#### feature:

- 1. MPPT charging mode, the peak efficiency is up to 99%, saving 30%~60% of the traditional PWM controller of solar panels.
- 2. The DC12V / 24V / 48V battery system is automatically recognized, so users can easily use it in different systems.
- 3. The MaximumPV input voltage is up to DC100V.
- 4. Three-level charging: fast charging (MPPT), constant voltage charging, floating charging, can protect the battery well.
- 5. Three discharges: about mode and off mode and PV voltage (solar) control mode.
- 6. Users can choose 4 commonly used standard batteries (sealed lead acid, Vented, Gel, NiCd). Other types of batteries can be defined by the user.
- 7. Digitaltube can display battery voltage and charging current. The software can display various parameters such as model number, PV input voltage, battery type, battery voltage, charging current, charging power, and working status.
- 8. RS232 communication, we can also provide communication protocols to facilitate user integration management.
- 9. This controller can be connected infinitely in parallel.
- 10. CE and RoHS certifications have been approved. We can help customers approve other certifications.
- 11. 2 year warranty; 3 to 10 years extended technical service.

### • parameter:

MPPT solar controller mode: I-P-E-SMART-12V / 24V / 48V Series		15A	20A	25A	30A	40A
Charging mode	MPPT (maximum power point tracking)					
Charging method	Three phases: constant current (MPPT), constant voltage, floating charge			ge		
System type	DC12V / 24V / 48V	auto recognition				
System voltage	12V system	DC9V~DC15V				
	24V system	DC18V~DC30V				
	48V system	DC36V~DC60V				
Soft start time	12V / 24V / 48V	-30				
	system	≤3S				
Dynamic response	12V / 24V / 48V	500US				
recovery time	system					
MPPT efficiency	12V / 24V / 48V	≥96.5%, ≤99%				
	system					

