

**RODOM<sup>®</sup>**



# **RODOM INTELLIGENT E-MOTORS SYSTEM**

*Lithium Battery  
& Integrated Smart System Solution*

## LITHIUM BATTERY INTELLIGENT E-MOTORS SYSTEM SOLUTION

ROTOM is committed to build the world's leading intelligent high-performance electric motorcycles and scooters. Therefor we have integrated the industry's leading resources, developed a series of products and provided a complete solutions.

First, we abandoned the traditional lead-acid batteries which are low efficiency, high pollution and short life, and chose the lithium batteries with long life, safety and reliability as our energy source. These batteries have effectively improved the performance of the vehicle. Considering their 8-10 years life and more than 2500 charging cycles, we believe that their limited cost increases are acceptable. We provide power supply solutions for more than 90% of electric motorcycles and scooters in the market. Some special designs make it suitable for various battery storage spaces. In addition, we also provide movable and replaceable solutions.

Meanwhile, in order to make the whole vehicle have more excellent performance, we have developed an integrated solution for intelligence electric vehicles, which includes high-performance motor, controller, intelligent instrument and vehicle control system (ECU) etc. These equipments cooperate with each other under precise control and work well, so that the performance of the whole vehicle has reached an unprecedented level. We have developed a custom APP, which is suitable for IOS and Android systems. Users can easily communicate with vehicles through mobile phones. The motorcycle is no longer a simple vehicle, but an intelligent travel robot.

Moreover, we believe that long waiting time for charging is intolerable, so we provide a convenient and removable dual battery design, and we have greatly improved the performance of the charger. Now you can choose a charger that can effectively shorten the charging time and fill up 95% of the power in one hour at the fastest. These measures stop you worrying about travel range.

ROTOM's integrated solution allows you to enjoy intelligent travel.

## Hardware

- 1.Motor
- 2.Controller
- 3.Battery
- 4.ECU
- 5.Speedometer
- 6.Remote controller
- 7.Charger



