



Taking EV Charging to the Next Level!

DC Charger Range

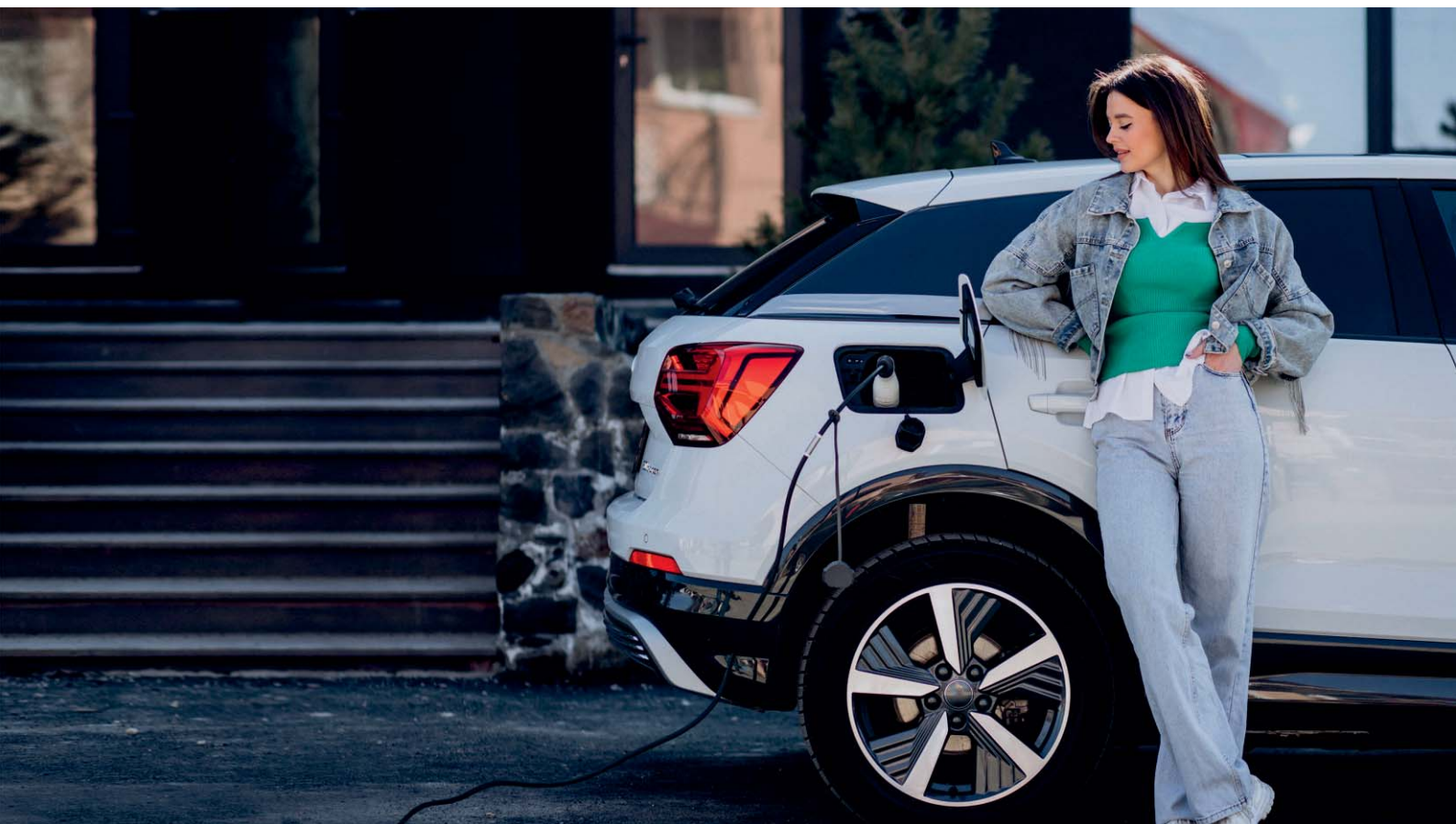


Innovating & Transforming Smart Transportation Solutions

With an established footprint across segments and geographies, Servotech has taken up the challenge of Charging the Future of ElectroMobility, creating smart EV charging solutions by cooperating and understanding the unique needs of different stakeholders like utilities, fleet operators, cities, and end-users. Mileage from the most highly perfected and ready-to-implement e-mobility solution in the market, as Servotech enables you to leverage energy-efficient EV-charging systems brought together by a combination of quality research infrastructure, innovative approaches, skilled personnel, and high-performance components.

