2020-2021
EV CHARGING SOLUTION





PHIHONG EV Chargers

World Class Quality, International Standard





Phihong Technology

With nearly 50 years of experience, Phihong is a leading global power supply manufacturer and recognized as a reputable brand by customers globally. Phihong strives to design innovative products while maintaining superior quality and safety standards.

With an eye toward the international trend of environmental protection and carbon reduction, Phihong has successfully developed a family of highly-efficient EV charging products: DC charging modules, auxiliary power, control & supervisor unit (CSU), discrete type DC chargers, integrated type DC chargers, moveable DC chargers and AC chargers and wall-mounted and post type AC chargers for EV buses and EV passenger cars.



Phihong EV charging software solution includes both the front end mobile APP and user interface (HMI) as well as the back end central office and cloud-based management, payment and monitoring platforms. Through the front end mobile APP, people can search for nearby chargers, make charging appointments, and monitor charging status. To facilitate long term maintenance and management, system operators can monitor the status of individual EV chargers and remotely update EV chargers. With strong R&D design capabilities and solid manufacturing experience, Phihong Technology provides high quality and cost effective hardware/software products based on specific customer needs.

Please contact us for more information:phsales@phihong.com.tw

- OEM/ODM/Re-label business
- EV charger manufacturers
- System operators
- Electric vehicle manufacturers

Production Base



◆ Phihong Vietnam Mass production began in O1 2020.



Phihong (DongGuan)



Dong Guan Phitek



Chin Sheng Hong (JiangXi)

In 1996, Phihong established the first overseas production base in Donguan City, the third largest computer production area in the world. The plant area covers 40,911 square meters and employs more than 4,000 people. In succession, Dong Guan Phitek Electronics Co., Ltd and Chin Sheng Hong (Jiangxi) Electronics Co., Ltd. were established. All production plants in China passed ISO9001 quality system certifications, ISO14001 environmental certifications and OHSAS18001 occupational safety and health systems.

In response to the economic turmoil caused by the Sino-American trade war in late 2018, the company launched the New Southbound Plan. The plan included construction of factories in Vietnam to avoid the risk of concentrating production in China, which would increase shipment flexibility. Located in the second largest seaport in Vietnam, shipment by vessels to China, Japan, Korea, Europe and North America can be shipped weekly. The plant area covers 22,418 square meters and employs approximately 1,500 people from the local area. Mass production began in Q1 of 2020.

Certificate

With ISO 9001 and ISO 13485 quality management system for industrial and medical products, Phihong offers comprehensive power solutions for customers. Moreover, our EV chargers and other car electronics are IATF 16949:2016 certified, which can provide customers with assurance that Phihong provides high quality products and exceptional after sales service.

IATF 16949:2016 Manufacture of on board charger



OCPP 1.6 Open Charge Point Protocol.



Integrated Product Service

Phihong Technology has successfully established a comprehensive operation model that integrates diverse products and services, including research and design, manufacturing, marketing, and services. Whether in public construction projects or implementing the island-wide charging station project in Taiwan, Phihong's corporate social responsibility covers green energy and environmental protection. In order to establish a more convenient charging environment, Phihong has also sought strategic partnerships with clients to leverage the company's years of experience in the EV industry to aggressively plan and build charging stations in construction projects across Taiwan so that vehicle owners have a comprehensive and dependable charging network.

Development & Design

- Power modules design 30kW~60kW
- 7kW~450kW moveable/wall-mounted/free standing charger design
- Planning of EV & E motor charging stations
- Integration of energy storage and safety management
- CE ETL, cTUVus(Complies with UL), CNS, GB certification
- IEC62196-2 Type1 & 2, CCS, CHAdeMO, SAE J1772, GB/T charging interface

Production & Manufacturing

- Taiwan
- Dongguan China
- Vietnam
- · IATF16949
- · ISO 9001
- ISO 13485
- · ISO 14001
- OHSAS 18001

Survey & Construction

- Charging station planning
- Electrical power evaluation
- License application
- Operator management
- Professional installation

Production and System Testing







Semi-finished Product Testing: Wave-Soldering Assembly







Semi-finished Products: Testing & Assembly

We Focus on

Growth Model

Copying Successful **Business Models**

Mission

Full Range of Power Solutions

Focus & Goal

The Global Leader of **Power Energy Solution** Provider

Back-end Cluster Management

- Back end/cloud platform development & management
- Real-time monitoring and management of chargers
- Mobile APP
- Account authorization management
- Supports operators with payment methods, such as credit cards, easy cards, iPass, 3rd party payment options
- · Big data analysis

Post-Sale Services

(Service available in select regions.
Please consult with local Phihong sales staff.)

- Comprehensive training
- 24/7 service
- Firmware upgrade
- Safe storage of factory repair parts
- Professional repair team

Charger - Assembly



DC Chargers: Assembly



AC Chargers: Assembly

Charger - Burn In



DC Charger Burn-in System



AC Charger Burn-in System

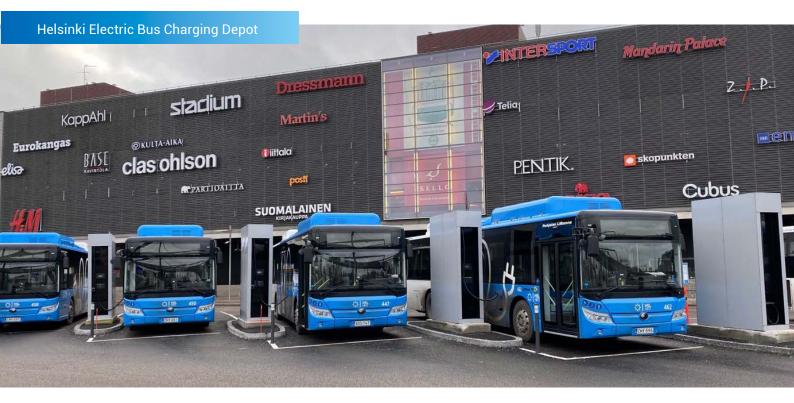


Power Module Burn-in System

Future Trend Outlook

Global urban populations are expanding. It is estimated that by 2050, 66% of the global population will be living in cities. In order to reduce increasing traffic congestion, governments of various nations are working with car manufacturers to implement smart services and ride-sharing by encouraging the use of electric vehicles. The global trend of reducing carbon emissions has also propelled the sales of EVs internationally, and in 2019 there was over 5 million EVs sold globally. There will be 10% market share for EVs in the total of all vehicles by 2030.

