

# INTELLIGENT PHOTOVOLTAIC MPPT CONTROLLER SMART PHOTOVOLTAIC SYSTEM SOLUTION PROVIDER

# IPANDEE

Focus on the MPPT Solar Controller  
More Professional, More Reliable



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INTELLIGENT PHOTOVOLTAIC MPPT CONTROLLER  
**SMART PHOTOVOLTAIC SYSTEM SOLUTION PROVIDER**

High quality, Intelligent, Comprehensive technical support

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WHO WE ARE

▶▶▶ company profile

Founded in 2011, IPANDEE New Energy is a national high-tech enterprise integrating research and development, production and sales. It provides photovoltaic controllers, photovoltaic systems, program formulation and related photovoltaic technical support services for the photovoltaic industry.

The company has passed the ISO9001/ISO14001 quality and environmental management system certification, and has won

a number of invention patents, practical patents, software works, appearance patents, and other products in the field of photovoltaic application, as well as has won the technical application awards issued by the global photovoltaic industry authority for many years.

After more than 10 years of hard work, we have the first-class R&D of off-grid, grid-connected and energy storage system products, as well as the service ability of personalized customization of solutions. In particular, the independent brand of MPPT controller has been designated as the national engineering project supplier by many countries in the world. At present, different series of products run efficiently and stably in high temperature, humid heat, rain, high altitude, wind and sand and other harsh natural environments, which has been highly recognized by the market and widely praised by customers, especially in the field of household, base station, security, telecom tower, forest fire prevention and other engineering field.



**Carbon peak carbon neutral promoter**  
**Green low-carbon industry enabler**

**FRATERNITY** Follow the truth and love people  
**DEVELOPMENT** Pursue the dream  
**MORALITY** Down to the earth

**OUR MISSION:** promote the development of energy industry, create customer value, and help partners achieve themselves.

**OUR VISION:** become a world-class PV application solution brand enterprise

**CORE VALUES:** Take "fraternity, development and morality" as the center

**Outlook on development:** customer refinement, result-oriented, along with the trend and proactive;

**Talent view:** morality first, high ambition, brave and resourceful, professional and pragmatic;

**Market service value:** perfect self to achieve others, light up self to illuminate others, and create the future with values;

**Production quality value:** the quality problem is the character problem;

**Product experience value:** good user experience and feedback;

**Training value:** learning on behalf of the future and deliberate practice to make a master;

**6000m<sup>2</sup>**  
enterprise production base

**100+**  
patent technology

more than **10**  
years  
off-grid system building experience

**1000+**  
project experience

IPANDEE started to enter the photovoltaic new energy industry since 2011, and has been engaged in the research and development and production of off-grid system equipment, including inverter, all-in-one machine, controller, etc., Then from 2016, our company began to focus on the research and development and production of MPPT solar controller, and now has nine series of MPPT solar controller. Meanwhile, It has been developing and producing the highest matching MPPT controller according to different platforms, regions and projects.

WHO WE ARE

▶▶▶ Core team



**Zhaobiao Que**  
General manger

Gather a group of loving and righteous people, Do a sentient and righteous thing;  
Build a professional and efficient team, Create satisfactory value for customers;



**Kang Yan**  
Technical Director

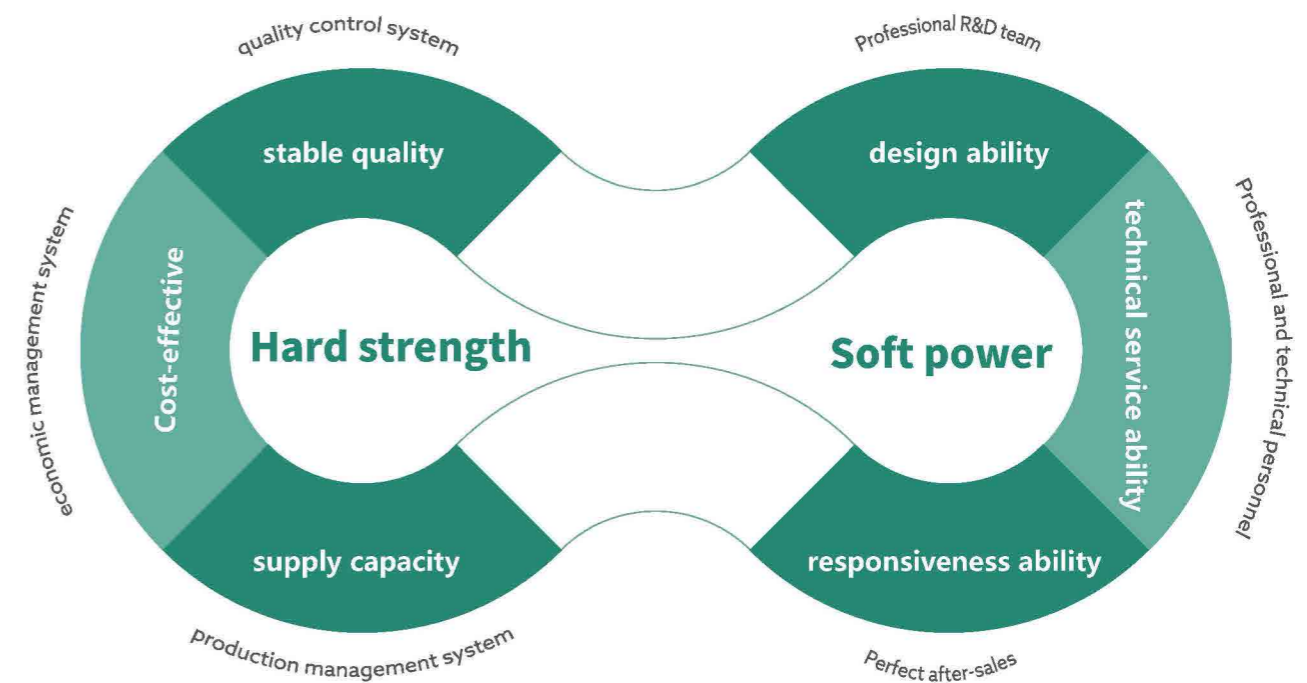
Committed to the development and design of photovoltaic power products, quality as life, strict links, excellence, continuous innovation;

