

Smart Energy Controller



Active Safety

AI Powered
Active Arcing Protection



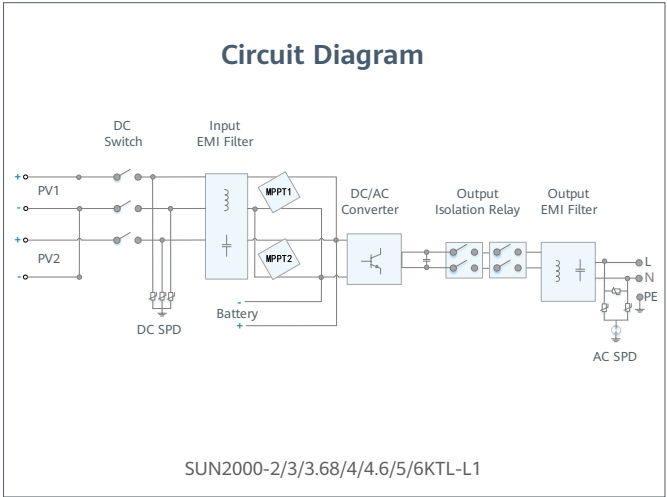
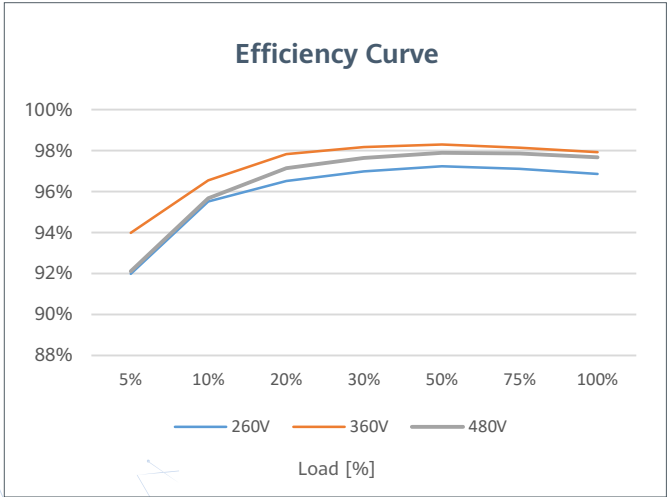
Higher Yields

Up to 30% More
Energy with Optimizer



2x POWER Battery Ready

5KW AC Output plus
5KW Battery Charge



Technical Specification

Technical Specification	SUN2000 -2KTL-L1	SUN2000 -3KTL-L1	SUN2000 -3.68KTL-L1	SUN2000 -4KTL-L1	SUN2000 -4.6KTL-L1	SUN2000 -5KTL-L1	SUN2000 -6KTL-L1
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Efficiency							
Max. efficiency	98.2 %	98.3 %	98.4 %	98.4 %	98.4 %	98.4 %	98.4 %
European weighted efficiency	96.7 %	97.3 %	97.3 %	97.5 %	97.7 %	97.8 %	97.8 %

Input (PV)							
Recommended max. PV power ¹	3,000 Wp	4,500 Wp	5,520 Wp	6,000 Wp	6,900 Wp	7,500 Wp	9,000 Wp
Max. input voltage	600 V ²						
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	2,200 W	3,300 W	3,500 W	3,500 W	3,500 W	3,500 W	3,500 W
Max discharge Power @10H_R	2,200 W	3,300 W	3,680 W	4,400 W	4,600 W	5,000 W	5,000 W

Compatible Battery	HUAWEI Smart LUNA2000 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	2,200 W	3,300 W	3,680 W	4,400 W	4,600 W	5,000 W	5,000 W

Output (On Grid)							
Grid connection	Single phase						
Rated output power	2,000 W	3,000 W	3,680 W	4,000 W	4,600 W	5,000 W ⁴	6,000 W
Max. apparent power	2,200 VA	3,300 VA	3,680 VA	4,400 VA	5,000 VA ⁵	5,500 VA ⁶	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	16 A	20 A	23 A ⁷	25 A ⁷	27.3 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	2,000 VA	3,000 VA	3,680 VA	4,000 VA	4,600 VA	5,000 VA	5,000 VA
Rated output voltage	220 V / 230 V						
Maximum output current	9.1 A	13.6 A	16.7 A	18.2 A	20.9 A	22.7 A	22.7 A
Power factor range	0.8 leading ... 0.8 lagging						

*1 Inverter max input PV power is 10,000 Wp when long strings are designed and fully connected with SUN2000-450W-P 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

*4 AS4777.2: 4,991W. *5. VDE-AR-N 4105: 4,600VA / AS4777.2: 4,999VA. *6. AS4777.2: 4,999VA / C10/11: 5,000VA *7. AS4777.2: 21.7A.

