

#### **Description**

The In-Charge Energy ICE-120 is an All-in-One DC Fast Charger, which supports both CCS and CHAdeMO standards with one or two connectors. This DC All-in-One is designed for easy installation and high reliability. This product is easy to operate with an intuitive touchscreen display that facilitates access control, charging status, and help menus. The ICE-120 is ideal for auto dealers, fleet charging and a variety of parking applications where DC charging is needed in minimal space.

#### **Key Benefits and Features**

- 150 to 1000Vdc output voltage range supports new high voltage DC charging voltages
- · 120kW rated output power
- User friendly control interface allows for PIN or RFID accessibility
- Tempered glass touchscreen LCD display for added durability and daylight readability
- OCPP 1.6 standard supports integration into In-Control, In-Charge's EVSE management platform
- · LTE Modem and LAN for connectivity to In-Control
- Compact design for space saving power-to-footprint ratio
- TUV certification to UL 2202 to ensure safety
- 480V 3-phase input for high efficiency conversion
- · TUV Certified

## **Specifications**

- · Available with single CCS, Dual CCS1 and CCS1 & CHAdeMO connectors
- DIN70212 and ISO15118-2 protocols supported
- Materials and Finish: Enclosure Hot galvanized steel; Facade Plastic; Screen Tempered glass
- Dimensions: 29.5"(D) x 27.5"(W) x 68.9" (H) / 750mm x 700mm x 1750mm
- Weight: 804lbs / 364kg



The ICE-60, 120, and 180 share the same housing

## **Ordering Information**

| Configuration                              | SKU                      |
|--|--------------------------|
| ICE-120kW DC Fast charger - Dual CCS1      | IDC-120- 480-C1C1-AC1R   |
| ICE-120kW DC Fast charger - CCS1 & CHAdeMO | IDC-120- 480-C1CH-AC1R   |
| ICE-120-CC CCR                             | IDC-120-480-C1C1-AC1C    |
| ICE-120-CC Cold Weather                    | IDC-120-480-C1C1-AC1R-CW |
| ICE-120-C1LC1L                             | IDC-120-480-C1LC1L-AC1R  |
| ICE-120-CJ CCR                             | IDC-120-480-C1CH-AC1C    |

## **Technical Specifications**

| Configuration             | SKU   |
|---------------------------|---|
| Voltage                   | 480 Vac +/- 10 %  |
| AC Input Power Connection | 3-phase: L1, L2, L3, GND                                  |
| Frequency                 | 60 Hz   |
| Recommended breaker       | 200A 3W+G   |
| SCCR                      | 25 kAIC   |
| Max Current Draw          | 150A  |
| Power factor              | >0.99   |
| THD - Current             | < 5%  |
| Output Parameters         | Value   |
| Voltage                   | 150 - 1000Vdc   |
| Current - Max             | 200A@300V / 200A@500V / 120A@1000V                        |
| Power - Max               | 120kW   |
| System Effciency - Max    | >95%  |
| Controls and Interface    | Value   |
| Charging Connectors       | CCS1, CHAdeMO   |
| НМІ                       | 7" TFT LCD Display  |
| Communication             | OCPP 1.6J   |
| Network Connection        | 4G/5G modem; LAN 10/100M                                  |
| RFID                      | ISO14443 Type A & S50, S70 MIFARE                         |
| Language                  | English (others available on request)                     |
| Environment               | Value   |
| Temperature - Operating   | -4°F to 113°F/ -20°C to +45°C * (Optional: -40°F / -40°C) |
| Temperature - Storage     | -40°F to 158°F/-40°C to +75°C                             |
| Humidity                  | 0 - 95%   |
| Altitude - Operating      | 6560ft (2000 m)   |
| Protection - Intrusion    | IP54, NEMA 3R; indoor and outdoor rated                   |
| General                   | Value   |
| Cable Length              | 16.4 ft (25ft available upon request)                     |
| Safety and EMI            | UL2202, CE, EN6100-6-3, EN61851-1/-23/-24                 |

<sup>\*</sup> Derating characteristics apply at extreme temperatures









| Name       | SKU                   | Certified As  | Certification Number    |
|------------|-----------------------|---|-------------------------|
| ICE-120-CC | IDC-120-480-C1C1-AC1R | Shenzhen Infypower Co.,<br>Ltd.<br>EXP120K2-FD-UU2,<br>EXP120K2-FS-U2 | TUV: <u>CU 72212743</u> |







# ICE- 60/120/180 Series Fast DC Charger Installation and Operation Manual



Version: 2

Last Time Edited: 5/22/2023

In-Charge Energy Inc.

