



FusionSolar[®]

Residential & Commercial Smart PV Solution

[SOLAR.HUAWEI.COM/EU/](https://solar.huawei.com/eu/)



About Huawei

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



Employees
195,000+



R&D Personnel
107,000+



Countries
170+



Brand Finance Global 500
9

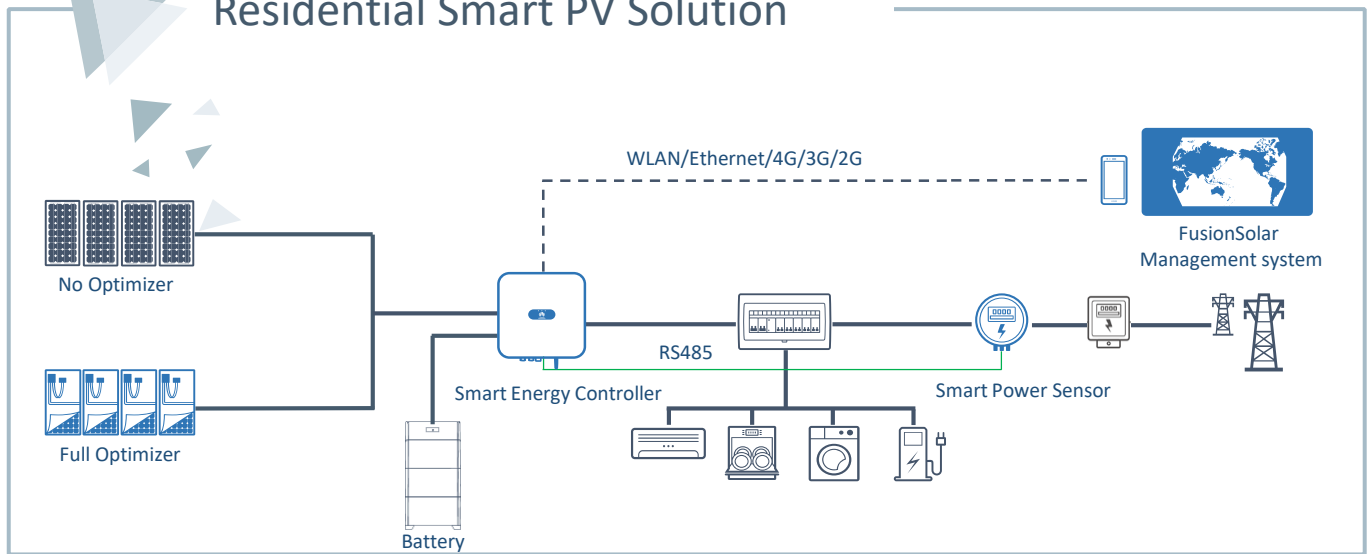


Fortune Global 500
44



R&D Investment
2

Residential Smart PV Solution



Optimal Electricity Cost

Up to 30% More Energy by
Optimizers

2x POWER Battery Ready for More Energy Consumption

Active Safety

AI Powered Active Arcing Protection

Pinpoint Arc Fault Positioning

Better Experience

One-Fits-All Solution,
Easier Business

Module Auto-Mapping
within 5 sec





Active Safety

AI Powered
Active Arcing Protection



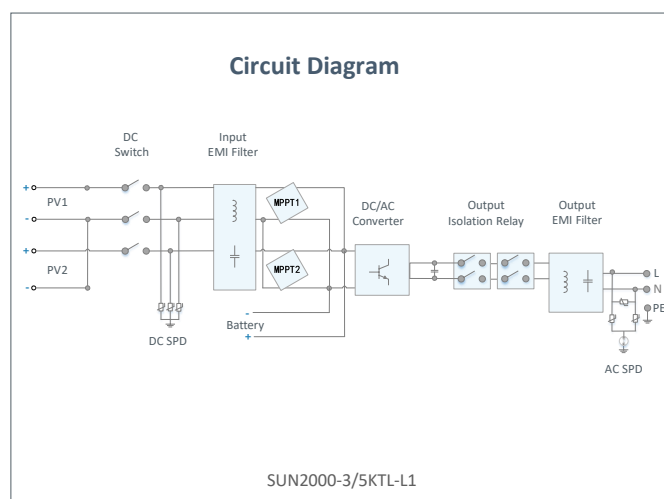
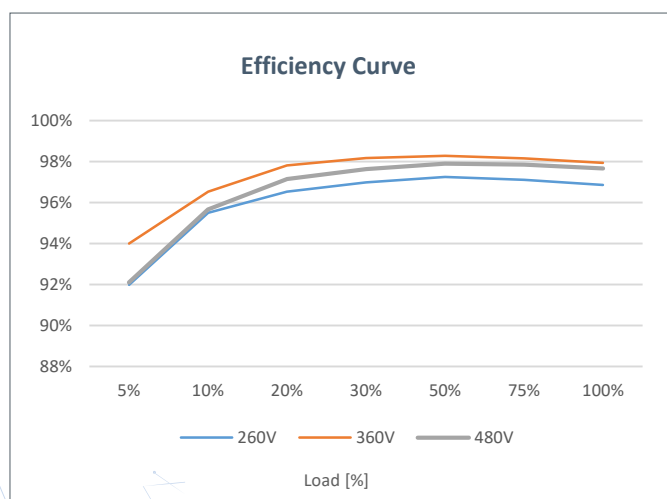
Higher Yields

Up to 30% More Energy
with Optimizer



2x POWER Battery Ready

5KW AC Output plus
5KW Battery Charge



SUN2000-3/5KTL-L1
Technical Specification

Technical Specification	SUN2000 -3KTL-L1	SUN2000 -5KTL-L1
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Efficiency		
Max. efficiency	98.3 %	98.4 %
European weighted efficiency	97.3 %	97.8 %

Input (PV)		
Recommended max. PV power ¹	4,500 Wp	7,500 Wp
Max. input voltage	600 V ¹	
Start-up voltage	100 V	
MPPT operating voltage range	90 V – 560 V ²	
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. input number per MPP tracker	1	

Input (DC Battery)		
Compatible Battery	LG Chem RESU 7H_R / 10H_R	
Operating voltage range	350 ~ 450 Vdc	
Max operating current	10 A @7H_R / 15 A @10H_R	
Max charge power	3,500 W @7H_R / 5,000 W @10H_R	
Max discharge Power @7H_R	3,300 W	3,500 W
Max discharge Power @10H_R	3,300 W	5,000 W

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 ³	
Max discharge Power	3,300 W	5,000 W

Output (On Grid)		
Grid connection	Single phase	
Rated output power	3,000 W	5,000 W
Max. apparent power	3,300 VA	5,500 VA
Rated output voltage	220 Vac / 230 Vac / 240 Vac	
Rated AC grid frequency	50 Hz / 60 Hz	
Max. output current	15 A	25 A
Adjustable power factor	0.8 leading ... 0.8 lagging	
Max. total harmonic distortion	≤ 3 %	

Output (Off Grid)		
Backup Box (Optional)	Backup Box – B0	
Maximum apparent power	3,000 VA	5,000 VA
Rated output voltage	220 V / 230 V	
Maximum output current	13.6 A	22.7 A
Power factor range	0.8 leading ... 0.8 lagging	

^{*1} Inverter max input PV power will be changed when long strings are designed and fully connected with power optimizers.
^{*2} The maximum input voltage and operating voltage upper limit will be reduced to 495 V when inverter connects and works with LG battery.
^{*3} 2,500 W @ 5kWh HUAWEI ESS battery.

Technical Specification	SUN2000 -3KTL-L1	SUN2000 -5KTL-L1
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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	
Arc fault protection	Yes	
Battery reverse charging from grid	Yes	

General Data		
Operating temperature range	-25 ~ +60 °C	
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	
Nighttime Power Consumption	< 2.5 W	

Optimizer Compatibility		
DC MBUS compatible optimizer	SUN2000-450W-P, SUN2000-600W-P	

Standard Compliance (more available upon request)		
Safety	EN/IEC 62109-1, EN/IEC 62109-2	
Grid connection standards	G98, G99, EN 50549-1, CEI 0-21, VDE-AR-N-4105, AS 4777.2, C10/11, ABNT, UTE C15-712, RD 1699, TOR D4, IEC61727, IEC62116,PEA,MEA	

Smart Energy Controller



Active Safety

AI Powered
Active Arcing Protection



Higher Yields

Up to 30% More Energy with
Optimizer



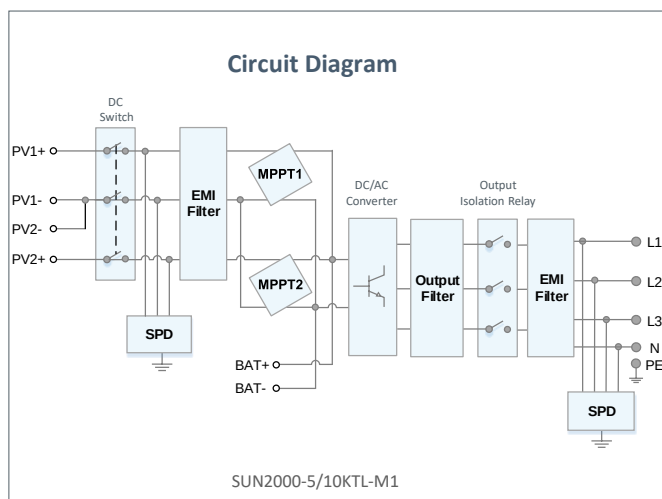
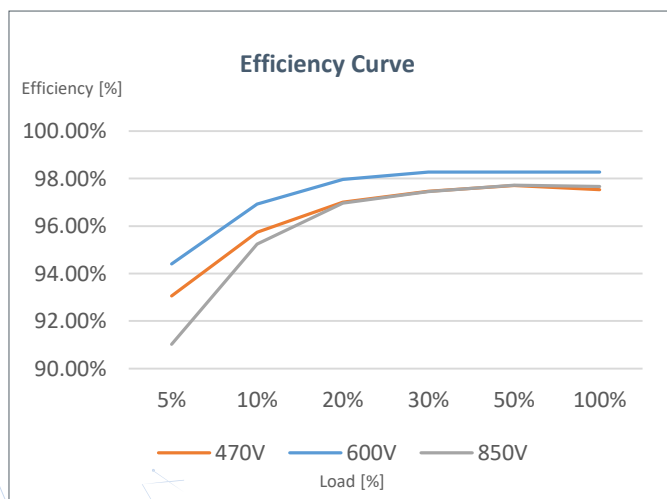
Battery Ready

