

# VRM series Vehicle charging station

Application: On-board DC charging of vehicles such as electric cars, taxis, engineering vehicles and coaches. >>>

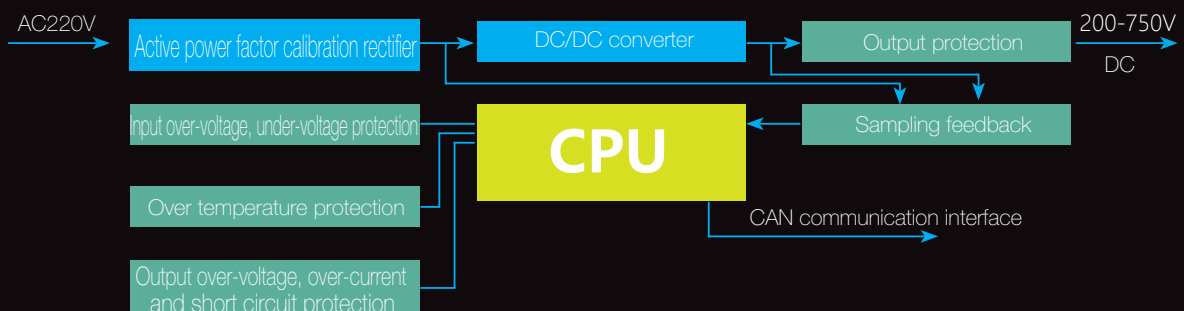
## Overview:

VRM360 series is an intelligent on-board DC Vehicle charging station promoted by SICON to meet market demands. It adopts advanced modular structure design concept and cutting-edge electronic circuit technology. It is internal vehicle charging module of electric cars, converts AC mains to DC power which can be used by electric car battery. Rectifier module input is single-phase mains, output DC is 200VDC-450VDC / 250VDC-650VDC / 300VDC-750VDC, to meet demands of different voltage battery pack. Functions such as start-up self-detection, AC input over/under voltage protection, output overload protection, over temperature protection are inside the module. Active power factor calibration technology, alternating tri-level series resonance soft switch technology and full digital control technology are adopted, with high reliability, high availability, high maintainability and high efficiency.

## Feature:

- Wide input voltage range:90-264V, input surge protection design, single module power:3.3KW, 6.0KW, 20KW;
- Adopting DSP control technology, full digital control from input to output.
- Alternating series resonance soft switch technology decreases power device bearing capacity.
- Input harmonic<3%, input PF 0.99, system efficiency >95%.
- Ultra wide output voltage range: adjustable 200~750VDC, meets demands of varies voltage of battery pack.
- Low output DC ripple, no effect on battery life.
- Monitor equipped with standard CAN communication interface, easy to exchange data with external device;
- Protections such as over voltage protection, under voltage alarm at input side, over current, short circuit protection at output side.

## Product diagram:



## Product view:



- High-performance PFC control circuit**  
 PFC rectifier transfers AC to DC to supply three-phase active power factor correction converter DC-DC converter needed. It features small shock, low input current harmonic and high input PF. THDI<3%, input PF>0.99, reducing upstream pressure of generators or transformers.
- High efficiency circuit topology**  
 The cutting-edge technology in the field of power supply, Zero voltage switching three level LLC resonant soft switch technology could make power device realized Zero conversion, reduce overall dissipation and device bearing stress, promote efficiency to 95% and achieve of impress lifespan of power device.
- Digital control technology**  
 Adopting digital control technology, it can be more accurate to manage the overall system, can eliminate the shortcomings of the uncertainty and discreteness of the simulation technology, and thereby more effectively guarantee the stability running of the DC charging modules to ensure safe operation of the load.

## Specification:

| VRM Model                               | VRM360P20000W                                    | VRM360P6000W | VRM360P3200W |
|---|--|--------------|--------------|
| Input capacity                          | 20KW   | 6.0KW        | 3.3KW        |
| Input voltage                           | 220V/380VAC                                      | 220VAC       |              |
| Range of input voltage                  | 90-264VAC; (90-175VAC,output power derating 50%) |              |              |
| Input frequency                         | 50/60HZ  |              |              |
| Input PF                                | 0.99   |              |              |
| THDI                                    | ≤ 3%   |              |              |
| Efficiency                              | ≥ 95%  |              |              |
| Output voltage                          | 200VDC-450VDC / 250VDC-650VDC / 300VDC-750VDC    |              |              |
| BMS auxiliary power                     | 13.8VDC/7.5A                                     |              |              |
| Voltage regulation accuracy             | < 0.5% ( 13.8VDC < 1% )                          |              |              |
| Current regulation accuracy             | < 1%   |              |              |
| Peak-to-Peak noise voltage of DC output | < 1%   |              |              |
| Overshoot                               | < 10%  |              |              |
| Soft-start time                         | 5S   |              |              |
| Operating temperature                   | -40°C ~65°C                                      |              |              |
| Storage temperature                     | -40°C ~70°C                                      |              |              |
| Relative Humidity                       | 5%-95% , 40±2°C , non-condensing                 |              |              |
| Altitude                                | 4000 m   |              |              |
| Dimension(W*D*H)mm                      | 415*460*110                                      | 280*460*110  | 280*350*110  |
| Cooling                                 | Air cooling/Water cooling                        |              |              |
| IP degree                               | IP67   |              |              |