

DC Charger 30KW (15KW + 15KW)

Operation & Maintenance Manual



Version 2.1

About this guide

Purpose

This guide explains the method to operate and maintain the DC Charger 30KW. This guide serves as a quick reference guide for EV users operating the system and for the owners of the charging stations who wish to do the preventive maintenance for the smooth functioning of the charging stations.

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1. Product Description

DC Charger 30KW is designed for the fast charging in both private and public charging stations, such as retail, commercial parking places fleet charging stations, public charging stations, highway services etc.

INPUT POWER	
Input Voltage (AC)	3 Phase, 400 Vac, (360 ~ 440 Vac)
Power Factor	>0.98
Nominal Efficiency	>94%
Input Frequency	50 Hz
Wires	5 Wire, L1, L2, L3, N, PE
OUTPUT POWER	
Number of Outputs	2 Nos.
Output Connector	GB/T 20234.3
Output Current	Max. 200Amp
Output Voltage	48V/60V/72V
Output 1 Rating	15 kW (Max)
Output 2 Rating	15 kW (Max)
ENVIRONMENT	
Ambient Temperature	Full power: 0°C to 50°C De-rated : 50°C to 55°C
Storage Temperature	0°C to 70°C
Altitude	<2000 Mtr.
Humidity	<95%, non-condensing
USER INTERFACE AND CONTROL	
Display	7" TFT LCD with Touch
Language	English
Key/Switch	On/Off, Emergency Stop (Mushroom Headed Red Color)
User Authentication	OTP/ RFID (Optional)
Visual Indication	Mains, Charging Status, System Error
PROTECTION	
Charger & CMS	Protocol: OCPP 1.6 (Open Charge Point Protocol)
	Interface : Ethernet, 3G/4G
PROTECTION	
Protection	Over Voltage, Under Voltage, Over Current, Short Circuit, Surge Protection, Over Temperature, Ground Fault, Residual Current.
MECHANICAL	
Ingress Protection	IP55
Enclosure Protection	IK10
Cooling	Air Cooled
Wire Length	5 Mtr.
Dimension (WxHxD)	1700mmX765 mmX 400 mm
Weight	~180Kg

2. Safety Instructions

DOs

- **Do** plug the charging gun appropriately inside the vehicle inlet.
- **DO** ensure charging cable is rolled back properly on charger after completion of charging session.
- **Do** note your battery levels before and after charging.

