

# 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
<b>Input</b>		
Rated Input DC Power <sup>1</sup>	1100 W	1300 W
Max. input voltage	125 V	
MPPT operating voltage range	12.5 – 105 V	
Max. short-circuit current (I <sub>sc</sub> )	20 A	
Max. efficiency	99.5 %	
Weighted efficiency	99.0 %	
Overvoltage category	II	
<b>Output</b>		
Max. output voltage	80 V	
Max. output current	22 A	
Output bypass <sup>2</sup>	Yes	
Shutdown output voltage per optimizer <sup>3</sup>	1 V	
<b>Standards Compliance</b>		
Safety	IEC62109-1 (class II safety)	
RoHS	Yes	
<b>General Data</b>		
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 <sup>4</sup>	
Input connector	Staubli MC4	
Input wire length	0.1 m (short input cable version) <sup>5</sup>	
Output connector	Staubli MC4	
Output wire length	0.1 m (+), 5.1 m (-) (short input cable version) <sup>5</sup>	
Operating temperature / humidity range	-40°C to +85°C / 0%-100% RH	
Degree of protection	IP68	

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 Disconnecter	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) <sup>7/8/9</sup> * 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 °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 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.