

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 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) ^{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 °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.