

POWERTECH

IP67 Solar Charge Controller

MP-3756, MP-3758

User Manual

1. General Information

Adopts the most advanced digital technique and operates automatically, it is ideal for extreme environments with corrosion, dust, water, and has various unique functions:

- Electronic protection: Over charging, over discharging, overload, short circuit and reverse protection of solar module
- High efficient Series PWM charging, increase battery lifetime and improve solar system performance
- Automatically recognize day/night
- LED indicates battery status
- Industrial design for a wide range of applications
- With digital tube display and simple one Key operation
- Intelligent timer function with 1~13 hours option
- IP67 protection

2. Features and Mounting

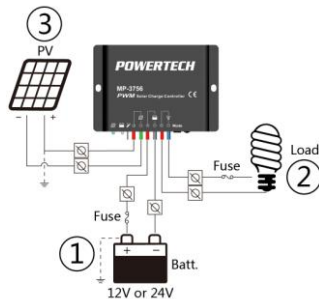
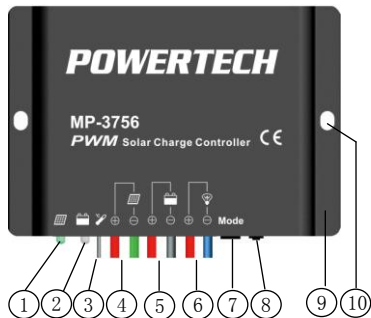


Figure1 Mounting

①	Charging Status LED indicator	⑥	Load Terminals
②	Battery Status LED indicator	⑦	Digital tube
③	Temperature Sensor	⑧	Key
④	Solar Module Terminals	⑨	Aluminum housing
⑤	Battery Terminals	⑩	Mounting hole Φ5

● Mounting

- 1) Connect components to the charge controller in the sequence as shown above picture and pay careful attention to the "+" and "-". Always connect the battery first.
- 2) After connecting the battery, check the battery indicator on the controller, it will be green. If it's not green, please refer to section 4.
- 3) The battery fuse should be installed as close to battery as possible. The suggested distance is within 150mm.

3. Indicators Description and Operation

1) Indicator Status Description

Charging Status LED indicator	Green	On Solid	Normal
	Green	Fast Flashing	Over voltage
Battery Status LED indicator	Green	On Solid	Normal
	Green	Slowly Flashing	Full
	Orange	On Solid	Under voltage
	Red	On Solid	Over discharged
Radix Point of Digital tube (Load indicator)	Red	On Solid	Load ON
	Red	Slowly Flashing	Over Load
	Red	Fast Flashing	Short Circuit

2) Operation



Digital tube Key

The digital tube displays the load work mode. Please refer to the correspondence table of Load Work Mode & LED digital tube value. Press the key to configure the parameter. Please refer to the configuration method below:

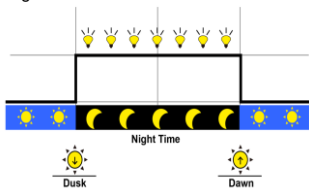
- 1) After powering on, disconnect the PV or connect the PV (Voltage < 5V), the light of the digital tube point will turn ON; Connect the PV (Voltage > 6V), the light of the digital tube point will turn OFF.

- The key can be used to operate switching ON/OFF the load (Manual control mode) or clear the faults.
- Keep pressing the key button over 5s. It will go to parameter browsing mode. Cycle through each parameter item by clicking the button.
- Once the digital tube displays the chosen value, release the key and wait 15s. The digital tube will stop flashing. Configuration has now been updated.

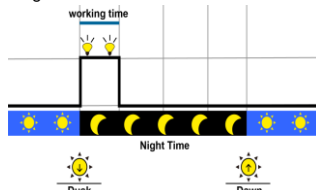
> Load mode

- Manual Control: Control the load via the button.

• Light ON/OFF



• Light ON + Timer



Note: In the mode of Light ON/OFF and Light ON/Timer, the Load is turned on after 10Min. delay.

- Test Mode (Default): Test Mode is the same as Light ON/OFF Mode but no delay.

> The correspondence table of Load Work Mode & LED digital tube value

Value	Working mode	Value	Working mode
0	Light ON/OFF	0.	Light ON + 8 hours
1	Light ON + 1 hours	1.	Light ON + 9 hours
2	Light ON + 2hours	2.	Light ON + 10 hours
3	Light ON + 3hours	3.	Light ON + 11 hours
4	Light ON + 4 hours	4.	Light ON + 12 hours
5	Light ON + 5 hours	5.	Light ON + 13 hours
6	Light ON + 6 hours	6.	Manual Control
7	Light ON + 7 hours	7.	Test Mode

4. Technical Specifications

Model	MP-3756	MP-3758
Nominal system voltage	12/24VDC Auto	
Max. PV input voltage	50V	

Rated current	10A	20A
Equalize Voltage	14.8V(12V);29.6V(24V)	
Boost Voltage	14.4V(12V);28.8V(24V)	
Float Voltage	13.7V(12V);27.4V(24V)	
Low Voltage Reconnect Voltage	12.6V(12V);25.2V(24V)	
Low Voltage Disconnect Voltage	11.2V(12V);22.4V(24V)	
Self-consumption	12V: $\leq 4.58\text{mA}$; 24V: $\leq 6.01\text{mA}$	
Temperature compensation coefficient	$-5\text{mV}/\text{C}/2\text{V}$ (25 $^{\circ}\text{C}$)	
Working temperature	$-35^{\circ}\text{C} \sim +55^{\circ}\text{C}$	
Enclosure	IP67	
Overall dimension	108.5mm×75mm×25.6mm	
Mounting dimension	100.5mm	
Mounting hole size	Φ5	
Power cable	PV/BAT/LOAD:4.0mm ²	PV/BAT/LOAD:6.0mm ²
Net weight	410g	435g

5. Package Contents:

MP-3756 / MP-3758 charge controller

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