

嘉盛电源
GRASEN

(Stock Code: 002519)



INTELLIGENT CHARGE



LUOYANG GRASEN POWER TECHNOLOGY CO.,LTD.
Website: www.grasen.com



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GRASEN

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Wholly-owned Subsidiary of Listed Company

Grasen is a wholly-owned subsidiary of Jiangsu Yinhe Electronics with stock code 002519.



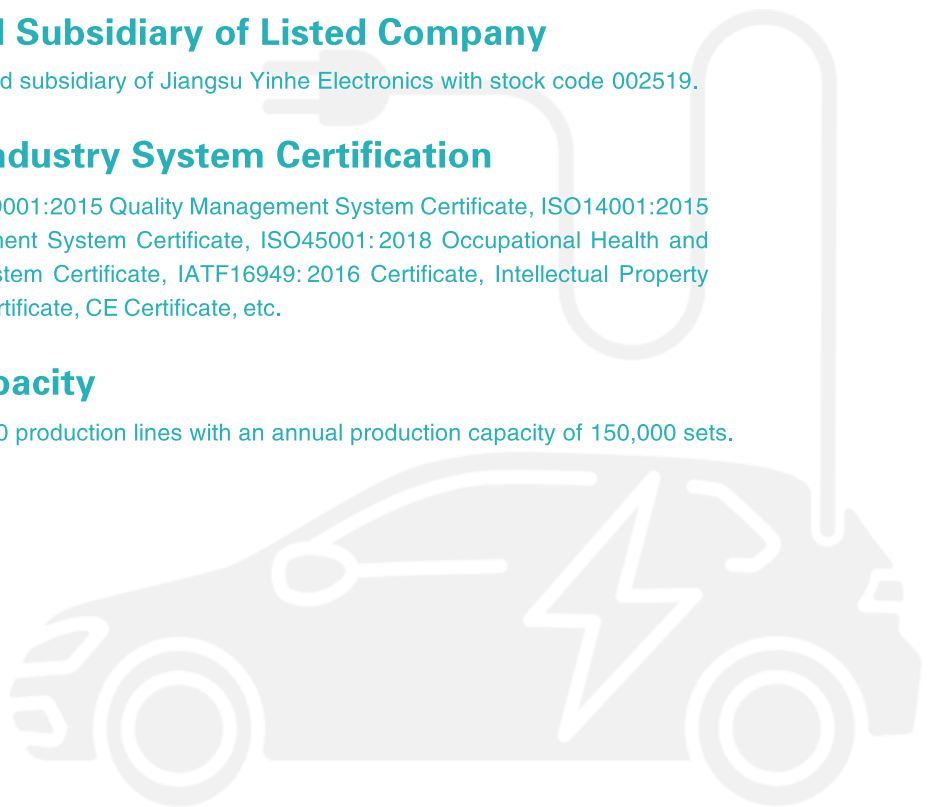
International Industry System Certification

Grasen has passed ISO9001:2015 Quality Management System Certificate, ISO14001:2015 Environmental Management System Certificate, ISO45001:2018 Occupational Health and Safety Management System Certificate, IATF16949:2016 Certificate, Intellectual Property Management System Certificate, CE Certificate, etc.



Production Capacity

Grasen has more than 30 production lines with an annual production capacity of 150,000 sets.



COMPANY PROFILE

Luoyang Grasen Power Technology Co., Ltd. was established on March 16, 2010 with a registered capital of 100 million yuan. Grasen Power is a wholly-owned subsidiary of the listed company Jiangsu Yinhe Electronics (stock code: 002519). And Grasen Power has more than 300 employees and an Electronic Industry Park of 40,000 square meters with annual production capacity over 150,000 sets.

Grasen Power is a high-tech enterprise specializing in the research and development, manufacture, sales and service of new energy electric vehicle charging equipment products. Grasen Power has obtained more than 100 patents and software copyrights. At present, a variety of products have been developed, intelligent AC and DC charger, high-power charging module, on-board charger (OBC), DC/DC converter, etc.

Grasen Power has long-term good cooperative relations with many well-known enterprises, such as BYD Auto, Yutong, Zhongtong BUS, CHERY, JAC, CATL, State Grid, ENGIE, etc.



