

# Solar Charge Controller LCD 10-60A



## Application area

- Solar home system
- Public security monitoring system
- Solar street lamp system
- DC signal light power supply system
- Small and medium size telecommunication station power supply system
- Small size solar power station system and solar DC power supply system

## Overview

This is a highly intelligent charge controller with Maximum Power Point Tracking (MPPT). The optimal and intelligent "MPPT + SOC" charge control is implemented. The power switching components consist of low-loss MOSFET type transistors that have a long operating life and guarantee high performance. The extremely low own consumption makes it especially suitable for solar home systems, solar street lamp system, advertising lighting, traffic management system, and other professional applications etc. With the reverse polarity protection, lightning protection, electronic fuse and automatic detection of faulty battery, the controller is robust, maintenance-free and user-friendly.

## Features

- Unmanned: the system with PV automatic starting and charging function, do not need the manual operation.
- High efficiency MPPT function (optional): the system adopt maximum power point tracking technology, even if the battery using in the different condition, this MPPT controller could ensure the Maximum output power from the PV panels, and increase 20-30% electrical power using efficiency from solar panel.
- Reliability: Adopt the Hybrid controller to realize "MPPT+SOC" double intelligent charge control, ensure the product stability and reliability.
- Intelligent charge control: With automatic battery temperature compensation, constant current and constant voltage integrated charge mode, improve the battery's charging efficiency and working life.
- Battery protection: automatically detect the battery working condition, when overdischarge, the system will be shut down automatically, avoid wasting the battery energy.
- High efficiency: Power loop adopts low-loss MOSFET type transistors in series, PWM Soft switching technology is applied to reduce switching loss, Synchronous rectification technology is applied to decrease voltage drop, increase the system's efficiency.
- Intelligent: Illumination recognition auto power on(optional): the system can be set to auto turn on the load when lack of sun, such as fog, storm, night. Auto turn on the load, it is a good assistant of transportation illumination.
- Protection: Overcharge protection/ Over-discharge protection / Battery Reverse Current Protection / Overloading Protection/ Short
- Circuit Protection/ Reverse Polarity Connection Protection/ TVS lightning protection etc.
- LCD Display: to show the working mode of solar battery, seal-lead acid battery and load.
- Well Adaptability (optional): through the man-machine interface, charging current fine adjustment can be settable, suitable for Li-ion Battery, lead-acid battery and other storage system.
- Intelligent communication (optional): RS232 and dry connect
- Temperature compensation (optional): with external battery working temperature detective port, to adjust the charging voltage in time according to the battery working temperature.



## Technical Data:

Model	F2448-10/M	F1224-20/M F2448-20/M	F1224-30/M F2448-30/M	F1224-40/M F2448-40/M	F1224-50/M F2448-50/M	F1224-60/M F2448-60/M
System voltage	12V / 24V ; 24V / 48V					
Rated Charging Current	10A	20A	30A	40A	50A	60A
Rated Load Current	10A	20A	30A	40A	50A	60A
PV panels configuration (suggestion)( $I_{mp} \leq \text{Rated current}$ )	$\leq 10A$	$\leq 20A$	$\leq 30A$	$\leq 40A$	$\leq 50A$	$\leq 60A$
Battery capacity	38Ah - 800Ah					
Max. Efficiency	> 98%					
Static dissipative	< 0.5%(system rated current)					
Solar battery port Input voltage range	12V:0-24V; 24V:0-48V; 48V:0-95V					
Rated battery voltage	12V / 24V ; 24V / 48V					
Buck Charge Voltage	14.6V / 29.2V $\pm 1\%$ ; 29.2V/58.4V $\pm 1\%$					
Float Charge Voltage	14.4V / 28.8V $\pm 1\%$ ; 28.8V/57.6V $\pm 1\%$					
Overcharge protection	14.7V / 29.4V $\pm 1\%$ ; 29.4V / 58.8V $\pm 1\%$					
Charging resume voltage	13.2V / 26.4V $\pm 1\%$ ; 26.4V / 52.8V $\pm 1\%$					
Undervoltage alarm	11.2V / 22.4V $\pm 1\%$ ; 22.4V / 44.8V $\pm 1\%$					
Overdischarge protection	10.8V / 21.6 $\pm 0.3V$ ; 21.6V / 43.2 $\pm 0.4V$					
Overdischarge resume start voltage	13.2V / 26.4 $\pm 0.3V$ ; 26.4V / 52.8 $\pm 0.4V$					
discharge circuit voltage drop	< 5% ( System rated voltage )					
Overload, short-circuit protection	125% ( 60S ) / 150% ( 10S ) / short-circuit auto shut down;					
PV Reverse Polarity Connection Protection	YES					
Display	LCD + LED					
Alarm mode	sound ( optional ) /light alarm					
Control mode	Switch control / PWM					
Working temperature	-20°C ~ +45°C					
Relative humidity	0-95% ( noncondensing )					
Storage temperature	-25°C ~ +85°C					
Altitude	1000m with rated power (increase 100m, reduce power 1%) Max.4000m					
Storage humidity	$\leq 85\%$					
Installation method	hanging vertical installation					
Packing dimension WxDxH(mm)	164×168×55					
Weight(kg)	F1224 F2448	0.58	0.58 1.80	1.80		
Packing weight(kg)	F1224 F2448	0.77	0.77 2.10	2.10		

Note: "M" means with MPPT function