Since established in 2011, IPANDEE has established a service and r&d team of highly educated and high-quality talent. As one of the first MPPT Chinese solar charge controller high-tech enterprises including sales, research and development, as well as services, our company has witnessed the rapid development of new energy industry, accumulated rich experience in pv off-grid system establishment, and formed a scientific solution system.

Our core team members are young and energetic, many of them are professionals from the world's top 500 technology enterprises, well-known photovoltaic manufacturers and listed enterprises. They have rich professional abilities in various positions and fields, and have established customer-centered quality control system, production management system, economic management system and industrial management system.



Customer-centric teamwork



WHO WE ARE

▶▶▶ Glory and Certifications

Patented technology

more than 100 independent research and development patented technology

Cooperated channel

In-depth cooperation with global more than 100 brand customers

R & D team

more than 40 professional technical R & D personnel

Total number of projects

more than 1000 project guaranteed experience

The efficiency of the MPPT solar charging controller independently developed by IPANDEE reaches 99.5%, and the average conversion efficiency of the whole machine reaches 98%. It has won the national high-tech enterprise, the most influential brand and hundreds of patented technologies in Shenzhen.



## WHAT WE DO

▶▶▶ Industry phenomenon

## 1 System efficiency problem:

There are many MPPT controllers on the market which have no tracking function, or low tracking efficiency. Especially in rainy days the machines can not track to the maximum power point and even often "crash", leading to a serious waste of solar panels and affecting the normal operation of the system;

## 2 The battery life problem:

Many users report the phenomenon that the battery will never be fully charged and even has bumps and caches fire. At the same time, many controllers and lithium batteries can not accurately match with each other, not only leading to damage of lithium batteries, but also the controller and inverter.

## 3 Technical application support problem:

Due to some suppliers lack professional technical team support, their controllers fail to meet the application requirements of various scenarios and provide customized services, resulting in many unreasonable system configuration, failure, and finally cannot achieve the original intention of system use, conversely bringing a lot of unnecessary trouble to users;

## 4 Homogeneity problem:

The products on the market are homogenized seriously, lack of innovation, poor quality, and do not aim at the user group. As a result, the products have no competitive advantage in the local market, low sales volume, low return rate, and many after-sales service problems, moreover have impact on the reputation of the customer's own brand.

## 5 Operation and maintenance problems:

Installation in remote areas, islands, deserts, mountains, pylons and other harsh environments can not get the manufacturer's technical support response, which wastes a lot of labor costs and seriously affects the progress of the project. Even due to the quality problems of the controller, the maintenance and repair of the controller for many times have resulted in high operation and maintenance costs, over budget, deficit on projects. Moreover, Party A's trust will be lost and subsequent projects will be excluded from the schedule.

**In a word:  
If people do not choose the  
right MPPT controller and  
manufacturer, this will affect  
their own brand and business  
revenue!**