R&D Strength >>



50+



100+ Patents



Professional



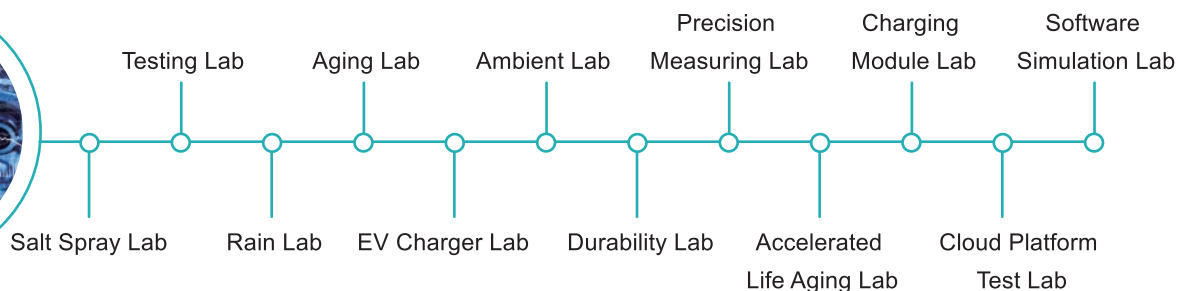
The R&D center focuses on the design and manufacture of new energy vehicle charging solutions. The engineers and management team of the center have more than 10 years of industry experience. At present, there are 50 professionals in basic research, design and application, process manufacturing and testing.



Jointly undertake 2018 national key R&D projects with Yutong Company; The R&D team actively innovates, obtains more than 100 invention patents, utility model patents and design patents.



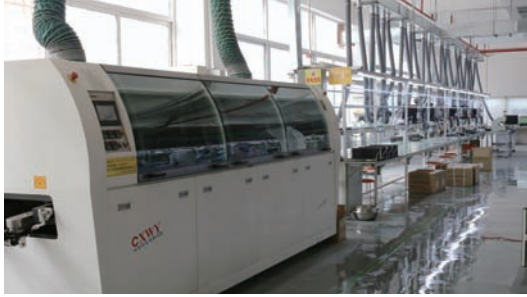
R&D Laboratory



Grasen is equipped with top R&D equipment, including AST900-ACDC system test equipment, oscilloscope, programmable constant temperature and humidity test chamber, electronic load device, power analyzer, power supply equipment, etc.

WORKSHOP

Wave soldering



DC charger production line



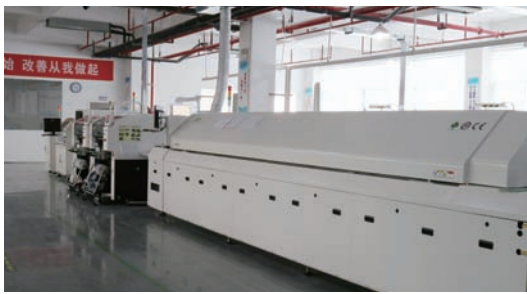
Conformal coating machine



SMT chip mounter



Lead-free reflow welding



PCB printer



OBC production line



DC/DC production line



>> CERTIFICATE & HONOR

Certificate



Honor





More than **100** Patents



Products Test Report



>> DC CHARGING STATION WITH TWO OUTLET



Advantage

- The modular design makes it easy to expand and maintain, and supports remote monitoring and online upgrades, providing ultra-high security and reliability.
- It can realize fast charging with a single gun, and can also simultaneously charging with two guns.
- It is widely used in large bus parking lots, expressway service areas, urban public parking lots and other scenes in Europe and other countries.



Feature

- Compatible with OCPP1.6 and OCPP2.0 open charging protocols.
- CE certificate, compatible with the latest DIN70122 communication protocol.
- Integrated with Ethernet and 4G communication, the cloud platform service system realizes functions such as charging, settlement, report statistics, equipment maintenance, remote monitoring and management, etc. The managers can easily count the operation status of charging stations.
- The mobile App can realize positioning, navigation, reservation, scanning QR code charging, real-time query and other functions, and support Credit card, Paypal and other payment methods.
- Perfect electrical safety design, with timing, real-time detection safety protection, equipment abnormal pre-diagnosis, alarm feedback, BMS independent safety protection and other functions.
- IP55 protection grade, moisture-proof, shockproof, dust-proof, flame retardant. With over temperature protection, overload protection, short circuit protection, leakage protection, battery anti-reverse connection and other protection functions.
- Humanized design, convenient for customers to swipe the card, take the gun to charge, emergency stop and other operations. The head of charging gun is equipped with an electronic lock to prevent the head from pulling out at random during charging to ensure personal safety.