Plug & Play battery interface



Flexible Communication

WLAN, Fast Ethernet, 4G
Communication Supported



Technical Specification

Technical Specification	SUN2000 -5KTL-M1	SUN2000 -10KTL-M1
Efficiency		
Max. efficiency	98.4%	98.6%
European weighted efficiency	97.5%	98.1%
Input (PV)		
Recommended max. PV power ¹	7,500 Wp	15,000 Wp
Max. input voltage ²	1,100 V	
Operating voltage range ³	140 V ~ 980 V	
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. input number per MPP tracker	1	
Input (DC Battery)		
Compatible Battery	HUAWEI Smart String ESS 5kWh – 30kWh	
Operating voltage range	600 V ~ 980 V	
Max operating current	16.7 A	
Max charge Power	10,000 W	
Max discharge Power	5,500 W	10,000 W
Output (On Grid)		
Grid connection	Three-phase	
Rated output power	5,000 W	10,000 W
Max. apparent power	5,500 VA	11,000 VA ⁴
Rated output voltage	220 Vac / 380 Vac, 230 Vac / 400 Vac, 3W / N+PE	
Rated AC grid frequency	50 Hz / 60 Hz	
Max. output current	8.5 A	16.9 A
Adjustable power factor	0.8 leading ... 0.8 lagging	
Max. total harmonic distortion	≤ 3 %	
Output (Off Grid)		
Backup Box	Backup Box – B1	
Maximum apparent power	3,300 VA	3,300 VA
Rated output voltage	220 V / 230 V	
Maximum output current	15 A	15 A
Power factor range	0.8 leading ... 0.8 lagging	
Features & Protections		
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 ⁵	Yes	
Battery reverse charging from grid	Yes	
General Data		
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	
Nighttime Power Consumption	< 5.5 W ⁶	
Optimizer Compatibility		
DC MBUS compatible optimizer	SUN2000-450W-P, SUN2000-600W-P	
Standard Compliance (more available upon request)		
Certificate	EN/IEC 62109-1, EN/IEC 62109-2, IEC 62116	
Grid connection standards	G98, G99, EN 50438, CEI 0-21, VDE-AR-N-4105, AS 4777, C10/11, ABNT, UTE C15-712, RD 1699, TOR D4, NRS 097-2-1, IEC61727, IEC62116, DEWA, PEA, MEA	

^{*1} Inverter max input PV power will be changed when long strings are designed and fully connected with power optimizers.

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

^{*3} Any DC input voltage beyond the operating voltage range may result in inverter improper operating. ^{*4} C10 / 11: 10,000 VA

^{*5} 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).

^{*6} <10 W when PID recovery function is activated.

Version No.:01-(20190716)

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One-Fits-All Optimizer
Easier Business



<1.5 min Pairing with Inverter



<5s Module Auto-Mapping



Arc Fault Pinpoint Positioning

Technical Specification	SUN2000-450W-P
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Input	
Rated Input DC Power ¹	450 W
Absolute maximum input voltage	80 V
MPPT operating voltage range	8 - 80 V
Maximum Short Circuit Current (Isc)	13 A
Max. efficiency	99.5 %
Weighted efficiency	99.0 %
Overvoltage category	II

Output	
Max. output voltage	80 V
Max. output current	15 A
Output bypass ²	Yes
Shutdown output voltage per optimizer ³	0 V
Shutdown output impedance per optimizer	1k ohm ± 10 %

Standard Compliance	
Safety	IEC62109-1 (class II safety)
RoHS	Yes

General Data	
Dimension (W x H x D)	71 x 138 x 25 mm (2.8 x 5.4 x 1.0 inch)
Weight (including cables)	0.55 kg (1.2 lb.)
Installation part (optional)	Grounding Plate, Grounding Lug, PV Module Frame Plate
Input connector	MC4
Output connector	MC4
Output wire length	1.2 m (3.9 ft.) ⁴
Operating temperature / humidity range	-40 °C ~ 85 °C ⁵ / 0 %RH ~ 100 %RH
Degree of protection	IP68
Compatible product	SUN2000-3/5KTL-L1, SUN2000-5/10KTL-M1

Long String Design (Full Optimizer)	SUN2000-3/5KTL-L1	SUN2000-5/10KTL-M1
Minimum optimizer number per string	4	6
Maximum optimizer number per string	25	50
Maximum DC power per string	5,000 W	10,000 W

^{*1} Rated power of the module at STC shall not exceed "Rated Input DC Power" of power optimizer. Modules with power up to +5% power tolerance are acceptable.

^{*2} Power optimizer is bypassed in the string connected to an operating inverter when it fails to work

^{*3} Power optimizer output 0Vdc when disconnecting to the inverter or inverter is shutdown.

^{*4} Fits PV module in landscape and portrait installation.

^{*5} Full power capability refers to online smart design tool.

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

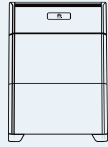


Perfect Compatibility

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 ¹	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) ²		
Installation	Floor stand (standard), Wall mount (optional)		
Operating temperature	-20°C ~ +55°C (-4°F ~ 131°F) ³		
Max. operating altitude	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		
Noise emission	<29 dB		
Cell technology	Lithium-iron phosphate (LiFePO4)		
Scalability	Max. 2 systems in parallel operation		
Compatible inverters	SUN2000-3/5KTL-L1, SUN2000-5/10KTL-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 ⁴	LUNA2000-5KW-C0, LUNA2000-5-E0, LUNA2000 Wall Mounting Bracket

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

Backup Box



Simple

Automatic detection & switchover



Reliable

Provide Reliable backup power

Technical Specification	Backup Box-B0	Backup Box-B1
AC Output (On grid)		
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
AC Output (Backup)		
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	
AC Input (Inverter)		
Rated voltage	220 V / 230 V	380 V / 400 V
AC frequency	50Hz / 60Hz	
Compatible inverter	SUN2000-3/5KTL-L1	SUN2000-5/10KTL-M1
General Specification		
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 ≤ 1 W

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

Smart Power Sensor



Accurate

Class 1 measurement accuracy



Simple & Easy

LCD display, easy to set and check



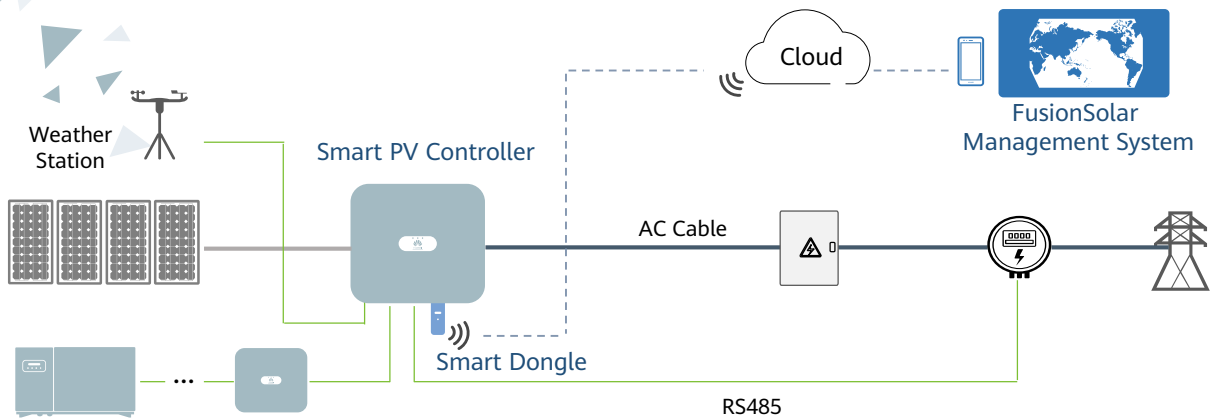
Energy Efficient

Overall power consumption ≤ 1.5 W

Technical Specification	DTSU666-HW/YDS60-80
General Data	
Dimension (H x W x D)	100 x 72 x 80 mm (3.9 x 2.8 x 3.1 inch)
Mounting type	DIN35 Rail
Weight (including cables)	< 0.5 kg
Power Supply	
Power grid type	3P4W/3P3W
Input voltage (line voltage)	90 ~ 500 Vac
Power consumption	≤ 1.5 W
Measurement Range	
Line voltage	90 Vac ~ 1000 Vac (> 500 with external PT ¹)
Phase voltage	52~577 Vac
Current	0 ~ 80 A(>80 with external CT ²)
Measurement Accuracy	
Voltage / Current	± 0.5 %
Power / Energy	± 1 %
Frequency	± 0.01 Hz
Communication	
Interface	RS485
Baud rate	4800/9600/19200/115200 (Default 9600bps)
Communication protocol	Modbus-RTU
Environment	
Operating temperature range	-25 °C ~ 60 °C
Storage temperature range	-40 °C ~ 70 °C
Operating humidity	5 %RH ~ 95 %RH (non-condensing)
Others	
Accessories	RS485 Cable (10 m / 33 ft.)

