

**E-FILL Electric Vehicle & Charging Solutions Pvt. Ltd.**

Plot-1670, Rai Industrial Estate, Sector-38, Sonipat, Haryana-131029

**Documents name:** 120kW DC charger Technical Specifications

<b>A</b>	<b>GENERAL REQUIREMENTS</b>	<b>120kW EV Charger</b>
1	EVSE Type	CCS 2 - DC EVSE
2	Connector Type	CCS2 + CCS2, IEC 62196-3
3	Charging Mode	Mode-4
<b>B</b>	<b>INPUT ( I/P ) REQUIREMENTS</b>	
4	AC Supply System	3-Phase, 5 Wire AC system (3Ph+N+E)
5	Nominal Input voltage	3 $\emptyset$ , 415V (+15% and -15%)
6	Input Frequency	50Hz, $\pm$ 1.5Hz
7	Provision for PE - Power Earth	Inside the charger cabinet
<b>C</b>	<b>OUTPUT ( O/P ) REQUIREMENTS</b>	
8	Number of Outputs & Connectors	2 & (CCS2 + CCS2), >95% efficiency on full load
9	Output power	120kW max
10	Granularity	30kW
11	DC Output Voltage	200 - 1000 Vdc as per IEC61851 Standard
12	Charging Gun – Current Carrying Capacity	0 - 200 Amp as per IEC61851 Standard
13	Power factor	$\geq$ 0.98
14	Earth Leakage Protection	30mA RCD
15	Output Connector Compatibility	CCS : IEC61851-23/-24, IEC 62196-3, DIN70121

16	Safety & Protection	SPD Protection AC input overvoltage protection AC input undervoltage protection AC Input overcurrent protection DC output overvoltage protection Residual current protection Short circuit retraction Earth fault Emergency shutdown with visula alarm Over temperature Protection against direct contact to live part Protection against Earth leakage
17	Power Split during simultaneous operations / Charger Configuration	Charger is able to deliver/split the output power as per EV Charging profile/EV Demand.  Case 1 : 120 KW Max @ Charging Gun 1 @ Full Load, when only Gun 1 is in use Case 2: 60 KW Max @ Charging Gun 1 & 2 each, when Gun 1 is in use & another user comes to use Gun 2
<b>D CHARGING CABLE REQUIREMENTS</b>		
18	Charging Cable Length (Usable )	5m Meter, Straight Cable with proper clamping and gland fitted to Cabinet system.
19	Charging cable mounting	Charging cable and connector permanently attached to EVSE
20	Cable Hanger & Dummy Holder	Mounted on Cabinet System
<b>E ENVIRONMENTAL &amp; MECHANICAL REQUIREMENTS</b>		
21	Ambient Operating Temperature Range	-25°C to 50°C as per 11.11.1.2 of IEC-60068-2-14. (Output power derating above 50°C temperature)
22	Ambient Storage Temperature Range	-30°C to 70°C
23	Ambient Humidity	5 to 95% as per IEC 60068-2-30
24	Cabinet System Application	Outdoor

25	Cabinet System Ingress Protection	IP 54
26	Cabinet System Cooling (Thermal Management )	Fan cooling
27	Altitude	2000 mtr. (Output power derating above 2000 meter.)
28	Dimension (HxWxD)	
29	Weight	349kG
30	Cabinet material	MS
<b>F</b>	<b>USER INTERFACE &amp; DISPLAY REQUIREMENTS</b>	
31	Charging Start/Stop	Mandatory - Controller Display
32	System Reset Switch	Reset MCB switch
33	Emergency stop switch	Red colour mushroom headed push button type.
34	Visual Indicators /Messages	Mains In / System Fault / Error / Out of Service (Unavailable) State of Charging Process
35	Display	Minimum 7" inches with 720 x 480 pixels
36	Support Language	English
37	Display Messages/ Indication	EVSE will display appropriate messages for user during the various charging states like given below- <ul style="list-style-type: none"> <li>- Gun connected / Gun disconnected</li> <li>- Charging Time Duration</li> <li>- User authorization Status</li> <li>- Idle / Charging in Progress / SoC</li> <li>- Fault conditions with message</li> <li>- Metering Information Unit Consumption</li> <li>- Network &amp; OCPP indications</li> <li>- EV Demand (Current &amp; Voltage) at page 2</li> <li>- Charger Output (Current &amp; Voltage)</li> <li>- Output Power (kW)</li> </ul>
38	Authentication	As per OCPP 1.6 (through mobile application or RFID card reader)
39	RFID Card Reader	ISO 14443

G	COMMUNICATION REQUIREMENTS	
40	Communication between EVSE and Vehicle	CCS - PLC Communication
41	Communication interface between charger and central managementsystem(CMS)	Wi-Fi, Ethernet, 2G/3G/4G ( GSM or CDMA ), GPRS ( compatible with all Indians network carriers)
42	Communication between EVSE and Central Server	Open Charge Point Protocol (OCPP) 1.6
43	Log Backup	1000 backup transaction logs
44	Firmware / Software Update	Remote upgrade (OTA)
H	STANDARDS APPLICABLE	
45	Safety functions Verification	As per IEC 61851/IS 17017 and As per AIS 138 Part-2
46	Mechanical Stability	As per IEC 61851/IS 17017 and As per AIS 138 Part-2
47	Climatic environmental tests	As per IEC 61851/IS 17017 and As per AIS 138 Part-2
48	EMC Verification	As per IEC 61851-21-2/IS 17017-21-2