All rights reserved. This manual may be subject to change without notice.

https://inchargeus.com/

Service hotline: 818-697-GOEV



#### **IMPORTANT SAFETY INSTRUCTIONS**

- Please read the operating instructions and notes carefully before starting operation in order to prevent accidents. The "Caution, Attention, Warning and Danger" statements in the products and product manual do not represent all safety matters to be observed and are intended to supplement various operational safety precautions.
- During the various operations of our products and equipment, it is necessary to comply with relevant National Safety Regulations and strictly observe the precautions and special safety instructions of the related equipment.

## **Electrical Safety**

#### **High Voltage**



Since some parts of this power system are under high voltage during operation, direct or indirect contact can be fatal.

- It is necessary to comply with relevant National Safety Regulations during the installation of the Portable DC Charger. Personnel who install and maintain this equipment must be qualified to work with high DC voltage up to 1000Vdc and 3-phase AC voltage up to 500Vac.
- It is strictly forbidden to wear watches, bracelets, bangles, rings and other conductive objects on the wrist during installation and maintenance.
- ➤ If there is water inside the DC Charger enclosure, AC power and DC connector must be disconnected immediately. During operation in a humid environment, water should be strictly prevented from entering the equipment.
- > During installation, it is strictly forbidden to operate the DC Charger and an "Operation prohibited" signboard must be used.



Construction operation of high voltage lines may cause fire or electric shock. The wiring area and the area where the line passes through for AC cables must comply with national and local regulations and norms. As this device utilizes high voltages do not attempt to install this equipment if you are not a qualified electrician.

#### **Tools**



Special tools must be used during various operations involving high DC and AC voltages.



#### **Thunderstorm**



It is strictly forbidden to carry out live installation and maintenance work during thunderstorms.

A strong electromagnetic field will be produced in the atmosphere during a thunderstorm. Therefore, the equipment should be well grounded to avoid damage to the equipment due to lightning strikes.

#### **Static Electricity**



Static electricity generated by the human body may damage electrostatic sensitive components on the circuit boards, such as the large-scale integrated circuit (IC), etc. Before handling any patch boards, circuit boards and IC chips, it is necessary to wear an anti-static wrist strap with the anti-static wrist strap wire connected to Ground to avoid damage to sensitive components due to static electricity.

#### Short circuit



During operation, it is strictly forbidden to short-circuit the positive and negative of the DC Charger DC distribution or short-circuit any DC distribution polarity to Ground. The DC Charger is a high voltage DC power supply, and short circuit may cause damage to the DC Charger and personal safety hazards.

- During work with High Voltage DC output, it is necessary to strictly check the polarity of cables and interface terminals.
- ➤ The space for DC power distribution work is compact and attention should be paid to planning cable routing etc. before starting any installation work.
- Insulated tools must be used.
- > During live work, attention should be paid to keeping hands, arms tools etc. away from live high voltage parts to avoid accidents.

#### Others

#### **Sharp Corners of Objects**



During the handling of equipment by hand, it is necessary to wear protective gloves to prevent injuries caused by sharp objects.

#### **Power Cable**



Caution

Make sure that the cable label is correct before the connection of cables.

#### Signal Cables



Signal cables should be kept away from power cables, with a minimum distance of 100mm.

#### Caution



## Table of Contents

| 1 General Product Description                   | 5  |
|---|----|
| 2 General Characteristics                       | 5  |
| 2.1 Technical Specification                     | 5  |
| 2.3 Model description                           | 7  |
| 2.4 Standards                                   | 7  |
| 3 Product Parts Presentation                    | 8  |
| 4 Installation                                  | 9  |
| 4.1 Grounding instructions                      | 9  |
| 4.2 Unpacking and visual inspection             | 9  |
| 4.3 Assembly/placing instructions               | 9  |
| 4.3.1 Preparation of concrete foundation        | 10 |
| 4.3.2 Cabinet Installation                      | 11 |
| 4.3.3 Power cables connections                  | 12 |
| 4.3.4 Riser Installation                        |    |
| 5 Start-Up                                      | 14 |
| 5.1 Verification and inspection                 | 14 |
| 5.2 Switch on                                   | 14 |
| 6 User Manual                                   | 16 |
| 6.1 Output connector                            | 16 |
| 6.1.1 CCS Connector                             | 16 |
| 6.1.2 CHAdeMO Connector                         | 17 |
| 6.2 Operation instructions                      | 17 |
| Appendix 1 Engineering and Technical Parameters | 19 |
| Appendix 2: Alarm information                   | 21 |
| Annendix 3: Error codes and possible solutions  | 22 |



## **1** General Product Description

- The ICE- 60/120/180 is able to fast charge all electric vehicles compliant with Combined Charging System (CCS) and CHAdeMO charging system standards.
- IP55 for use in harsh environments
- This charger is rated to charge at full power at the following temperature range: -22°F~122°F (-30°C~50°C)
- LTE wireless modem support, RFID authorization and Mobile App payment support

## **2** General Characteristics

#### 2.1 Technical Specification

The Technical Specifications of the ICE-60/120/180 are shown in Table 1.

