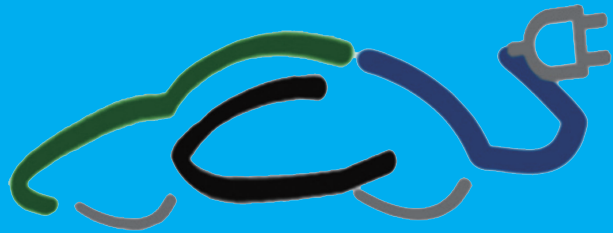


SCU E-MOBILITY
**Electric Vehicle Charging
Infrastructure**

Overall Solution

**OVERALL
SOLUTION**





Contents

Company profile	1
EVMS DC Fast Charging Station.....	2
EVHS High Power Ultra Fast Charging Station.....	6
EVMS Satellite EV Charging Solution	8
EVMS DC Wallbox charger	10
EV Charging Module.....	12
Power Line Communication Modem.....	17
Renewable Energy Charging Station	18

Sicon Chat Union Electric Co., Ltd. (referred to as: SCU Electric), is an industry leading electrical and power electronic product designer and manufacturer. SCU Electric provide complete solutions for Electric Vehicle Charging Infrastructure, Energy Storage, UPS& Data Center.

EV Charging Infrastructure portfolio: 60kW CCS2 CHAdeMO AC type2 Fast Charging Station, 120/150kW CCS2 DC Charging Station, 360~500kW High Power Ultra Fast Charging Station, DC Charging Stack, Power Module for DC Charger, Power Line Communication Modem and Renewable Energy Charging Station.

The Chargers are designed to be durable, reliable, modular and easy to service. It supports the open communication protocol OCPP, and obtained the CE test certificate compliance with IEC-61851 and IEC-62196.

Since 2012, SCU is leading the e-mobility revolution with charging infrastructure in China and many countries. We welcome worldwide distributors and partners to join us and write the future together.



EVMS DC Fast Charging Station

Application: public operations such as highway rest stops, petrol stations, airport etc.. private operations such as EV dealers, EV fleets etc.

Compatible vehicles: BMW, Volkswagen, Porsche, Audi, Nissan, Mitsubishi, Peugeot, Citroen, Kia, Renault, Fiat, Tesla, Smart, Mercedes BYD, Mazda, HONDA, Skoda, etc..



Overview

The EVMS DC Fast Charging Station is able to charge all current and next generation vehicles with CCS, CHAdeMO and AC Type 2.

The power covers 60KW~180KW, and can be configurable single, dual or triple connectors to meet the changing charging needs of customers.
















180kW CCS/CCS

Features

- Comply with multiple standards as CCS, CHAdeMO, AC Type 2
- Multiple outputs:DC power covers 60kW ~ 180kW,AC power up to 43kVA
- Supports CCS, CHAdeMO and AC Type 2 charging outputs simultaneously
- Reliable, robust, modular system hardware
- Simple, quick and easy installation
- Daylight readable touch screen display
- Supports the open communication protocol OCPP
- RFID authorization
- Low operational noise
- Customizable
- multilingual

60kW Possible configurations

Product type		750Vdc	1000Vdc + 400Vac
CCS2 60 kW DC/CHAdeMO 60 kW DC/AC 43 kW	  AC ~		default
CCS2 60 kW DC/CHAdeMO 60 kW DC/AC 22.1 kW	  AC ~	optional	
CCS2 60 kW DC/CHAdeMO 60 kW DC	 		
CCS2 60 kW DC/CCS2 60 kW DC	 		
CCS2 60 kW DC			
CCS2 60 kW DC/AC 43 kW	 AC ~		
CCS2 60 kW DC/AC 22.1 kW	 AC ~		
CHAdeMO 60 kW DC			
CHAdeMO 60 kW DC/AC 43 kW	 AC ~		
CHAdeMO 60 kW DC/AC 22.1 kW	 AC ~		






120kW Possible configurations

Product type		750Vdc	1000Vdc
120kW, CCS2 single connector		optional	default
120kW, CCS2 dual connectors	 	optional	default
120kW, CHAdeMO and CCS2 connector	 	optional	default

150kW Possible configurations

Product type		750Vdc	1000Vdc
150kW, CCS2 single connector		optional	default
150kW, CCS2 dual connectors	 	optional	default
150kW, CHAdeMO and CCS2 connector	 	optional	default

180kW Possible configurations

Product type		750Vdc	1000Vdc
180kW, CCS2 single connector		optional	default
180kW, CCS2 dual connectors	 	optional	default
180kW, CHAdeMO and CCS2 connector	 	optional	default

