DS series

120kW Standalone DC Fast Charger

- Optional non-Liquid-cooled 500A charging connector*
- Simultaneous DC charging
- Multi-standard: CCS and CHAdeMO
- Network or standalone operation
- User authentication
- Optional cable management accessories
- Supports smart charging and load balancing
- Efficiency > 94%;PF > 0.99(APFC)
- 7-inch LCD screen with user friendly interface
- OCPP 1.6 JSON
- IK10/NEMA 3R(Not including screen and RFID module)
- Customization available

Optional Cable Management

* 300A to 500A duty cycle is following charging connector's instruction

Applications

- Parking garage
- Commercial fleet operators
- EV infrastructure operators and service providers
- EV dealer workshops
- Gas/Service stations

Model Name		UL, DS 120 Series
Safety		NRTL – cETLus (USA/Canada)
Product Photo		
Power Specification		
AC Input	Input Rating	3Φ_480Vac (+10%, -15%)
	AC Input Connection	3P+N+PE (Wye configuration), TN/TT
	Max. Input Current	DC System:3Φ170A
	Frequency	50Hz/60Hz
	Power Factor	>0.99
	Efficiency	>94%,at optimize V/I point
DC Output	Output Voltage Range	• CCS1:150~950Vdc • CHAdeMO:150~500Vdc
	Max. Output Current	• CHAdeMO:120A@500V • CCS1:200A@600V, optional 300A
	Max. Output Power	DC System:120kW
	Voltage Accuracy	±2%
	Current Accuracy	±2%
User Interface & Control		
Display		7" TFT-LCD
Push Buttons		Operation button/Emergency stop button
User Authentication		RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment
Communication		
External		Ethernet,Wi-Fi,and 4G
Internal		CAN bus/RS485
Environmental		
Operating Temperature		-30˚C~50˚C, will derating from 50˚C and above
Humidity		5%~95% RH, non-condensing
Altitude		≦ 2000m
IP/IK Level		NEMA 3R IK10 (not including screen and RFID module)
Cooling Method		Fan cooling
Mechanical		
Cabinet Dimension(W x D x H)		800 x 650 x 1900mm ±1%
Weight		≦ 420kg ±1%
Cable Length		4m
Protection		
Input Protection		OVP, OCP, OPP, OTP, UVP, SPD
Output Protection		OCP,SCP,OVP, LVP, OTP, IMD
Regulation		
Certificate		UL 2202, UL2231
Charging Interface		CHAdeMO V1.2, DIN 70121, ISO15118, GB/T 27930

Model Name		UL, DS 150 Series	UL, DS 180 Series
Safety		NRTL – cETLus (USA/Canada)	
Product Photo			
Power Specification			
AC Input	Input Rating	3Φ_480Vac (+10%, -15%)	
	AC Input Connection	3P+N+PE (Wye configuration), TN/TT	
	Max. Input Current	DC System:3Φ215A	DC System:3Φ260A
	Frequency	50Hz/60Hz	
	Power Factor	>0.99	
	Efficiency	>94%,at optimize V/I point	
DC Output	Output Voltage Range	• CCS1:150~950Vdc • CHAdeMO:150~500Vdc	
	Max. Output Current	• CHAdeMO:120A@500V • CCS1:200A@750V, optional 300A	• CHAdeMO:120A@500V • CCS1:200A@900V, optional 300A
	Max. Output Power	DC System:150kW	DC System:180kW
	Voltage Accuracy	±2%	
	Current Accuracy	±2%	
User Interface & Control			
Display		7'' TFT-LCD	
Push Buttons		Operation button/Emergency stop button	
User Authentication		RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment	
Communication			
External		Ethernet,Wi-Fi,and 4G	
Internal		CAN bus/RS485	
Environmental			
Operating Temperature		-30˚C~50˚C, will derating from 50˚C and above	
Humidity		5%~95% RH, non-condensing	
Altitude		≦ 2000m	
IP/IK Level		• NEMA 3R • IK10 (not including screen and RFID module)	
Cooling Method		Fan cooling	
Mechanical			
Cabinet Dimension(W x D x H)		800 x 650 x 1900mm ±1%	
Weight		≦ 460kg ±1%	≦ 500kg ±1%
Cable Length		4m	
Protection			
Input Protection		OVP, OCP, OPP, OTP, UVP, SPD	
Output Protection		OCP, SCP, OVP, LVP, OTP, IMD	
Regulation			
Certificate		UL 2202, UL2231	
Charging Interface		CHAdeMO V1.2, DIN 70121, ISO15118, GB/T 27930	