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

Technical Specification

Technical Specification	SUN2000 -2KTL-L1	SUN2000 -3KTL-L1	SUN2000 -3.68KTL-L1	SUN2000 -4KTL-L1	SUN2000 -4.6KTL-L1	SUN2000 -5KTL-L1	SUN2000 -6KTL-L1 ¹
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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
Max. operating altitude	4,000 m (13,123 ft.) (Derating above 2000 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

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

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Higher Yields

Up to 30% More Energy
with Optimizer ¹



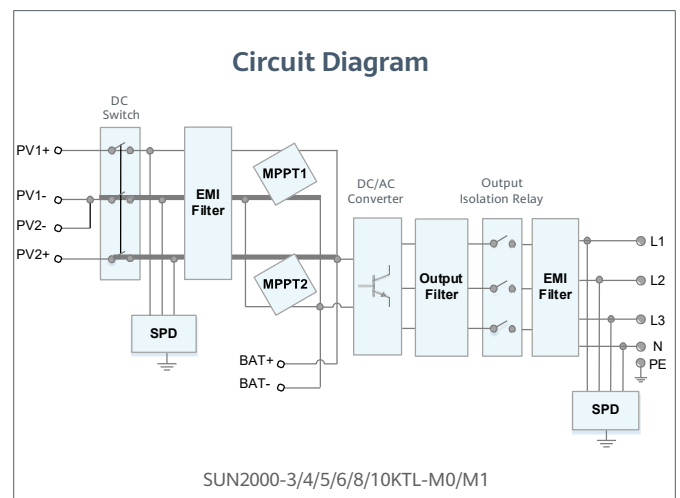
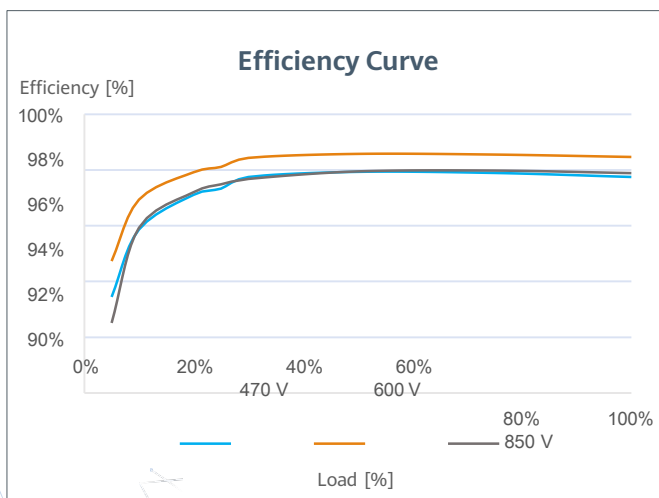
Battery Ready

Plug & Play battery interface ²



Flexible Communication

WLAN, Fast Ethernet, 4G
Communication Supported



^{*1} Only applicable to SUN2000-3/4/5/6/8/10KTL-M1 smart energy center.

^{*2} SUN2000-3/4/5/6/8/10KTL-M0 will be compatible with HUAWEI smart string ESS in Q1, 2021

SUN2000-3/4/5/6/8/10KTL-M1

Technical Specification

Technical Specification	SUN2000 -3KTL-M1	SUN2000 -4KTL-M1	SUN2000 -5KTL-M1	SUN2000 -6KTL-M1	SUN2000 -8KTL-M1	SUN2000 -10KTL-M1
Efficiency						
Max. efficiency	98.2%	98.3%	98.4%	98.6%	98.6%	98.6%
European weighted efficiency	96.7%	97.1%	97.5%	97.7%	98.0%	98.1%
Input (PV)						
Recommended max. PV power ¹	4,500 Wp	6,000 Wp	7,500 Wp	9,000 Wp	12,000 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	11 A					
Max. short-circuit current	15 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	3,300 W	4,400 W	5,500 W	6,600 W	8,800 W	10,000 W
Output (On Grid)						
Grid connection	Three-phase					
Rated output power	3,000 W	4,000 W	5,000 W	6,000 W	8,000 W	10,000 W
Max. apparent power	3,300 VA	4,400 VA	5,500 VA	6,600 VA	8,800 VA	11,000 VA 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	5.1 A	6.8 A	8.5 A	10.1 A	13.5 A	16.9 A
Adjustable power factor	0.8 leading ... 0.8 lagging					
Max. total harmonic distortion	≤ 3 %					
Output (Off Grid)						
Backup Box	Backup Box – B1					
Maximum apparent power	3,000 VA	3,300 VA	3,300 VA	3,300 VA	3,300 VA	3,300 VA
Rated output voltage	220 V / 230 V					
Maximum output current	13.6 A	15 A	15 A	15 A	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					
Max. operating altitude	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, SUN2000-450W-P2, 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					

^{*1} Inverter max input PV power is 20,000 Wp when long strings are designed and fully connected with SUN2000-450W-P 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} SUN2000-3~10KTL-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.

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