

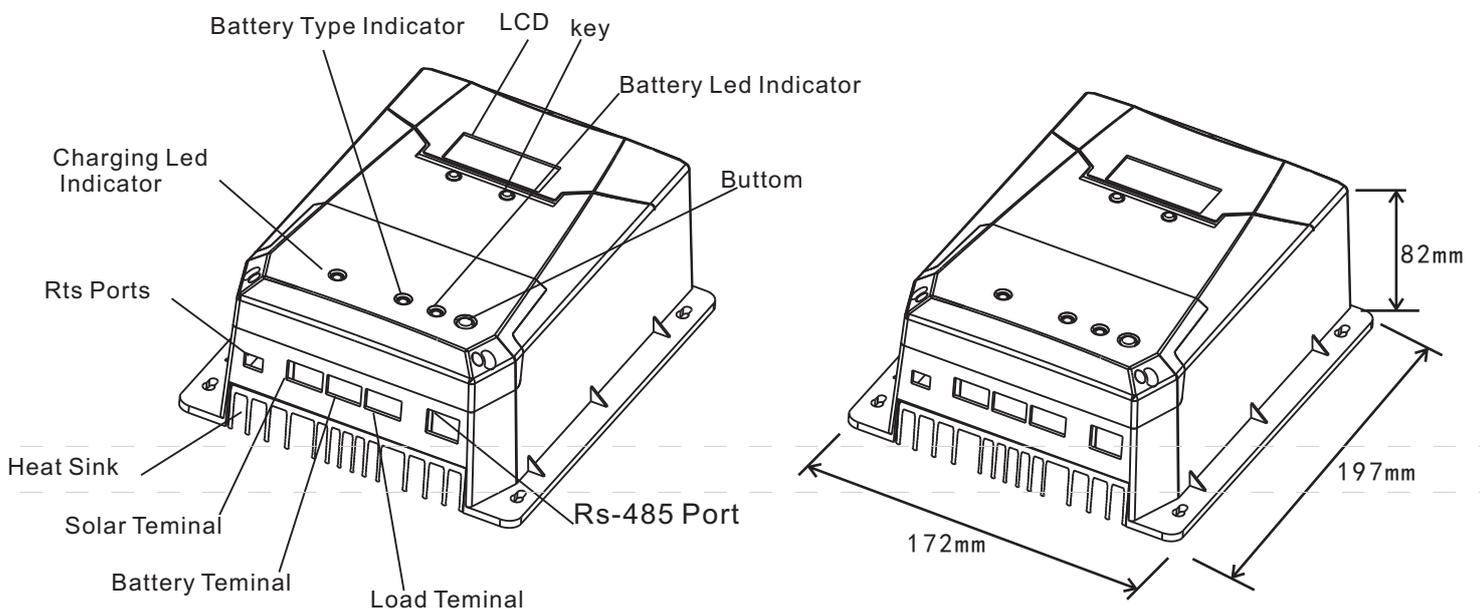
MPPT solar charge controller

Model:MPPT10020 user manual

Feature

- Advanced Maximum Power Point Tracking (MPPT) technology, with efficiency no less than 99.5% .
- High quality components, perfecting system performance, with maximum conversion efficiency of 98%
- Ultra-fast tracking speed and guaranteed tracking efficiency .
- Accurately recognizing and tracking of multiple power points .
- Reliable automatic limit function of maximum PV input power, ensuring no overload under any circumstance
- Wide MPP operating voltage range
- Die cast aluminum design ensuring excellent heat dissipation characteristic .
- 12/24VDC automatically identifying system voltage or userdefined working voltage.
- LED indicators showing system status, simple and clear
- Multiple load control modes: manual control, light ON/OFF, light On+Timer and time control
- Support 4 charging options: Sealed, Gel, Flooded and lithium battery
- Battery temperature compensation function
- Real-time energy statisticsfunction.