^{*1} 2nd voltage of PT should be 100V. And accuracy should be better than Class 0.5
^{*2} 2nd current of CT should be 1A or 5A. And accuracy should be better than Class 0.5

Small-scale Commercial PV Solution



Smart Dongle supports Max. 10 devices¹

¹: Devices refer to: Inverter, meter, weather station devices and so on.

Ultimate Safety

AI Powered AFCI to mitigate fire risk

Fuse-free design for superior safety

Higher Yields

Multi-MPPT to reduce string mismatch

Max. Efficiency 98.65% for higher yields

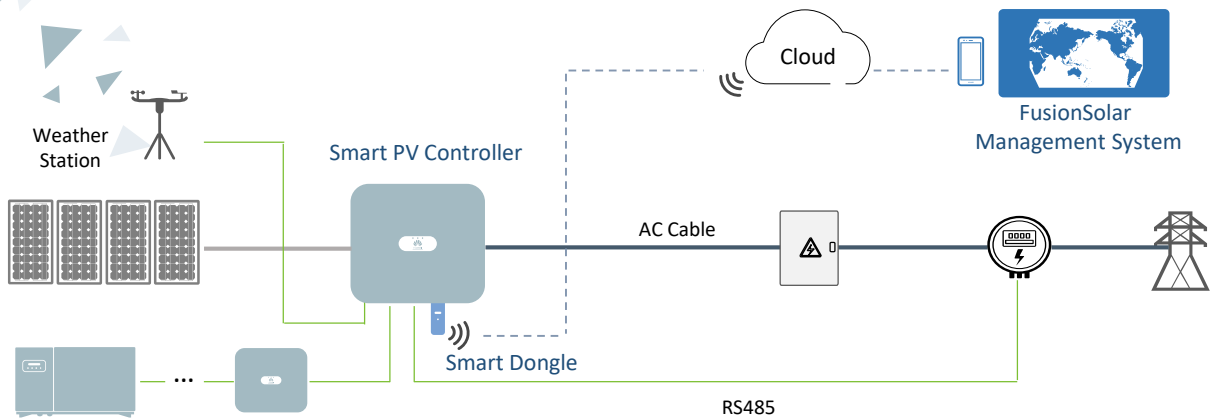
Better Experience

WLAN/Ethernet/4G, flexible comm. options

One click I-V curve diagnosis making unhealthy modules visible



Small-scale Commercial PV Solution



Smart Dongle supports Max. 10 devices¹

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SUN2000-12/15/20KTL-M5 Smart PV Controller



Active Safety

AI Powered Arcing Protection



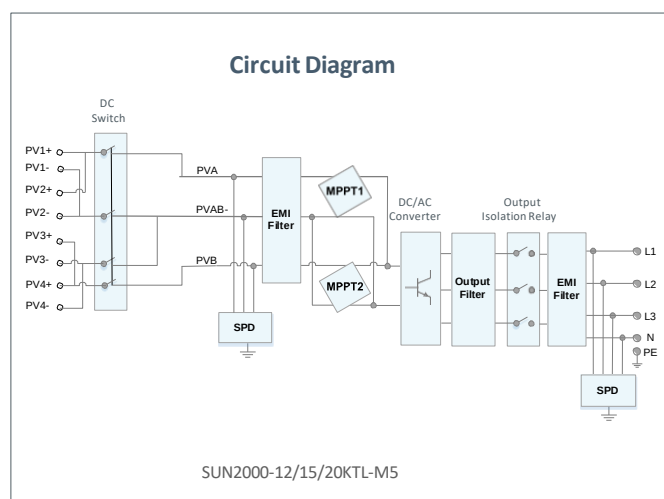
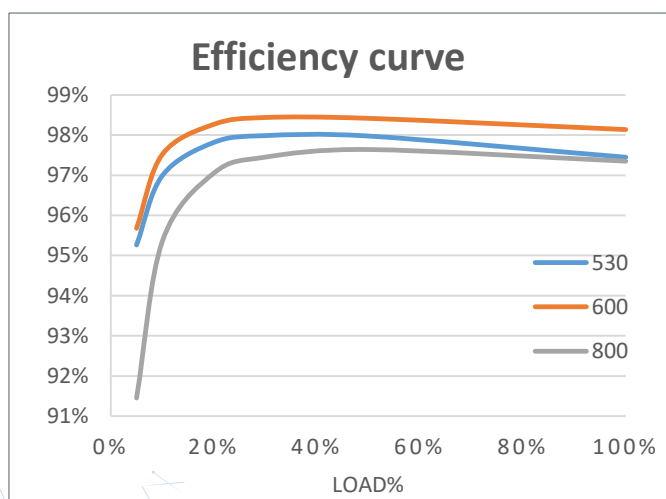
Higher Yields

Up to 30% More Energy with Optimizer



Flexible Communication

WLAN, Fast Ethernet, 4G
Communication Supported



SUN2000-12/15/20KTL-M5
Technical Specification

Technical Specification	SUN2000 -12KTL-M5	SUN2000 -15KTL-M5	SUN2000 -20KTL-M5
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Efficiency

Max. efficiency	98.4%	98.4%	98.4%
European weighted efficiency	97.9%	98.0%	98.1%

Input

Recommended max. PV power ¹	18,000 Wp	22,500 Wp	30,000 Wp
Max. input voltage ²		1100 V	
Full-load MPPT voltage range	370V~800V	410V~800V	480V~800V
MPPT Operating voltage range ³		200 V ~ 1000 V	
Start-up voltage		200 V	
Rated input voltage		600 V	
Max. input current per MPPT		30 A (two string) / 20 A (single string)	
Max. short-circuit current		40 A	
Number of MPP trackers		2	
Max. number of inputs		4	

Output

Grid connection		Three phase	
Rated output power	12,000 W	15,000 W	20,000 W
Max. apparent power	13,200 W	16,500 VA	22,000 VA
Rated output voltage		220 Vac / 380 Vac, 230 Vac / 400 Vac, 239.6 Vac / 415Vac, 3W + N + PE	
Rated AC grid frequency		50 Hz / 60 Hz	
Max. output current	18.2A/380Vac 17.3A/400Vac	25.2A/380Vac 23.9A/400Vac	33.6A/380Vac 31.9A/400Vac
Adjustable power factor		0.8 leading ... 0.8 lagging	
Max. total harmonic distortion		≤ 3 %	

Features & Protections

Input-side disconnection device	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
Ripple control ripple control	Yes
Integrated PID recovery ⁴	Yes

General Data

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	Smart air cooling
Display	LED Indicators; Integrated WLAN + FusionSolar App
Communication	RS485; WLAN/Ethernet via Smart Dongle-WLAN-FE (Optional) 4G / 3G / 2G via Smart Dongle-4G (Optional)
Weight (with mounting plate)	21kg (46.4 lb)
Dimensions (W x H x D) (incl. mounting plate)	546 x 460 x 228mm (21.5 x 18.1 x 9.0 inch)
Degree of protection	IP66

Optimizer Compatibility

DC MBUS compatible optimizer	SUN2000-600W-P, MERC-1100/1300W-P
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Standard Compliance (more available upon request)

Safety	EN/IEC 62109-1, EN/IEC 62109-2
Grid connection standards	G99, EN 50549, CEI 0-21, CEI 0-16, VDE-AR-N-4105, VDE-AR-N-4110, C10/11, ABNT, VFR 2019, UNE 217001, UNE 217002, RD 244, TOR D4, IEC61727, IEC62116, MEA

^{*1} Inverter max input PV power will be changed when long strings are designed and fully connected with power optimizers.

