



# FusionSolar<sup>®</sup> Residential & Commercial Smart PV Solution

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

 Countries  
**170+**

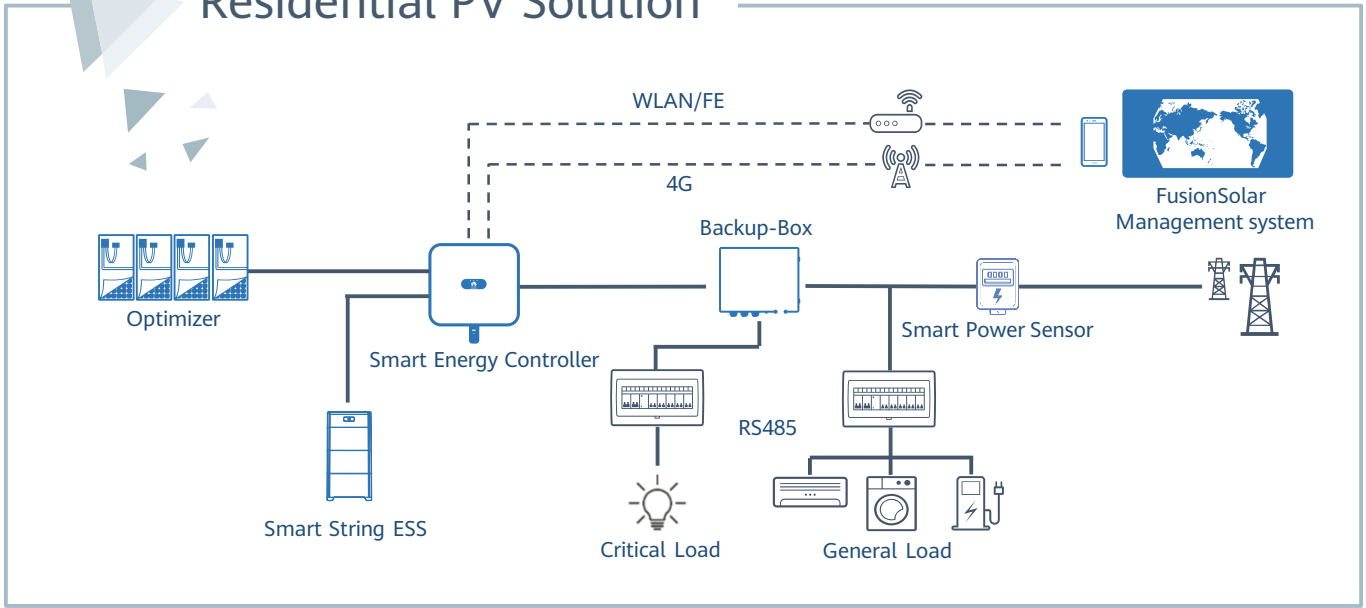
 Brands Finance  
Global 500  
**9**

 Fortune Global 500  
**44**

 R&D Investment  
**2**



# Residential PV Solution



## Active Safety

AI Powered Active Arcing Protection

Pinpoint Arc Fault Positioning

## Higher Yields

Up to 30% More Energy by Optimizers

2x POWER Battery Ready with More Energy

## Better Experience

One-Fits-All Optimizer, Easier Business

Module Auto-Mapping within 5 sec



# Smart Energy Controller



## Active Safety

AI Powered  
Active Arcing Protection



## Higher Yields

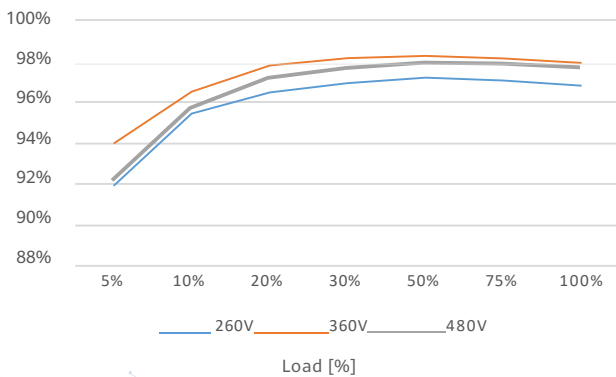
Up to 30% More  
Energy with Optimizer



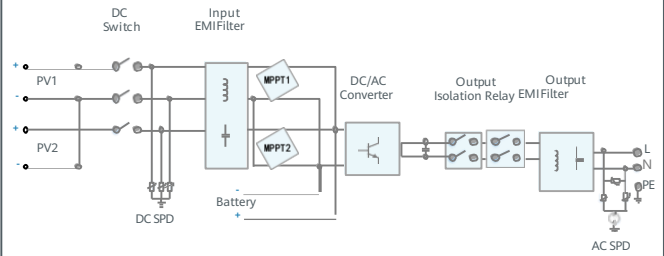
## 2x POWER Battery Ready

5KW AC Output plus  
5KW Battery Charge

### Efficiency Curve



### Circuit Diagram



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

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

Technical Specification	SUN2000 -2KTL-L1	SUN2000 -3KTL-L1	SUN2000 -4KTL-L1	SUN2000 -4.6KTL-L1	SUN2000 -5KTL-L1	SUN2000 -6KTL-L1
<b>Efficiency</b>						
Max. efficiency	98.2%	98.3 %	98.4 %	98.4 %	98.4 %	98.4%
European weighted efficiency	96.7%	97.3 %	97.5 %	97.7 %	97.8 %	97.8%
<b>Input ( PV )</b>						
Recommended max. PV power	3,000 Wp	4,500 Wp	6,000 Wp	6,900 Wp	7,500 Wp	9,000 Wp
Max. input voltage	600 V <sup>1</sup>					
Start-up voltage	100 V					
MPPT operating voltage range	90 V – 560 V <sup>1</sup>					
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. number of inputs	2					
<b>Input ( DC Battery )</b>						
Compatible Battery	HUAWEI Smart ESS Battery 5kWh – 30kWh					
Operating voltage range	350 ~ 560 Vdc					
Max operating current	15 A					
Max charge power	5,000 W <sup>2</sup>					
Max discharge power	2,200 W	3,300 W	4,400 W	4,600 W	5,000 W	5,000 W
<b>Output</b>						
Grid connection	Single phase					
Rated AC Active power	2,000 W	3,000 W	4,000 W	4,600 W	4,991 W <sup>3</sup>	6,000 W
Rated AC Apparent power	2,000 VA	3,000 VA	4,000 VA	4,600 VA	4,991 VA	6,000 VA
Max. apparent power	2,200 VA	3,300 VA	4,400 VA	4,999 VA	4,999 VA <sup>3</sup>	6,000 VA
Rated output voltage	220 Vac / 230 Vac / 240 Vac					
Rated AC grid frequency	50 Hz / 60 Hz					
Max. output current	10 A	15 A	20 A	20.9 A	21.7 A <sup>3</sup>	27.3 A
Adjustable power factor	0.8 leading ... 0.8 lagging					
Max. total harmonic distortion	≤ 3 %					
Backup power output	Yes (via Backup Box-5000)					
<b>Protection &amp; Feature</b>						
Anti-Islanding protection	Yes					
DC reverse polarity protection	Yes					
Insulation monitoring	Yes					
DC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11					
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11					
Residual current monitoring	Yes					
AC overcurrent protection	Yes					
AC short-circuit protection	Yes					
AC overvoltage protection	Yes					
Over-heat protection	Yes					
Arc fault protection	Yes					
Battery reverse charging from grid	Yes					
<b>General Data</b>						
Operating temperature range	-25 ~ +60 °C (Derating above 45°C @ Rated output power)					
Relative operating humidity	0 %RH ~ 100 %RH					
Operating altitude	0 ~ 4,000 m (Derating above 2,000 m)					
Cooling	Natural convection					
Display	LED indicators; integrated WLAN + FusionSolar APP					
Communication	RS485, WLAN via inverter built-in WLAN module Ethernet via Smart Dongle-WLAN-FE (Optional); 4G / 3G / 2G via Smart Dongle-4G (Optional)					
Weight (incl. mounting bracket)	12.0 kg (26.5 lb)					
Dimension (incl. mounting bracket)	365mm * 365mm * 156 mm (14.4 x 14.4 x 6.1 inch)					
Degree of protection	IP65					
Country of Manufacture	China					
<b>Optimizer Compatibility</b>						
DC MBUS compatible optimizer	SUN2000-450W-P, SUN2000-450W-P2, SUN2000-600W-P					
<b>Standard Compliance (more available upon request)</b>						
Safety	EN/IEC 62109-1, EN/IEC 62109-2, IEC 62116					
Grid connection standards	AS/NZS 4777.2 2020					

\*1 The maximum input voltage and operating voltage upper limit will be reduced to 495 V when inverter connects and works with LG battery.

\*2 2,500 W @ 5kWh HUAWEI ESS battery

\*3 According to AS/NZS 4777.2 2020 standard

# Smart Energy Controller



## Higher Yields

Max. Efficiency  
Up to 98.4%



## Better Experience

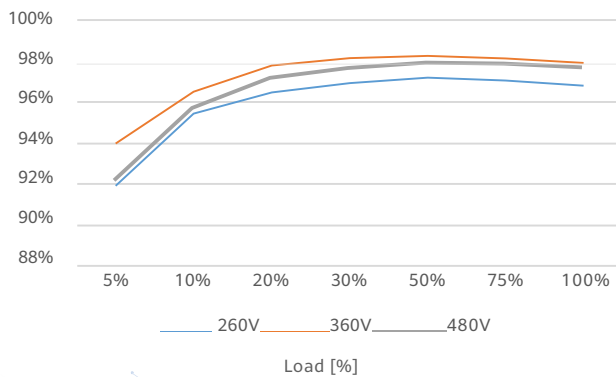
Small & Light  
Only 12kg



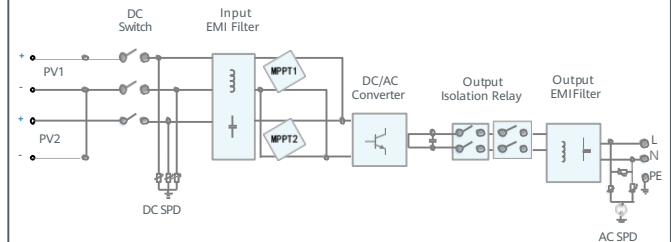
## Safe & Reliable

Fully Sealed design  
With IP65

### Efficiency Curve



### Circuit Diagram



SUN600-5/6KTL-L0

# Technical Specification

Technical Specification	SUN600-5KTL-L0	SUN600-6KTL-L0
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Efficiency		
Max. efficiency	98.4 %	97.8%
European weighted efficiency	97.8 %	97.2%

Input ( PV )		
Recommended max. PV power	7,500 Wp	9,000 Wp
Max. input voltage		600 V
Start-up voltage		100 V
MPPT operating voltage range		90 V – 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. number of inputs		2