Specification

Model	EVMS-60, EVMS-90, EVMS-120, EVMS-150, EVMS-180
AC Input for the DC Output	
Power connection	3P + N + PE
Voltage range	400 Vac \pm 20 %
Frequency	50 Hz or 60 Hz
Nominal input current & power	87A, 60kW / 130A, 90kW / 174A, 120kW / 217A, 150kW / 260A, 180kW
Power factor	> 0.99
Overall efficiency	96%(Power Module), 95% (System)
DC Output	
Voltage	50Vdc-1000Vdc
Max Current	200A(60kW) / 250A(200A optional)
Nominal Power	60kW / 90kW / 120kW / 150kW / 180kW
AC Output	
Voltage	400 Vac
Current	63 A(default) / 32 A(optional)
Nominal Power	43 kVA(default) / 22 kVA(optional)
General Specifications	
Output mode	Multi-standard DC outputs (Mode-4), with AC (Mode-3)
Connectors	CCS2, CHAdeMO, AC Type 2
AC-Interface	Type 2 Plug 43kW(default) Type 2 Plug 22kW(optional) Type 2 Socket 22kW(optional)
Display	10.4" TFT Touch screen
RFID system	ISO/IEC14443A, Mifare;
Network connection	4G LAN Wi-Fi(Auto Switching from LAN to 4G)
Communication Protocols	OCPP1.6J (OCPP 2.0 upgradable)
Environment	Indoor / outdoor
Operating temperature	-20 C -75 C (55 C to 75 C derating to 60%)
Storage Temperature	-40 °C to +70 °C
Operating humidity	\leq 95% non-condensing
Altitude	Up to 1000 m
Protection	IP54 , IK10,RCD TYPE A 30mA
Acoustic noise	<70 dB
Compliance and safety	CE, IEC EN 61851, EN 62196,DIN 70121, ISO 15118

EVMS DC Fast Charging Station

Overview

The EVMS DC Fast Charging Station is able to charge all current and next generation vehicles with CCS, CHAdeMO and GB/T. Configured with DPM1000/30 charging modules, Built-in DSP in the charging module realizes intelligent management and digital control functions. Support RFID Card charging(Mobile app optional) , and support reservation function.

The power covers 60KW~360KW, and can be configurable dual onnectors to meet the changing charging needs of customers. Self-identifying electric vehicle BMS protocol function, multi-models compatible charging.



240kW (CCS+CCS)

Features

- Comply with multiple standards as CCS, CHAdeMO, GB/T
- Multiple outputs:DC power covers 60kW~360kW, and 2 DC Connectors could be used simultaneously.
- Support CCS, CHAdeMO and GB/T, any one or two standards to form charging station
- Reliable, robust, modular system hardware
- Simple, quick and easy installation
- Daylight readable touch screen display
- Supports the open communication protocol OCPP
- RFID authorization
- Low operational noise
- Customizable
- multilingual