# LITHIUM BATTERY

Reliable  
/  
Long Life  
/  
Smart

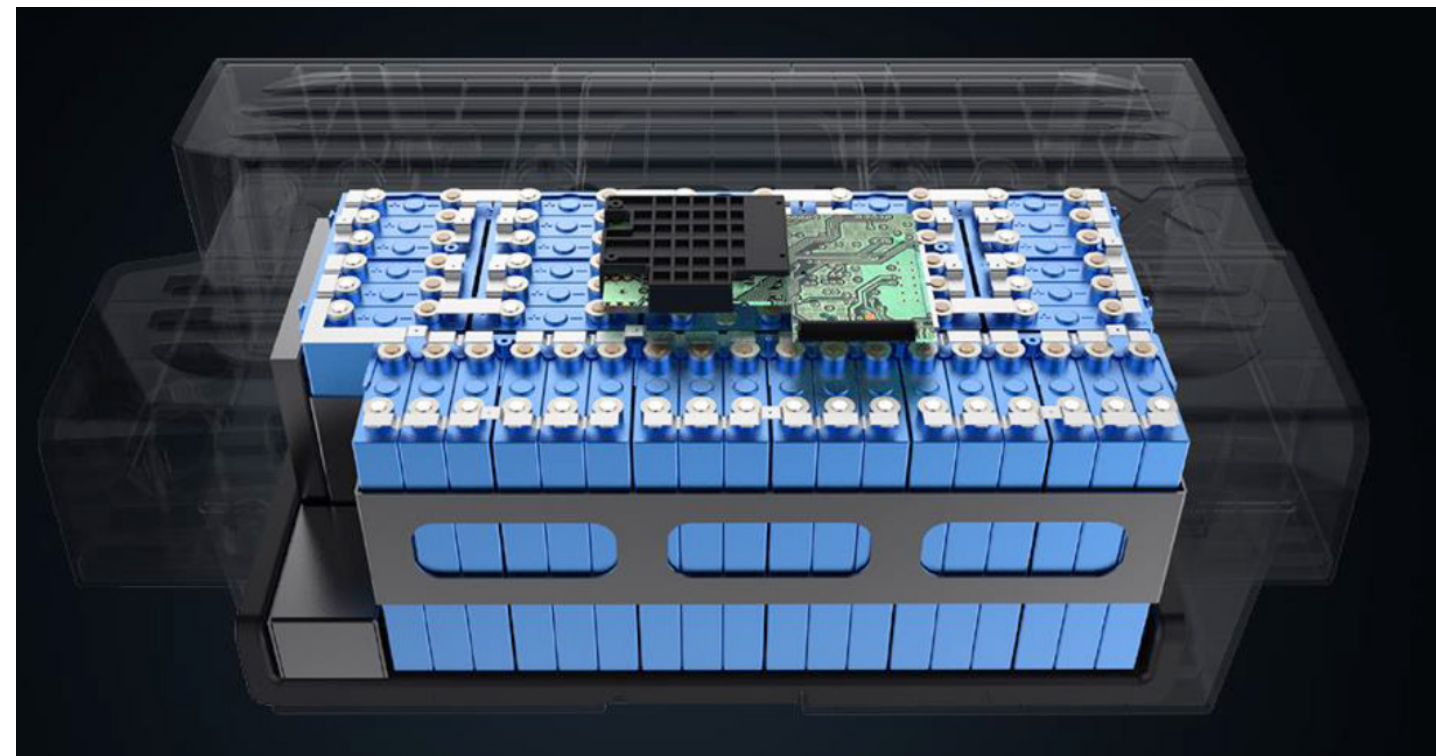
RELIABLE

5 YEARS  
UNLIMITED  
KM/MILES  
WARRANTY

## Arrangement of Cells

Cell used for electric cars  
high performance and safe.

Excellent thermal management  
system in battery pack





## Large Capacity VS Small Body

At the same time as 30Ah, the lithium battery weighs only 15kg, making it easy to remove and charge.

48V20AH  
60V30AH  
72V30AH  
.....

**1200** WH **13** KG

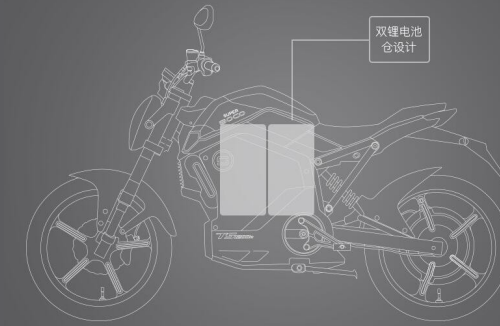
**1440** WH **15** KG

**2160** WH **16** KG



## Portable Battery

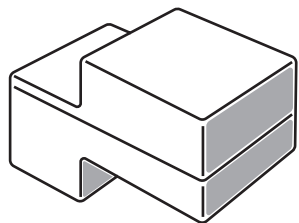
Portable design makes dual battery possible



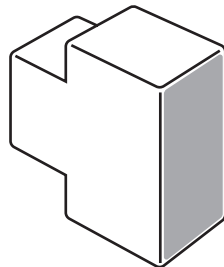
PORTABLE



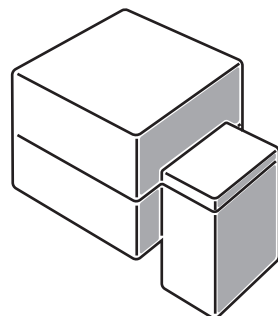
## Customize Battery



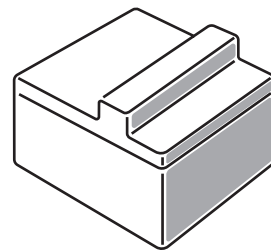
60V20AH



60V30AH

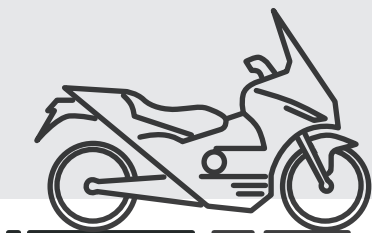


72V20AH

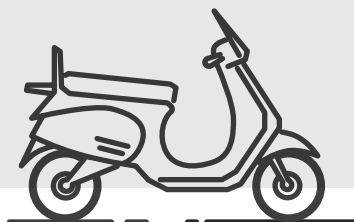


72V30AH

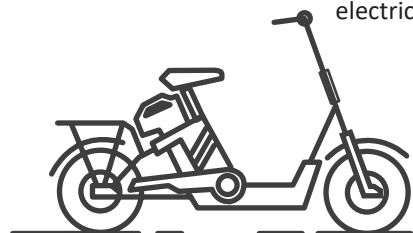
Applicable to 90% current models  
Including not only e-motorcycle/scooter/e-car/  
e-bike or air wheel, but also e-logistics vehicle/  
forklift and so on.



