

## MPPT Internet-of-Things Wireless Remote-Controlled Street Light Controller

# User Manual

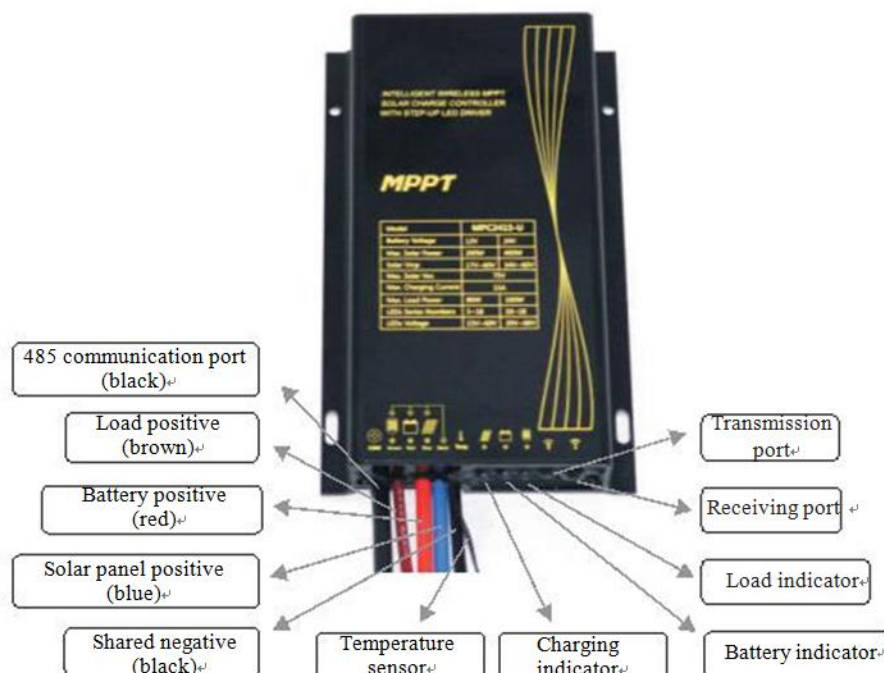


Model	BR2410-U		BR2415-U	
	Battery voltage	12V	24V	12V
Max. solar panel power	130W	260W	200W	400W
Solar panel peak voltage	17V~60V	34V~60V	17V~60V	34V~60V
Max. solar panel open-circuit voltage	<75V			
Max. charging current	15A		20A	
Max. LED power	60W	120W	80W	160W
Number of serially connected LEDs	5to18	10to18	5to18	10to18
Output LED voltage	15V~60V	30V~60V	15V~60V	30V~60V

## 1. Product Features

- ◆ Features true MPPT functions, applicable to monocrystalline, polycrystalline and amorphous silicon solar panels serially connected in various numbers, significantly improving the solar panels' energy utilization ratio.
- ◆ Boasts a wireless communication function, able to conduct remote monitoring and real-time management on street lights via the solar power street light management system and wireless module.
- ◆ 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.
- ◆ Supports 12 V and 24 V lead-acid batteries and lithium batteries, and the user can set the operating modes for lead-acid batteries or lithium batteries accordingly.
- ◆ Provides a charging and discharging management mode designed dedicatedly for lithium batteries, supporting 3 to 8 strings of ternary-material lithium, lithium cobalt oxide, lithium manganese oxide, lithium iron phosphate and some other types of lithium batteries.
- ◆ Adopts a multi-peak MPPT technology to deal with conditions in which part of the photovoltaic battery is shadowed or damaged, with a tracking efficiency higher than 99%.
- ◆ Provides built-in boost LED constant current output, able to directly power up to 18 serially connected LEDs.
- ◆ Employs a four-stage dimming design (including a morning on stage).
- ◆ An infrared remote control can be used to set and read parameters and view historical data of the controller's operation.
- ◆ Automatically recognizes daytime/ nighttime.
- ◆ A sleep-mode power consumption as low as 0.06 W.
- ◆ An IP68 waterproof level.
- ◆ Provides photovoltaic overvoltage, charging power limit, load short-circuit/open-circuit, reverse-charging, reverse-connection, over-temperature, TVS lightning proof protection measures, etc.

## 2. Controller Panel Structure



### 3. Specific Parameters

Parameter	Value				Whether Adjustable	Default
Model	BR2410-U		BR2415-U			
Supported battery types	Lead-acid batteries (including gel batteries), lithium batteries				√	
Battery specifications	12V	24V	12V	24V		
Battery voltage range	7V~36V					
Rated charging current	15A		20A			
Charging current limit						
Max. solar panel power	130W	260W	200W	400W		
Solar panel peak voltage	17V~60V	34Vto60V	17V~60V	34V~60V		
Max. load power	60W	120W	80W	160W		
No. of serially connected LEDs	5~18	10~18	5~18	10~18		
Output voltage range	15V~60V	30V~60V	15V~60V	30V~60V		
Circuit conversion efficiency	≤95%	≤97%	≤95%	≤97%		
No-load loss	Normal operation ≤ 0.55 W, energy-saving mode ≤0.32 W, sleep mode ≤ 0.06 W					
Solar panel open-circuit voltage	< 75V					
MPPT tracking efficiency	> 99%					
Charging voltage limit	15.5V ; ×2/24V					
Overvoltage protection	17.0V ; ×2/24V					
Equalizing charging voltage	Only lead-acid	(boost charging voltage + 0.4 V); ×2/24 V (25 °C)				
Equalizing charging time		1 hour				

Equalizing charging interval	batteries	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			
Whether charging is prohibited below 0 °C	Only lithium batteries	<Yes, no>		√	NO
Charging methods		<0, 1>		N/A	
Overcharge voltage		7.5V~15.5V ; ×2/24V		√	14.6V
Overcharge recovery voltage		7.5V~15.5V ; ×2/24V		√	13.6V
Over-discharge recovery voltage	7.5V~15.5V ; ×2/24V			12.6V	
Output current range	70~4200 mA	70~5600 mA	√	900mA	
Output current accuracy	±3% or ±30 mA				
Light control voltage	5V~15V ; ×2/24V		√	10V	
Light control on time delay	1~50min				
Light control off time delay	1min				
Operating temperature	-40°C ~ +60°C ;				
Inside over-temperature protection	70°C to 85 °C: progressively decreases power; over 85 °C: shuts down charging or the load.				
Weight	390g	490g			
Product dimensions	114×88.3×24.5(mm)	142×88.3×24.5(mm)			
Installation dimensions	74×82.3(mm) , hole diameter 3.5	102×82.3(mm),hole diameter 3.5			