In 2013, Phihong Technology began its efforts on designing electric vehicle systems and charging solutions. Since then, Phihong has successfully developed a series of highly efficient EV charging solutions through globally renowned energy conversion technology. Today, Phihong is the leading charger supplier for Canada's electric buses. Additionally, Phihong has earned the acclamation of renowned car manufacturers and operators from China, Japan, the USA, and Europe.







EV Chargers



P.09

















16A Portable EV AC Charger P.08





































AC Charger

- Wall-Mounted
- **Free Standing**
- Portable

AC series

Portable EV AC Charger

Features

- Mode 2-chargers can use a circuit ranging from 8Amp to 16Amp with a local standard AC input plug installed for operation
- Provides over current, over voltage and short circuit protection
- Protected against strong jets of water from all directions
- Continuously monitors/supervises the ground connection between the AC supply and EV to ensure safe and reliable charging



Applications

Parking garage

		AC Series	
Model Nam	e	EA352	
Power Spec	ification		
Input Rating		Single phase:200~240VAC	
AC Input	AC Input Connection	NEMA 6-20 (L	1/L2/GND)
AC IIIput	Input Current	16A	1
	Frequency	50Hz/6	0Hz
AC Output	Output Current	8A-16	5A
Environmer	ntal		
Operating Temperature		-20°C~+50°C	
Humidity		Max. 95% RH	
Altitude(m)		≦ 2000m	
IP Level		IP66	
Cooling Me	thod	Natural cooling	
Mechanical			
Dimension(WxDxH)	100x80x200mm	
Weight		≦ 3.5Kg	
Cable Lengt	th	6m	
Protection			
RCD		RCD Type A	
Input Side		UVP, OVP, Surge protection, Ground fault	
Output Side		OCP, Control pilot fault, Residual current protection	
Regulation			
Charging In	terface	IEC 62196-2 Type 2	SAE J1772 Type 1

AW series

32A EV AC Charger















Features

- · Ideal choice for residential and commercial EV charging.
- · Optional wired/wireless connection for back office management
- · Optional RFID card reader for user identification and management
- Input: 200Vac~240Vac
- · Stylish, ergonomic and customizable design
- IP55 rated for indoor/outdoor applications
- Firmware updates through remote connection
- Charging interface: SAE J1772 (Type 1) or IEC 62196 (Type 2)
- OCPP 1.6 JSON

Applications

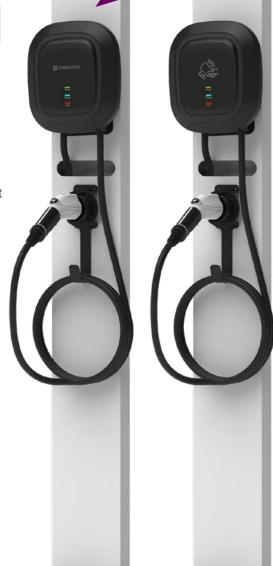
- · Highway gas/service station
- Parking garage
- · Commercial fleet operators
- EV infrastructure operators and service providers
- EV dealer workshops

Accessory

Please refer to page 37 for accessory information.



Stand



Model List

	Type 1	Type 2	Туре 3	Type 4
Function	BASIC	LAN	Wi-Fi	4G
RFID	Χ	•	•	•
LAN	Χ	•	•	•
Wi-Fi	Χ	Χ	•	Χ
4G	Χ	Χ	Χ	•
OCPP	Χ	•		

		A	W Series			
Model Name		AWSE770	AWLU770	AWSC770	AWSG770	
Picture			1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -			
Power Spe	cification					
	Input Rating		200~240Vac	/Single phase		
AC Input	AC Input Connection	L/N/PE	L1/L2/GND	L/L1, N/L2, PE	L/N/PE	
Ao mput	Input Current		3:	2A		
	Frequency		50Hz	/60Hz		
AC Output	Output Current		3	2A		
User Interfa	ice & Control					
User Authe	ntication	RFID (ISO/IEC 14443A/B, ISO/IEC 15693, FeliCa™, Mifare)				
Communica	ation					
External		LAN (optional) + 4G (optional) or Wi-Fi (optional)				
Internal		OCPP 1.6 JSON				
Environmen	ntal					
Operating Temperature			-30°C	~50°C		
Humidity		Max. 95% RH				
Altitude		≦ 2000m				
IP Level		IP55	NEMA TYPE 3R	IP55	IP55	
Cooling Me	thod	Natural Cooling				
Mechanical						
Dimension((WxDxH)	260x100x280mm				
Weight			≤ 4Kg (V	Vith Plug)		
Cable Leng	th		5	m		
Protection						
RCD/CCID		RCD Type B	CCID 20	RCD Type A	RCD Type A	
Input Side			UVP, OVP, Surge pro	tection, Ground fault		
Output Side	2	OC	P, Control pilot fault, R	esidual current protec	tion	
Internal		OTP, Relay we	lding detection, CCID s	elf-test, MCU function	fault detection	
Regulation						
Certificate		IEC 61851-1, IEC 61851-21-2	UL2594, UL2231-1/-2	CNS 15511-1, CNS 15511-2, CNS 15511-3, CNS 15511-22	GB/T 18487.1/.2, GB/T 20234.1/.2, GB/T 33594, GB/T 34657.1	
Safety		CE/CB	UL/cUL	CNS	CQC	
Wireless Ce	ertificate	RED	FCC/IC	NCC	-	
Charging In	terface	IEC 62196-2 Type 2 Plug	SAEJ1772 Type 1 Plug	SAEJ1772 Type 1 Plug	GB / T 20234.2	

AH series

32A Wall Mount EV AC Charger







Features

- · Ideal choice for residential and commercial EV charging
- Input: 200Vac~240Vac
- · Stylish, ergonomic and customizable design
- IP55 rated for indoor/outdoor applications
- · Firmware updates through remote connection
- · Optional wired/wireless connection for back office management
- · Optional RFID card reader for user identification and management
- Charging interface: SAE J1772 (Type 1)/IEC 62196-2 (Type 2)
- OCPP 1.6 JSON

Applications

- · Highway gas/service station
- Parking garage
- Commercial fleet operators
- EV infrastructure operators and service providers
- EV dealer workshops

Accessory

Please refer to page 37 for accessory information.