Max   System   DCLBV	Input characteristics	5							
247 System	MDDT an anation	12V system	DC14V~DC	:100V					
New Yorkstein		24V system	DC30~DC1	DC30~DC100V					
DC30V   Protection point   A8V system   DC30V   DC60V	voitage range	48V system	DC60~DC1	DC60~DC100V					
DC30V   Protection point   A8V system   DC30V   DC60V	Low input voltage Protection point	12V system	DC14V						
ABV system			DC30V						
12V system			DC60V						
Description of the content of the	Low input voltage Recovery point								
Max   System   DC65V   High input voltage protection point   System   DC110   System   S			DC34V						
High input voltage   12V / 24V / 48V   system			DC65V						
System   12V / 24V / 48V   213   284   355   426   568   24V system (W)   426   568   710   852   1136   1420   1704   2272   272   273   284   355   426   568   274   272   273   284   355   426   568   274   272   273   284   355   426   568   274   272   273   284   272   273   284   272   273   284   273   284   273   284   273   284   273   284   273   284   273   284   273   273   284   273   273   284   273	High input voltage								
Naximum	protection point	system	DC110						
Maximum photovoltaic power photovoltaic photov	High input voltage	12V / 24V / 48V	DC100V						
24	recovery point	system	DC100A						
photovoltaic power ABV system (W) 426 b88 /10 852 1136 1420 1704 2272  Charge science  Optional battery type 12V / 24V / 48V system (W) 852 1136 1420 1704 2272  Constant pressure battery)  Constant pressure 12V / 24V / 48V system Please confirm the charging voltage according to the battery type.  Floating charge system 12V / 24V / 48V system Please confirm the charging voltage according to the battery type.  System 12V / 24V / 48V system Please confirm the charging voltage according to the battery type.  System 12V / 24V / 48V system 20A 25A 30A 40A  Limiting 12V / 24V / 48V system 20A 25A 30A 35A 45A  Temperature 12V / 24V / 48V system 20.02%/°C  Sompensation 20x yes tem 20x / 24V / 48V system 20x 200mV  Coefficient 12V / 24V / 48V system 200mV  Output ripple 12V / 24V / 48V system 200mV  Output voltage stability system 21V / 24V / 48V system 200mV  Output voltage 12V / 24V / 48V system 200mV  Courtput discharge characteristics  The output voltage 12V / 24V / 48V system 200mV  Output voltage 12V / 24V / 48V system 200mV  Dutput voltage 12V / 24V / 48V system 200mV  Satisfied autput current 30A  Output control On mode, off mode, PV voltage control mode 0utput control Output control On mode, off mode, PV voltage control mode 0utput control Setting mode display Charging indicator R5232  Decomposition 12V oltage protection Check input characteristics	Maxima	12V system (W)	213	284	355	426	568		
Charge science  Optional battery type (default gel battery) (Donstant pressure latter) (Constant pressure system latter) (Floating charge system latter)  Rated input current latter lat		24V system (W)	426	568	710	852	1136		
Optional battery type (default gel system	priotovoitaic power	48V system (W)	852	1136	1420	1704	2272		
type (default gel battery)  Constant pressure   12V / 24V / 48V   system	Charge science								
type (default gel battery)  Constant pressure   12V / 24V / 48V   system	Ontional battery								
Constant pressure   12V / 24V / 48V   system   12V / 24V / 48V   system   12V / 24V / 48V   system   15A   20A   25A   30A   40A   25A   30A   45A   200   25A   30A   45A   200   25A   30A   45A   200   25A   30A   35A   45A   200   25A   30A   35A   45A   200   25A   30A   35A		12V / 24V / 48V	Sealed lead	d acid. Vent	ed. Gel. NiCo	d battery			
Constant pressure    12V / 24V / 48V   System		· · ·					)		
Constant pressure   12V / 24V / 48V   system   15A   20A   25A   30A   40A   25A   30A   35A   45A   20C   25A   2					. <b>,</b> ,		,		
Please confirm the charging voltage according to the battery type.   System   Syst	<b>,</b>	12\//24\//40\/							
Floating charge   12V / 24V / 48V   system   12V / 24V / 48V   20A   25A   30A   35A   45A   30A   35A   35A	Constant pressure		<b>-</b>						
Rated input current   12V / 24V / 48V   system   15A   20A   25A   30A   40A   25A   30A   40A   25A   30A   40A   25A   30A   40A   25A   30A   35A   45A   20A   25A   30A   35A									
Rated input current   12V / 24V / 48V   system   20A   25A   30A   40A   40A   25A   30A   40A   25A   30A   40A   25A   30A   35A   45A   45A   20A   25A   30A   35A   45A   45A   20A   25A   30A   35A   45A   20A   25A   30A   25A   30A   35A   45A   20A   25A   30A   25A   30A   25A   30A   25A   30A   35A   45A   20A   25A   30A   35A   45A   35A   35A   45A   35A   35A   45A   35A	Floating charge		type.						
Limiting 12V / 24V / 48V system 20A 25A 30A 35A 45A  Temperature 12V / 24V / 48V system 20A 25A 30A 35A 45A  Temperature 12V / 24V / 48V system 14.2V- (maximum temperature -25 ° C) * 0.3  Output ripple 12V / 24V / 48V system 200mV  Output voltage stability accurate 212V / 24V / 48V system 212V / 24V / 48V system 200mV  Output discharge characteristics  The output voltage Battery based voltage  Low voltage output Protection point The default is 10.5V; restore 11V; it can be adjusted.  Rated output current 30A  Output control On mode, off mode, PV voltage control mode Controller button or PC software display  LED digital tube display Battery voltage, charging current  LED light display Charging indicator PC (Communication port) RS232  protection  Low input voltage protection Check input characteristics				1	i				
