

## MPPT Solar Charge Controller

# Solar Mate

250V 100A / 70A 150V 120A / 80A / 60A  
100V 20A / 40A



Solar Mate is a solar charge controller with built-in Maximum Power Point Tracking (MPPT) technology, which enables it to increase its PV output by as much as 30% compared with non-MPPT designs.

Solar Mate can optimize the PV's output and eliminate the fluctuation due to shading or temperatures variables. It is a multi-voltage MPPT with built-in sophisticated battery charging algorithm for both lead acid battery or lithium-ion battery, suitable for various system designs. Meantime, it supports data management of 365-day history records, which can tell users the system's actual performance.

- High dynamic MPPT efficiency more than 99.9%
- High efficiency up to 98%, and European weighted efficiency up to 97.3%
- Up to 7056W of charging power at 40°C
- Excellent performance at sunrise and low solar insolation levels
- Wide MPPT operating voltage range
- Parallel function, up to 6 units can be operated in parallel
- Built-in TBB premium II battery charging algorithm for lead acid battery
- Support 365days Data logging
- Communication: Auxiliary contact, RS485 support\T-bus





Model No	SP100-20	SP100-40	SP150-60	SP150-80	SP150-120	SP250-70	SP250-100
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## Electrical

Nominal battery voltage (VDC)	12,24,or 48			24 or 48				
Maximum charging current (A)	20	40	60	80	120	70	100	
Maximum charging power (W)	12VDC	294	588	N/A				
	24VDC	588	1176	1764	2352	3528	2058	2940
	48VDC	1176	2352	3528	4704	7056	4116	5880
Maximum PV input power (W)	12VDC	300	600	N/A				
	24VDC	600	1200	2250	3000	4500	2700	N/A
	48VDC	1200	2400	4500	6000	9000	5400	7500
PV open circuit voltage (Voc) (VDC)	100			150		250		
MPPT voltage range (VDC)	(Vbat+5)~95		(Vbat+5)~90		65~145		65~245	
Max. PV short circuit current (A)	20	Normal operation: 40 PV polarity reversed: 20		40	80			
Max efficiency	98.2% @48Vdc system			98%@48VDC system				
Max MPPT efficiency	>99.9%							
Self-consumption (mA)	Less than 1mA@12Vdc/ 3mA @24Vdc/5mA@48Vdc			37mA @ 48VDC system				
Charge voltage 'absorption' (VDC)	Default setting: 14.1/28.2/56.4			Default setting: 28.8/57.6				
Charge voltage 'float' (VDC)	Default setting: 13.7/27.4/54.8			Default setting: 27/54				
Charging algorithm	TBB II multiple stages							
Temperature compensation	Default setting: -3mV/°C/cell							
Equalization charging	N/A			Programmable				

## Other

Display	LED + LCD						
Communication port	RS485, Bluetooth			RS485			
Dry contact	30VDC/2A						
Remote on / off	Yes (2 pole connector)						
Data logging	365 days of history record, daily, monthly and total production; Real time figure including solar array voltage, battery voltage, charging current, charging power; Record the daily PV start charging time, absorb to floating transfer time, PV power loss time and etc; Real time fault time and information.						
Storage temperature	-40°C~70°C						
Operating temperature	-40°C~70°C (power derated above 50°C)	-40°C~70°C (power derated above 30°C)	-25°C~60°C (power derated above 40°C)				
Humidity	5%~95%, non-condensing						
Altitude	3000m (full rated output up to 2000m)						
Max wire sizes (mm <sup>2</sup> )	16			35			
Protection category	IP31			IP21			
Dimension (L*W*H) - mm	205*160*68.5			325.2*293*116.2			352.2*293*116.2
Weight (kg)	1.4		6.8	7.0	7.2	7.0	7.8
Cooling	Natural cooling						Forced fan
Standard	ECE-10-6			EN61000-6-1,EN61000-6-3, EN62109-1			