This system is intended to have at least one DC output connection (CCS and/or CHAdeMO).



| Technical Data         |                                     | Description   | Remarks |
|------------------------|-------------------------------------|---|---------|
|                        | Phases/Lines                        | 3 phases + PE   |         |
|                        | Voltage                             | 480Vac (+/-10%)   |         |
|                        | Frequency                           | 45 – 60 Hz  |         |
| Nominal Input          | Current                             | 60:86A ;120:150A; 180: 222A   |         |
|                        | Power                               | 60: 60kW ; 120: 120kW; 180: 180kW   |         |
|                        | Power factor                        | ≥0.99   |         |
|                        | System Efficiency                   | ≥ 94.5% (Full load)   |         |
| DC Outrot              | Voltage                             | 150~1000Vdc   |         |
| DC Output<br>CCS1      | Current                             | 60: 60A @ 1000V; 120: 120A @ 1000V; 180: 180A @ 1000V                           |         |
| CCS1                   | Nominal Power                       | 180kW   |         |
| DC Output              | Voltage                             | 200~500Vdc  |         |
| CHAdeMO                | Current                             | 125A  |         |
| CHAdeMO                | Nominal Power                       | 62.5kW  |         |
|                        | Dimensions(W*D*H)                   | 700*750*1750 (mm)   |         |
| Cabinet                | Weight                              | 60: 708lbs / 321kg;120: 804lbs / 364kg; 180: 900lbs / 408kg                     |         |
|                        | Protection Degree                   | IP55, IK10  |         |
|                        | Local interface                     | TFT Color touch display 7"  |         |
| HMI and Command Unit   | Communication                       | Router 4G/5G (GSM or LTE)   |         |
|                        | Protocol                            | OCPP1.6   |         |
|                        | Operating temperature <sup>1</sup>  | -40°F ~ 167°F ( -40°C ~ +75°C), Derating After 131°F (55°C)                     |         |
|                        | Transportation/ Storage temperature | -40°F ~ 167°F ( -40°C ~ +75°C)  |         |
|                        | Humidity                            | 5%RH~95%RH  |         |
|                        | Place of installation               | Indoor / Outdoor  |         |
| Environment conditions | Altitude                            | 2000m (6561 ft)   |         |
|                        | Sound Noise                         | ≤65dB (nominal input/output power, the environment temperature is 77°F (25°C).) |         |
|                        | Atmospheric pressure                | 80KPa~110KPa  |         |
|                        | Overvoltage category                | Ш   |         |
|                        | Protection class                    | Class I   |         |



#### 2.3 Model description

| NRTL Model Number | Model      | Configuration   | Remarks |
|-------------------|------------|-----------------|---------|
| EXP-180K2-FDW-UU2 | ICE-180-CC | CCS-1 + CCS-1   | 180kW   |
| EXP-180K2-FDW-UC2 | ICE-180-CJ | CCS-1 + CHAdeMO | 180kW   |
| EXP-120K2-FD-UU2  | ICE-120-CC | CCS-1 + CCS-1   | 120kW   |
| EXP-120K2-FD-UC2  | ICE-120-CJ | CCS-1 + CHAdeMO | 120kW   |
| EXP-60K2-FD-UU2   | ICE-60-CC  | CCS-1 + CCS-1   | 60kW    |
| EXP-60K2-FD-UC2   | ICE-60-CJ  | CCS-1 + CHAdeMO | 60kW    |

#### 2.4 Standards

The EVSE (Electric Vehicle Supply Equipment) complies with the following standards:

Table 2 Applicable Standards

| Norm                      | Remarks   |
|---------------------------|---|
| IEC 61851-1 <sup>1</sup>  |   |
| IEC 61851-23 <sup>2</sup> |   |
| IEC 61851-24 <sup>3</sup> |   |
|                           |   |
| ]                         | IEC 61851-1 <sup>1</sup><br>IEC 61851-23 <sup>2</sup> |

1 **IEC 61851-1 2017**: Electric vehicle conductive charging system. Part 1: General Requirements

2 **IEC 61851-23 2014**: Electric vehicle conductive charging system - Part 23: DC electric vehicle charging station

3 **IEC 61851-24 2014**: Electric vehicle conductive charging system - Part 24: Digital communication between a DC EV charging station and an electric vehicle for control of DC charging



## **3 Product Parts Presentation**

The charging system is composed of DC charging cabinet and DC charging connector. The System can be installed outdoors.