Output		
Grid connection		Single phase
Rated output power	5,000 W <sup>1</sup>	6,000 W
Rated apparent output power	5,000 VA <sup>1</sup>	6,000 VA
Max. apparent power	5,000 VA <sup>1</sup>	6,000 VA
Rated output voltage		220 Vac / 230 Vac / 240 Vac
Rated AC grid frequency		50 Hz / 60 Hz
Max. output current	22.7 A <sup>1</sup>	27.3 A
Adjustable power factor		0.8 leading ... 0.8 lagging
Max. total harmonic distortion		≤ 3 %

Protection & Feature		
Anti-Islanding protection		Yes
DC reverse polarity protection		Yes
Insulation monitoring		Yes
DC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11	
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11	
Residual current monitoring		Yes
AC overcurrent protection		Yes
AC short-circuit protection		Yes
AC overvoltage protection		Yes
Over-heat protection		Yes

General Data		
Operating temperature range	-25 ~ +60 °C (Derating above 45°C @ Rated output power)	
Relative operating humidity	0 %RH ~ 100 %RH	
Operating altitude	0 ~ 4,000 m (Derating above 2,000 m)	
Cooling	Natural convection	
Display	LED indicators; integrated WLAN + FusionSolar APP	
Communication	RS485, WLAN via inverter built-in WLAN module Ethernet via Smart Dongle-WLAN-FE (Optional); 4G / 3G / 2G via Smart Dongle-4G (Optional)	
Weight (incl. mounting bracket)	12.0 kg (26.5 lb)	
Dimension (incl. mounting bracket)	365mm * 365mm * 156 mm (14.4 x 14.4 x 6.1 inch)	
Degree of protection	IP65	
Country of Manufacture	China	

## Standard Compliance (more available upon request)

Safety	EN/IEC 62109-1, EN/IEC 62109-2, IEC 62116
Grid connection standards	AS/NZS 4777:2015, AS/NZS 4777:2020 <sup>2</sup>

<sup>1</sup> According to AS/NZS 4777:2020 standard

# Smart Energy Controller



## Active Safety

AI Powered  
Active Arcing Protection



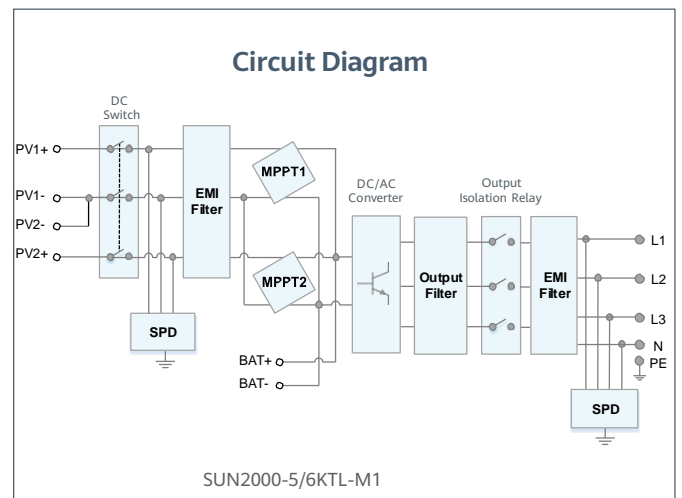
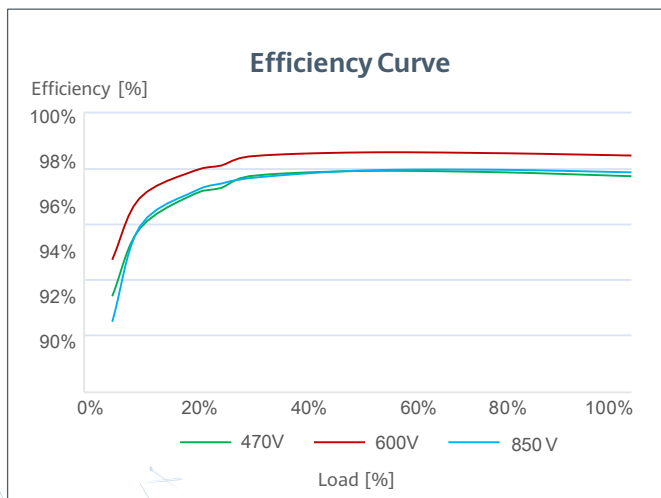
## Higher Yields

Up to 30% More Energy  
with Full Optimizer



## Flexible Communication

WLAN, Fast Ethernet, 4G  
Communication Supported





SUN2000-5/6KTL-M1  
**Technical Specification**

Technical Specification	SUN2000-5KTL-M1	SUN2000-6KTL-M1
<b>Efficiency</b>		
Max. efficiency	98.4%	98.6%
European weighted efficiency	97.5%	97.7%
<b>Input (PV)</b>		
Recommended max. PV power <sup>1</sup>	7,500 Wp	9,000 Wp
Max. input voltage <sup>2</sup>	1,100 V	
Operating voltage range <sup>3</sup>	140 V ~ 980 V	
Start-up voltage	200 V	
Rated input voltage	600 V	
Max. input current per MPPT	11 A	
Max. short-circuit current	15 A	
Number of MPP trackers	2	
Max. number of inputs	2	
<b>Input (DC Battery)</b>		
Compatible Battery	HUAWEI Smart ESS Battery 5kWh – 30kWh	
Max number of connected battery	2	
Voltage range	600 V ~ 980 V	
Max Input current	16.7 A	
Max charge Power	10,000 W	
Max discharge Power	5,000 W	6,000 W
<b>Output</b>		
Grid connection	Three-phase	
Rated output power	5,000 W	6,000 W
Rated AC Apparent power	5,000 VA	6,000 VA
Max. apparent power	5,500 VA	6,600 VA
Rated output voltage	230 Vac / 400 Vac, 3W / N+PE	
Rated AC grid frequency	50 Hz / 60 Hz	
Max. output current	8.5 A	10.1 A
Adjustable powerfactor	0.8 leading ... 0.8lagging	
Max. total harmonic distortion	≤ 3 %	
Backup poweroutput	Yes (via Backup Box-B1)	
<b>Features &amp; Protections</b>		
Input-side disconnection device	Yes	
Anti-Islanding protection	Yes	
DC reverse polarity protection	Yes	
Insulation monitoring	Yes	
DC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11	
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11	
Residual current monitoring	Yes	
AC overcurrent protection	Yes	
AC short-circuit protection	Yes	
AC overvoltage protection	Yes	
Arc fault protection	Yes	
Ripple receiver control	Yes	
Integrated PID recovery <sup>4</sup>	Yes	
Battery reverse charging from grid	Yes	
<b>General Data</b>		
Operating temperature range	-25 ~ + 60 °C (-13 °F ~ 140 °F)	
Relative operating humidity	0 %RH ~ 100 %RH	
Operating altitude	0 ~ 4,000 m (13,123 ft.) (Derating above 2000 m)	
Cooling	Natural convection	
Display	LED Indicators; Integrated WLAN + FusionSolar App	
Communication	RS485; WLAN/Ethernet via Smart Dongle-WLAN-FE; 4G / 3G / 2G via Smart Dongle-4G (Optional)	
Weight (incl. mounting bracket)	17 kg (37.5lb)	
Dimension (incl. mounting bracket)	525 x 470 x 146.5 mm (20.7 x 18.5 x 5.8 inch)	
Degree of protection	IP65	
Country of Manufacture	China	
<b>Optimizer Compatibility</b>		
DC MBUS compatible optimizer	SUN2000-450W-P, SUN2000-450W-P2, SUN2000-600W-P	
<b>Standard Compliance (more available upon request)</b>		
Certificate	EN/IEC 62109-1, EN/IEC 62109-2, IEC 62116	
Grid connection standards	AS/NZS 4777.2 2020	

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

<sup>2</sup> The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter. Please limit input voltage to maximum 600Vdc according to AS/NZS 4777.1:2016

<sup>3</sup> Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

<sup>4</sup> SUN2000-5-6KTL-M1 raises potential between PV- and ground to above zero through integrated PID recovery function to recover module degradation from PID. Supported module types include: P-type (mono, poly)..

# Smart Energy Controller



## Active Safety

AI Powered  
Active Arcing Protection



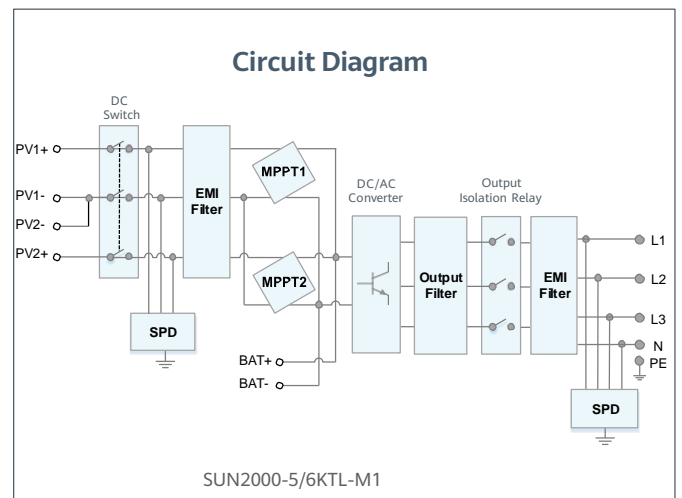
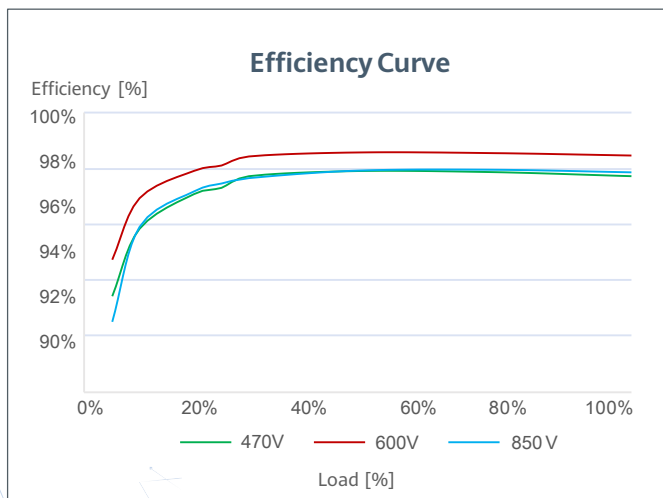
## Higher Yields