Specification

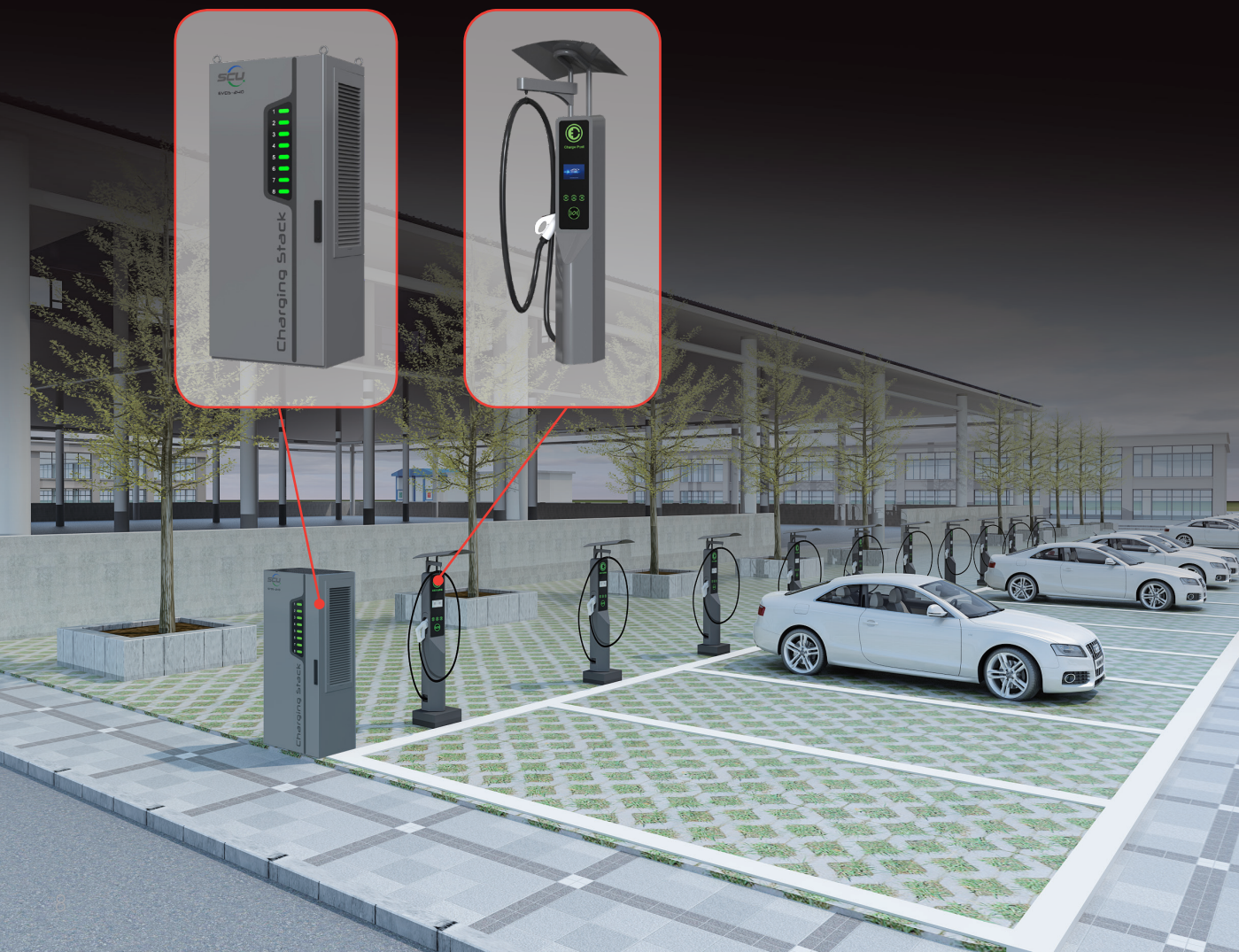
Model	EVMS-120	EVMS-240	EVMS-360
AC Input for the DC Output			
Power connection	3P + N + PE		
Voltage range	400 Vac \pm 20 %		
Frequency	50 Hz or 60 Hz		
Nominal input current	174 A	348A	522A
Power factor	> 0.99		
Overall efficiency	96%(Power Module), 95% (System)		
DC Output			
Voltage	50-1000VDC		
Constant power voltage	300-1000VDC		
Max Current	200A	200A(250A optional)	200A(250A optional)
Nominal Power	0-120kW	120-240KW	180-360KW
General Specifications			
Output mode	Multi-standard DC outputs (Mode-4)		
Connectors	CCS, CHAdeMO, GB/T		
Display	10.4" TFT Color screen		
RFID system	ISO/IEC14443A, Mifare;		
Network connection	4G LAN Wi-Fi(Auto Switching from LAN to 4G)		
Communication Protocols	OCPP1.6J		
Environment	Indoor / outdoor		
Operating temperature	-20 C -75 C (55 C to 75 C derating to 60%)		
Storage Temperature	-40 °C to +70 °C		
Operating humidity	\leq 95% non-condensing		
Altitude	Up to 1000 m		
Protection degree	IP54 , IK10 , RCD TYPE A 30mA		
Acoustic noise	<70 dB		
Compliance and safety	CE, EN 61851, EN 62196,DIN 70121, ISO 15118		

EVMS Satellite EV Charging Solution (Power Stack+Charge Post)

Application: Parking lots and charging station where multiple DC charging service required.

Overview

EVMS series EV charging stack is a split-type charging system meeting multiple standards CCS, CHAdeMO, GB/T. Adopting modular design concept and forefront power electronic technology, consists of power stack, control units and charge posts. Can be installed both outdoor and indoor.



Feature

- Comply with CCS, CHAdeMO, GB/T.
- Flexible power distribution function, dynamically adjust output power according to the demand of electric vehicles.
- Multi outlets to charge multiple vehicles simultaneously, the output and power as follows:
240KW type stack: configurable 2 ~ 8 outlets, each output 0~60KW or 0 ~ 120KW;
360KW type stack: configurable 2 ~ 12 outlets, 30 ~ 180KW flexible output.
- 12.1 inch LCD/LED screen to display information in real time, easy operation and interactive user interface.
- Supports Web & mobile based payment methods.
- Insulation monitoring function, automatically turn off output to ensure safe charging.
- High adaptability of temperature range, isolated heat dissipation air ducts, power heat dissipation is separated from control circuit to ensure dust-free control unit.
- High efficiency, high reliability, ultra low radiation, fast maintenance, flexible capacity expansion, energy efficiency and environmental protection.

Model	EVMS-240	EVMS-360
Environment	Outdoor / Indoor	
System capacity	240KW	360KW
Maximum outlets	8	12
Output capacity of each route	0~60KW or 0~120kW	30~180kW
Input voltage	400VAC±20%	
Input voltage range	260V~530V (260V~304VAC, output power derating 50%)	
Current share precision	< 3%	
Power factor	> 0.99	
Working frequency	50/60HZ	
Output voltage	50VDC-1000VDC	
Current regulation accuracy	< 1%	
Voltage regulation accuracy	< 0.5%	
Current share precision	< 3%	
Overall efficiency	96%(Power Module), 95% (System)	
RFID system	ISO/IEC14443A, Mifare;	
Network connection	4G LAN Wi-Fi(Auto Switching from LAN to 4G)	
Communication Protocols	OCPP1.6J (OCPP 2.0 upgradable)	
Operating temperature	-20 C -75 C (55 C to 75 C derating to 60%)	
Storage Temperature	-40°C ~ +70°C	
Operating humidity	≤ 95%, non-condensing	
Altitude	Up to 1000meters	
Protection	IP54, IK10, RCD TYPE A 30mA	
Acoustic noise	< 70dB	
Compliance and safety	CE, IEC EN61851, EN62196, DIN70121, ISO15118	

EVMS DC Wallbox charger

Application: Service station, Public corridor charging along the highways, Commercial fleet operators, EV Infrastructure operators, EV Garage and EVSE providers.

