

# FusionSolar Residential Smart PV Solution



### **ABOUT FUSIONSOLAR**



695







160+

Technical Support

Spare Parts Operation Centers

16

Spare Parts Repair Centers

130+

National Spare Parts Logistics



1000+ Global Partners

300+

**Partners** 

70+

Partners

600+

Certified Installers



Global Research

Competence Centers

**R&D** Centers

10%+

of Revenue on

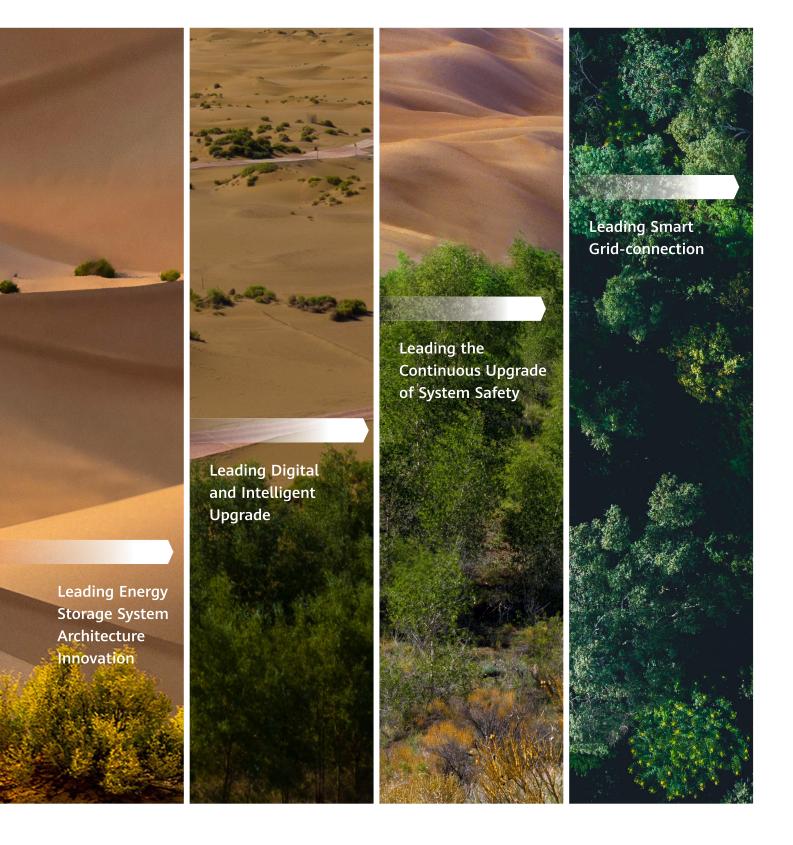
\*Based on data available as of 2022

FusionSolar Residential Smart PV Solution



# LEADING INNOVATIONS FOR THE MOST VALUABLE CREATIONS





# AHOME 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 2022, FusionSolar has provided clean energy for 2.7 million homes in over 170 countries



# 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 Professionals

**Green** is the new black. **""** 

#### For Homeowners

**66** You deserve the visibility and control of your energy on the go. **33** 





#### For the Seniors

1 may be gray, but my power is green. ""

#### For Young People

Green energy gets you energized.

#### For Children

**66** Future generations deserve a greener planet. **77** 





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# SOLUTION VALUE



# FUSIONSOLAR RESIDENTIAL ONE-FITS-ALL SOLUTION



The whole chain of home energy management including green power generation, storage, charging and power consumption





#### One Supplier

Easier purchase & storage management for system products

#### One Solution

Suitable for all scenarios, with less training required

## One Service Window

One contact for pre-sales & after-sales services











One ESS for both single-phase and three-phase residential inverters

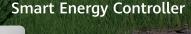
One app for all functions

\*The data above is for reference only



### FUSIONSOLAR RESIDENTIAL **ONE-FITS-ALL SOLUTION**





- SUN2000-2/3/3.68/4/4.6/5/6KTL-L1 (Single-Phase)
- SUN2000-3/4/5/6/8/10KTL-M1 (Three-Phase)
- SUN2000-12/15/17/20/25KTL-M5 (Three-Phase)

#### **Smart String ESS**



Power-M-5/10/15/20/25/30

\*Available in specific regions only





#### **OPTIMAL ELECTRICITY COST**

Many factors can cause power output loss, which reduces the system benefit and increase the system payback time. The FusionSolar Residential Smart PV Solution ensures the best system performance and generates more usable energy





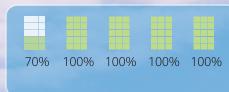
#### Without Optimizer

The output power of a PV string is limited by the PV module with the lowest output current

# 70% 85% 85% 85% 85% \*Figures are for reference only

#### With Optimizer

All PV modules can achieve their maximum output power





### **ACTIVE SAFETY**

System safety is always the priority to concern. FusionSolar Residential Smart PV Solution meets the highest safety standard to ensure safety through advanced technologies used in the optimizer, inverter and ESS



## Safety under rooftop ESS Modular+ Safety



#### Cell level protection

- LFP from top suppliers
- Cell level management

#### Electrical protection

- Overcharging, over current, over temperature protections
- External short-circuit protection

#### Structural protection

- High-strength high-melting-point cabinet
- IP66 class level protection

#### Emergency protection

- Built-in intelligent Fire Suppression Kit for each battery pack
- Quickly eliminate safety risks in 15s







# ENJOY EVERY MOMENT WITHOUT WORRYING POWER BLACKOUT

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



#### Frequent blackouts

The grid is unstable and blackouts are frequent



#### Mains power inaccessible

Remote areas not covered by power grids



#### Power backup

Power load is heavy and energy independence is required



#### HOURS

#### Worry-free of outages

Provide reliable backup power during outages



### 24/7 OVERALL MANAGEMENT

FusionSolar Management System provides an overall control of the whole system, allowing you to monitor the realtime power generation, consumption, and the states of the devices anywhere, anytime you want