Stand









AP series

32A/63A Pedestal **EV AC Charger**



Features

- · Ideal choices for residential and commercial EV charging
- · Stylish, ergonomic and customizable design
- · IP54 rated for indoor/outdoor applications
- · Firmware updates through remote connection
- · Optional wired/wireless connection for back office management
- · Optional RFID card reader for user identification and management
- Charging interface: IEC 62196-2 (Type 2)
- OCPP 1.6JSON

Applications

- · Highway gas/service station
- · Parking garage
- Commercial fleet operators
- EV infrastructure operators and service providers
- EV dealer workshops





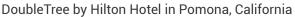


		AP Ser	ies	
N	Nodel Name	EA443E3E	EA443E2E	EA873E3E
Picture			The Processor Annual Processor Parks	
Power Spec	ification			
	Input Rating	Th	ree phase:3P+N+PE; 380~415	Vac
AC Input	Input Current	64A	64A	126A
	Frequency		50Hz/60Hz	
AC Output	Output Current	32Ax2	32Ax2	63Ax2
User Interfa	ce & Control			
Display			5 inch LCD	
User Authentication		RFID (ISO/IEC 14443A/B, ISO/IEC 15693, FeliCa™, Mifare)		
Energy Met	ering	Class 1.0 accuracy (MID Certified Meter)		
Communica	ation			
External		LAN(sta	andard)/4G(optional) or Wi-Fi(optional)
Internal		OCPP 1.6 JSON		
Environmen	ital			
Operating T	emperature		-30°C~50°C	
Humidity			Max. 95% RH	
Altitude		≤ 2000m		
IP Level		IP54		
Cooling Met	thod	Natural cooling		
Mechanical				
Dimension(WxDxH)		420 x 305 x 1350mm	
Weight		32A Plug ≦ 57Kg	32A Socket ≦ 51Kg	63A Plug ≦ 70Kg
Cable Lengt	th	5m	-	5m
Protection				
RCD			RCD Type B	
Input Side		UVP,	OVP, Surge protection, Ground	l fault
Output Side OCP & Control pilot fault, Residual		trol pilot fault, Residual curren	t protection	
Internal		OTP, Relay we	elding detection, MCU function	fault detection
Regulation				
Certificate			IEC 61851-1, IEC61851-21-2	
Safety			CB, CE	
Charging In	terface	IEC 62196-2 Type 2 Plug	IEC 62196-2 Type 2 Socket	IEC 62196-2 Type 2 Plug

Sales Performance

















DC Chargers

- Wall-Mounted
- Moveable
- Free Standing
- Power Rack
- DC Charging Modules

DW series

30kW Wall Mount DC Fast Charger





Features

- · Multi-standard: CCS, CHAdeMO and GB/T
- Network or standalone operation
- User authentication
- · Support smart charging and load balancing
- Efficiency > 94%
- PF > 0.99(APFC)
- 7 inches LCD screen with user friendly interface
- OCPP 1.6 JSON
- IK10(Not including screen and RFID module),
- Customization available

Applications

- · Highway gas/service station
- · Parking garage
- Commercial fleet operators
- EV infrastructure operators and service providers
- EV dealer workshops

Accessory

Please refer to page 37 for accessory information.



Stand







		DW Series	
	Model Name	CE, DW 30 Series	UL, DW 30 Series
	Picture		
Power Spec	ification		
	Input Rating	3Ф_380~415Vac (±15%)	3Ф_480Vac (+10%, -15%)
	AC Input Connection	3P+N+PE (Wye configuration), TN/TT/IT	3P+N+PE (Wye configuration), TN/TT
A O I I I I I I I I I	Max. Input Current	3Ф60A(Тур.±1%)	3Ф40A(Тур.±1%)
AC Input	Frequency	50Hz	/60Hz
	Power Factor	>0.99 @	full load
	Efficiency	≥ 9	4%
	Output Voltage Range	CHAdeMO:150~500Vdc / CCS:1	150~950Vdc / GBT:150~750Vdc
	Max. Output Current	CHAdeMO/CCS/GBT:60A@500Vdc CCS:31.5A@950Vdc / GBT:40A@750Vdc	
DC Output	Max. Output Power	30kW	
	Voltage Accuracy	±2%	
Current Accuracy		±	2%
User Interfa	ce & Control		
Display		7"	LCD
Push Buttor	าร	·	n buttons
User Auther	ntication	RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment	
Communica	ition		
External		Ethernet,	/4G/Wi-Fi
Internal		CAN bu	s/RS485
Environmen	tal		
Operating T	emperature	-30° C~50° C, power derating from 50° C and above	
Humidity			on-condensing
Altitude		_	00m
IP/IK Level			screen and RFID module)
Cooling Met		Fan c	ooling
Mechanical			
	nension(W x D x H)		690mm±1%
Weight			/Dual plugs: ≦ 88kg ±1%
Cable Lengt	h	4	m
Protection			
Input Protect			TP, UVP, RCD, SPD
Output Prot	ection	OCP, OVP, U	VP, OTP, IMD
Regulation		VEO 61051 1 VEO 61055	
Certificate		IEC 61851-1, IEC 61851-23, IEC 61851-21-2	UL 2202, UL 2231-1/-2
Safety (Not	including GB)	CB, CE	NRTL - cETLus
Charging Interface		CHAdeMO V1.2, DIN 70121, GE	3/T 27930, (ISO15118:2020/Q4)

DM series

30kW Moveable DC Fast Charger





Features

- Multi-standard: CCS, CHAdeMO and GB/T
- Network or standalone operation
- User authentication
- · Support smart charging and load balancing
- Efficiency > 94%
- PF > 0.99(APFC)
- 7 inches LCD screen with user friendly interface
- OCPP 1.6 JSON
- IK10(Not including screen and RFID module), IP55
- Customization available

Applications

- Parking garage
- · Commercial fleet operators
- EV dealer workshops

PHIHONG

Accessory

Please refer to page 37 for accessory information.



