | Measurement
Accuracy



Simple & Easy LCD Display, Easy to Set and Check



Energy Efficient
Overall Power
Consumption ≤ 1.5 W

Version No.: 01-202411

SmartPS-250A-T0

Technical Specifications

	SmartPS-250A-T0						
Technical Specification	DTSU666-H 250A/50mA	YDS60-C24	DTSU71	DHSU1079-CT			
General Specification							
Dimensions (H x W x D)	100mm x 72mm x 65.5mm	101mm x 72mm x 66mm	100mm × 72mm × 66mm	99mm × 72mm × 66mm			
Mounting type	DIN35 Rail						
Weight (including cables)	0.3kg	0.285kg	0.248kg	0.26kg			
Power Supply							
Power grid type	3P3W/3P4W						
Input voltage (phase voltage)	230 V AC/400 V AC						
Power consumption	<1.5W						
	Measurement Range						
Line voltage	304V-500V						
Phase voltage	176 V AC-288 V AC						
Current	0-250A						
Measurement Accuracy							
Current/Voltage	±0.5%						
Power/Energy	±1%						
Frequency	±0.01 Hz						
		Communication					
Interface	RS485						
Baud rate	4800/9600(Default)/19200/115200						
Communication protocol	Modbus-RTU						
Environment							
Operating temperature range	−25°C to +60°C	-25°C to +60°C	−25°C to +60°C	-25°C to +60°C			
Storage temperature range	-40°C to +85°C	-40°C to +85°C	−35°C to +70°C	-40°C to +85°C			
Operating humidity	5% RH–95% RH (non-condensing)						
	Others						
Accessories	RS485 Cable (10 m / 33 ft.)						
	3 CT 250 A/50 mA						

SMART POWER SENSOR

Model: DTSU666-H 100A





Accurate Class | Measurement Accuracy



Simple & Easy LCD Display, Easy to Set and Check



Energy Efficient Overall Power Consumption ≤ 1.5 W

Version No.: 01-202411

Smart Power Sensor **Technical Specifications**

Technical Specification	DTSU666-H				
	General Specification				
Dimensions (H x W x D)	100 mm x 72 mm x 65.5 mm				
5e.is.e.is (1.7. 1.7. 2.7	(3.9 in. x 2.8 in. x 2.6 in.)				
Mounting type	DIN35 Rail				
Weight (including cables)	1.5 kg (3.3 lb)				
Power Supply					
Power grid type	3P3W/3P4W				
Input voltage (phase voltage)	176 V AC-288 V AC				
Power consumption	≤ 1 W				
Measurement Range					
Line voltage	304 V AC-499 V AC				
Phase voltage	176 V AC-288 V AC				
Current	0–100 A				
Measurement Accuracy					
Current/Voltage	±0.5%				
Power/Energy	±1%				
Frequency	±0.01 Hz				
	Communication				
Interface	RS485				
Baud rate	9,600 bps				
Communication protocol	Modbus-RTU				
	Environment				
Operating temperature range	−25°C to +60°C				
Storage temperature range	-40°C to +70°C				
Operating humidity	5% RH–95% RH (non-condensing)				
	Others				
	RS485 Cable (10 m / 33 ft.)				
	3 CT 100 A/40 mA				
Accessories	(5 m/16.4 ft.)				
ACCCSOUTES	9 98				

FUSIONSOLAR SMART PV MANAGEMENT SYSTEM





Better Experience

One app for All Products
Auto-Discovery of Local
Components
Modular Auto-mapping Within 5S



Energy Visualization

KPI Dashboard and Centralized Management of Multiple Plants Module-level Monitoring Report Subscription and Real-time Alarm Push