Overview

The EVMS DC Wallbox charger is able to charge all current and next generation vehicles with CCS and CHAdeMO.

The 30kW charging station is a configurable single or dual outlet wall mounted DC fast charger, supporting the changing needs of each customer. With compact, space-saving and attractive design, it is ideal for a wide range of installations, both indoors and outdoors available.



Feature

- DC power up to 30kW
- Supports a single CCS1/CCS2/ CHAdeMO connector
- Overall efficiency $\geq 95\%$
- Simple installation, convenient operation
- Daylight readable touch screen display
- Built-in safety measures
- Robust design
- Supports the open communication protocol OCPP
- Low operational noise
- Support multi-language operation
- Customizable

Model	EVMS-30
System capacity	30kW
Input parameters	
Voltage	400Vac, 3P+N+PE
Voltage rage	304V~456Vac
Power factor	>0.99
Frequency	50/60Hz
Output parameters	
Connectors	Single output CCS1/CCS2/ CHAdeMO
Voltage	50-1000Vdc
Current	Maximum 100A, maximum 30kW
Power	30kW
Overall efficiency	95%
Other parameters	
Display	10.4" TFT Touch screen
RFID system	ISO/IEC14443A, Mifare;
Network connection	4G (GSM or CDMA) LAN WI-FI
Communication Protocols	OCPP1.6J (OCPP 2.0 upgradable)
Operating temperature	-20°C~ 60°C
Storage Temperature	-40°C ~ +70°C
Working Humidity	5%~95%, non-condensing
Operating humidity	≤95%, non-condensing
Altitude	2000meters
Protection	IP54, IK10
Acoustic noise	< 55dB
Environment	outdoor/indoor
System protection	Leakage detection and protection ; Over-voltage and Under-voltage protection ; Self-checking recover ; Over-temperature protection ; Double Lightning protection; Emergency stop button protection ; Power failure data records.
Compliance and safety	CE, IEC EN61851, EN62196, DIN70121, ISO15118
Dimension(W*D*H)	460*345*735

EV Charging Module

Overview

With more than 20 years experience in power electronics industry, SCU is focused on the core components of new energy electric vehicle, develop a series of standard power modules such as 15kW/20kW/30kW for EV chargers applied for CCS, CHAdeMO, Combo, GB/T standards. The power module is based on the latest DC power supply techniques, which results in high efficiency, high reliability and long service life.

Feature

- Wide range of input voltage, 260V~530V, input surge protection design.
- DSP control, achieves pure digital control from input to output; adopts interlaced series resonance soft switch technology to reduce the tolerance of power devices.
- Input THDI <3%, input PF is 0.99.
- Low output DC ripple wave, has no influence on battery's working cycle.
- Input over voltage protection, under voltage alarming, output over current and short circuit protection functions.
- Support multi modules parallel, hot-swappable, brings the charger great availability, reliability and maintainability.
- Battery current reverse protection circuit inside.
- Forced air cooling design to property handle temperature rise of components in module.
- Ultra wide temperature range, suitable for all kinds of harsh environment.

Comparison Table

Model	15kW power module	20kW(Low-voltage)power module	20kW /30kW constant power module
Output capacity	15kW	20kW	20kW/30kW
Output voltage range	200V-500VDC, 200V-750VDC, 150V-1000VDC	40V-100VDC, 40V-135VDC	50V-750VDC, 50V-1000VDC
Constant power range	/	/	300V-750VDC, 300V-1000VDC
Efficiency	95%	95%	96%
Compatible standard	CCS, CHAdeMO, Combo, GB/T		
Communication	CAN		
Cooling	Forced air cooling		

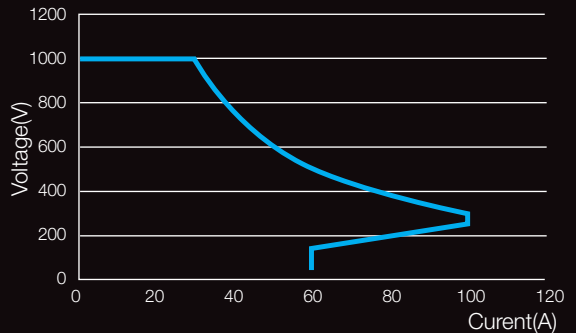
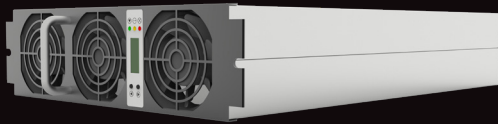
30kW Constant Power Module

Overview

Vienna rectifier technology for PFC, LLC technology for DCDC, with three phase active PFC, integrated with functions of rectifier, contro, output, protect and remote-signal function. Modular design, high power density, high reliability, ultra wide temperature range, suitable for all kinds of harsh environment.