Up to 30% More Energy  
with Full Optimizer



## Flexible Communication

WLAN, Fast Ethernet, 4G  
Communication Supported



# SUN2000-5/6/8/10KTL-M1 (High Current Version)

## Technical Specification

Technical Specification	SUN2000-5KTL-M1	SUN2000-6KTL-M1	SUN2000-8KTL-M1	SUN2000-10KTL-M1
<b>Efficiency</b>				
Max. efficiency	98.4%	98.6%	98.6%	98.6%
European weighted efficiency	97.5%	97.7%	98.0%	98.1%
<b>Input (PV)</b>				
Recommended max. PV power <sup>1</sup>	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 V ~ 980V			
Start-up 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. number of inputs	2			
<b>Input (DC Battery)</b>				
Compatible Battery	HUAWEI Smart String ESS 5kWh – 30kWh			
Max number of connected battery	2			
Operating voltage range	600 V ~ 980 V			
Max operating current	16.7 A			
Max charge Power	10,000 W			
Max discharge Power	5,000 W	6,000 W	8,000 W	10,000 W
<b>Output</b>				
Grid connection	Three-phase			
Rated output power	5,000 W	6,000 W	8,000 W	10,000 W
Rated AC apparent power	5,000 VA	6,000 VA	8,000 VA	10,000 VA
Max. apparent power	5,500 VA	6,600 VA	8,800 VA	11,000 VA
Rated output voltage	230 Vac / 400 Vac, 3W / N+PE			
Rated AC grid frequency	50 Hz / 60 Hz			
Max. output current	8.5 A	10.1 A	13.5 A	16.9 A
Adjustable powerfactor	0.8 leading ... 0.8 lagging			
Max. total harmonic distortion	≤ 3 %			
Backup power output	Yes (via Backup Box-B1)			
<b>Features &amp; Protections</b>				
Input-side disconnection device	Yes			
Anti-Islanding protection	Yes			
DC reverse polarity protection	Yes			
Insulation monitoring	Yes			
DC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11			
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11			
Residual current monitoring	Yes			
AC overcurrent protection	Yes			
AC short-circuit protection	Yes			
AC overvoltage protection	Yes			
Arc fault protection	Yes			
Ripple receiver control	Yes			
Integrated PID recovery <sup>4</sup>	Yes			
Battery reverse charging from grid	Yes			
<b>General Data</b>				
Operating temperature range	-25 ~ + 60 °C (-13 °F ~ 140 °F)			
Relative operating humidity	0 %RH ~ 100 %RH			
Operating altitude	0 ~ 4,000 m (13,123 ft.) (Derating above 2000 m)			
Cooling	Natural convection			
Display	LED Indicators; Integrated WLAN + FusionSolar App			
Communication	RS485; WLAN/Ethernet via Smart Dongle-WLAN-FE; 4G / 3G / 2G via Smart Dongle-4G (Optional)			
Weight (incl. mounting bracket)	17 kg (37.5 lb)			
Dimension (incl. mounting bracket)	525 x 470 x 146.5 mm (20.7 x 18.5 x 5.8 inch)			
Degree of protection	IP65			
Country of Manufacture	China			
<b>Optimizer Compatibility</b>				
DC MBUS compatible optimizer	SUN2000-450W-P, SUN2000-450W-P2, SUN2000-600W-P			
<b>Standard Compliance (more available upon request)</b>				
Certificate	EN/IEC 62109-1, EN/IEC 62109-2, IEC 62116			
Grid connection standards	AS/NZS 4777.2 2020			

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

<sup>2</sup> The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter. Please limit input voltage to maximum 600V dc according to AS4777.1 2016

<sup>3</sup> Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

<sup>4</sup> SUN2000-5~10KTL-M1 raises potential between PV- and ground to above zero through integrated PID recovery function to recover module degradation from PID. Supported module types include: P-type (mono, poly).

# Smart String Energy Storage System



## More Usable Energy

100% Depth of Discharge  
Pack Level Energy Optimization



## Flexible Investment

5kWh Modular Design,  
Scalable from 5 to 30 kWh



## Safe & Reliable

Lithium Iron Phosphate (LFP) Cell



## Easy Installation

12 kg Power Module  
50 kg Battery Module



## Quick Commissioning

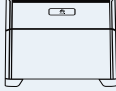


Automatically Detected in App



## Perfect Compatibility

Compatible to Both Residential  
Single & Three Phase Inverter

# LUNA2000-5/10/15-S0 Technical Specification

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

Performance			
Power module	LUNA2000-5KW-C0		
Number of power modules	1		
Battery module	LUNA2000-5-E0		
Battery module energy	5 kWh		
Number of battery Modules	1	2	3
Battery usable energy <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, 10 s	7 kW, 10 s	7 kW, 10 s
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			
Dimension (W*D*H)	670 * 150 * 600 mm (26.4 * 5.9 * 23.6 inch)	670 * 150 * 960 mm (26.4 * 5.9 * 37.8 inch)	670 * 150 * 1320 mm (26.4 * 5.9 * 60.0 inch)
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*D*H)	670 * 150 * 240 mm (26.4 * 5.9 * 9.4 inch)		
Power module weight	12 kg (26.5 lb)		
Battery module dimension (W*D*H)	670 * 150 * 360 mm (26.4 * 5.9 * 14.0 inch)		
Battery module weight	50 kg (110.2 lb) <sup>2</sup>		
Installation	Floor stand (standard), Wall mount (optional)		
Operating temperature	-20°C ~ + 55°C (-4°F ~ 131°F) <sup>3</sup>		
Operating altitude	0 - 4,000 m (13,123 ft.) (Derating above 2,000 m)		
Environment	Indoor / Outdoor		
Relative humidity	5% ~ 95%		
Cooling	Natural convection		
Protection rating	IP 66		
Cell technology	Lithium-iron phosphate (LiFePO4)		
Scalability	Max. 2 systems in parallel operation		
Compatible inverters	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-5/6KTL-M0, SUN2000-5/6KTL-M1		

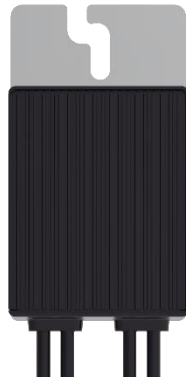
Standard Compliance (more available upon request)	
Certificates	CE, RCM, CEC, VDE2510-50, IEC62619, IEC 60730, UN38.3

Ordering and Deliverable Part	
Product ordering model <sup>4</sup>	LUNA2000-5KW-C0, LUNA2000-5-E0, LUNA2000 Wall Mounting Bracket

1. Test conditions: 100% depth of discharge (DoD), 0.2C rate charge & discharge at 25°C at the beginning of life
2. The weight of the battery module is subject to the actual product, with a tolerance of ±3%
3. Refer to battery warranty letter for conditional application.
4. Storage system is ordered and delivered in the form of power module and battery module separately with corresponding quantity.



# Smart PV Optimizer



One-Fits-All Optimizer  
Easier Business



<5s Module Auto-Mapping



Arc Fault Pinpoint  
Positioning Along PV Cable

Technical Specification	SUN2000-450W-P2	SUN2000-600W-P		
<b>Input</b>				
Rated Input DC Power <sup>1</sup>	450 W			600 W
Absolute maximum input voltage			80 V	
MPPT operating voltage range			10 - 80 V	
Maximum Short Circuit Current (Isc)			14.5 A	
Max. efficiency			99.5 %	
Weighted efficiency			99.0 %	
Overvoltage category			II	
<b>Output</b>				
Max. output voltage			80 V	
Max. output current			15 A	
Output bypass <sup>2</sup>			Yes	
Shutdown output voltage per optimizer <sup>3</sup>			0 V	
Shutdown output impedance per optimizer			1k ohm ± 10 %	
<b>Communication</b>				
Communication Method	MBUS			
<b>Standard Compliance</b>				
Safety	IEC62109-1 (class II safety)			
RoHS	Yes			
<b>General Data</b>				
Dimension (W x H x D)	75 x 140 x 28 mm (3.0 x 5.5 x 1.1 inch)			
Weight (including cables)	0.6 kg (1.3 lb.)			
Installation part (optional)	Frame Mounting Bracket / T-shaped Bolt <sup>4</sup>			
Input connector	MC4			
Input wire length	0.15m			
Output connector	MC4			
Output wire length	1.3 m (4.3 ft.) <sup>5</sup>			
Operating temperature / humidity range	-40 °C ~ 85 °C <sup>5</sup> / 0 %RH ~ 100 %RH			
Degree of protection	IP68			
Compatible product	SUN2000-5/6KTL-L1, SUN2000-5/6/8/10KTL-M1, SUN2000-8/10/12/15/17/20KTL-M2, SUN2000-29.9/36/40KTL-M3			
Long String Design (Full Optimizer)	SUN2000-2-6KTL-L1	SUN2000-3-10KTL-M1	SUN2000-12-20KTL-M2	SUN2000-30-40KTL-M3
Minimum optimizer number per string <sup>6</sup>	4	6	6	6
Maximum optimizer number per string	25	35	35	25
Maximum DC power per string	6,000 W	10,000 W	12,000 W	12,000 W

<sup>\*1</sup> In the STC environment, The rated power of the module shall not exceed 1.05 times of the optimizer rated input power.

<sup>\*2</sup> Power optimizer is bypassed in the string connected to an operating inverter when it fails to work

<sup>\*3</sup> Power optimizer output 0Vdc when disconnecting to the inverter or inverter is shutdown.

<sup>\*4</sup> Allow PV module frame installation / extruded aluminum profile installation

<sup>\*5</sup> Fits PV module in landscape and portrait installation.

<sup>\*6</sup> Require standard 60 cells module to meet the inverter minimum startup voltage

<sup>\*7</sup> Full power capability refers to online smart design tool.

