

SMF Series

High-Precision Intelligent MPPT Solar Charge Controller

CE FC RoHS



Product Introduction

- Based on the MPPT control algorithm, the SMF series supports charging both lead-acid and lithium batteries. Equipped with an RS485 waterproof communication interface, it allows users to check and modify the controller's working status. The SMF series can be connected to an external dedicated IoT module and coordinated with cloud server monitoring software to achieve remote, centralized monitoring of multiple machines. It is widely used in fields such as IoT, field monitoring, and solar lighting systems.



Product Features

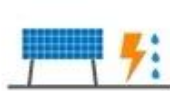
- Adopts MPPT (Maximum Power Point Tracking) technology, with an MPPT efficiency of 99.9% and a conversion efficiency of no less than 98%;
- Supports charging of lead-acid batteries, lithium batteries, and other custom batteries.
- Supports 0V activation function for lithium batteries;
- Low power consumption (static power dissipation below 20mA);
- High-precision digital boost constant current control algorithm, providing high efficiency and precision in boost constant current;
- Multiple intelligent load modes available, supporting dual 12V and 24V load outputs;
- Multiple protection features, including batteries/ PV reverse polarity protection, and power limiting protection;
- Extendable IoT remote communication and monitoring capabilities;
- All-aluminum metal shell with IP65 ingress protection, capable of operating in harsh environments.



Solar RV



Solar Yacht



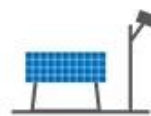
Solar Meteorological
Monitoring



Forest Fire
Prevention



Solar-Powered
Streetlight



Solar-Powered
Monitoring

SMF24 Series		SMF2420	SMF2430
Controller Type		MPPT Controller	
MPPT Efficiency		≥99%	
Peak Conversion Efficiency		≥98%	
Standby Consumption		Around 1W	
Heat-Dissipation Method		Self-Cooling	
Input Parameters			
Maximum PV Open Circuit Voltage		60VDC	
Start Charging V _{start pv}		Vbat+3V	
Low Voltage Protection V _{low pv}		Vbat+2V	
Maximum PV Open Circuit Voltage		60Vdc	
Input Protection Recovery Voltage		55Vdc	
Rated Input	12V System	260W	390W
Power	24V System	520W	780W
Charging Parameters			
Output DC Voltage Range		Output Range:9V~30VDC	
Battery Type		Lead-Acid Battery / Li-ion Battery	
Battery Management		Variable Output Charging Parameters and Protection Parameters	
Lithium Battery Activation		Equipped	
Output DC Current		0~20A (Variable)	0~30A (Variable)
Charging Mode		Lead-Acid Battery: Fast, Equalized, Float; Lithium Battery: Fast, Equalized	
Fault Parameters		Lead-Acid Battery (GEL/AUTO)	
Load Parameters			
Load Voltage		Load 1: Same as Battery Voltage Load 2: 12V	
Rated Load Current		Load 1: 20A; Load 2: 2.0A (Continuous), 2.5A (3S)	
Load Control Mode		Allows to operate in 5 timed periods (the main switch can be enabled via instructions), with time range variable as needed. Unused time slots are set to 0:00-0:00 by default, meaning no operation.	
Load Protection		Over Current Protection	
Display&Communication			
Communication		RS485 Bus/ Standard Modbus Protocol	
Monitoring		PC, Wi-Fi Module, 4G Module, Ethernet	
Protection			
PV Input Protection		PV Input Overvoltage Protection, Reverse Polarity Protection, Surge Protection, Lightning Protection	
Output Protection		Voltage Stabilization/ Reverse Polarity Protection/ Battery Detachment Protection/ Overcharge Protection	
Normal Protection		Heat Dissipation Over-temperature Protection/ Load Reduction Operation under Over-Temperature / Ambient Over-Temperature Protection	
Other Parameters			
Installation		Wall-Mounted Type	
Product Dimensions		160*115*40mm	
Product Weight (kg)		0.99	
Operating Ambient Temp.		-20℃~+50℃	
IP Rating		IP67	
Operating Altitude		≤3000M	