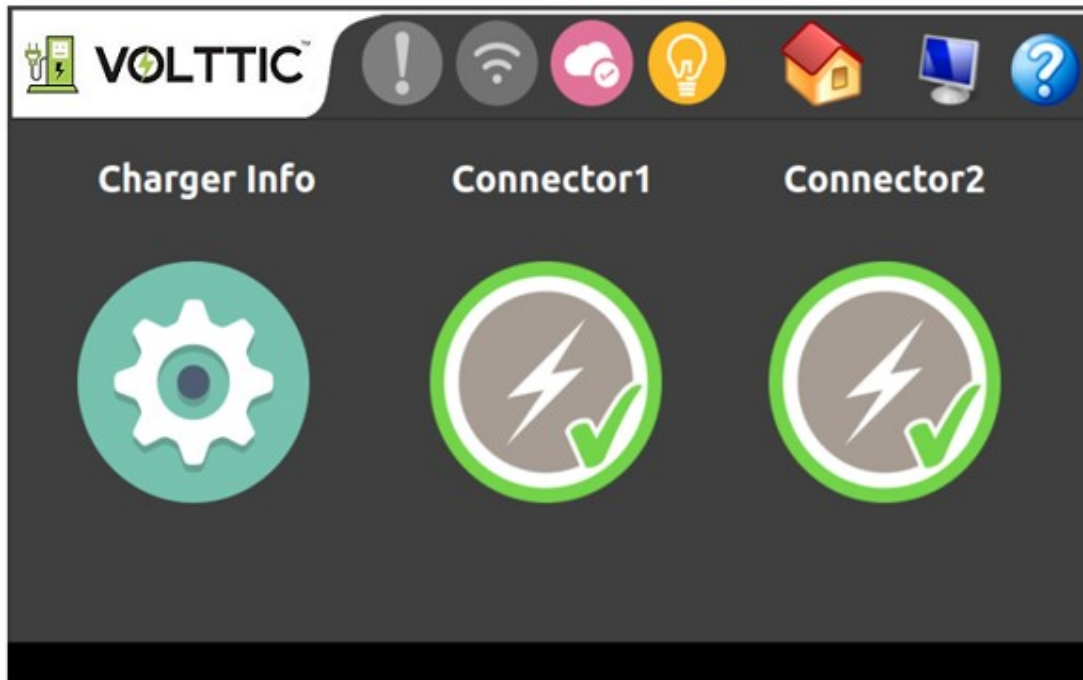
DON'Ts

- **Do** plug the charging gun appropriately inside the vehicle inlet.
- **Do not** insert your fingers into the electric vehicle connector.
- **Do not** use adaptors, conversion adaptors or cord extension sets with the product.
- **Do not** replace any component of the charger.
- **Do not** use this product if the enclosure, flexible power cord or charging cable assembly is frayed, the insulation is broken, or the device shows signs of damage.
- **Do not** use this product if the vehicle inlet is broken, cracked, open, or shows any signs of damage.
- **Do not** touch any live components while the compartment is open.










3. User Interfaces

Main menu

The main menu of the charger is shown below. Green circle on the connector symbols indicates that the connector is available for charging.

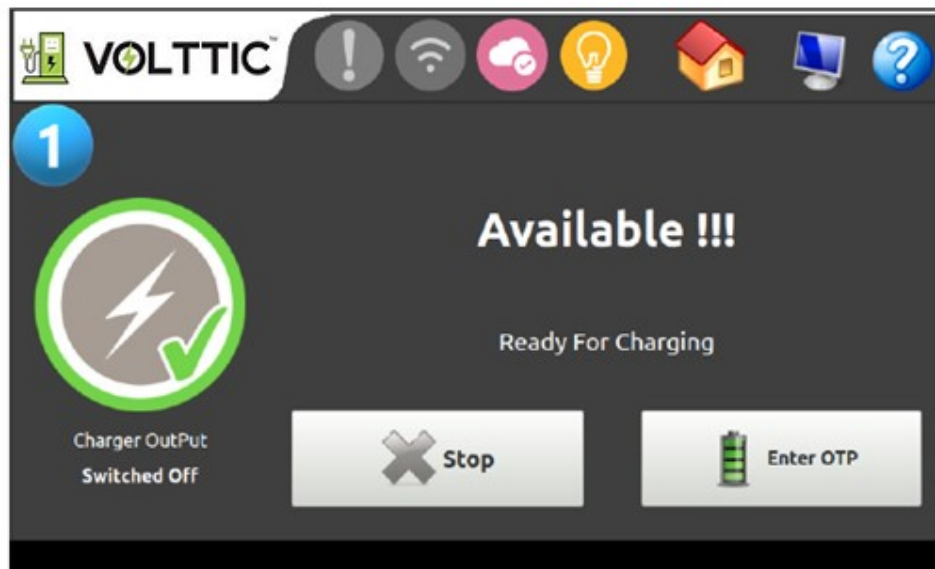
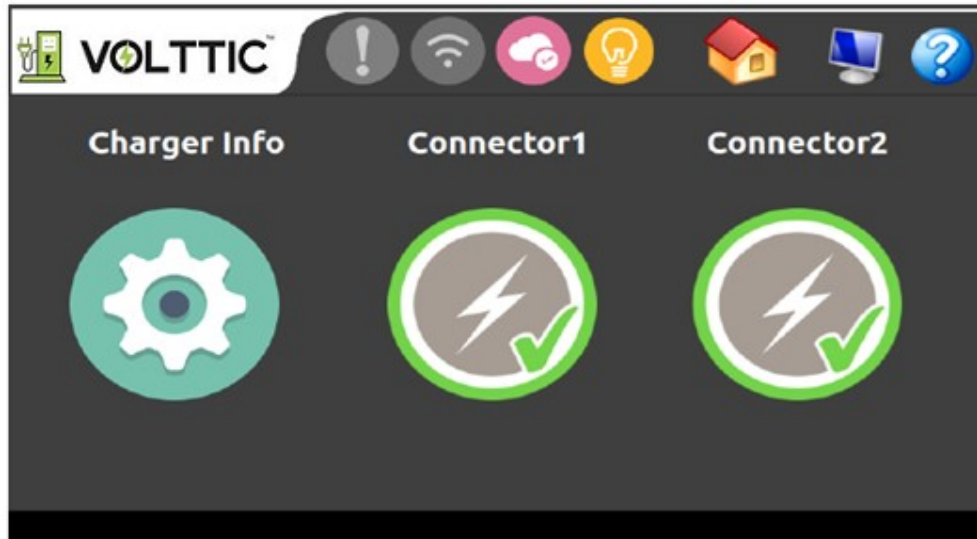


Following Icons will be displayed on the charger screen. If the Icon is Dull/Grey background, it refers that Unviable condition or no session.

