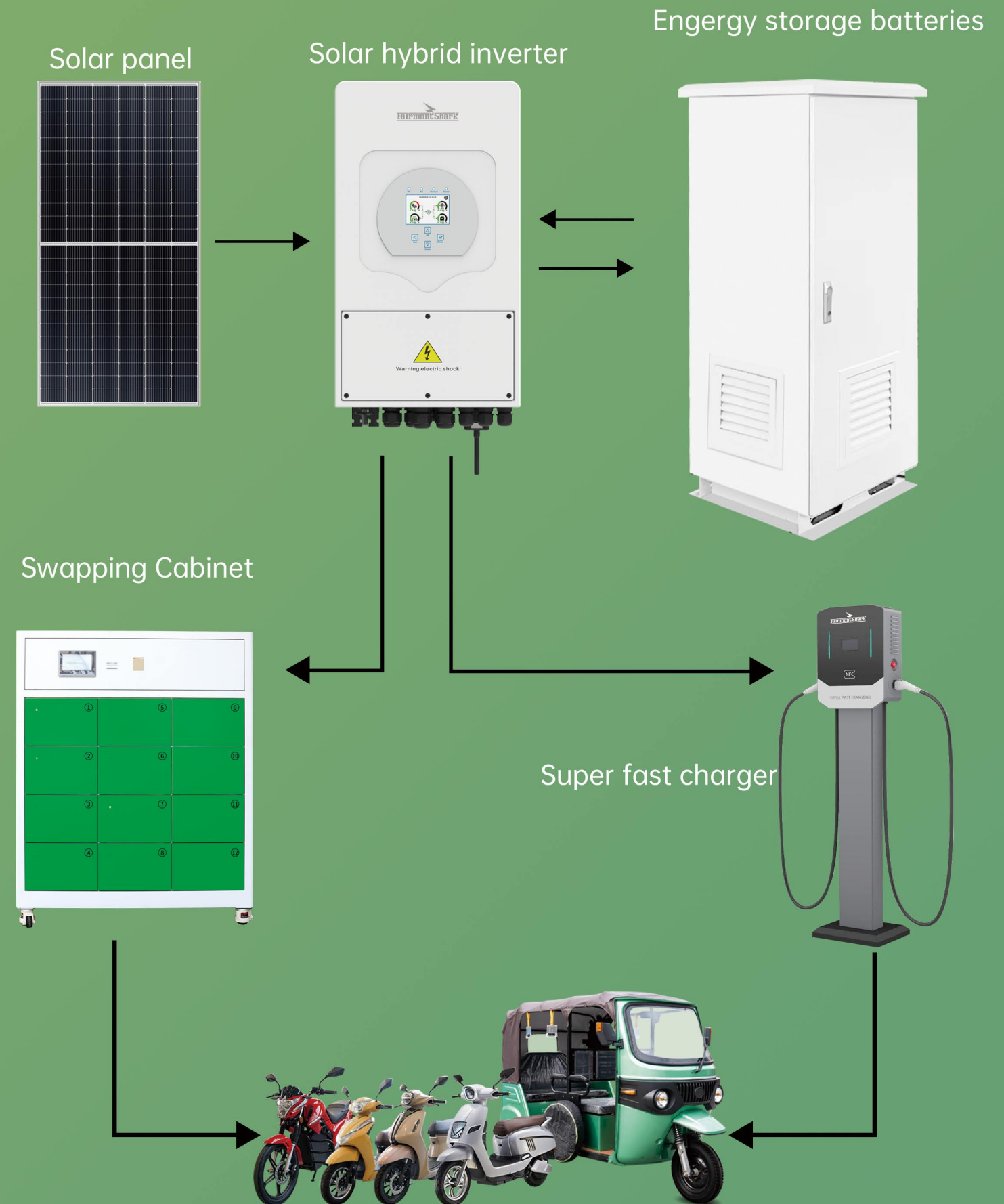




Making life easier for travelling



Charging Flow Diagram



- Solar Power Station

- Fast Charging

- Intelligent APP

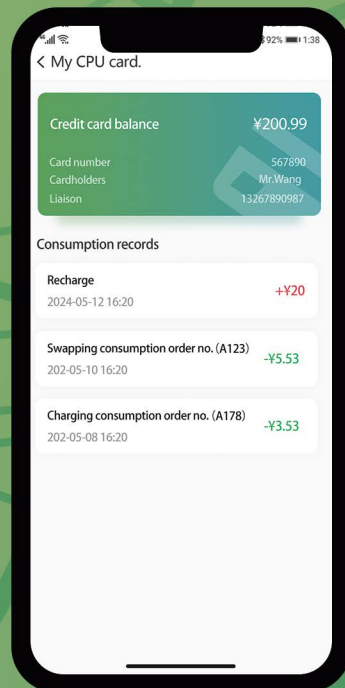
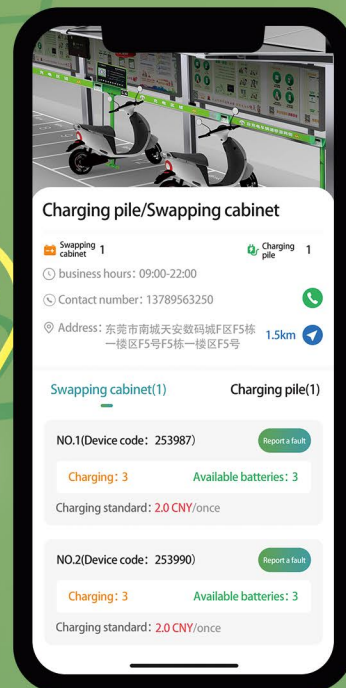
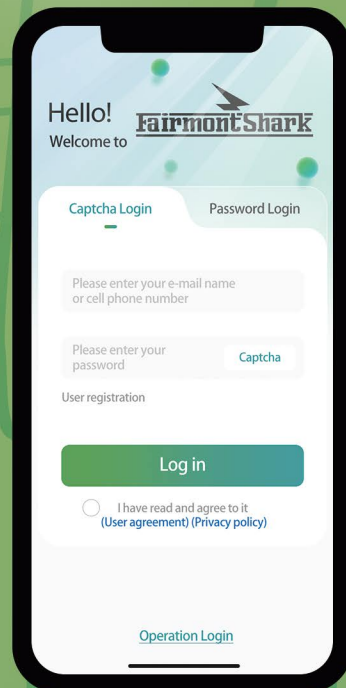
INTELLIGENT EV POWER STATION