3.4 Recommended Tools for Installation and Inspection

3.4.1 Recommended Tools for Installation

Type	Description
Philips Screwdriver	No. 2 and 3
Shifting Wrench	
Socket Screwdriver	No. 8 and 10 and 17 and 19
Electrical Tape	Black / 15mm Width
AC Input Cable	95mm^2 at least Cable x 5 (L1, L2, L3, N, PE)
Ring Terminal	1. Ring Terminal for L1, L2, L3, N,PE (Inner diameter : 8.2mm, Outer diameter : 22mm)
Crimping Pliers for Ring Terminal	Hexagonal
Wire Stripper	
Wire Cutters	
Crane / Folklift	> 500kgW

3.4.2 Recommended Tools for Inspection & Commissioning

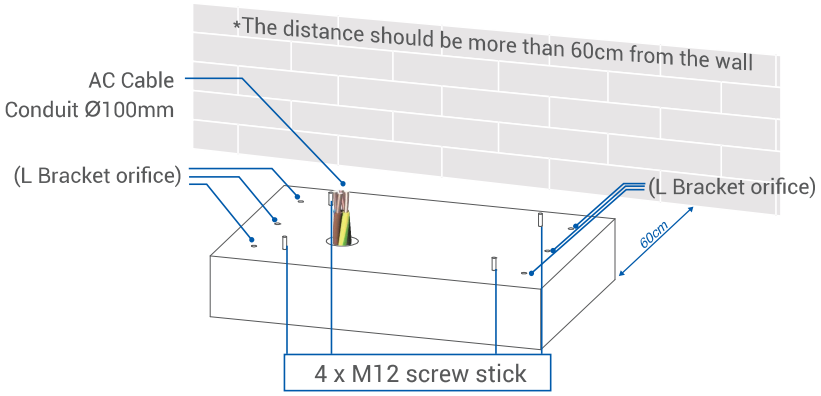
Type	Description
EV or EV Simulator	Meet CHAdeMO/CCS Standard
Multiple Meter	1000V
Current Probe	400Amp
RFID Authorized Card	
RFID No Valid Card	
Door Key	
Needle-Nose Plier	
Laptop or PC & CAT6 cable	For Charger Configuration

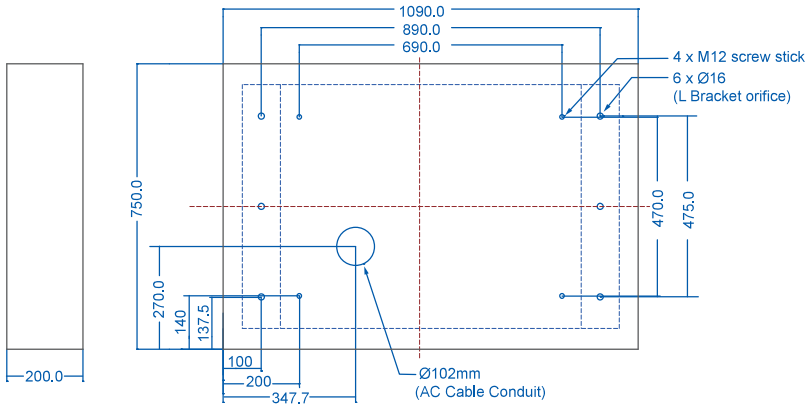
3.5 Installation Procedure

3.5.1 Installation Procedure

STEP 1.

Build 1090mm x750mm x 200mm concrete base on the level to stand charger in advance ; implant Φ100mm conduit for input AC and Ethernet cables. and implant 4 pcs of M12 screw stick out the concrete base for 40mm to fix the charger. The positioning of these 4 pcs of M12 screws should be within ± 2mm in short axis , ± 8mm in long axis according to screw holes of charger.
To fit this positioning requirement , a steel plate fixture be suggested. Please create the fixture by the following drawing or order this fixture from your vendor .The other way to fix the charger on concrete base is install 2 of L Brackets accessories outside of charger , and drill the screw holes(Φ16mm) on the cement base as drawing below .





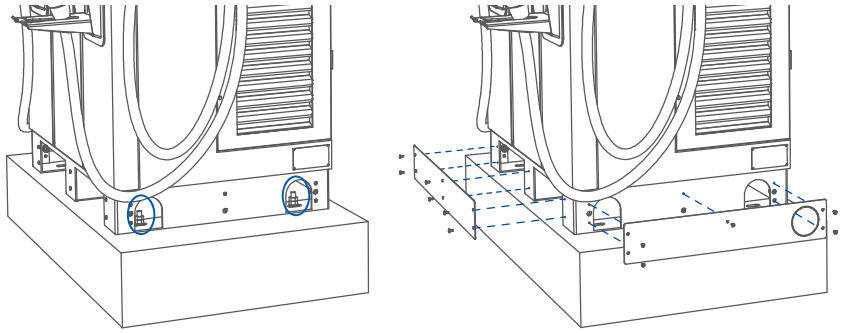
STEP 2.

