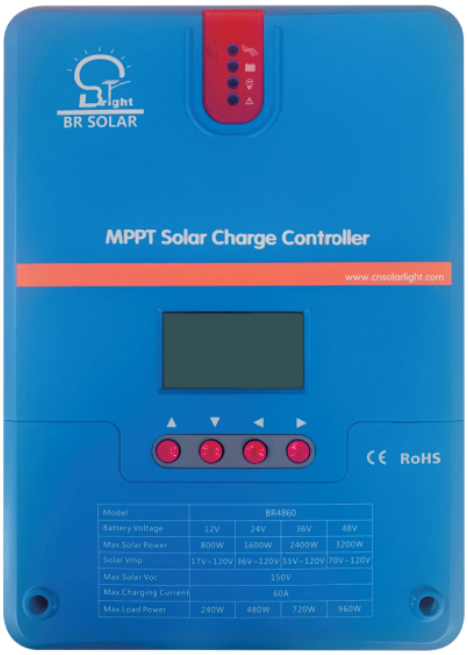
# Solar Charge and Discharge Controller

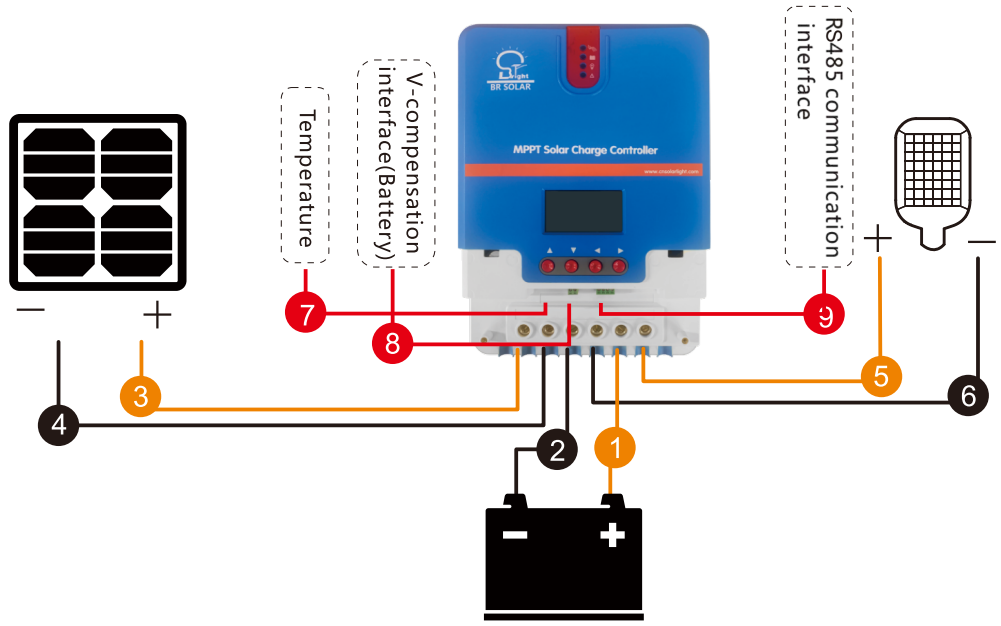




## Product Features

• With the advanced dual-peak or multi-peak tracking technology, when the solar panel is shadowed or part of the panel fails resulting in multiple peaks on the I-V curve, the controller is still able to accurately track the maximum power point.
• A built-in maximum power point tracking algorithm can significantly improve the energy utilization efficiency of photovoltaic systems, and raise the charging efficiency by 15% to 20% compared with the conventional PWM method.
• A combination of multiple tracking algorithms enables accurate tracking of the optimum working point on the I-V curve in an extremely short time.
• The product boasts an optimum MPPT tracking efficiency of up to 99.9%.
• Advanced digital power supply technologies raise the circuit's energy conversion efficiency to as high as 98%.
• Charging program options are available for different types of batteries including gel batteries, sealed batteries, open batteries, lithium batteries, etc.
• The controller features a limited current charging mode. When the solar panel power exceeds a certain level and the charging current is larger than the rated current, the controller will automatically lower the charging power and bring the charging current to the rated level.
• Instantaneous large current startup of capacitive loads is supported.
• Automatic recognition of battery voltage is supported.
• LED fault indicators and an LCD screen which can display abnormality information help users to quickly identify system faults.
• Historical data storage function is available, and data can be stored for up to a year.
• The controller is equipped with an LCD screen with which users can not only check device operating data and statuses, but also modify controller parameters.
• The controller supports standard Modbus protocol, fulfilling the communication needs of various occasions.
• The controller employs a built-in over-temperature protection mechanism. When temperature surpasses the set value, the charging current will decline in linear proportion to the temperature so as to curb the temperature rise of the controller, effectively keeping the controller from being damaged by overheat.
• Featuring a temperature compensation function, the controller can automatically adjust charging and discharging parameters in order to extend the battery's service life.
• TVS lighting protection.

## Wiring diagram




(BR4860 as the example)

## Product Specification Parameters

| Parameter | Value | | | |
|---|---|---|---|---|
| Model | BR2420 | BR2430 | BR2440 | BR4860 |
| System voltage | 12V/24V Auto | | | 12V/24V/36V/48V Auto |
| No-load loss | 0.7W to 1.2W | | | |
| Battery voltage | 9V to 35V | | | 9V to 70V |
| Max. solar input voltage | 100V(25℃),90V(-25℃) | | | 150V(25℃),145V(-25℃) |
| Max. power point voltage range | Battery Voltage +2V to 75V | | | Battery Voltage +2V to 120V |
| Rated charging current | 20A | 30A | 40A | 60A |
| Rated load current | 20A | | | |
| Max. capacitive load capacity | 10000uF | | | |
| Max. photovoltaic system input power | 260W/12V 520W/24V | 400W/12V 800W/24V | 520W/12V 1040W/24V | 800W/12V 1600W/24V 2400W/36V 3200W/48V |
| Conversion efficiency | ≤98% | | | |
| MPPT tracking efficiency | ＞99% | | | |
| Temperature compensation factor | -3mv/℃/2V（default） | | | |
| Operating temperature | -35℃ to +45℃ | | | |
| Protection degree | IP32 | | | |
| Weight | 1.4kg | 2kg | 2kg | 3.6kg |
| Communication method | RS232 | | | RS232 RS485 |
| Altitude | ≤ 3000 m | | | |
| Product dimensions | 210*151*59.5mm | 238*173*72.5mm | 238*173*72.5mm | 285*205*93mm |