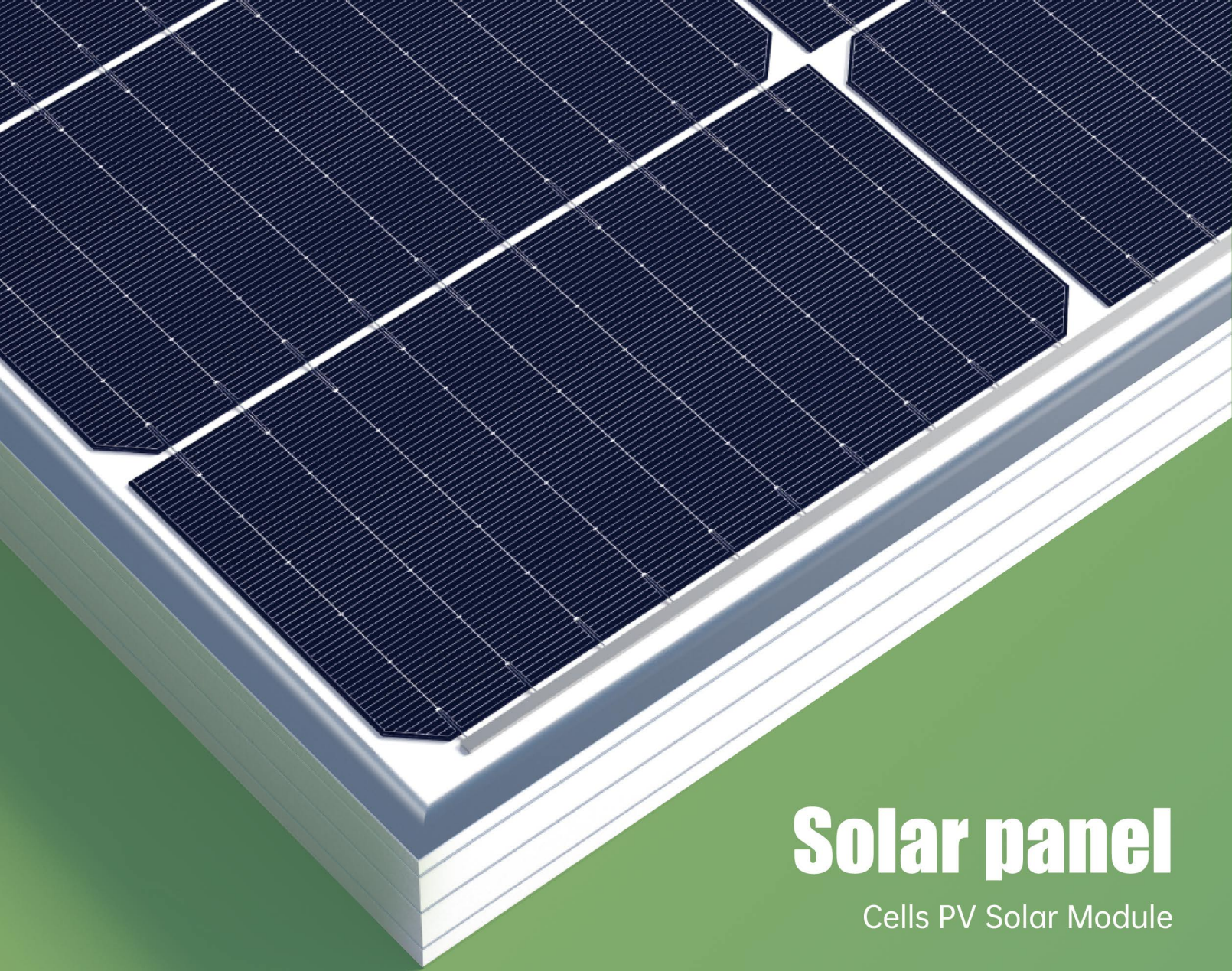
FairmontShark
Green travel for everyone



Intelligent APP

- Client-side
- Operation side
- Agent-side

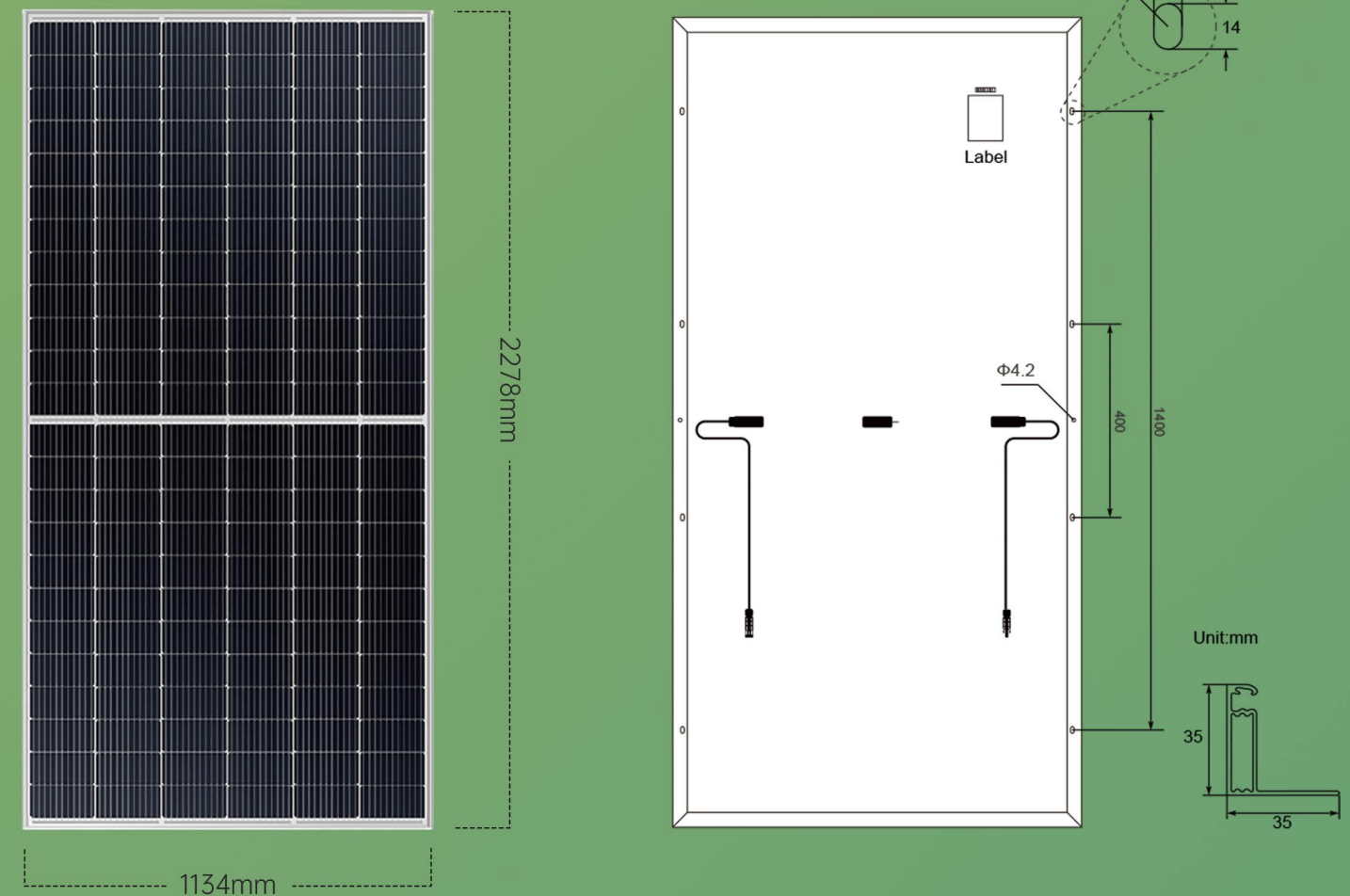




Solar panel

Cells PV Solar Module

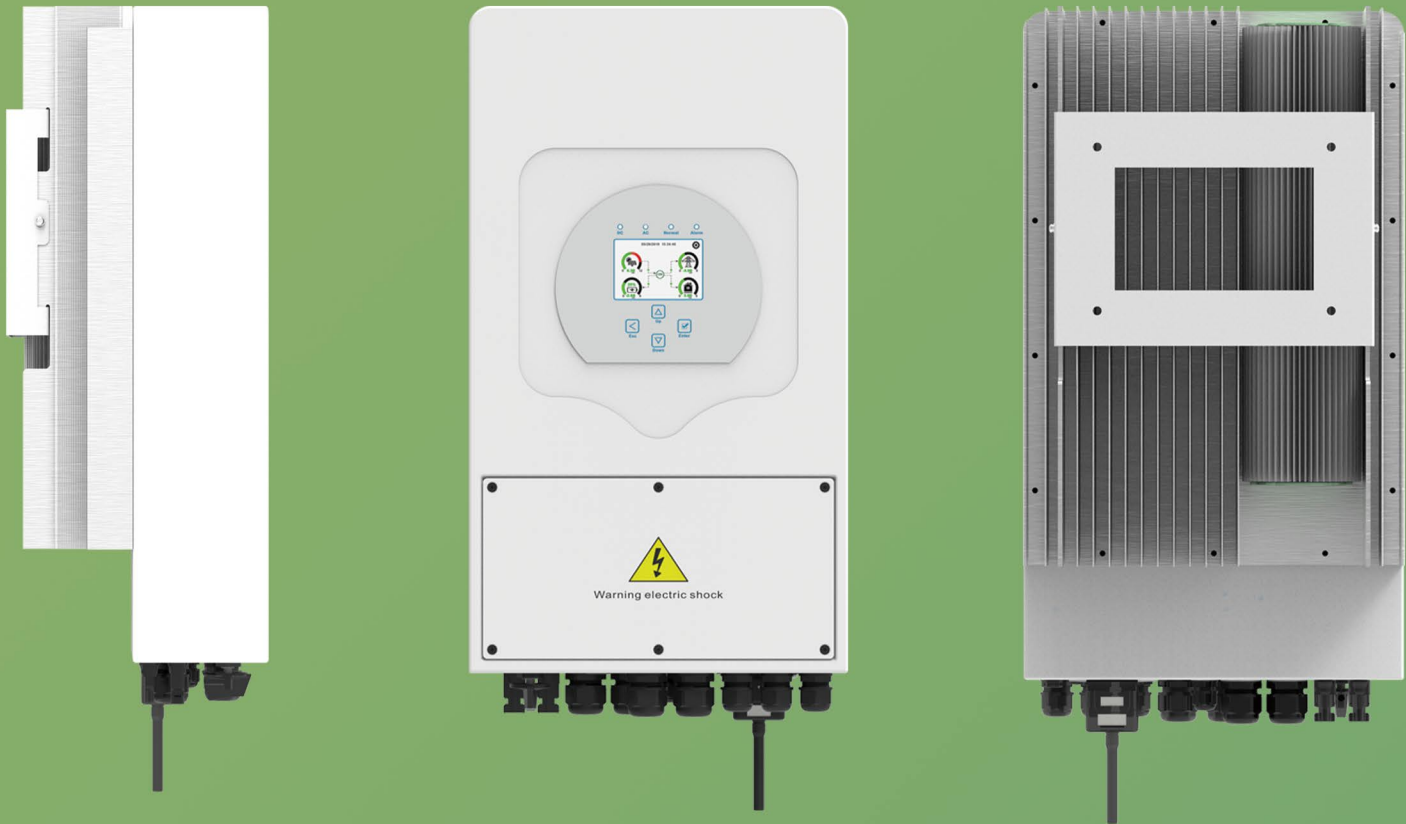
- MBB PERC haif Cut Cell
- Excellent Low-light Performance
- Anti PID
- Strengthened Mechanical Load
- 100% Inspection Guarantee Reliability