· Cable hook



EU wheel



US wheel

		DM Series	
	Model Name	CE, DM 30 Series	UL, DM 30 Series
	Picture	3. 200 A	
Power Spec	ification		
	Input Rating	3Ф_380~415Vac (±15%)	3Ф_480Vac (+10%, -15%)
	AC Input Connection	3P+N+PE (Wye configuration),TN/TT/IT	3P+N+PE (Wye configuration),TN/TT
	Max. Input Current	3Ф60A(Typ.±1%)	3Ф40A(Тур.±1%)
AC Input	Frequency	50Hz/(
	Power Factor	> 0.99 @ 3	
	Efficiency	≥ 94	
	-	CHAdeMO:15	
	Output Voltage Range	CCS:150~950Vdc /	
DC Output Max. Output Current CCS:31.5A@950Vdc /			
	Max. Output Power	30kW	
	Voltage Accuracy	±2%	
Current Accuracy		±2%	
User Interfa	ce & Control		
Display		7" LCD	
Push Buttor	าร	Operation buttons /Emergency stop button	
User Auther	ntication	RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment	
Communica	ation		
External		Ethernet/4	4G/Wi-Fi
Internal		CAN bus/RS485	
Environmen	ital		
Operating T	emperature	-30°C~50°C, power derati	ng from 50°C and above
Humidity		5%~95% RH, non-condensing	
Altitude		≤ 2000m	
IP/IK Level		IP55/IK10 (not including s	creen and RFID module)
Cooling Met	thod	Fan cooling	
Mechanical			
Cabinet Dim	nension(W x D x H)	589 x 490 x 7	'40 mm±1%
Weight		≦ 80kg	±1%
Cable Length		3n	n
Protection			
Input Protec	ction	OVP, OCP, OPP, OT	P, UVP, RCD, SPD
· Output Prot		OCP, OVP, UV	
Regulation			
Certificate		IEC 61851-1, IEC 61851-23, IEC 61851-21-2	UL 2202, UL 2231-1/-2
Safety (Not	including GB)	CB, CE	NRTL - cETLus
	terface	CHAdeMO V1.2, DIN 70121, GB/	T 27020 (ISO15119:2020/O4)

60kW Free Standing

DC Fast Charger





Features

- · Simultaneously 2 DC and 1 AC charging (AC will be available in 2020/Q4)
- · Multi-standard: CCS, CHAdeMO and GB/T
- Network or standalone operation
- User authentication
- · Optional cable management accessories
- Support smart charging and load balancing
- Efficiency > 94%; PF > 0.99(APFC)
- 7 inches LCD screen with user friendly interface
- OCPP 1.6 JSON
- IK10(Not including screen and RFID module), IP55
- Customization available

Applications

- · Highway gas/service station
- · Parking garage
- Commercial fleet operators
- EV infrastructure operators and service providers
- EV dealer workshops

Accessory

Please refer to page 37 for accessory information.



· Cable Management







Simultaneously 2 DC and 1 AC charging (AC will be available in 2020/Q4)

		DS Series		
N	Model Name	CE, DS 60 Series	UL, DS 60 Series	
	Picture			
Power Spec	ification			
	Input Rating	3Ф_380~415Vac (±15%)	3Ф_480Vac (+10%, -15%)	
	AC Input Connection	3P+N+PE (Wye configuration), TN/TT/IT	3P+N+PE (Wye configuration), TN/TT	
AC Input	Max. Input Current	DC System:3Φ110A(Typ.±1%) AC module(43kW):3Φ63A(±1%) or AC module(22kW):3Φ32A(±1%)	DC System:3Φ100A(Typ.±1%) AC module(19.2kW):1Φ80A(±1%)	
	Frequency	50Hz/6	60Hz	
	Power Factor	>0.99 @ fu	ull load	
	Efficiency	≥945	%	
DC Output	Output Voltage Range	CCS2:150~950Vdc CHAdeMO:150~500Vdc GBT:150~750Vdc AC:3Ф_380~415Vac (±15%)	CCS1:150~950Vdc CHAdeMO:150~500Vdc AC:1Ф_240Vac (+10%, -15%)	
	Max. Output Current	CCS2:63A@950Vdc , GBT:80A@750Vdc CHAdeMO/CCS2/GBT:120A@500Vdc AC(43kW):3Ф63A@230Vac or AC(22kW): 3Ф32A@230Vac	CCS1:63A@950Vdc CHAdeMO/CCS1:120A@500Vdc AC(19.2kW):1Ф80A@240Vac	
	Max. Output Power	DC System:60kW + AC module:3-phase 43kW or 22kW	DC System:60kW + AC module:Single Phase 19.2kW	
	Voltage Accuracy	±2%	6	
	Current Accuracy	±2%		
User Interfa	ce & Control			
Display		7" LCD		
Push Buttor	าร	Operation buttons/ Emergency stop button		
User Auther	ntication	RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment		
Communica	ntion	00.1, 22 20.000.0, 1.	,, meane payment	
External		Ethernet/4	G/Wi-Fi	
Internal		CAN bus/RS485		
Environmen	tal			
Operating T	emperature	-30°C~50°C, power deratir	ng from 50°C and above	
Humidity		5%~95% RH, nor	n-condensing	
Altitude		≤ 2000m		
IP/IK Level		IP55/IK10 (not including so	creen and RFID module)	
Cooling Met		Fan cooling		
Mechanical				
Cabinet Dimension(W x D x H)		700 x 331 x 1800 mm±1%		
Weight		≦ 235kg		
Cable Lengt	h	4m	4m	
Protection				
Input Protect		OVP, OCP, OPP, OTF		
Output Prot	ection	OCP, OVP, UVF	Z, OTP, IMD	
Regulation		JEO 610E1 1 JEO 610E1 00 JEO 610E1	LII 0000 LII 0007 T. C	
Certificate		IEC 61851-1, IEC 61851-23, IEC 61851-21-2		
Safety		CB, CE	NRTL - cETLus	
Charging In	terface	CHAdeMO V1.2, DIN 70121, GB/T 27930, (ISO15118:2020/Q4)		

90kW Free Standing

DC Fast Charger





Features

- Simultaneously 2 DC and 1 AC charging (AC will be available in 2020/Q4)
- Multi-standard: CCS, CHAdeMO and GB/T
- Network or standalone operation
- User authentication
- · Optional cable management accessories
- · Support smart charging and load balancing
- Efficiency > 94%; PF > 0.99(APFC)
- 7 inches LCD screen with user friendly interface
- OCPP 1.6 JSON
- IK10(Not including screen and RFID module), IP55
- Customization available

Applications

- · Highway gas/service station
- · Parking garage
- Commercial fleet operators
- EV infrastructure operators and service providers
- · EV dealer workshops

Accessory

Please refer to page 37 for accessory information.