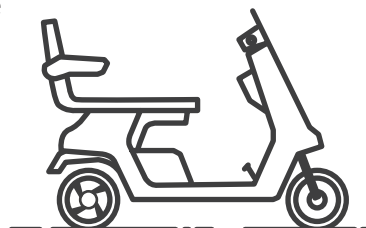
electric motorcycle



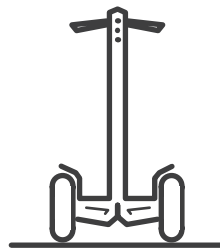
scooter



electric bicycle



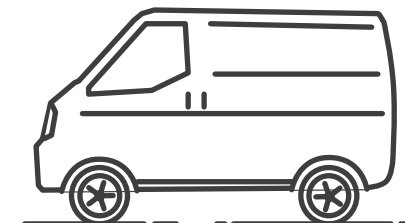
tricycle



air wheel



forklift



electric logistics vehicle



electric car

Battery Pack

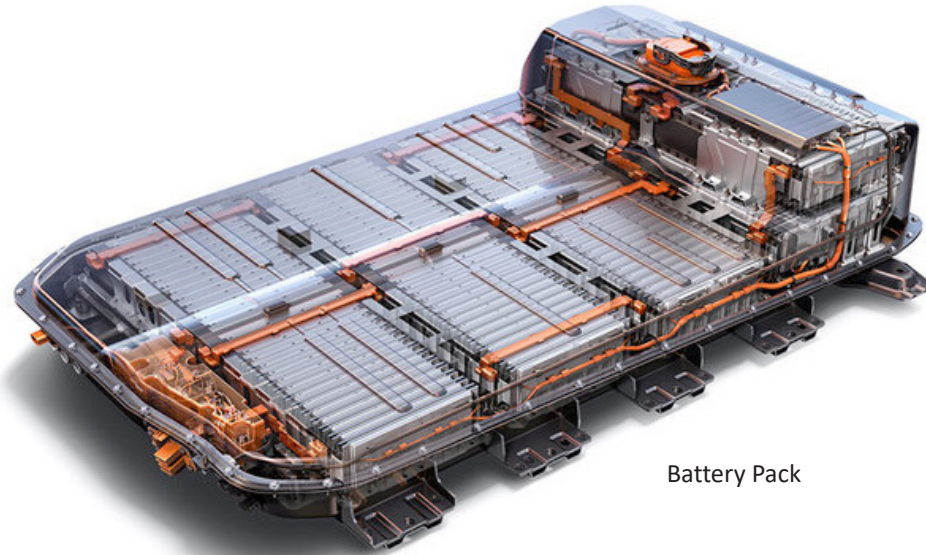




## Customize Battery

12 years to focus on the development and manufacture of cylindrical PACK, hundreds of millions of battery packs have passed the "cruel inspection" by market for many years, no accidents.

UN/UL/CB/RoHS and other certifications.