Mechanical Specifications

Extenal Dimensions	2278*1134*35mm
Weight	28.6kg
Power(Pmax)	550W
Working Voltage	41.96V
Working Current	13.11A
Solar Cells	Mono crystalline 182mm(2*72pcs)
Front Glass	AR Coated 3.2mm tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68
Output Cables	4.0mm ² , 50cm(+),50cm(-),length can be customized
Conector	MC4 Compatible
Mechanical Load	Front Side Max.5400Pa,Rear Side Max.2400Pa

Hybrid Inverter



- Colorful touch LCD,IP65 protection degree
- DC couple and AC couple to retrofit existing solar system
- Max.16 pcs parallel for on-grid and off-grid operation; Support multiple batteries parallel
- Max.charging/discharging current of 190A
- 6 time periods for battery charging /discharging

Technical Data

Model	SUN-5K -SG01LP1-US	SUN-6K -SG01LP1-US	SUN-7.6K -SG01LP1-US/EU	SUN-8K -SG01LP1-US/EU
Battery Input Data				
Battery Type	Lead-acid or Li-Ion			
Battery Voltage Range(V)	40~60			
Max.Charging Current(A)	120	135	190	190
Max.Discharging Current(A)	120	135	190	190
External Temperature Sensor	Yes			
Charging Curve	3 Stages / Equalization			
Charging Strategy for Li-Ion Battery	Self-adaption to BMS			
PV String Input Data				
Max.DC Input Power(W)	6500	7800	9800	10400
Rated PV Input Voltage(V)	370(125~500)			
Start-up Voltage(V)	125			
MPPT Voltage Range(V)	150-425			
Full Load DC Voltage Range(V)	300-425	200-425		
PV Input Current(A)	13+13	26+13	26+26	
Max.PV Isc(A)	22+22	44+22	44+44	
No.of MPP Trackers	2			
No.of Strings per MPP Tracker	1	2+1	2	
AC Output Data				
Rated AC Output and UPS Power(W)	5000	6000	7600	8000
Max.AC Output Power(W)	5500	6600	8360	8800
AC Output Rated Curent(A)	20.8/24	25/28.8	31.7/36.5	33.3/38.5
Max.AC Current(A)	22.9/26.4	27.5/31.7	34.8/40.2	36.7/42.3
Max.Continuous AC Passthrough(A)	50			
Peak Power (off grid)	2 time of rated power,10 S			
Power Factor	0.8 leading to 0.8 lagging			
Output Frequency and Voltage	50 / 60Hz;L1 / L2/N(PE) 120 /240Vac (split phase), 208Vac(2 / 3 phase), L/N/PE 220 /230 Vac(single phase)			
Grid Type	Split phase; 2/3 phase;Single Phase			
DC injection current(mA)	THD<3%(Linear load<1.5%)			
Efficiency				
Max.Efficiency	97.60%			
Euro Efficiency	97.00%			
MPPT Efficiency	99.90%			
Protection				
Integrated	PV Input Lightning Protection,Anti-islanding Protection,PV String Input Reverse Polarity Protection, Insulation Resistor Detection,Residual Current Monitoring Unit,Output Over Current Protection, Output Shorted Prtection,Surge protection			
Output Over Voltage Protection	DC Type II / AC Type III			
Certifications and Standards				
Grid Regulation	VDE4105,IEC61727 / 62116,VDE0126,AS4777.2,CEI 0 21,EN50549-1 G98,G99,C10-11,UNE217002,NBR16149/NBR16150			
Safety EMC / Standard	IEC / EN 61000-6-1/2/3/4,IEC/EN 62109-1,IEC / EN 62109-2			
General Data				
Operating Temperature Range(°C)	~40~60°C, >45°C derating			
Cooling	Smart cooling			
Noise(dB)	<30dB			
Communication with BMS	RS485;CAN			
Weight(kg)	32			
Size(mm)	W 420* H 670* D 233			
Protection Degree	IP65			
Instalation Style	Wall-mounted			

Storage Battery



Certificates: CE,UN38.3,IEC62619,IEC6305

Configuration Parameter

Battery Type	LFP
Cell Capacity	3.2V / 120Ah
System Battery Configuration	1P64S
Battery Rated Capacity	20kWh
Battery Rated Voltage	51.2V
Battery Cooling	Intelligent air cooling
Life Cycle	≥6000
System Charge and discharge efficiency	≥85%
Degree of protection	Battery system IP65
Elctrical Compartment	IP54
Operating temperature range	30-50°C
Storage temperature range	-20°C-50°C
Operating humidity range	0% to 95%(No condensation)
Weigh	≤950kg
Dimenions	W 600* D 600* H 1600mm
Installation Position	Outdoor
Communicatio interface	RS485,Ethernet

Electrical Characteristics

Total Energy*	5.12kWh
Usable Energy(DC)*	4.6kWh
Nominal Dis-/Charge Power	3kW
Peak Power(Only Discharge)	7kWh for 3 seconds
Constant Current(Only Discharge)	100A
Voltage	43.2~56Vd.c
Max. Charge Current	50A
Max. Discharge Current	50A
Max. Charge Voltage	50A
Weight	49.5kg
Dimension(mm)	453*433*177mm

Swapping cabinet

Integration Program



1200*650*1730mm(L*W*H)

Charging Function

Input Voltage	220V
Charging connection	Flex Cable Connection
Static power	50W
Maximum power of the whole cabinet	10000W/17500W
Charging conversion efficiency	≥ 90%
Distribution method	Single 220V
Output Voltage	48V/60V/72V/84V/96V (84V and 96V to be determined)
Maximum output current	10A/15A
Maximum Output Power	750W/1300W (single bin)
Battery compartment indicator	Three-colour lamp

Functional Design

Voice Announcement	
Networking Methods	4G
External Communication Protocol	MQTT
Charging mode	Automatic detection of charging, automatic full stop
Power consumption record	Real-time recording of power consumption
Monitoring Record	Webcam monitoring (optional)
NFC card reading	Built-in card reader

Safety Function

Short circuit protection	Whole Cabinet
Lightning protection	Whole Cabinet.
Leakage protection	Whole Cabinet
Waterproof rating	IP54
Over-temperature protection	Temperature sensors in the whole cabinet and in each compartment
Fire extinguishing device	Monitoring of the status of the fire extinguishing equipment
Heat Dissipation	Automatic control of the built-in fan (air conditioning optional)
Smoke alarm	Single cabinet with smoke alarm
Temperature protection	Individual temperature sensors for each compartment
Water Q detection	Single cabinet with water Q sensor