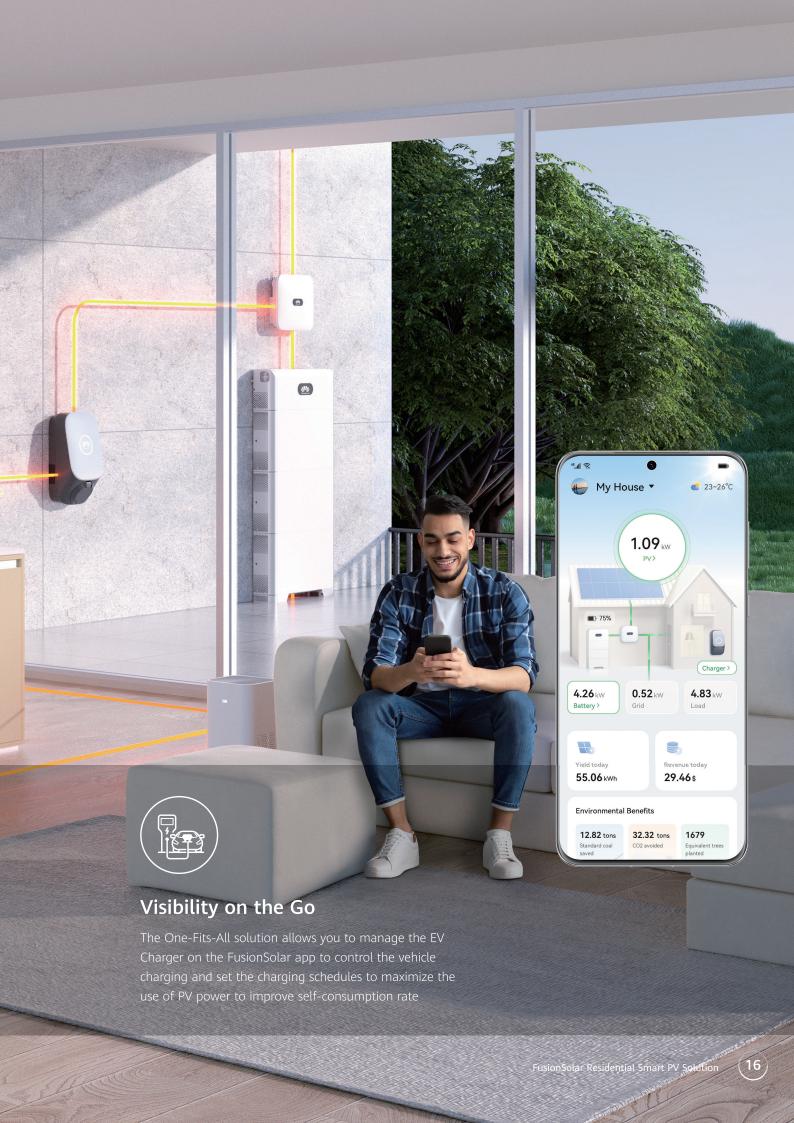
#### **Energy Transparency**

FusionSolar Management System monitors system performance and brings full transparency of the energy consumption and production



#### **Overall Control**

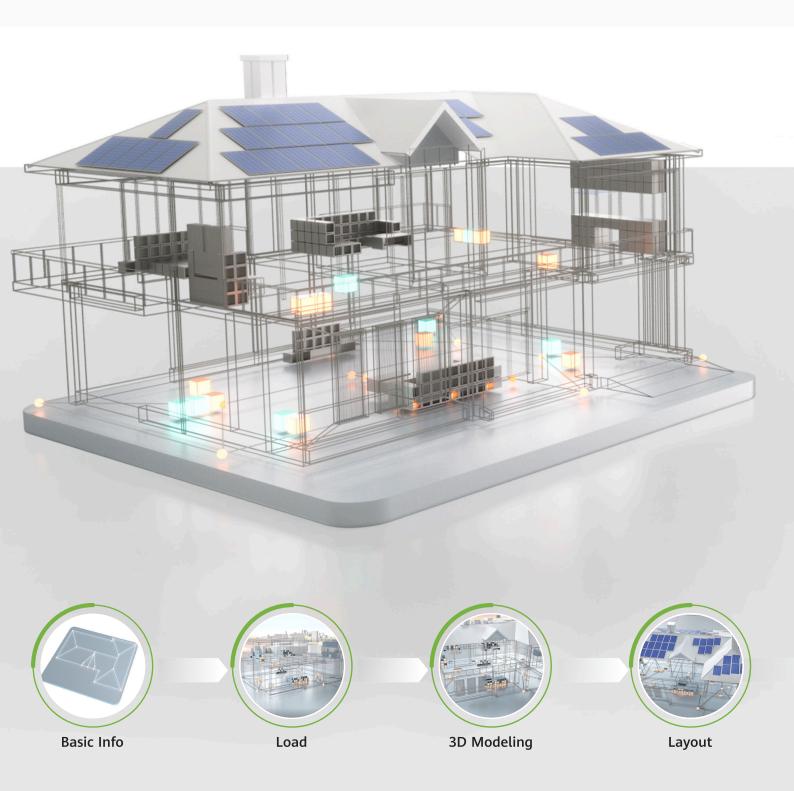
Control all the devices in the system, including the inverter, ESS, modules, EV charger, and monitor the operation state





# EASIER AND MORE PROFESSIONAL DESIGN

Smart Design 2.0, an online tool that allows installers to create a PV system with the 3D modeling function to provide better experience and support business success





Automatic module layout & electrical connection



Multi-scheme comparison to achieve optimal design



Vivid 3D site report for higher satisfaction







Report



# PRODUCT COLLECTION





Active Safety AFCI Active Arcing Protection



**Higher Yields**Up to 30% More Energy with Optimizer

2x **/** 

**2X Power Battery Ready** 5 kW AC Output plus 5 kW Battery Charge

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

	SUN2000	SUN2000	SUN2000	SUN2000	SUN2000	SUN2000	SUN2000		
Technical Specification	-2KTL-L1	-3KTL-L1	-3.68KTL-L1	-4KTL-L1	-4.6KTL-L1	-5KTL-L1	-6KTL-L11		
			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 <sup>1</sup>	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	ln	nut (DC Batton)						
Compatible battery	HIIAWEI Sma	ırt ESS Battery 5	put (DC Battery)						
Operating voltage range	350-560 V D		JKVVII-JUKVVII						
Max. operating current	15 A								
Max. charge power	5,000 W <sup>2</sup>								
Max. discharge power	2,200 W	3,300 W	3,680 W	4,400 W	4.600 W	5,000 W	5,000 W		
3 '	,	1 '	output (On Grid)	1	'	,	,		
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/240 V AC	2						
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 lagging							
Max. total harmonic distortion	≤ 3%	D = 50001)							
Backup power output	Yes (via Back								
Anti-islanding protection	Yes	Pr	otection Feature						
DC reverse polarity protection									
Insulation monitoring	Yes	Yes Vac							
DC surge protection		Yes, compatible with TYPE II protection class according to EN/IEC 61643-11							
AC surge protection		Yes, compatible with TYPE II protection class according to EN/IEC 61643-11  Yes, compatible with TYPE II protection class according to EN/IEC 61643-11							
Residual current monitoring	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								
		Ger	neral Specification						
Operating temperature range	-25°C to +60'	°C (Derating ab	ove 45°C @ Rated o	output power)					
Relative operating humidity	0%-100% RH								
Operating altitude	0-4,000 m (Derating above 2,000 m)								
Cooling	Natural convection								
Display	LED indicators; integrated WLAN + FusionSolar app RS485, WLAN via inverter built-in WLAN module, Ethernet via Smart Dongle-WLAN-FE (Optional); 4G/3G/2G via								
Communication		I via inverter bu e-4G (Optional)	ilt-in WLAN module	e, Ethernet via S	mart Dongle-W	'LAN-FE (Optio	nal); 4G/3G/2G via		
Weight (incl. mounting brackets)	12.0 kg (26.5								
Dimensions (incl. mounting brackets)		5 mm x 156 mr	n (14.4 in. x 14.4 in	. x 6.1 in.)					
IP rating	IP65								
Nighttime power	< 2.5 W	0 11							
DC MINIS			mizer Compatibility						
DC MBUS compatible optimizer		DW-P2, SUN200							
	1		ce (More Available	Upon Request)					
Safety		9-1, EN/IEC 621		05 46 4777	C10/11 ABAIT	LITE CAE ZAO	DD 1000 TOD 5:		
Grid connection standards	G98, G99, EN		u-21, VDE-AR-N-41	U5, AS 4777.2,	C10/11, ABNT,	UTE C15-712,	RD 1699, TOR D4,		
	ILCUT/Z/, IE	202110							