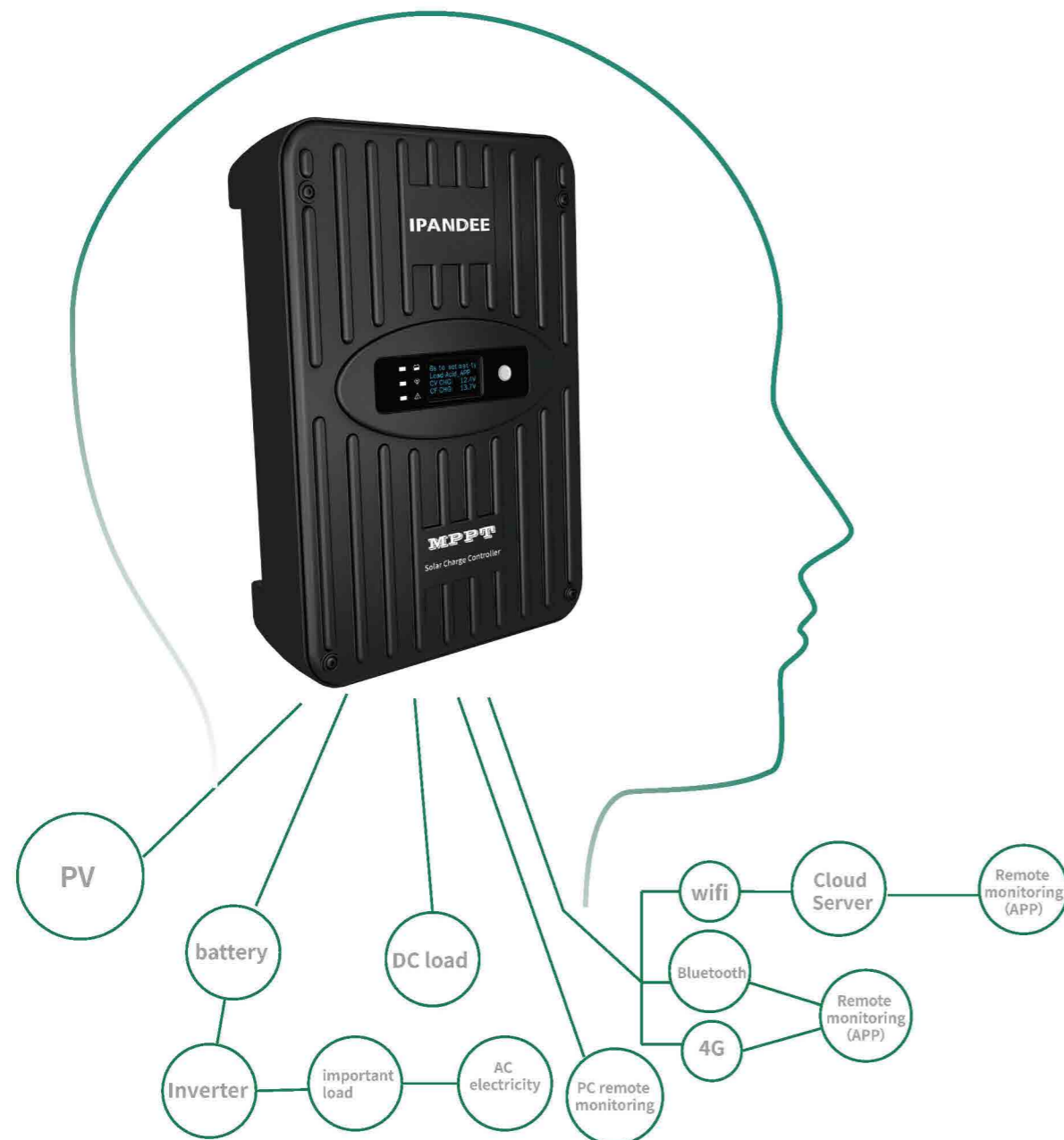
WHAT WE DO

▶▶▶ System Core/industry trends

The solar MPPT controller is the **brain center** of the off-grid system  
 The MPPT controller with high conversion efficiency has been replacing the PWM controller with low efficiency.

Promoting policy

At the same time, with the rise of new energy in the world and the promotion of carbon peaking and carbon neutrality policies, the application of photovoltaic off-grid system will be more and more in household use, communication, energy storage, electricity, smart city, transportation, oil Wells and other scenarios.



**In a word:**

**It is the core of the off-grid system business to select the solar MPPT controller manufacturer with quality guarantee, targeted and professional technical team support!**

WHAT DO WE DO

▶▶▶ Product Overview



All series of MPPT solar charging controllers of our company integrate new design concepts, keep up with the development of science and technology, adapt to the needs of cutting-edge off-grid system applications, and adopt our own patented MPPT control algorithm technology, which can always maintain the maximum power point tracking efficiency in high and low power segments. At the same time, when obtaining the energy of the solar panel, it has the dual functions of charging current limiting and power limiting, the protection mechanism of automatic power reduction for high temperature charging, and the fourth-order charging method, which effectively protects and prolongs the life of the battery and fully ensures the stability of the system.