Feature

- Output capacity: 30kW; Efficiency: 96%
- Output voltage range:50V-750VDC, 50V-1000VDC
- Constant power range: 300V-750VDC,300V-1000VDC
- Compatible standard: CCS, CHAdeMO, Combo, GB/T
- Cooling: forced air cooling



30kW Power Module

Model	DPM750/40	DPM1000/30
Output capacity	30kW	
Input voltage	380Vac three-phase three-wire	
Input voltage range	260V-530V(260-304V,output power derating 50%)	
Input frequency	50/60HZ	
Input power factor	> 0.99	
Input current harmonic	≤ 3%	
Efficiency	96%	
Output voltage range	50V-750VDC	50V-1000VDC
Voltage regulation accuracy	< 0.5%	
Current regulation accuracy	< 0.5%	
Peak-to-Peak noise voltage of DC output	< 1%	
Startup&Shutdown overshoot	< 1%	
Soft start time	≤ 5S	
Operating temperature	-20°C-+75°C,during 55°C-75°Cderating to 60%	
Ambient temperature	-40°C-+70°C	
Relative humidity	0-95%,40±2°C,non-condensing	
Altitude	2000 meters	
Dimension(W*D*H)	300*460*87mm(Horizontal)	315*463*87mm(Vertical)
Weight	15kg	15kg

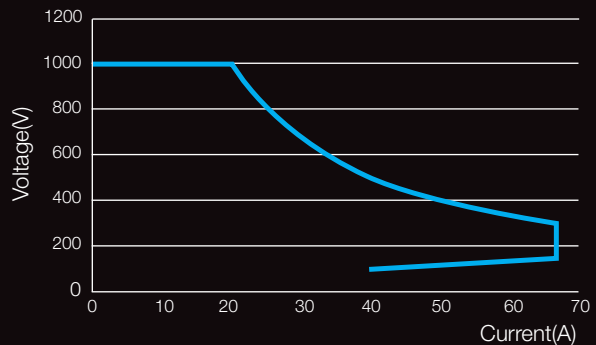
20kW Constant Power Module

Overview

Vienna rectifier technology for PFC, LLC technology for DCDC, with three phase active PFC, integrated with functions of rectifier, contro, output, protect and remote-signal function. Modular design, high power density, high reliability, ultra wide temperature range, suitable for all kinds of harsh environment.

Feature

- Output capacity: 20kW; Efficiency: 96%
- Output voltage range:50V-750VDC, 50V-1000VDC
- Constant power range: 300V-750VDC,300V-1000VDC
- Compatible standard: CCS, CHAdeMO, Combo, GB/T
- Cooling: forced air cooling



20kW Power Module

Model	DPM750/26	DPM1000/20
Output capacity	20kW	
Input voltage	380Vac three-phase three-wire	
Input voltage range	260V-530V(260-304V,output power derating 50%)	
Input frequency	50/60HZ	
Input power factor	> 0.99	
Input current harmonic	≤ 3%	
Efficiency	96%	
Output voltage range	50V-750VDC	50V-1000VDC
Voltage regulation accuracy	< 0.5%	
Current regulation accuracy	< 0.5%	
Peak-to-Peak noise voltage of DC output	< 1%	
Startup&Shutdown overshoot	< 1%	
Soft start time	≤ 5S	
Operating temperature	-20°C-+60°C,during 50°C-60°Cderating to 60%	
Ambient temperature	-40°C-+70°C	
Relative humidity	0-95%,40±2°C,non-condensing	
Altitude	2000 meters	
Dimension(W*D*H)	218*463*87mm	218*463*87mm
Weight	12kg	12kg

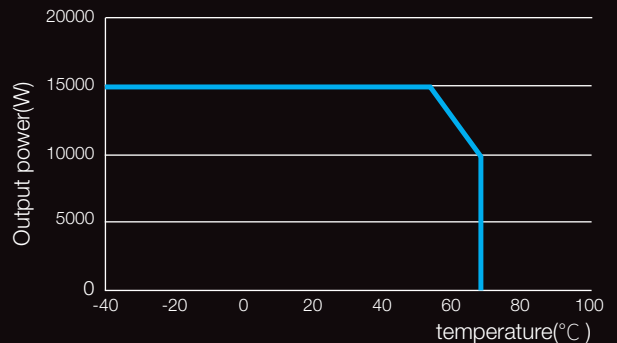
15kW Power Module

Overview

Vienna rectifier technology for PFC, LLC technology for DCDC, with three phase active PFC, integrated with functions of rectifier, contro, output, protect and remote-signal function. Modular design, high power density, high reliability, ultra wide temperature range, suitable for all kinds of harsh environment.

