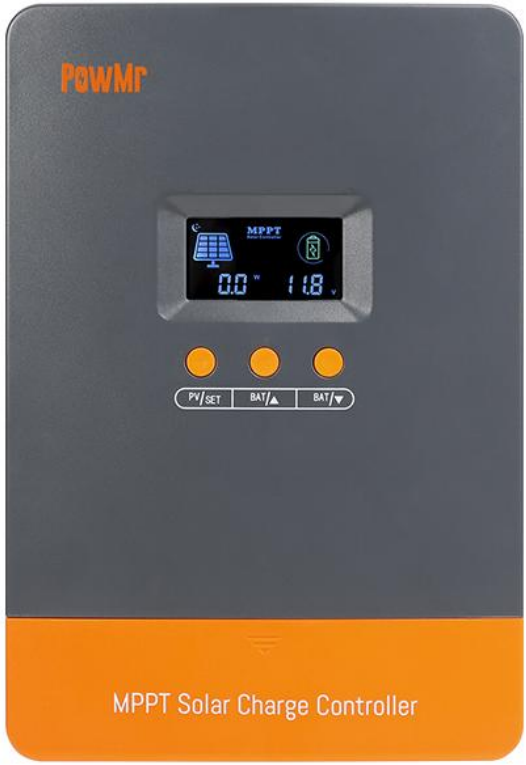
Product Type

POW-M80-PRO

POW-M100-PRO




PowMr

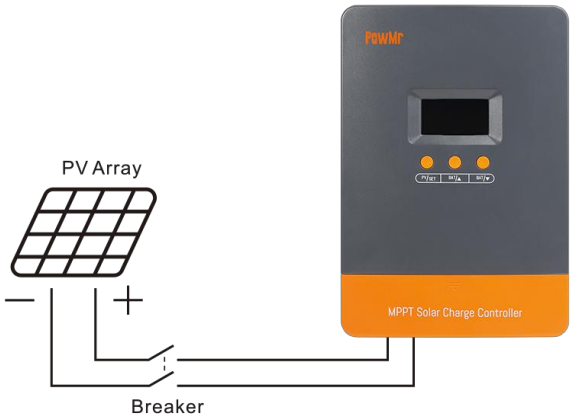
# SOLAR CHARGE CONTROLLER

User Manual

# 6 Specification Parameters

| Models | 80A | 100A |
|---|---|---|
| **Solar Input Specification** | | |
| **Maximum Input Power:** | | |
| For 12V System | 960W | 1200W |
| For 24V System | 1920W | 2400W |
| For 36V System | 2880W | 3600W |
| For 48V System | 3840W | 4800W |
| **Input Voltage Range:** | | |
| For 12V System | 20V~80V | |
| For 24V System | 37V~105V | |
| For 36V System | 50V~150V | |
| For 48V System | 72V~150V | |
| **Battery Charging Specification** | | |
| Charging Technology | MPPT | |
| Charging Algorithm | 3 Stages | |
| Nominal System Voltage | 12V/24V/36V/48V | |
| Battery Voltage Range | 9~60V | |
| Rated Charging Current | 80A | 100A |
| Maximum Efficiency | ≤98% | |
| MPPT Efficiency | >99% | |
| Temperature Compensation | -3mV/℃/2V (default) | |
| Self-Consumption | 44mA/12V; 26mA/24V; 18mA/36V; 12mA/48V | |
| **Environment Specification** | | |
| Operating Temperature Range | -35℃~+45℃ | |
| Humidity Range | ≤95%, Non-condensing | |
| Altitude | <3000m | |
| **General Specification** | | |
| Protection Level | IP32 | |
| Dimensions | 260x180x75mm | 315x195x80mm |
| Net Weight | 2kg | 2.7kg |

**Step 3. PV Wiring:** Connect the photovoltaic array to the controller using cables.




**Step 4. Temperature Probe Connection:** Connect the temperature probe wire to the controller and securely fix the probe end to the battery using insulation tape.