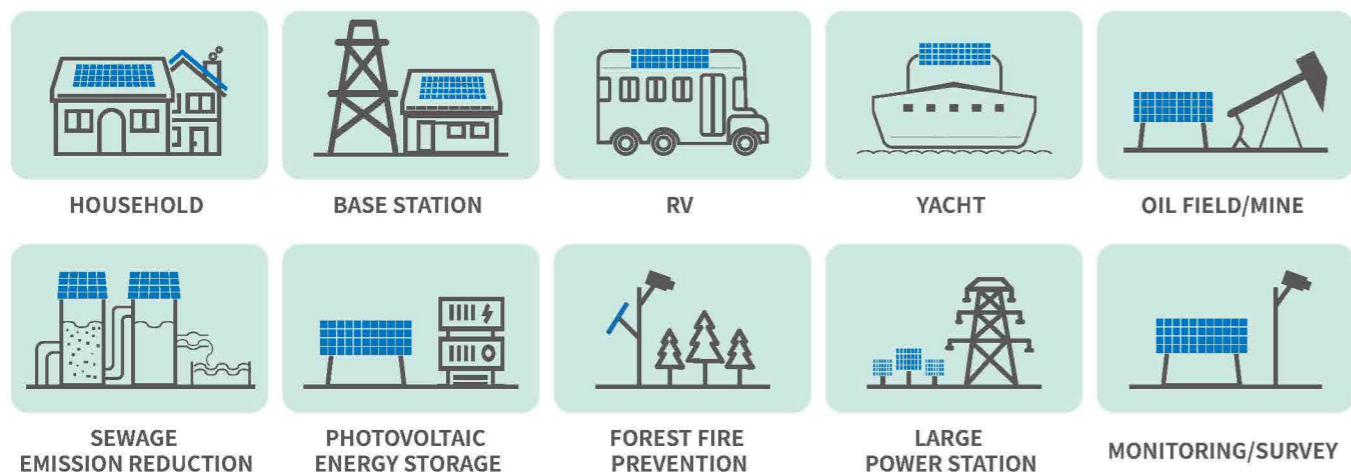
In addition, the product innovation breakthrough waterproof and dust-proof design, to combat different harsh environments with IP21~IP65 protection level. It adapts to different charging requirements of lead-acid battery and lithium battery. Except as some model series, it is standard equipped with activation function after over-discharge protection of lithium battery, which can fully meet the application requirements of various systems of users. It has perfect various protection functions, so that the solar power supply system can run safely and stably for a long time. It can be used in household, communication base station, mine and oil field, photovoltaic energy storage, RV and yacht, security monitoring and other application scenarios.

Product features

- MPPT efficiency 99.5%, the whole machine conversion efficiency up to 98%;
- The interface is not only simple and easy to operate but also has intelligent interactive experience;
- Supports lithium activation wake-up function;
- Battery type: lead-acid battery, lithium battery, or custom battery;
- Supports user-defined charging of lead-acid batteries or lithium batteries;
- Complete protection function ensures stable operation of lithium battery or lead-acid battery system;
- Four LOAD control modes: normally on/normally off mode, optical control mode, dual-time controller mode, optical control + fixed time control mode;
- Dual RJ45 interface, meet the communication application of RS485 modbus, integrated management and secondary development;
- Support computer, wired instrument and wireless module APP remote monitoring;

High quality, intelligent and redevelopable

Application field



Small MPPT solar charging controller



EXPLORER - N *professional version*

model	EN2420	EN2430	EN2440	EN2450	EN2460
battery system	12V / 24V				
Battery Type	Various lead-acid batteries, lithium batteries or other types of batteries				
Rated charge current	20A	30A	40A	50A	60A
Max.PV input voltage(Voc)	100VDC				
Rated load current	20A		30A		
Wiring	common negative				
IP (Ingress protection)	IP43				
Product/package size	220x148x58.8/ 289x212x105		245x170x68.5/334x255x123		



EXPLORER - NS *User Edition*

model	NS24L30	NS24L40	NS24H50	NS24H60	NS48H20	NS48H30
battery system	12V / 24V			12V/24V/36V/48V		
Battery Type	Various lead-acid batteries, lithium batteries or other types of batteries					
Rated charge current	30A	40A	50A	60A	20A	30A
Max.PV input voltage(Voc)	100VDC			150VDC		
Rated load current	20A		30A		20A	
Wiring	common negative					
IP (Ingress protection)	IP42					
Product/package size	220x148x64/ 275x176x70			245x170x69/300x198x75		



## Medium MPPT Solar Charge Controller



### EXPLORER professional version

parameter	model E4850	model E4860
battery system	12V / 24V / 36V / 48V	
Battery Type	Various lead-acid batteries, lithium batteries or other types of batteries	
Rated charge current	50A	60A
Max.PV input voltage(Voc)	150VDC	
Rated load current	30A	
Wiring	Common positive	
IP (Ingress protection)	IP65	
Product/package size	290x220x88/410x328x193	



### EXPLORER - T NEW

parameter	model ET4850	model ET4860
battery system	12V / 24V / 36V / 48V	
Battery Type	Various lead-acid batteries, lithium batteries or other types of batteries	
Rated charge current	50A	60A
Max.PV input voltage(Voc)	150VDC	
Wiring	common negative	
IP (Ingress protection)	IP65	
Product/package size	290x220x90 / 410x328x193	