In its 2 decade-long journey, Servotech Power Systems Limited has emerged as a pioneer in developing intelligent lifestyle solutions by integrating technology and innovation. An NSE-listed company, Servotech is leading the charge in the end-to-end manufacturing, procurement, and distribution of a range of high-end yet customer-focused products which include solar offerings, medical devices, electric vehicle solutions, and smart lighting products.

Why EV Charging at your location?



Appreciate Property Value



Invite a Greener Tomorrow



Fulfil Sustainability Commitments



Augment Brand Value



Government Standards Compliant



Dissect the Competition



SERVOTECH

Easy Compatible Chargers



2 Wheelers



E-Rickshaw



3 Wheelers

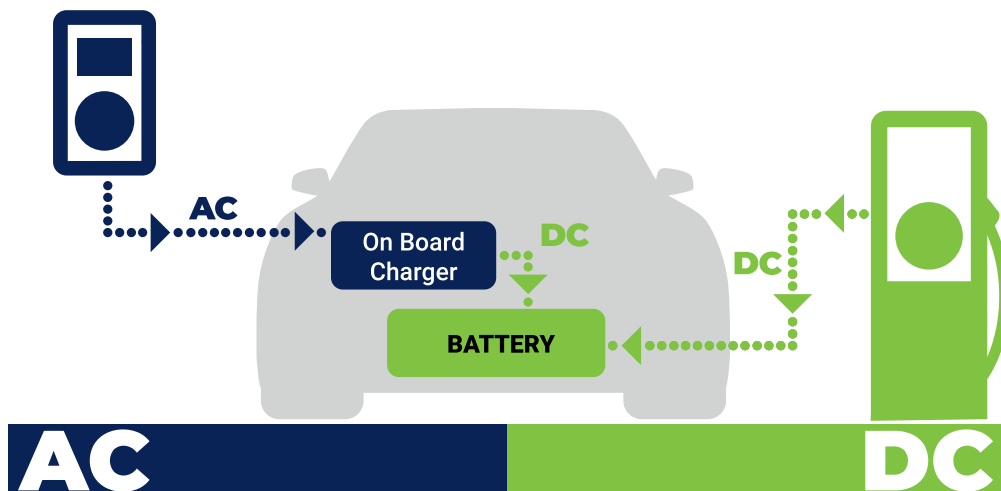


4 Wheelers



Buses

All-EV-Friendly Charging Solutions



AC Charging

All electric vehicles include inbuilt chargers that can convert current before supplying it to the battery. Because they are less expensive to make, install, and run, AC chargers are more ubiquitous in the EV ecosystem.

DC Charging

The converter for a DC charger is included inside the charger itself. That means it can supply power straight to the vehicle's battery, bypassing the onboard charger. When it comes to EVs, DC chargers are bigger, faster, and an amazing development.