Characteristics



Accessories instructions

1. Remote Temperature Sensor

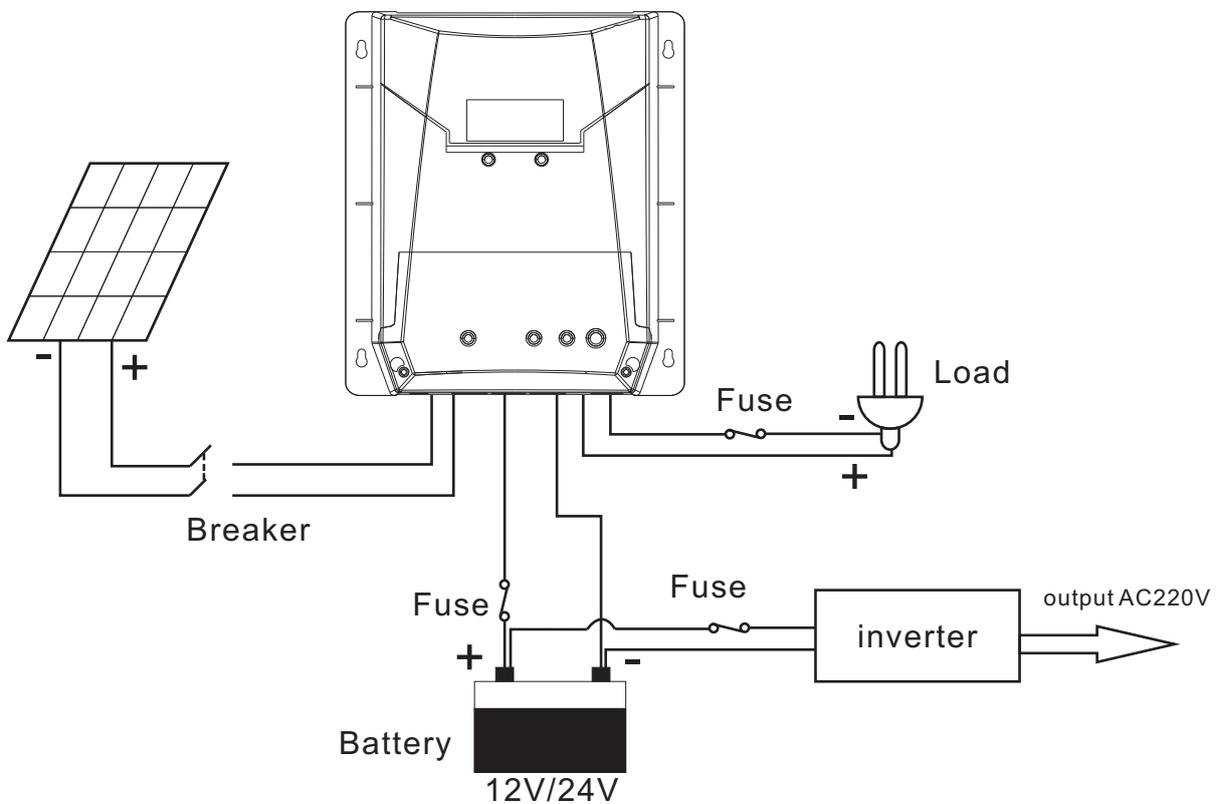
Acquisition of battery temperature for undertaking temperature compensation of control parameters, the standard length of the cable is 1.5m (length can be customized).

Note: Unplug the RTS, the temperature of battery will be set to a fixed value 25C.

2. Remote Meter

The digital remote meter displays system operating information, error indications, parameters setting and selfdiagnostics.

Mounting



- 1) Connect components to the charge controller in the sequence as shown above installation. When disconnecting the system, and pay much attention to the + and — Please don't turn on the fuse during the installation, when disconnecting the system the order will be reserved.
- 3) After installation, power the controller and check the battery indicator on the controller, it will be green. If it's not green, please refer to chapter 4.
4. Always connect the battery first, in order to allow the controller to recognize the system voltage.
- 3) The battery fuse should be installed as close to the battery as possible. The suggested distance is within 150mm.
- 4) The MPPT series is a negative ground controller. Any negative connection of solar, load or battery can be earth grounded as required.



CAUTION: Unplug the RTS, the temperature of battery will be set to a fixed value 25°C



CAUTION: Please connect the inverter to the battery rather than to the controller, if the inverter is necessary.