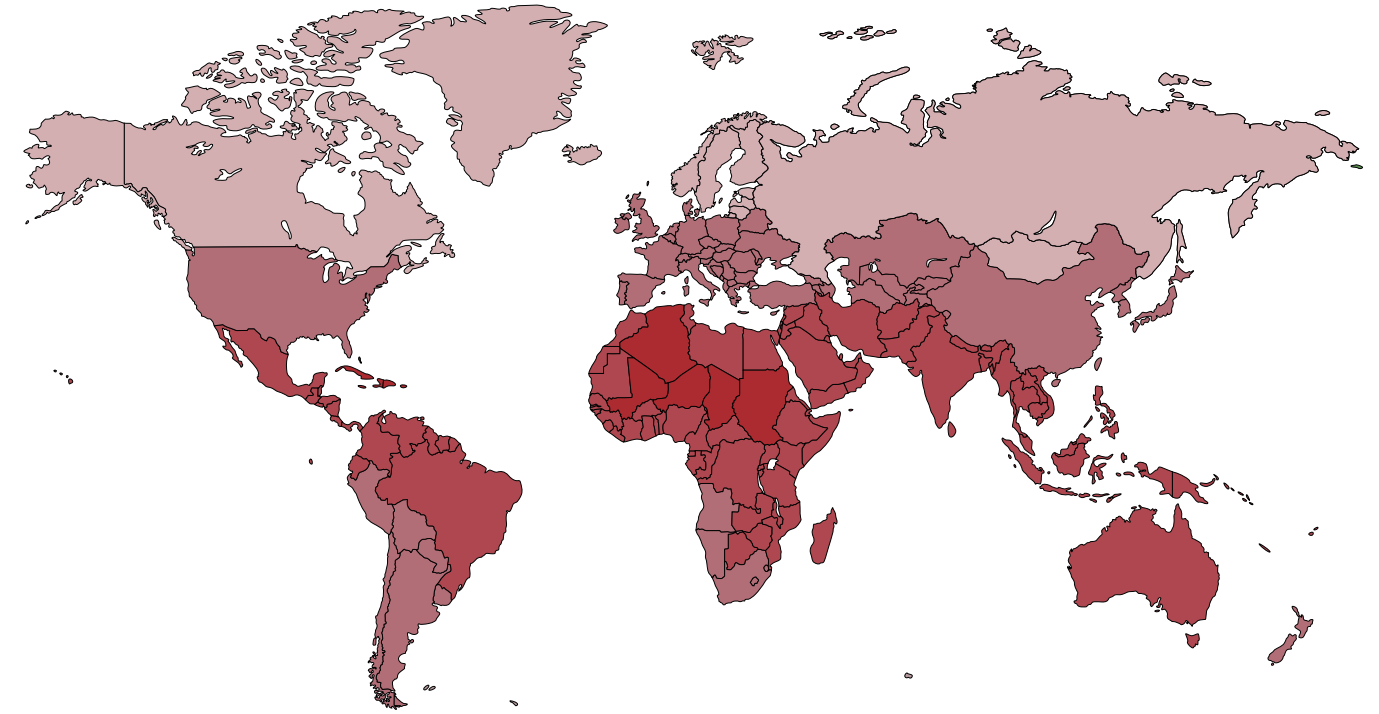
Battery Pack

Composing Room



## Sales Territory Map

Stable from  $-20^{\circ}\text{C}$  to  $80^{\circ}\text{C}$ , Suitable for 95% regions of the world.



### Stable

Better discharge capacity in low temperature condition

### Reliable

5 years unlimited km/miles warranty

Excellent short circuit protection

### Long Life

2500+ charging cycles  
longer lifetime for 8 years

## BMS SYSTEM



### System Functions

**Information collection:** total voltage, current, insulation, cell voltage, temperature, etc.;

**Security:** Multi-level battery system alarms and protections such as overvoltage and undervoltage Fault alarm and protection such as over temperature, under temperature, over current and insulation;