- NFC Function
- Fast Charging
- IP54 Waterproof Level

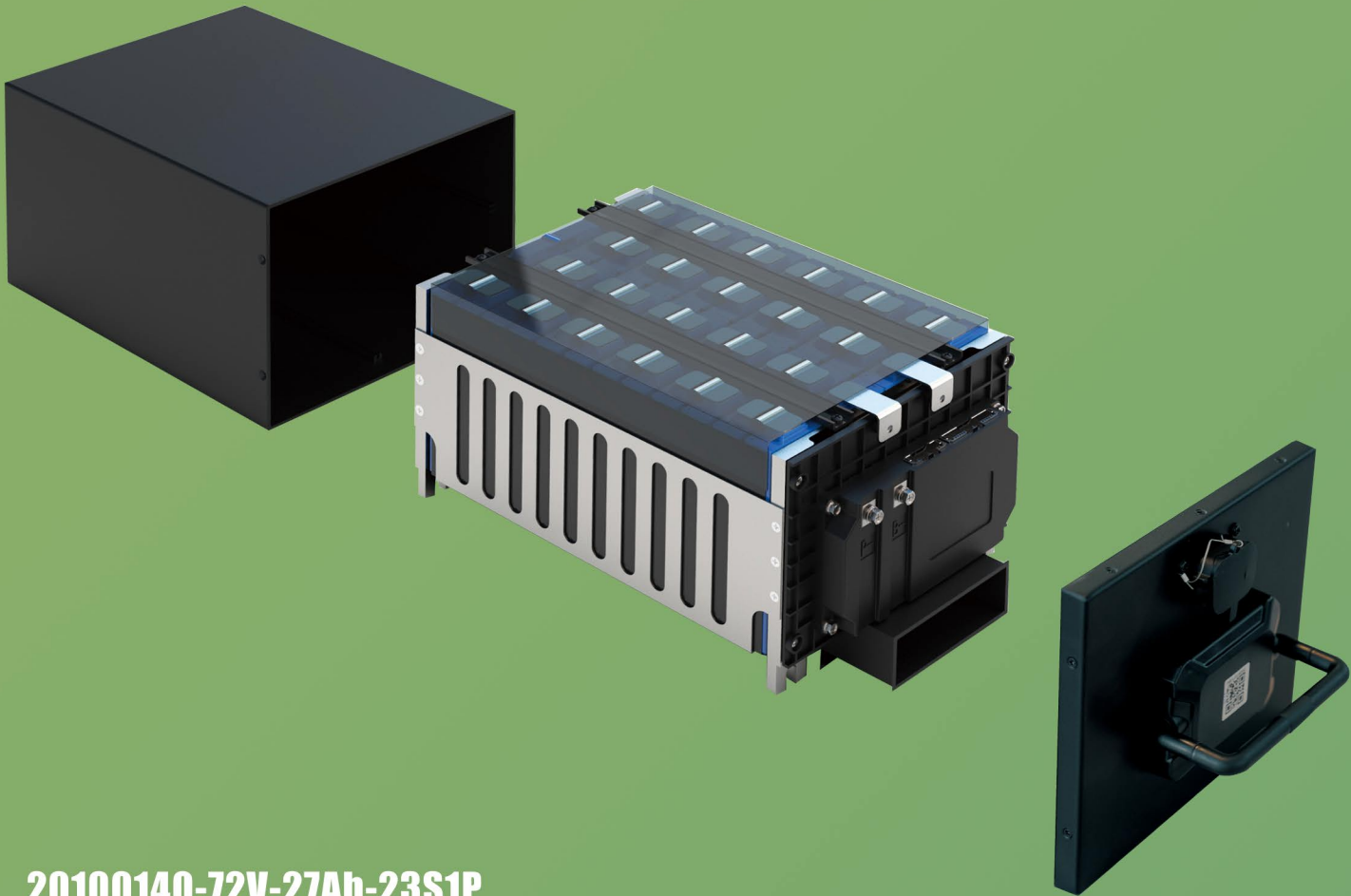
Super fast charger

Technical Data

Input Power	178~265V
Networking method	4G & Ethernet
Charging gun	30A
Gun Specifications	Redi Air Custom Mould Overmould
Screen Configuration	4 inch
Operating Temperature	-20~50 degree
Working Humidity	5%~95%
Communication mode	MQTT
Cooling method	Air Cooled
Output Voltage	48~84V
Maximum Output Power	3.3KW*2
Charging gun protocol	CAN (Private protocol of LeiDiHang)
Payment Method	NFC swipe card machine (private protocol)
Voice reminder	With alarm tone and voice-activated reminder
Electricity metering method	Power Meter
Protection Measures	Overload protection, short circuit protection, over-voltage protection, over-current protection, overheating protection, emergency stop protection,
Three-proof protection	Moisture-proof, mould-proof, salt spray-proof
Noise	Not higher than 65dB
Human-computer interaction	Button & touch screen
Function	Dual guns output at the same time, separate metering; display voltage, current, battery SOC, charging capacity
Installation	Can be wall-mounted or with its own support pile - the structure design of both common
Appearance	Simple, generous, durable, easy to maintain, surface screws for hidden type



Battery Pack



20100140-72V-27Ah-23S1P



Intelligent Handle Positioning Terminal

- Can be applied to location tracking
- Anti-theft
- Trip playback
- Vibration alarm
- Remote power off
- Data transmission
- Bluetooth transmission
- Disassembly alarm

20100140-72V-27Ah-23S1P Battery pack

Typical Capacity	27Ah@ 0.2C Discharge	
Minimum capacit	25Ah@ 0.2C Discharge	
Nominal voltage	72V	
Charge	Max Charge voltage	85.1V
	Standard charge current	13.5A
	Maximum continuous charging current	50A
Discharge	Min Discharge voltage	51.75V
	Fast Discharge current	13.5A
	Max continuous discharge current	90A
Initial Impedance	Max 300 mΩ	
Weight	Approx 16kg	
Storage temperature	0℃~30℃	
Storage Humidity	≤75% RH	
Appearance	Without scratch, distortion, contamination and leakage	

Standard environmental cond	Temperature	25±2℃
	Humidity	45-75%RH
	Atmospheric Pressure	86-106 KPA
Ex-factory voltage of battery pack		69V~78V

Multi-purpose communication module

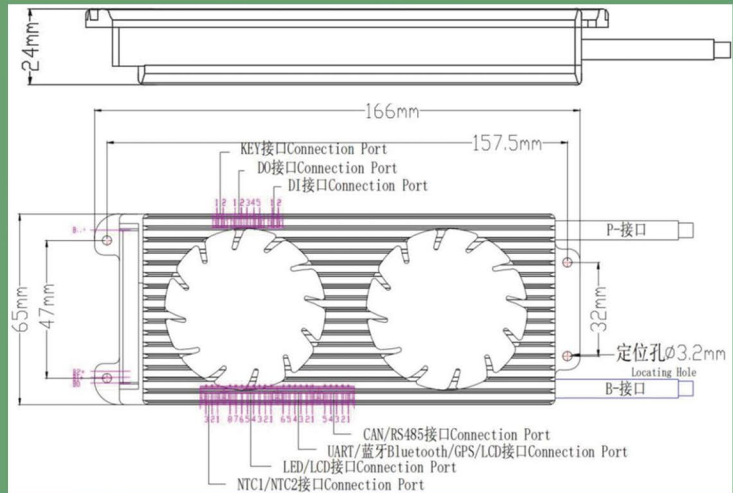
A 4G communication module based on SIMCOM modulewith integrated GPS.
The external interface of the module is a 6PIN 2.0mm pitch socket, which provides users with common hardware interfaces.



Module Features

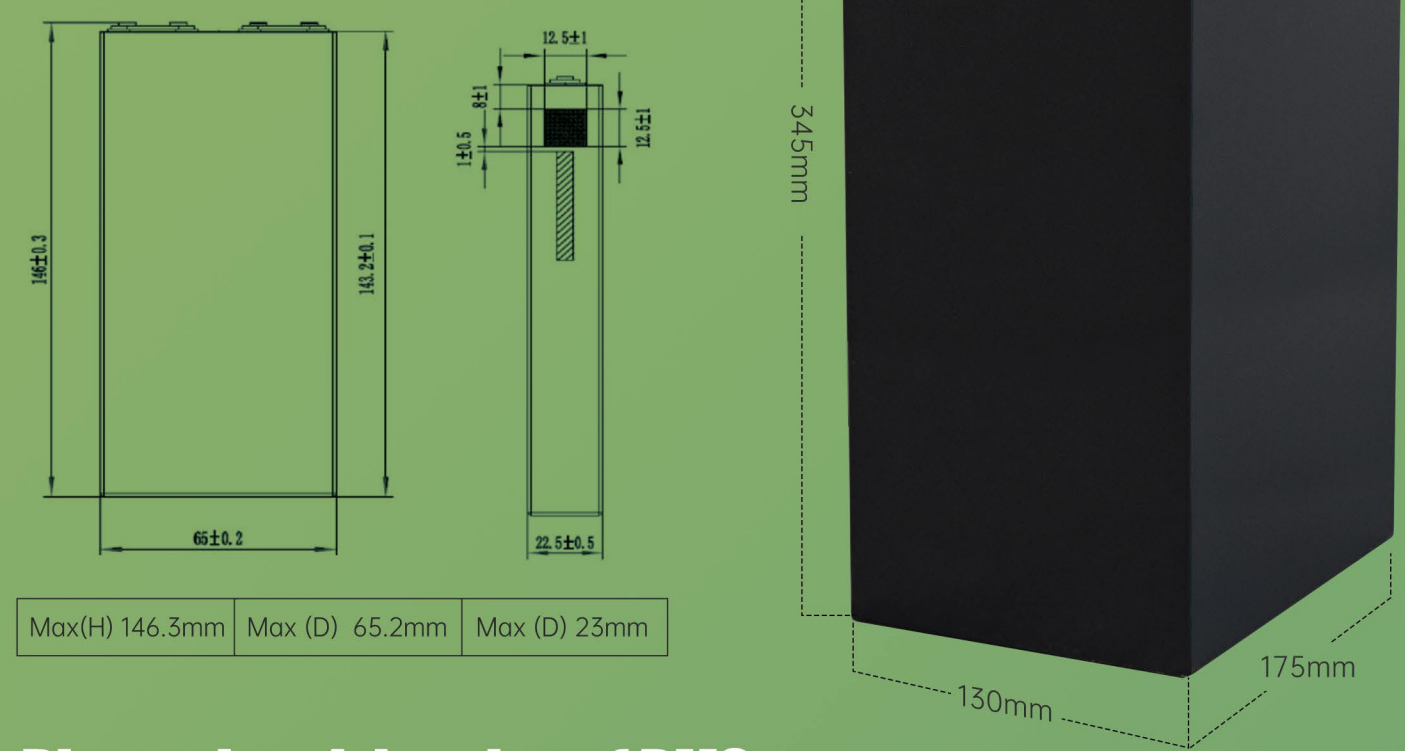
One TTL serial port (can be changed to RS485 interface, either one)
One ACC input detection
One switch control (CTR)
SIM card connection, patch SIM and Nano SIM card can be selected.
GPS function, hardware GPS to meet the needs of high sensitivity and high precision positioning.
12V-90V power input and integrated ADC function.