The ICE-60/120/180 series fast DC Charger has various possible output combinations as shown in section 2.3 Model description:



Figure 1: External View of ICE-60/120/180



## **4** Installation

#### 4.1 Grounding instructions

An equipment grounding conductor or a grounded, metal, and permanent wiring system is required for the EVSE charger connection. This should be run with circuit conductors and connected to the equipment grounding bar or lead on the EVSE.

#### 4.2 Unpacking and visual inspection

- Check that the exterior packaging has been damaged by mechanical impacts or any accidents during transportation
- If applicable, check that the exterior panels of the ICE Charger are in perfect condition
- Check that the interior of the Charging Station is clean
- Check that the door of the Charging Station is working properly
- Check for proper Charging Station protective ground connection point, which should be interconnected with the low voltage switchboard ground connection during the installation

#### 4.3 Assembly/placing instructions

- As shown in the figure below, the concrete foundation should be made, and the height of the base should not be less than 8in (200 mm) above grade.
- It is recommended to reserve a Φ3.5in (90mm) plastic pipe at the cable entrance, and the height of the pipe extending out of the foundation horizontal plane shall not be more than 3.15in (80mm).
- As shown in the figure below, mark the installation holes of four M12 expansion bolts on the concrete foundation.
- $\triangleright$  Open 4 holes on the concrete foundation, select the percussion bit of Φ 0.63in (16mm) type, and use the percussion drill to drill the holes perpendicular to the ground at the above marked hole position, with the drilling depth of 2.36in~3.15in (60mm ~ 80mm).
- ➤ Use four M12 × 60 expansion bolts equipped with attached accessories, slightly tighten the bolts, vertically put them into the hole, and knock them with a rubber hammer until all the expansion pipes enter the installation hole.
- Screw off the bolt, spring pad and flat pad in turn counterclockwise.

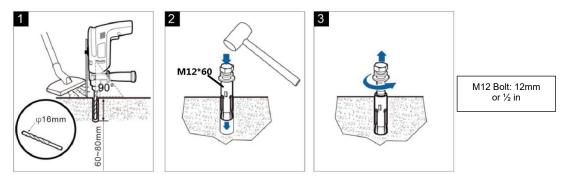
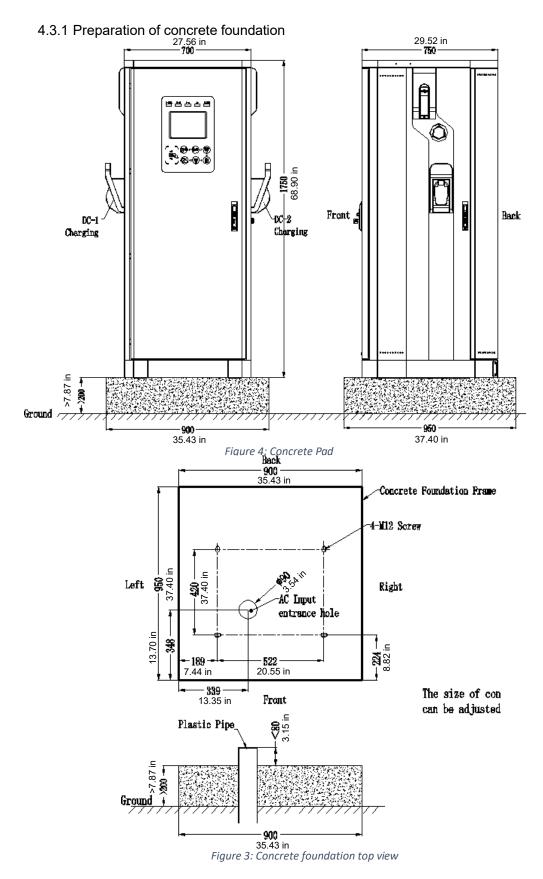


Figure 2: Anchor Installation







#### 4.3.2 Cabinet Installation

- As shown in the figure below, the protective covers on both sides of the steel base of the cabinet can be removed, and the cabinet can be transported to the concrete foundation by forklift.
- Align the installation hole of the cabinet base and fix the cabinet to the concrete foundation with expansion bolts.