Limiting 12V / 24V / 48V system 20A 25A 30A 35A 45A  Temperature 12V / 24V / 48V system 12V / 24V / 48V compensation system 12V / 24V / 48V system 12V / 24V / 48V system 200mV  Output ripple 12V / 24V / 48V system 200mV  Output voltage 12V / 24V / 48V system 200mV  Output discharge characteristics  The output voltage Battery based voltage  Low voltage output Protection point 7 the default is 10.5V; restore 11V; it can be adjusted.  Rated output current 30A  Output control On mode, off mode, PV voltage control mode  Output control setting mode Controller button or PC software display  LED digital tube display Battery voltage, charging current  ED light display Charging indicator  PC (communication port) RS232  protection  Low input voltage protection Check input characteristics	IRATED INDIIT CUTTENT		15A	20A	25A	30A	40A		
protection system 20A 25A 30A 35A 45A  Temperature 12V / 24V / 48V system 14.2V- (maximum temperature -25 ° C) * 0.3  Output ripple (peak) system 200mV  Output voltage stability accurate 212V / 24V / 48V system 212V / 24V / 48V system 2200mV  Output discharge characteristics  The output voltage Battery based voltage  Low voltage output Protection point The default is 10.5V; restore 11V; it can be adjusted.  Rated output current 30A  Output control Setting mode Controller button or PC software display  LED light display Battery voltage, charging current  ED light display Charging indicator  PC (communication port) RS232  Protection  Low input voltage protection Check input characteristics		-							
Temperature 12V / 24V / 48V system ±0.02%/°C  Temperature 12V / 24V / 48V system 14.2V- (maximum temperature -25 ° C) * 0.3  Output ripple (peak) system 200mV  Output voltage stability accurate 12V / 24V / 48V system 200mV  Output discharge characteristics  The output voltage Low voltage accurate 25 Battery based voltage 25 Battery based voltage 27 The default is 10.5V; restore 11V; it can be adjusted.  Protection point 30A  Output control 0n mode, off mode, PV voltage control mode 25 Controller button or PC software 36 display 25 Eather yoltage, charging current 26 Eather yoltage, charging current 27 Charging indicator 28 PC (communication port) RS232  Protection Low input voltage protection Check input characteristics		•	20A	25A	30A	35A	45A		
Coefficient       system       ±0.02%/°C         Temperature compensation       12V / 24V / 48V system       14.2V- (maximum temperature -25 ° C) * 0.3         Output ripple (peak)       12V / 24V / 48V system       200mV         Output voltage stability accurate       12V / 24V / 48V system       ≤±1.5%         Output discharge characteristics       5       5         The output voltage       Battery based voltage         Low voltage output Protection point       The default is 10.5V; restore 11V; it can be adjusted.         Rated output current       30A         Output control       On mode, off mode, PV voltage control mode         Output control setting mode       Controller button or PC software         display       LED digital tube display       Battery voltage, charging current         LED light display       Charging indicator         PC (communication port)       RS232         protection       Check input characteristics		-							
Temperature compensation system 14.2V- (maximum temperature -25 ° C) * 0.3  Output ripple (peak) system 200mV  Output voltage stability accurate 12V / 24V / 48V system 212V / 24V / 48V system 2200mV  Output discharge characteristics  The output voltage Battery based voltage  Low voltage output The default is 10.5V; restore 11V; it can be adjusted.  Rated output current 30A  Output control On mode, off mode, PV voltage control mode  Output control setting mode Controller button or PC software display  LED digital tube display Battery voltage, charging current  LED light display Charging indicator  PC (communication port) RS232  protection  Low input voltage protection Check input characteristics	<u> </u>		±0.02%/°C						
compensation system 14.2V- (maximum temperature -25 ° C) * 0.3  Output ripple (peak) system 200mV  Output voltage stability accurate 12V / 24V / 48V system ≤±1.5%  Output discharge characteristics  The output voltage Battery based voltage  Low voltage output Protection point The default is 10.5V; restore 11V; it can be adjusted.  Rated output current 30A  Output control On mode, off mode, PV voltage control mode Controller button or PC software display  LED digital tube display Battery voltage, charging current Charging indicator PC (communication port) RS232  protection  Low input voltage protection Check input characteristics									
Output ripple (peak) system 200mV  Output voltage stability accurate 12V / 24V / 48V system ≤±1.5%  Output discharge characteristics  The output voltage Battery based voltage  Low voltage output Protection point 7 the default is 10.5V; restore 11V; it can be adjusted.  Rated output current 30A Output control On mode, off mode, PV voltage control mode Output control setting mode Controller button or PC software display  LED digital tube display Battery voltage, charging current LED light display Charging indicator PC (communication port) RS232  protection  Low input voltage protection Check input characteristics			14.2V- (ma	ximum tem	perature -25	° C) * 0.3			