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

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

^{*4} SUN2000-12~20KTL-M5 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)

SUN2000-30/36/40KTL-M3 Smart String Inverter



Smart

8 strings intelligent monitoring



Efficient

Max. efficiency 98.7%



Safe

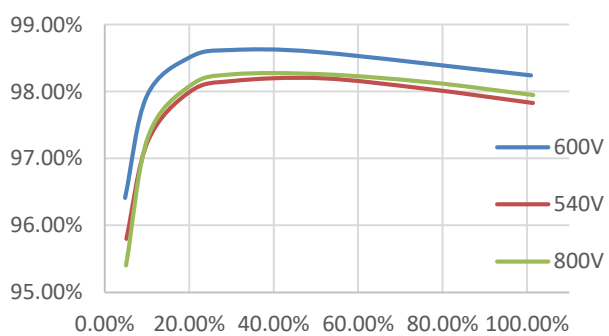
Fuse free design



Reliable

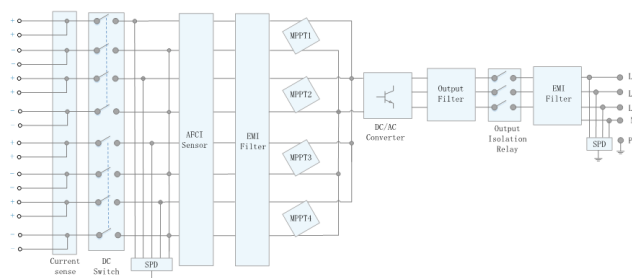
Type II surge arresters for DC & AC

Efficiency Curve



SUN2000-30/36/40KTL-M3

Circuit Diagram



SUN2000-30/36/40KTL-M3
Technical Specification

Technical Specification	SUN2000-30KTL-M3	SUN2000-36KTL-M3	SUN2000-40KTL-M3
-------------------------	------------------	------------------	------------------

Efficiency			
Max. Efficiency	98.7%		
European Efficiency	98.4%		

Input			
Max. Input Voltage ¹	1,100 V		
Max. Current per MPPT	26 A		
Max. Short Circuit Current per MPPT	40 A		
Start Voltage	200 V		
MPPT Operating Voltage Range ²	200 V ~ 1000 V		
Rated Input Voltage	600 V		
Number of Inputs	8		
Number of MPP Trackers	4		

Output			
Rated AC Active Power	30,000 W	36,000 W	40,000 W
Max. AC Apparent Power	33,000 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	43.3 A	52.0 A	57.8 A
Max. Output Current	47.9 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 ³	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		

Optimizer Compatibility			
DC MBUS Compatible Optimizer	SUN2000-600W-P, MERC-1100/1300W-P		

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, VDE-AR-N4105, VDE 0126-1-1, BDEW, G59/3, UTE C 15-712-1, CEI 0-16, CEI 0-21, RD 661, RD 1699, P.O. 12.3,RD 413, EN-50438-Turkey, EN-50438-Ireland, C10/11, PEA, MEA, Resolution No.7, NRS 097-2-1, AS/NZS 4777.2, DEWA		

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

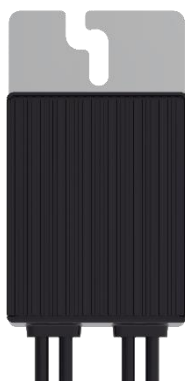
2. Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

3. SUN2000-30~40KTL-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)
Version No.:01-(20190716)

SUN2000-600W-P

Smart PV Optimizer



One-Fits-All Optimizer
Easier Business



<5s Module Auto-Mapping



Arc Fault Pinpoint
Positioning Along PV Cable

Technical Specification		SUN2000-600W-P			
		Input			
Rated Input DC Power ¹		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			
		Output			
Max. output voltage		80 V			
Max. output current		15 A			
Output bypass ²		Yes			
Shutdown output voltage per optimizer ³		0 V			
Shutdown output impedance per optimizer		1k ohm ± 10 %			
		Communication			
Communication Method		MBUS			
		Standard Compliance			
Safety		IEC62109-1 (class II safety)			
RoHS		Yes			
		General Data			
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 ⁴			
Input connector		MC4			
Input wire length		0.1m			
Output connector		MC4			
Output wire length		1.3 m (4.3 ft.) ⁵			
Operating temperature / humidity range		-40 °C ~ 85 °C ⁵ / 0 %RH ~ 100 %RH			
Degree of protection		IP68			
Compatible product		SUN2000-3/5KTL-L1, SUN2000-5/10KTL-M1 SUN2000-12/15/20KTL-M5, SUN2000-30/36/40KTL-M3			
Long String Design (Full Optimizer)		SUN2000-2-5KTL-L1	SUN2000-5-10KTL-M1	SUN2000-12-20KTL-M5	SUN2000-30-40KTL-M3
Minimum optimizer number per string ⁶		4	6	6	6
Maximum optimizer number per string		25	35	35	25
Maximum DC power per string		5,500 W	10,000 W	12,000 W	12,000 W

^{*1} Rated power of the module at STC shall not exceed "Rated Input DC Power" of power optimizer. Modules with power up to +5% power tolerance are acceptable.

^{*2} Power optimizer is bypassed in the string connected to an operating inverter when it fails to work

^{*3} Power optimizer output 0Vdc when disconnecting to the inverter or inverter is shutdown.

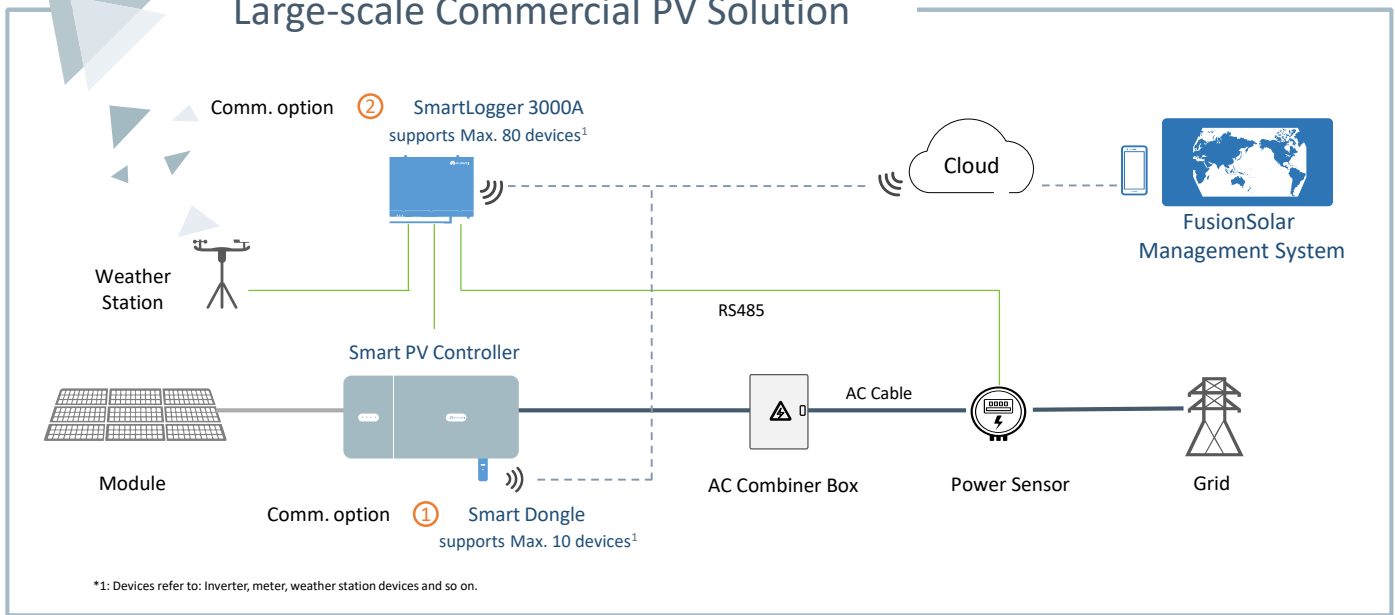
^{*4} Allow PV module frame installation / extruded aluminum profile installation

^{*5} Fits PV module in landscape and portrait installation.

^{*6} Require standard 60 cells module to meet the inverter minimum startup voltage

^{*7} Full power capability refers to online smart design tool.

Large-scale Commercial PV Solution



Safe & Reliable

Fuse-free design for superior safety

Natural cooling fully sealed design for better reliability

Higher Yields

Multi-MPPT to reduce string mismatch

Max. Efficiency 98.7% for higher yields

Smart O&M

String-level monitoring for fast trouble-shooting

One click I-V curve diagnosis making unhealthy modules visible



SUN2000-50KTL-M3 Smart PV Controller



Higher Yields

Up to 30% More Energy
with Optimizer



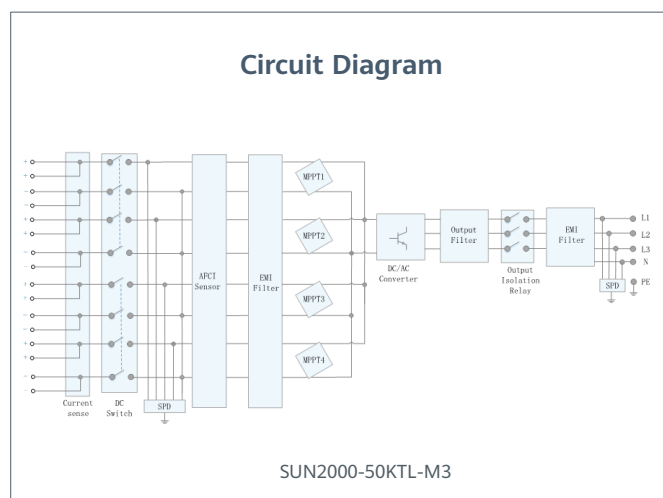
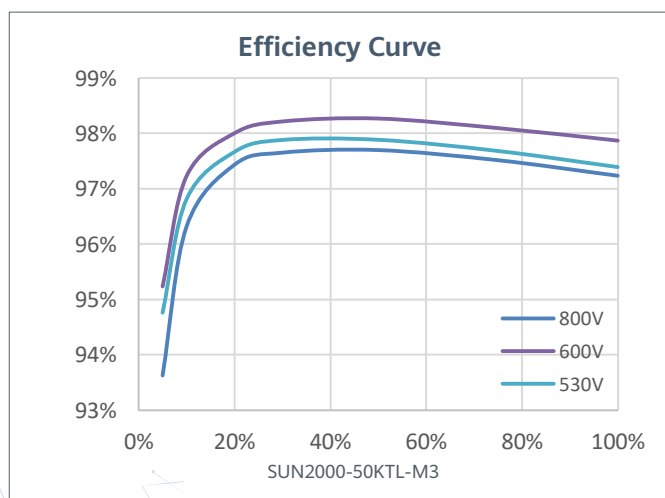
Active Safety