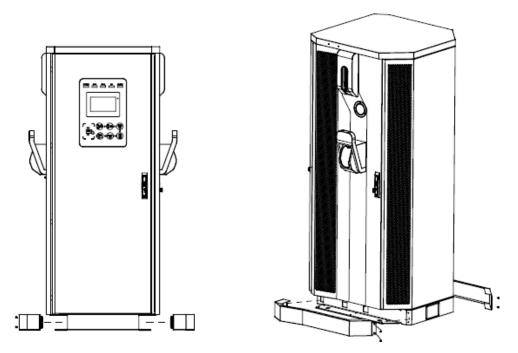
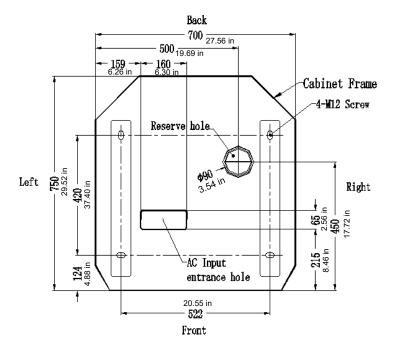


Figure 5:EVSE cabinet installation





#### **EVSE Top View**

#### 4.3.3 Power cables connections

End terminals for input wiring: 4 (four) end terminals for 3 phases + protective ground.

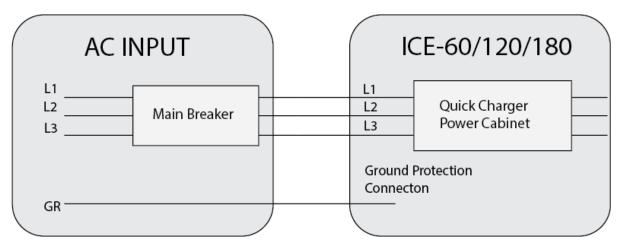


Figure 6: AC Input Wiring

Max. Power of The section for AC Specification of **AWG Amperage** feed cables terminal screw charger L1/L2/L3 is M10 PE is 180kW 3/0 3\*185+2\*95mm<sup>2</sup> 320A M8 L1/L2/L3 is M10 PE is 120kW 2/0 3\*120+2\*70mm<sup>2</sup> 224A M8 L1/L2/L3 is M10 PE is 60kW 3\*95+2\*50mm<sup>2</sup> 1 115A

#### Notes:

- The AC feed power cables to the charger are not included.
- The AC feed power cables should be no less than 90°C temperature resistant grade.  $\triangleright$
- The protective MCCB must be installed on the customer's distribution cabinet, and the upper MCCB capacity shall not be less than 1.25 times of the input current.
- It is recommended that the upper MCCB should not be equipped with RCD function.
- This system is to be connected to a grounded, metal, permanent wiring system; or an equipment-grounding conductor is to be run with circuit conductors and connected to equipment-grounding terminal or lead on battery charger.

M8



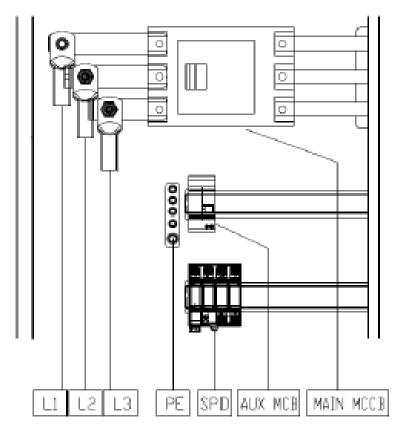


Figure 7: UL Wiring Diagram



#### 4.3.4 Riser Required Installation

- A riser is <u>required to be installed if the installation location has a preexisting</u> concrete foundation.
- A riser is <u>required to be used if the customer does not want to break ground to run</u>
  <u>the power wires.</u> Therefore, <u>any modifications to the chargers housing, such as cutting holes into the unit, will void all warranties.</u>
- ➤ The riser places the ICE-60, ICE-120, ICE-180 up six inches.
- Using a riser will still allow the charges HMI to still be ADA compliant.
- Comes with three plates to cover the side wall holes. All plates are the same, but holes can easily be punched out of the side wall cover for the power lines at the desired entry point.



| Name                | SKU       |
|---------------------|-----------|
| Rapid Base Platform | RMA-DP-FD |



## 5 Start-Up

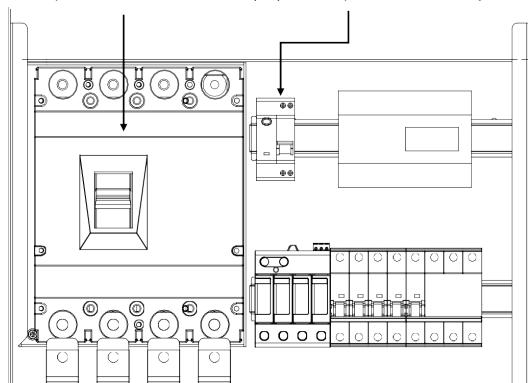
#### 5.1 Verification and inspection

- Check if the bolts of the AC and protective ground cables of the EVSE are correctly tightened to the specified torque. The torque values are as follows:
  - M8: 20ft-lbs (15ft-lbs on M8 Ground screws)
  - M10: 40ft-lbs
- Check the resistance between the EVSE protective ground and the low voltage switchboard ground connection; the value must be according to local codes.
- ➤ Check the resistance on the Grid AC between phases and between phase and PE. Also check resistances between DC+/DC-/PE to ensure no dead shorts.
- Check that power modules panel address setting is correct.
- ➢ Before switching ON all the fuses and circuit breakers, check the supply voltage between lines: it must be 380Vac-520Vac. Also check between phases and phase to ground. Voltage should be 480V +/- 5% P to P and 277V +/- 5% P-PE for a 480V feed

#### 5.2 Switch on

> Switch on the circuit breakers in the charging pile, Q1 and Q2 in turn.