**Information estimation:** high precision real-time calculation of battery SOC, SOH and SOP;

**Data storage:** It has a large-capacity data storage function and is capable of high-speed and convenient data export.

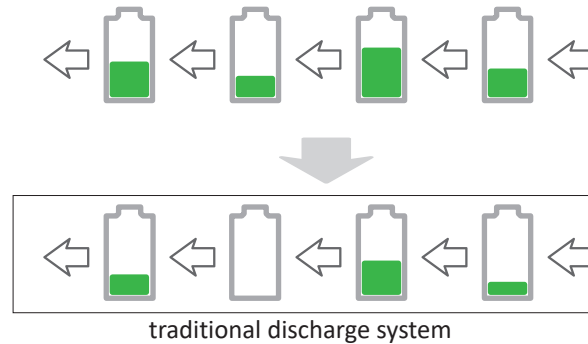
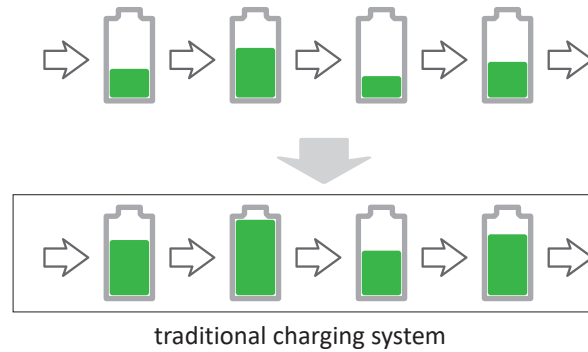
**Charge and discharge management:** in line with the latest national standard charging standard protocol, with dual gun simultaneous charging function;

**Balanced management:** Active and passive equalization options can be flexibly configured according to user needs.

## Core Technology:Active equilibrium

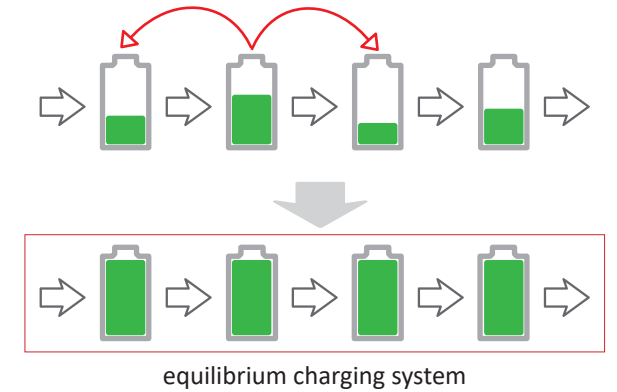
Maximize battery capacity: fully charged or released at the same time.  
Effectively extend the life of battery packs.  
Ladder utilization, effectively reducing the cost of battery use

The "bucket effect" of a group of batteries in use

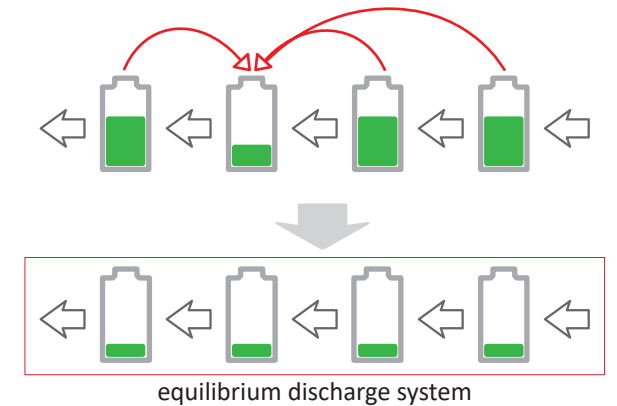


VS

Value Active equalization system



VS



# INTELLIGENT INTEGRATED E-MOTORS SYSTEM SOLUTION

SMART CONTROLLER

/

APP

/

ECU

/

SPEEDOMETER

/

MOTOR

/

CHARGER

## Smart controller

### Advantages of controller:

- Linear start
- S file acceleration
- Energy recovery
- Troubleshooting
- E-ABS/Steep slope

### Performance characteristics:

- Functional protection: overvoltage\undervoltage protection, charging protection, overheat protection, short circuit protection, missing protection, stall protection
- Support communication protocol: UART, 485, LIN, CAN
- Motor sensor: Hall, SPI, difference, A\D
- Protection level: IP67
- Adjustable software interface: support for computers and mobile phones
- Motor, controller over temperature protection
- Slope boost: anti-slope