Dimensional drawing of BMS

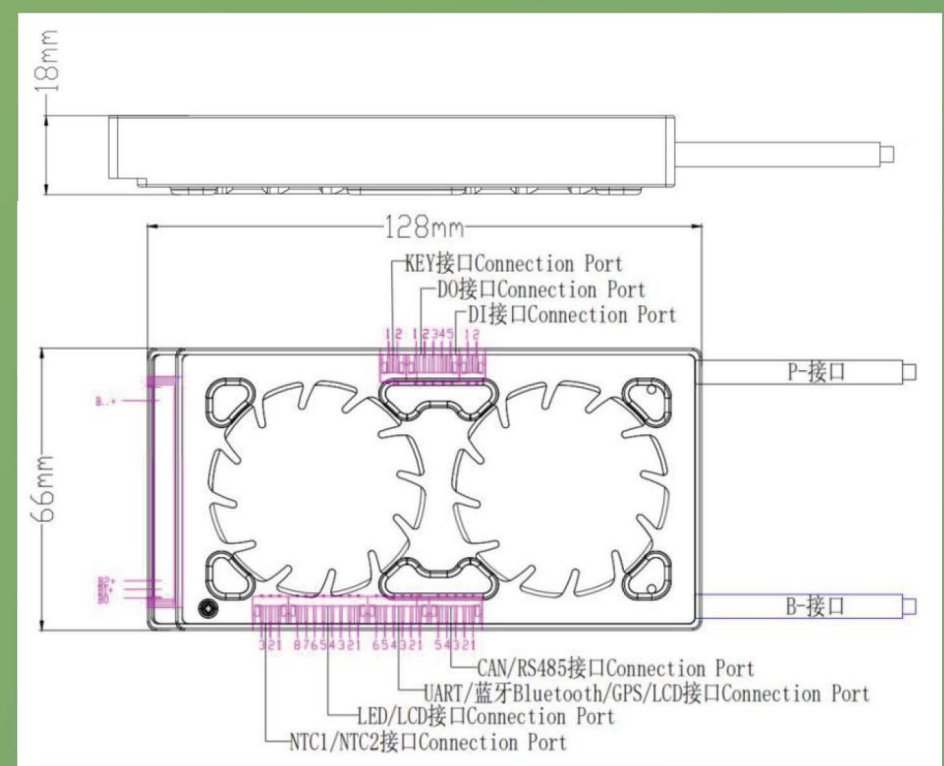


2265146-60V-21Ah-19S1P Battery Pack

Cell (Dimensions/Specifications)



Dimensional drawing of BMS



2265146-60V-21Ah-19S1P Battery pack

Typical Capacity	21Ah@ 0.2C Discharge	
Minimum capacit	20Ah@ 0.2C Discharge	
Nominal voltage	60V	
Charge	Max Charge voltage	71.25V
	Standard charge current	4.2A
	Maximum continuous charging current	20A
Discharge	Min Discharge voltage	41.8V
	Fast Discharge current	10.5A
	Max continuous discharge current	21A
Initial Impedance	Max 500 mΩ	
Weight	Approx 13kg	
Storage temperature	0℃~30℃	
Storage Humidity	≤75% RH	
Appearance	Without scratch, distortion, contamination and leakage	
Standard environmental cond	Temperature	25±2℃
	Humidity	45-75%RH
	Atmospheric Pressure	86-106 KPA
Ex-factory voltage of battery pack	58V~64V	

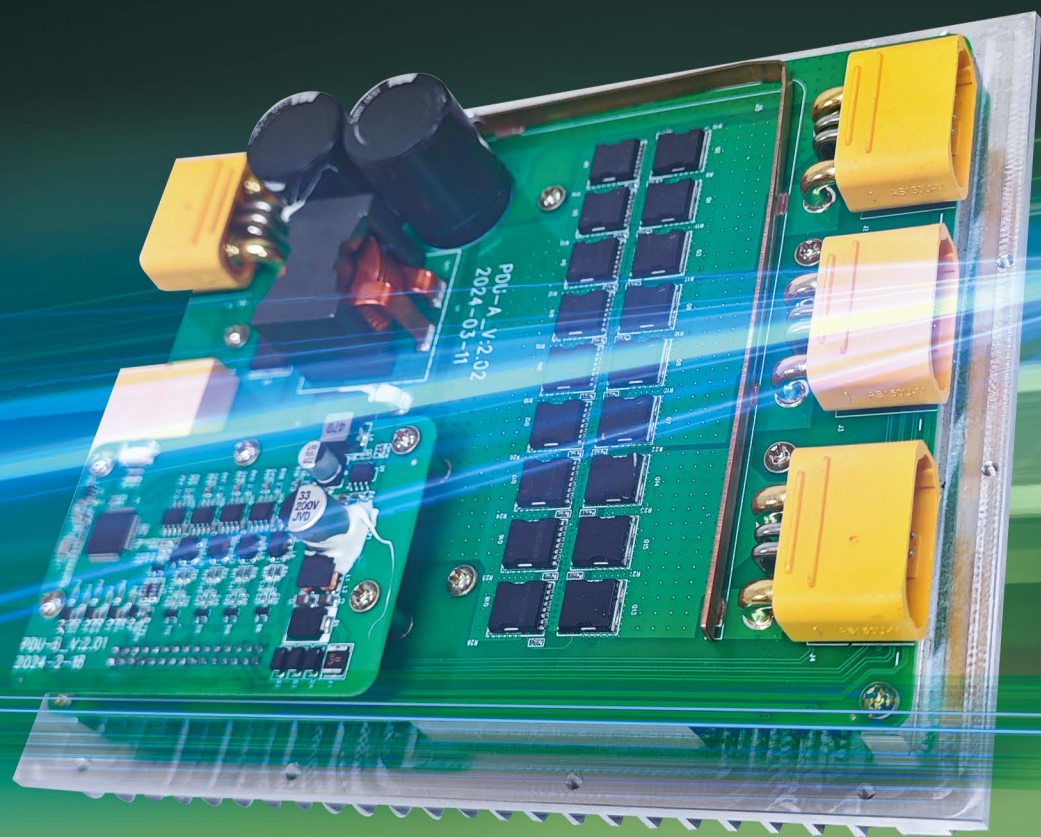
Communication Description

- Provided by the customer RS485 letter protocol, which communicates with the designated host computer through a special communication box, and the default baud rate is 9600bps. Therefore, various information of the battery can be viewed on the host computer, including battery voltage, current, temperature, state, SOC, and battery production information, etc., parameter settings and corresponding control operations ca be performed, and the program upgrade function can be supported. (This host computer is suitable for PCs of Windows series platforms).
- Provided by the customer CAN protocol, and the communication rate is 500KB/S.
- Provided by the customer TTL protocol,and the default baud rate is 9600bps

Scope of application

This specification describes the basic performance, technical requirement,testing method, warning and caution of the Li- ion Cylindrical rechargeable battery

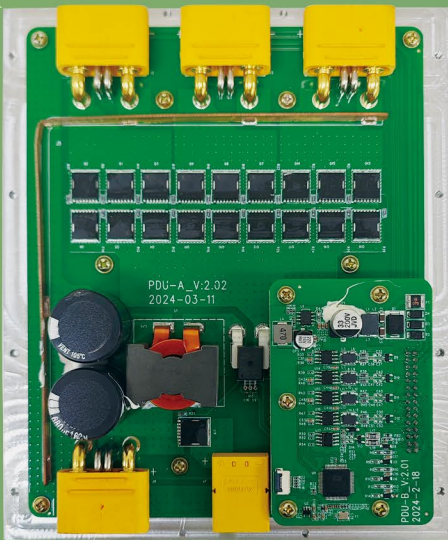
PDU system architecture design



PDU



Front



Inside



Back

PDU full name is Power Distributor, which is used for power distribution of multi-battery packs of two-wheelers and three-wheelers to achieve the function of increasing the range and increasing the output power. A PDU connects up to three battery packs, a motor controller, and a charger. All five interfaces come with a bus protocol, according to which docking is achieved.

