

Smart PV Optimizer



One-Fits-All Optimizer
Easier Business



<5s Module Auto-Mapping



Arc Fault Pinpoint
Positioning Along PV Cable

Technical Specification		SUN2000-600W-P			
		Input			
Rated Input DC Power ¹		600 W			
Absolute maximum input voltage		80 V			
MPPT operating voltage range		10 - 80 V			
Maximum Short Circuit Current (Isc)		14.5 A			
Max. efficiency		99.5 %			
Weighted efficiency		99.0 %			
Overvoltage category		II			
		Output			
Max. output voltage		80 V			
Max. output current		15 A			
Output bypass ²		Yes			
Shutdown output voltage per optimizer ³		0 V			
Shutdown output impedance per optimizer		1k ohm ± 10 %			
		Communication			
Communication Method		MBUS			
		Standard Compliance			
Safety		IEC62109-1 (class II safety)			
RoHS		Yes			
		General Data			
Dimension (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		MC4			
Input wire length		0.1m			
Output connector		MC4			
Output wire length		1.3 m (4.3 ft.) ⁵			
Operating temperature / humidity range		-40 °C ~ 85 °C ⁵ / 0 %RH ~ 100 %RH			
Degree of protection		IP68			
Compatible product		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, SUN2000-30/36/40KTL-M3			
Long String Design (Full Optimizer)		SUN2000-2-6KTL-L1	SUN2000-3-10KTL-M1	SUN2000-12-20KTL-M2	SUN2000-30-40KTL-M3
Minimum optimizer number per string ⁶		4	6	6	6
Maximum optimizer number per string		25	35	35	25
Maximum DC power per string		5,500 W	10,000 W	12,000 W	12,000 W

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

^{*2} Power optimizer is bypassed in the string connected to an operating inverter when it fails to work

^{*3} Power optimizer output 0Vdc when disconnecting to the inverter or inverter is shutdown.

^{*4} Allow PV module frame installation / extruded aluminum profile installation

^{*5} Fits PV module in landscape and portrait installation.

^{*6} Require standard 60 cells module to meet the inverter minimum startup voltage

^{*7} Full power capability refers to online smart design tool.

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MERC-1100/1300W-P

Smart Module Controller



Long String Design
Better for C&I Scenarios



Up to 20 A Input Current
Fit All Type Module



< 5s
Module Auto-Mapping



Temperature Detection
Safety Enhanced



1V Safe Voltage Shutdown
Easier for Detection



Arc Fault Pinpoint Positioning
Along PV Cable

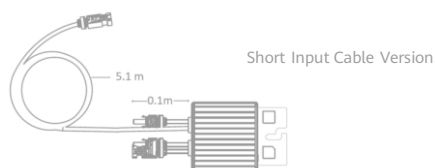


MERC-1100/1300W-P

Smart Module Controller



Technical Specification		MERC-1100W-P				MERC-1300W-P			
Input									
Rated Input DC Power ¹		1100 W				1300 W			
Max. input voltage		125 V							
MPPT operating voltage range		12.5 – 105 V							
Max. short-circuit current (Isc)		20 A							
Max. efficiency		99.5 %							
Weighted efficiency		99.0 %							
Overvoltage category		II							
Output									
Max. output voltage		80 V							
Max. output current		22 A							
Output bypass ²		Yes							
Shutdown output voltage per optimizer ³		1 V							
Standards Compliance									
Safety		IEC62109-1 (class II safety)							
RoHS		Yes							
General Data									
Dimension (W x H x D)		149 mm x 104 mm x 49 mm (5.9 in. x 4.1 in. x 2.0 in.)							
Weight (including cables)		1.05 kg (2.2 lb.)							
Installation part (optional)		PV Module Frame Plate, T-shaped Bolt							
Input connector		MC4							
Input wire length		0.1 m (short input cable version) ⁴							
Output connector		MC4							
Output wire length		0.1 m (+), 5.1 m (-) (short input cable version) ⁴							
Operating temperature/humidity range		-40°C to +85°C ⁵ / 0%–100% RH							
Degree of protection		IP68							
Compatible Inverter		SUN2000-8/10/12/15/17/20KTL-M2 SUN2000-20/29.9/30/36/40KTL-M3 SUN2000-12/15/17/20/23/25KTL-M5 SUN2000-50KTL-M3							
String Configuration (Full Optimizer Configuration) * MERC-1100/1300W-P support full optimizer configuration only		SUN2000-12-20KTL-M2		SUN2000-12-25KTL-M5		SUN2000-20-40KTL-M3		SUN2000-50KTL-M3	
Minimum optimizers per string		6		6		6		6	
Maximum optimizers per string		25		25		25		20	
Recommend strings per inverter		12KTL	15-20KTL	12KTL	15-25KTL	30/36KTL	40KTL	4	
* Only one string can be connected to each MPPT. * The DC/AC ratio is 1.0 to 1.3 for this recommended configuration. For other ratios, refer to the user manual.		1	2	1	2	3	4		
Maximum DC power per string		20,000 W		20,000 W		20,000 W		20,000 W	



- *1 The rated power of modules under standard test conditions (STC) shall not exceed the rated DC input power of optimizers. The module power can be 5% higher than the rated optimizer power.
- *2 Failed optimizers will be bypassed so that other optimizers and inverters will not be affected.
- *3 When the optimizer output is an open circuit or the inverter connected to the optimizer is shut down, the default optimizer output is 1 V DC voltage.
- *4 For the short input cable version (Input cable 0.1 m (+/-), output cable 0.1 m(+), 5.1 m(-)), ensure that the PV module cables are long enough to connect to the optimizers. For split junction box module with a short cable, the long-input cable version of optimizer is available (input cables: 1.3 m (+/-); positive output cable: 0.1 m; negative output cable: 2.9 m) on request.
- *5 When the operating temperature of the optimizer is 70°C to 85°C, the optimizer may shut down for overtemperature protection and report an overtemperature alarm. After the operating temperature drops to 70°C or below, the optimizer automatically recovers with no risk of damage.
- *6 The SUN2000-450/600W-P cannot be mixed with the MERC-1100/1300W-P under the same inverter.
- *7 The temperature detection function is only available on the short output cable (0.1 m).
- *8 It is allowed to connect single PV module to the MERC-1100/1300W-P.