<i>Icon/Symbol Definition</i>	
<i>Icon/Symbol</i>	<i>Definition</i>
	Charger Info: This icon displays the status of different errors of the system.
	Connector Available: Icon displays that the connector is available for charging the vehicle.
	Connector Unavailable: Icon displays that the connector is unavailable for charging the vehicle.
	Controller Error: Will turn ON RED, in case there is any error on EVSE controller.
	System Error : Will turn ON Orange, in case of any system fault/alarm.
	Internet Connection : Will turn ON Green, when internet connection is available either by Ethernet or GSM.
	CMS/Server Connection: Will turn ON Pink, when the charger is connected to CMS/remote server.
	Mains Available: Will turn ON Yellow, when mains supply to charger is available.
	EV Connection: Will turn ON Blue, when plug is connected to Electric Vehicle

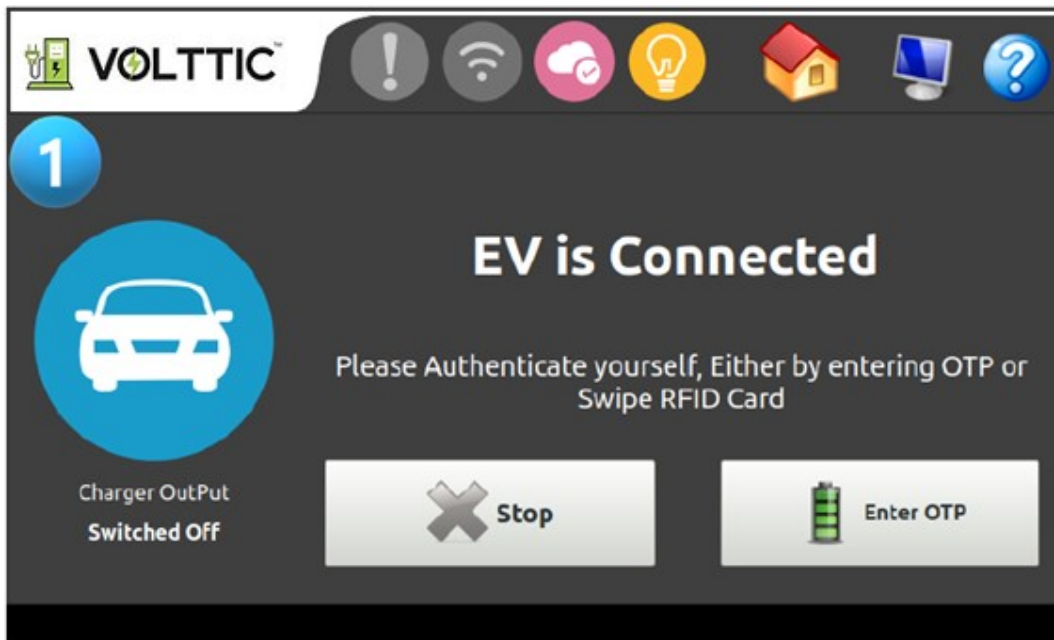
4. Starting Charging Session

STEP-1 Home screen will appear as shown below. To start the charging session, click on the icon below based on your requirement. It will take you the next screen displaying that the charger is Available.

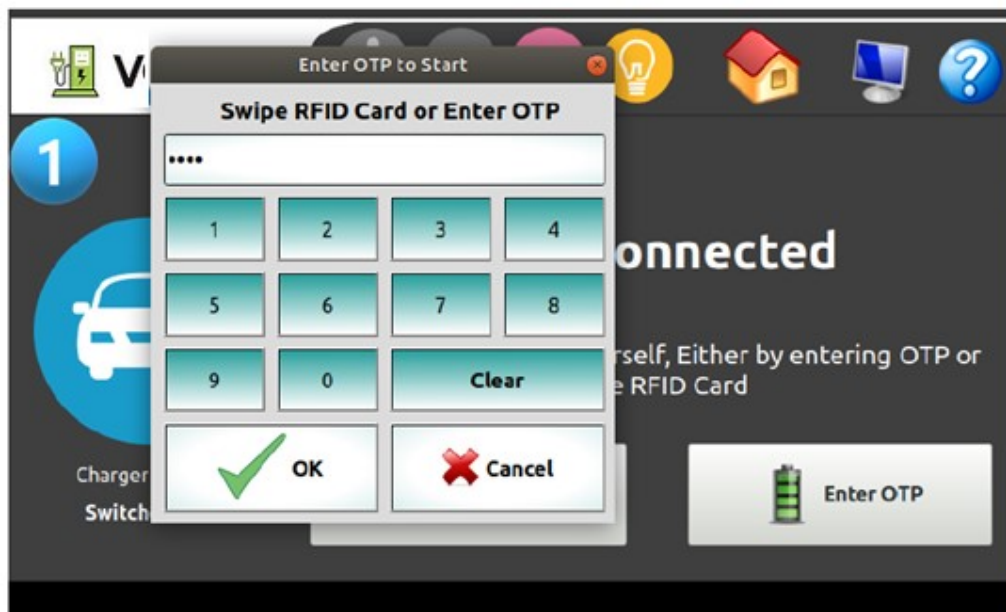


STEP-2

Connect the charging gun inside the vehicle Charging socket. The charger detects the proper connection automatically and will display the message “EV Connected” (only in case of DC Charging).