EM-50



EM-300

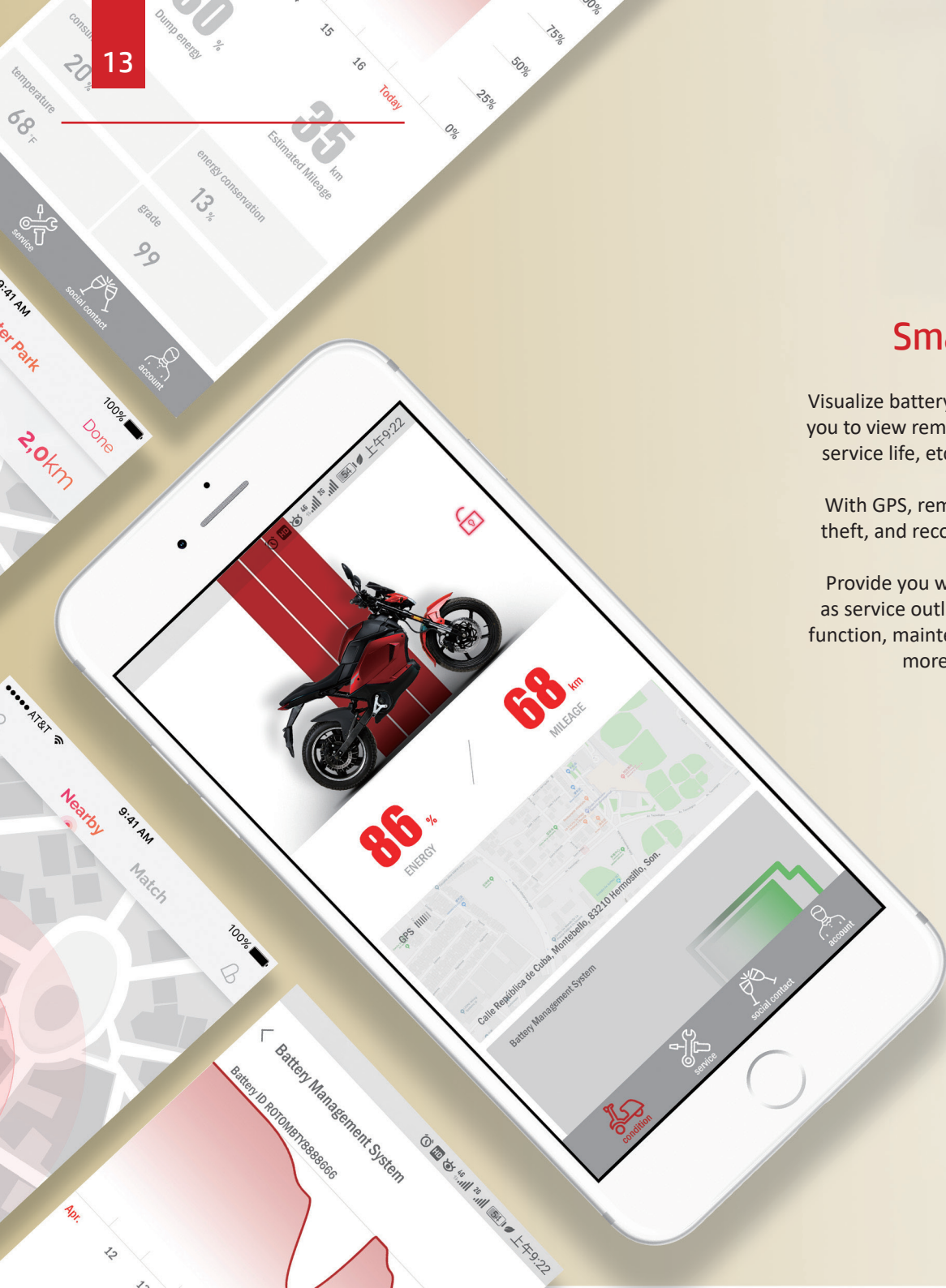


EM-100 /EM-150



EM-30S





## Smart App

Visualize battery information, allowing you to view remaining battery capacity, service life, etc. anytime, anywhere

With GPS, remote lock, smart anti-theft, and record your daily journey

Provide you with information such as service outlets, and open scoring function, maintenance and service are more convenient



### Locate

- ✓ Support satellite and base station positioning

### Remote cloud management

- ✓ Remote query: battery level / mileage / speed / history track / charging cycles
- ✓ Remote maintenance: data collection / firmware upgrade / parameter modification

### Mechanical key starter

- ✓ Start the vehicle with a traditional mechanical key

### Smart one-button start vehicle

- ✓ DKE Dynamic Sensing: When the authorized mobile phone is near the vehicle, press the one-button to start the vehicle.
- ✓ BLE Sensing: When the authorized BLE is near the vehicle, press the one-button to start the vehicle.
- ✓ Use the remote control handle: Press the "unlock" button, then press the one-button to start the vehicle within 10s.
- ✓ Use the app to remotely start the vehicle.