AC Input MCB For Rectifier Module (Q1) AC Input RCD For Auxiliary Power(Q2)





Wait for a few seconds. The display will present a picture as below:



Figure 8: Loading Screen

Finally, the display will present the following charging screen

#### **CCS1+CHAdeMO Units:**

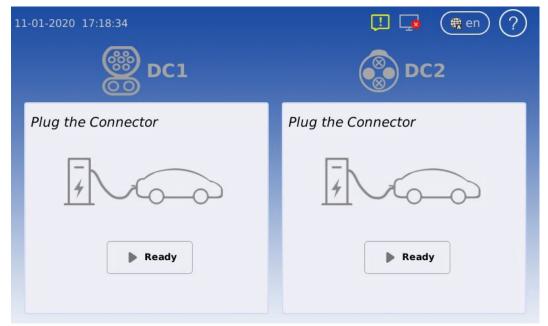


Figure 9: Charging screen



Before attempting to install or start up the charger must ensure that the safety instructions in this manual have been carefully read and observed by trained personnel. Keep this manual with the charger for future reference.



## 5.3 Indicator Lights

| Indicator Light Location | Color  | Meaning                   |
|--------------------------|--------|---------------------------|
| DC-1                     | Yellow | DC-1 is currently in use  |
| Power                    | Green  | Power is active           |
| Alarm                    | Red    | Critical error is present |
| DC-2                     | Yellow | DC-2 is currently in use  |



## **6** User Manual

The EVSE operation depends on its output connections: CCS, CHAdeMO. During the charging process, the Human Machine Interface (HMI), will give instructions and will signal different stages. These sequences are shown in this chapter.



## 6.1 Output connector

The EVSE is prepared to charge electric vehicles according to the mentioned charging systems

## 6.1.1 CCS Connector

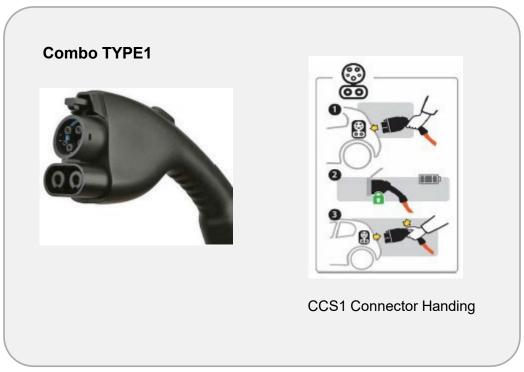


Figure 10: CCS1 Connector



#### 6.1.2 CHAdeMO Connector

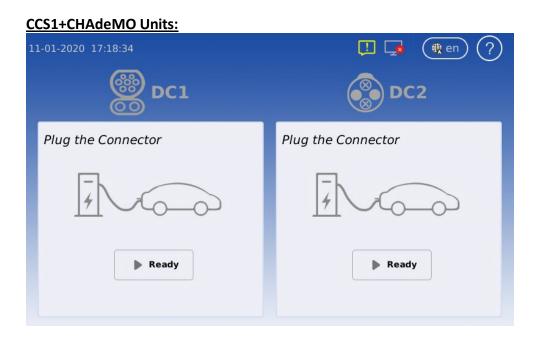
CHAdeMO connector has a lock button.



Figure 11: CHAdeMO

#### **6.2 Operation instructions**

When a user starts an operation on the EVSE, the HMI display will show one of the following screens.





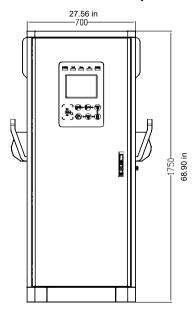
- 1. Plug the charging gun into the vehicle receptacle.
- 2, Press "Ready on the screen.
- 3. Waiting for the charging session to begin.
- 4. After the vehicle is fully charged, stop charging first, then unplug the charging gun.

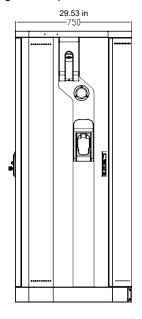


## **Appendix 1 Engineering and Technical Parameters**

- **\*\*** The DC Charger has front and back doors. A minimum of 40in (1000mm) clearance should be provided on both sides to provide space for maintenance.
- **\*\*** Hot ventilation air exits to the back of the machine. A minimum 40in (1000mm) clearance should be provided to prevent hot air from recirculating back to the air intake.