# Backup Box



## Simple

Automatic detection & switchover



## Reliable

Provide reliable backup power

Technical Specification	Backup Box-B0	Backup Box-B1
<b>AC Output (On grid)</b>		
Grid connection	Single Phase	Three Phase
Rated voltage	220 V / 230 V	380 V / 400 V
AC frequency	50Hz / 60Hz	
AC output voltage range	198 V ~ 253 V	342 V ~ 440 V
<b>AC Output (Backup)</b>		
Load connection	Single Phase	Single Phase
Rated voltage	220 V / 230 V	220 V / 230 V
AC frequency	50Hz / 60Hz	
Maximum apparent power	5,000 VA	3,300 VA
Maximum output current	22.7 A	15.2 A
Switchover time	<3 s	
<b>AC Input (Inverter)</b>		
Rated voltage	220 V / 230 V	380 V / 400 V
AC frequency	50Hz / 60Hz	
Compatible inverter	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1	SUN2000-3/4/5/6/8/10KTL-M1
<b>General Specification</b>		
Operating temperature range	-20 °C to +45 °C (-4 °F to 113 °F)	
Relative humidity range	0 %RH~100 %RH	
Dimensions (W * H * D)	400 x 350 x 130 mm (15.8 x 13.8 x 5.1 inch)	
Weight	11 kg	
Degree of protection	IP 65	

# Smart Power Sensor



## Accurate

Class 1 measurement accuracy



## Simple & Easy

LCD display, easy to set and check

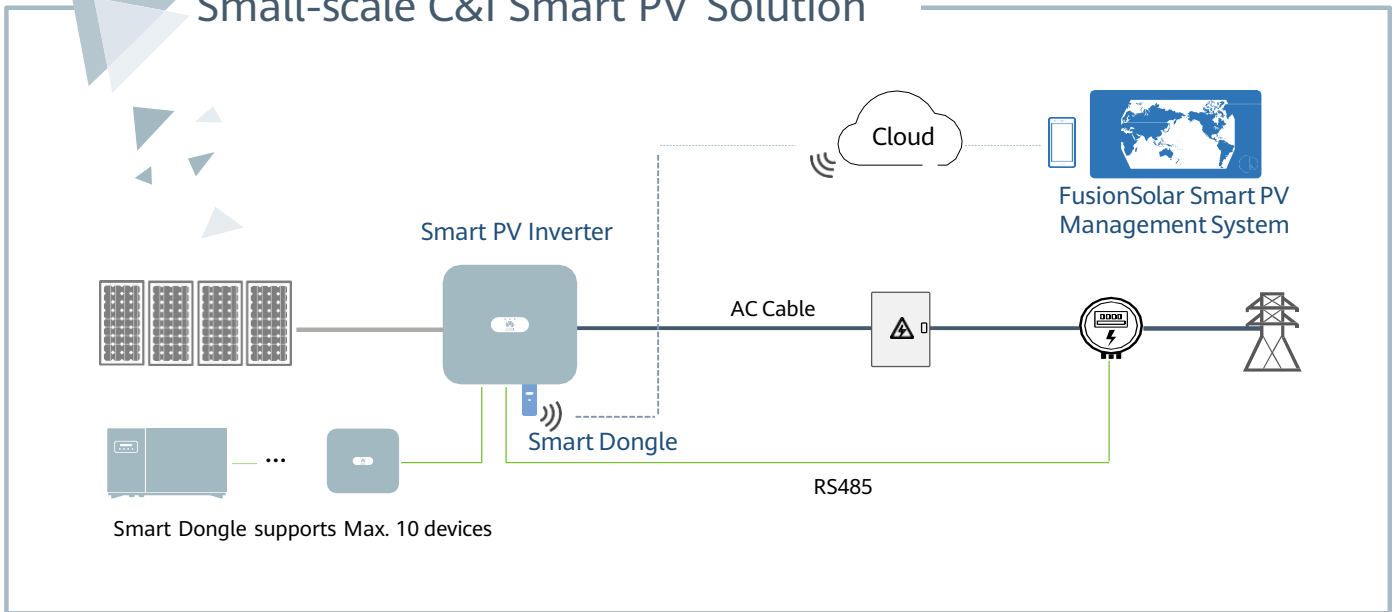


## Energy Efficient

Overall power consumption  $\leq 1$  W

Technical Specification	DDSU666-H	DTSU666-H	DTSU666-H 250A/50mA
<b>General Data</b>			
Dimension (H x W x D)	100 x 36 x 65.5 mm (3.9 x 1.4 x 2.6 inch)	100 x 72 x 65.5 mm (3.9 x 2.8 x 2.6 inch)	100 x 72 x 65.5 mm (3.9 x 2.8 x 2.6 inch)
Mounting type	DIN35 Rail		
Weight (including cables)	1.2 kg (2.6 lb)	1.5 kg (3.3 lb)	1.5 kg (3.3 lb)
<b>Power Supply</b>			
Power grid type	1P2W	3P4W	3P4W/3P3W
Input voltage (phase voltage)	176 Vac ~ 288 Vac		
Power consumption	$\leq 0.8$ W	$\leq 1$ W	$\leq 1$ W
<b>Measurement Range</b>			
Line voltage	/	304 Vac ~ 499 Vac	304 Vac ~ 499 Vac
Phase voltage	176 Vac ~ 288 Vac		
Current	0 ~ 100 A	0 ~ 100 A	0 ~ 250 A
<b>Measurement Accuracy</b>			
Voltage	$\pm 0.5$ %		
Current / Power / Energy	$\pm 1$ %		
Frequency	$\pm 0.01$ Hz		
<b>Communication</b>			
Interface	RS485		
Baud rate	9,600 bps		
Communication protocol	Modbus-RTU		
<b>Environment</b>			
Operating temperature range	-25 °C ~ 60 °C		
Storage temperature range	-40 °C ~ 70 °C		
Operating humidity	5 %RH ~ 95 %RH (non-condensing)		
<b>Others</b>			
Accessories	RS485 Cable (10 m / 33 ft.)		
	1 CT 100A / 40mA (5 m / 16.4 ft.)	3 CT 100A / 40mA (5m / 16.4 ft.)	3 CT 250A / 50mA (5m / 16.4 ft.)

## Small-scale C&I Smart PV Solution



### Active Safety

AI Powered Active Arcing Protection

C&I Tailored Enhanced Arcing Protection

### Higher Yields

2 Strings per MPPT, More Energy Yields

Built-in PID Recovery, Secure Better Module Performance

### Maintenance Free

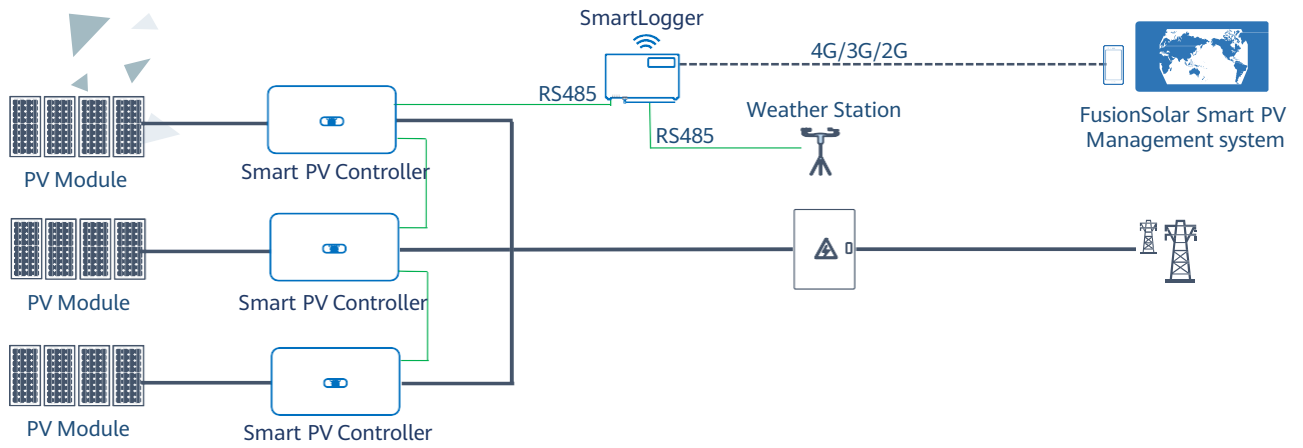
No Fuse & Other Quick-wear Parts, Inverter Touch Free

Online Smart I-V Curve Diagnosis, Module Touch Free





# Large-scale C&I PV Solution



## Active Safety

AI Powered Active Arcing Protection

C&I Tailored Enhanced Arcing Protection

## Higher Yields

2 Strings per MPPT, More Energy Yields

Built-in PID Recovery, Secure Better Module Performance

## Maintenance Free

No Fuse & Other Quick-wear Parts, Inverter Touch Free

Online Smart I-V Curve Diagnosis, Module Touch Free





# Smart PV Controller



## Active Safety

AI Powered Arcing Protection



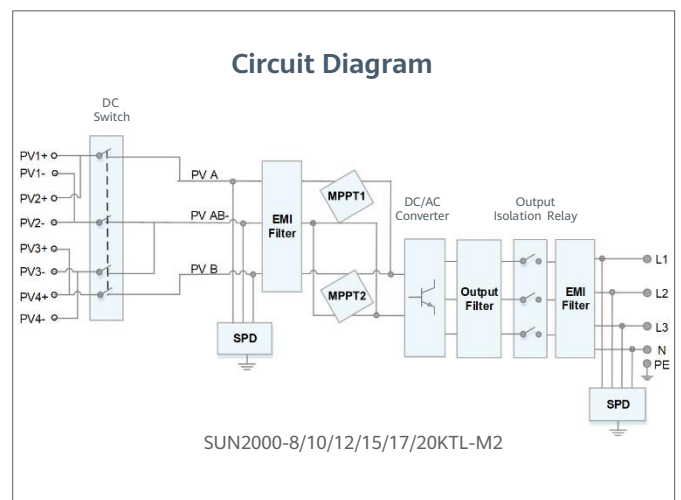
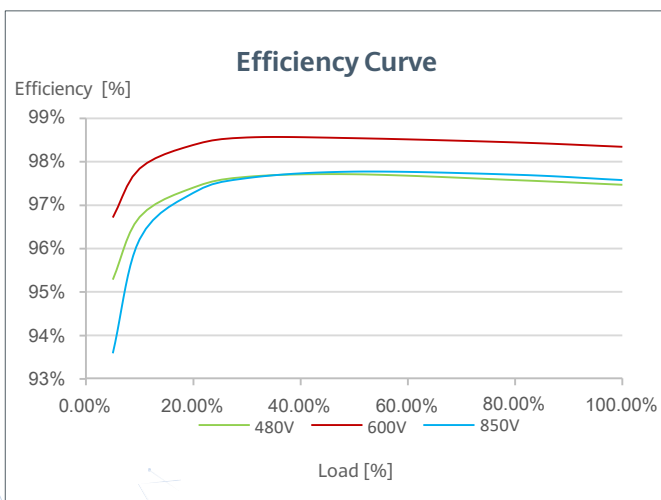
## Higher Yields