Power	60kW	90kW	120kW	150kW	160kW	180kW	200kW	240kW	300kW	360kW
Input Voltage	3-phase 400V/440V/480V±15% AC									
Output Voltage	200~750V DC; 150~1000V DC optional									
Max. Output Current	5-200A	5-300A	5-400A	5-500A	5-533A	5-600A	5-667A	5-800A	5-1000A	5-1200A
Output Connector	CCS1, CCS2, CHAdeMO, GBT optional									
Constant Power Range	300~750V; 400~750V; 600~750V; 300~1000V optional									
Working Frequency	45~65Hz									
Power Factor	≥0.99									
Efficiency	≥94%									
Communication Interface	4G, Ethernet									
Screen Size	8"									
Charging Cable Length	5m or 7m									
IP Class	IP55									
Cooling Method	Air cooling									
Working Temperature	-30°C ~ +55°C									
Storage Temperature	-35°C ~ +55°C									
Support Language	Chinese, English, French, German, Spanish, Italian, Portuguese, Russian, Czech, Finnish, Romanian, Thai, Arabic									
Certificate	TUV CE Certificate: IEC 61851-1, IEC 61851-21-2, EN 61851-23									
Please note that this is preliminary data, the final product and data are subject to change										

>> DC CHARGING STATION WITH TWO GB/T OUTLET



Advantage

- By the active power factor automatic correction function of the charging module together, with man-machine interaction, card, billing, settlement, remote communication and control functions, with safety protection measures.
- It is an intelligent charging device for pure electric vehicles and plug-in hybrid electric vehicles.
- Due to its small size, it can be widely built in bus stations and large parking lots.



Feature

- New and old GB/T compatible design, can automatically configure charging voltage according to the different electric vehicle, to meet the needs of charging.
- Integrated with Ethernet and 4G communication mode, the cloud platform service system realizes functions such as user charging, user settlement, report statistics, equipment maintenance, remote monitoring and management, so that managers can easily count the operation status of charging stations.
- By using App, Wechat and Alipay, it can realize the functions of positioning, navigation, reservation, scanning QR code charging, real-time and other functions, and support Wechat, Alipay, and other payment methods.
- Charging modes are diversified, including automatic, reservation, quantitative, quota and SOC charging. Powerful power division and constant power function could shorten 20% charging time.
- Perfect electrical safety design, with timing, real-time detection safety protection, equipment abnormal pre-diagnosis, alarm feedback, BMS independent safety protection and other functions.
- IP55 protection grade, moisture-proof, shockproof, dust-proof, flame retardant. With over temperature protection, overload protection, short circuit protection, leakage protection, battery anti-reverse connection and other protection functions.
- Humanized design, convenient for customers to swipe the card, take the gun to charge, emergency stop and other operations. The head of charging gun is equipped with an electronic lock to prevent the head from pulling out at random during charging to ensure personal safety.

Power	60kW	80kW	120kW	160kW	180kW	240kW	300kW	320kW	360kW
Input Voltage	3-phase 380V±15% AC								
Output Voltage	200~750V DC; 150~1000V DC optional								
Max. Output Current	5-200A	5-267A	5-400A	5-533A	5-600A	5-800A	5-1000A	5-1066A	5-1200A
Output Connector	GBT*2								
Constant Power Range	300~750V; 400~750V; 600~750V; 300~1000V optional								
Working Frequency	45~65Hz								
Power Factor	0.99								
Efficiency	≥94%								
Communication Interface	4G, Ethernet								
Screen Size	8"								
Charging Cable Length	5m/7.5m/10m								
IP Class	IP55								
Cooling Method	Air cooling								
Working Temperature	-30℃ ~ +55℃								
Storage Temperature	-30℃ ~ +55℃								
Support Language	Chinese, English, French, German, Spanish, Italian, Portuguese, Russian, Czech, Finnish, Romanian, Thai, Arabic								
Certificate	TUV CE Certificate: IEC 61851-1, IEC 61851-21-2, EN 61851-23								
Please note that this is preliminary data, the final product and data are subject to change									

