Solar Mate

– MPPT Solar Charge Controller –



The SP600/900 is a high-performance MPPT solar charge controller with up to 600V/900VDC PV open circuit voltage and 120A/200A charge current for 48VDC battery banks. It is tailored for on-grid and off-grid solar systems where high battery charging power is required.

Featuring a wide MPPT tracking range, the SP600/900 minimizes cable costs, reducing overall system expenses. Its two independent MPPT trackers allow for flexible panel configurations and maximize solar power generation. It is specifically designed to seamlessly integrate with TBB Tyrann II inverter charger (except 3.0M model models), Matrix II solar hybrid inverter and PolyGon solar hybrid inverter, enabling highly efficient DC Coupling in solar energy systems.

Exceptional Performance

- High open-circuit voltage and wide MPPT voltage range
- Two independent MPPT trackers for flexible panel configurations and maximum solar power generation
- Parallel connection capability for up to 15 units
- Natural cooling ensures a longer lifespan, reduced maintenance and silent operation (SP900 only)
- Compact design for efficient space utilization

Enhanced Safety

- Multiple-layer protection
- Built-in PV array insulation resistance detection (earth fault detection) for peace of mind at higher voltages
- Full galvanic isolation between PV and battery for added system safety

Easy O&M

- Monitoring via 1xRS485 and 1xCAN communication interfaces
- Remote control and monitoring through TBB NOVA APP & Web when used with TBB inverter

Model	SP600-120	SP900-200
Charger		
Battery voltage (V)	48	
Maximum charge current (A)	120	200
Maximum charge power	7000W @ 57.6V total, 5000W @ 57.6V per tracker	11500W @ 57.6V total, 8000W @ 57.6V per tracker
Charge voltage 'absorption' (V)	Default: 57.6	
Charge voltage 'float' (V)	Default: 54.0	
Charger voltage range (V)	40-60	
Battery types	AGM / GEL / OPzV / Lead-Carbon / Lithium	
Battery temperature sensor	Included	
Maximum efficiency	97.0%	98.0%
Self consumption	80mA @ 48V	100mA @ 48V
Solar		
Maximum PV open circuit voltage (V)	600	900
Start-up voltage (V)	120	160
PV operating voltage range (V)	120-525	160-900
MPPT voltage range (V)	80-525	80-720
Number of MPPT trackers	2	
Maximum PV input current per tracker (A)	18 + 18	20+ 20
Maximum PV short circuit current per tracker (A)	20 + 20	25 + 25
Maximum PV power per tracker (W)	8000 + 8000	10000 + 10000
MPPT efficiency	>99.9%	
PV array insulation resistance detection (Earth fault detection)	Integrated	
General Data		
Surge protection	Yes	
Protection	a) battery voltage too high, b) battery voltage too low, c) temperature too high, d) PV reverse polarity	
Dry in port	1x	
Programmable relay	1x (28Vdc/4A or 250Vac/2A)	
General purpose com. port	RS485	RS485 / CAN
Operating temperature range	-20˚C to 65˚C	-40˚C to 65˚C
Relative humidity in operation	95% without condensation	
Altitude (m)	3000	4000
Mechanical Data		
Dimension (W*H*D) (mm)	280*484*108	258*452*134 (Excluding Connectors and Brackets)
Net weight (kg)	7.8	12
Cooling	Forced fan	Natural Cooling
Protection index	IP21	IP41
Standards		
Safety	EN-IEC 62109-1, EN-IEC 62109-2	
EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3	EN-IEC 61000-6-1, EN-IEC 61000-6-2, EN 61000-6-3, EN 61000-6-4