

SUN2000-450W-P2/600W-P Smart Module Controller



One-fits-all Optimizer
for Easier Business



<5s PV Module Physical
Layout Auto-mapping



Pinpointing Open-circuit Fault for Quick
Troubleshooting

Technical Specification	SUN2000-450W-P2	SUN2000-600W-P		
Input				
Rated Input DC Power ¹	450 W	600 W		
Absolute Maximum Input Voltage	80 V			
MPPT Operating Voltage Range	10 ~ 80 V			
Maximum Short Circuit Current (Isc) of Connected PV Module	14.5 A			
Maximum Efficiency	99.5 %			
Weighted Efficiency	99.0 %			
Overvoltage Category	II			
Output				
Maximum Output Voltage	80 V			
Maximum Output Current	15 A			
Output Bypass ²	Yes			
Output Voltage during Standby ³	0 V per Optimizer			
Output Impedance during Standby	1kΩ ± 10 % per Optimizer			
Communication				
Communication Method	MBUS			
Standard Compliance				
Safety	IEC62109-1 (class II safety)			
RoHS	Yes			
Fire Safety	VDE-AR-E 2100-712:2018-12			
General Data				
Dimensions (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	Staubli MC4			
Input Wire Length	0.15 m (0.49 ft.)			
Output Connector	Staubli MC4			
Output Wire Length	1.3 m (4.3 ft.)			
Operating Temperature / Relative Humidity Range	-40 °C ~ 85 °C ⁵ / 0 % ~ 100 %			
Protection Rating	IP68			
Compatible Inverters	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-3/4/5/6/8/10KTL-M1, SUN2000-12/15/17/20KTL-M2, SUN2000-12/15/17/20/25KTL-M5, SUN2000-30/36/40KTL-M3			
PV System Design ⁶				
Minimum String Length (Power Optimizers)	SUN2000-2~6KTL-L1	SUN2000-3~10KTL-M1	SUN2000-12~20KTL-M2 SUN2000-12~25KTL-M5	SUN2000-30~40KTL-M3
Maximum String Length (Power Optimizers)	4	6	6	6
Maximum DC power per string	25	35	35	25
	6,000 W	10,000 W	12,000 W	12,000 W

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

^{*2} Any power optimizer, which is connected to an operating inverter in a PV string, will be bypassed when it fails.

^{*3} Once the power optimizer stops working, its output voltage remains 0Vdc.

^{*4} It is for PV module frame / extruded aluminum profile racking system installation.

^{*5} When the operating temperature of the SUN2000-450W-P2/600W-P reaches 70°C to 85°C, it may shut down due to over-temperature protection and report an over-temperature alarm. After the temperature decreases, it can automatically resume working without causing any damage.

^{*6} SUN2000-450W-P2/600W-P and MERC-1100/1300W-P can NOT be used in mixture in single Smart Energy/PV Controller.