》》 THREE-IN-ONE AC/DC INTEGRATED CHARGING STATION



Advantage

- The modular design that makes it easy to expand and maintain, and supports remote monitoring and online upgrades, providing ultra-high security and reliability.
- It can realize fast charging and recharge for a single gun, and can also meet the requirements of simultaneous and average power charging for two guns.
- Support AC Type1, Type2, DC CCS, CHAdeMO, GB/T cable and Schuko socket and charging for four vehicles at the same time.



Feature

- Unique charging display and friendly HMI for easy operation.
- Charging EVs to 80% within 30 mins, 95% power efficiency for cost-saving operation.
- Compatible with CCS/CHAdeMO/GBT Combined.
- Support wired/wireless network LAN, 4G.
- Support online payment, intelligent monitoring, App charging and POS system.
- Full OCPP 1.6 and OCPP2.0 upgradable.

Description	82kW EV Charger	112kW EV Charger	142kW EV Charger
Max Power of DC-1	30kW	60kW	60kW
Max Power of DC-2	30kW	30kW	60kW
Output Power of AC	22kW/44kW	22kW/44kW	22kW/44kW
Input Rating	3-phase 400V/440V/480V±15% AC		
Working Frequency	45~65Hz		
Output Voltage	For DC connectors, output voltage is 150~1000V DC; For AC connector, output voltage is 3-phase 400V±15% AC		
Output Current	0-200A	0-300A	0-400A
Power Factor	≥0.99		
Efficiency	≥94%		
Communication Interface	4G, Ethernet		
Screen Size	8"		
Charging Cable Length	5m or 7m		
IP Class	IP54		
Cooling Method	Air cooling		
Working Temperature	-30℃ ~ +55℃		
Storage Temperature	-35℃ ~ +55℃		
Support Language	Chinese, English, French, German, Spanish, Italian, Portuguese, Russian, Czech, Finnish, Romanian, Thai, Arabic		
Certificate	TUV CE Certificate: IEC 61851-1, IEC 61851-21-2, EN 61851-23		
Push Buttons	Emergency stop		
Please note that this is preliminary data, the final product and data are subject to change			

>> WALLBOX DC CHARGER SYSTEM

Advantage

- Adopting 30kW 1000V charging module and widely applied in electric vehicles.
- With compact design and elegant cabinet, supports wall mounted and pole mounted.
- Widely applied in supermarkets, shopping centers, hotels, parking lots, real estate, car dealerships and other service centers.



Feature

- With OCPP integrated, the charger can be easily connected to our cloud charging management system for easy operation, online payment, monitoring, and maintenance.
- Support RFID card reader for user authentication; 8" LCD touch screen & user-friendly interface.
- Support wired/wireless network LAN, 4G.
- Support OCPP 1.6 and OCPP 2.0.

Power	30kW DC Charger	60kW DC Charger
Power	30kW	60kW
Charging Mode	Alternately	Simultaneously
Output Connector	CCS1, CCS2, CHAdeMO, GBT optional	
Input Rating	3-phase 400V±15% AC	
Working Frequency	45~65Hz	
Output Voltage	150~1000V DC	
Output Current	5-100A	5-200A
Power Factor	≥0.99	
Efficiency	≥94%	
Communication Interface	4G, Ethernet	
Screen Size	8"	
Charging Cable Length	5m/7m	
IP Class	IP54	
Cooling Method	Air cooling	
Working Temperature	-30°C ~ +55°C	
Storage Temperature	-35°C ~ +55°C	
Support Language	Chinese, English, French, German, Spanish, Italian, Portuguese, Russian, Czech, Finnish, Romanian, Thai, Arabic	
Certificate	TUV CE Certificate: IEC 61851-1, IEC 61851-21-2, EN 61851-23	
Please note that this is preliminary data, the final product and data are subject to change		

>> AC CHARGING SYSTEM

Advantage

- The product has a beautiful design and convenient wiring.
- Charging process can be monitored and controlled through mobile App. Support dynamic load balancing, and energy management. User authentication via RFID, smartphone App, or POS.
- Charging mode can be selected according to different needs. Charging mode can be charged until full, by time, by electricity and by amount. It supports wireless 4G and wired networking functions, and can be operated online combined with mobile App.