## Medium MPPT Solar Charge Controller



### RUNNER - RS User Edition

parameter	model RS48L40	model RS48L50	model RS48L60	model RS48L80	model RS48L100
Max.PV input voltage(Voc)	150VDC				

parameter	model RS48H40	model RS48H50	model RS48H60	model RS48H80	model RS48H100
Max.PV input voltage(Voc)	200VDC				
battery system	12V / 24V / 36V / 48V				
Battery Type	Various lead-acid batteries, lithium batteries or other types of batteries				
Rated charge current	40A	50A	60A	80A	100A
Rated load current	30A			50A	
IP (Ingress protection)	IP21				
Product/package size	305x185x90/370x218x98			380x210x80/490x350x195	



### RUNNER professional version

parameter	model R48L40	model R48L50	model R48L60	model R48L80	model R48L100
Max.PV input voltage(Voc)	150VDC				

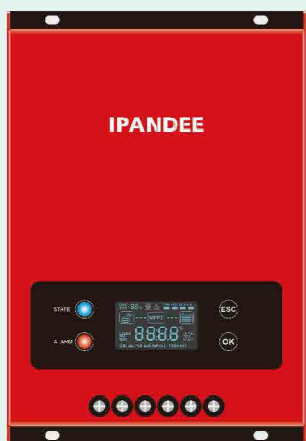
parameter	model R48H40	model R48H50	model R48H60	model R48H80	model R48H100
Max.PV input voltage(Voc)	200VDC				
battery system	12V / 24V / 36V / 48V				
Battery Type	Various lead-acid batteries, lithium batteries or other types of batteries				
Rated charge current	40A	50A	60A	80A	100A
Rated load current	30A			50A	
IP (Ingress protection)	IP21				
Product/package size	305x185x72/420x275x150			380x210x80/490x350x195	



ESMART 3

classic version

parameter	model	E20	E30	E40	E50	E60
battery system	12V / 24V / 36V / 48V					
Battery Type	Various lead-acid batteries, lithium batteries or other types of batteries					
Rated charge current	20A	30A	40	50A	60A	
Max.PV input voltage(Voc)	150VDC					
Rated load current	40A			60A		
IP (Ingress protection)	IP21					
Product/package size	240x168x66/289x204x101			270x180x85/324x223x135		



ESMART 4

NEW

parameter	model	ESF48L50	ESF48L60	ESF48L80	ESF48L100
Max.PV input voltage(Voc)	150VDC				

parameter	model	ESF48H50	ESF48H60	ESF48H80	ESF48H100
Max.PV input voltage(Voc)	200VDC				
battery system	12V / 24V / 36V / 48V				
Battery Type	Various lead-acid batteries, lithium batteries or other types of batteries				
Rated charge current	50A	60A	80A	100A	
Rated load current	50A	60A	80A	100A	
IP (Ingress protection)	IP21				
Product/package size	240x166x65				

MASTER

classic version



parameter	model	M48L80	M48L100	M48L120	M48H80	M96H50
battery system	12V / 24V / 36V		48V		48V	96V
Battery Type	Various lead-acid batteries, lithium batteries or other types of batteries					
Rated charge current	80A	100A	120A	80A	50A	
Max.PV input voltage(Voc)	150VDC			300VDC		
Rated load current	80A	100A	120A	80A	50A	
IP (Ingress protection)	IP31					
Product/package size	420x280x95/510x368x210					

Large MPPT Solar Charge Controller



MARS

project version

parameter	model	MS48L80	MS48L100	MS48H80	MS48H100	MS96H50
battery system	12V / 24V / 36V / 48V			48V		96V
Battery Type	各种铅酸电池、锂电池或其它种类电池					
Rated charge current	80A	100A	80A	100A	50A	
Max.PV input voltage(Voc)	150VDC			300VDC		
Rated load current	80A	100A	80A	100A	50A	
IP (Ingress protection)	IP65					
Product/package size	430x350x140/600x448x265					



GALAXY

professional version

parameter	model	GS96 L60	GS96 L80	GS96 L100	GS120 L60	GS120 L80	GS120 L100	GS144 L60	GS144 L80	GS180 L60	GS180 L80
battery system	96V			120V			144V		180V		
Battery Type	各种铅酸电池、锂电池或其它种类电池										
Max.PV input voltage(Voc)	430VDC										
Rated charge current	60A	80A	100A	60A	80A	100A	60A	80A	60A	80A	
Rated load current	60A	80A	100A	60A	80A	100A	60A	80A	60A	80A	
IP (Ingress protection)	IP21										
Product/package size	313x540x187/635x430x295 (木箱)										

parameter	model	GS192 L50	GS192 L60	GS216 L50	GS216 L60	GS240 L50	GS240 L60	GS192 H100	GS216 H80	GS216 H100	GS240 H80	GS240 H100	GS360 H80	GS384 H80	GS384 H100	GS480 H60	GS480 H80
battery system	192V		216V		240V		192V		216V		240V		360V	384V		480V	
Battery Type	各种铅酸电池、锂电池或其它种类电池																
Max.PV input voltage(Voc)	430VDC						660VDC						850VDC				
Rated charge current	50A	60A	50A	60A	50A	60A	100A	80A	100A	80A	100A	80A	80A	100A	60A	80A	
Rated load current	50A	60A	50A	60A	50A	60A	—										
IP (Ingress protection)	IP21																
Product/package size	313x540x187/635x430x295						340x522x222/620x450x335MM						340x585x227/680x450x335				