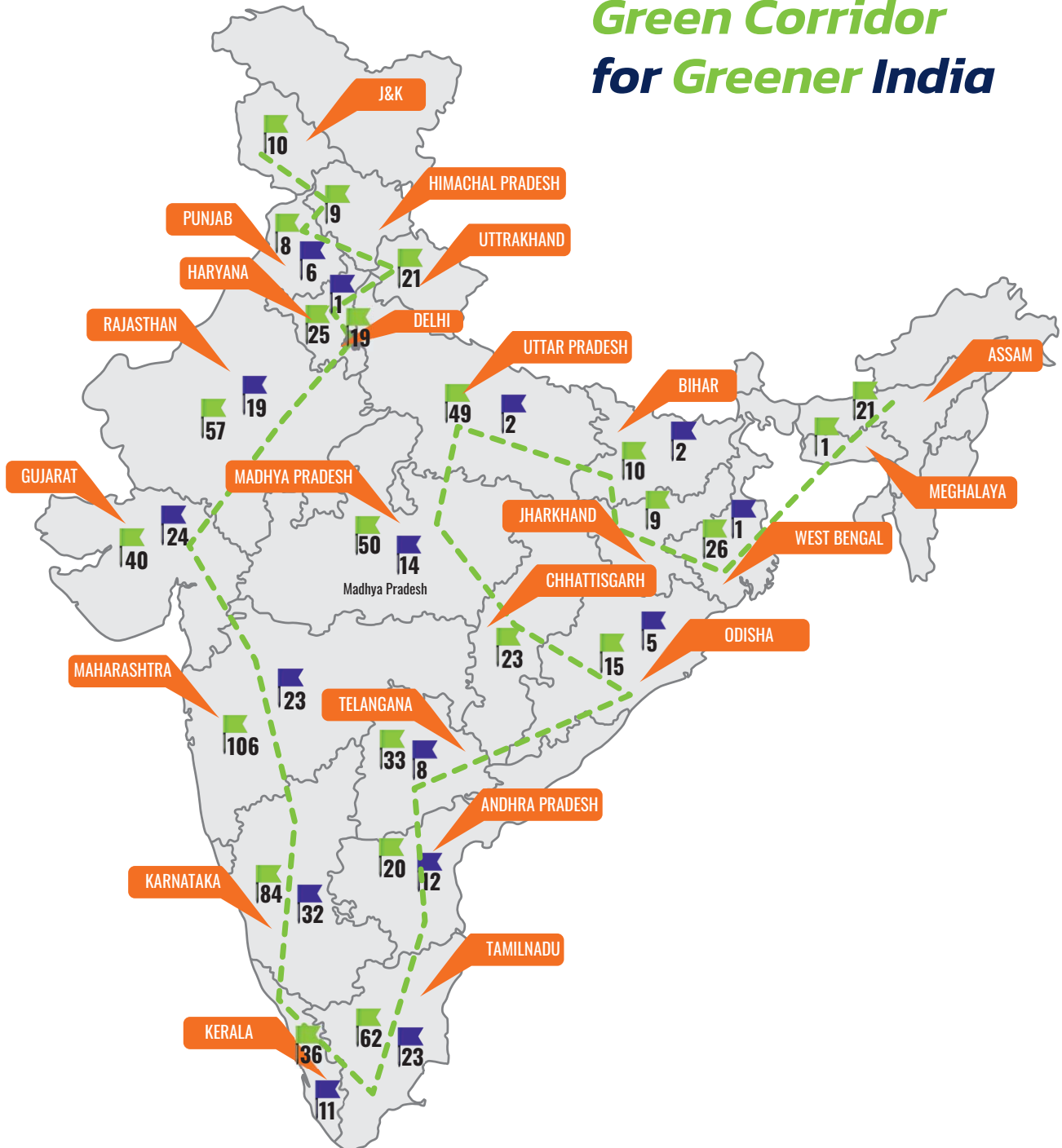
Which EV Charger to go for?

Configure your EV needs to different charger specifications:

EV CHARGER TYPE					
Locations	AC001, 3.3kW-7.2kW	11kW – 22AC	15kW – 30kW DC	50/60 kW DC	100 kW – 240 kW DC
Residential	●				
Work Place	●	●	●		
Commercial (Parking, Hospitals, Malls)	●	●	●	●	
Leisure (Hotels, Museum, Parks)	●	●	●	●	
Highways	●	●	●	●	●



Creating Green Corridor for Greener India



AC Chargers Features

- Smart charging solution – takes care of grid load and varying charging demand
- Supports IEC60309 & IEC 62196 standard connectors
- User-friendly app for EV owners to monitor charging and billing information
- Able to manage power loads, keeping it in sync with the charging load
- Grid responsive metering and billing

Benefits

- Compact Design
- Charging Interface Support
- User Authorization
- Easy Installation

Application

- Commercial
- Parking
- Residential
- Fleet

DC Chargers Features

- Smart charging solution – takes care of grid load and varying charging demand
- Supports CCS-2 connector
- User-friendly app for EV owners to monitor charging and billing information
- Smart card, QR/App Server-based online payment
- Able to manage power loads, keeping it in sync with the charging load
- Grid responsive metering and billing

Benefits

- Interoperability
- Fast Charging
- Connectivity
- Interactive Display
- Set-and-Go
- Charge-all-Together