· Cable Management







Simultaneously 2 DC and 1 AC charging (AC will be available in 2020/Q4)

		DS Series		
	A. J.IN.		III DO 00 0	
ľ	Model Name Picture	CE, DS 90 Series	UL, DS 90 Series	
Power Spec	cification			
	Input Rating	3Φ_380~415Vac (±15%)	3Ф_480Vac (+10%, -15%)	
	AC Input Connection	3P+N+PE (Wye configuration), TN/TT/IT	3P+N+PE (Wye configuration), TN/TT	
AC Input	Max. Input Current	DC System:3Φ170A(Typ.±1%) AC module(43kW):3Φ63A(±1%) or AC module(22kW):3Φ32A(±1%)	DC System:3Φ135A(Typ.±1%) AC module(19.2kW):1Φ80A(±1%)	
	Frequency	50Hz	/60Hz	
	Power Factor	>0.99 @	full load	
	Efficiency	≥9	04%	
	Output Voltage Range	CCS2:150~950Vdc GBT: 150~750Vdc CHAdeMO:150~500Vdc AC:3Φ_380~415Vac (±15%)	CCS1:150~950Vdc CHAdeMO:150~500Vdc AC:1Φ_240Vac (+10%, -15%)	
DC Output	Max. Output Current	CCS2:95A@950Vdc, GBT:120A@750Vdc CHAdeMO:120A@500Vdc AC(43kW):3Ф63A@230Vac or AC(22kW):3Ф32A@230Vac	CCS1:95A@950Vdc CHAdeMO:120A@500Vdc AC(19.2kW):1Ф80A@240Vac	
	Max. Output Power	DC System:90kW + AC module:3 Phase 43kW or 22kW	DC System:90kW + AC module:Single Phase 19.2kW	
	Voltage Accuracy	±2%		
	Current Accuracy	±2%		
User Interfa	ace & Control			
Display		7" TF	T-LCD	
Push Butto	ns	Operation button/Er	nergency stop button	
User Auther	ntication	RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment		
Communic	ation			
External		Ethernet/4G/Wi-Fi		
Internal		CAN bu	s/RS485	
Environmen				
	emperature	-30°C~50°C, power derating from 50°C and above		
Humidity		· ·	on-condensing	
Altitude		≦ 2000m		
IP/IK Level		,	screen and RFID module)	
Cooling Me		Fan c	cooling	
Mechanica		200 550	1000	
Cabinet Dimension(W x D x H)			1900mm ±1%	
Weight			kg ±1%	
Cable Lengt	uı	4m	4m	
Protection	otion	0//0 000 000 0	TD LIVE BOD COD	
Input Prote Output Prot		OVP, OCP, OPP, OTP, UVP, RCD, SPD OCP, OVP, UVP, OTP, IMD		
Regulation		00,00,0	VI, OIT, IIVID	
Certificate		IEC 61851-1, IEC 61851-23, IEC 61851-21	-2 UL 2202, UL 2231-1/-2	
Safety		CB, CE	-2 OL 2202, OL 2231-17-2 NRTL - cETLus	
-	terface		/T 20234.3, (ISO15118:2020/Q4)	
Charging Interface		GITAGENIO VI.Z, DIN TUTZI, GD,	7 20204.0, (10010110.2020/Q4)	

120kW Free Standing

DC Fast Charger





Features

- Simultaneously 2 DC and 1 AC charging (AC will be available in 2020/Q4)
- Multi-standard: CCS, CHAdeMO and GB/T
- Network or standalone operation
- User authentication
- · Optional cable management accessories
- · Support smart charging and load balancing
- Efficiency > 94%; PF > 0.99(APFC)
- 7 inches LCD screen with user friendly interface
- OCPP 1.6 JSON
- IK10(Not including screen and RFID module), IP55
- Customization available

Applications

- · Highway gas/service station
- · Parking garage
- Commercial fleet operators
- EV infrastructure operators and service providers
- · EV dealer workshops

Accessory

Please refer to page 37 for accessory information.



· Cable Management







Simultaneously 2 DC and 1 AC charging (AC will be available in 2020/Q4)

		DS Series		
N	Model Name	CE, DS 120 Series	UL, DS 120 Series	
	Picture			
Power Spec	cification			
	Input Rating	3Φ_380~415Vac (±15%)	3Ф_480Vac (+10%, -15%)	
	AC Input Connection	3P+N+PE (Wye configuration), TN/TT/IT	3P+N+PE (Wye configuration), TN/TT	
AC Input	Max. Input Current	DC System:3Φ220A(Typ.±1%) AC module(43kW):3Φ63A(±1%) or AC module(22kW):3Φ32A(±1%)	DC System:3Φ180A(Typ.±1%) AC module(19.2kW):1Φ80A(±1%)	
	Frequency	50Hz/	60Hz	
	Power Factor	>0.99 @	full load	
	Efficiency	≥94		
	,	CCS2:150~950Vdc		
	Output Voltage Range	GBT: 150~750Vdc CHAdeMO:150~500Vdc AC:3Φ_380~415Vac (±15%)	CCS1:150~950Vdc CHAdeMO:150~500Vdc AC:1Ф_240Vac (+10%, -15%)	
DC Output	Max. Output Current	CCS2:126A@950Vdc GBT:160A@750Vdc CHAdeMO:120A@500Vdc AC(43kW):3Ф63A@230Vac or AC(22kW):3Ф32A@230Vac	CCS1:126A@950Vdc CHAdeMO:120A@500Vdc AC(19.2kW):1Ф80A@240Vac	
	Max. Output Power	DC System:120kW + AC module:3 Phase 43kW or 22kW	DC System:120kW + AC module:Single Phase 19.2kW	
Voltage Accuracy		±2	%	
	Current Accuracy	±2%		
User Interfa	ace & Control			
Display		7" TFT-LCD		
Push Buttor	าร	Operation button/Em	ergency stop button	
User Auther		RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment		
Communica	ation			
External		Ethernet/4G/Wi-Fi		
nternal		CAN bus/RS485		
Environmer			5010	
	emperature	-30°C~50°C, power derati	•	
Humidity		5%~95% RH, no	<u> </u>	
Altitude		≤ 2000m		
P/IK Level	th a d	IP55/IK10 (not including s	•	
Cooling Met Mechanical		Fan co	ouiiig	
		000 650 - 14	000	
Cabinet Dimension(W x D x H)		800 x 650 x 19		
Weight Cohla Langth		≦ 420k(
Cable Lengt	.11	4m	4m	
Protection	ation	0.40.000.000.00		
Input Protec		OVP, OCP, OPP, OT		
Output Prot Regulation	ection	OCP, OVP, UV	F, OTF, IMD	
		IEO 610E1 1 IEO 610E1 20 IEO 610E1 21) III 2202 III 2221 17 2	
Certificate		IEC 61851-1, IEC 61851-23, IEC 61851-21-2 CB, CE	2 UL 2202, UL 2231-1/-2 NRTL - cETLus	
Safety Charging Interface				