Extend 3 phase 5 wires AC input cable from conduit of concrete base, AC cable expose at least 500mm and these 5 wires should be with ring terminals. The conductor cross sectional area of input power wires should be not less than 95mm². If internet connection is via Ethernet ,a 1500mm Ethernet cable is necessary to install via the conduit to the charger.

3.5.2 Two Methods of Fixing DS120 Charger

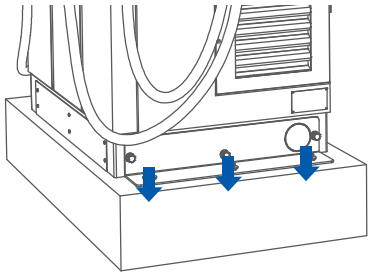
METHOD 1.

Lift the charger on concrete base, pull the input cable through bottom hole of charger; fasten 8 pcs of M12 screw nuts and 4 pcs M12 washers on 4 pcs of M12 screw of concrete base (2 nuts for each screw) to secure the chargers. Then fix the base cover(in the accessory pack) in charger base.



METHOD 2.

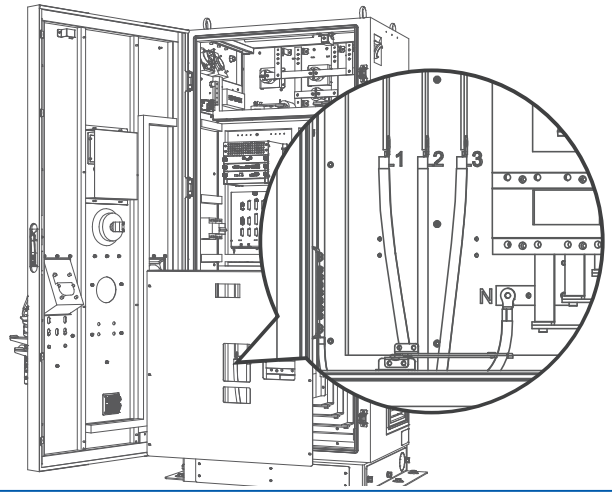
If use L brackets to fix charger, secure L brackets on the cement base by 6 PCS M12 expansion bolts.



3.5.3 Installing the AC Input Connection

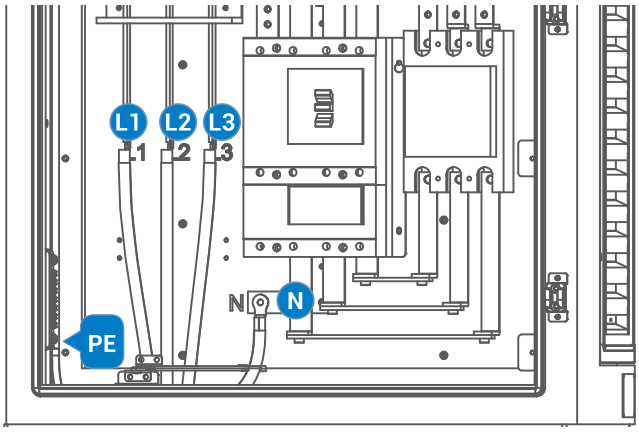
STEP 1.

Open front door and disassembly the protection cover for wiring:



STEP 2.

Connect L1, L2, L3 and N of AC power to 4P terminal. Fasten each wire with proper screw and torque number- 180Kgf.cm/5-15 secs. Connect the PE wire (green with yellow) to Grounding position of Charger and torque number- 220Kgf.cm. Keep proper length of each wires then fasten cable grand.



STEP 3.

Pull AC power cables to power distribution box, connect the Protective Earth wire (Green/Yellow) to ground point of power distribution box. Neutral should be shorted with ground point to meet TN(-S) grounding system.Ethernet cable be connected to charger RJ45 port .(refer to pic. of section 4.1)

STEP 4.

Wiring installation of L1, L2 and L3 of 3 Line wires and Neutral wire to external breaker Recommended breaker spec : Max. input current be not less than 400A , B curve type , Max. residual leakage current (RCD) shall be 30mA .

A 400A NFB with 30mA RCD-Type A is recommended.

STEP 5.

Do inspection as section 3.6.1 to 3.6.3.
Turn on the power source and be ready for operational testing. The power supply of the Standalone DC Fast Charger will be enabled and automatically drive the information screen. Information screen will turn to Phihong charging solution screen within 30 seconds.

Not following installation instruction will cause charger damage.

STEP 6.

Use adaptive flame retardants and electrical insulated foaming agent and far from conductive live parts at least 12mm or other method to seal the cable entry hole to assure the IP55 grade of the charger ,and prevent insects enter the cabinet