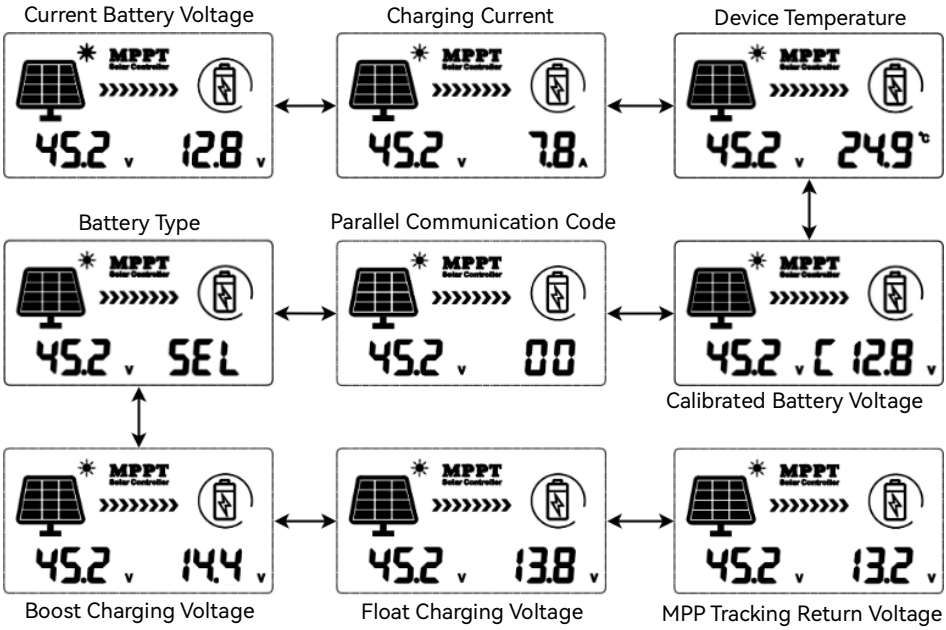

**Step 5. Pre-Startup Check:** Refer to the wiring diagram below. If all connections are accurate, and all wiring is securely connected, close the circuit breakers in the order of Battery and PV Input circuitry.

**WARNING: Risk of Electric Shock!**

- Before wiring, ensure that all power sources are turned off and follow the relevant inspection and operation procedures.

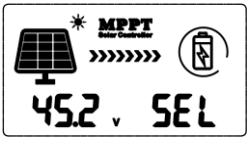
### 3.3 Overview of Battery Parameters

In browsing mode, use the **BAT/▲** and **BAT/▼** keys to scroll through battery parameters. When switching to the parameter that needs adjustment, long-press the **BAT/▲** key to enter the parameter setting mode. Once in the specified parameter setting, use the **BAT/▲** and **BAT/▼** keys to adjust the numerical values or toggle between options. Finally, press the **PV/SET** key to confirm the settings.



| Code / Possible Scenarios | 01 | 02 | 03 | 04 | 05 | 06 |
|---|---|---|---|---|---|---|
| Scenario 1: Normal operation | Master | Slave | Slave | Slave | Slave | Slave |
| Scenario 2: No. 01 failure | Fault | Master | Slave | Slave | Slave | Slave |
| Scenario 3: No. 03 failure | Master | Slave | Fault | Slave | Slave | Slave |
| Scenario 4: No. 01 & 02 failures | Fault | Fault | Master | Slave | Slave | Slave |

## Battery Type Setting

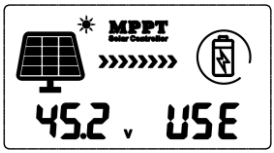



Please refer to the table below and choose the battery type based on the connected batteries:

| Order | Display | Battery Type |
|---|---|---|
| **1** | SEL | Sealed Lead-Acid Battery |
| **2** | GEL | Gel Sealed Lead-Acid Battery |
| **3** | FLd | Flooded Lead-Acid Battery |
| **4** | L04 | 4-Cell LiFePO4 Battery |
| **5** | L08 | 8-Cell LiFePO4 Battery |
| **6** | L16 | 16-Cell LiFePO4 Battery |
| **7** | USE | User-defined |

Long-press the **BAT/▲** key to enter the setup program. Use the **BAT/▲** and **BAT/▼** keys to toggle through the battery type options. Finally, press the **PV/SET** key to save and confirm.

## Custom Configuration of Charging Voltage




**NOTE**

- If the battery type is selected as "USE" (User-defined mode), then the five charging parameters in the diagram below can be manually set.
- If "USE" is not selected, there is no need to manually set charging parameters. The controller will charge based on preset values for the corresponding battery type. Refer to Chapter 3.5 for charging preset values.

