

# 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 <sup>1</sup>	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 <sup>2</sup>	Yes	
Shutdown output voltage per optimizer <sup>3</sup>	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 <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 <sup>6</sup> / 0%–100% RH	
Degree of protection	IP68	

# SUN5000 Series

## 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		
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; 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 ±10% 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.