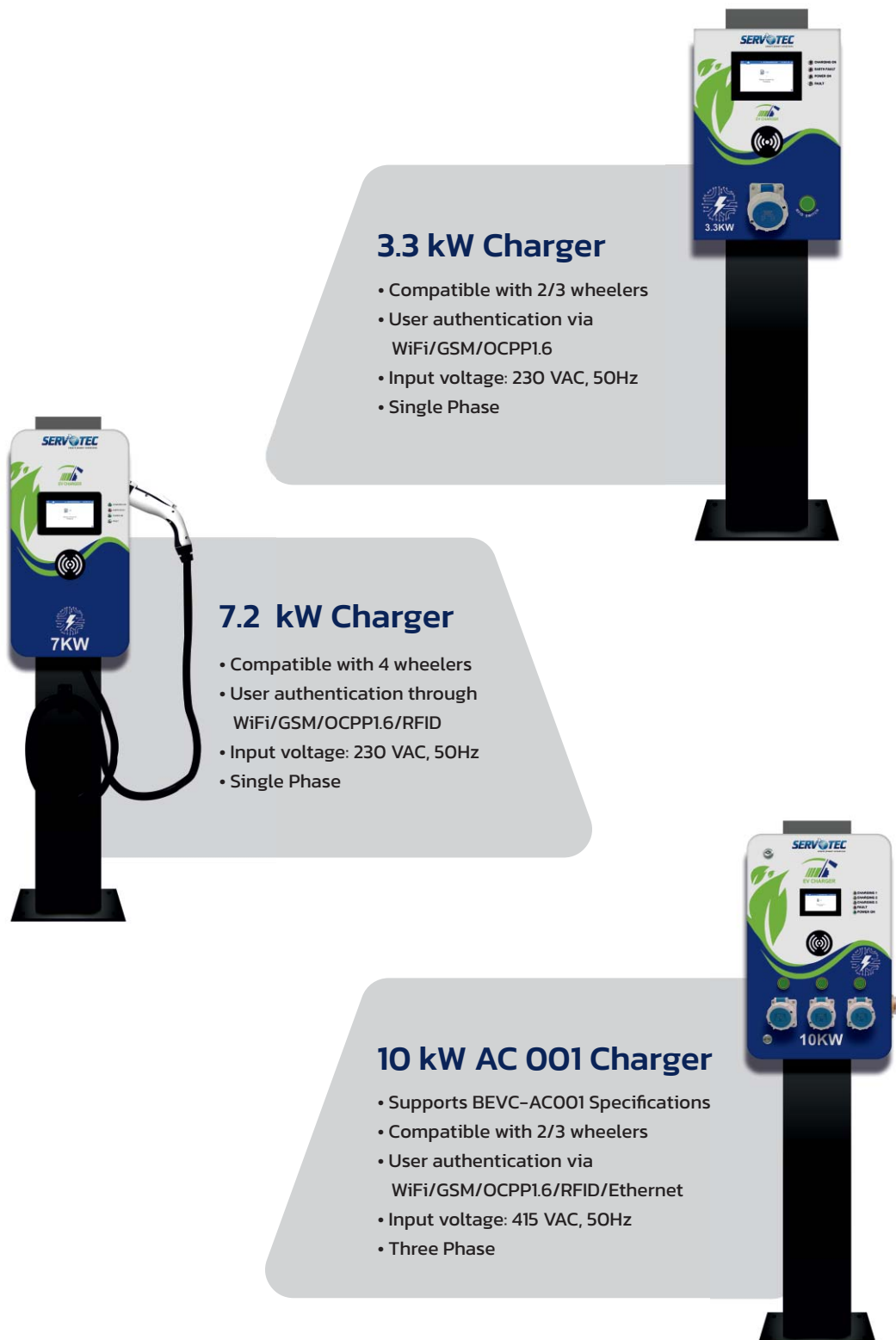
Application

- EV Bus Station
- Commercial Operators
- Parking
- Parking Garage
- Highway Fuel Stations
- Fleet

AC Chargers



Servotech AC EV Charger enables connectivity with the vehicle control system and to assure the vehicle's and crew's safety. Furthermore, depending on how busy the grid is, the charger informs the car of the maximum current it can draw at that time. So that the network is not overburdened, the AC charging station regulates charging based on the current capabilities of the house or charging point.



