

SMART ENERGY CONTROLLER

SUN5000-8/12K-MAP0



Saferooft

Multiple-protection technologies
always keeps rooftop safe



Unbalanced load

100% three-phase
unbalance load



Higher Yields

Up to 30% More Energy
with Optimizer ¹



Battery Ready

Plug & Play Battery
Interface ²

SUN2000-8/12K-MAPO

Technical Specification

Technical Specification	SUN2000-8K-MAPO	SUN2000-12K-MAPO
Max. efficiency	98.6 %	98.6 %
European weighted efficiency	98.0 %	98.2 %
Input (PV)		
Recommended max. PV power ¹	14,600 Wp	22,000 Wp
Max. input voltage ²		1,100 V
Operating voltage range ³		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	HUAWEI Smart String ESS	
Operating voltage range	600 ~ 980 V	
Max. operating current	20 A	
Max. charge power	12,000 W	
Max. discharge 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 / 380 V AC 12.8 A / 400 V AC 12.2 A / 415 V AC	20.2 A / 380 V AC 19.1 A / 400 V AC 18.5 A / 415 V AC
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	
Overload output power	110 % load (3-phase): continuous; 150 % load (3-phase): 1 minute; 150 % load (Single-phase): 5 minutes; 200 % load (3-phase): 10 seconds	
Automatic switchover time	≤ 20 ms (with SmartGuard-63A-T0)	
Protection Feature		
Unbalanced 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 monitoring	Yes	
AC overcurrent protection	Yes	
AC short-circuit protection	Yes	
AC overvoltage protection	Yes	
Arc fault protection	Yes	
Connectors temperature monitoring	Yes	
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 (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); 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	
Safety	Standards Compliance (More Available Upon Request)	
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.