AI Powered
Active Arcing Protection



Flexible Communication

WLAN, Fast Ethernet, 4G
Communication Supported



SUN2000-50KTL-M3

Technical Specification

Technical Specification

SUN2000-50KTL-M3

Efficiency	
Max. Efficiency	98.5%
European Efficiency	98.0%

Input	
Max. Input Voltage ¹	1,100 V
Max. Current per MPPT	30 A
Max. Current per Input	20 A
Max. Short Circuit Current per MPPT	40 A
Start Voltage	200 V
MPPT Operating Voltage Range ²	200 V ~ 1,000 V
Rated Input Voltage	600 V
Number of Inputs	8
Number of MPP Trackers	4

Output	
Rated AC Active Power	50,000 W
Max. AC Apparent Power	55,000 VA
Max. AC Active Power (cosφ=1)	55,000 W
Rated Output Voltage	400 Vac / 480 Vac, 3W+(N) + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	72.2 A @ 400Vac, 60.1 A @ 480Vac
Max. Output Current	79.8 A @ 400Vac, 66.5 A @ 480Vac
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
Arc Fault Protection	Yes
Ripple Receiver Control	Yes
Integrated PID Recovery ³	Yes

Communication	
Display	LED Indicators, Bluetooth + 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)

Optimizer Compatibility	
DC MBUS Compatible Optimizer	MERC-1100/1300W-P

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)	49 kg (108.1 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% RH ~ 100% RH
DC Connector	Amphenol HH4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP 66
Topology	Transformerless
Nighttime Power Consumption	≤ 5.5W

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, VDE-AR-N4105, VDE 0126-1-1, BDEW, G59/3, UTE C 15-712-1, CEI 0-16, CEI 0-21, RD 661, RD 1699, P.O. 12.3, RD 413, EN-50438-Turkey, EN-50438-Ireland, C10/11, MEA, Resolution No.7, NRS 097-2-1, DEWA, MEA

1. The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.
2. Any DC input voltage beyond the operating voltage range may result in inverter improper operating.
3. SUN2000-50KTL-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)
4. 50KTL Platform only supports C&I Optimizer(MERC-1100/1300W-P). Refer to [HTTP://solar.huawei.com/](http://solar.huawei.com/)

MERC-1100/1300W-P

Smart Module Controller



Long String Design
C&I Better Fit



20A Input Current
Fit All Type Module



<5s
Module Auto-Mapping



Temperature Detection
Safety Enhanced



1V Safe Voltage Shutdown
Easier for Detection



Arc Fault Pinpoint Positioning Along PV
Cable

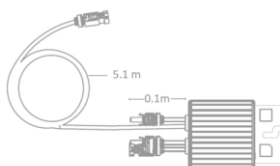


MERC-1100/1300W-P

Smart Module Controller



Technical Specification		MERC-1100W-P		MERC-1300W-P	
Input					
Rated Input DC Power ¹	1100 W		1300 W		
Absolute maximum input voltage	125 V				
MPPT operating voltage range	12.5 - 105 V				
Maximum 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 ²	Yes				
Shutdown output voltage per optimizer ³	1 V				
Standard Compliance					
Safety	IEC62109-1 (class II safety)				
RoHS	Yes				
General Data					
Dimension (W x H x D)	149 x 104 x 49mm (5.9 x 4.1 x 2.0 inch)				
Weight (including cables)	1.0 kg (2.2 lb.)				
Installation part (optional)	PV Module Frame Plate, T-shaped Bolt				
Input connector	MC4				
Input wire length	0.1 m (short cable version) ⁴				
Output connector	MC4				
Output wire length	0.1 m (+), 5.1 m (-) (short cable version) ⁴				
Operating temperature / humidity range	-40 °C ~ 85 °C ⁵ / 0 %RH ~ 100 %RH				
Degree of protection	IP68				
Compatible product	SUN2000-12/15/20KTL-M5 SUN2000-30/36/40KTL-M3 SUN2000-50KTL-M3				
String Configuration (Full Optimizer) * MERC-1100/1300W-P support full optimizer only		SUN2000-12-20KTL-M5		SUN2000-30-40KTL-M3	
Minimum optimizer number per string		6		6	
Maximum optimizer number per string		25		25	
Recommend minimum number of strings per inverter * Each MPPT only support connect to 1 string only		12KTL	15-20KTL	30/36KTL	40KTL
		1	2	3	4
Maximum DC power per strings * Recommend to have the equal string capacity and string capacity difference <2kW, otherwise might affect energy yield		20,000 W		20,000 W	



- *1 Rated power of the module at STC shall not exceed "Rated Input DC Power" of power optimizer. Modules with power up to +5% power tolerance are acceptable.
- *2 Power optimizer is bypassed in the string connected to an operating inverter when it fails to work.
- *3 Power optimizer output 1Vdc when disconnecting to the inverter or inverter is shutdown.
- *4 Optimizer input cable 0.1m (+/-), output cable 0.1m (+), 5.1m (-), please ensure the PV module cable length to connect to the optimizer. For split junction box module with short module cable, the long input cable optimizer available on request (Input cable 1.3 m (+/-), output cable 0.1m (+), 2.9m (-)).
- *5 When the operating temperature of the optimizer ranges from 70°C to 85°C, the optimizer may shut down for over-temperature protection and report an over-temperature alarm. After the operating temperature decreases, the optimizer automatically recovers with no risk of damage.
- *6 SUN2000-450/600W-P is not allowed to mixed in use with MERC-1100/1300W-P.
- *7 The temperature detection function is only enabled on the short cable (0.1m).
- *8 The MERC-1100/1300W-P is allowed to connect to 1 PV module only and operate.

SUN2000-100KTL-M2

Smart PV Controller



10
MPP Trackers



98.8% (@480V)
Max. Efficiency



String-level
Management



Smart I-V Curve Diagnosis
Supported



MBUS
Supported



Support AFCI &
Smart String Level
Disconnect

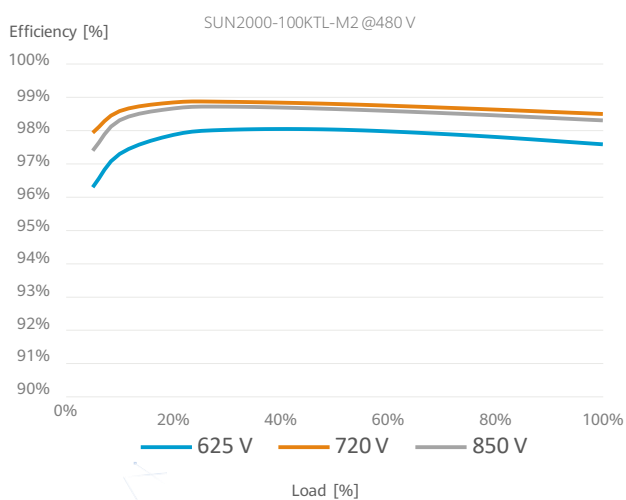


Surge Arresters for
DC & AC

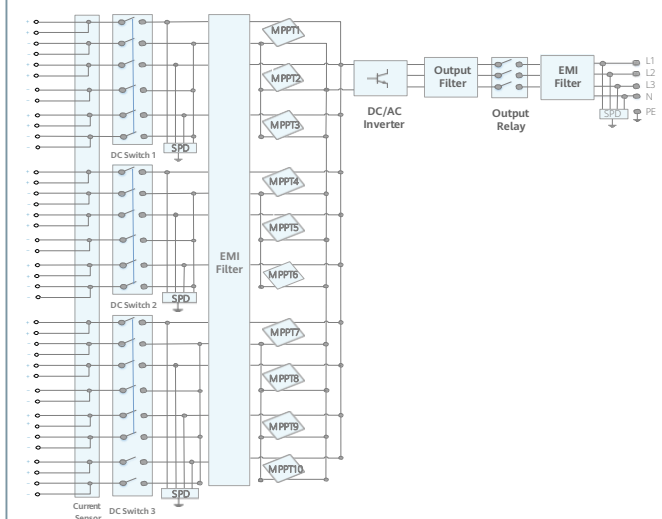


IP66
Protection

Efficiency Curve



Circuit Diagram



Technical Specification SUN2000-100KTL-M2

Efficiency	
Max. efficiency	98.6% @ 400 V, 98.8% @ 480 V
European efficiency	98.4% @ 400 V, 98.6% @ 480 V

Input	
Max. Input Voltage ¹	1,100 V
Max. Current per MPPT	30 A
Max. Current per Input	20 A
Max. Short Circuit Current per MPPT	40 A
Start Voltage	200 V
MPPT Operating Voltage Range ²	200 V ~ 1,000 V
Nominal Input Voltage	600 V @ 400 Vac, 720 V @ 480 Vac
Number of MPP trackers	10
Max. input number per MPP tracker	2

Output	
Nominal AC Active Power	100,000 W
Max. AC Apparent Power	110,000 VA
Max. AC Active Power (cosφ=1)	110,000 W
Nominal Output Voltage	400 V/ 480 V, 3W+(N)+PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	144.4 A @ 400 V, 120.3 A @ 480 V
Max. Output Current	160.4 A @ 400 V, 133.7 A @ 480 V
Adjustable Power Factor Range	0.8 leading... 0.8 lagging
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
Arc Fault Protection	Yes
Smart String Level Disconnecter	Yes

