

Introduction:

This is a Maximum Power Point Tracking(MPPT) function with high efficiency MPPT charge controller. It has many advantages such as self cooling, system voltage automatic recognition, wide rang of PV input,bcharge for all kinds of batteries, intelligent discharge control, RS485 communication function etc. It is the most high-end product in solar market.



Feature:

- 1.It has an efficient MPPT algorithm, MPPT efficiency $\geq 99.5\%$ and converter efficiency up to 98%.
- 2.Charge mode: three stages (constant current, constant voltage, floating charge), it prolongs service life of the batteries.
- 3.Four types of load mode selection: ON/OFF, PV voltage control, Dual Time control, PV+Time control .
- 4.Battery system voltage automatic recognition.
- 5.Three kinds of commonly used lead-acid battery (Seal\Gel\Flooded) parameter settings fcan be selected by the user, and the user can also customize the parameters for other battery charging.
- 6.It has a current limiting charging function. When the power of PV is too large, the controller automatically keeps the charging power, and the charging current will not exceed the rated value.
- 7.Support multi - machine parallel to realize system power upgrade.
- 8.High definition LCD display function to check the device running data and working status, also can support modify the controller display parameter.
- 9.RS485 communication, we can offer communication protocol to convenient user's integrated management and secondary development.
- 10.Support PC software monitoring and WiFi module to realize APP cloud monitoring.
- 11.CE, RoHS, FCC certifications approved, we can assist clients to pass various certifications.
- 12.3 years warranty, and 3~10 years extended warranty service also can be provided.

Parameter

MASTER series		48BL-100A
Product category	Controller Properties	MPPT (maximum power point tracking)
	MPPT efficiency	$\geq 99.5\%$
	Standby power	0.5W~1.2W
	System voltage	Automatic recognition
	Heat-dissipating method	Air cooling

Input Characteristics	Max.PV input voltage(VOC)	DC150V	
	Start the charge voltage point	Battery voltage + 3V	
	Low input voltage protection point	Battery voltage + 2V	
	Over voltage protection point	DC150V	
	Rated PV power	12V system	1300W
		24V system	2600W
36V system		3900W	
48V system		5200W	
96V system		□	
Charge Characteristics	Selectable Battery Types (Default Gel battery)	Sealed lead acid, Gel battery, Flooded (Other types of the batteries also can be defined)	
	Charge rated current	100A	
	Charging Method	3-Stage: constant current(fast charging)-constant voltage-floating charge	
LOAD Characteristics	Load voltage	The same as the battery voltage	
	Load rated current	100A	
	Load control mode	On\Off mode, PV voltage control mode, Dual-time control mode, PV + Time control mode	
Display & Communication	Display mode	High-definition LCD segment code backlight display	
	Communication mode	8-pin RJ45 port/RS485/support PC software monitoring/support WiFi module to realize APP cloud monitoring	

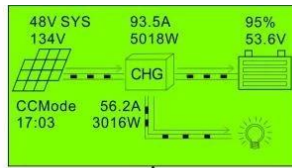
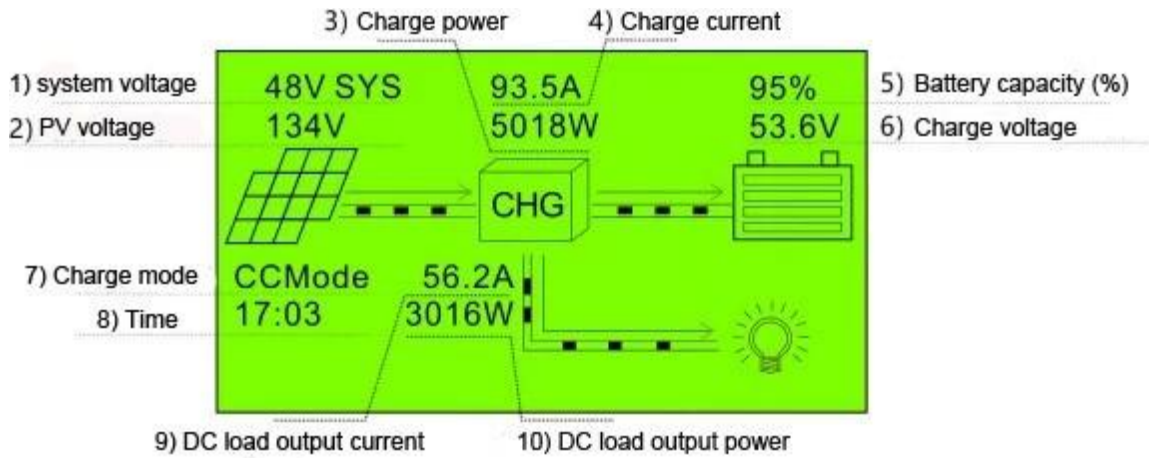
Other Parameters	Protect function	Input-output over \ under voltage protection, Prevention of connection reverse protection, battery shedding protection etc.
	Operation Temperature	-20°C~+50°C
	Storage Temperature	-40°C~+75°C
	IP(Ingress protection)	IP43
	Max. connection size	50mm ²
	Net Weight (kg)	7.1
	Gross Weight (kg)	8.8
	Product Size(mm)	420*280*95
	Packing Size(mm)	510*368*210