Up to 30% More Energy with Optimizer



## Flexible Communication

WLAN, Fast Ethernet, 4G  
Communication Supported



# SUN2000-8/10/12/15/17/20KTL-M2 Technical Specification

Technical Specification	SUN2000-8KTL-M2	SUN2000-10KTL-M2	SUN2000-12KTL-M2	SUN2000-15KTL-M2	SUN2000-17KTL-M2	SUN2000-20KTL-M2
<b>Efficiency</b>						
Max. efficiency	98.50%	98.50%	98.50%	98.65%	98.65%	98.65%
European weighted efficiency	97.80%	98.00%	98.00%	98.30%	98.30%	98.30%
<b>Input</b>						
Recommended max. PV power <sup>1</sup>	12,000 Wp	15,000 Wp	18,000 Wp	22,500 Wp	25,500 Wp	30,000 Wp
Max. input voltage <sup>2</sup>	1,080 V					
Operating voltage range <sup>3</sup>	160 V ~ 950 V					
Start-up voltage	200 V					
Rated input voltage	600 V					
Max. input current per MPPT	22 A (two string)/14.5 A (single string)					
Max. short-circuit current	30 A					
Number of MPP trackers	2					
Max. number of inputs	4					
<b>Output</b>						
Grid connection	Three phase					
Rated output power	8,000 W	10,000 W	12,000 W	15,000 W	17,000 W	20,000 W
Rated AC Apparent power	8,000 VA	10,000 VA	12,000 VA	15,000 VA	17,000 VA	20,000 VA
Max. apparent power	8,800 VA	11,000 VA	13,200 VA	16,500 VA	18,700 VA	22,000 VA
Rated output voltage	230 Vac / 400 Vac, 3W + N + PE					
Rated AC grid frequency	50 Hz / 60 Hz					
Max. output current	13.4 A	17 A	20 A	25.2 A	28.5 A	33.5 A
Adjustable power factor	0.8 leading ... 0.8 lagging					
Max. total harmonic distortion	≤ 3 %					
<b>Features &amp; Protections</b>						
Input-side disconnection device	Yes					
Anti-islanding protection	Yes					
AC over-current protection	Yes					
AC short-circuit protection	Yes					
AC over-voltage protection	Yes					
DC reverse-polarity protection	Yes					
DC surge protection	TYPE II					
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11					
Residual current monitoring unit	Yes					
Arc fault protection	Yes					
Ripple receiver control	Yes					
Integrated PID recovery <sup>4</sup>	Yes					
<b>General Data</b>						
Operation temperature range	-25 ~ + 60 °C (-13 °F ~ 140 °F)					
Relative humidity	0 % RH ~ 100% RH					
Max. operating altitude	0 ~ 4,000 m (13,123 ft.) (Derating above 2000 m)					
Cooling	Natural Convection					
Display	LED Indicators; Integrated WLAN + FusionSolar App					
Communication	RS485; WLAN/Ethernet via Smart Dongle-WLAN-FE (Optional) 4G / 3G / 2G via Smart Dongle-4G (Optional)					
Weight (with mounting plate)	25 kg					
Dimensions (W x H x D) (incl. mounting plate)	525 x 470 x 262 mm (20.7 x 18.5 x 10.3 inch)					
Degree of protection	IP65					
Country of Manufacture	China					
<b>Optimizer Compatibility</b>						
DC MBUS compatible optimizer	SUN2000-450W-P, SUN2000-450W-P2, SUN2000-600W-P					
<b>Standard Compliance (more available upon request)</b>						
Safety	EN/IEC 62109-1, EN/IEC 62109-2					
Grid connection standards	G98, G99, EN 50549, CEI 0-21, CEI 0-16, VDE-AR-N-4105, VDE-AR-N-4110, AS/NZS 4777.2 2020, C10/11, ABNT, VFR 2019, RD 1699, RD 661, PO 12.3, TOR D4, IEC61727, IEC62116, DEWA					

<sup>1</sup> Inverter max input PV power is 40,000 Wp when long strings are designed and fully connected with SUN2000-450W-P power optimizers.

<sup>2</sup> The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.

<sup>3</sup> Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

<sup>4</sup> SUN2000-8-20KTL-M2 raises potential between PV- and ground to above zero through integrated PID recovery function to recover module degradation from PID. Supported module types include: P-type (mono, poly)

# Smart PV Controller



## Active Safety

AI Powered Arcing Protection



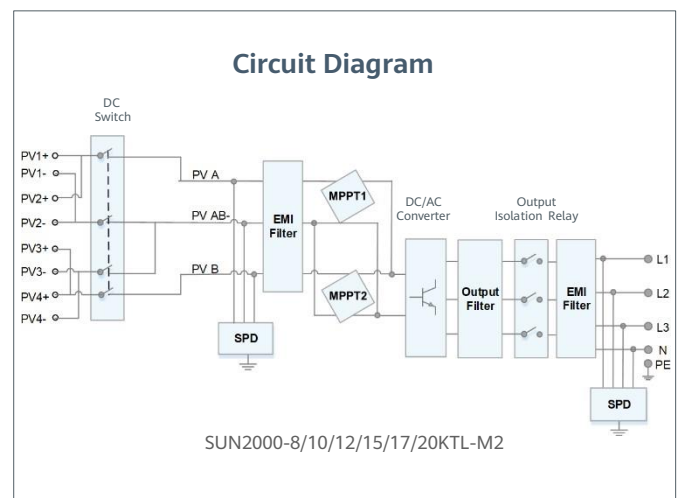
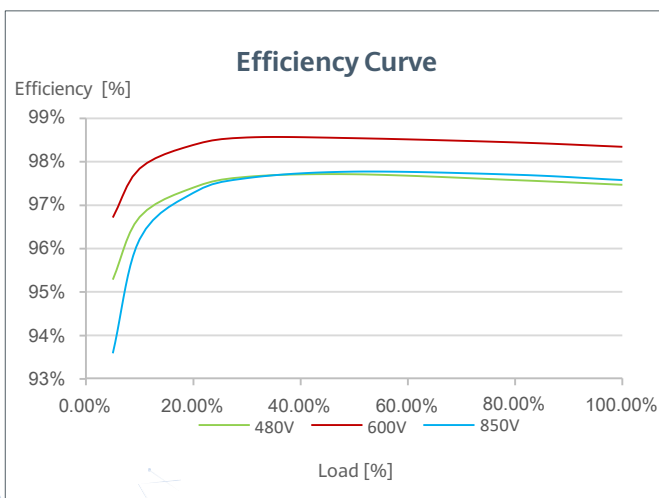
## Higher Yields

Up to 30% More Energy with Optimizer



## Flexible Communication

WLAN, Fast Ethernet, 4G  
Communication Supported



# SUN2000-8/10/12/15/17/20KTL-M2(High Current Version)

## Technical Specification

Technical Specification	SUN2000-8KTL-M2	SUN2000-10KTL-M2	SUN2000-12KTL-M2	SUN2000-15KTL-M2	SUN2000-17KTL-M2	SUN2000-20KTL-M2
<b>Efficiency</b>						
Max. efficiency	98.50%	98.50%	98.50%	98.65%	98.65%	98.65%
European weighted efficiency	97.80%	98.00%	98.00%	98.30%	98.30%	98.30%
<b>Input</b>						
Recommended max. PV power <sup>1</sup>	12,000 Wp	15,000 Wp	18,000 Wp	22,500 Wp	25,500 Wp	30,000 Wp
Max. input voltage <sup>2</sup>	1,080 V					
Operating voltage range <sup>3</sup>	160 V ~ 950 V					
Start-up voltage	200 V					
Rated input voltage	600 V					
Max. input current per MPPT	27 A (two string)/18 A (single string) <sup>4</sup>					
Max. short-circuit current	39 A					
Number of MPP trackers	2					
Max. number of inputs	4					
<b>Output</b>						
Grid connection	Three phase					
Rated output power	8,000 W	10,000 W	12,000 W	15,000 W	17,000 W	20,000 W
Rated AC Apparent power	8,000 VA	10,000 VA	12,000 VA	15,000 VA	17,000 VA	20,000 VA
Max. apparent power	8,800 VA	11,000 VA	13,200 VA	16,500 VA	18,700 VA	22,000 VA
Rated output voltage	230 Vac / 400 Vac, 3W + N + PE					
Rated AC grid frequency	50 Hz / 60 Hz					
Max. output current	13.4 A	17 A	20 A	25.2 A	28.5 A	33.5 A
Adjustable power factor	0.8 leading ... 0.8 lagging					
Max. total harmonic distortion	≤ 3 %					
<b>Features &amp; Protections</b>						
Input-side disconnection device	Yes					
Anti-islanding protection	Yes					
AC over-current protection	Yes					
AC short-circuit protection	Yes					
AC over-voltage protection	Yes					
DC reverse-polarity protection	Yes					
DC surge protection	TYPE II					
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11					
Residual current monitoring unit	Yes					
Arc fault protection	Yes					
Ripple receiver control	Yes					
Integrated PID recovery <sup>5</sup>	Yes					
<b>General Data</b>						
Operation temperature range	-25 ~ + 60 °C (-13 °F ~ 140 °F)					
Relative humidity	0 % RH ~ 100% RH					
Max. operating altitude	0 ~ 4,000 m (13,123 ft.) (Derating above 2000 m)					
Cooling	Natural Convection					
Display	LED Indicators; Integrated WLAN + FusionSolar App					
Communication	RS485; WLAN/Ethernet via Smart Dongle-WLAN-FE (Optional) 4G / 3G / 2G via Smart Dongle-4G (Optional)					
Weight (with mounting plate)	25 kg					
Dimensions (W x H x D) (incl. mounting plate)	525 x 470 x 262 mm (20.7 x 18.5 x 10.3 inch)					
Degree of protection	IP65					
Country of Manufacture	China					
<b>Optimizer Compatibility</b>						
DC MBUS compatible optimizer	SUN2000-450W-P, SUN2000-450W-P2, SUN2000-600W-P					
<b>Standard Compliance (more available upon request)</b>						
Safety	EN/IEC 62109-1, EN/IEC 62109-2					
Grid connection standards	G98, G99, EN 50549, CEI 0-21, CEI 0-16, VDE-AR-N-4105, VDE-AR-N-4110, AS/NZS 4777.2 2020, C10/11, ABNT, VFR 2019, RD 1699, RD 661, PO 12.3, TOR D4, IEC61727, IEC62116, DEWA					

<sup>1</sup> Inverter max input PV power is 40,000 Wp when long strings are designed and fully connected with SUN2000-450W-P power optimizers.

<sup>2</sup> The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.

