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

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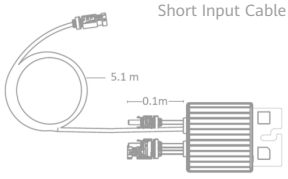
Technical Specification	MERC-1100W-P	MERC-1300W-P
Input		
Rated Input DC Power	1100 W	1300 W
Max. Input DC Power	1155W[1]	1430W[1]
Max. input voltage	125 V	
MPPT operating voltage range	12.5 – 105 V	
Max. short-circuit current (Isc)	20 A	
Max. efficiency	99.5 %	
Weighted efficiency	99.0 %	
Overvoltage 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 SUN2000-30/36/40KTL-M3 SUN2000-12/15/17/20/23/25KTL-M5 SUN2000-50KTL-M3	

String Configuration (Full Optimizer Configuration)[8/9/10] * **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.