 $<sup>^{*}</sup>$ 1 The inverter max input PV power is 10,000 Wp when long strings are designed and fully connected with optimizers.  $^{*}$ 2 2,500 W @ 5kWh HUAWEI ESS battery





Active Safety AFCI Active Arcing Protection



**Higher Yields**Up to 30% More Energy with Optimizer <sup>1</sup>



**Battery Ready** Plug & Play Battery Interface <sup>2</sup>

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

Technical Specification	SUN2000	SUN2000	SUN2000	SUN2000	SUN2000	SUN2000		
Teenmeat Speemeation	-3KTL-M1	-4KTL-M1	-5KTL-M1	-6KTL-M1	-8KTL-M1	-10KTL-M1		
			ciency			,		
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 <sup>1</sup>	4,500 Wp	6,000 Wp	7,500 Wp	9,000 Wp	12,000 Wp	15,000 Wp		
Max. input voltage <sup>2</sup>	1,100 V	-/	.,	-,	,	,		
Operating voltage range <sup>3</sup>	140-980 V							
Startup voltage	200 V							
Rated input voltage	600 V							
Max. input current per MPPT	13.5 A							
Max. short-circuit current	19.5 A							
Number of MPP trackers	2							
Max. input number per MPP tracker	1							
Max. Input number per wir i tracker	1	Innut (D	C Pattony)					
	LULIANAGELG		C Battery)					
Compatible battery		tring ESS 5kWh-30l	kvvn					
Operating voltage range	600-980 V							
Max. operating current	16.7 A							
Max. charge power	10,000 W	T	T = ===					
Max. discharge power	3,300 W	4,400 W	5,500 W	6,600 W	8,800 W	10,000 W		
		Output	(On Grid)					
Grid connection	Three-phase							
Rated output power	3,000 W	4,000 W	5,000 W	6,000 W	8,000 W	10,000 W		
Max. apparent power	3,300 VA	4,400 VA	5,500 VA	6,600 VA	8,800 VA	11,000 VA <sup>4</sup>		
Rated output voltage	220 V AC/380 V A	C, 230 V AC/400 V	AC, 3W/N+PE					
Rated AC grid frequency	50 Hz/60 Hz							
Max. output current	5.1 A	6.8 A	8.5 A	10.1 A	13.5 A	16.9 A		
Adjustable power factor	0.8 leading 0.8	lagging		<u>'</u>		·		
Max. total harmonic distortion	≤ 3%							
	1	Output	(Off Grid)					
BackupBox	BackupBox-B1		(					
Max. apparent power	3,000 VA	3,300 VA	3,300 VA	3,300 VA	3,300 VA	3,300 VA		
Rated output voltage	220 V/230 V	3,500 VA	3,500 VA	3,300 VA	3,500 VA	3,500 VA		
Max. output current	13.6 A	15 A	15 A	15 A	15 A	15 A		
			137	13 A	13 /	137		
EDWEL BUILD FAILUR								
Power factor range	0.8 leading 0.8		n Feature					
			on Feature					
Input-side disconnection device	Yes		on Feature					
Input-side disconnection device Anti-islanding protection	Yes Yes		on Feature					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection	Yes Yes Yes		on Feature					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring	Yes Yes Yes Yes	Protectio		+o FNUIC C1642 11				
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection	Yes Yes Yes Yes Yes Yes Yes, compatible w	Protection	on class according	to EN/IEC 61643-11				
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection	Yes Yes Yes Yes, compatible w Yes, compatible w	Protection	on class according	to EN/IEC 61643-11 to EN/IEC 61643-11				
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring	Yes Yes Yes Yes, compatible w Yes, compatible w	Protection	on class according					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection	Yes Yes Yes Yes, compatible w Yes, compatible w Yes	Protection	on class according					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes Yes Yes	Protection	on class according					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes Yes Yes Yes Yes Yes	Protection	on class according					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes Yes Yes Yes Yes Yes Yes	Protection	on class according					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes Yes Yes Yes Yes Yes	Protection	on class according					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes Yes Yes Yes Yes Yes Yes	Protection	on class according					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes Yes Yes Yes Yes Yes Yes Yes Yes	Protection	on class according					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery 5	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes	Protection	on class according on class according					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery 5 Battery charging from grid	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes	Protection  with TYPE II protection  with TYPE II protection  General S	on class according					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery 5 Battery charging from grid Operating temperature range	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes	Protection  with TYPE II protection  with TYPE II protection  General S	on class according on class according					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery 5 Battery charging from grid Operating temperature range Relative operating humidity	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes	Protection  with TYPE II protection  with TYPE II protection  General S  13°F to +140°F)	on class according on class according pecification					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Arc fault protection Bipple receiver control Integrated PID recovery 5 Battery charging from grid Operating temperature range Relative operating humidity Max. operating altitude	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes	Protection  with TYPE II protection  with TYPE II protection  General S  13°F to +140°F)  ft.) (Derating above	on class according on class according pecification					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery 5 Battery charging from grid  Operating temperature range Relative operating humidity Max. operating altitude Cooling	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes	Protection  with TYPE II protection  ith TYPE II protection  General S  13°F to +140°F)  ft.) (Derating above  on	on class according on class according pecification					
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery 5 Battery charging from grid  Operating temperature range Relative operating humidity Max. operating altitude Cooling Display	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes, compatible w Yes Yes Yes Yes Yes Yes Yes Yes Yes And The Market of the	Protection  with TYPE II protection  General S  13°F to +140°F)  ft.) (Derating above in tegrated WLAN + F	pecification  2 2000 m)	to EN/IEC 61643-11				
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery 5 Battery charging from grid Operating temperature range Relative operating humidity Max. operating altitude Cooling Display Communication	Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes, compatible w Yes Yes Yes Yes Yes Yes Yes Yes Yes And The Market and T	Protection  with TYPE II protection  General S  13°F to +140°F)  ft.) (Derating above in tegrated WLAN + F	pecification  2 2000 m)	to EN/IEC 61643-11		l)		
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery <sup>5</sup> Battery charging from grid  Operating temperature range Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets)	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes, compatible w Yes Yes Yes Yes Yes Yes Yes Yes Yes And	Protection  with TYPE II protection  General S  13°F to +140°F)  ft.) (Derating above an tegrated WLAN + Filternet via Smart Do	pecification 2 2000 m) iusionSolar app	to EN/IEC 61643-11		1)		
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection AC surge protection AC overcurrent monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Arc fault protection Integrated PID recovery 5 Battery charging from grid Operating temperature range Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets)	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes, compatible w Yes Yes Yes Yes Yes Yes Yes Yes Yes August 123 August 123 August 124 August 124 August 125	Protection  with TYPE II protection  General S  13°F to +140°F)  ft.) (Derating above in tegrated WLAN + F	pecification 2 2000 m) iusionSolar app	to EN/IEC 61643-11		1)		
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery Battery charging from grid Operating temperature range Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) IP rating	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes	Protection  with TYPE II protection  General S  13°F to +140°F)  ft.) (Derating above an tegrated WLAN + Filternet via Smart Do	pecification 2 2000 m) iusionSolar app	to EN/IEC 61643-11		l)		
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection AC surge protection AC overcurrent monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Arc fault protection Integrated PID recovery 5 Battery charging from grid Operating temperature range Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) Dimensions (incl. mounting brackets)	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes, compatible w Yes Yes Yes Yes Yes Yes Yes Yes Yes August 123 August 123 August 124 August 124 August 125	General S  —13°F to +140°F)  ft.) (Derating above on tegrated WLAN + Filternet via Smart Doom x 146.5 mm (20.	pecification  2000 m)  SusionSolar app  Single-WLAN-FE; 4G	to EN/IEC 61643-11		1)		
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery Battery charging from grid Operating temperature range Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) IP rating	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes	Protection  with TYPE II protection  General S  13°F to +140°F)  ft.) (Derating above in tegrated WLAN + Former via Smart Down X 146.5 mm (20.)	pecification  2 2000 m)  Single-WLAN-FE; 40  7 in. x 18.5 in. x 5.8	to EN/IEC 61643-11		1)		
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery Battery charging from grid Operating temperature range Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) IP rating	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes	General S  —13°F to +140°F)  ft.) (Derating above on tegrated WLAN + Filternet via Smart Doom x 146.5 mm (20.	pecification  2 2000 m)  Single-WLAN-FE; 40  7 in. x 18.5 in. x 5.8	to EN/IEC 61643-11		1)		
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery Battery charging from grid Operating temperature range Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) IP rating Nighttime power	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes	Protection  with TYPE II protection  General S  13°F to +140°F)  ft.) (Derating above in tegrated WLAN + Former via Smart Down X 146.5 mm (20.)	pecification  2 2000 m)  fusionSolar app ingle-WLAN-FE; 40 7 in. x 18.5 in. x 5.8	5/3G/2G via Smart E		l)		
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery Battery charging from grid Operating temperature range Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) IP rating Nighttime power	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes, compatible w Yes	Protection  with TYPE II protection  General S  13°F to +140°F)  ft.) (Derating above on tegrated WLAN + Finemet via Smart Down x 146.5 mm (20.)  Optimizer (P2, SUN2000-600W.)	pecification  2 2000 m)  SusionSolar app  In in. x 18.5 in. x 5.8  Compatibility  Pere Available Upon	5/3G/2G via Smart E		1)		
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC overvoltage protection Arc fault protection Ripple receiver control Integrated PID recovery 5 Battery charging from grid Operating temperature range Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) IP rating Nighttime power  DC MBUS compatible optimizer Safety	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes, compatible w Yes	General S  -13°F to +140°F)  ft.) (Derating above in tegrated WLAN + Fibernet via Smart Down X 146.5 mm (20.  Optimizer 0  P2, SUN2000-600W  rds Compliance (Me EN/IEC 62109-2, IEC	pecification  2 2000 m)  SusionSolar appongle-WLAN-FE; 40  7 in. x 18.5 in. x 5.8  Compatibility  1-P  1-P  1-P  1-P  1-P  1-P  1-P  1-	to EN/IEC 61643-11  5/3G/2G via Smart E  B in.)  Request)	Dongle-4G (Optiona	l) 1699, TOR D4, NRS		
Input-side disconnection device Anti-islanding protection DC reverse polarity protection Insulation monitoring DC surge protection AC surge protection Residual current monitoring AC overcurrent protection AC short-circuit protection AC short-circuit protection Arc fault protection Ripple receiver control Integrated PID recovery Battery charging from grid  Operating temperature range Relative operating humidity Max. operating altitude Cooling Display Communication Weight (incl. mounting brackets) IP rating Nighttime power  DC MBUS compatible optimizer	Yes Yes Yes Yes Yes Yes, compatible w Yes, compatible w Yes, compatible w Yes	General S  -13°F to +140°F)  ft.) (Derating above in tegrated WLAN + Fibernet via Smart Down X 146.5 mm (20.  Optimizer 0  P2, SUN2000-600W  rds Compliance (Me EN/IEC 62109-2, IEC	pecification  2 2000 m)  SusionSolar app  Include the susy of the	to EN/IEC 61643-11  5/3G/2G via Smart E  B in.)  Request)	Dongle-4G (Optiona			