<sup>3</sup> Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

<sup>4</sup> The MPPT voltage of each PV string must exceed the lower limit of Full Power MPPT Voltage Range. (Full Power MPPT Voltage Range: 12KTL@360-850V, 15KTL@380-850V, 17KTL@400-850V, 20KTL@450-850V)

<sup>5</sup> SUN2000-8-20KTL-M2 raises potential between PV- and ground to above zero through integrated PID recovery function to recover module degradation from PID. Supported module types include: P-type (mono, poly)

# SUN2000-29.9/36/40KTL-M3 Smart PV Controller



## Smart

8 PVs intelligent monitoring



## Efficient

Max. efficiency 98.7%



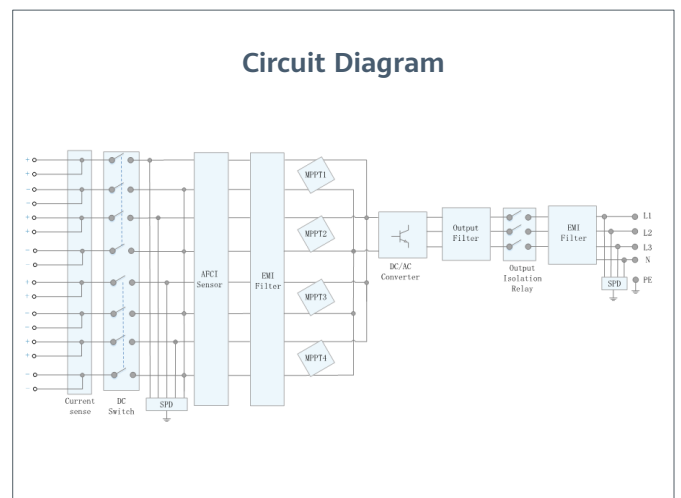
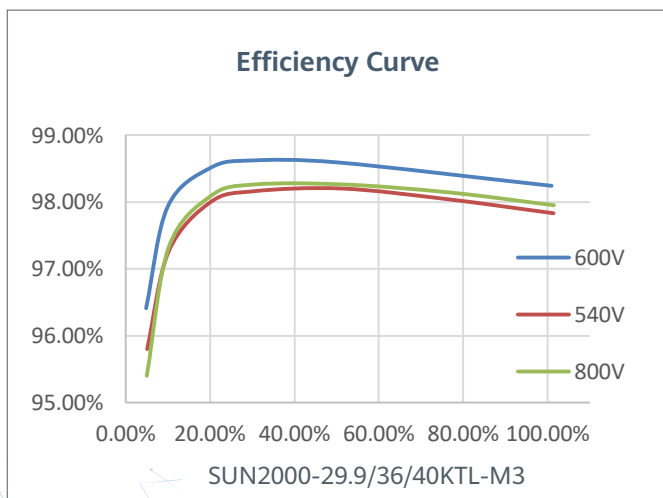
## Safe

Fuse free design



## Reliable

Type II surge arresters for DC & AC





# SUN2000-29.9/36/40KTL-M3 Technical Specification

Technical Specification	SUN2000-29.9KTL-M3	SUN2000-36KTL-M3	SUN2000-40KTL-M3
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## Efficiency

Max. Efficiency	98.7%
European Efficiency	98.4%

## Input

Max. Input Voltage <sup>1</sup>	1,100 V
Max. Current per MPPT	26 A (two string)/20 A (single string) <sup>2</sup>
Max. Short Circuit Current per MPPT	40 A
Start Voltage	200 V
MPPT Operating Voltage Range <sup>3</sup>	200 V ~ 1000 V
Rated Input Voltage	600 V
Number of Inputs	8
Number of MPP Trackers	4

## Output

Rated AC Active Power	29,900 W	36,000 W	40,000 W
Rated AC Apparent power	29,900 VA	36,000 VA	40,000 VA
Max. AC Apparent Power	29,900 VA	40,000 VA	44,000 VA
Rated Output Voltage	230 Vac / 400 Vac, 3W/N+PE		
Rated AC Grid Frequency	50 Hz / 60 Hz		
Rated Output Current	43.2 A	52.0 A	57.8 A
Max. Output Current	43.2 A	58.0 A	63.8 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD		
Max. Total Harmonic Distortion	< 3%		

## Protection

Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Yes
AC Surge Arrester	Yes
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
Arc Fault Protection	Yes
Ripple Receiver Control	Yes
Integrated PID Recovery <sup>4</sup>	Yes

## Communication

Display	LED Indicators, Integrated WLAN + FusionSolar APP
RS485	Yes
Smart Dongle	WLAN/Ethernet via Smart Dongle-WLAN-FE (Optional) 4G / 3G / 2G via Smart Dongle-4G (Optional)
Monitoring BUS (MBUS)	Yes (Isolation Transformer required)

## General Data

Dimensions (W x H x D)	640 x 530 x 270 mm (25.2 x 20.9 x 10.6 inch)
Weight (with mounting plate)	43 kg (94.8 lb)
Nosie Level	< 46 dB
Operating Temperature Range	-25 ~ + 60 °C (-13 °F ~ 140 °F)
Cooling Method	Natural Convection
Max. Operating Altitude	0 - 4,000 m (13,123 ft.)
Relative Humidity	0% RH ~ 100% RH
DC Connector	Staubli MC4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP 66
Topology	Transformerless
Nighttime Power Consumption	≤5.5W
Country of Manufacture	China

## Optimizer Compatibility

DC MBUS Compatible Optimizer	SUN2000-450W-P, SUN2000-450W-P2, SUN2000-600W-P
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## Standard Compliance (more available upon request)

Safety	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683
Grid Connection Standards	IEC 61727, AS/NZS 4777.2 2020

- The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.
  - The MPPT voltage of each PV string must exceed the lower limit of Full Power MPPT Voltage Range. (Full Power MPPT Voltage Range: 29.9KTL@500~800V, 36KTL@520~800V, 40KTL@540~800V)
  - Any DC input voltage beyond the operating voltage range may result in inverter improper operating.
  - SUN2000-29.9~40KTL-M3 raises potential between PV- and ground to above zero through integrated PID recovery function to recover module degradation from PID. Supported module types include: P-type (mono, poly), N-type (nPERT, HIT)
- SOLAR.HUAWEI.COM/ AU/

# SUN2000-50KTL-M0 Smart PV Controller



## Smart

Smart I-V Curve Diagnosis supported



## Efficient

Max. efficiency 98.7%



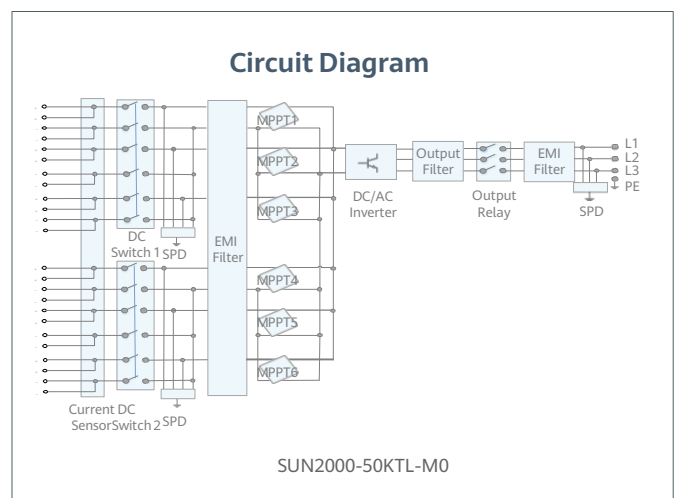
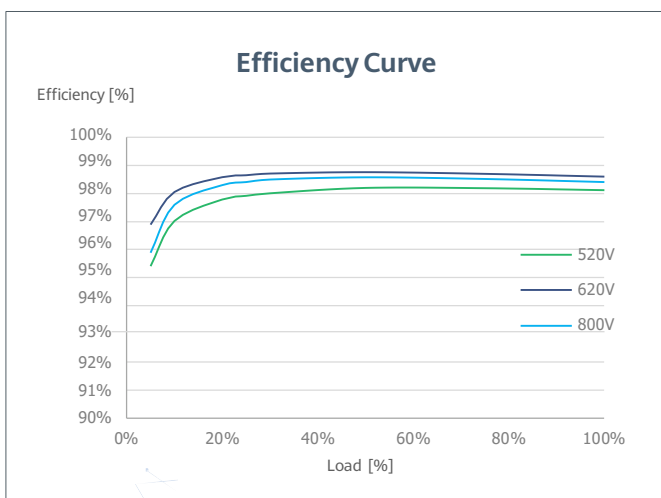
## Safe

Fuse free design



## Reliable

Type II surge arresters for DC & AC



Technical Specification	SUN2000-50KTL-M0
-------------------------	------------------

Efficiency	
Max. Efficiency	98.7%
European Efficiency	98.5%

Input	
Max. Input Voltage	1,100 V
Max. Current per MPPT	22 A (two string)/18 A (single string)
Max. Short Circuit Current per MPPT	30 A
Start Voltage	200 V
MPPT Operating Voltage Range	200 V ~ 1,000 V
Rated Input Voltage	600 V
Number of Inputs	12
Number of MPP Trackers	6

Output	
Rated AC Active Power	50,000 W
Rated AC Apparent power	50,000 VA
Max. AC Apparent Power	55,000 VA
Max. AC Active Power (cosφ=1)	55,000 W
Rated Output Voltage	400 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	72.2 A @400 V
Max. Output Current	79.4 A @400 V
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	<3%

Protection	
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes

Communication	
Display	LED Indicators, Bluetooth + APP
RS485	Yes
USB	Yes
Monitoring BUS (MBUS)	Yes

General Data	
Dimensions (W x H x D)	1,075 x 555 x 300 mm (42.3 x 21.9 x 11.8 inch)
Weight (with mounting plate)	74 kg (163.1 lb.)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Natural Convection
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol Helios H4
AC Connector	Cable Gland + OT Terminal
Protection Degree	IP65
Topology	Transformerless
Nighttime Power Consumption	< 2 W
Country of Manufacture	China

Standard Compliance (more available upon request)	
Certificate	N/IEC 62109-1, EN/IEC 62109-2, IEC 62116
Grid Code	AS/NZS 4777.2 2020

# SUN2000-100KTL-M1 Smart PV Controller



## Smart

Smart I-V Curve Diagnosis supported



## Efficient

Max. efficiency 98.8%



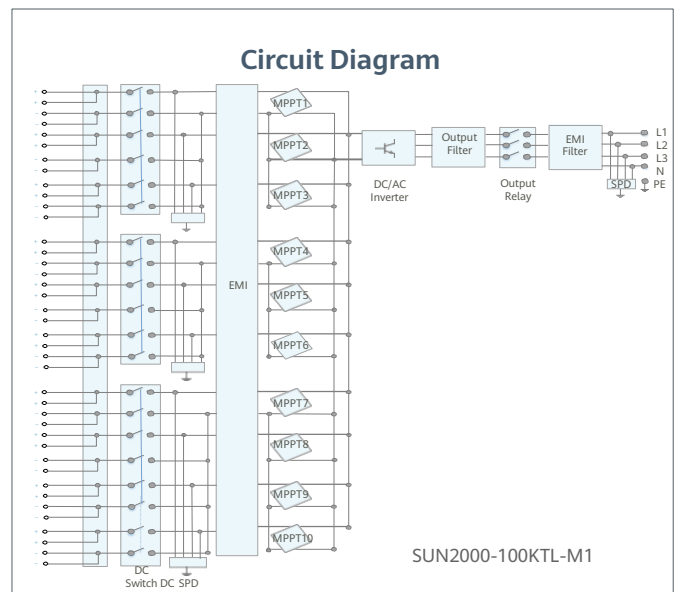
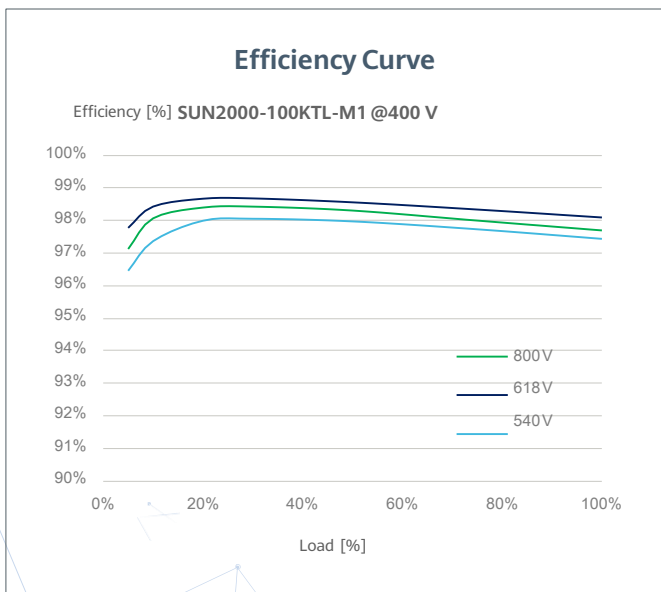
## Safe