Communication	
Display	LED indicators; WLAN adaptor + FusionSolar APP
RS485	Yes
USB	Yes
Smart Dongle-4G	4G / 3G / 2G via Smart Dongle – 4G (Optional)
Monitoring BUS (MBUS)	Yes (isolation transformer required)

General Data	
Dimensions (W x H x D)	1,035 x 700 x 365 mm
Weight (with mounting plate)	93 kg
Operating Temperature Range	-25°C ~ 60°C
Cooling Method	Smart Air Cooling
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol HH4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless
Nighttime Power Consumption	< 3.5 W

Standard Compliance (more available upon request)	
Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 61727, IEC 60068, IEC 61683
Grid Connection Standards	VDE-AR-N4105, EN 50549-1, EN 50549-2, RD 661, RD 1699, C10/11

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

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

SUN2000-115KTL-M2
Smart PV Controller



10
MPP Trackers



98.8% (@480V)
Max. Efficiency



String-level
Management



Smart I-V Curve Diagnosis
Supported



MBUS
Supported



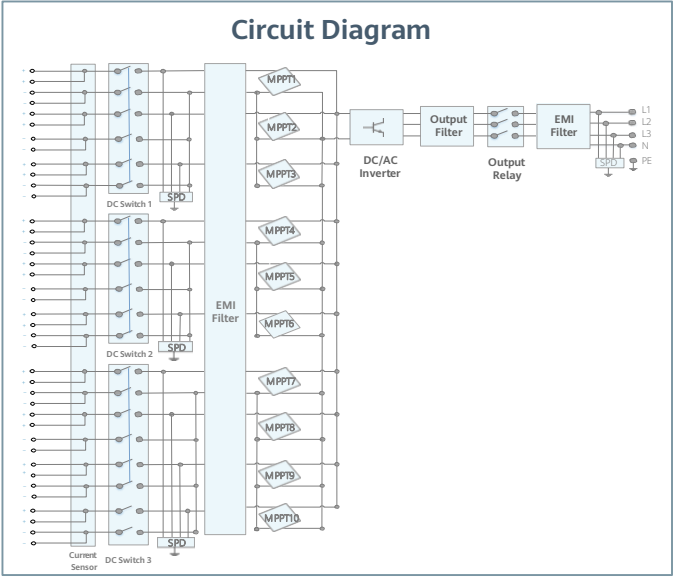
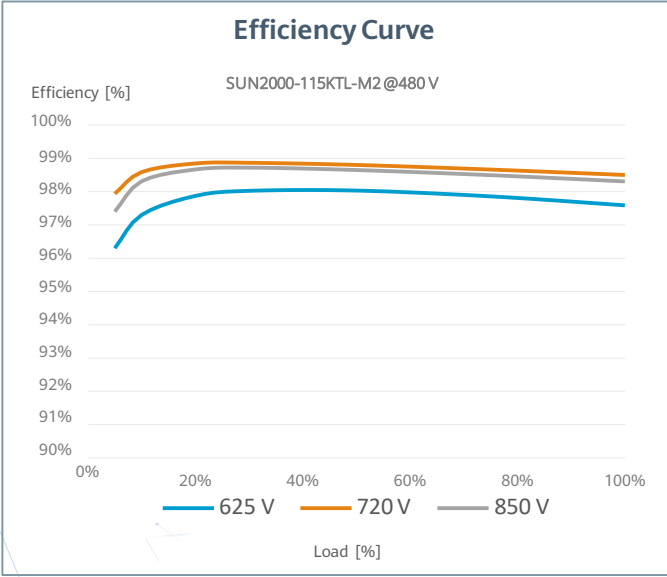
Support
Smart String Level
Disconnect



Surge Arresters for
DC & AC



IP66
Protection



Technical Specification

SUN2000-115KTL-M2

Efficiency

Max. efficiency	98.6% @400 V, 98.8% @480 V
European efficiency	98.4% @400 V, 98.6% @480 V

Input

Max. Input Voltage ¹	1,100 V
Max. Current per MPPT	30 A
Max. Current per Input	20 A
Max. Short Circuit Current per MPPT	40 A
Start Voltage	200 V
MPPT Operating Voltage Range ²	200 V ~ 1,000 V
Nominal Input Voltage	600 V @400 Vac, 720 V @480 Vac
Number of MPP trackers	10
Max. input number per MPP tracker	2

Output

Nominal AC Active Power	115,000 W
Max. AC Apparent Power	125,000 VA
Max. AC Active Power (cosφ=1)	125,000 W
Nominal Output Voltage	400 V / 480 V, 3W+(N)+PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	166.0 A @400 V, 138.4 A @480 V
Max. Output Current	182.3 A @400 V, 151.9 A @480 V
Adjustable Power Factor Range	0.8 leading... 0.8 lagging
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
Smart String Level Disconnecter	Yes

Communication

Display	LED indicators; WLAN adaptor + FusionSolar APP
RS485	Yes
USB	Yes
Smart Dongle-4G	4G / 3G / 2G via Smart Dongle – 4G (Optional)
Monitoring BUS (MBUS)	Yes (isolation transformer required)

General Data

Dimensions (W x H x D)	1,035 x 700 x 365 mm
Weight (with mounting plate)	93 kg
Operating Temperature Range	-25°C ~ 60°C
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

Standard Compliance (more available upon request)

Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 61727, IEC 60068, IEC 61683
Grid Connection Standards	VDE-AR-N4105, EN 50549-1, EN 50549-2, RD 661, RD 1699, C10/11

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

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

Smart Dongle-WLAN-FE



Smart

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



Simple

Plug & Play Support
max. 10 devices



Reliable

IP65
Support auto reconnection

Technical Specification	SDongleA-05
General Data	
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	AP + STA
Encryption Algorithm	Encryption Mechanism: WPA/WPA2 Encryption: TKIP/CCMP/AES
Wireless Parameter	
Supported standards & frequencies	802.11b/g/n (2.412G—2.484G)
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	SRRC, CE, RCM
Inverter Compatibility	
Inverter Model	SUN2000-3/5KTL-L1 SUN2000-5/10-M1 SUN2000-12/15/20KTL-M2 SUN2000-12/15/20KTL-M5 SUN2000-30/36/40/50KTL-M3 SUN2000-100/115KTL-M2

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

Smart Dongle-4G



Smart

4G communication¹

Support 3rd-party monitoring system²



Simple

Plug & Play

WLAN-AP for local deploying³



Reliable

IP65

Support auto reconnection

Technical Specification	SDongleB-06-EU
-------------------------	----------------

General Data	
Max. Devices Supported	10
Max. Inverters Supported	10
Connection interface	USB
Installation	Plug-and-play
Indicator	LED Indicator
Dimensions (W * H * D)	162*48*28mm
Degree of protection	IP65
Power consumption (typical)	3.5W

Wireless Parameter	
Sim card type	mini-sim (15 mm*25 mm)
Supported standards & frequencies ⁴	LTE-FDD: B1/B3/B7/B8/B20/B28 LTE-TDD: B38/B40/B41 GSM: 850/900/1800/1900MHz
Wifi Operation Mode	AP
Supported standards & frequencies	802.11b/g/n (2.412G—2.484G)

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	CE

Inverter Compatibility	
------------------------	--

Inverter model

SUN2000-3/5KTL-L1
SUN2000-5/10KTL-M1
SUN2000-12/15/20KTL-M2
SUN2000-12/15/20KTL-M5

SUN2000-30/36/40/50KTL-M3
SUN2000-60KTL-M0
SUN2000-100KTL-M1
SUN2000-100/115KTL-M2

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

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



Smart

Smart zero export control design



Simple

Easy to install on site



Reliable

Safety by lightning protection module

Technical Specification	SmartLogger3000A01EU
Device Management	
Max. Number of Manageable Devices ³	80
Communication Interface	
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 ¹	LTE(FDD) : B1,B2,B3,B4,B5,B7,B8,B20 DC-HSPA+/HSPA+/HSPA/UMTS : 850/900/1900/2100 MHz GSM/GPRS/EDGE: 850/900/1800/1900 MHz ²
Digital / Analog Input / Output	DI x 4, DO x 2, AI x 4
Active DO	12V, 100mA (connection with relay, sensor)
Communication Protocol	
Ethernet	Modbus-TCP, IEC 60870-5-104
RS485	Modbus-RTU, IEC 60870-5-103 (standard), DL / T645
Interaction	
LED	LED Indicator x 3 – RUN, ALM, 4G
WEB	Embedded Web
USB	USB 2.0 x 1
APP	FusionSolar APP Communicated by WLAN for Commissioning
Environment	
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.)
Electrical	
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
Mechanical	
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

*1: When putting inside metal box, extended antenna will be needed.

*2: For recommended carriers list and details on supported frequencies, please contact local distributors.

*3: Devices refer to: Inverter, meter, weather station devices and so on.

SmartLogger3000A



Smart

Smart zero export control design



Simple

Easy to install on site



Reliable

Safety by lightning protection module

Technical Specification	SmartLogger3000A00GL
Device Management	
Max. Number of Manageable Devices ²	80
Communication Interface	
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
Digital / Analog Input / Output	DI x 4, DO x 2, AI x 4
Active DO	12V, 100mA (connection with relay, sensor)
Communication Protocol	
Ethernet	Modbus-TCP, IEC 60870-5-104
RS485	Modbus-RTU, IEC 60870-5-103 (standard), DL / T645
Interaction	
LED	LED Indicator x 3 – RUN, ALM, 4G ¹
WEB	Embedded Web
USB	USB 2.0 x 1
APP	FusionSolar APP Communicated by WLAN for Commissioning
Environment	
Operating Temperature Range	-40°C ~ 60°C (-40°F ~ 140°F)
Storage Temperature	-40°C ~ 70°C (-40°F ~ 158°F)
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Electrical	
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
Mechanical	
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

*1: 4G is not available in this model.