1.1 Protocol with battery pack: CAN 2.0, 500kbps, standard frame

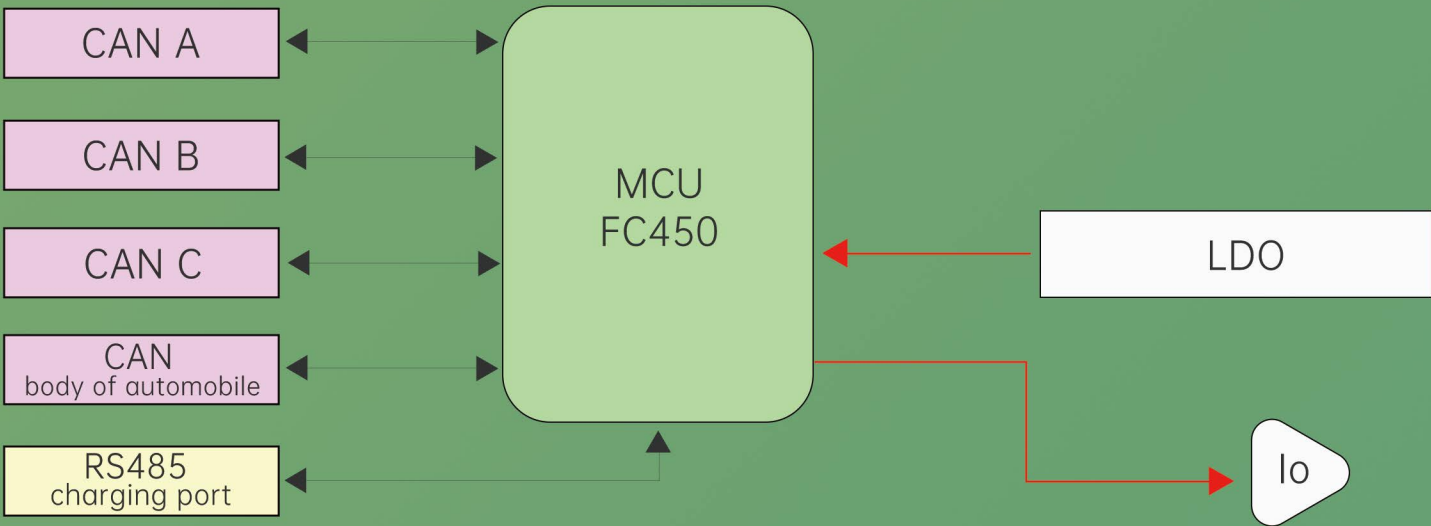
1.2 Protocol to the charging port RS485

1.3 CAN 2.0, 500kbps, standard frame, for connection to the discharge port or the vehicle body.

The PDU is divided into a base board and a control board, both of which are connected by pins and lead to interface wires. Above the bottom board is a large number of MOS tubes and other power devices, to do a good job of heat dissipation, structural strength should be solid.

Control Board Block Diagram

The control board has the automotive-grade MCU FC450, CAN and 485 communication interface chips, and IOs to control MOS tubes.



ECU

Functions and line definitions



ECU for vehicle control functions for two- and three-wheelers. Ladea's range of ECUs, from the E201 with no 4G and GPS integration, to the E301 /E302 with 4G and GPS integration, covers low-cost to fully-intelligent two- and three-wheelers.

In order to use the different needs of different customers, Ladea's ECU design, using a software-defined hardware architecture, can flexibly define the line ports to use the configuration differences of different customers' vehicles.

- E301 ECU Interface
- Instrument interface
- Bus Interface
- Input and output control of IO
- Bluetooth proximity unlocking
- Alarm
- Vehicle search
- Bluetooth proximity control
- Support IOT remote car control (optional)
- APP Vehicle Setting
- Riding data
- Riding track (optional)

TFT Meter

- TFT LCD meter, high brightness full lamination ISP screen
- IP67 waterproof and dustproof
- Vehicle-grade operating system
- Support boot animation, boot self-test
- Support multi-speed color change
- Support acceleration animation
- Support Bluetooth caller alert, caller ID
- Support Bluetooth music
- Support Bluetooth easy navigation
- Support Wi-Fi cast screen (optional)
- Support domestic map / overseas map
- NFC function
- Support OTA upgrade (optional)
- Support USB upgrade
- Support CAN / 485 / K line protocol



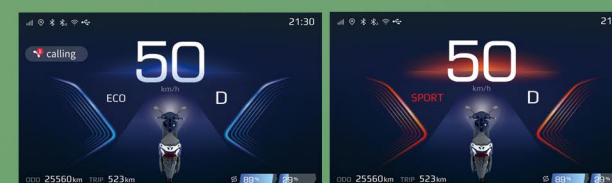
Instrumentation interface



Power on (animation/self-test)



Multifunctional



Two-speed colour change (speed/over speed)