<sup>\*1</sup> The inverter max input PV power is 20,000 Wp when long strings are designed and fully connected with SUN2000-450W-P2, SUN2000-600W-P power optimizers.

\*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 VA

<sup>\*5</sup> SUN2000-3~10KTL-M1 raises the potential between PV- and ground to above zero through integrated PID recovery function to recover from PID-caused module degradation module types: P-type (mono, poly).

<sup>\*6</sup> < 10 W when PID recovery function is activated.





Active Safety AFCI Active Arcing Protection



**Higher Yields**Up to 30% More Energy
with Optimizer



**Flexible Communication**WLAN, Fast Ethernet, and 4G
Communication Supported

### SUN2000-12/15/17/20/25KTL-M5 Technical Specification

Max. efficiency European weighted efficiency  Recommended max. PV power <sup>1</sup> Max. input voltage <sup>2</sup> Full-load MPDT voltage range	98.4% 97.9%	98.4%	98.4%	98.4%					
European weighted efficiency  Recommended max. PV power <sup>1</sup> Max. input voltage <sup>2</sup> Full-load MPPT voltage range			98.4%	98.4%					
Recommended max. PV power <sup>1</sup> Max. input voltage <sup>2</sup> Full-load MPPT voltage range	97.9%	00.001		30.470	98.4%				
Max. input voltage <sup>2</sup> Full-load MPPT voltage range		98.0% Input	98.1%	98.1%	98.2%				
Full-load MPPT voltage range	18,000 Wp	22,500 Wp	25,500 Wp	30,000 Wp	37,500 Wp				
	1100 V								
MDDT	370-800 V	410-800 V	440-800 V	480-800 V	530-800 V				
MPPT operating voltage range <sup>3</sup>	200-1000 V	200-1000 V							
Start-up voltage	200 V								
Rated input voltage	600 V	600 V							
Max. input current per MPPT	30 A (two-string)/2	30 A (two-string)/20 A (single string)							
Max. short-circuit current	40 A	40 A							
Number of MPP trackers	2	2							
Max. number of inputs	4								
	,	Output							
Grid connection	Three-phase								
Rated output power	12,000 W	15,000 W	17,000 W	20,000 W	25,000 W				
Max. apparent power	13,200 W	16,500 VA	18,700 VA	22,000 VA	27,500 VA				
Rated output voltage	220 V AC/380 V AC	220 V AC/380 V AC, 230 V AC/400 V AC, 239.6 V AC/415V AC, 3W + N + PE							
Rated AC grid frequency	50 Hz/60 Hz								
	18.2 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 A				
Max. output current	17.3 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 A				
	16.7 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 A				
Adjustable power factor	0.8 leading 0.8 la	agging							
Max. total harmonic distortion	≤ 3%								
	Prote	ection Feature							
Overvoltage category	PV II /AC III								
Input-side disconnection device	Yes	Yes							
Anti-islanding protection	Yes								
AC over-current protection	Yes								
DC reverse polarity protection	Yes								
String fault detection	Yes								
DC surge protection	TYPE II								
AC surge protection	CLASS II								
Residual current monitoring unit	Yes								
Arc fault protection	Yes			<u> </u>					
Ripple receiver control	Yes								
Integrated PID recovery <sup>4</sup>	Yes	al Specification							
Operating temperature range	-25°C to +60°C (-1								
Relative humidity	0%-100% RH	,							
Max. operating altitude		4,000 m (13,123 ft.) (Derating above 2000 m)							
Cooling	, , ,	Smart air cooling							
Display		LED Indicators; Integrated WLAN + FusionSolar App							
Communication	RS485; WLAN/Ethe	RS485; WLAN/Ethernet via Smart Dongle-WLAN-FE (Optional)							
		4G/3G/2G via Smart Dongle-4G (Optional)							
Weight (with mounting plate)	21 kg (46.4 lb)	21 kg (46.4 lb)							
Dimensions (W x H x D)	5/6 mm v /60 mm	n x 228 mm (21.5 in.	v 18 1 in v 0.0 in \						
(incl. mounting plate)	340 HIII X 400 HIII	1 A ZZO HIIII (Z I . 3 II).	A 10.1 III. X 9.0 III.)						
IP rating	IP66								
	Optimiz	er Compatibility							
DC MBUS compatible optimizer	SUN2000-450W-P	2, SUN2000-600W-	P, MERC-1100W-P, N	ИERC-1300W-Р					
	Standards Compliance	(More Available Upo	n Request)						
	EN/IEC 62109-1, EI	N/IEC 62109-2							
Safety	,								