Feature

Input Voltage	1-Phase 230V±20%	3-Phase 400V±20%	
Frequency	50~60Hz		
Standby Power	< 5 W		
Output Rating	7KW, 32A	11kW, 16A	22KW, 32 A
Status Indicators	Standby (Green),Charging (Flashing Green), Fault (Red), Warning (Flash Red)		
Display	7" LCD		
Buttons/Switches	Start/Stop Charging		
User Authentication	RFID Card/App		
Payment	RFID/App/Credit Card (optional)		
Network Interface	4G LTE/Wi-Fi/Ethernet		
Communication Protocol	OCPP 2.0		
Charging Interface	Socket or cable connector		
Support Language	Chinese, English, French, German, Spanish, Italian, Portuguese, Russian, Czech, Finnish, Romanian, Thai, Arabic		
Operating Temperature	-30°C ~ +50°C		
Storage Temperature	-40°C ~ +70°C		
Humidity	95% Relative humidity, non-condensing		
Mounting Type	Wall-Mount or Pole-Mount		
Charging Cable Length	5m		

Advantage

- Over Current Protection with MCB to ensure.
- Internal residual current detection: 30mA AC & 6mA DC Type B RCCB.
- Output Protection: Power output is terminated upon detection of charging connector plug-out.
- The electrical protection includes over/under voltage protection, overload protection, short circuit protection, current leakage protection, grounding protection, over temp protection, lightning surge protection.
- Insert MID&CE certified meter.
- IP54.
- Emergency Stop button optional.

>> CHARGING MODULE

Advantage

Charging module adopts patent electricity design and innovation process, with constant power wide voltage range, high efficiency, high power factor, high power density, electromagnetic radiation, and minimal interference, the advantages of high protective performance, high reliability, meet the demand of quick charge of various electric vehicles, energy conservation and environmental protection effect is remarkable, reached the international leading level.



Power		15kW	20kW	30kW
AC Input	Input System	Three phase+PE	Three phase+PE	Three phase+PE
	Voltage Range	260V~530V AC	260V~530V AC	260V~530V AC
	Max. Static Voltage When Not Working	600V AC	600V AC	600V AC
	Rated Voltage	400V	400V	380V
	Max. Current	24A	32A	58A
	Grid Frequency	45~65Hz	45~65Hz	45~65Hz
	Rated Frequency	50~60Hz	50~60Hz	50~60Hz
DC Output	Voltage Range	50~750V DC	50~750V DC	150~1000V DC
	Current Range	0~25A	0~40A	0~100A
	Rated Current	20A	26A	30A
	Stabilized Voltage Precision	≤±0.5%		
	Stabilized Current Precision	≤±1%		
	Load Regulation	≤±0.5%		
	Grid Regulation	≤±0.1%(test range 320V~530V)		
Power Factor and THD	Start Overshoot	≤±3%		
	Power Factor	≥0.99%		
Working Conditions	THD	≤5%		
	Working Temperature	-40℃ ~ +75℃		
	Storage Temperature	-40℃ ~ +70℃		
	Relative Humidity	≤95% RH non-condensing		
Communication	Cooling Method	Air cooling		
	Communication Interface	CAN		
Safety	Protection Function	Short circuit, over voltage, under voltage, over temperature		

INTELLIGENT QUICK AUTOMATIC CHARGING SOLUTION



We also have intelligent fast automatic charging system, intelligent power distribution charging system.

The intelligent fast automatic charging system integrates charging host and charging bow, which is more beautiful and generous. The charging system has three functions, charging with gun, charging with bow and back to the grid inverter. This system is suitable for setting up quick charging stations at the beginning and end of bus lines.

The host of intelligent power distribution charging system integrates multiple charging modules into a centralized management system. It needs to be used together with charging terminals to provide charging services through intelligent power distribution. It can be applied to highways, public parking, bus parking and other outdoor parking places.