Feature

- Output capacity: 15kW; Efficiency: 95%
- Output voltage range:200V-500VDC,200V-750VDC,1 50V-1000VDC
- Compatible standard: CCS, CHAdEMO, Combo, GB/T
- Cooling: forced air cooling



Output power vs. temperature

Model	DPM500/30	DPM750/20	DPM1000/15
Output capacity	15kW		
Input voltage	380Vac three-phase three-wire		
Input voltage range	260V-530V(260-304V,output power derating 50%)		
Input frequency	50/60HZ		
Input power factor	>0.99		
Input current harmonic	≤3%		
Efficiency	95%		
Output voltage range	200V-500VDC	200V-750VDC	150V-1000VDC
Voltage regulation accuracy	<0.5%		
Current regulation accuracy	<0.5%		
Peak-to-Peak noise voltage of DC output	<1%		
Startup&Shutdown overshoot	<1%		
Soft start time	≤5S		
Operating temperature	-20°C-+60°C,during 50°C-60°C derating to 60%		
Ambient temperature	-40°C-+70°C		
Relative humidity	0-95%,40±2°C,non-condensing		
Altitude	2000 meters		
Dimension(W*D*H)	220*405*88mm	220*405*88mm	220*405*88mm
Weight	10kg	10kg	10kg

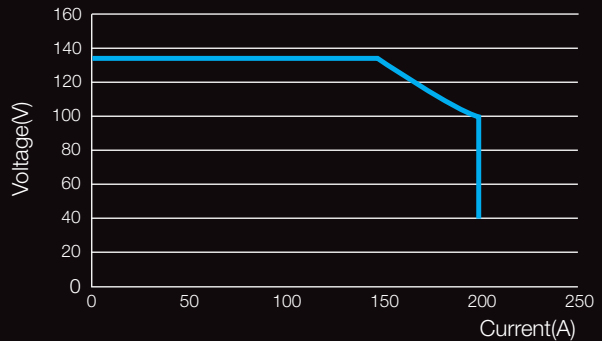
20kW Low-voltage power module

Overview

Vienna rectifier technology for PFC, LLC technology for DCDC, with three phase active PFC, integrated with functions of rectifier, contro, output, protect and remote-signal function. Modular design, high power density, high reliability, ultra wide temperature range, suitable for all kinds of harsh environment.

Feature

- Output capacity: 20kW; Efficiency: 95%
- Output voltage range: 40V-100VDC,40V-135VDC
- Compatible standard: CCS, CHAdcMO, Combo, GB/T
- Cooling: forced air cooling



20kW Power Module

Model	DPM100/200	DPM135/150
Output capacity	20kW	
Input voltage	380Vac three-phase three-wire	
Input voltage range	260V-530V(260-304V,output power derating 50%)	
Input frequency	50/60HZ	
Input power factor	>0.99	
Input current harmonic	≤3%	
Efficiency	95%	
Output voltage range	40V-100VDC	40V-135VDC
Constant power range	-	100V-135VDC
Voltage regulation accuracy	<0.5%	
Current regulation accuracy	<0.5%	
Peak-to-Peak noise voltage of DC output	<1%	
Startup&Shutdown overshoot	<1%	
Soft start time	≤5S	
Operating temperature	-20°C-+60°C,during 50°C-60°Cderating to 60%	
Ambient temperature	-40°C-+70°C	
Relative humidity	0-95%,40±2°C,non-condensing	
Altitude	2000 meters	
Dimension(W*D*H)	222*470*132mm	222*470*132mm
Weight	11kg	11kg

Power Line Communication Modem-PLC Modem

Overview

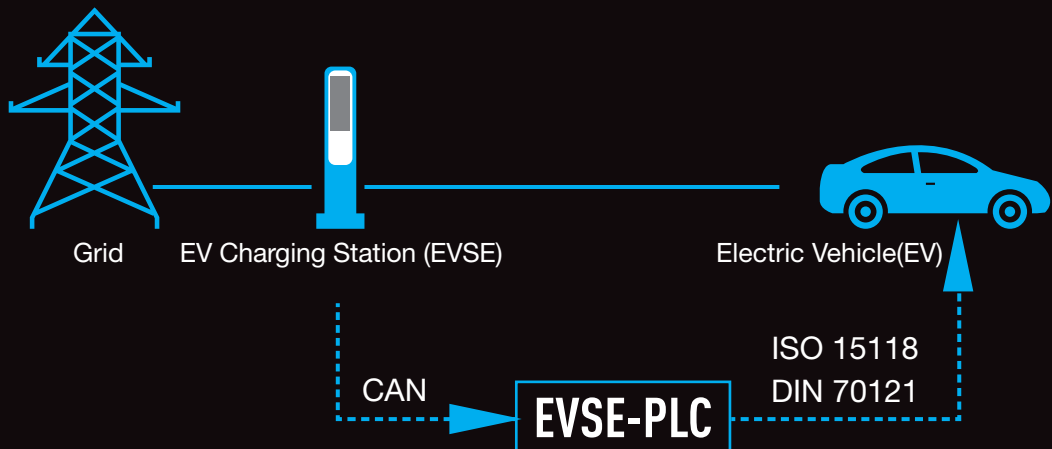
EVSE-PLC is a PLC(Power Line Communication) based modem for communication between EV and EVSE. It is suitable for DC charging, and supports conversion of CAN, RS232/485 communication protocol to ISO/IEC 15118 and DIN 70121 standards. It can be installed inside CCS2 DC chargers or new energy electric vehicles to realize intelligent interconnection between EV and EVSE.