WHAT DO WE DO

▶▶▶ Product Overview

Rack Mount MPPT Controller



**MCJ SERIES** *exclusive version*

parameter	model	MCJ96 L60	MCJ96 L80	MCJ96 L100	MCJ120 L60	MCJ120 L80	MCJ120 L100	MCJ144 L60	MCJ144 L80	MCJ180 L60	MCJ180 L80
battery system		96V			120V			144V		180V	
Battery Type		Various lead-acid batteries, lithium batteries or other types of batteries									
Max.PV input voltage(Voc)		430VDC									
Rated charge current		60A	80A	100A	60A	80A	100A	60A	80A	60A	80A
Rated load current		60A	80A	100A	60A	80A	100A	60A	80A	60A	80A
Cabinet unit		4U									

parameter	model	MCJ192 L50	MCJ192 L60	MCJ216 L50	MCJ216 L60	MCJ240 L50	MCJ240 L60	MCJ192 H100	MCJ216 H80	MCJ216 H100	MCJ240 H80	MCJ240 H100	MCJ360 H80	MCJ384 H80	MCJ384 H100	MCJ480 H60	MCJ480 H80
battery system		192V		216V		240V		192V	216V		240V		360V	384V		480V	
Battery Type		Various lead-acid batteries, lithium batteries or other types of batteries															
Max.PV input voltage(Voc)		430VDC						660VDC						850VDC			
Rated charge current		50A	60A	50A	60A	50A	60A	100A	80A	100A	80A	100A	80A	80A	100A	60A	80A
Rated load current		50A	60A	50A	60A	50A	60A	—									
Cabinet unit		4U						5U									



**EMPPT48 SERIES** *exclusive version*

parameter	model	EMPPT4860	EMPPT48120
battery system		12V / 24V / 36V / 48V AUTO	
Battery Type		Various lead-acid batteries, lithium batteries or other types of batteries	
Rated charge current		60A	120A
Max.PV input voltage(Voc)		150VDC	200VDC
Cabinet unit		2U	4U

Security monitoring MPPT controller



**MSC SERIES** *high precision version*

parameter	model	MSC2410	MSC2420	MSC2430
Battery Type		Various lead-acid batteries, lithium batteries or other types of batteries		
Max.PV input voltage(Voc)		60VDC		
Rated charge current		10A	20A	30A
Rated load current		10A	20A	30A
IP (Ingress protection)		IP65		

Customized MPPT Controller



The highest matching MPPT controller can be customized and manufactured according to different platforms, regions, projects;