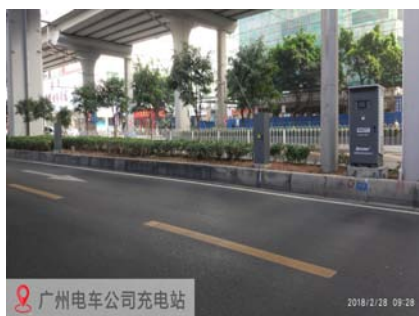
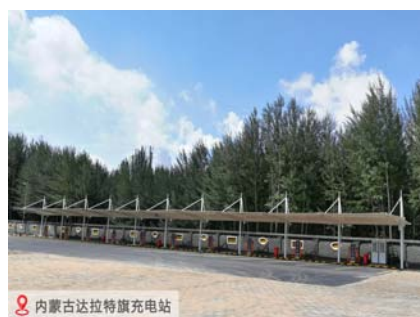
>> APPLICATION CASES

We have exported our products to more than 30 countries. The main market is Europe, South America, Southeast Asia and other countries. By May 2022, 1,256 global charging stations had been established.

Application in overseas markets



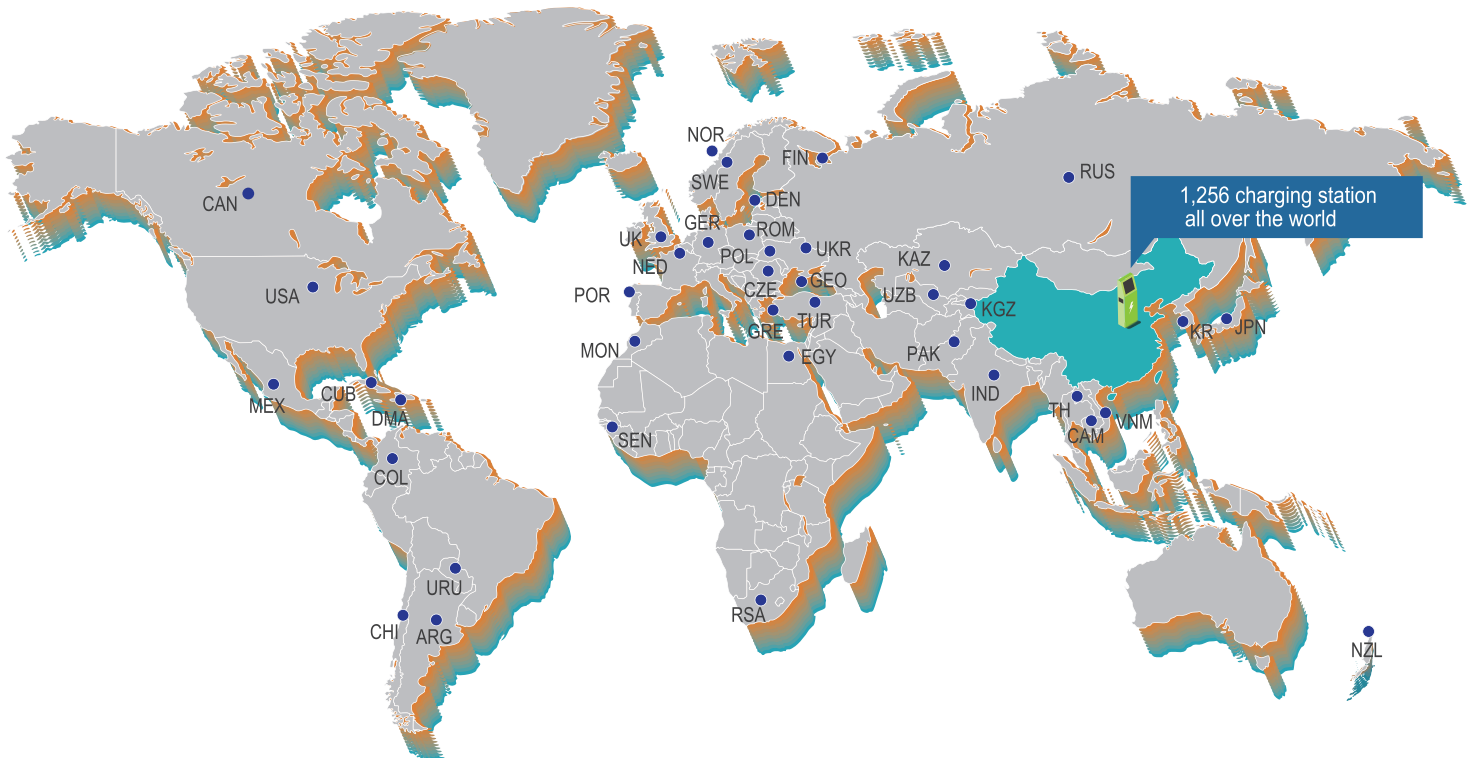