- Processor: TI AM3352
- Operating system: Linux 4.1.16
- SECC interface: CAN, RS 232/485
- PLC interface: HomePlugGreenPHY
- Debug interface: Ethernet port
- Chip: QCA7000
- Operating voltage: 7VDC-30VDC
- Power consumption: maximum 4W, idle mode 2W



Application

- Charging controller for electric vehicle supply equipment (EVSE)
- Charging controller for plug-in electric vehicles (PEV)
- PEV or EVSE testing Simulator



Feature

- Robust, portable and easy to be embedded inside EVSE and EV;
- ISO/IEC 15118, DIN 70121 compliant communication;
- RS232, RS485, CAN and Ethernet interface to power electronics;
- It can be used with EVSE, or to be installed in EV to realize the interconnection and communication between EVSE and EVs of different communication protocols;
- Short development cycle, quick docking between different EVSE and EV;
- Parallel support for multiple vehicles;
- Instantly handling of abnormal charging process;
- OTA upgrade compatible
- TUV SUD certified.

Renewable Energy Charging Station

New Energy Integrated Charging Station is combined with PV, energy storage battery, bidirectional converter and charging facilities, uses modular and standardized design concept, standard integrated charging overall solution, achieves rapid and flexible deployment.

The interior of container is divided into equipment area and user resting area, the exterior of container is charging parking space, user can charge with charging terminal inserted.

Benefit:

- Convenient operation, high reliability, high security, high integration, low cost, low energy consumption.
- The system supports grid-connected and off-grid operation, can be used as backup power supply.
- The system can access the cloud platform to achieve unified monitoring management.

Configuration:



