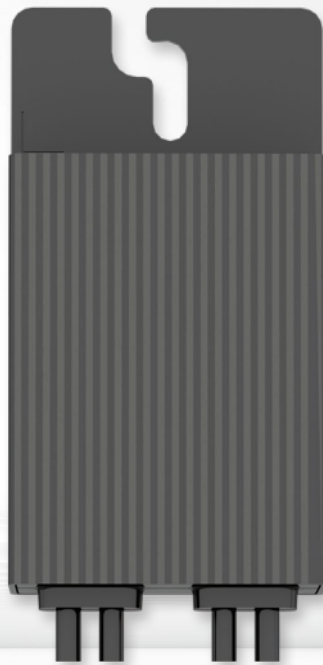


# SMART MODULE CONTROLLER

MERC-600W-PA0



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



**Saferoof**  
Multiple-protection  
technologies always keeps  
rooftop safe



**Flexible Design**  
Easier Module Layout  
and 30% Higher Installed  
Capacity on Average



**Smart O&M**  
Module-level  
Visibility and Refined  
Management

# MERC-600W-PA0

## Technical Specification

Technical Specification		MERC-600W-PA0			
Input					
Rated input DC power <sup>1</sup>	600 W				
Absolute max. input voltage	80 V				
MPPT operating voltage range	10–80 V				
Max. short-circuit current (Isc)	16 A				
Max. efficiency	99.5%				
Weighted efficiency	99.0%				
Overtoltage category	II				
Output					
Max. output voltage	80 V				
Max. output current	16 A				
Output bypass <sup>2</sup>	Yes				
Output voltage during standby per optimizer	1 V				
Communication					
Communication protocol	MBUS				
Standards Compliance					
Safety	IEC62109-1 (class II safety)				
EMC	IEC61000-6-1, IEC61000-6-2, IEC61000-6-3, IEC61000-6-4, EN 55011:2016/A2:2021, EN62920:2017/A1:2021				
RoHS	Yes				
Fire Safety	NEC 2020				
General Specifications					
Dimensions (W x H x D)	73.8 mm x 145 mm x 27.2 mm				
Weight (including cables)	0.65 kg				
Installation part (optional)	Frame mounting bracket / T-shaped bolt <sup>3</sup>				
Input connector	Staubli MC4				
Input wire length	0.1 m				
Output connector	Staubli MC4				
Output wire length	(+)2.225 m / (-) 0.1 m				
Operating temperature/humidity range <sup>4</sup>	-40°C to +85°C / 0%-100%				
IP rating	IP68				
Compatible inverters	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-3/3.68/4/4.6/5/6K-LB0, SUN5000-3/6K-LB0 SUN2000-8/10K-LC0, SUN2000-3/4/5/6/8/10KTL-M1, SUN2000-10KTL-BEM1 SUN2000-5/6/8/10/12K-MAPO, SUN5000-8/12K-MAPO, SUN2000-10K-MAPO-BE SUN2000-12/15/17/20/25K-MB0, SUN5000-17/25K-MB0				

PV System Design <sup>5</sup>	SUN2000-2-6KTL-L1	SUN2000-3-6KTL-LB0	SUN2000-3-10KTL-M1	SUN2000-5-12K-MAPO	SUN2000-12-25K-MB0
	SUN2000-8K/10K-LC0	SUN5000-3K/6K-LB0	SUN2000-10KTL-BEM1	SUN5000-8K/12K-MAPO	SUN5000-17/25K-MB0
Min. string length (power optimizers)	4	4	6	6	6
Max. string length (power optimizers)	20	20	35	35	35
Max. DC power per string	6,000 W	6,000 W	10,000 W	12,000 W	12,000 W

\*1 The maximum power of PV module at STC shall NOT exceed the "Rated Input DC Power" of the power optimizer. 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 It is for PV module frame/extruded aluminum profile racking system installation.

\*4 When the operating temperature of the MERC-600W-PA0 reaches 70 °C to 85 °C, it may shut down due to over-temperature protection. After the temperature decreases, it can automatically resume working without causing any damage.

\*5 SUN2000-450W-P2/600W-P, MERC-600W-PA0 and MERC-1100/1300W-P can NOT be used in mixture under the same Smart Energy/PV Controller.

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.