Fuse free design



## Reliable

Type II surge arresters for DC & AC



<b>Technical Specification</b>	<b>SUN2000-100KTL-M1</b>
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<b>Efficiency</b>	
Max. Efficiency	98.8%
European Efficiency	98.6%

<b>Input</b>	
Max. Input Voltage	1,100 V
Max. Current per MPPT	26 A (two string)/18 A (single string)
Max. Short Circuit Current per MPPT	40 A
Start Voltage	200 V
MPPT Operating Voltage Range	200 V ~ 1,000 V
Rated Input Voltage	600 V
Number of Inputs	20
Number of MPP Trackers	10

<b>Output</b>	
Rated AC Active Power	100,000 W
Rated AC Apparent power	100,000 VA
Max. AC Apparent Power	110,000 VA
Max. AC Active Power (cosφ=1)	110,000 W
Rated Output Voltage	400 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	144.4 A
Max. Output Current	160.4 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	<3%

<b>Protection</b>	
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes

<b>Communication</b>	
Display	LED Indicators, Bluetooth/WLAN + APP
RS485	Yes
USB	Yes
MBUS	Yes (isolation transformer required)

<b>General Data</b>	
Dimensions (W x H x D)	1,035 x 700 x 365mm (40.7 x 27.6x 14.4 inch)
Weight (with mounting plate)	90 kg (187.4 lb.)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Smart Air Cooling
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Staubli MC4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless
Nighttime Power Consumption	≤ 3.5 W
Country of Manufacture	China

<b>Standard Compliance (more available upon request)</b>	
Safety	N/IEC 62109-1, EN/IEC 62109-2, IEC 62116
Grid Connection Standards	AS/NZS 4777.2 2020

# Smart Dongle-WLAN-FE



## Smart

WLAN & Fast Ethernet (FE) communication  
Support 3rd-party monitoring system <sup>1</sup>



## Simple

Plug & Play  
Support max. 10 devices



## Reliable

IP65  
Support auto reconnection

Technical Specification	SDongleA-05
<b>General Data</b>	
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 * H * D)	146 x 48 x 33 mm (5.1 x 1.9 x 1.3 inch)
Weight	90 g (0.2 lb.)
Degree of protection	IP65
Power consumption (typical)	2.5 W
Operation Mode	STA
Encryption Algorithm	Encryption Mechanism: WPA/WPA2 Encryption: TKIP/CCMP/AES
<b>Wireless Parameter</b>	
Supported standards & frequencies	802.11b/g/n (2.412G—2.484G)
<b>Environment</b>	
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.)
<b>Standard Compliance (more available upon request)</b>	
Certificate	SRRC, CE, RCM
<b>Inverter Compatibility</b>	
Supported Master Inverter Model	SUN2000-2/3/4/4.6/5/6KTL-L1 SUN2000-5/6KTL-M1 SUN2000-8/10/12/15/17/20KTL-M2 SUN2000-29.9/36/40KTL-M3 SUN2000-5/6/8/10/12/15/17/20KTL-M0

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

# Smart Dongle-4G



## Smart

2G, 3G, 4G communication <sup>1</sup>  
Support 3rd-party monitoring system <sup>2</sup>



## Simple

Plug & Play  
Support max. 10 devices



## Reliable

IP65  
Support auto reconnection

Technical Specification	SDongleA-03-AU
-------------------------	----------------

General Data	
Max. devices supported	10
Max. inverters supported	10
Connection interface	USB
Installation	Plug-and-play
Indicator	LED Indicator
Dimensions (W * H * D)	130 x 48 x 33 mm (5.1 x 1.9 x 1.3 inch)
Weight	90 g (0.2 lb.)
Degree of protection	IP65
Power consumption (typical)	3.5 W

Wireless Parameter	
Sim card type	mini-sim (15 mm*25 mm)
Supported standards & frequencies	4G: FDD-LTE / TDD-LTE 3G: WCDMA / HSDPA / HSUPA / HSPA+ 2G: GSM / GPRS / EDGE <sup>3</sup>

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.)

Standard Compliance (more available upon request)	
Certificate	RCM

Inverter Compatibility	
Inverter model	SUN2000-2/3/4/4.6/5/6KTL-L1 SUN2000-5/6KTL-M1 SUN2000-8/10/12/15/17/20KTL-M2 SUN2000-29.9/36/40KTL-M3 SUN2000-50KTL-M0

1: To ensure stable data transmission, Huawei suggests 4G dongle to be installed in areas with stable mobile signal (2G signal ≥ 4 bars, 3G/4G signal ≥ 3 bars).  
2: 3rd-party management system shall match the communication protocol with Huawei Smart Dongle.  
3: For recommended carriers list and details on supported frequencies, please contact local distributors.



# SmartLogger3000A



## Smart

Smart zero export control design



## Simple

Easy to install on site



## Reliable

Safety by lightning protection module

Technical Specification	SmartLogger3000A01AU
<b>Device Management</b>	
Max. Number of Manageable Devices	80
<b>Communication Interface</b>	
WAN	WAN x 1, 10 / 100 / 1000 Mbps
LAN	LAN x 1, 10 / 100 / 1000 Mbps
RS485	COM x 3, 1200 / 2400 / 4800 / 9600 / 19200 / 115200 bps, 1000 m
2G / 3G / 4G <sup>1</sup>	LTE(FDD): B1 / B2 / B3 / B4 / B5 / B7 / B8 / B28 LTE(TDD): B40 WCDMA: B1 / B2 / B5 / B8 GSM: B2 / B3 / B5 / B8 <sup>2</sup>
Digital / Analog Input / Output	DI x 4, DO x 2, AI x 4
Active DO	12V, 100mA (connection with relay, sensor)
<b>Communication Protocol</b>	
Ethernet	Modbus-TCP, IEC 60870-5-104
RS485	Modbus-RTU, IEC 60870-5-103 (standard), DL / T645
<b>Interaction</b>	
LED	LED Indicator x 3 – RUN, ALM, 4G
WEB	Embedded Web
USB	USB 2.0 x 1
APP	Communication by WLAN for Commissioning
<b>Environment</b>	
Operating Temperature Range	-40°C ~ 60°C (-40°F ~ 140°F)
Storage Temperature	-40°C ~ 70°C (-40°F ~ 158°F)
Relative Humidity (Non-condensing)	5% ~ 95%
Max. Operating Altitude	4,000 m (13,123 ft.)
<b>Electrical</b>	
AC Power Supply	100 V ~ 240 V, 50 Hz / 60 Hz
DC Power Supply	12V / 24 V
Power Consumption	Typical 8 W, Max. 15 W
<b>Mechanical</b>	
Dimensions (W x H x D)	225 x 160 x 44 mm (8.9 x 6.3 x 1.7 inch, without mounting ears and antenna)
Weight	2 kg (4.4 lb.)
Protection Degree	IP20
Installation Options	Wall Mounting, DIN Rail Mounting, Tabletop Mounting

<sup>1</sup> - When putting inside metal box, extended antenna will be needed.

<sup>2</sup> - For recommended carriers list and details on supported frequencies, please contact local distributors.

# FusionSolar Smart PV Management System



## Simple & Swift

- Simple commissioning by APP
- Auto-detection of system equipment
- Registering your plant by scanning any device



## Convenient & Reliable

- Energy flow illustration
- Real-time data at anytime from anywhere
- Performance data back-up



## Improved O&M Experience

- Physical & logical module layout
- Module-level performance management\*
- Smart I-V Diagnosis

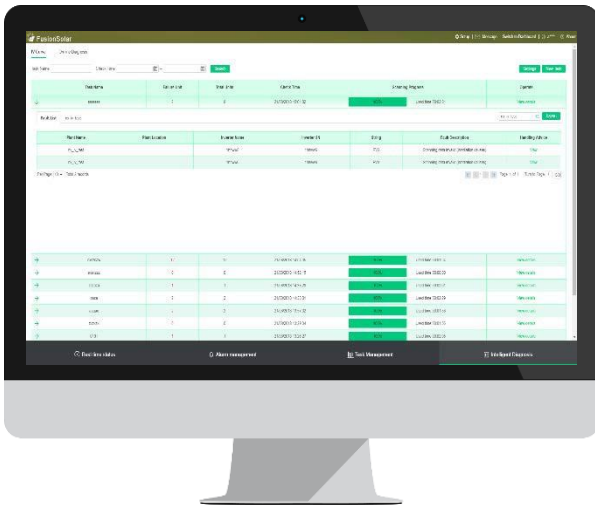
\*Full optimizer solution with Smart PV Safety Box required

Feature List		WEB	APP
Basic Feature	Swift Installation & Registration	●	●
	Data Collection	●	
	Dashboard	●	●
	Energy Flow	●	●
	Energy Generation & Consumption	●	●
	Device Management	●	●
	Report Management	●	●
	Alarm Management	●	●
	System Configuration	●	
Advanced Feature	Intelligent O&M	○	
	Mobile O&M	○	○
	Proactive Diagnosis	○	○
	Smart I-V Curve Diagnosis	○	○

● Basic    ○ Optional

# Smart I-V Curve Diagnosis

Smart I-V Curve Diagnosis is able to carry out online I-V curve analysis on entire strings with advanced diagnosis algorithm. The scanning would help to find out and identify the strings with low performance or faults, which would help to achieve proactive maintenance, higher O&M efficiency and lower operation cost.