<sup>\*1</sup> The inverter max. input PV power is 40,000 Wp when long strings are designed and fully connected with SUN2000-450W-P power optimizers.
\*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 input DC voltage beyond the operating voltage range may result in inverter malfunction.
\*4 SUN2000-12-20KTL-M2 raises the potential between PV- and ground to above zero through integrated PID recovery function to recover from PID-caused module degradation. Supported module types: P-type (mono, poly)





#### 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

4-layer Safety Protection



#### **More Options**

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-S0Technical Specification

	LUNA2000-5-S0	LUNA2000-10-S0	LUNA2000-15-50
Technical Specification			

	Performance			
Power module	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 <sup>1</sup>	5 kWh	10 kWh	15 kWh	
Max. output power	2.5 kW	5 kW	5 kW	
Peak output power	3.5 kW, 10s	7 kW, 10s	7 kW, 10s	
Nominal voltage (single-phase system)	450 V			
Operating voltage range (single-phase system)	350-560 V			
Nominal voltage (three-phase system)	600 V			
Operating voltage range (three phase system)	600-980 V			
	Communication			
Display	SOC status indicator, LED indicator			
Communication	RS485/CAN (only for parallel operation)			
	General Specification	on		
Dimensions (W x D x H)	670 mm x 150 mm x 600 mm	670 mm x 150 mm x 960 mm	670 mm x 150 mm x 1320 mm	
	(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)	670 mm x 150 mm x 240 mm (20	5.4 in. x 5.9 in. x 9.4 in.)	-	
Power module weight	12 kg (26.5 lb)			
Battery module dimensions (W x D x H)	670 mm x 150 mm x 360 mm (26.4 in. x 5.9 in. x 14.0 in.)			
Battery module weight	50 kg (110.2 lb) <sup>2</sup>			
Installation	Floor stand (standard), Wall mou	nt (optional)		
Operating temperature	-20°C to +55°C (-4°F to +131°F)	3		
Max. operating altitude	4,000 m (13,123 ft.) (Derating ab	ove 2,000 m)		
Environment	Outdoor 4 (*Please refer to the us	er manual for installation conditi	on)	
Relative humidity	5%-95% RH			
Cooling	Natural convection			
IP rating	IP 66			
Noise emission <sup>5</sup>	< 29 dB			
Cell technology	Lithium-iron phosphate (LiFePO4	)		
Scalability	Max. 2 systems in parallel operati	on		
	SUN2000-2/3/3.68/4/4.6/5/6KTL-	L1,		
Compatible inverters	SUN2000-3/4/5/6/8/10KTL-M0 <sup>6</sup> ,	SUN2000-3/4/5/6/8/10KTL-M1		
	Standards Compliance (More Availa			
Certificates	CE, RCM, CEC, VDE2510-50, IEC6:			
	Ordering			
Available for ordering <sup>7</sup>	LUNA2000-5KW-C0, LUNA2000-5	5-E0, LUNA2000 Wall Mounting (	Bracket	
	,	,		

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

<sup>\*2</sup> The weight of the battery module may vary with products, with a tolerance of  $\pm 3\%$ .

 $<sup>^{*}</sup>$ 3 Refer to battery warranty letter for conditional application.

<sup>\*4</sup> Improper storage system installation may compromise product warranty and operation safety. Please follow the user manual during the installation, use, and maintenance of the storage system.

<sup>\*5</sup> Noise level (typical): < 29 dB(A) @1 m, 30°C, power on and run stably for 2 hours

<sup>\*6</sup> Please contact local engineers for the compatibility between the SUN2000-3/4/5/6/8/10KTL-M0 and the LUNA2000.

 $<sup>^{\</sup>star}7$  Power modules and battery modules of ESS products are ordered and shipped separately in the requester quantity.



\*Available in specific regions only



24 Hours Power Supply 100% Depth of Discharge Pack Level Energy Optimization



Safe & Reliable thium Iron Phosphate (I

Lithium Iron Phosphate (LFP) Cell
Cell Level Monitoring
0 V on Port
Built-in Fire Suppression Kit