150kW Free Standing

DC Fast Charger





Features

- · Simultaneously 2 DC and 1 AC charging (AC will be available in 2020/Q4)
- · Multi-standard: CCS, CHAdeMO and GB/T
- Network or standalone operation
- User authentication
- Optional cable management accessories
- · Support smart charging and load balancing
- Efficiency > 94%; PF > 0.99(APFC)
- 7 inches LCD screen with user friendly interface
- OCPP 1.6 JSON
- IK10(Not including screen and RFID module), IP55
- Customization available

Applications

- · Highway gas/service station
- Parking garage
- · Commercial fleet operators
- EV infrastructure operators and service providers
- · EV dealer workshops

Accessory

Please refer to page 37 for accessory information.



· Cable Management







Simultaneously 2 DC and 1 AC charging (AC will be available in 2020/Q4)

		DS Series		
N	Model Name	CE, DS 150 Series	UL, DS 150 Series	
	Picture			
Power Spec	cification			
	Input Rating	3Φ_380~415Vac (±15%)	3Ф_480Vac (+10%, -15%)	
	AC Input Connection	3P+N+PE (Wye configuration), TN/TT/IT	3P+N+PE (Wye configuration), TN/TT	
AC Input	Max. Input Current	DC System:3Ф270A(Typ.±1%) AC module(43kW):3Ф63A(±1%) or AC module(22kW):3Ф32A(±1%)	DC System:3Φ226A(Typ.±1%) AC module(19.2kW):1Φ80A(±1%)	
	Frequency	50Hz	/60Hz	
	Power Factor	>0.99 @	full load	
	Efficiency		14%	
	Output Voltage Range	CCS2:150~950Vdc GBT: 150~750Vdc CHAdeMO:150~500Vdc AC:3Φ_380~415Vac (±15%)	CCS1:150~950Vdc CHAdeMO:150~500Vdc AC:1Φ_240Vac (+10%, -15%)	
DC Output	Max. Output Current	CCS2:158A@950Vdc GBT:200A@750Vdc CHAdeMO:120A@500Vdc AC(43kW):3Ф63A@230Vac or AC(22kW):3Ф32A@230Vac	CCS1:158A@950Vdc CHAdeMO:120A@500Vdc AC(19.2kW):1Ф80A@240Vac	
	Max. Output Power	DC System:150kW + AC module:3-phase 43kW or 22kW	DC System:150kW + AC module:Single Phase 19.2kW	
	Voltage Accuracy	±	2%	
	Current Accuracy	±	2%	
User Interfa	ace & Control			
Display		7" TFT-LCD		
Push Buttor	ns	-	nergency stop button	
User Auther		RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment		
Communica	ation			
External		Ethernet/4G/Wi-Fi		
nternal		CAN bus/RS485		
Environmer				
	emperature	·	ting from 50°C and above	
Humidity			on-condensing	
Altitude		≤ 2000m		
P/IK Level	th o d	· · · · · · · · · · · · · · · · · · ·	screen and RFID module)	
Cooling Met Mechanical		Fan c	ooling	
		000 050	1000mm +1%	
Cabinet Dimension (W x D x H)			1900mm ±1%	
Weight Cable Length		≦ 4601 4m	kg ±1% 4m	
Protection		4111	4111	
nput Protec	ction		TP, UVP, RCD, SPD	
Output Protect			VP, OTP, IMD	
Regulation		001, 047, 0	· · · · · · · · · · · · · · · · · · ·	
Certificate		IEC 61851-1, IEC 61851-23, IEC 61851-21-	-2 UL 2202, UL 2231-1/-2	
Safety		CB, CE	NRTL - cETLus	
Charging Interface			/T 20234.3, (ISO15118:2020/Q4)	

180kW Free Standing

DC Fast Charger





Features

- · Simultaneously 2 DC and 1 AC charging (AC will be available in 2020/Q4)
- · Multi-standard: CCS, CHAdeMO and GB/T
- Network or standalone operation
- User authentication
- · Optional cable management accessories
- · Support smart charging and load balancing
- Efficiency > 94%; PF > 0.99(APFC)
- 7 inches LCD screen with user friendly interface
- OCPP 1.6 JSON
- IK10(Not including screen and RFID module), IP55
- Customization available

Applications

- · Highway gas/service station
- · Parking garage
- Commercial fleet operators
- EV infrastructure operators and service providers
- EV dealer workshops

Accessory

Please refer to page 37 for accessory information.



· Cable Management







Simultaneously 2 DC and 1 AC charging (AC will be available in 2020/Q4)