WHAT DO WE DO

▶▶▶ Parts / Systems

accessories



CLOUD - BOX - M2 WIFI MODULE



BT-02 BLUETOOTH MODULE



MH-M80 REMOTE MONITORING HEADER



ETHERNET MODULE



4G MODULE

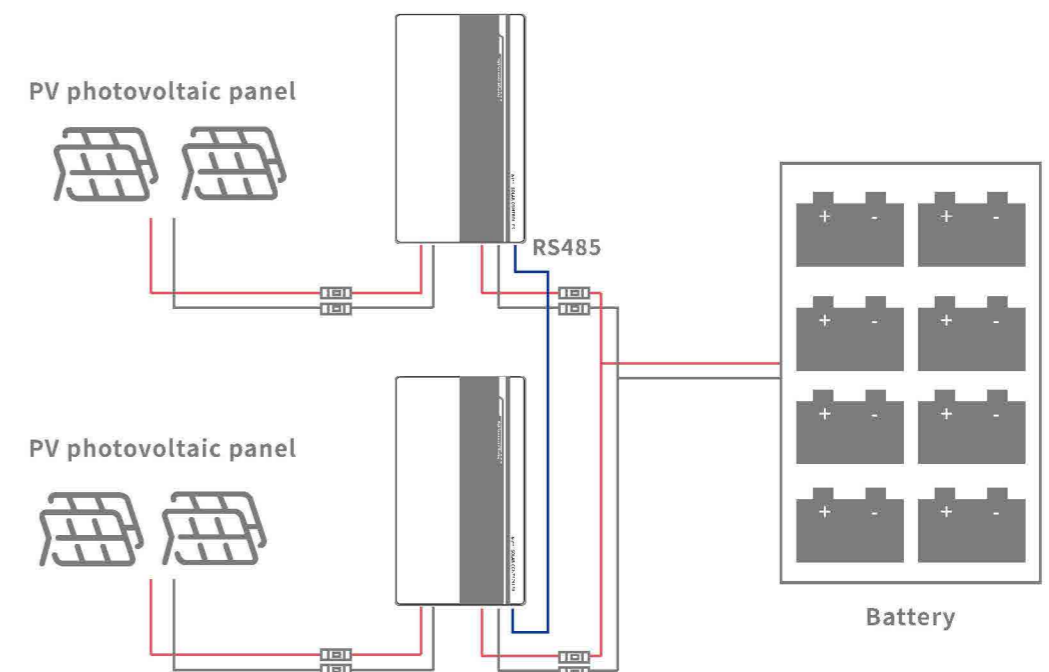


RS485-UUSB S485 TO USB COMMUNICATION CABLE

APP remote monitoring system



Example diagram of PV parallel series



Host computer/remote monitoring system



WHAT WE DO

▶▶▶ OEM/ODM customization

Customer-centric steps:

1. R&D and produce the high-quality and intelligent MPPT controller;
2. Understand the real needs of customers and project requirements;
3. Adjust the parameters according to the matching products recommended by customers or projects;
4. OEM/ODM or project customization services if we do not have matching products;



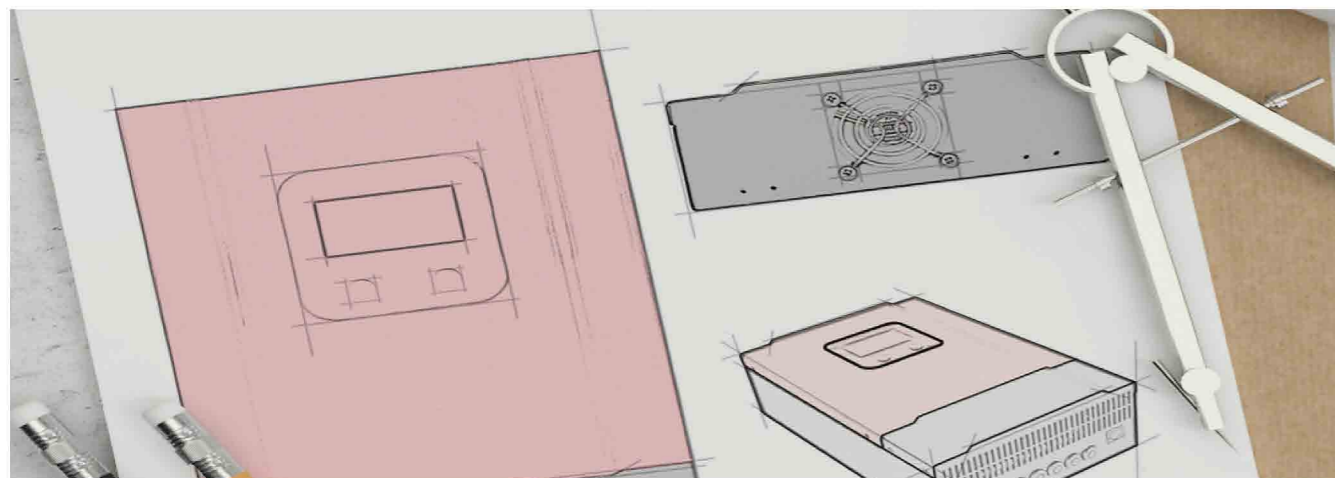
OEM/ODM ORDERS

Relying on the scale effect of IPANDEE to maximize product value under the condition of optimal cost, it can solve multiple problems such as research and development design, production and manufacturing, supply chain and so on for brand owners, so that brand owners can concentrate on brand promotion, expand better sales channels and gain market leading advantages!

