

SMART MODULE CONTROLLER

MERC-600W-PA0



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



Saferooft
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 ¹		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%
Overvoltage category		II
Output		
Max. output voltage		80 V
Max. output current		16 A
Output bypass ²		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 ³
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 ⁴		-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-MAP0, SUN5000-8/12K-MAP0, SUN2000-10K-MAP0-BE SUN2000-12/15/17/20/25K-MB0, SUN5000-17/25K-MB0

PV System Design ⁵	SUN2000-2-6KTL-L1	SUN2000-3-6KTL-LB0	SUN2000-3-10KTL-M1	SUN2000-5-12K-MAP0	SUN2000-12-25K-MB0
	SUN2000-8K/10K-LC0	SUN5000-3K/6K-LB0	SUN2000-10KTL-BEM1	SUN5000-8K/12K-MAP0	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.