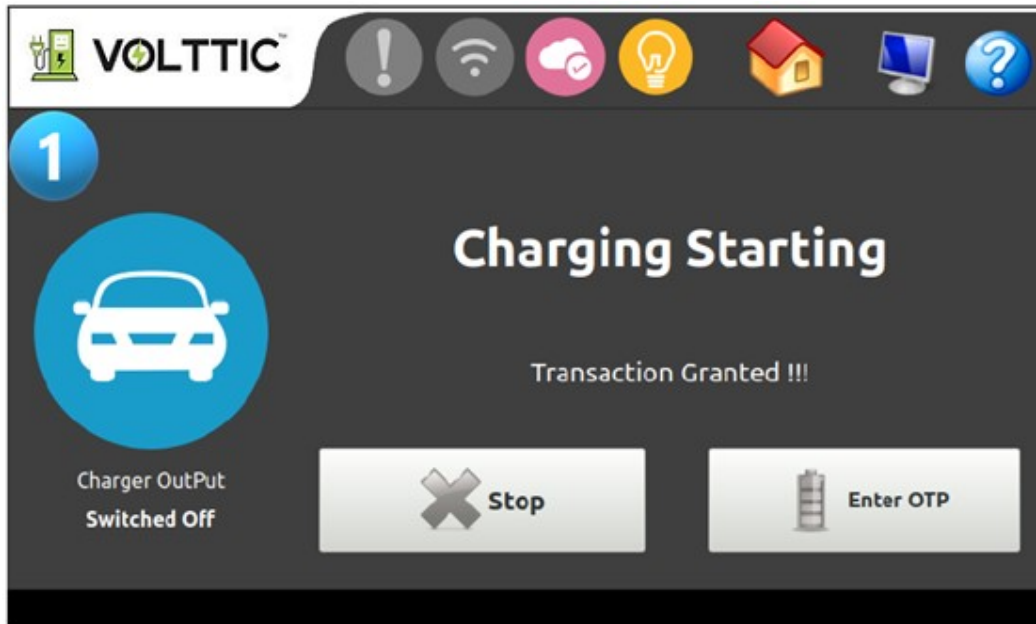

STEP-3

Authenticate the charging session with OTP received at registered mobile no. or swiping the RFID Card on the reader provided on the charger. Below screen will appear, charger will check the valid RFID card/ OTP and authorize the session. Click OK to proceed for charging session or click cancel to abort the charging.

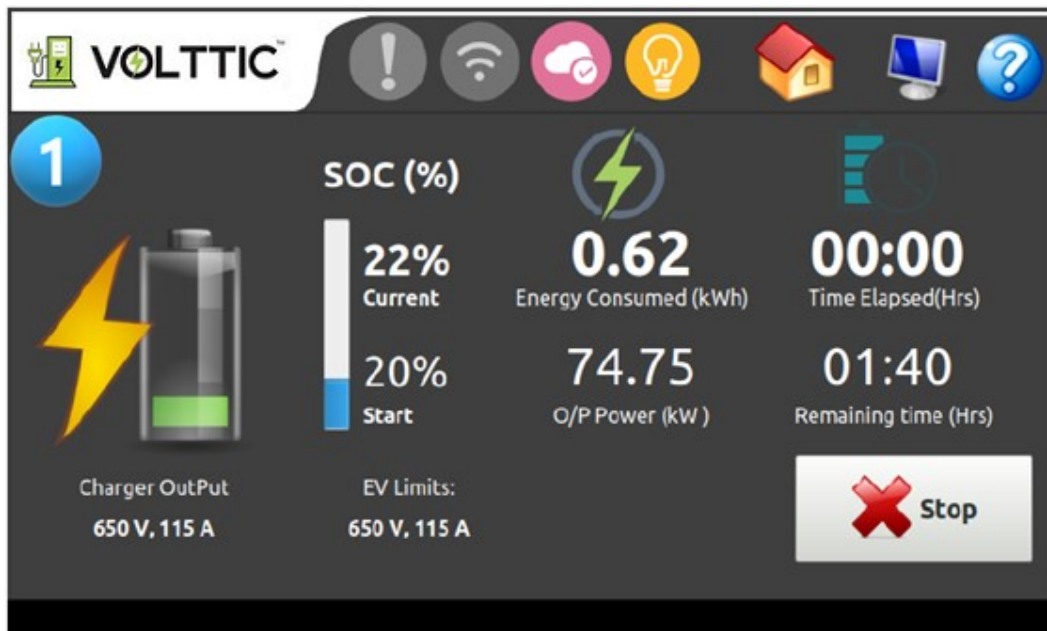


STEP-4

Below screen will appear showing “Charging Starting” after successful authorization of the charging session.