Note: When the system is running, the temperature of the back side door will be hot so avoid contact.





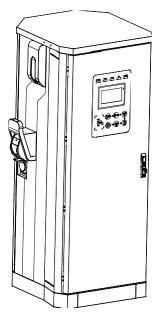


Figure 12: EVSE 3 Views



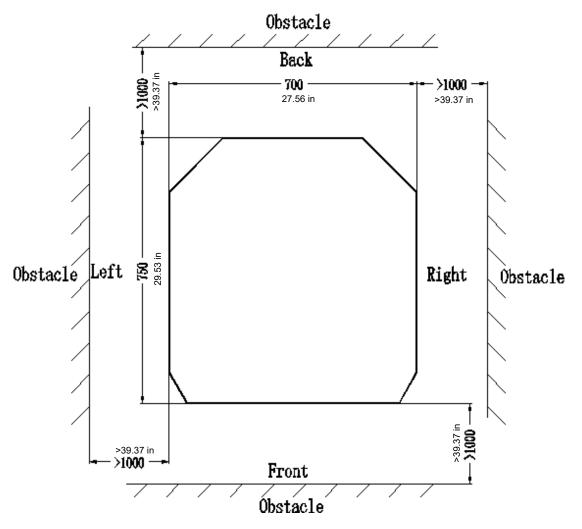


Figure 13: EVSE Space Requirement



## **Appendix 2: Alarm information**

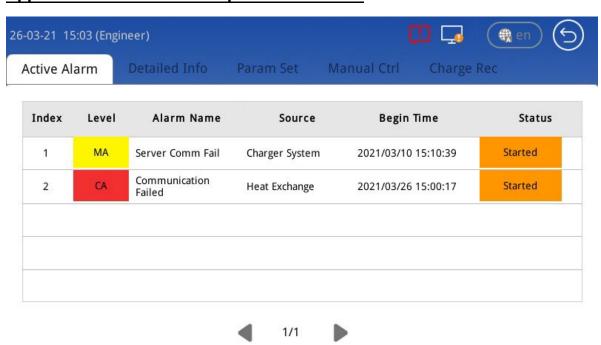
- 1) Click "?" In the upper right corner of the screen and log in as Engineer or Administrator to view the error code/alarm information. Default password for Engineer is 151719. Administrator password is only to be used by qualified technicians.
- 2) If an alarm is displayed it should be addressed immediately. If it cannot be resolved, contact the manufacturer for assistance.

Click here to view alarm information.





## **Appendix 3: Error codes and possible solutions**





|     |          |   | Table: Char | ger_Alarms   |   |
|-----|----------|---|-------------|--|---|
| NO. | Alarm_ID | Alarm_Name                                  | Alarm_Level | Description  | Remark  |
| 1   | 1        | System Not<br>Available                     | CA          | System is out of service<br>and charge is not allowed.<br>This usually comes after<br>other critical alarm(e,g<br>EPO pressed)                       |   |
| 2   | 2        | System Disabled                             | MA          | System is out of service<br>and charge is not allowed.<br>This happens after system<br>is set to 'In-operative' by<br>service guy or backend.        |   |
| 3   | 3        | All CCU Comm<br>Fail(Not used right<br>now) | CA          | Note used any longer   |   |
| 4   | 4        | Server Comm Fail                            | MA          | If the network is not accessible or the connection between server and charger is broken  |   |
| 5   | 5        | All kWh Meter Not<br>Installed              | MA          | All kWh meters are set to 'Not installed'. This means the system is not available  |   |
| 6   | 6        | CCU Comm Fail                               | CA          | The communication between IMMU2 and IMSU-D has failed. This means the system is not available  |   |
| 7   | 7        | EPO is pressed                              | CA          | This means system not available  |   |
| 8   | 8        | Door is opened                              | CA          | This means system not available  |   |
| 9   | 9        | SPD alarm                                   | CA          | This means system not available  |   |
| 10  | 10       | Mains Fail Alarm                            | CA          | This means system not available  |   |
| 11  | 11       | Gun is disabled                             | MA          | The specified gun is out of service and not allowed to charge. This happens after the gun is set to 'In-operative' by service technician or backend. | Gun A/B/C shall be specified                                |
| 12  | 12       | System over temp                            | MA          | The temperature measurement from sensor  | Note that this alarm does not stop/prohibit charge function |