Smart O&M

Site, Personnel, and Status Management on One Screen

• FusionSolar Smart PV Management System

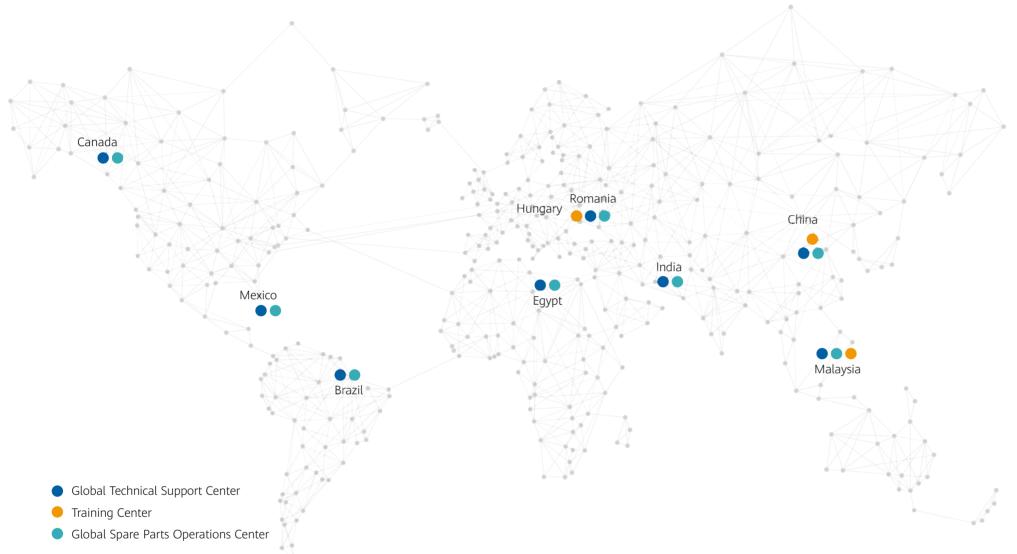
Category	Function	Web	Арр
Homepage	PV Plants List	•	•
	Add Plant	•	•
Report Management	Plant Report	•	
	Inverter Report	•	
	Battery Report	•	
Device Management	Device Details	•	•
	Remote Parameter Setting	•	
	Remote Optimizer Search	•	
	Real-time Status	•	
Intelligent OOM	Alarm Management	•	•
Intelligent O&M	Task Management	•	•
	Smart IV-Curve Diagnose	•	
KPI Dashboard	KPI Dashboard	•	
Homepage of Single Plant	Energy Flow	•	•
	Energy Management	•	•
	Plant Layout	•	•
	Kiosk Mode	•	
System Setting	Plant Management	•	•
	Company Management	•	
Demo	Demo Site	•	•





CUSTOMER SERVICE

FusionSolar global service centers cover more than 170 countries, supporting 1/3 of the world's population



Warrant service Your energy system guardian

If product quality defects occur under warranty, Huawei would provide the following services:

24/7 timely response Remote troubleshooting

Online technical support

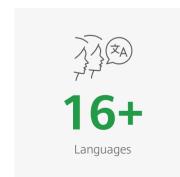
Software support service

Hardware support service (advance spare parts replacement within 2BD)

For longer-lasting warranty services

Flexibly select the services you need based on your actual requirements

Remote technical support Spare parts support









Process and Method Maintenance

Issue to Resolution (ITR) process: The "technology + management escalation" mechanism ensures the involvement of experts and mid- and high-level executives in the process.



Organization and Personnel

The three-level support system provides reliable technical support for global customers.



Smart tools-FusionSolar

Monitor your energy system anytime anywhere Al-based customer support robot for your request All service accessible on the App



FUSIONSOLAR PARTNER

Please click the link to join us: https://community.solar.huawei.com

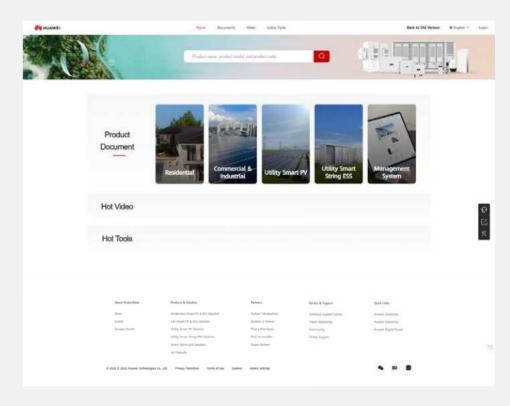








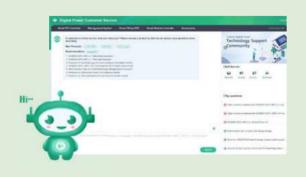




Have more questions? Contact us and get support

Online Service

The online Digital Power Customer Service is available now. You can find it in the floating window on the website or FusionSolar app, and get help anytime, anywhere



Installer Forums

You also can post your questions on the online forum to discuss with other installers. The technical experts also would respond to the questions





CASES

◆ PV+ESS Scenario



Residential PV systems in Gnesta, Sweden

Capacity: 10 MWp

System Configuration

- + SUN2000-450W-P2 + LUNA2000-5/10/15-S0 * SmartGuard-63A-T0
- + SUN2000-600W-P
- + EMMA-A02 + SUN2000-10KTL-M1
- + SCharger-22KT-S0



Scan the code to learn more

◆ PV+ESS Scenario



Residential PV system in Xanten, Germany

Capacity: 11 kWp

System Configuration

- + SUN2000-5KTL-M1
- + SUN2000-6KTL-M1
- + LUNA2000-10-S0



CASES

to learn more

◆ PV+ESS Scenario



Residential PV System in Milan, Italy

Capacity: 20 kWp

System Configuration

- + SUN2000-450W-P2
- + SCharger-22KT-S0 + SUN2000-10K-MAP0 + SmartGuard-63A-T0
- + LUNA2000-14-S1
- + EMMA-A02



to learn more

◆ PV+ESS Scenario



Residential PV system in Ho Chi Minh, Vietnam

Capacity: 5 kWp

System Configuration

- + SUN2000-5KTL-L1
- + LUNA2000-5-S0
- + SUN2000-450W-P



to learn more