		DS Series		
N	Model Name	CE, DS 180 Series	UL, DS 180 Series	
Picture				
Power Spec	cification			
	Input Rating	3Ф_380~415Vac (±15%)	3Ф_480Vac (+10%, -15%)	
	AC Input Connection	3P+N+PE (Wye configuration), TN/TT/IT	3P+N+PE (Wye configuration), TN/TT	
AC Input	Max. Input Current	DC System:3Φ330A(Typ.±1%) AC module(43kW):3Φ63A(±1%) or AC module(22kW):3Φ32A(±1%)	DC System:3Φ270A(Typ.±1%) AC module(19.2kW):1Φ80A(±1%)	
	Frequency	50Hz/60	OHz	
	Power Factor	>0.99 @ fu	II load	
	Efficiency	≥94%	,	
	Output Voltage Range	CCS2:150~950Vdc GBT: 150~750Vdc CHAdeMO:150~500Vdc AC:3Φ_380~415Vac (±15%)	CCS1:150~950Vdc CHAdeMO:150~500Vdc AC:1Ф_240Vac (+10%, -15%)	
DC Output	Max. Output Current	CCS2:190A@950Vdc GBT:240A@750Vdc CHAdeMO:120A@500Vdc AC(43kW):3Ф63A@230Vac or AC(22kW):3Ф32A@230Vac	CCS1:190A@950Vdc CHAdeMO:120A@500Vdc AC(19.2kW):1Ф80A@240Vac	
	Max. Output Power	DC System:180kW + AC module:3-phase 43kW or 22kW	DC System:180kW + AC module:Single Phase 19.2kW	
	Voltage Accuracy	±2%		
	Current Accuracy	±2%		
User Interfa	ace & Control			
Display		7" TFT-L	_CD	
Push Buttor User Auther		Operation button/ Emergency stop button RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment		
Communica	ation	, , , , , , , , , , , , , , , , , , , ,		
External		Ethernet/40	G/Wi-Fi	
Internal		CAN bus/RS485		
Environmer	ntal			
Operating T	emperature	-30°C~50°C, power derating	g from 50°C and above	
Humidity		5%~95% RH, non-	-condensing	
Altitude		≦ 2000)m	
IP/IK Level		IP55/IK10 (not including sc	reen and RFID module)	
Cooling Met	thod	Fan cool	ling	
Mechanica				
Cabinet Din	nension(W x D x H)	800 x 650 x 190	00 mm ±1%	
Weight		≦ 500kg :	±1%	
Cable Lengt	th	4m	4m	
Protection				
Input Protec	ction	OVP, OCP, OPP, OTP,	UVP, RCD, SPD	
Output Prot	ection	OCP, OVP, UVP,	OTP, IMD	
Regulation				
Certificate		IEC 61851-1, IEC 61851-23, IEC 61851-21-2	UL 2202, UL 2231-1/-2	
Safety		CB, CE	NRTL - cETLus	
Charging In	terface	CHAdeMO V1.2, DIN 70121, GB/T 2	20234.3, (ISO15118:2020/Q4)	

DO series

360kW - Fan Cooling System **DC Charger**

Features

- Simultaneously 4 DC charging, up to 360KW per output with liquid-cooled connector
- · Power cabinet supports Pantograph Charging
- Multi-standard: CCS, CHAdeMO and GB/T
- Network or standalone operation
- User authentication
- · Support smart charging and load balancing
- · Customization available

Applications

- EV bus station
- · Highway gas/service station
- Parking garage
- EV dealer workshops
- Commercial fleet operators
- EV infrastructure operators/service providers







		DO Series	
ı	Model Name	CE, DO 360 Series	UL, DO 360 Series
	Picture		
Power Spec	ification		
	Input Rating	3Ф_380~415Vac (±15%)	3Ф_480Vac (+10%, -15%)
	AC Input Connection	3P+N+PE (Wye configuration), TN/TT/IT	3P+N+PE (Wye configuration), TN/TT
A O Immust	Max. Input Current	396k\	/A
AC Input	Frequency	50Hz/6	0Hz
	Power Factor	>0.99 @ (APFC)
	Efficiency	>94% at nominal	output power
	Output Voltage Range	CCS:150~950Vdc / GBT: 150~750	OVdc / CHAdeMO: 150~500Vdc
DC Output	Max. Output Current	Single Liquid-cooled plug:500A@720V, 380A@950V Single Regular plug: 250A@720V, 200A@900V CHAdeMO: 125A@500V	
	Max. Output Power	360kW	
	Voltage Accuracy	±2%	
Current Accuracy		±2%	
User Interfa	ce & Control		
Display		7" TF T-	LCD
Push Buttor	ns	Operation buttons/ Eme	ergency stop button
User Auther	ntication	RFID ISO14443A (M	1/MIFARE Card)
Display Info		RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment	
Communica	tion		
External		Ethernet/4	•
Internal - ·		CAN bus/	RS485
Environmen		2010 7010	6 - 50 - 1 - 1
Operating To	emperature	-30°C~50°C, power derating from 50 and above 5%~95% RH, non-condensing	
Humidity			
Altitude		≤ 2000	
IP/IK Level	had	IP55/IK10 (not including so	
Cooling Met Mechanical		Fan coo	omig
		1400 v 200 v 1000mm (main ashin st)	700 v 550 v 1900mm (outh cohingt)
Cabinet Dir Weight	nension(W x D x H)	1400 x 800 x 1900mm (main cabinet), ≤ 1000	
weigni Cable Lengt	h	≦ 1000 4m	
Protection		4111	
Input Protec	ation	OVP, OCP, OPP, OTP	PLIVE BOD SPD
Output Protec		OCP, OVP, UVF	
Regulation	CONOTI	00r, 0vP, 0vF	, 511, 11110
Compliance		IEC 61851-1, IEC 61851-23, IEC 61851-21-2	UL 2202, UL 2231-1/-2
Safety		TBD	
Charging Interface			

DR series

180kW Power Rack DC Fast Charger

Features

- · Simultaneously 2 DC Charging
- · Multi-standard: CCS, CHAdeMO and GB/T
- Network or standalone operation
- · Support smart charging and load balancing
- Efficiency > 94%; PF > 0.99(APFC)
- OCPP 1.6 JSON
- Customization available

Applications

- Highway gas/service station
- Parking garage
- · Commercial fleet operators
- EV infrastructure operators and service providers
- EV dealer workshops