*2: Devices refer to: Inverter, meter, weather station devices and so on.

FusionSolar Smart PV Management System



Better experience

- One APP for all access procedure
- Auto-detection of local devices
- Module auto-mapping within 5s



Energy visualization

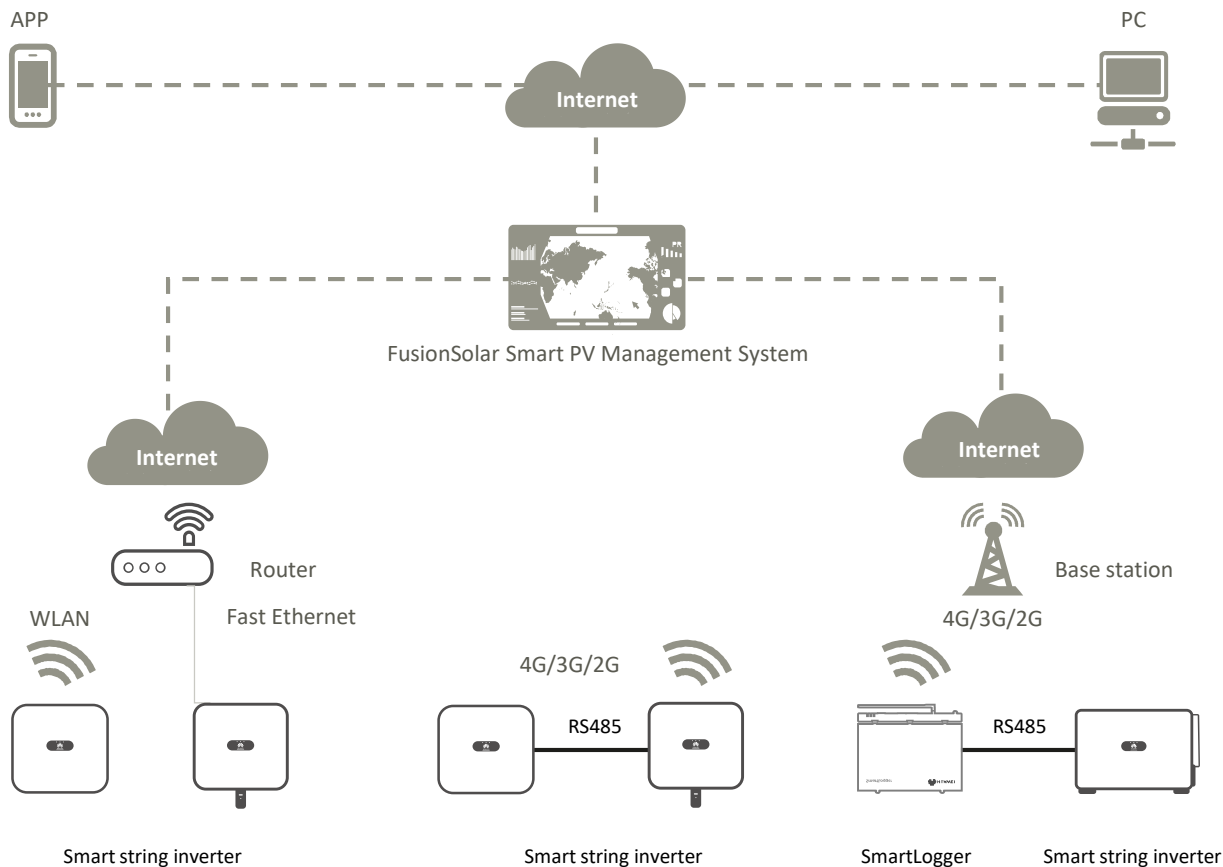
- KPI Dashboard, centralized management of multiple plants
- Module-level monitoring
- Report subscription and real-time alarm push



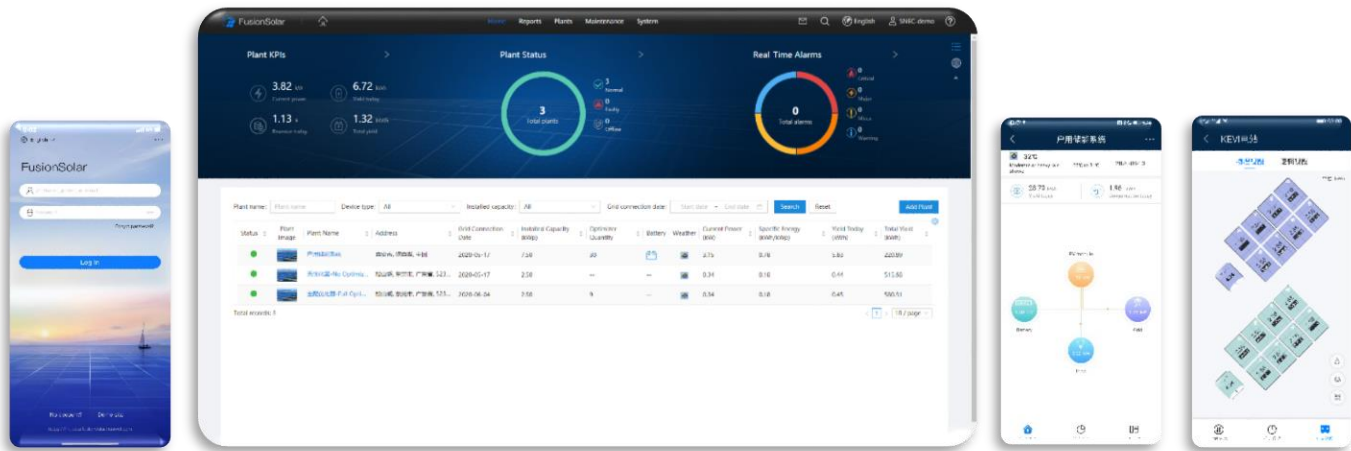
Smart O&M

- One-screen mgmt. of site, personnel, status
- One-click ticket dispatching & site navigation
- Online Smart I-V Curve Diagnosis, 15mins required for a 100MW plant diagnosis

Networking



FusionSolar Smart PV Management System

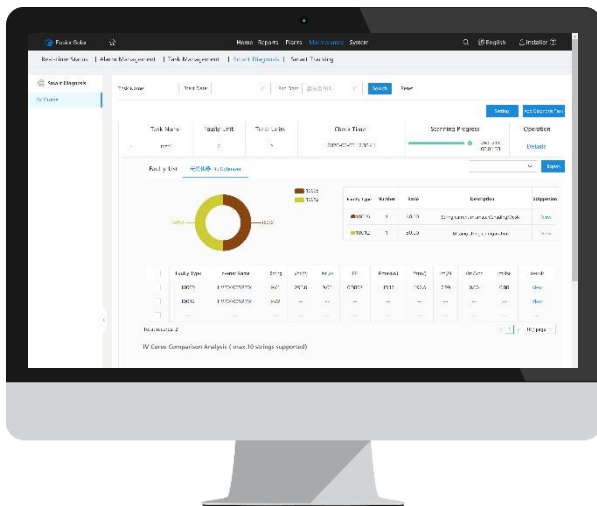


Category	Function	Web	APP
Homepage	PV Plants List	●	●
	Add Plant	●	●
Report Management	Plant Report	●	
	Inverter Report	●	
	Battery Report	●	
Device Management	Device Details	●	●
	Remote Parameter Setting	●	
	Remote Optimizer Search	●	
Intelligent O&M	Real-time Status	●	
	Alarm Management	●	●
	Task Management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

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

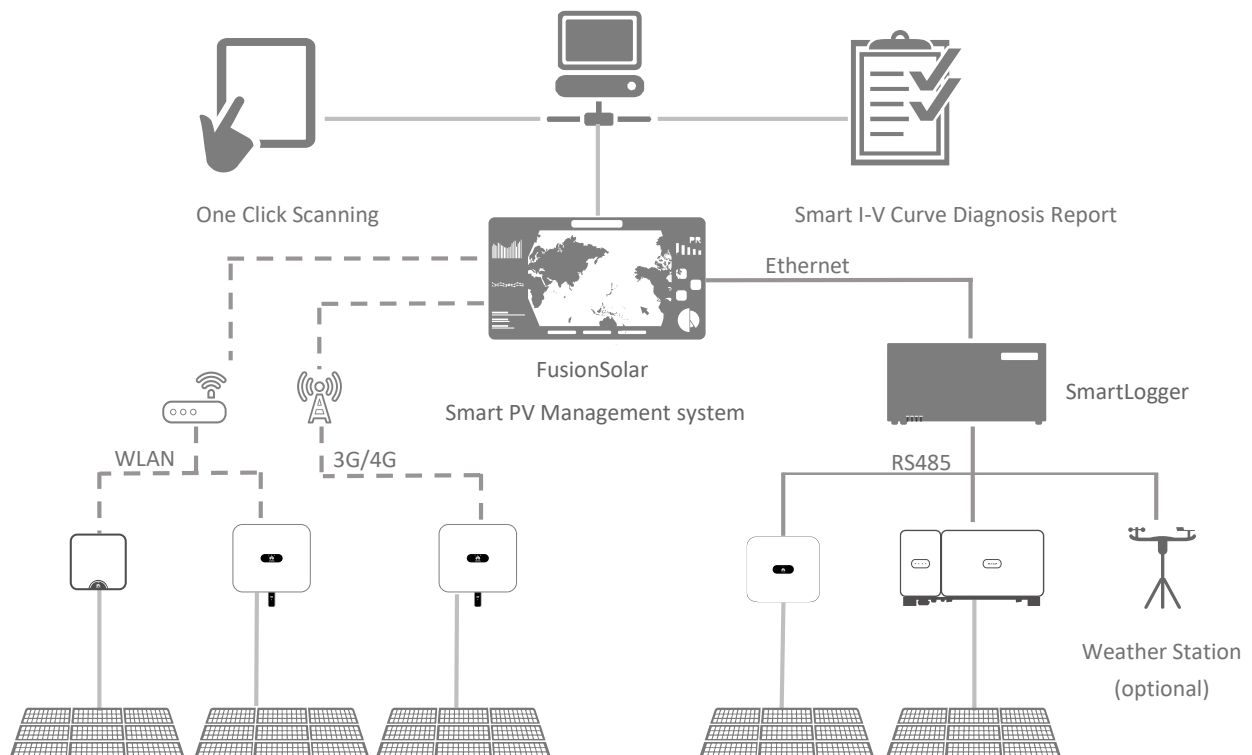
- Support plant-level, array-level and inverter-level analysis and diagnosis
- Automatically identify different failure types and provide recovery suggestion



