

# SMART MODULE CONTROLLER

MERC-1100/1300W-P



#### Higher Yields

Module-level Optimization  
Increase System Energy  
Yield by 5% to 30%



#### Flexible Design

Long String Design to  
Reduce Bos



#### Active Safety

Firefighting and O&M  
Safety with Module-  
level Rapid Shutdown



#### Smart O&M

Pinpointing Open-  
Circuit Fault for Quick  
Troubleshooting

# MERC-1100/1300W-P Technical Specification

| Technical Specification            | MERC-1100W-P  | MERC-1300W-P |
|------------------------------------|---|--------------|
| Input                              |   |              |
| Rated input DC power <sup>1</sup>  | 1100 W  | 1300 W       |
| Absolute 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%   |              |
| Overtoltage category               | II  |              |
| Output                             |   |              |
| Max. output voltage                | 80 V  |              |
| Max. output current                | 22 A  |              |
| Output bypass <sup>2</sup>         | Yes   |              |
| Safety output voltage <sup>3</sup> | 1 V   |              |
| Standards Compliance               |   |              |
| Safety                             | IEC62109-1 (class II safety)  |              |
| RoHS                               | Yes   |              |
| General Specification              |   |              |
| Dimension (W X H X D)              | 149 mm x 104 mm x 48.8 mm (5.9 in. x 4.1 in. x 1.9 in.)   |              |
| Weight (including wires)           | 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              | -40°C to +85°C <sup>6</sup>   |              |
| Relative humidity                  | 0% ~ 100%   |              |
| IP rating                          | IP68  |              |
| Compatible inverters               | SUN2000-8/10/12/15/17/20KTL-M2, SUN2000-30/36/40KTL-M3,<br>SUN2000-12/15/17/20/25KTL-M5, SUN2000-50KTL-M3 |              |

| PV System Design <sup>7/8/9</sup>        | SUN2000-12~25K-MB0 | SUN2000-12~25KTL-M5 | SUN2000-30~40KTL-M3 | SUN2000-50KTL-M3 |
|--|--------------------|---------------------|---------------------|------------------|
| Minimum String Length (Power Optimizers) | 8                  | 8                   | 8                   | 8                |
| Maximum String Length (Power Optimizers) | 25                 | 25                  | 25                  | 20               |
| Maximum DC Power per String              | 20,000 W           | 20,000 W            | 20,000 W            | 20,000 W         |



\*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 become 1 V.

\*4 It is for PV module frame/extruded aluminum profile racking system installation.

\*5 Pay attention to the 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 causing 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 this is not feasible, the capacity difference between strings under the same inverter must not exceed 2 kW. Otherwise, the energy yield will be reduced.

Disclaimer: the preceding values are measured by an internal laboratory of Huawei in a specific environment. The actual values may vary with products, software versions, usage conditions, and environmental factors.