PV
43kW



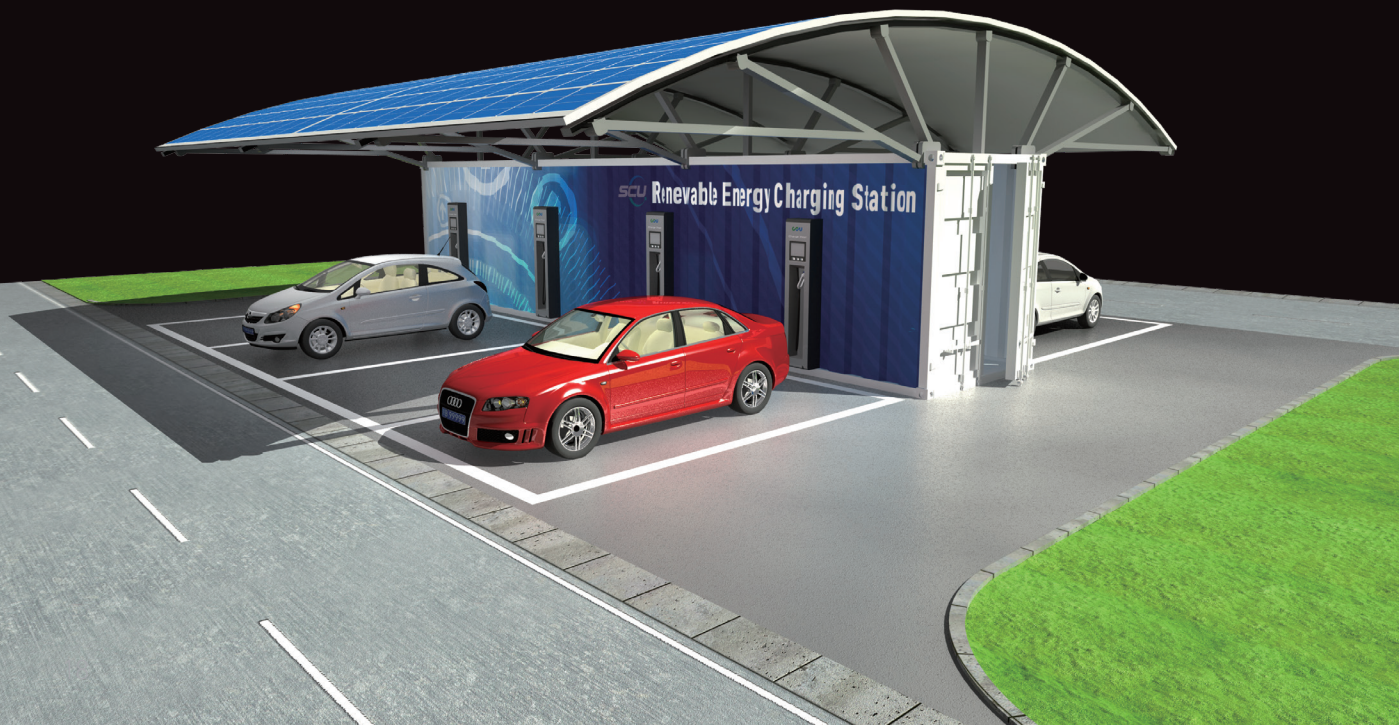
PCS
200kW



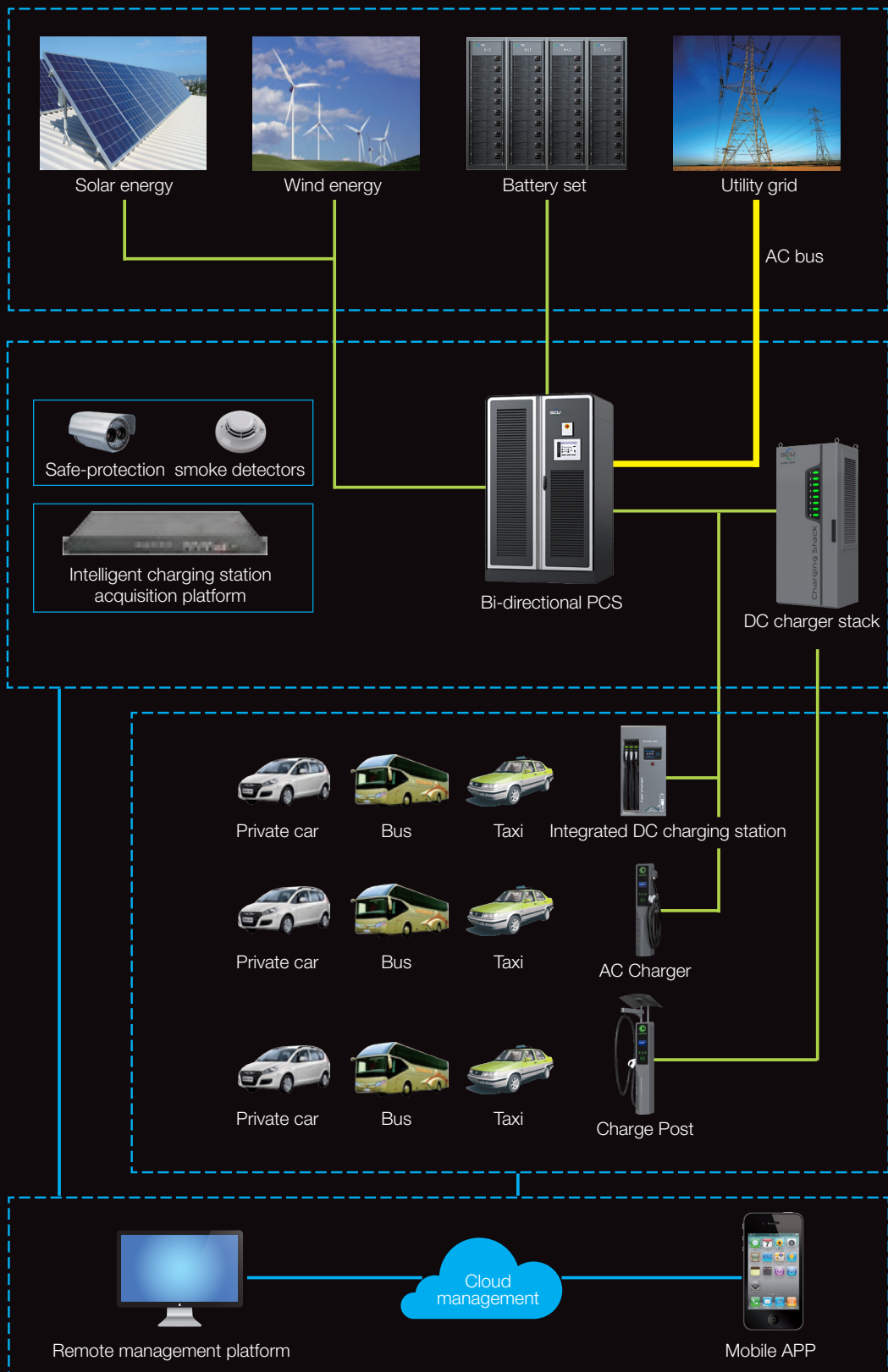
Li-ion Battery
200kWH



EV Charging Solution
240kW Power Unit
+8 Charge Post



System Diagram





Sicon Chat Union Electric Co., Ltd.

Bldg.14&15 No. 319. Xiangjiang Street High-Tech Zone. Shijiazhuang 050035 China

Tel. +86 311 85903762

Fax. +86 311 85903718

enquiry@scupower.com

www.scupower.com