### Multiple ways to turn off the vehicle

- ✓ Turn off the vehicle with a traditional mechanical key.
- ✓ Use the remote control handle: Press the "lock" button to turn off the vehicle.
- ✓ Use the app to remotely turn off the vehicle.
- ✓ Use the one-button to turn off the vehicle.

### Various saddle opening methods

- Use the remote control handle: Hold down "unlock" button for 3s to open the saddle.
- Use the app to open the saddle.

### Multiple car-seeking methods

- ✓ Use the remote control handle: Press the "vehicle-search" button to find your vehicle.
- ✓ Use the app to remotely search your vehicle.

### Light switch control

- ✓ Control the switch of the running light according to the bus command.

## Intelligent Terminal ECU

ROTOM description of requirements of Intelligent central control system

### Whistle control

- After receiving the bus whistle command, drive the horn to whistle.

### Automatic arming

- Automatically armed within 2 minutes after the vehicle is turned off .

### Automatic disarming

- Automatically disarmed after starting the vehicle.

### Dynamic state management

- Real-time drive/static state changes to intelligently control power consumption.

### Bus management

- Support 485 bus, manage dashboard/ BMS/controller  
PS: Built-in bus protocol

### Active burglar

- Vibration alarm
- Displacement alarm
- Power failure alarm
- Intelligent lock motor
- Bus anti-theft



## Speedometer

# LCD Intelligent Light Sensing Instrument

Brightness adjust automatically high clarity, waterproof.





## Motor

The Rotom motor was developed to be optimized for efficiency, power and size. The Rotom motor features an interior permanent magnet (IPM) design that significantly improves performance during hard riding and allows higher sustained top speeds. Even more impressive, the compact brushless motor requires no liquid or forced-air cooling and requires no routine maintenance.



When combined with a Rotom Power Pack with BMS and ECU system, the remarkably compact and light motor delivers amazing horsepower and breathtaking acceleration. Providing a unique ride quality, the motor produces 100% torque from a standstill for instantaneous throttle response and incredible off-the-line performance.



13 inches Split type electric motor



Spec	Voltage	Power	Speed	Hub width
New power-saving type(V1) Power saving enhanced(V2) Tile Power Saver(V3)	36-96V	2000-8000 W	45-120 km/h	13X3.5

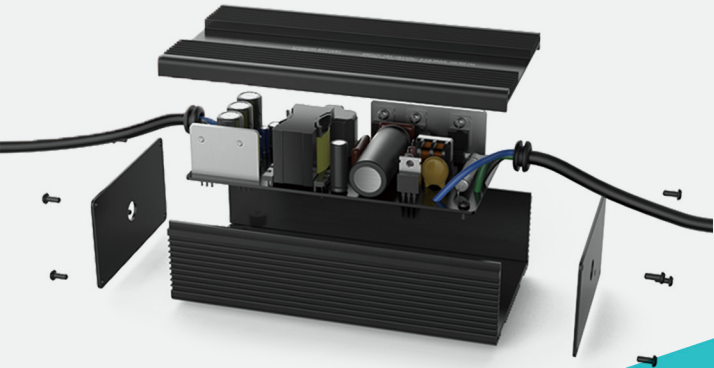
14 inches Split type electric motor



Spec	Voltage	Power	Speed	Hub width
New power-saving type(V1) Power saving enhanced(V2) Tile Power Saver II (V3) Tile Power Saver III (V4)	36-96V	1500-5000 W	40-110 km/h	14X4.0



## Ordinary charger



## Faster Charger

Rotom charging system apply for 5Ah to 20Ah output. The fastest charging options increase charging speeds by up to 6 times what you'd expect from a normal household outlet, enabling recharges to 95% in as little as one hour.





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