STEP-5

Once the charging starts below screen will appear and show the charging session details, such as Voltage, current, SOC, Energy. To stop the charging session, click on “Stop” icon.



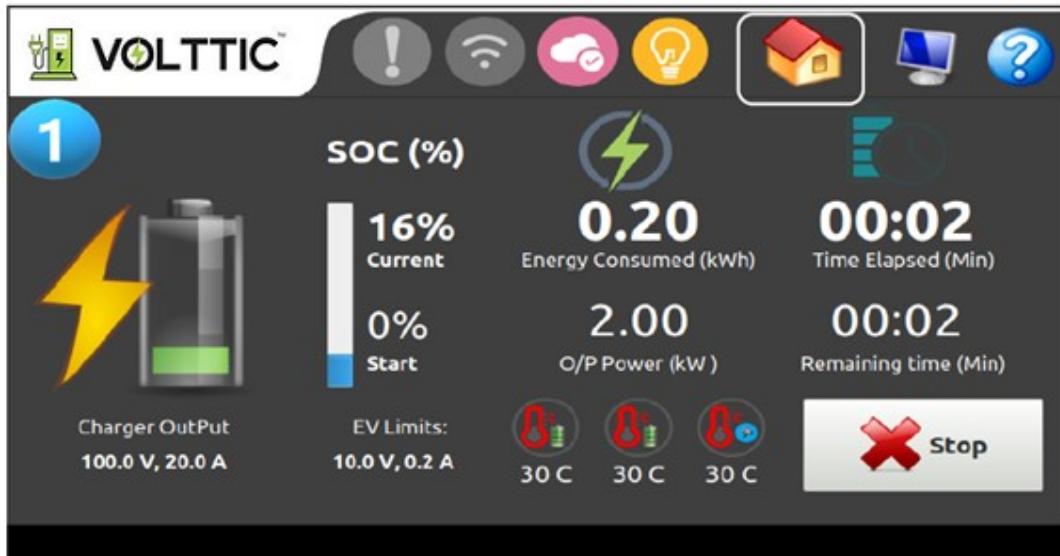
During the charging session, the following parameters are shown to the user:

- BMS Demand: Voltage and current demand from vehicle BMS.
- Charger Output: Output voltage and current rating of charger.
- Output Power: Output Power supplied by the charger.
- Time Elapsed: Charging session time completed.
- Energy Consumption: Energy charged during actual charge session in kWh
- SOC: Initial, Actual and target SOC