(peak)       system         Output voltage stability accurate       12V / 24V / 48V system         Output discharge characteristics	<u> </u>	-			<u> </u>	·			
Output voltage stability accurate  Output discharge characteristics The output voltage  Low voltage output Protection point  Rated output current  Output control  Output control  Output control setting mode  Controller button or PC software  display  LED digital tube display  Battery voltage, charging current  Charging indicator  RS232  Protection  Low input voltage protection  Check input characteristics			200mV						
stability accurate  Output discharge characteristics The output voltage  Low voltage output Protection point  Rated output current  Output control  Output control  Output control setting mode  display  LED digital tube display  LED light display  PC (communication port)  RS232  Protection  Low input voltage protection  Sattery based voltage  Battery based voltage  The default is 10.5V; restore 11V; it can be adjusted.  Controller button or PC software output control mode  Controller button or PC software  Charging indicator  RS232  Check input characteristics	•	system							
Stability accurate  Output discharge characteristics The output voltage  Low voltage output Protection point  Rated output current Output control Output control Output control setting mode  display  LED digital tube display  LED light display PC (communication port)  RS232  Protection Low input voltage protection  System  Sattery based voltage  On be default is 10.5V; restore 11V; it can be adjusted.  On mode, off mode, PV voltage control mode  Controller button or PC software  Charging indicator  RS232  Protection  Check input characteristics		12V / 24V / 48V	1 50/						
Output discharge characteristics The output voltage  Low voltage output Protection point  Rated output current Output control Output control Output control setting mode display  LED digital tube display  LED light display  PC (communication port)  Rester voltage control Rester voltage, charging current Charging indicator Rester voltage, charging current Characteristics  Check input characteristics	_		≤±1.5%	≤±1.5%					
The output voltage  Low voltage output Protection point  Rated output current Output control Output control setting mode  display  LED digital tube display  LED light display  PC (communication port)  RS232  protection  Low input voltage protection  Rated output current  30A On mode, off mode, PV voltage control mode Controller button or PC software  Controller button or PC sof									
Low voltage output Protection point  Rated output current Output control Output control Setting mode Output control setting mode Controller button or PC software  display LED digital tube display LED light display PC (communication port) PC (communication port) RS232  protection Low input voltage protection  The default is 10.5V; restore 11V; it can be adjusted.  The default is 10.5V; restore 11V; it can be adjusted.  RATE OF TOTAL SETTING TO SETT		iaracteristics	Datten, ba	ad valtaga					
Protection point  Rated output current  Output control  Output control setting mode  Controller button or PC software  display  LED digital tube display  LED light display  PC (communication port)  PC (communication port)  RS232  Protection  Check input characteristics	<u> </u>		Battery bas	sed voitage					
Rated output current Output control Output control Output control setting mode Output control setting mode Controller button or PC software  display LED digital tube display LED light display Charging indicator PC (communication port) RS232  protection Low input voltage protection Check input characteristics	Protection point		The default is 10.5V: restore 11V: it can be adjusted						
Output control On mode, off mode, PV voltage control mode Output control setting mode Controller button or PC software  display  LED digital tube display Battery voltage, charging current  LED light display Charging indicator  PC (communication port) RS232  protection  Low input voltage protection Check input characteristics									
Output control setting mode  display  LED digital tube display  LED light display  Charging indicator  PC (communication port)  protection  Check input characteristics  Controller button or PC software  Controller button or PC software  Charging indicator  RS232  Check input characteristics									
display  LED digital tube display  LED light display  Charging indicator  PC (communication port)  Protection  Low input voltage protection  Check input characteristics	·								
LED digital tube display  LED light display  Charging indicator  PC (communication port)  RS232  protection  Low input voltage protection  Check input characteristics		ng mode	Controller I	outton or PC	software				
LED light display Charging indicator PC (communication port) RS232  protection Low input voltage protection Check input characteristics	display								
PC (communication port)  PC (communication port)  PC (communication port)  PS232  Protection  Check input characteristics	· · ·		· · · · · · · · · · · · · · · · · · ·						
protection Low input voltage protection Check input characteristics									
Low input voltage protection Check input characteristics	PC (communication port)		RS232						
	protection								
High input voltage protection Check input characteristics									
	High input voltage protection		Check input characteristics						