Operation

LED Indication

LED Indication	Color	Indicator	Status
PV 	Green	On Solid	PV connection normal but low voltage (irradiance) from PV, no charging
	Green	Slowly Flashing(1Hz)	In charging
	Green	OFF	No PV voltage (night time) or PV connection problem
	Green	fast Flashing	PV over voltage
Battery type 	Red	ON	Gel
	Green	ON	Sealed
	Blue	ON	Flooded
	White	ON	Lithium(LiFeP04)
Battery Status 	Green	On Solid	Normal
	Green	Slowly Flashing(1Hz)	Full
	Green	Fast Flashing(4Hz)	Over voltage
	Orange	On Solid	Under voltage
	Red	On Solid	Over discharge
	Red	Flashing	Battery Overheating
Load Status LED indicator	Red	On Solid	Load ON
	Red	OFF	Load OFF
	Red	Fast Flashing(4Hz)	Load Short Circuit/Load Overload
	Red	Slowly Flashing(1Hz)	LVD (low-voltage protection)
Charging (green) and battery (Red) indicator flashing simultaneously			System voltage error
Charging (green) and battery indicator (Red) and Load (Red) flashing simultaneously			Controller overheating

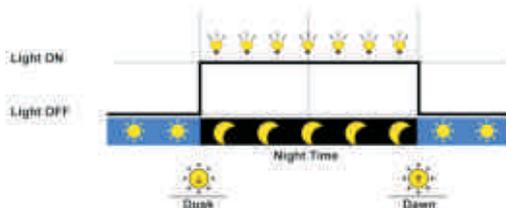
Load Set Mode

The MPPT controller have 4 working mode

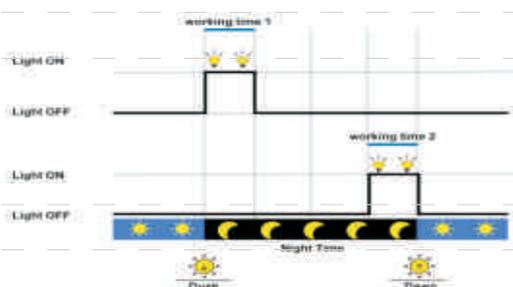
1. Manual Control (default)

The load can be switched by button or remote control command.

2. Light ON/Off



3. Light ON+ Timer



4. Time Control

Control the load on/off time through setting real time clock.

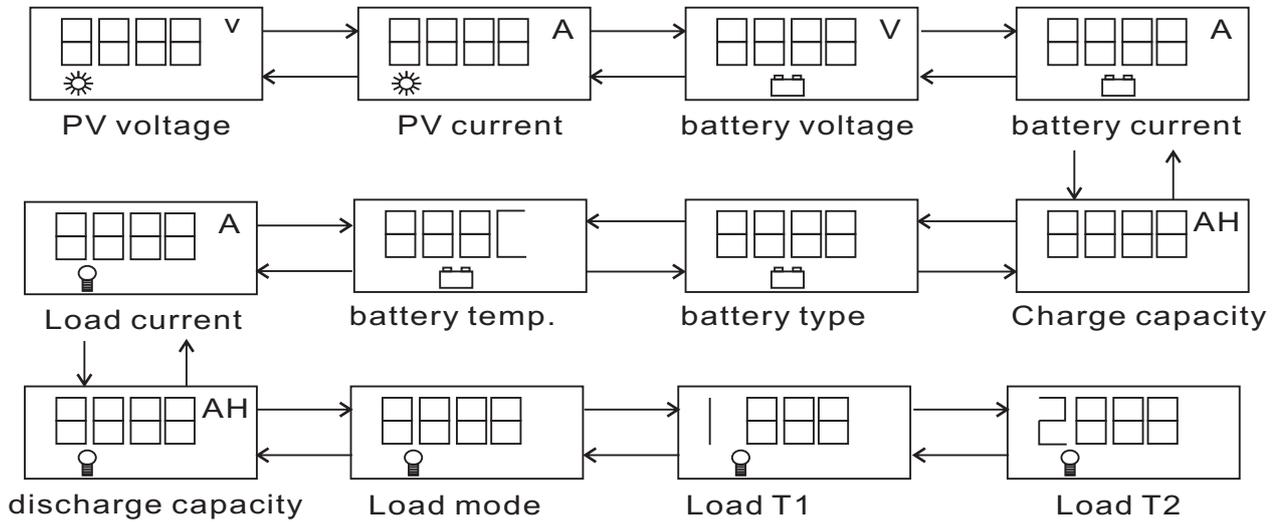
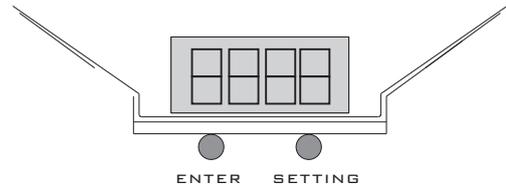
Note: set work time to use Remote meter