Application in domestic market



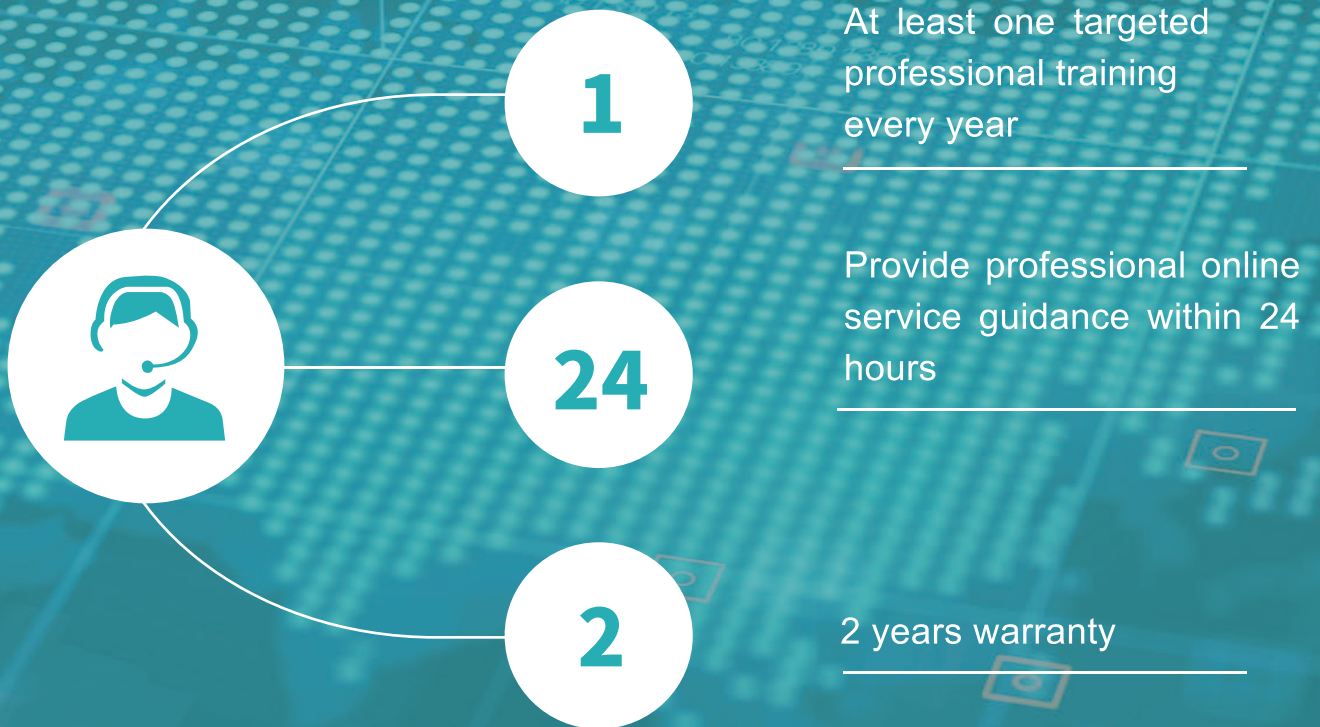


Until April, 2022, Grasen has a total of 1,256 charging stations with a daily charging capacity of 2 million kWh.

We have a professional station construction team, according to customer needs to customize professional charging foundation design scheme, and can assist customers to complete the construction of charging facilities.