Overcharge protection	Yes
Low voltage discharge protection	Yes
High current protection	Yes
Temperature protection	Yes
Other parameters	
noise	≤40dB
Heat dissipation method	Cool yourself Fan cooling
Component	Imported materials comply with EU standards.
prove	CE \ FCC \ RoHS Directive
physical	
Measuring D x W x H(mm)	205 * 168 * 60
Package size D x W x H(mm)	265 * 196 * 110
N.G (KG)	1.8 kg
G.N (KG)	2KG
Mechanical protection	IP25
surroundings	
humidity	Relative humidity 0~90% (no condensation)
height	0~3000 meters
Operating temperature	-20°C~+ 50°C
Storage temperature	-40°C~+ 75°C
Air pressure	70~106kPa

## Remarks:

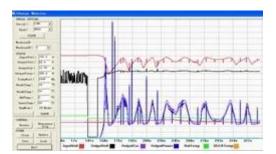
This specification is for reference only. Subject to change without noticeWe offer OEM and ODM services. The 36V / 72V / 96V models are also available for you.

# • Product packaging

number	Quantity	Included items
1	1 item	Controller color (blue or green is optional OEM ODM order is very popular)
2	2	Hanger (for controllers hanging on the wall)
3	Set of 4	screw
4	1 item	RJ45 to RS232 cable
Fives	1 item	Battery temperature sensor line
6	2	Fuse (DC output)
7	1 item	User guidance (manual)
8	1 item	CD

## Controller PC upper layer software and test software:

1 Controller PC upper layer software and test software can display information. Users can set parameters through the upper software of the PC.





Graphics: PC upper layer software graphics: test software

- 1.1 The first picture shows the operating state (charge and discharge), PVV voltage, charging voltage, charging current, etc. of the solar controller. The user can select the type of battery and the DC load output control method.
- 1.2 We provide PC upper layer software. Test software is not included. (User's PC hassoftware development platform, if required, please apply)
- 2. Information display and parameter setting.



Figure 2.1



Figure 2.2

2.1 ENTER1 button: Press ENTER1 on the left to display 2 digital battery voltages (if charging, 2 digital charging voltages are displayed), for example, battery voltage or charging voltage is 13.5V, display 13, please see Figure 2.1; press ENTER1 a little bit For longer, the user can set the battery type.

2.2 ENTER2 button: Press ENTER2 to display 2 digital battery currents (if it is not charging, it will display 00. If the charging current is 22.5A, display 22, please refer to Figure 2.2); press ENTER2 button again to set DC load control (on mode, off mode, photovoltaic voltage control mode)
Please see the user manual for more details.

• Other detailed parameters

- 1. Please refer to the design outline, technical documentation, user manuals, etc.
- 2. The R&D department produced the second edition on May 5, 2014.