**Documents name: 240 kW DC charger Technical Specifications**

<b>A</b>	<b>GENERAL REQUIREMENTS</b>
1	EVSE Type
2	Connector Type
3	Charging Mode
<b>B</b>	<b>INPUT ( I/P ) REQUIREMENTS</b>
4	AC Supply System
5	Nominal Input voltage
6	Input Frequency
7	Provision for PE - Power Earth
<b>C</b>	<b>OUTPUT ( O/P ) REQUIREMENTS</b>
8	Number of Outputs & Connectors
9	DC Output Voltage
10	Output power
11	Granularity
12	Charging Gun – Current Carrying Capacity
13	Power factor
14	Earth Leakage Protection
15	Output Connector Compatibility
16	Safety & Protection
17	Power Split during simultaneous operations / Charger Configuration
<b>D</b>	<b>CHARGING CABLE REQUIREMENTS</b>
18	Charging Cable Length (Usable )
19	Charging cable mounting
20	Cable Hanger & Dummy Holder
<b>E</b>	<b>ENVIRONMENTAL &amp; MECHANICAL REQUIREMENTS</b>
21	Ambient Operating Temperature Range
22	Ambient Storage Temperature Range

23	Ambient Humidity
24	Cabinet System Application
25	Cabinet System Ingress Protection
26	Cabinet System Cooling (Thermal Management )
27	Altitude
28	Dimension (HxWxD)
29	Weight
30	Cabinet material
<b>F</b>	<b>USER INTERFACE &amp; DISPLAY REQUIREMENTS</b>
31	Charging Start/Stop
32	System Reset Switch
33	Emergency stop switch
34	Visual Indicators /Messages
35	Display
36	Support Language
37	Display Messages/ Indication
38	Authentication
39	RFID Card Reader
<b>G</b>	<b>COMMUNICATION REQUIREMENTS</b>
40	Communication between EVSE and Vehicle
41	Communication interface between charger and central managementsystem(CMS)
42	Communication between EVSE and Central Server
43	Log Backup
44	Firmware / Software Update
<b>H</b>	<b>STANDARDS APPLICABLE</b>
45	Safety functions Verification
46	Mechanical Stability
47	Climatic environmental tests
48	EMC Verification

**E-FILL Electric Vehicle & Charging Solutions Pvt. Ltd.**

570, Rai Industrial Estate, Sector-38, Sonipat, Haryana-131029

<b>240kW EV Charger</b>
CCS 2 - DC EVSE
CCS2 + CCS2, IEC 62196-3
Mode-4
3-Phase, 5 Wire AC system (3Ph+N+E)
3 $\emptyset$ , 415V (+15% and -15%)
50Hz, $\pm$ 1.5Hz
Inside the charger cabinet
2 & (CCS2 + CCS2), >95% efficiency on full load
200 - 1000 Vdc as per IEC61851 Standard
240kW max
40kW
0 - 200 Amp as per IEC61851 Standard
$\geq$ 0.98
30mA RCD
CCS : IEC61851-23/-24, IEC 62196-3, DIN70121
SPD Protection AC input overvoltage protection AC input undervoltage protection AC Input overcurrent protection DC output overvoltage protection Residual current protection Short circuit retraction Earth fault Emergency shutdown with visula alarm Over temperature Protection against direct contact to live part Protection against Earth leakage
Charger is able to deliver/split the output power as per EV Charging profile/EV Demand.  Case 1 : 240 KW Max @ Charging Gun 1 @ Full Load, when only Gun 1 is in use Case 2: 120 KW Max @ Charging Gun 1 & 2 each, when Gun 1 is in use & another user comes to use Gun 2
5m Meter, Straight Cable with proper clamping and gland fitted to Cabinet system.
Charging cable and connector permanently attached to EVSE
Mounted on Cabinet System
-25°C to 50°C as per 11.11.1.2 of IEC-60068-2-14. (Output power derating above 50°C temperature)
-30°C to 70°C

5 to 95% as per IEC 60068-2-30
Outdoor
IP 54
Fan cooling
2000 mtr. (Output power derating above 2000 meter.)
(1746x960x583)mm
405kG
MS
Mandatory - Controller Display
Reset MCB switch
Red colour mushroom headed push button type.
Mains In / System Fault / Error / Out of Service (Unavailable)
State of Charging Process
Minimum 7" inches with 720 x 480 pixels
English
EVSE will display appropriate messages for user during the various charging states like given below- - Gun connected / Gun disconnected - Charging Time Duration - User authorization Status - Idle / Charging in Progress / SoC - Fault conditions with message - Metering Information Unit Consumption - Network & OCPP indications - EV Demand (Current & Voltage) at page 2 - Charger Output (Current & Voltage) - Output Power (kW)
As per OCPP 1.6 (through mobile application or RFID card reader)
ISO 14443
CCS - PLC Communication
Wi-Fi, Ethernet, 2G/3G/4G ( GSM or CDMA ), GPRS ( compatible with all Indians network carriers)
Open Charge Point Protocol (OCPP) 1.6
1000 backup transaction logs
Remote upgrade (OTA)
As per IEC 61851/IS 17017 and As per AIS 138 Part-2
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