**High Quality Experience** 

Sleep-level Noise One App for All Control

## Power-M-5/10/15/20/25/30 Technical Specification

Power module	iSitaDowar MA M	System Specifications iSitePower-M-MAP05A1				
Output/Input power per module	2.5 kW	AIV (I OOW I				
Battery module		4A D O E D 1				
Battery module capacity	5 kWh	iSitePower-M-MAB05B1				
Number of power modules	1 5 KVVII					
	1	2	3	4	5	6
Number of battery modules		2				
Battery usable capacity <sup>1</sup>	5 kWh	10 kWh	15 kWh	20 kWh	25 kWh	30 kWh
Max. output power	2.5kW	5 kW Communication	5 kW	5 kW	5 kW	5 kW
Display	SOC status ind					
		CAN (for parallel communications between power modules, between battery modules and power modules, and				
Communication		y modules); WLAN/FE/				vver modutes, and
		General Specification	n			
Power module dimension (W x H x D)	700 mm x 246	mm x 152 mm				
Power module weight	17 kg					
Battery module dimension (W x H x D)		700 mm x 390 mm x 158 mm				
Battery module weight	50 kg	3				
Base dimension (W x H x D)		nm x 147 mm (floor in		.n)		
		mm x 176 mm (wall-n	iounted installatio	111)		
Base weight	1.5 kg (floor in 5.5 kg (wall-m	stallation) ounted installation)				
Installation mode		/Floor-mounted				
IP rating	IP 66					
Cell technology	Lithium-iron pl	nosphate (LiFePO4)				
		AC input				
Input voltage	200/208/220/2					
Input current	Max. 30 A					
Frequency	50/60 Hz					
Maximum bypass input power	6 kW					
Lightning protection		Differential mode (between live and neutral): 3 kA; 8/20 µs				
Lightning protection	Common mode (between live or neutral and PE, between live/neutral pair and PE): 5 KA; 8/20 μs				μs	
		PV input				
MPPT voltage range	90-420 V DC					
Maximum input capacity of the MPPT	5.5 kWp					
PV string quantity	2 strings					
Number of MPPT channels	1 channel					
Maximum input current for one string	12.5 A					
Maximum short circuit current per string	18 A	o (hotugon DV) /DV/ no	is and DEV 10 KA	. 0/20		
Lightning protection	Common mod	e (between PV+/PV- pa AC output	II and PE). ±10 KA	., ο/20 μs		
Output	Single-phase 2	00/208/220/230/240 V	AC The default va	is 220 V AC		
Output frequency		default value is 50 Hz.	Ac. The deladit ve	ituc 13 220 V AC		
Maximum output current	30 A	actable value is 50 FIZ.				
Output power	6 kVA/5 kW					
Power factor	0.8					
		Overload capacity				
102% ≤ Load ≤ 125%	30s					
125% < Load ≤ 150%	10s					
>150%/short circuit	0.3s					
		AC Parallel Box				
Dimensions (W * H * D)		mm x 150 mm				
Weight	Approx. 12 kg					
Input voltage		30/240 V AC. The defa	ult value is 220 V A	AC.		
Input current	Max. 90 A					
	200/208/220/230/240 V AC. The default value is 220 V AC.			AC.		
Output current	Max. 90 A	I as a				
Output current Cable outlet mode	Max. 90 A Bottom in and		lation			
Output current Cable outlet mode Installation mode	Max. 90 A Bottom in and Wall-mounted	bottom out or pole-mounted insta	lation			
Output current Cable outlet mode Installation mode	Max. 90 A Bottom in and	or pole-mounted insta				
IP rating	Max. 90 A Bottom in and Wall-mounted IP55					
Output current Cable outlet mode Installation mode IP rating Operating temperature	Max. 90 A Bottom in and Wall-mounted IP55  0°C to 45°C	or pole-mounted insta				
Output current Cable outlet mode Installation mode IP rating Operating temperature Relative humidity	Max. 90 A Bottom in and Wall-mounted IP55  0°C to 45°C 5%-95% (RH)	or pole-mounted insta Environmental parame	eters	per 200 m		
Output current Cable outlet mode Installation mode IP rating Operating temperature Relative humidity	Max. 90 A  Bottom in and  Wall-mounted  IP55  0°C to 45°C  5%-95% (RH)  0-4000 m (The	or pole-mounted insta	eters e decreases by 1°C	per 200 m		
Output current Cable outlet mode Installation mode IP rating Operating temperature Relative humidity	Max. 90 A  Bottom in and  Wall-mounted  IP55  0°C to 45°C  5%-95% (RH)  0-4000 m (The	or pole-mounted insta  Environmental parame operating temperature	eters e decreases by 1°C n)	per 200 m		
Output current Cable outlet mode Installation mode IP rating	Max. 90 A Bottom in and Wall-mounted IP55  0°C to 45°C 5%-95% (RH) 0-4000 m (The when the altitu	or pole-mounted insta  Environmental parame coperating temperature de is 2000 m to 4000 i	eters e decreases by 1°C n) ce 016/EN55011: 201	6+A1: 2017, EN620		

<sup>\*1</sup> 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%.

 $<sup>^{\</sup>star}2$ . The weight of the battery module is subject to the actual product, with a tolerance of  $\pm 3\%$ .

<sup>\*3.</sup> Refer to battery warranty letter for conditional application.

<sup>\*4.</sup> Improper storage system installation may compromise product warranty and operation safety. Please follow the user manual during the installation, use, and maintenance of the storage system.





## Higher Yields

Module-level Optimization Increase System Energy Yield by 5% to 30%



## Active Safety

Firefighting and O&M Safety with Module-level Rapid Shutdown



#### Flexible Design

Easer Module Layout and 30% Higher Installed Capacity on Average



#### **Smart O&M**

Module-level Visibility and Refined Management

## SUN2000-450W-P2/SUN2000-600W-P Technical Specification

Technical Specification	SUN2000-450W-P2	SUN2000-600W-P
	Input	
Rated input DC power <sup>1</sup>	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	П	
	Output	
Max. output voltage	80 V	
Max. output current	15 A	
Output bypass <sup>2</sup>	Yes	
Output voltage during standby <sup>3</sup>	0 V	
Output impedance during standby	1 kΩ ± 10%	
	Communication	
Communication protocol	MBUS	
	Standards Compliance	
Safety	IEC62109-1 (class II safety)	
RoHS	Yes	
Fire Safety	VDE-AR-E 2100-712:2018-12	
	General Specifications	
Dimensions (W x H x D)	75 mm x 140 mm x 28 mm (3.0 in. x 5.5 i	in. x 1.1 in.)
Weight (including cables)	0.6 kg (1.3 lb.)	
Installation part (optional)	Frame mounting bracket/T-shaped bolt <sup>4</sup>	
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	-40°C to +85°C <sup>5</sup> /0%-100%	
IP rating	IP68	
Compatible inverters	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2 SUN2000-8/10/12/15/17/20KTL-M2, SUN:	2000-3/4/5/6/8/10KTL-M1, 2000-12/15/17/20/25KTL-M5, SUN2000-30/36/40KTL-M3

PV System Design <sup>6</sup>	SUN2000-2~6KTL-L1	SUN2000-3~10KTL-M1	SUN2000-8~20KTL-M2 SUN2000-12~25KTL-M5	SUN2000- 30~40KTL-M3
Min. string length (power optimizers)	4	6	6	6
Max. string length (power optimizers)	25	35	35	25
Max. DC power per string	6,000 W	10,000 W	12,000 W	12,000 W

<sup>\*1</sup> 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.

<sup>\*2</sup> Any power optimizer, which is connected to an operating inverter in a PV string, will be bypassed when it fails.

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

<sup>\*4</sup> It is for PV module frame/extruded aluminum profile racking system installation.

<sup>\*5</sup> 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.

