



MPL Series

MPPT Solar Charge Controller

MPL2415/MPL2415-U



Main Features

- With MPPT functions, applicable to monocrystalline, polycrystalline and amorphous silicon solar panels serially connected in various numbers significantly improving the solar panels' energy utilization ratio.
- Adopts the MPPT solar charging technology, with a max. solar panel open-circuit voltage $V_{oc} \leq 60V$ and a max. solar panel power $P_m \leq 400W$.
- Adopts an improved charging algorithm that supports 12V and 24V lead-acid batteries and lithium batteries, and the user can set the operating modes for lead-acid batteries or lithium batteries accordingly.
- With a load triple-stage brightness adjustment and morning on design, with an operating duration adjustable from 0 to 15 hours and a power settable from 0 to 100%.
- With a system status log function, able to record a maximum of 7 days of system status, comprehensively and effectively monitoring the system's conditions.
- Data communication adopts a multi-time two-way handshake protocol and a data compression algorithm, realizing precise and fast data transmission.
- With an intelligent power mode which can extend the battery life to its top limit by adjusting the dimming signal voltage (0-10V) automatically according to the remaining battery capacity.
- With an infrared remote control function, operations including setting parameters, reading status and viewing historical data can be conducted remotely.
- A metal case and an IP68 waterproof level enable the device to operate in various kinds of tough conditions.
- An overheat protection function enables the device to scale down the load or shut off the load completely when its temperature exceeds a certain point.
- A range of protection measures such as battery reverse-connection protection, load short-circuit and overload protection, etc., put the system under comprehensive and constant guard.load operating status, controller operating status and other data, and automatically triggers alarms when failures are detected.
- The following are functions of the "-U" series
- With a wireless Internet communication function, able to conduct remote monitoring and real-time management on street lights via the solar power street light management system.
- Supports remote light on/off switching and dimming, as well as modification of battery and load parameters.
- Monitors solar panel voltage, current and power, battery charging and discharging current and voltage, load operating status, controller operating status and other data, and automatically triggers alarms when failures are detected.

Parameters

Parameter	Value	Adjustable or not	Default
Model	SR- MPL2415 SR- MPL2415-U		
No-load loss	26mA/12V;15mA/24V 40mA/12V;21mA/24V		
System voltage	12V/24V		
Charging current	15A		
Max. solar panel power	200W/12V;400W/24V		
Solar panel input voltage	<60V		
MPPT tracking efficiency	>99%		
Charging conversion efficiency	90% - 96%		
Dimming output voltage	0 - 10V	√	
Max. output current	15A		
Over-voltage protection	17.0V; ×2/24V		
Charging limit voltage	15.5V; ×2/24V		
Equalizing charging voltage	(boost charging voltage + 0.2V); ×2/24V (25° C)		14.6V
Equalizing charging time	1 hour		
Equalizing charging interval	30 days		
Boost charging voltage	7.5V - 15.5V; ×2/24V(25°C)	√	14.4V
Boost charging time	4 hours		
Floating charging voltage	7.5V - 15.5V; ×2/24V(25°C)	√	13.8V
Temperature compensation factor	-3.0mV/°C/2V		
Over-voltage protection	(overcharge voltage + 2V); ×2/24V (25° C)	√	16.6V
Whether charging is prohibited below 0° C	Yes, No	√	No
Overcharge voltage	7.5V - 15.5V; ×2/24V(25°C)	√	14.6V
Overcharge recovery voltage	7.5V - 15.5V; ×2/24V(25°C)	√	13.6V
Over-discharge voltage	7.5V - 15.5V; ×2/24V(25°C)	√	11.0V
Over-discharge recovery voltage	7.5V - 15.5V; ×2/24V(25°C)	√	12.6V
Light control voltage	5V - 11V; ×2/24V	√	10V
Light control delay	1 - 50min	√	1min
Operating temperature	-35°C - +65°C		
Protection degree	IP68		
Weight (g)	490		
Dimensions (mm)	142x88.3x24.5		

Note: parameter settings shall comply with the following rule, i.e. boost voltage > floating charging voltage > over-discharge recovery voltage > over-discharge voltage.