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

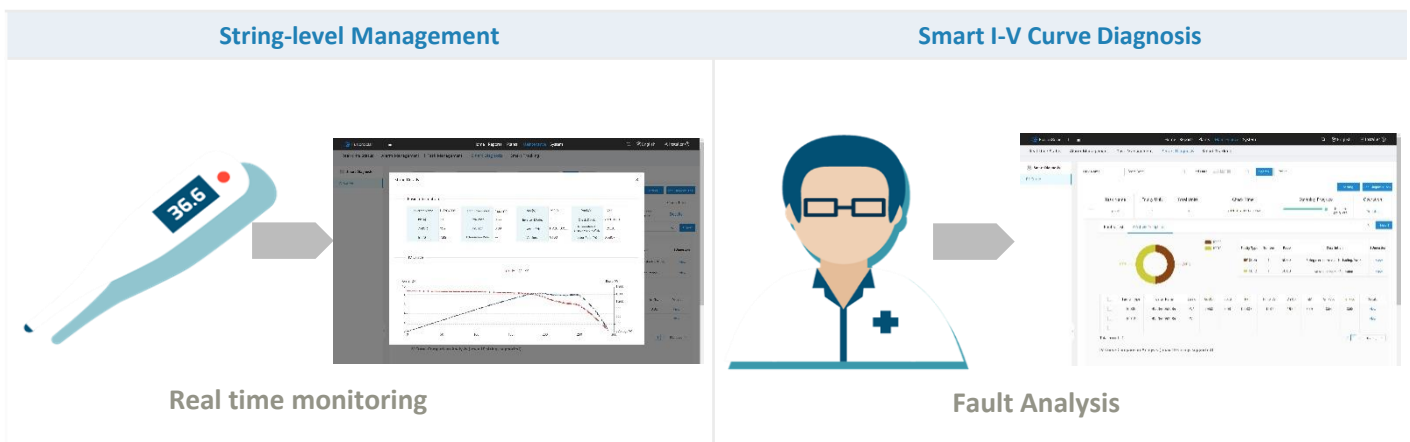
Network



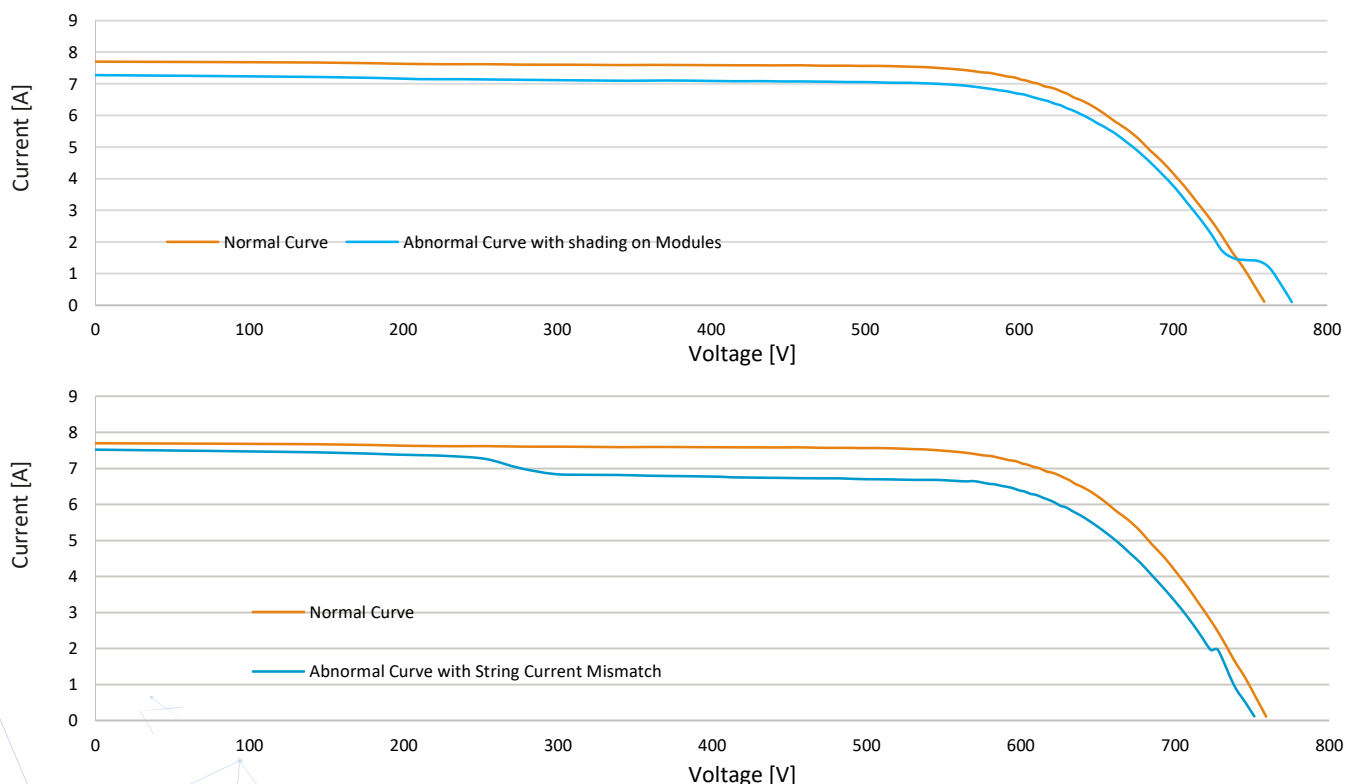
Smart I-V Curve Diagnosis

Technical Specifications	Smart I-V Curve Diagnosis
Smart PV Inverter *	SUN2000-3/5KTL-L1, SUN2000-5/10KTL-M1, SUN2000-12/15/20KTL-M2, SUN2000-12/15/20KTL-M5, SUN2000-30/36/40/50KTL-M3, SUN2000-60KTL-M0, SUN2000-100KTL-M1, SUN2000-100/115KTL-M2
Communication	SmartLogger3000A, Smart Dongle-WLAN-FE/4G
Management System	FusionSolar Smart PV Management System
Scanning Time	< 1s (1 string)
Sampling Points per I-V Curve	128
Certification	 TÜV

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



String I-V Curve Comparison





3kW

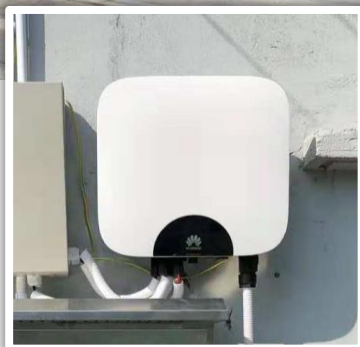
Residential PV System in Quezon City, Philippines

System Configuration

- SUN2000L-3KTL

COD

June, 2018



5kW

Residential PV System in Hong Kong, China

System Configuration

- SUN2000L-5KTL

COD

Nov, 2018



4kW

Residential PV System in Waregem, Belgium

System Configuration – Partial Optimizer

- 18 × 295Wp modules
- 6 × 375W optimizers
- SUN2000L-4KTL, WLAN
- Smart PV safety box

COD
May, 2018



5kW

Residential Energy System in Bangkok, Thailand

System Configuration

- SUN2000L-5KTL

COD
April, 2019



15kW

Residential PV System in Philippines

System Configuration

- 80 modules
- 3 × SUN2000L-5KTL

COD

Mar, 2019



4.5MW

Distributed PV System in Taiwan, China

System Configuration

- SUN2000-40KTL

COD

May, 2019



2.8MWp

Distributed PV System in Changi Airport, Singapore

COD

Dec, 2016

System Configuration

- SUN2000-36KTL



1MWp

Distributed PV System in Kuala Lumpur, Malaysia

COD

Mar, 2016

System Configuration

- SUN2000-36KTL



604.5 kWp

Distributed PV System in Philippines

System Configuration

- SUN2000-42KTL

COD

Jan, 2019



760kWp

Distributed PV System in Vietnam

System Configuration

- SUN2000-36KTL

COD

July, 2018

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