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





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



#### Flexible Design Long String Design to Reduce Bos



Active Safety
Safe Voltage Shutdown
Ensure Firefighting and
Maintenance Safety



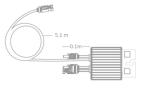
Smart O&M
Pinpointing OpenCircuit Fault for Quick
Troubleshooting

## MERC-1100/1300W-P Technical Specification

Technical Specification	MERC-1100W-P	MERC-1300W-P			
	Input				
Rated input DC power <sup>1</sup>	1100 W	1300 W			
Absolute max. input voltage	125 V				
MPPT operating voltage range	12.5-105 V				
Max. short-circuit current (Isc)	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 <sup>2</sup>	Yes	1			
Safety output voltage <sup>3</sup>	1 V				
	Standards Compliance				
Safety	IEC62109-1 (class II safety)	IEC62109-1 (class II safety)			
RoHS	Yes				
	General Specification				
Dimension (W X H X D)	· · · · · · · · · · · · · · · · · · ·	149 mm x 104 mm 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 part (optional)	PV Module Frame Plate/T-shaped B	olt <sup>4</sup>			
Input connector	Staubli MC4				
Input wire length	0.1 m (+/-) (short-input-cable version	on) <sup>5</sup>			
Output connector	Staubli MC4				
Output wire length	0.1 m (+), 5.1 m (-) (short-input-cal	ole version) <sup>5</sup>			
Operating temperature	-40°C to +85°C <sup>6</sup>				
Relative humidity	0%-100%				
IP rating	IP68				
Compatible inverters	SUN2000-8/10/12/15/17/20KTL-M2 SUN2000-50KTL-M3	, SUN2000-30/36/40KTL-M3, SUN2000-12/15/17/20/25KTL-M5,			

PV System Design <sup>7/8/9</sup>	SUN2000-8~20KTL-M2	SUN2000-12~25KTL-M5	SUN2000-30~40KTL-M3	SUN2000-50KTL-M3
Minimum String Length (Power Optimizers)	8	8	8	8
Maximum String Length (Power Optimizers)	25	25	25	20
Maximum DC Power per String	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 +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.
- $^{\star}3$  When the MERC-1100/1300W-P is disconnected from inverter or when the inverter is off, its output voltage will become 1 V.
- \*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.



\*Available in specific regions only



**PV Power** Power Your Car with Solar Make EV Even Greener



**Dynamic Charging Power** Automatic Detection and Adjustment No Worry about Overload



**3 Ways of Authentication**Authentication Through
Bluetooth, RFID



**3-Step Installation**Fast Installation in 16
Minutes
Wiring-free Maintenance

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

Inputs and Outputs 7.4 kW  1.4 kW¹ to 22 kW  (% (1-phase) 400 V ± 20% (3-phase)  phase) 6-32 A (3-phase or 1-phase)  Hz ± 1 Hz  ket  mm²  TN, TT  er Interface & Communications  CP  ernet  and app 14443-A), app, Bluetooth  arage Charge Preferred Protection  ck via app  mA) + DC 6 mA integrated		
400 V ± 20% (3-phase)  phase) 6-32 A (3-phase or 1-phase)  Hz ± 1 Hz  ket  nm²  TN, TT  er Interface & Communications  CP  ernet  and app  14443-A), app, Bluetooth  large Charge Preferred Protection  ck via app		
phase) 6-32 A (3-phase or 1-phase) Hz ± 1 Hz ket  mm²  TN, TT  er Interface & Communications Ep ernet  and app 14443-A), app, Bluetooth  arge Charge Preferred Protection ck via app		
Hz ± 1 Hz  ket  nm²  TN, TT  er Interface & Communications  CP  ernet  and app  14443-A), app, Bluetooth  large Charge Preferred  Protection  ck via app		
TN, TT  er Interface & Communications  CP  ernet  and app  14443-A), app, Bluetooth  large Charge Preferred Protection  ck via app		
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ck via app		
mA) + DC 6 mA integrated		
Type A (30 mA) + DC 6 mA integrated		
UL94		
IEC 61851-1		
General Specification		
45°C		
40°C @ 32A		
-35°C to +50°C @ 16A  Outdoor/Indoor		
70°C		
H (4)		
(derating between 2000~4000 m)		
180 mm x 145 mm		
3 kg		
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mpliance (More Available Upon Request) 351-1 2019, EN 62311 2008, EN IEC 62311 2020, EN 50665 2017, EN 50364 2018		
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mpliance (More Available Upon Request) 851-1 2019, EN 62311 2008, EN IEC 62311 2020, EN 50665 2017, EN 50364 2018 851-21-2 2021, EN 301 489-1 V2.2.3 2019, EN 301 489-3 V2.1.1 2019, EN 301 489-17		
mpliance (More Available Upon Request) 351-1 2019, EN 62311 2008, EN IEC 62311 2020, EN 50665 2017, EN 50364 2018 351-21-2 2021, EN 301 489-1 V2.2.3 2019, EN 301 489-3 V2.1.1 2019, EN 301 489-17		
mpliance (More Available Upon Request) 851-1 2019, EN 62311 2008, EN IEC 62311 2020, EN 50665 2017, EN 50364 2018 851-21-2 2021, EN 301 489-1 V2.2.3 2019, EN 301 489-3 V2.1.1 2019, EN 301 489-17 0 90 328 V2.2.2, ETSI EN300 330 V2.1.1		
- r		

<sup>\*1 1.4</sup> kW for 1-phase charge and 4. 2 kW for 3-phase charge





**Simplicity**Automatic Detection &
Switchover



**Reliability** Reliable Backup Power



**Black Start**System Restarts After
Battery Shutdown

## BackupBox-B0/B1 Technical Specifications

Technical Specification	BackupBox-B0	BackupBox-B1			
AC Output (On-Grid Mode)					
Grid connection	Single-phase	Three-phase			
Rated voltage	220 V/230 V	380 V/400 V			
AC frequency	50 Hz/60 Hz				
AC output voltage range	198-253 V	342-440 V			
	AC Output (Backup Mode)				
Load connection	Single-Phase	Single-Phase			
Rated voltage	220 V/230 V	220 V/230 V			
AC frequency	50 Hz/60 Hz				
Max. apparent power	5,000 VA	3,300 VA			
Max. output current	22.7 A	15.2 A			
Switchover time < 3s					
AC Input (Inverter Input Port)					
Rated voltage	220 V/230 V	380 V/400 V			
AC frequency	50 Hz/60 Hz				
Compatible inverter	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1	SUN2000-3/4/5/6/8/10KTL-M1			
	General Specification				
Operating temperature range	-20°C to +45°C (-4°F to +113°F)				
Relative humidity range	0%-100% RH				
Dimensions (W x H x D)	400 mm x 350 mm x 130 mm (15.8 in. x 13.8 in.	x 5.1 in.)			
Weight	11 kg				
IP rating	IP65				





### Smart

Wlan & Fast Ethernet (Fe) Communication, Support 3Rd-Party Monitoring System <sup>1</sup>



## Simple

Plug-and-play, with A Maximum of 10 Devices Connected



## Reliable

IP65 Auto Reconnection

## 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			
Inverter model	SUN2000-2/3/3.68/4/4.6/5/6-L1 SUN2000-3/4/5/6/8/10-M1 SUN2000-12/15/17/20KTL-M2 SUN2000-12/15/17/20/25KTL-M5 SUN2000-30/36/40/50KTL-M3 SUN2000-100/115KTL-M2			

<sup>1: 3</sup>rd-party management system shall support the communication protocol used on Huawei Smart Dongle.