· Acrylic board for electrical shock proof

		DR Series	
Model Name		CE, DR 180 Power Rack	UL, DR 180 Power Rack
	Picture		
Power Spec	cification		
	Input Rating	3Ф_380~415Vac (±15%)	3Ф_480Vac (+10%, -15%)
	AC Input Connection	3P+N+PE (Wye configuration), TN/TT/IT	3P+N+PE (Wye configuration), TN/TT
401	Max. Input Current	DC System:3Φ330A(Typ.±1%)	DC System:3Φ270A(Typ.±1%)
AC Input	Frequency	50Hz/60Hz	
	Power Factor	>0.99 @ f	full load
	Efficiency	≥94	%
DC Output	Output Voltage Range	CCS2:150~950Vdc GBT: 150~750Vdc CHAdeMO:150~500Vdc	
	Max. Output Current	CCS2:190A@950Vdc GBT:240A@750Vdc CHAdeMO:120A@500Vdc	
	Max. Output Power	180kW	
	Voltage Accuracy	±2%	
	Current Accuracy	±2%	
Communica	ation		
External		Ethernet/4	4G/Wi-Fi
Internal		CAN bus/RS485	
Environmer	ntal		
Operating T	Temperature	-30°C~50°C, power derating from 50°C and above	
Humidity		5%~95% RH, non-condensing	
Altitude		≦ 2000m	
Cooling Method		Fan cooling	
Mechanical			
Cabinet Dimension(W x D x H)		960 x 780 x 1865 mm ±1%	
Weight		≦ 430kg ±3%	
Protection			
Input Protection		OVP, OCP, OPP, OTP, UVP, RCD, SPD	
Output Protection		OCP, OVP, UVP, OTP, IMD	
Regulation			
Certificate of Compliance		IEC 61851-1, IEC 61851-23, IEC 61851-21-2	2 UL 2202, UL 2231-1/-2
Safety		TBD	TBD
Charging Interface		CHAdeMO V1.2, DIN 70121, GB/T 20234.3, (ISO15118:2020/Q4)	

30kW EV DC Charging Module



Features

- DC charging solution for electric vehicles
- Models with 150V~1000V charging voltage are available
- Digital controlled power
- Active PFC to achieve 0.99 power factor
- · Comply with CCS and CHAdeMO, GB/T standards
- · Soft start and pre-charging function
- Power input side: over/under voltage protection, surge protection
- DC output side: over/under voltage protection, over-current protection and short-circuit protection
- · Modular and compact design for easy maintenance

Applications

Optional devices

· Ready for CCS, CHAdeMO, GB/T system integration.



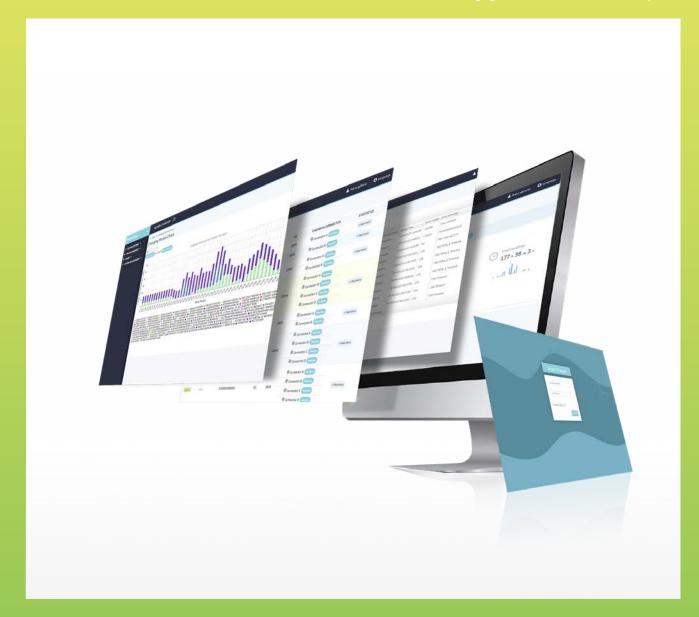
30kW DC Charging Module			
Model Name		G-1K0100	
Picture			
Power Spec	ification		
	Input Rating	260~530Vac	
	AC Input Connection	3L + PE	
	Max. Input Current	60A	
AC Input	Frequency	45~65Hz	
	Power Factor	> 0.99	
	Efficiency	≥ 95% @1000Vdc/50%~100% load current, max. point ≥ 95.5%	
	Standby Power	< 10W	
	Output Voltage Range	150~1000Vdc	
DC Output	Max. Output Current	0~100A	
	Max. Output Power	30kW	
Communica	ation		
Internal		CAN bus, Max. 48 Power modules in parallel	
Environmen	ıtal		
Operating T	emperature	-40°C ~ +75°C, derating from 55°C	
Humidity		≤95% RH, non-condensing	
Altitude		≦ 2000m	
IP Level		IP20	
Cooling Met	thod	Forced air	
Mechanical			
Dimension(W x D x H)	385 x 395 x 110 mm	
Weight		≤ 21Kg	
Protection			
Input Protection		OVP, OCP, OPP, OTP, UVP, Surge protection	
Output Protection		SCP, OVP, OCP, OTP, UVP	
Electrical Insulation		Insulated DC output and AC input	
MTBF		MTBF > 300Khrs	
Regulation			
Certificate		UL2202, IEC61851-1, IEC61851-23, IEC61851-21-2 Class B	
Safety		CE, NRTL - cTUVus (Complies with UL)	

Accessories

Accessories	Stand (Lite) (P/N KITPSDWPH01-RW)	Cable Hook (P/N KITHSDMPH01-RW)	Cable Management (P/N KITCSDSPH01-RW)
Photos			
Dimensions	930 x 805 x 1665mm	295 x 210 x 90mm	1122 x 212 x 122mm
Compatibility	DW30 Series	DM30 Series	DS180 Series / DS150 Series DS120 Series / DS60 Series

Accessories	Stand for Multi-Charger (AH) (P/N KITPMAHPH01-RW)	Stand (AH) (P/N KIT702C1TF8P1-RW)	Stand (AW) (P/N KITPSAWPH01-RW)
Photos		Schwarms Schwarms	
Dimensions	308 x 271 x 1571mm	330 x 504 x 1425mm	220 x 150 x 1500mm
Compatibility	AH/AW Series	AH Series	AW/AH Series

Accessories	US/SAE Cable Hook (P/N KITHUAWPH01-RW)	IEC/EURO Cable Hook (P/N KITHEAWPH01-RW)
Photos		
Dimensions	72 x 55 x 172mm	98 x 62.5 x 274mm
Compatibility	SAE J1772	IEC 62196-2



EV Charging Management Solution

- **Front End System**
- Back End System

EV Charging Management Solution

Through mobile app, users can search for charger locations, make charging reservations and monitor charging status. The Human Interface (HMI) provides interactive charging operations and support various payment methods.

The cloud based backend system can monitor individual overall EV charger status. It also allows EV charger updates remotely which facilitate the long-term maintenance and management of the charger. The back end system also supports data statistics and reports for administrators to do analysis.







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NOTE

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