Fusionsolar C&I SmartPV Solution
SUN5000 Series



ProfiLink
PV Module Optimization
Links Inverter to Increase
Energy Yield by 5% to 30%

SafeLink
Links Varies Safety Function
AFCI+ RSD
To Cover the Breakpoint of PV Safety

SmartLink
One-stop Smart Platform Links Smartdesign &
Module-level Management
To Provide Lifecycle Intelligent Experience

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 1.9 in.)	
Weight (including cables)	1.0 kg (2.2 lb.)	
Installation part (optional)	PV Module Frame Plate/T-shaped Bolt[4]	
Input connector	Staubli MC4	
Input wire length	0.1 m (short input cable version)[5]	
Output connector	Staubli MC4	
Output wire length	0.1 m (+), 5.1 m (–) (short input cable version) [5]	
Operating temperature / humidity range	–40°C to +85°C [6]/ 0%–100% RH	
Degree of protection	IP68	

Technical Specification

Technical Specification	SUN5000-150K-MG0
Efficiency	
Max. efficiency	98.6% @400V, 98.8% @480V
European efficiency	98.4%
Input	
Max. Input Voltage	1,100 V
Max. Short Circuit Current	66 A
Operating Voltage Range	200 V ~ 1,000 V
Max. input number	12
Output	
Nominal AC Active Power	150,000 W
Max. AC Apparent Power	165,000 VA
Max. AC Active Power (cosϕ=1)	165,000 W
Nominal Output Voltage	380 V/400 V/480Vac
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	227.9 A @380 V, 216.5 A @400 V, 180.4A @480Vac
Max. Output Current	253.2 A @380 V, 240.5 A @400 V, 200.5A @480Vac
Adjustable Power Factor Range	0.8 leading... 0.8 lagging
alternating current THDi	< 1%
Protection	
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Surge Arrester	Type Ⅱ/Ⅰ (Optional)
AC Surge Arrester	Type Ⅱ
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
Smart String Level Disconnector	Yes
Arc Fault Protection	Yes
Smart Connector Temperature Detector	Yes
PID Recovery	Yes
PV Ground-Fault Protection	Yes
Communication	
Display	LED indicators; WLAN adaptor + FusionSolar APP
RS485 / USB	Yes
Smart Dongle-4G	Smart Dongle – 4G / WLAN (Optional)
Monitoring BUS (MBUS)	Yes (Isolation Transformer Required)
General Data	
Dimensions (W x H x D)	1,000 x 710 x 395 mm
Weight (without mounting plate)	≤ 100 kg
Operating Temperature Range	-25°C ~ 60°C
Cooling Method	Smart Air Cooling
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol HH4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Standard Compliance (more available upon request)	
Certificate	EN 62109-1/-2, IEC 62109-1/-2, IEC 62116, IEC 61727, IEC 60068, IEC 61683
Grid Connection Standards	VDE-AR-N4105, EN 50549-1, EN 50549-2, RD 661, RD 1699, C10/11

String Configuration (Full Optimizer Configuration)[7/8/9] * **MERC-1100/1300W-P support full optimizer configuration only**		SUN5000-150K-MG0 DC/AC Ratio Recommendation			
Max Input Power Per String	Max Number of Strings	9 Strings	10 Strings	11 Strings	12 Strings
20kW	12-20	0.8-1.0	1.0-1.1	1.1-1.2	1.2-1.6

1.The maximum power of PV module at STC shall NOT exceed the "Rated input DC power" of MERC -1100/1300W-P. 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.When the MERC -1100/1300W-P is disconnected from inverter or when the inverter is off, its output voltage will be 1 V.
4.It is for PV module frame/extruded aluminum profile racking system installation.
5.Pay attention to PV module wire length. To match PV modules with a split junction box and short output wire, the long-input-cable version (input wire: 1.3 m(+/-); output wire 0.1m(+)/2.9m (-)) of MERC -1100/1300W-P is available upon request.
6.When the operating temperature of the MERC -1100/1300W-P reaches 70 ℃ to 85 ℃, 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 any damage.
7.Each PV module under the same inverter must be equipped with a MERC -1100/1300W-P.
8.SUN2000-450W-P2/600W-P and MERC -1100/1300W-P can NOT be used in mixture under the same Smart Energy/PV controller.
9.It is recommended that strings under the same inverter have an equal capacity. If it is not feasible, the capacity difference between strings under the same inverter must not exceed 2 kW. Otherwise, the energy yield will be reduced.