

SMART ENERGY CONTROLLER

SUN5000-8/12K-MAP0



Saferooft

Multiple-protection technologies
always keeps rooftop safe



Asymmetric load
100% three-phase
asymmetric load



Higher Yields
Up to 30% More Energy
with Optimizer ¹



Battery Ready
Plug & Play Battery
Interface ²

SUN5000-8/12K-MAP0 **Technical Specification**

Technical Specification	SUN5000-8K-MAP0	SUN5000-12K-MAP0
Max. efficiency	98.6 %	98.6 %
European weighted efficiency	98.0 %	98.2 %
Input (PV)		
Recommended max. PV power	14,600 Wp	22,000 Wp
Max. input voltage ¹	1,100 V	
Operating voltage range ²	160 ~ 1,000 V	
Startup voltage	160 V	
Rated input voltage	600 V	
Max. input current per MPPT	16 A	
Max. short-circuit current	22 A	
Number of MPP trackers	2	
Max. input number per MPP tracker	1	
Input (DC Battery)		
Compatible battery	LUNA2000-5/10/15-S0, LUNA2000-7/14/21-S1	
Operating voltage range	600 ~ 980 V	
Max. operating current	20 A	
Max. charging power	12,000 W	
Max. discharging power	8,000 W	12,000 W
Output (On Grid)		
Grid connection	Three-phase	
Rated output power	8,000 W	12,000 W
Max. apparent power	8,800 VA	13,200 VA
Rated output voltage	220 V AC / 380 V AC, 230 V AC / 400 V AC, 240 V AC / 450 V AC 3W/N+PE	
Rated AC grid frequency	50 Hz/60 Hz	
Max. output current	13.3 A	20.2 A
Adjustable power factor	0.8 leading ... 0.8 lagging	
Max. total harmonic distortion	≤ 3%	
Output (Off Grid)		
Compatible backup device	SmartGuard-63A-T0 (3 phase)	
Rated output power	8,000 W	12,000 W
Rated output voltage	220 V AC / 380 V AC, 230 V AC / 400 V AC, 240 V AC / 450 V AC 3W/N+PE	
110% overload	Continuous	
200% overload	10 seconds	
Automatic switchover time	≤ 20 ms (with SmartGuard-63A-T0)	
Protection Feature		
Asymmetric load	Yes, Supports 100% three-phase unbalanced load	
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 detection	Yes	
AC overcurrent protection	Yes	
AC short-circuit protection	Yes	
AC overvoltage protection	Yes	
Arc fault protection	Yes	
Connector temperature detection	Yes (PV & Battery Inputs)	
Ripple receiver control	Yes	
Battery charging from grid	Yes	
General Specification		
Operating temperature range	-25°C to +60°C (-13°F to +140°F)	
Relative operating humidity	0 % - 100% RH	
Max. operating altitude	4,000 m	
Cooling	Natural convection	
Noise	≤ 29 dB	
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); EMMA (Optional)	
Weight (incl. mounting brackets)	21 kg	
Dimensions (incl. mounting brackets)	490 mm x 460 mm x 130 mm	
IP rating	IP66	
Nighttime power	< 5.5 W	
Optimizer Compatibility		
DC MBUS compatible optimizer	SUN2000-450W-P2, SUN2000-600W-P, MERC-500W-P, MERC-600W-P	
Standards Compliance (More Available Upon Request)		
Safety	-	
Grid connection standards	-	

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

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

Disclaimer: the preceding values are measured by an internal laboratory of Huawei in a specific environment. The actual values may vary with products, software versions, usage conditions, and environmental factors.