AC Chargers



11 kW Charger

- Compatible with 4 wheelers
- User authentication via WiFi/GSM/OCPP1.6/RFID/Ethernet
- Input voltage: 415 VAC, 50Hz
- Three Phase



14 kW Hybrid Charger

- Compatible with 4 wheelers
- User authentication via WiFi/GSM/OCPP1.6/RFID/Ethernet
- Input voltage: 415 VAC, 50Hz
- Three Phase



22 kW Charger

- Compatible with 4 wheelers
- User authentication via WiFi/GSM/OCPP1.6/RFID/Ethernet
- Input voltage: 415 VAC, 50Hz
- Three Phase



AC Chargers – Technical Specs

Parameters	Details	3.3 KW	3.3 KW	7 KW	7 KW	10KW	14 KW	14 KW	22 KW	
		Without HMI	WITH HMI	Without HMI	WITH HMI	WITH HMI	Model 1	Model 2	WITH HMI	
Input Power	Rated Power	3.3 KW	3.3 KW	Type 2: 7.2kw	Type 2: 7.2kw	10 KW (3 No. Industrial Socket 3.3 KW)	Hybrid 14 KW (1 No. Domestic Socket -3.3 KW , 2. 1 No. Industrial Socket 3.3 KW , 3. 1 No. type 2 Gun Sungle Phase)	Hybrid 14 KW (1 No. Domestic Socket -3.3 KW , 2. 1 No. Industrial Socket 3.3 KW , 3. 1 No. type 2 Gun Sungle Phase)	Type 2: 22kw	
	Input Voltage	230 V +/- 10%	230 V +/- 10%	7.2 KW -230V AC single phase	7.2 KW -230V AC single phase	10 KW Three phase -415V (+6% and - 10%) a	14 KW Three phase	14 KW Three phase	22KW Three Phase 3L + N + PE, 415V AC +/- 10% , 50Hz (Three phase)	
Output Power	Number of output	One	One	one type -2 Gun	one type 2 Gun	3 No. Industrial Socket 3.3 KW	1 No. Domestic Socket -3.3 KW , 2. 1 No. Industrial Socket 3.3 KW , 3. 1 No. type 2 Gun	1 No. Domestic Socket -3.3 KW , 2. 1 No. Industrial Socket 3.3 KW , 3. 1 No. type 2 Gun	one type 2 Gun	
	Output current range	0-16 A for 3.3KW	0-16 A for 3.3KW	0-16 A for 3.3kw , 0-32A for 7.2 kw per phase, 0-16 Amp per phase		0-16 Amp per phase			32A / Phase	
	Output charging outlet	Domestic 5 Pin Socket	Industrial IEC 60309	IEC 60309 or Type 2 IEC 62196						Type 2 IEC 62196
	Output voltage	230 V AC	230 VAC	230V AC/415 V AC		230V (+6% and -10%) single phase			Three Phase 3L + N + PE, 415V AC +/- 10% , 50Hz (Three phase)	
Battery Backup	For Billing (optional)	15 Min	15 Min	15 Min	15 Min	15 Min (for Billing) Optional	15 Min	15 Min	15 Min	
User interface and control function	DISPLAY	NIL	4.3 TFT LCD with touch	NIL	4.3 TFT LCD with touch	4.3 TFT LCD with touch	2.3 Inch LCD	4.3 TFT LCD with touch	4.3 TFT LCD with touch	
	Status Indicator	LED Light	LED Light	Provided	Provided	Provided	Provided	Provided	Provided	
	Push button	Yes	Yes	Emergency Stop		Provided			Emergency Stop	
	User authentication	QR Code +OCPP 1.6	QR code + RFID +OCPP1.6	QR CODE + RFID +OCPP1.6	QR CODE + RFID +OCPP1.6	QR CODE /RFID + OCPP1.6v	QR CODE /RFID + OCPP1.6v	QR CODE /RFID + OCPP1.6v	QR CODE /RFID + OCPP1.6v	
Environment	Ambient temperature	-30 to 55 deg C								