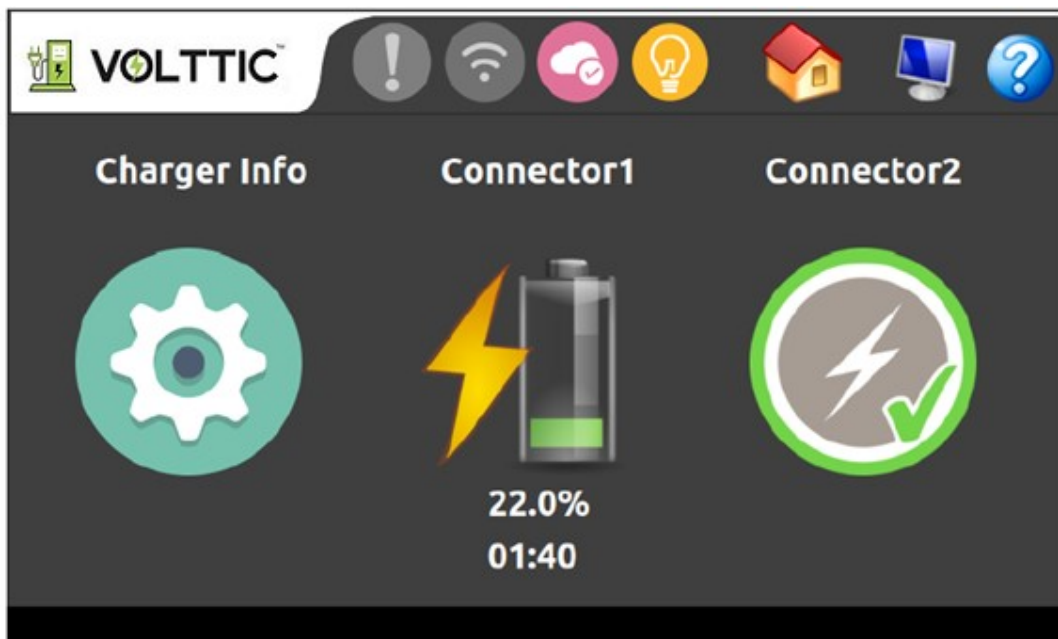
5. Parallel Charging Session

Once the one connector is utilized for charging the electric vehicle, the other connector can be used for parallel charging the second vehicle.

Use the home icon to  go back to the home screen.



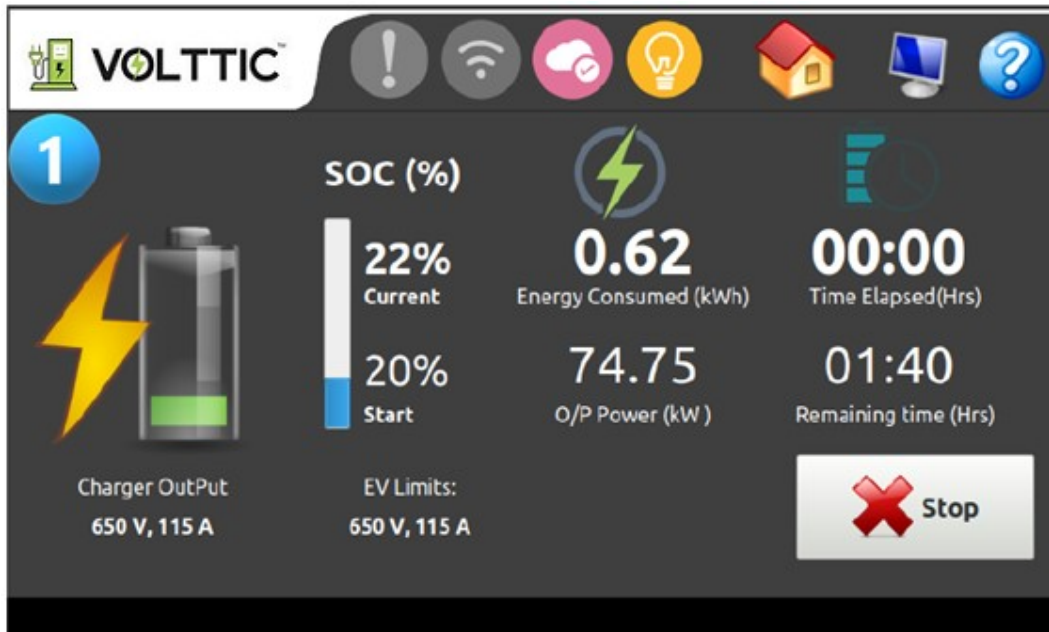
The home button will take you to the home page where connector 1 will show you that it is charging the vehicle as shown below. To Start the charging process, simply follow the above mentioned steps 1,2,3,4,5 with connector 2.