LCD operation

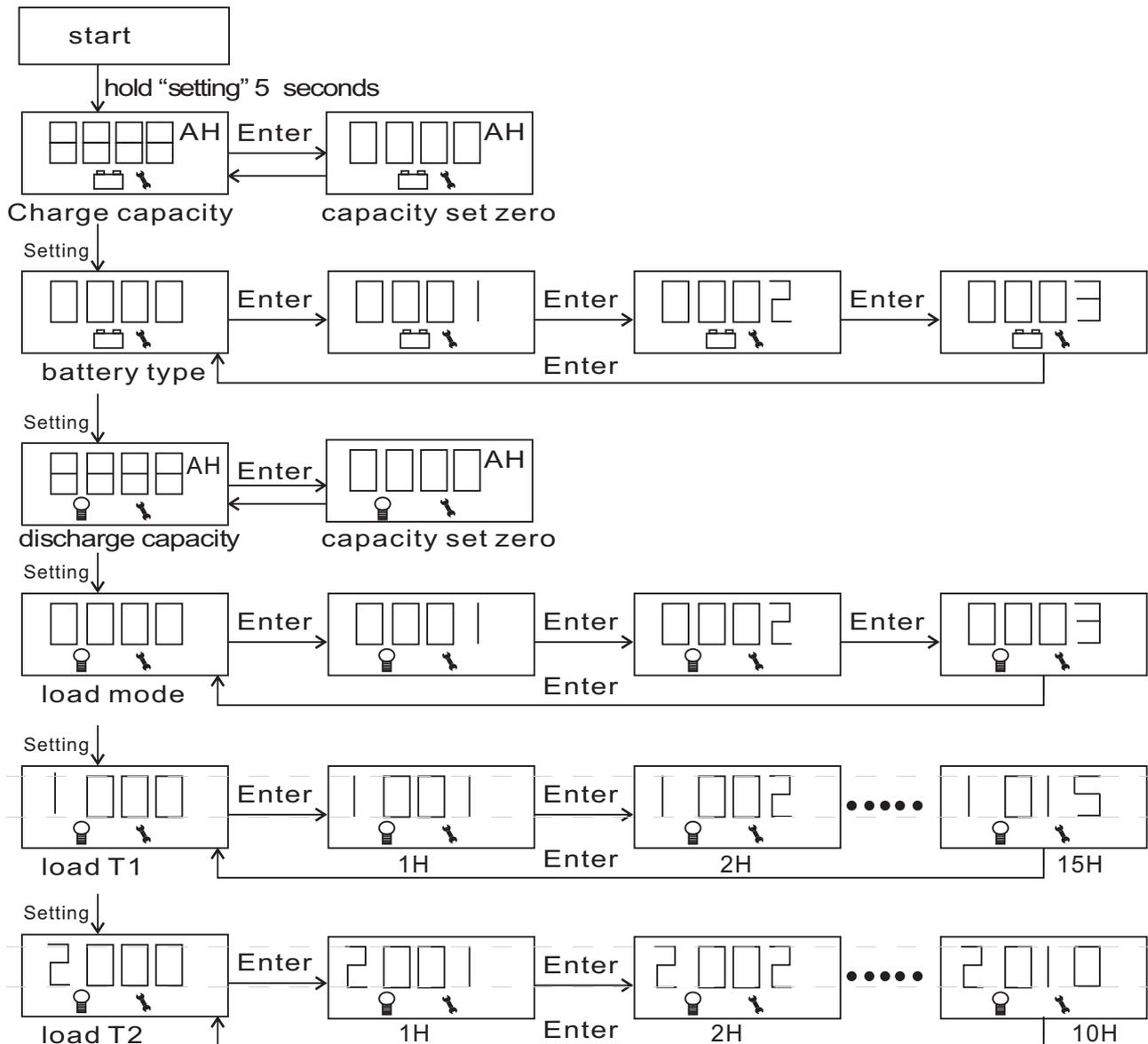
Parameter browsing

Key discription

Enter :	previous
Setting:	back



Parameter setting



Operation instructions

1. Parameter setting : hold “setting” key 5 seconds, the LCD digital flash, and short press key “enter”, the parameter is changed. after 10 seconds, the number not blink, automatically save, the same way you can set other parameters

2. Battery type:

000 : GEL

001: Sealed

002: Flooded

003: Lithium (LiFePO4)(12.8V)

3. Load work mode:

000: Manual Control. (press the “ON/OFF” on the controller to open or close the load)

001: Pure light ON/OFF

002: Light ON+time. (can be set 2 period)

003: Real time control. (you need monitor to set the real time. the monitor is optional accessories)

note: Load working time 1 set range : 0-15H

Example: 101: 1H, 110: 10H, 115: 15H

Load working time 2 set range: 0-10H

Example: 201: 1H, 210: 10H

Battery parameter

Battery Voltage Parameters (parameters is in 12V system at 25°C, please use double value in 24V)

Battery charging setting	Sealed	Gel	Flooded	Lithium(LiFePO4), 12.8V
Over Voltage Disconnect Voltage	16.0V	16.0V	16.0V	16V
Charging Limit Voltage	15.0V	15.0V	15.0V	15V
Over Voltage Reconnect Voltage	15.0V	15.0V	15.0V	15V
Equalize Charging Voltage	14.6V	—	14.8V	--V
Boost Charging Voltage	14.4V	14.2V	14.6V	14.6V
Float Charging Voltage	13.8V	13.8V	13.8V	--V