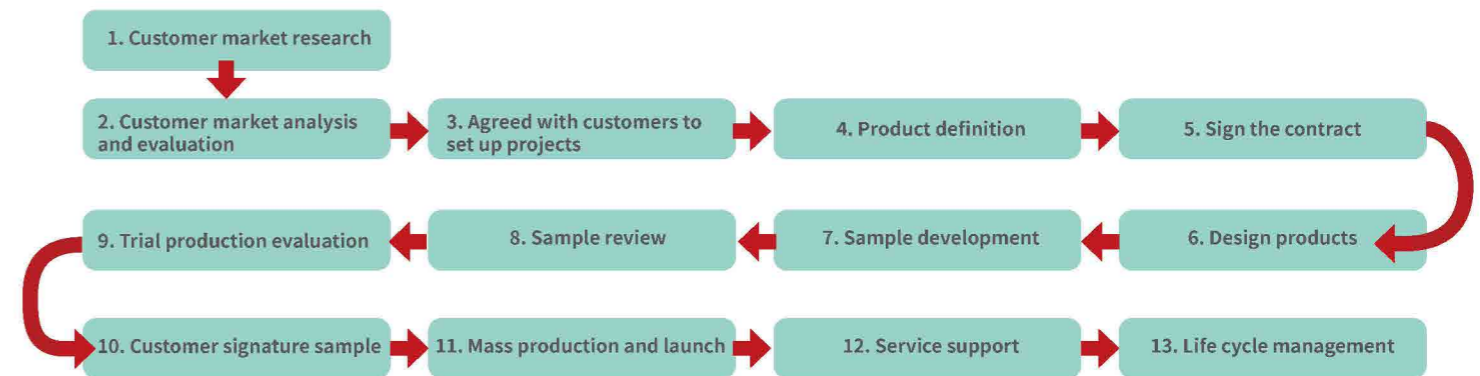


PROJECT CUSTOMIZATION SCHEME

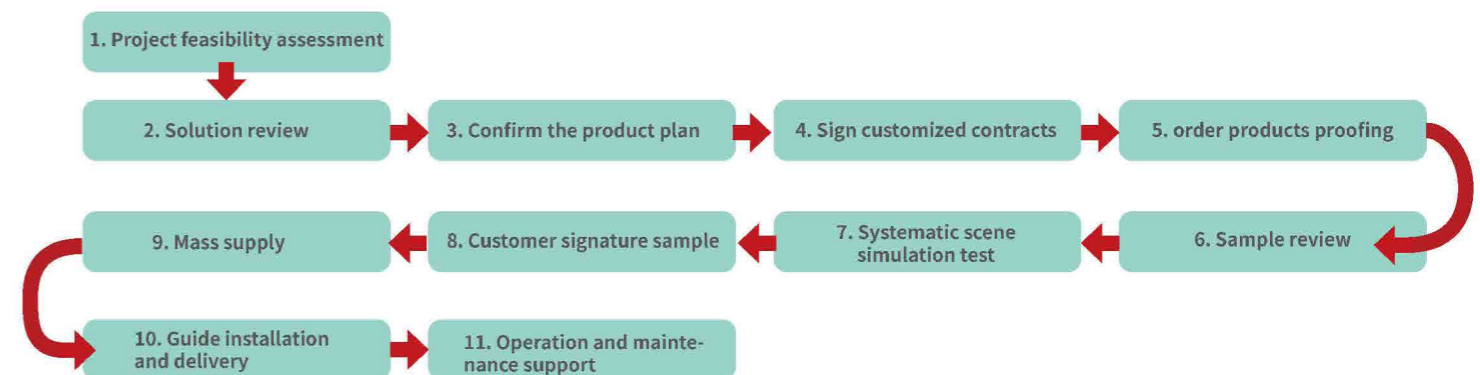
Based on customer-centric value, IPANDEE will establish a project team for every project by the accused of top executives, which can adequately address the diversified needs of customers and improve the operational efficiency and profitability of the project, helping customers achieve the success of the business value and bringing customers the whole cycle, the all-round high-quality experience!



OEM/ODM cooperation process:



Project customized product process:



What differentiates our company from other companies?

1. we focus on the development of MPPT controller, do not follow others;
2. We focus on customer needs, not only provide products, but also provide solutions;



WHAT WE DO

▶▶▶ Project cases

01 Customized service



We provide customized services to clients, assist them in market analysis, design competitive products, better match the needs of local users, and greatly enhance the brand value of customers;

02 High voltage power transmission line project



South Grid State Grid unattended survey power line project, Explorer-N series solve the problem of high voltage power line monitoring power supply;

03 Island Power generation project



The power supply is difficult, the road is long, and the operation and maintenance is difficult. The large-scale off-grid system has been successfully installed for many times. The Galaxy parallel solution solves the problems of instability and low efficiency of the system with large power consumption;

04 Outdoor intelligent door valve project



Outdoor valve irrigation and other related projects, Explorer series is specially designed for double waterproof, dust-proof and mosquito prevention design, to solve the problem of system instability caused by very bad field environment;

05 Aquaculture, fishing and drainage power generation project in water yard



The stable and efficient photovoltaic power supply system for fishing and volleyball fishermen can solve the difficulty of electricity supply for fishing and volleyball fishermen. They use diesel generators for power supply for a long time, which causes serious noise and air pollution;

06 Southeast Asia Base Station Project



Won the 3KW-5KW system of the communication base station project. Runner series solved the power supply problem of the local communication base station

07 RV solar energy



Cooperation with a number of brands in the United States , Explorer series solve the RV user efficiency is not high, complex operation, and even charging unsafe problems;

08 Love Power Station of Luokema Primary School in Ganzi



The Solar Energy Association jointly builds a high-power off-grid system. Galaxy series solves the problem of insufficient power supply in remote areas and provides a strong guarantee for children's learning environment;

Partners

Win-win cooperation and common progress



IPANDEE New energy technology

## **SEEK GLOBAL PARTNERS**

Brands and project vendors of various platforms and regions

Light up the world together

