# MERC-1100/1300W-P
# **Smart Module Controller**



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

**Flexible Design**
Long String Design
to Reduce Bos

**Active Safety**
Safe Voltage Shutdown
Ensure Firefighting and
Maintenance Safety

**Smart O&M**
Pinpointing Open-
Circuit Fault for Quick
Troubleshooting

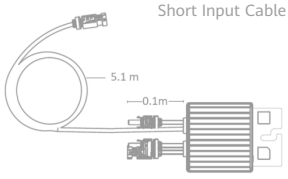
MERC-1100/1300W-P

# Smart Module Controller

| Technical Specification | MERC-1100W-P | MERC-1300W-P |
|---|---|---|
| **Input** | | |
| Rated Input DC Power | 1100 W | 1300 W |
| Max. Input DC Power | 1155W[1] | 1430W[1] |
| 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** | | |
| Rated Output DC Power | 1100W | 1300W |
| Max. Output DC Power | 1155W | 1430W[2] |
| Max. output voltage | 80 V | |
| Max. output current | 22 A | |
| Output bypass[3] | Yes | |
| Shutdown output voltage per optimizer[4] | 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[5] | |
| Input connector | Staubli MC4 | |
| Input wire length | 0.1 m (short input cable version)[6] | |
| Output connector | Staubli MC4 | |
| Output wire length | 0.1 m (+), 5.1 m (–) (short input cable version) [6] | |
| Operating temperature/humidity range | –40°C to +85°C [7]/ 0%–100% RH | |
| Degree of protection | IP68 | |
| Compatible Inverter | SUN2000-8/10/12/15/17/20KTL-M2<br>SUN2000-30/36/40KTL-M3<br>SUN2000-12/15/17/20/23/25KTL-M5<br>SUN2000-50KTL-M3 | |

| String Configuration (Full Optimizer Configuration)[8/9/10]<br>* **MERC-1100/1300W-P support full optimizer configuration only** | SUN2000-8~20KTL-M2 | SUN2000-12~25KTL-M5 | SUN2000-30~40KTL-M3 | SUN2000-50KTL-M3 |
|---|---|---|---|---|
| Minimum optimizers per string | 8 | 8 | 8 | 8 |
| Maximum optimizers per string | 25 | 25 | 25 | 20 |
| Maximum DC power per string | 20,000 W | 20,000 W | 20,000 W | 20,000 W |

Short Input Cable Version




*1 MERC-1100W-P can connect to PV modules with power ≤605W at STC. MERC-1300W-P can connect to PV modules with power ≤800W at STC.
*2 When the ambient temperature around the optimizer is ≤60℃ and the module STC power is ≤715W, the MERC-1300W-P has no DC output power limit.
*3 Any power optimizer, which is connected to an operating inverter in a PV string, will be bypassed when it fails.
*4 When the MERC -1100/1300W-P is disconnected from inverter or when the inverter is off, its output voltage will be 1 V.
*5 It is for PV module frame/extruded aluminum profile racking system installation.
*6 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.
*7 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.
*8 Each PV module under the same inverter must be equipped with a MERC -1100/1300W-P.
*9 SUN2000-450W-P2/600W-P and MERC -1100/1300W-P can NOT be used in mixture under the same Smart Energy/PV controller.
*10 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.