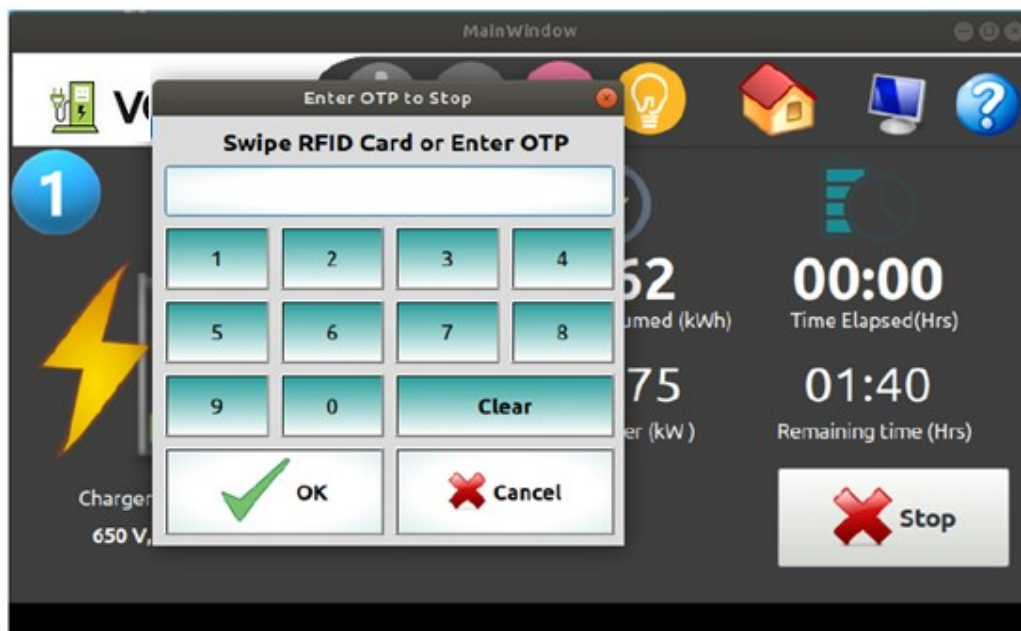
6. Aborting Charging Session

If you want to abort charging, follow the below steps:

STEP 1 Click on “Stop” icon on charging screen.



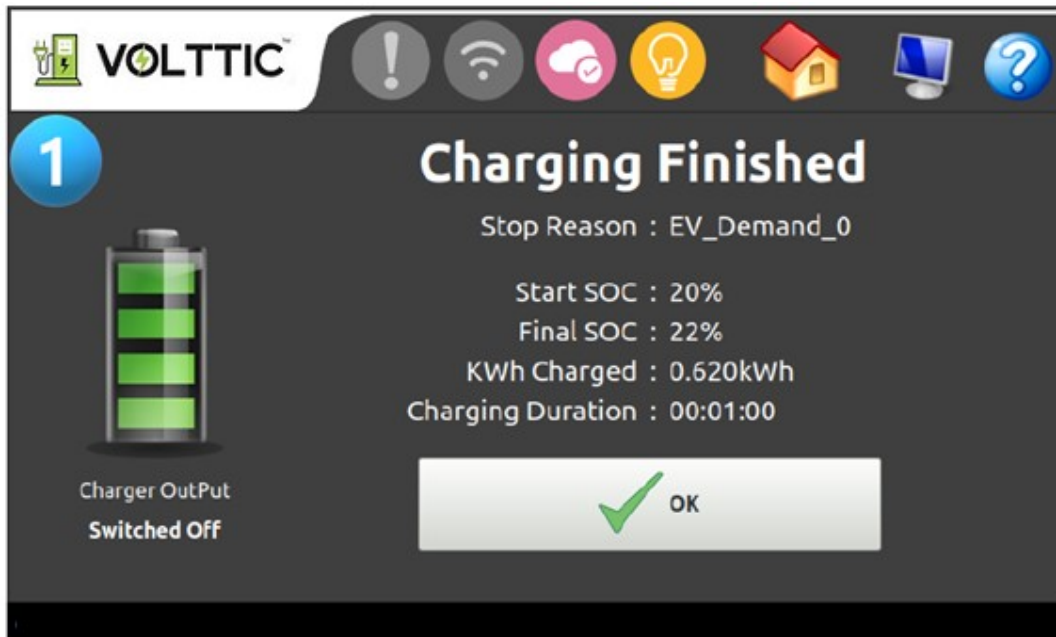
STEP 2 Authorize user identity by using RFID as used in charging session/ OTP Received at registered mobile number.



Click “OK” to proceed to stop the charging session. If user wish to continue the charging, use “cancel” to abort the operation.