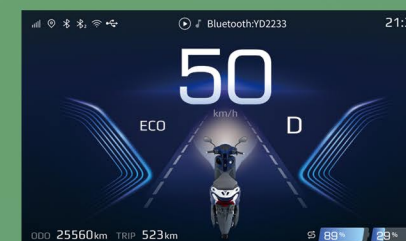
Navigation Maps



Caller ID/Caller Alert



Alarm

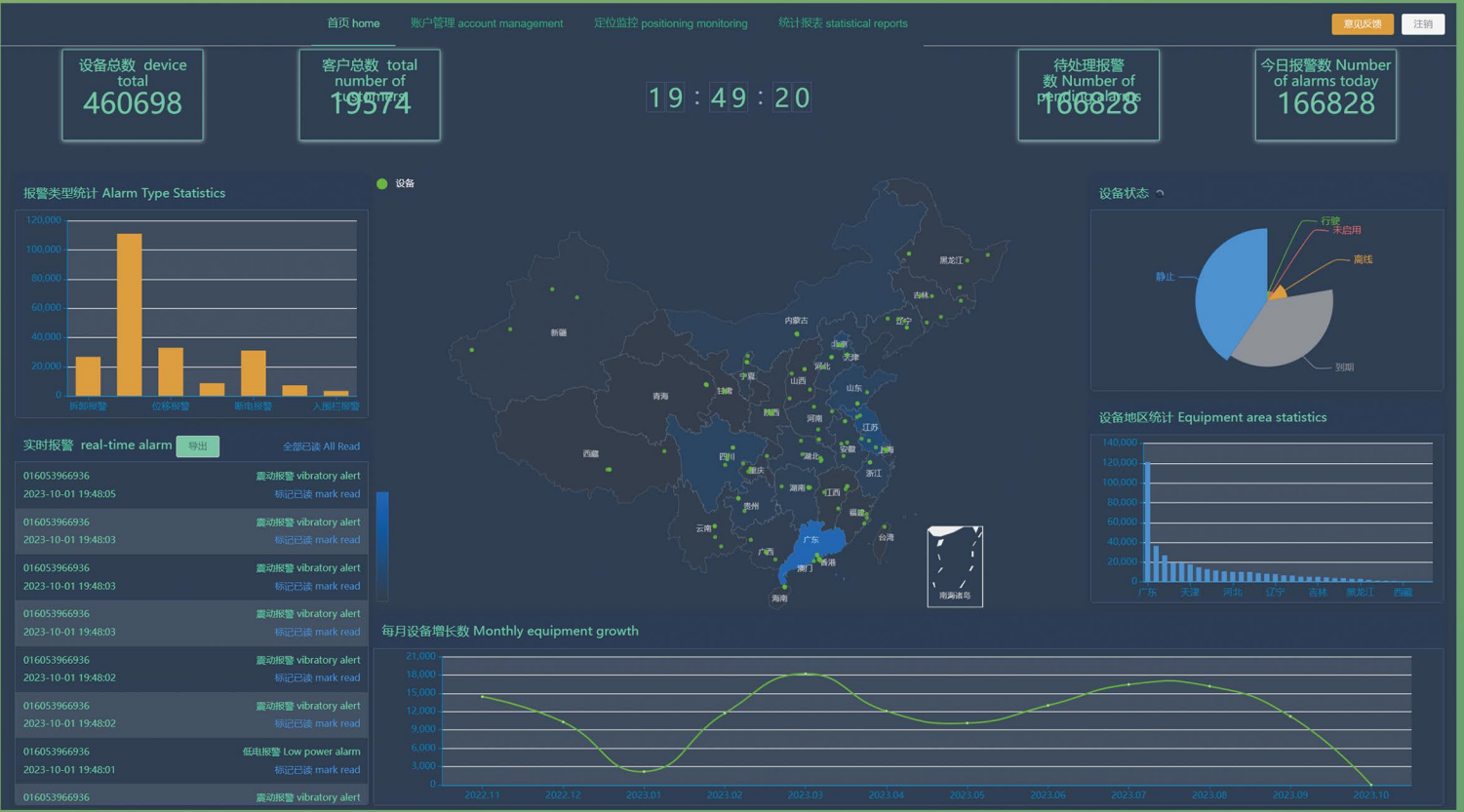


Real-time speed/power display

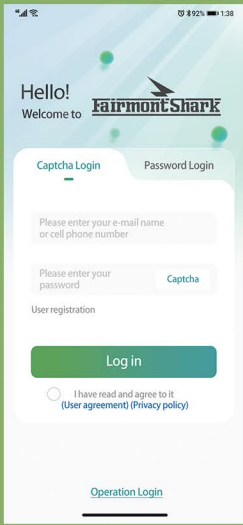


Charging

APP function module



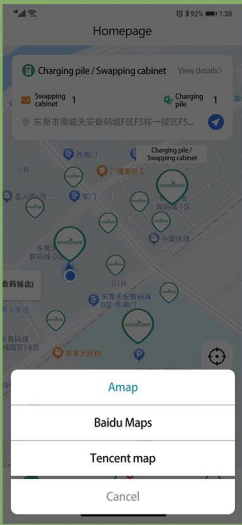
Client-side



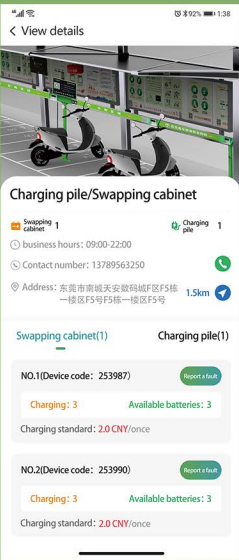
Log in



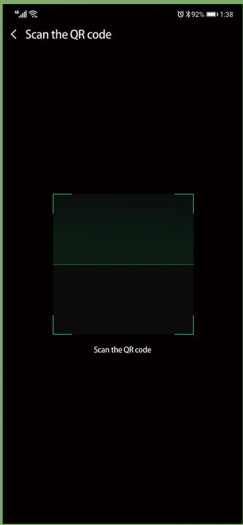
Home page



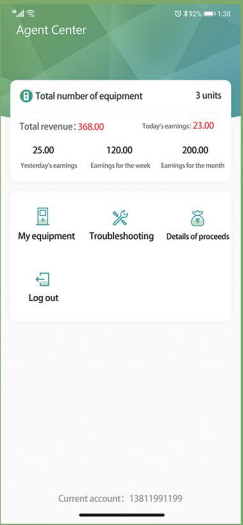
Navigation



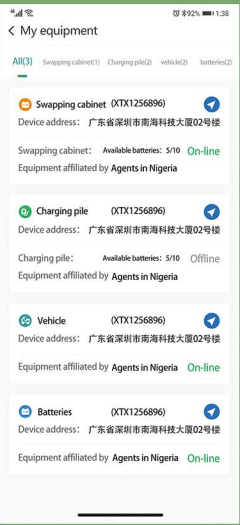
Power station details



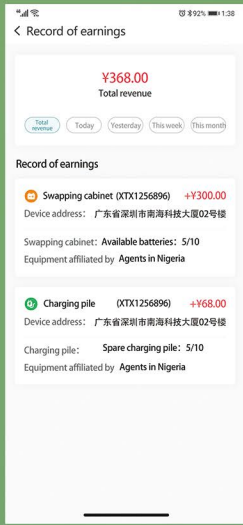
Scan



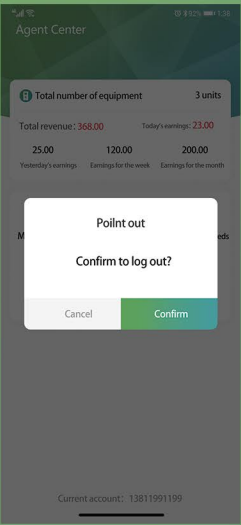
Agency centre



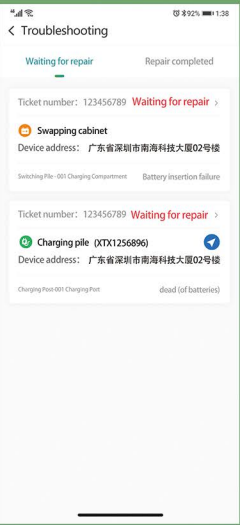
Equipment



Details of proceeds



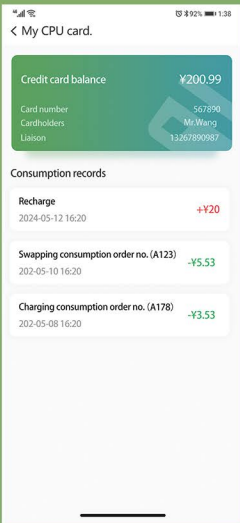
Exit Alerts



Troubleshooting



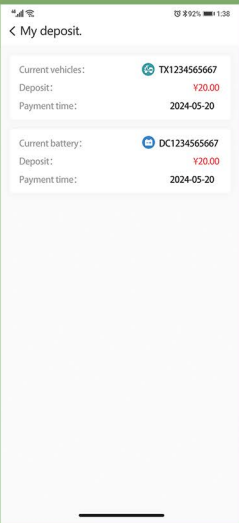
Information



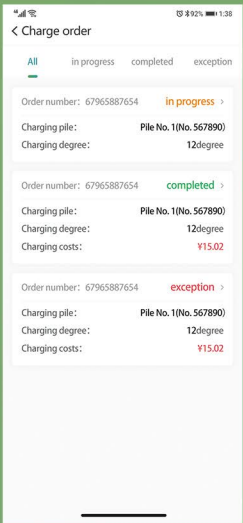
CPU card



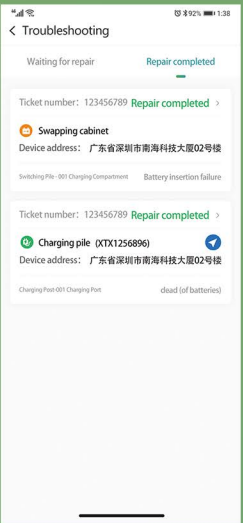
Tenancy



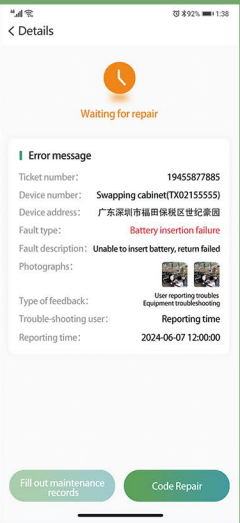
Deposit Payment Deposit



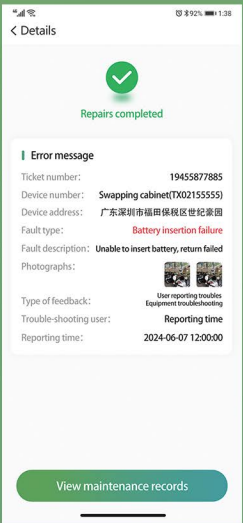
Charge order



Repairs completed



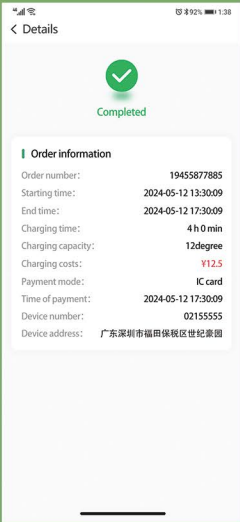
Awaiting repair



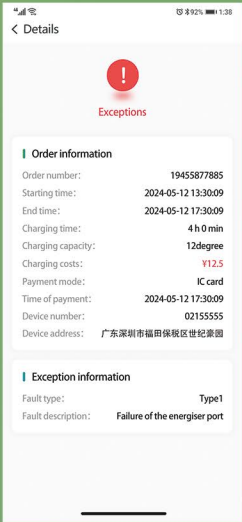
Repairs completed - details



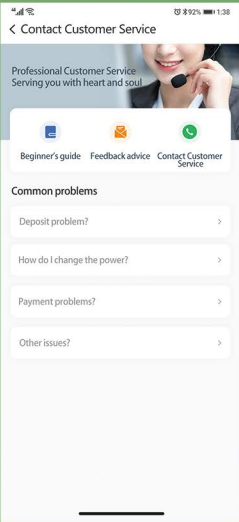
In progress



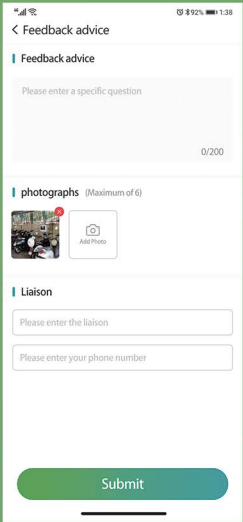
Completed



Exceptions



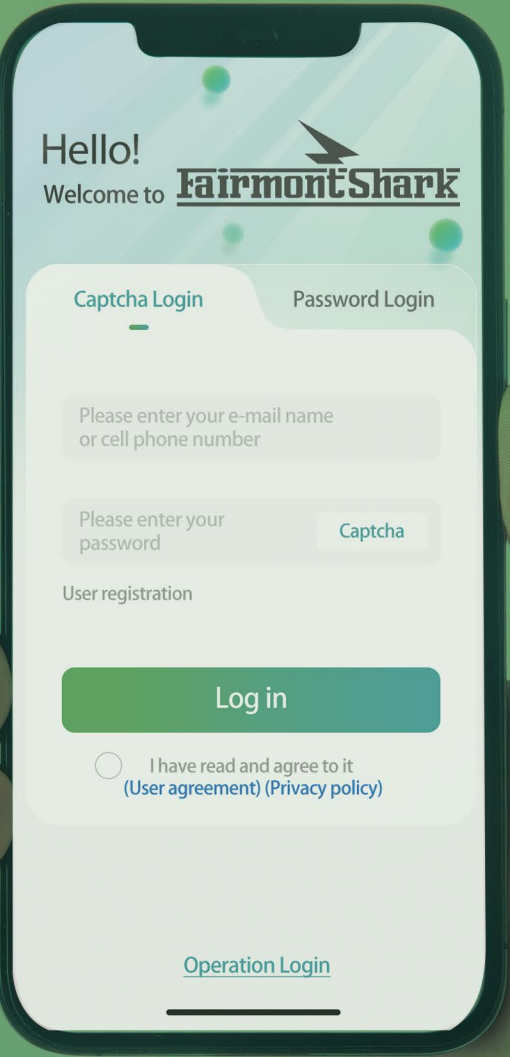
Contact Customer Service



Feedback advice



Maintenance records



Electric Motorcycle



CB02

Main technical parameters	
Dimension	1950*730*1120mm
Wheelbase	1380mm
Cushion size	760mm
Ground distance	23cm
Basic Configuration	
Protocol	CAN
Meter	LED / TFT
Motor	3000W
Controller	Far Driver 72V 100A
Max speed	80km/H
Range	
Brake	CBS
Tyres	Front: 3.00-17 Rear :120/70-17
Battery	72V*27AH*2 Swappable
Slope hill ability	12°
Maximum laden mass	200KG
Tare weight	128.5KG



Electric light motorcycle



A057		
Main technical parameters	Version 1	Version 2
Dimension	1990*710*1170mm	1990*710*1170mm
Wheelbase	1470mm	1470mm
Cushion size	840mm	840mm
Ground distance	15cm	15cm
Basic Configuration		
Protocol	CAN	CAN
Meter	LED / TFT	LED / TFT
Motor	1200W	1500W
Controller	60V 32A	72V 38A
Max speed	50km/H	60km/H
Range		
Brake	DISC / DISC	DISC / DISC
Tyres	90 / 90-12	90 / 90-12
Battery	60V*21AH*2 Swappable	72V27AH*1 Swappable
Slope hill ability	12°	12°
Maximum laden mass	200KG	200KG
Tare weight	76.5KG	76.5KG

Takeaway

Electric Light Motorcycle



A140		
Main technical parameters	Version 1	Version 2
Dimension	2000*690*1125mm	2000*690*1125mm
Wheelbase	1345mm	1345mm
Cushion size	565mm	565mm
Ground distance	18cm	18cm
Basic Configuration		
Protocol	CAN	CAN
Meter	LED / TFT	LED / TFT
Motor	1200W	1500W
Controller	60V 32A	72V 38A
Max speed	50km/H	60km/H
Range		
Brake	DISC / DISC	DISC / DISC