Nominal System Voltage → Boost Charging Voltage → Float Charging Voltage → MPP Tracking Return Voltage

| Setting Item | Setting Range |
|---|---|
| **Nominal System Voltage** | 12V/24V/36V/48V (optional) |
| **Boost Charging Voltage** | 9.0~17.0V |
| **Float Charging Voltage** | 9.0~17.0V |
| **MPP Tracking Return Voltage** | 9.0~17.0V |

**Setting Steps:**

**Step 1.** Use the **BAT/▲** and **BAT/▼** keys to select the parameter you want to set.

**Step 2.** Long-press the **BAT/▲** key to enter the setting mode for the selected parameter.

**Step 3.** Use the **BAT/▲** and **BAT/▼** keys to adjust the voltage value.

**Step 4.** Press the **PV/SET** key to confirm and save.

**NOTE**

- The above parameters are applicable to 12V batteries. When the connected battery voltage is 24V/36V/48V, the range values are 2/3/4 times the specified range, respectively. The LCD screen only displays voltage values for 12V batteries.

➢ **Logic for setting custom battery voltage parameters:**

Maximum Charging Voltage > Boost Charging Voltage > Float Charging Voltage > MPP Tracking Return Voltage

### 3.5 Default Parameters for Different Battery Types

◆ **For Lead-acid Batteries and User-defined Batteries:**

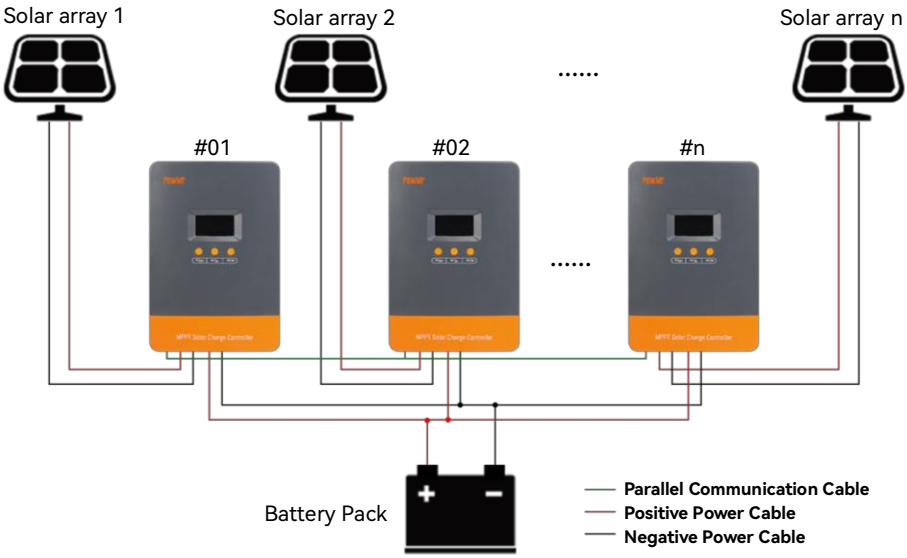
| Battery Type / Parameters | FLd | GEL | SEL | USE |
|---|---|---|---|---|
| Boost Charging Voltage | 14.6V | 14.2V | 14.4V | 9.0~17.0V |
| Float Charging Voltage | 13.8V | 13.8V | 13.8V | 9.0~17.0V |
| MPP Tracking Return Voltage | 13.2V | 13.2V | 13.2V | 9.0~17.0V |

◆ **For LiFePO4 Batteries:**

| Battery Type / Parameters | L04 | L08 | L16 |
|---|---|---|---|
| Boost Charging Voltage | 14.5V | 29.0V | 58.0V |
| Float Charging Voltage | 13.8V | 27.6V | 55.2V |
| MPP Tracking Return Voltage | 13.2V | 26.4V | 52.8V |

# 7 Parallel Operation Guide

## Parallel Operation Schematic




**Main Modules:**

➢ Controller

The controller device is designed for both standalone and parallel operation. In parallel operation, communication between controllers is achieved through communication lines. Parallel controllers should be installed at the same horizontal level.

➢ Solar Array

Each controller must be connected to a separate solar array. One solar array cannot be simultaneously connected to more than one controller. The input power connected to each controller should not exceed the rated input power of a single controller.

➢ Battery Bank

Parallel controllers are connected to the same battery bank.