### Smart

4G Communication <sup>1</sup> Support for 3Rd-party <sup>2</sup> Monitoring System



## Simple

Plug-and-play Wlan-ap for Local Deployment <sup>3</sup>



## Reliable

IP65 Auto Reconnection

## Smart Dongle-4G Technical Specifications

Tochnical Specification	Spanglap of Ell	SDanglaB 06 ALL	SDanglap 06 NIL		
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 <sup>4</sup>	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/B26 LTE-TDD: B41 WCDMA: B1/B6/B8/B19		
Wi-Fi operation mode	AP		1		
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 (N	More Available Upon Request)			
Certificate	CE	RCM	TELEC		
	Inverter	Compatibility			
Inverter model	SUN600-5/6KTL-L0 SUN2000-2~6KTL-L1 SUN2000-3~10KTL-M1 SUN2000-8~20KTL-M2 SUN2000-12~25KTL-M5 SUN2000-20~50KTL-M3	SUN2000-50/60KTL-M0 SUN2000-50KTL-JPM1 SUN2000-63KTL-JPM0 SUN2000-75KTL-M1 SUN2000-100KTL-M0/M1 SUN2000-100KTL-INM0 SUN2000-100/115KTL-M2			

<sup>1:</sup> 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).

<sup>2: 3</sup>rd-party management system shall support the communication protocol used on Huawei Smart Dongle.

<sup>3:</sup> When all inverters support WLAN hotspot, hotspot of Dongle will be disabled by default.

<sup>4:</sup> For recommended carriers list and details on supported frequencies, please contact local distributors.





Accurate
Class 1 Measurement
Accuracy



Simple & Easy Lcd Display, Easy to Set and Check



Energy Efficient
Overall Power
Consumption ≤ 1.5 W

# Smart Power SensorTechnical Specifications

Technical Specification	SmartPS-100A-S0	SmartPS-80A-T0	DDSU666-H	DTSU666-H	
		General Specification			
Dimensions (H x W x D)	100 mm x 36 mm x 65.5 mm (3.9 in. x 1.4 in. x 2.6 in.)	100 mm x 72 mm x 80 mm (3.9 in. x 2.8 in. x 3.1 in.)	100 mm x 36 mm x 65.5 mm (3.9 in. x 1.4 in. x 2.6 in.)	100 mm x 72 mm x 65.5 mm (3.9 in. x 2.8 in. x 2.6 in.)	
Mounting type	DIN35 Rail	<u> </u>		<u> </u>	
Weight (including cables)	1.2 kg	< 0.5 kg	1.2 kg (2.6 lb)	1.5 kg (3.3 lb)	
		Power Supply			
Power grid type	1P2W	3P3W/3P4W	1P2W	3P3W/3P4W	
Input voltage (phase voltage)	176-288 V AC	90-500 V AC	176 V AC-288 V AC		
Power consumption	≤ 0.8 W	≤ 1.5 W	≤ 0.8 W	≤ 1 W	
		Measurement Range			
Line voltage	/	90-1000 V AC (> 500 with external PT <sup>1</sup> )	/	304 V AC-499 V AC	
Phase voltage	176-288 V AC	52-577 V AC	176 V AC-288 V AC		
Current	0-100 A	0-80 A (>80 with external CT <sup>2</sup> )	0-100 A	0-100 A	
		Measurement Accuracy	'		
Current/Voltage	±0.5%				
Power/Energy	±1%				
Frequency ±0.01 Hz					
Communication					
Interface	RS485				
Baud rate	4800/9600/19200/115200 (9600 bps by default) 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-conder	nsing)			
		Others			
	RS485 Cable (10 m / 33 ft.)		RS485 Cable (10 m / 33 ft.)		
	1 CT 100 A / 40 mA		1 CT 100 A / 40 mA	3 CT 100 A / 40 mA	
Accessories	(5 m / 16.4 ft.)		(5 m / 16.4 ft.)	(5 m / 16.4 ft.)	
Wereszon iez		/		9 88	





#### **Better Experience**

- One app for All Products
- Auto-Discovery of Local Components
- Module 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
- One-click Ticket Dispatching & Site
- Navigation Online Smart I-V Curve Diagnosis in 15 Min. for A 100Mw Plant

## FusionSolar Smart PV Management System

Category	Function	Web	Арр
Homepage	PV Plants List	•	•
	Add Plant	•	•
	Plant Report	•	
Report Management	Inverter Report	•	
	Battery Report	•	
Device Management	Device Details	•	•
	Remote Parameter Setting	•	
	Remote Optimizer Search	•	
	Real-time Status	•	
Intelligent O&M	Alarm Management	•	•
intettigent Oalvi	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	•	•
System Setting	Company Management	•	
Demo	Demo Site	•	•



# SERVICE



## **AFTER-SALES SERVICE SUPPORT**

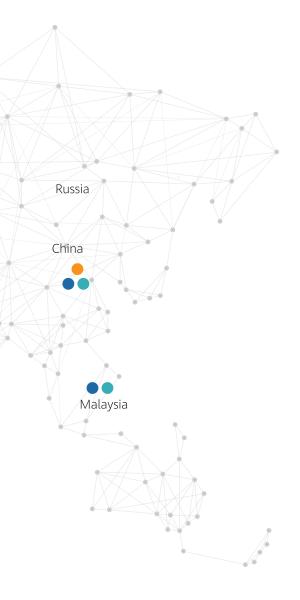
FusionSolar global service centers cover more than 170 countries, supporting 1/3 of the world's population











## **Hotline Service**

Supporting 24/7 hour online services in multiple languages, making holidays worry-free

## **On-site Service**

Remote troubleshooting services are provided online in multiple languages by experienced and dedicated engineers.

## **Spare Parts Service**

Our spare parts service covers the globe and we have localized spare parts warehouses to provide you with timely and accurate spare parts support and services.

## **Training Service**

Technical training on Smart PV solutions and products is available for agents and partners, including hands-on training.

## **Repairing Service**

Various maintenance services are provided. Customers can choose the extended service based on the service period.

## **Warranty Service**

During the warranty period, free remote technical support services and spare parts services



## **SMART PV COMMUNITY**

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



## Plenty training resources

More than 40+ courses and webinars available online, providing the best training you need to start with.







## Become our certificated installer

Once you finish the courses, you can pass the exam and become our certificated installer

Level	Occupation
Primary	Onsite installer
Advanced	Installer CTO, sales



## 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



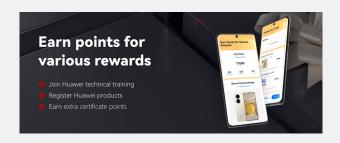


## Earn the point and get reward

After becoming our registered installer, you can earn the points and get rewards from online shopping mall

## How to get points?

- Install inverter, optimizer and energy storage products and connect them to the FusionSolar Management System
- 2. Join online webinars/offline seminars





# Join the installer map

Once becoming our certificated installer and getting enough points, you can sign up on the installer map so that customers can find you online and boost your business



### **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





# CASE STUDIES

## **CASES**

### ◆ PV+ESS Scenario



# Residential PV system in Villa Argentino, Italy

Capacity: 6 kWp

## **System Configuration**

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



Scan the code to learn more

## ◆ PV Only Scenario



# Residential PV system in Silesian Voivodeship, Poland

Capacity: 7.5 kWp

## **System Configuration**

+ SUN2000-6KTL-M1



Scan the code to learn more

## **CASES**

### ◆ PV+ESS Scenario



# Residential PV system in Aquila Game Reserve, South Africa

Capacity: 11 kWp

## **System Configuration**

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



Scan the code 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



Scan the code to learn more



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