Tyres	90 / 90-12	90 / 90-12
Battery	60V*21AH*2 Swappable	72V27AH*1 Swappable
Slope hill ability	12°	12°
Maximum laden mass	200KG	200KG
Tare weight	72KG (NO BOX) +16KG	72KG (NO BOX) +16KG



Passenger Electric Tricycles



Additional features can be supported

Positioning Function

Lock function

Fast charging

Photovoltaic - Energy Storage - Charging - Switching Total Solution

TR01 Commercial

Main technical parameters	3000W-50	3000W-60
Overall Dimension	2800*1250*1780mm(L*W*H)	2800*1250*1780mm(L*W*H)
Vehicle Weight	327kg(Battery not included)	327kg(Battery not included)
Ground clearance	150mm	150mm
Minimum Turning Radius	3.5M	3.5M
Number of persons	7 persons	7 persons
Wheelbase	2200mm	2200mm
Wheelbase	1100mm	1100mm
Maximum load	600Kg	600Kg
Maximum Climbing Gradient	27°	27°
Rear axle	Bracket + Shock Absorber	Ball cage half shaft (full suspension)
Basic Configuration		
Motor power	3000W	3000W
Magnet height	80	80
Controller	36 tubes	36 tubes
No-load speed	50km/h	60km/h
Nominal voltage	60V/72V	60V/72V
Other		
Tyre size (front/rear)	400-12 tyres 6P	400-12 tyres 6P
Multimedia	USB port, SD, Radio	USB port, SD, Radio
Brake type (front/rear)	Front Hub Brake Rear Hub Brake	Front Hub Brake Rear Hub Brake
Wiper	Single wiper	Single wiper
Battery Specifications		
Battery	Lithium-ion 72V27Ah (3 sets)	Lithium-ion 72V27Ah (3 sets)
Charger Specifications	83.95V10A Power Bank Charging	83.95V10A Power Bank Charging
Range	55~60KM	55~60KM
Charging time	2~3 hours	2~3 hours



Passenger Electric Tricycles



Additional features can be supported

- Positioning Function
- Lock function
- Fast charging
- Photovoltaic - Energy Storage - Charging - Switching Total Solution
- reversing camera

TR02 Commercial

Main technical parameters	3000W-50	3000W-60
Overall Dimension	3000*1250*1750mm(L*W*H)	3000*1250*1750mm(L*W*H)
Vehicle Weight	355kg(Battery not included)	355kg(Battery not included)
Ground clearance	150mm	150mm
Minimum Turning Radius	4M	4M
Number of persons	7 persons	7 persons
Wheelbase	2240mm	2240mm
Wheelbase	1100mm	1100mm
Maximum load	600Kg	600Kg
Maximum Climbing Gradient	27°	27°
Rear axle	Bracket + Shock Absorber	Ball cage half shaft (full suspension)
Basic Configuration		
Motor power	3000W	3000W
Magnet height	80	80
Controller	36 tubes	36 tubes
No-load speed	50km/h	60km/h
Nominal voltage	60V/72V	60V/72V
Other		
Tyre size (front/rear)	400-12 tyres 6P	400-12 tyres 6P
Multimedia	USB port, SD, Radio	USB port, SD, Radio
Brake type (front/rear)	Front Hub Brake Rear Hub Brake	Front Hub Brake Rear Hub Brake
Wiper	Single wiper	Single wiper
Battery Specifications		
Battery	Lithium-ion 72V27Ah (3 sets)	Lithium-ion 72V27Ah (3 sets)
Charger Specifications	83.95V10A Power Bank Charging	83.95V10A Power Bank Charging
Range	55~60KM	55~60KM
Charging time	2~3 hours	2~3 hours