	Storage temperature	-30 to 70 deg C								
	Operatioinal Temp	-30 to 60 deg C								
	Altitude	< 2000 meters								
	Humidity	upto 95% Non Condensing								
Communication	External (GSM - Optional)	WiFi +4G +LAN +OCPP1.6v	WiFi +4G +LAN +OCPP1.6v	WiFi +4G +LAN +OCPP1.6v	WiFi +4G +LAN +OCPP1.6v	WiFi +4G (optional) +OCPP1.6v	WiFi +4G +LAN +OCPP1.6v	WiFi +4G +LAN +OCPP1.6v	WiFi +4G +LAN +OCPP1.6v	
	Meeting and billing	Wifi/ GSM with SIM APP server based online Payment, with OCPP based authentication	Grid Responsive metering - QR code scan/RFID card/APP server based online Payment	Grid Responsive metering - QR code scan/RFID card/APP server based online Payment		Grid Responsive metering - QR code scan/RFID card/APP server based online Payment	Grid Responsive metering - QR code scan/RFID card/APP server based online Payment		Grid Responsive metering - QR code scan/RFID card/APP server based online Payment	
	Charging operation	Scan Code/ App APP based authentication	RFID /Scan Code/ App APP based authentication	RFID /Scan Code/ App APP based authentication		Swipe card/Scan Code APP based authentication	RFID /Scan Code/ App APP based authentication		RFID /Scan Code/ App APP based authentication	
Protection	Input/Output protection	Over/Under voltage protection, Overload protection, Short circuit protection, Current leakage protection Grounding protection, Surge protection, Over/Under temperature protection	Over/Under voltage protection, Overload protection, Short circuit protection, Current leakage protection Grounding protection, Surge protection, Over/Under temperature protection	Over/Under voltage protection, Overload protection, Short circuit protection, Current leakage protection Grounding protection, Surge protection, Over/Under temperature protection ("protections are optional and based on user requirements)		Over/Under voltage protection, Overload protection, Short circuit protection, Current leakage protection Grounding protection, Surge protection, Over/Under temperature protection ("protections are optional and based on user requirements)			Over/Under voltage protection, Overload protection, Short circuit protection, Short circuit protection, Current leakage protection Grounding protection, Surge protection, Over/Under temperature protection ("protections are optional and based on user requirements)	
	Mechanical protection	IP 54								
	Cooling	Natural Cooling								
Regulation	As per	IEC 61851-1:201	IEC 61851-1:201	IEC 61851-1:2017, IEC 61851-21-2						
	Safety Certificate	CE								
	Optional Accessories	ARAI/NABL								
	Optional	Mounting Column / Pillar								
	Mounting	Wall / Pole Mounted								