Boost Reconnect Charging Voltage	13.2V	13.2V	13.2V	13.2V
Low Voltage Reconnect Voltage	12.6V	12.6V	12.6V	12.0V
Under Voltage Warning Reconnect Voltage	12.2V	12.2V	12.2V	11.5V
Under Volt Warning Volt.	12.0V	12.0V	12.0V	11V
Low Volt Disconnect Volt.	11.1V	11.1V	11.1V	10.5V
Discharging Limit Voltage	10.6V	10.6V	10.6V	10V
Equalize Duration (min)	120	—	120	--
Boost Duration (min)	120	120	120	—

Technical specifications

Electrical Parameters

Item	MPPT10020
Nominal system voltage	12/24VDC Auto
Rated charge current	20A
Rated discharge current	20A
Battery voltage range	8V~32V
Max. PV open circuit voltage	100V (at minimum operating environment temperature) 92V (at 25°C environment temperature)
MPP voltage range	Battery voltage+2V ~ 72V V
Max. PV input power	260W (12V) 520W (24V)
Self-consumption	≤ 60mA (12V); ≤ 30mA (24V)
Discharge circuit voltage drop	≤ 0.15V
Temperature compensate coefficient	- 3mV/°C/2V (Default)
Communication	RS485 (RJ45 interface)
Grounding	Common negative

Environmental Parameters

Environmental	Parameter
Ambient temperature range*	-35°C ~ +55°C
Storage temperature range	-35°C ~ +80°C
Humidity range	≤ 95% (N. C.)

* Please operate controller at permitted ambient temperature. If over permissible range, please derate capacity in service.

Mechanical Parameters

Mechanical	MPPT10020
Dimension	197*172*82mm
Mounting dimension	158*156mm
Mounting hole size	Φ5.5
Power cable	12AWG (4mm ²)
Weight	1.1kg