AFTER-SALES SERVICE



Training Plan

- DC charger performance characteristics and operation
- DC charger maintenance
- DC charger basic parameter setting and troubleshooting
- Electrical equipment fire knowledge and first aid measures

Service Guarantee

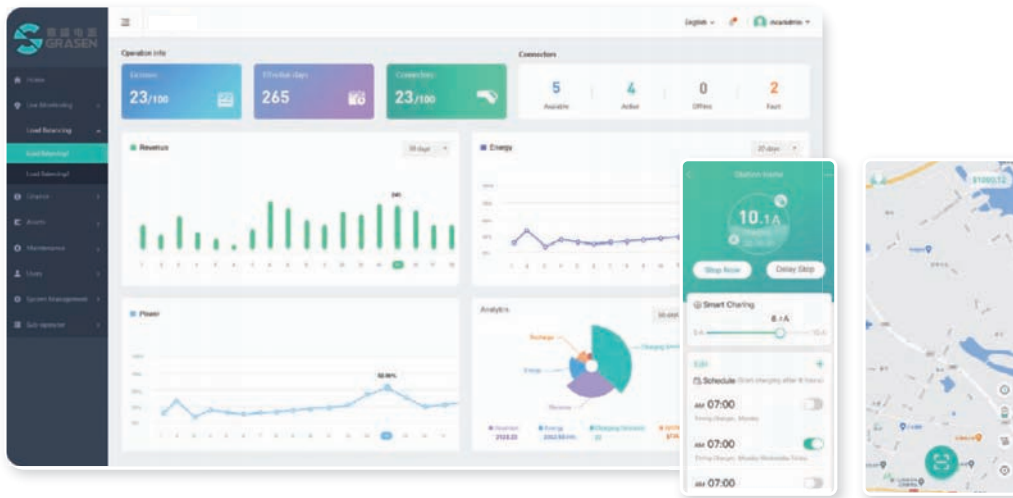
- Commitment to respond within 2 hours, within 4 hours to provide clear treatment measures
- If you need to provide guidance based on physical objects, arrange an online meeting within 24 hours to provide guidance on problems and faults

Quality Assurance

- For faulty products due to quality defects, spare parts will be provided free of charge during the warranty period

>> APP & CLOUD PLATFORM

CSMS is a cloud-based service management platform that allows operators to optimize the charging experience. Operators can easily manage accessibility and remotely monitor stations, bill users easily through a single background management system, and generate a variety of valuable data on how your stations are being used.



Gain From A Rich Interface

Provide owners of charging stations access to real-time data. Let them manage their charging stations.



White-label Mobile & Web Apps

Provide an outstanding branded and localized experience for your clients with our web and mobile apps.



Flexible Billing System

Set your own pricing strategies and manage subscription billing with flexible terms.



Lower Maintenance Costs

Smart charging and auto fault-recovery lower your maintenance costs.

User Management

Dynamic Load Balancing

Analytics and Reporting

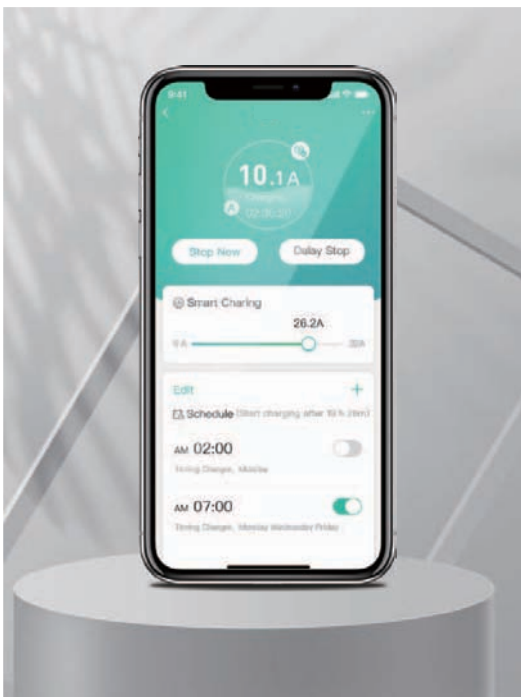
Smart Energy Management

Roaming Support

Mobile APP



- View a map of real-time charging stations
- Navigate to the location
- Start and stop charging via RFID card or the APP
- Monitor charging status remotely
- Add the charging stations to your favorites
- Higher VIP level to enjoy more services and discounts



- Add family members to share your charger
- View all records of charging transactions
- Set schedules to charge at any time

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