Remark:Above is company's standard parameters;

Product Parts:

NO.	Quantity	Description
1	1PC	MPPT Solar controller□Blue,Green or White□
2	2 pc	hangers(To install the controller on the wall)
3	8 set	Screw(To keep the hangers into the controller)
4	1 pc	RJ45 turn to RS232 communication cable
5	1 pc	Temperature sensing wire
6	1 pc	User manual

The Main Information of MPPT



Main Menu
 1.Work Status
 2.Setting
 3.Information

Normal Mode
 Fault: NoFault
 CC Charging
 PV Volt: 134V

Setting
 *1.Ethernet set
 2.Load Set
 3.Time&Data Set

Information
 MPPT CHARGER
 12/24/36/48V 100A
 48V BAT CHG SYS

Normal Mode
 Chg Curr : 93.5A
 Chg Powr : 5018W
 Chg Volt : 53.6V

Setting
 1.Ethernet set
 *2.Load Set
 3.Time&Data Set

IP:192.168.1.18
 GT:192.168.1.1
 Port:8888
 ADR:1

Normal Mode
 Chg Curr : 93.5A
 Chg Powr : 5018W
 Chg Volt : 53.6V

Setting
 1.Ethernet set
 2.Load Set
 *3.Time&Data Set

Load: Time Ctrl
 Total: 0.0KWH
 Firmware: 1.0
 Bat: CustomDef

Normal Mode
 Bat Temp: 28C
 HS Temp: 48C
 Load Curr: 56.2A

Setting
 2.Load Set
 3.Time&Data Set
 *4.Bat Set

Setting page

Note: All above information is a sample which is the working state of MASTER in some time . In

different working stage the parameters will change, like working mode , charge current ,charge mode ,charge power and so on ; In the fault mode it will show fault mode ;

Upper Computer Software and Test Software

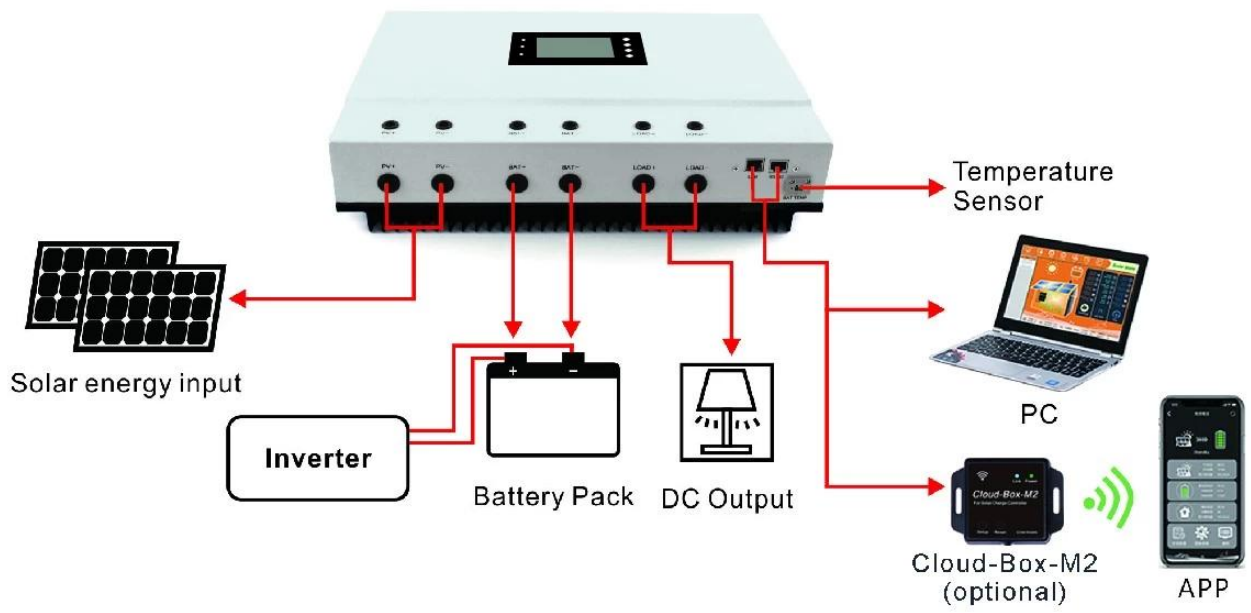
The screenshot displays the MPPT Solar Monitor V1.0 software interface. The title bar shows 'MPPT Solar MonitorV1.0'. The main interface is divided into several sections:

