

# 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 Bps



**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**

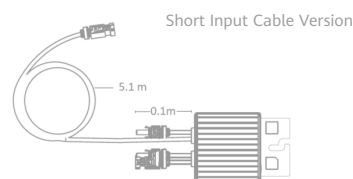
Technical Specification	MERC-1100W-P	MERC-1300W-P
<b>Input</b>		
Rated Input DC Power	1100 W	1300 W
Max. Input DC Power	1155W <sup>1</sup>	1430W <sup>1</sup>
Max. input voltage	125 V	
MPPT operating voltage range	12.5 – 105 V	
Max. short-circuit current (Isc)	20 A	
Max. efficiency	99.5 %	
Weighted efficiency	99.0 %	
Overvoltage category	II	

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

String Configuration (Full Optimizer Configuration) <sup>8/9/10</sup> * 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



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