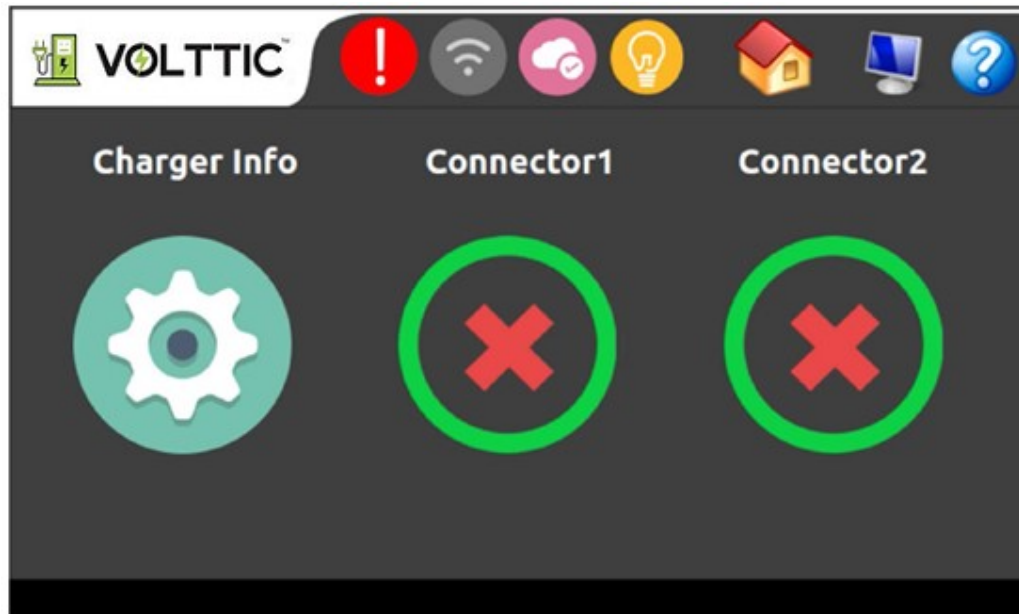
STEP 3

Once the charging has stopped, the screen will show the charging session data as shown below:

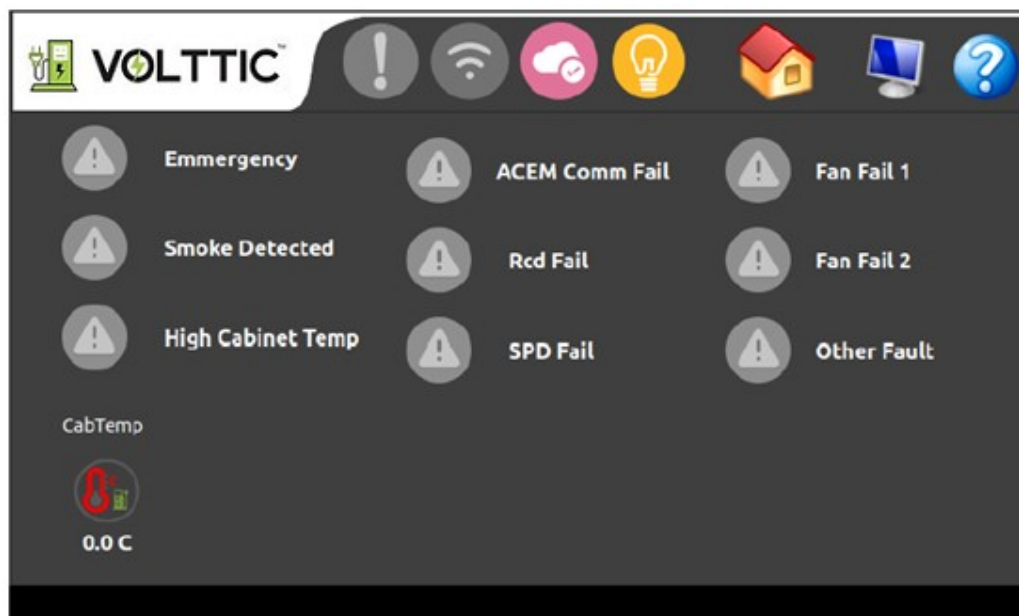


7. Error Indications

If the charger is not in condition of being operational then the connectors will not be available for charging and will show a red cross mark.



To get the understanding of error codes, system info icon will take you to the error page where the error that is restricting the usage of charger will be highlighted.



8. Preventive Maintenance Work

8.1 Important Safety Instructions

- The Charger should be maintained by the trained electrician in accordance with all the local and national electrical codes.
- Do not remove circuit protective devices or any other component until the power is turned OFF.
- Turn OFF power at the panel board or load centre before working inside the equipment or removing any component.

8.2 Maintenance Tasks

8.2.1 Regular inspection

Regularly check the DC Charger every quarter and inspect:

- Whether the charger and display are operating normally.
- Whether the charger and charging guns are clean and undamaged.
- Whether the charger and slits are clean, fans are running normally to ensure proper ventilation.

Note 1: If any component or part of the charger like cable, gun or display is damaged, replacement of the component is necessary to ensure the safe operation of the charger.

8.2.2 Filter cleaning and change

To assure the proper flow of air inside the charger, filters should be cleaned regularly with soap/detergent water. Minimum recommended interval between filter changes is **6 months** and cleaning of the filters should be done **once in a month**.

8.2.3 Charger cleaning

Regularly clean the Charger, especially slits and openings, to ensure that the air freely flows into the charger to avoid overheating. If necessary, use an air-gun to clean the slits and openings to prevent any object from blocking or covering these areas.

Dust collected on the internal electrical components should be removed using a blower once every **three months**.

Note 2: Charger cleaning and filter change period can vary based on the environmental conditions in which the charger is installed and operated.

8.2.4 Fan inspection

High temperature shortens fan life. When the charger is running, check if all the fans on the side of the charger work normally and make sure if ventilation air can move freely around and through the charger.

Thank You

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