|    |     |                            |    | is over the upper limit point(default is 75 'C)  |  |
|----|-----|----------------------------|----|--|--|
| 13 | 13  | All Rectifier Failure      | CA | This means system not available  |  |
| 14 | 14  | All Rectifier Comm<br>Fail | CA | This means system not available  |  |
| 15 | 15  | Rectifiers Failure         | CA | This means the specified gun will not be available   | Rectifier group 1/2 shall be specified |
| 16 | 16  | Rectifiers Comm<br>Fail    | CA | This means the specified gun will not be available   | Rectifier group 1/2 be specified       |
| 17 | 17  | Insulation Comm<br>Fail    | CA | This means the specified gun will not be available   |  |
| 18 | 18  | Output Shorted             | CA | This is from Rectifiers after detected the internal circuit shorted  |  |
| 19 | 19  | Insulation Alarm           | CA | This is from IMSU-D after detected the insulation abnormal   |  |
| 20 | 20  | PLC ComFail Alarm          | CA | This is from IMSU-D when the PLC communication is lost   |  |
| 21 | 21  | Ground Fault               | CA | This is from IMSU-D after detected ground fault  |  |
| 22 | 22  | AC Fail Alarm(for AC only) | CA | This is from IMSU-D after detected AC gun input fails(DI)  |  |
| 23 | 301 | CR CommFail                | CA | The communication<br>between IMMU2 and Card<br>Reader is failed. This<br>usually means the<br>authentication with RFID<br>card loses efficacy and<br>user has to take other<br>method instead(e,g OTP) |  |
| 24 | 401 | kWhMeterCommFail           | CA | The communication between IMMU2 and specified kWh meter is failed. This means the specified gun will be out of service and forbid to charge  |  |
| 25 | 402 | Sampled Invalid<br>Current | CA | The measurement from the specified kWh meter is invalid. This usually happens with a reversed  |  |



|--|

# 1. CA - Critical alarm MA - Major alarm OA - Observative Alarm

| Stop Reason<br>Classification | Code | Description                    | Remark              |
|-------------------------------|------|--------------------------------|---------------------|
| Normal Stop                   | 1    | Normal Stop                    | Condition satisfied |
|                               | 2    | EV request Stop                | EV Request Stop     |
|                               | 201  | Parameter configuration failed |                     |
|                               | 202  | Charging Enable timeout        |                     |
|                               | 203  | Abnormal volt of outside bus   |                     |
|                               | 204  | Unable lock charging gun       |                     |
|                               | 205  | Insulation inspection anomaly  |                     |
|                               | 206  | Insulation inspection timeout  |                     |
|                               | 207  | EV Relay pull-In timeout       |                     |
| Charger Error                 | 208  | Require Curr Timeout           |                     |
|                               | 209  | Remain time over stop          |                     |
|                               | 210  | Ring fail alarm (reserved)     |                     |
|                               | 211  | Communication with EV failed   |                     |
|                               | 212  | Plugged gun timeout            |                     |
|                               | 213  | Pre Charging fault             |                     |
|                               | 214  | DoorOpen                       |                     |
|                               | 215  | EPO                            |                     |
|                               | 216  | SPD                            |                     |



|          | 217 | AllRectFail                     |  |
|----------|-----|---------------------------------|--|
|          | 218 | MainsFailAlm                    |  |
|          | 219 | AlRectCommFail                  |  |
|          | 220 | E_LockFail                      |  |
|          | 221 | GunOverTemp                     |  |
|          | 222 | OutputShortCircuit              |  |
|          | 223 | PWM Failure                     |  |
|          | 224 | Ground Fault Detected           |  |
|          | 250 | CR Comm Fail                    |  |
|          | 251 | kWhMeterComm Fail               |  |
|          | 252 | CCU Comm Fail                   |  |
|          | 301 | Battery overvoltage             |  |
|          | 302 | Battery undervoltage            |  |
|          | 303 | Battery current deviation error |  |
|          | 304 | High battery temperature        |  |
|          | 305 | Battery voltage deviation error |  |
|          | 306 | Charger Connector Lock<br>Fault |  |
| EV Error | 307 | Vehicle shift position          |  |
|          | 308 | Error Status Noticed by EV      |  |
|          | 309 | PLC Low Level Comm Fail         |  |
|          | 310 | PLC High Level Comm Fail        |  |
|          | 311 | PLC Authentication Timeout      |  |
|          | 312 | PLC ParamDiscovery<br>Timeout   |  |
| Canceled | 401 | Local Stop                      |  |
|          | 402 | Server Stop                     |  |
|          | 403 | Network fault                   |  |



|       | 404 | Reboot         |  |
|-------|-----|----------------|--|
|       | 405 | DeAuthorized   |  |
|       | 406 | One-Click Stop |  |
|       | 407 | Hard Reset     |  |
|       | 408 | Soft Reset     |  |
| Other | 501 | Other          |  |