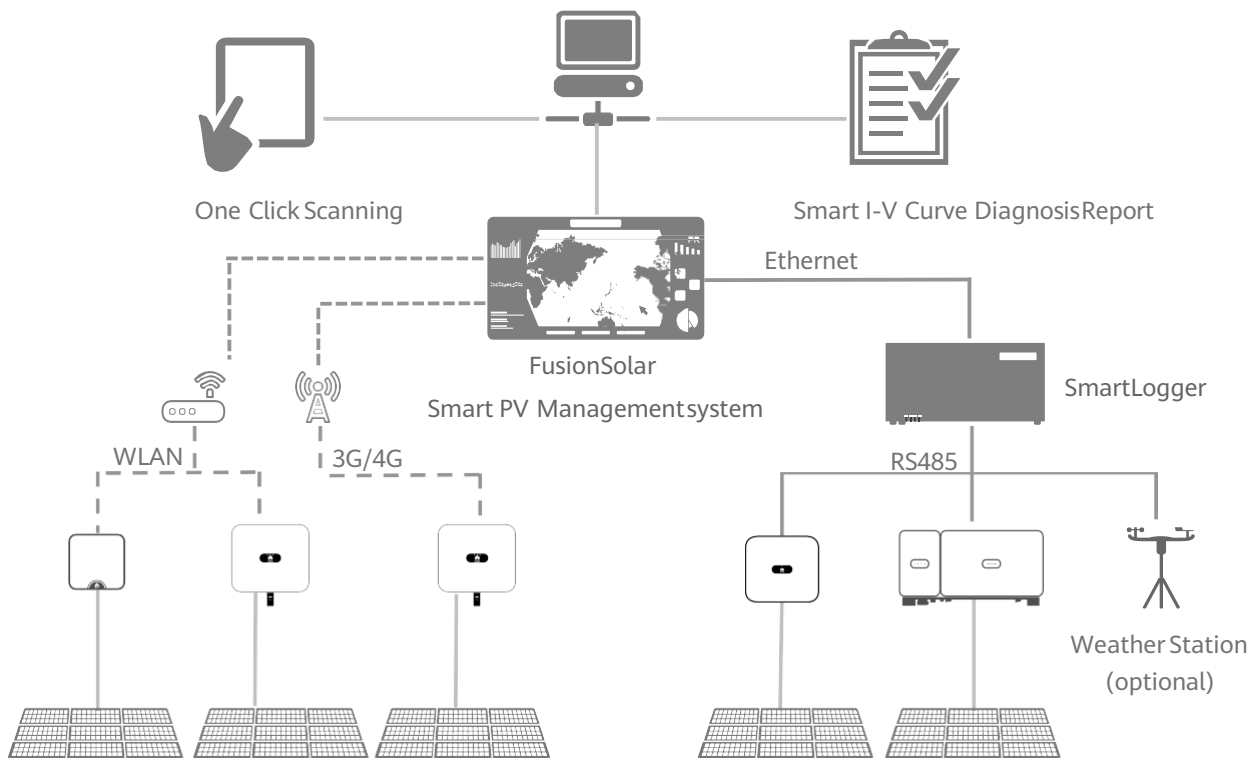
## Smart


- Support plant-level, array-level and inverter-level analysis and diagnosis
- Automatically identify different failure types and provide recovery suggestion

## Efficient

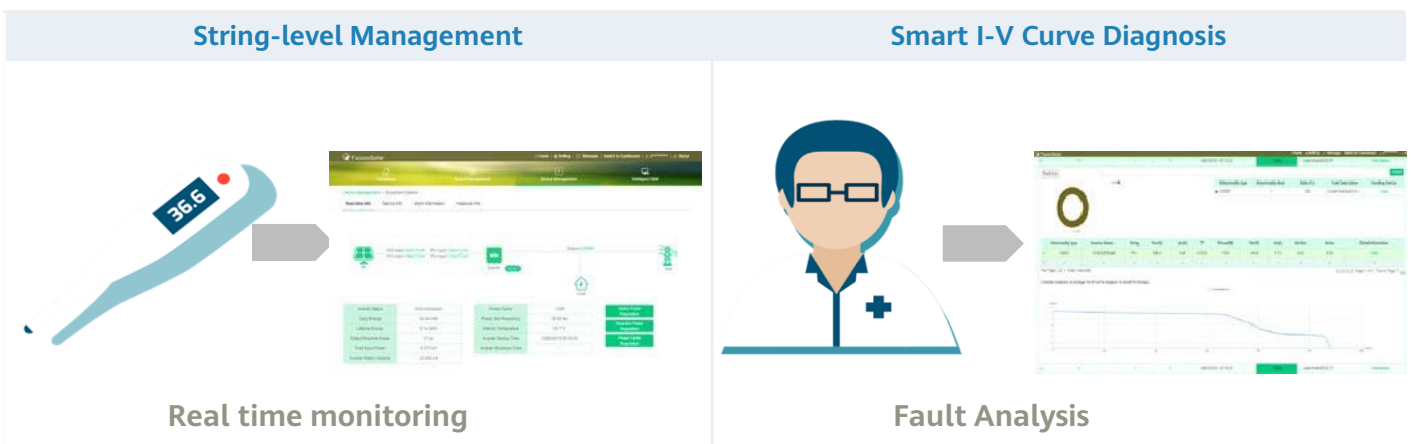
- One-click scanning without onsite experts or equipment
- Online I-V curve scanning on entire strings of 5 MW plant within 5min
- Automatic report generation of 5 MW plant within 15min

## Network

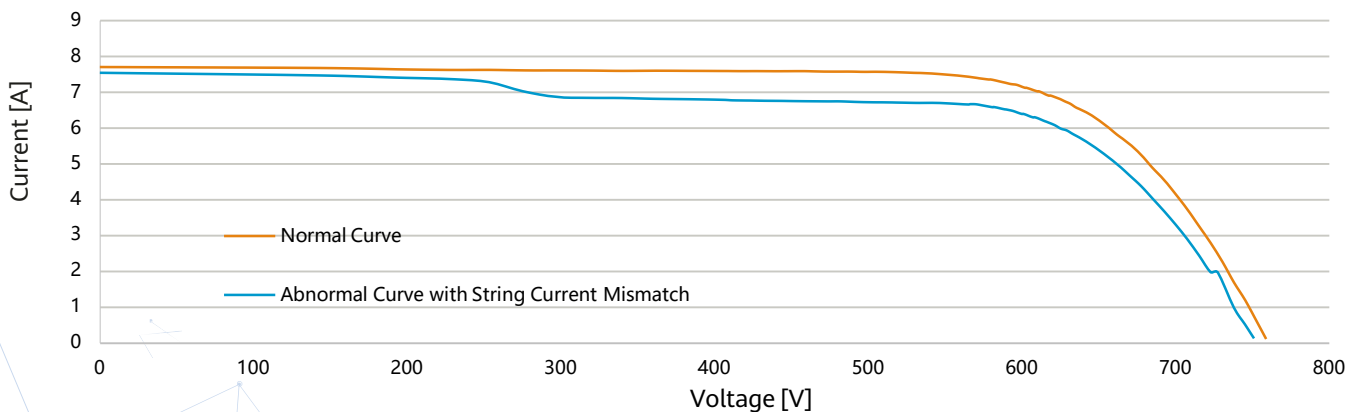
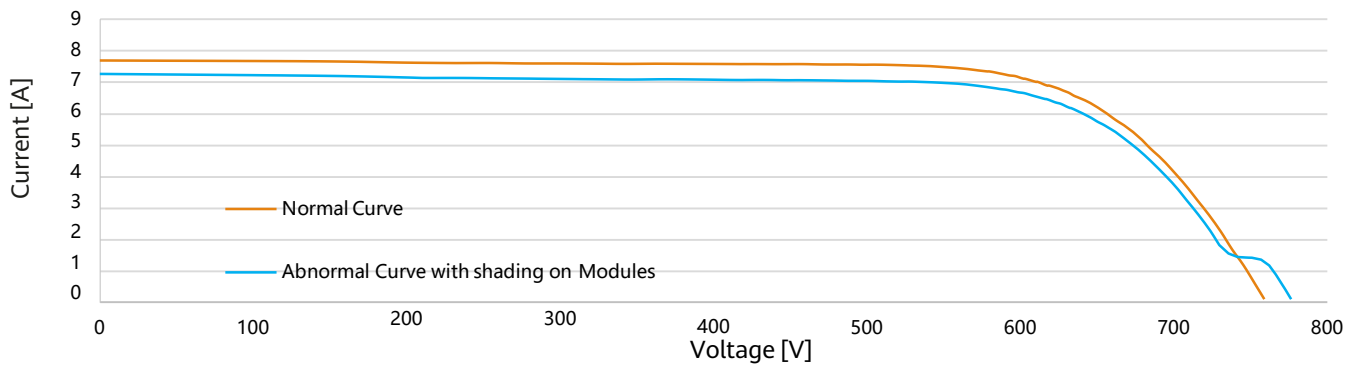


Technical Specifications	Smart I-V Curve Diagnosis	
Smart PV Inverter*	SUN2000L-2/3/4/4.6/5KTL, SUN2000-5/6KTL-M0, SUN2000-8/10/12/15/17/20KTL-M0, SUN2000-29.9/36KTL, SUN2000-50KTL-M0	
Communication	SmartLogger1000, SmartLogger2000, SmartLogger1000A, Smart Dongle	
Management System	FusionSolar Smart PV Management System, NetEco1000s	
Scanning Time	< 1s (1 string)	
Sampling Points per I-V Curve	128	
Certification	 TÜVRheinland®	TUV

\* I-V curve diagnosis is not supported when inverter is connected with power optimizer.



### String I-V Curve Comparison





## 10kW

Residential Energy System in NSW, Australia

### System Configuration

- 32 × 310Wp modules
- 2 × SUN2000L-5KTL
- WLAN Communication

COD  
Jan, 2019

Retailer  
JT Solar



## 5kW

Residential PV System in NSW, Australia

### System Configuration

- 18 × 310Wp modules
- 1 × SUN2000L-5KTL
- WLAN Communication

COD  
Jan, 2019

Retailer  
JT Solar





## 8kW

Residential Energy System in Sydney, Australia

### System Configuration

- 36 × 270Wp modules
- 24 × 375W optimizers
- SUN2000L-3KTL & -5KTL
- LG Chem RESU10H Type R

COD  
Dec, 2017

Distributor  
ASC



## 33kW

Residential PV System in Hanadacho Chokushi, Japan

### System Configuration

- 120 × 275Wp modules
- 8 × SUN2000L-4.125KTL-JP
- SmartACBox12in1

COD  
April, 2018

Distributor  
DMM.com





## 1.12MW

Distributed PV System in Dandenong, Australia

### System Configuration

- 4000 x Jinko 305Wp modules
- 34 x SUN2000-33KTL
- SmartLogger1000

COD  
2019



## 550kWp

Commercial PV Project in NSW, Australia

### System Configuration

- 1679 x 320Wp Jinko modules
- 17 x SUN2000-33KTL

COD  
May, 2018

Distributor  
Megawatt Power





## 1MWp

Distributed PV System in Kuala Lumpur, Malaysia

### System Configuration

- SUN2000-36KTL

COD

Mar, 2016



## 2.8MWp

Distributed PV System in Singapore Changi Airport

### System Configuration

- SUN2000-36KTL

COD

Dec, 2016



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