Smart Energy Controller



Active Safety

AI Powered
Active Arcing Protection

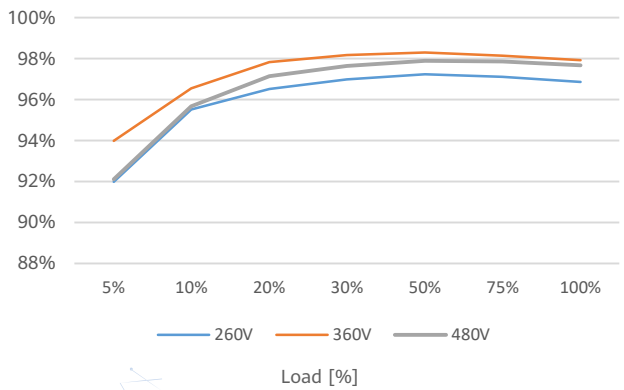
Higher Yields

Up to 30% More
Energy with Optimizer

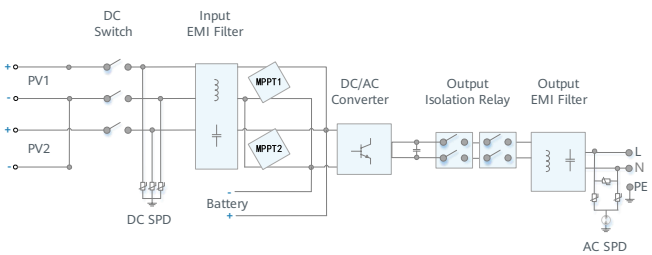
2x POWER Battery Ready

5KW AC Output plus
5KW Battery Charge

Efficiency Curve



Circuit Diagram



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

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

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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						