- Header:** IPANDEE logo, MPPT Model: Explorer-M2460, Firmware: V2.6, Serial: 9246111120220419, and a message: Click [START EDIT] to modify parameters!
- Left Panel:** Configuration options for Com Port (COM1), BaudRate (9600), and Address (1). Includes buttons for 'CHECK ADDRESS', 'STOP MONITOR', 'START EDIT', 'SET TIME', 'RESTORE', and 'DATA CORRECTION'.
- Running State:** Shows 'Standby'.
- Real-time Data:**
 - PV Volt: 0.1V
 - BAT Volt: 14.2V
 - Load Volt: 14.1V
 - CHG Curr: 0.0A
 - Load Curr: 0.4A
 - CHG Power: 0W
 - Load Power: 5W
 - Inner Temp: 27.0°C
 - BAT Temp: 25.0°C
 - Alarm Tip: PV Low
- Electricity Statistics:**
 - Day CHG: 0.0kWh
 - Month CHG: 0.0kWh
 - Total CHG: 0.0kWh
 - Day Used: 0.5kWh
 - Month Used: 0.5kWh
 - Total Used: 0.5kWh
- Bat Parameters Of Controller:**
 - Bat Category: FLD
 - System Volt: (Auto)12 V
 - C. V. Charge: 14.6 V
 - Float Charge: 13.8 V
 - Equalizing V: 14.8 V
 - Equalizing T: 30 min
 - Max Chg Curr: 80.0 A
 - Max Load Curr: 30.0 A
 - Battery Over: 15.0 V
 - Over Recover: 14.8 V
 - Battery Low: 10.5 V
 - Low Recover: 11.0 V
- Bat Parameters Set:**
 - Select Battery: BatType (FLD), Sys. Volt (Auto)
 - Max CHG -I: 80.0 A
 - Max Load-I: 30.0 A
 - SAVE button
- Lead Acid Battery (9~15V):**
 - C.V. Charge: 14.6 V
 - Equalizing V: 14.8 V
 - Float Charge: 13.8 V
 - Equalizing T: 30 min
 - Battery Over: 15.0 V
 - Over Recover: 14.8 V
 - Battery Low: 10.5 V
 - Low Recover: 11.0 V
 - SAVE button
- Lithium Battery:**
 - Charge Volt: 14.4 V
 - Nominal Volt: 12.8 V
 - Battery Over: 15.0 V
 - Over Recover: 14.4 V
 - Battery Low: 7.6 V
 - Low Recover: 6.0 V
 - SAVE button
- Load Output Parameters Of Controller:**
 - Load Control Mode: On Mode
 - Note: If Vbat exceeds the protection, will turn off!
- Load Output Set:**
 - Light Mode: On Load->PV Low (20.0 V), Off Delay (10 min); Off Load->PV OK (20.0 V), Off Delay (10 min)
 - Dual Timer Mode: Timer1->On Time (10:00), Off Time (20:00); Timer2->On Time (00:00), Off Time (00:00)
 - Light-Time Mode: Dark->On Load->PvLow (20.0 V), On Hour (10 H); Dawn->Off Load->Pv Ok (20.0 V), On Hour (0 H)
 - Load Mode Selection: On Mode, SAVE button

The footer contains: Copyright(C)IPANDEE [2022/1], 2022- 4-19 15:37:33, Bytes received: 378468, Bytes sent: 99320, Language English, and a button to switch to Chinese (切换为中文).

The interface of upper computer software working state

System connection diagram □



Parallel connection diagram