*Due to continuous improvement technical specifications & product image can change without prior notice.

DC Chargers



Servotech DC chargers are capable of providing DC power to the car right away. The vehicle does not need to convert DC EV charging to AC. Because this method eliminates a stage, it can charge an electric vehicle considerably more quickly. Some of the fastest DC chargers can fully charge a vehicle in less than an hour.

DC Charging Station

15kW | 20kW

- Charging Gun as per CCS 2 Standard.
- 1 Output for Charging Port
- Input Voltage- 3 Phase
- User Authentication- RFID/ QR Code Scan/ OCPP 1.6 J
- Network Connection- 4G Module/Wifi/ Ethernet



DC Charging Station

30kW

- Charging Gun as per CCS 2 Standard.
- 1-2 Output for Charging Port
- Input Voltage- 3 Phase
- User Authentication- RFID/ QR Code Scan/ OCPP 1.6 J
- Connectivity- GSM / Ethernet / WiFi



DC Charging Station

30kW

- Charging Gun as per CCS 2 Standard.
- 1 Output for Charging Port
- Input Voltage- 3 Phase
- User Authentication- RFID/ QR Code Scan/ OCPP 1.6 J
- Connectivity- GSM / Ethernet / WiFi



DC Chargers – Technical Specs

Parameters	Detail	15/20kW	30kW (Model-I)	30kW (Model-II)
AC Input	Voltage Rating	3-Phase, 265-475Vac (+10 %,-10%)		3-Phase, 415Vac (+10 %,-10%)
	Max. Input Current	40A		50 Amp (30 KW)
	Input Frequency	45-66 Hz		50 Hz ± 1.5Hz or better
	Current THD	<=5%(50% to 100% load)		
	User Authentication	RFID		
		QR-Code Scan		
		Password		
		OCPP1.6 or better based Mobile App Interface Optional		
Charger interface	Interfacing to App	Ethernet, 3G/4G, Wifi,		
Backup Power- Optional	Input Supply Failure backup for billing unit	-	Battery backup for minimum 15 minute for the control system and billing unit.	
DC Output	No. of Output Ports	1 Nos . CCS Type 2, 5 meter cable length		
	Output Cable	As per Applicable AIS standard		
	Output Current per gun	100 Amp		
	Power factor	> 0.98		
	Output Voltage	200-750 V DC		
Minimum efficient		92%		
Electrical metering		to comply with IEC 62052-11 and IEC 62053-21		
AC Input Protections	AC Voltage Protection	AC Over-Voltage, AC Under-Voltage		
	AC Current Protection	AC Over Current / Short Circuit		
	AC Safety Protections	Residual current / Ground fault		
		Earth Presence/Connection Monitoring		
		Surge Protection 4kV DM		
		Lightning Protection		
		Reverse Battery Connction		
		Over temperature		
		Charging Mode	IEC 61851-1	IEC 61851-1
Charger and Vehicle Communication	Power Line Communication (PLC)		Power Line Communication (PLC)	
ESD	Emergency shut down button	Emergency Shut Button (ESD)		
Energy Metering	Independent AC Energy Meter for each output and cummlative	Independent AC Energy Meter for each output and cummlative		
Operating Temperature	Operating Temperature	-10 to 55 degC		
Humidity	Enclosure Protection	95% relative humidity, Non-condensing		
Enclosure Protection	Enclosure Protection	IP54 or better		
Cooling Method	Natural / Forced	Natural / FAN Cooling		
Applications	To Charge	4 wheelers compatible with CCS-2		
Altitude		Upto 2000 m		
Keypad	Metallic/Membrane type /Touch screen		Alpha numeric keypad with minimum 12 keys If touch screen is offered it can be integral part of display	
Display	LCD or equivalent screen The following shall be displayed a.KW hr consumed while charging b.Date and time in DD/MM/YYYY, HH:MM c.Total KW hr consumed (Totaliser) - On selection thru key pad d.Output DCV and Amp while charging e.Event logs- On selection basis thru keypad f.Alarms g.All error logs on selection basis on selection basis	4.3 Inch, Color Touch Screen	10 inch LCD or equivalent screen The following shall be displayed a.KW hr consumed while charging b.Date and time in DD/MM/YYYY, HH:MM c.Total KW hr consumed (Totaliser) - On selection thru key pad d.Output DCV and Amp while charging e.Event logs- On selection basis thru keypad f.Alarms g.All error logs on selection basis on selection basis	4.3 Inch , Optional -7inch LCD The following shall be displayed a.KW hr consumed while charging b.Date and time in DD/MM/YYYY, HH:MM c.Total KW hr consumed (Totaliser) - On selection thru key pad d.Output DCV and Amp while charging e.Event logs- On selection basis thru keypad f.Alarms g.All error logs on selection basis on selection basis h. Price per unit f. Total amount ,incremented during charging
CEA compliance	Chargers to comly with CEA guidelines		Chargers to comly with CEA guidelines	
Memory storage			To store last 50 event logs	
			To store last 50 charging transactions	
			To have memory of storing price of charging per unit with in the unit	
			To store total charging units (cumulative in KW hr)	
Enclosure	Metal sheet		Charging unit shall be able to take price per unit and billing information	
Enclosure Protection	Protection against mechanical impact		Metal Sheet	
	Weight	35-45KG	65 Kg	62 Kg
	Certification		ARAI /ARAI, IEC 61851	
Dimension	Product	545X380X170MM	459*236*734mm	650*160*550mm

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DC Charging Station

SQUAD



60kW | 120kW

- Charging Gun as per CCS 2 Standard.
- 2 Output for Charging Port
- Input Voltage- 3 Phase
- User Authentication- RFID/
QR Code Scan/ OCPP 1.6 J
- Connectivity- GSM / Ethernet / WiFi

DC Charging Station

SQUAD

180kW | 240kW

- Charging Gun as per CCS 2 Standard.
- 2 Output for Charging Port
- Input Voltage- 3 Phase
- User Authentication- RFID/
QR Code Scan/ OCPP 1.6 J
- Network Connection- 4G Module/
Wifi/ Ethernet



DC Charging Station

SQUAD



360kW

- Charging Gun as per CCS 2 Standard.
- 2 Output for Charging Port
- Input Voltage- 3 Phase
- User Authentication- RFID/
QR Code Scan/ OCPP 1.6 J
- Connectivity- GSM / Ethernet / WiFi

DC Charging Station – Technical Specs

Parameters	Details	Specifications 50-60kW	Specifications 120 kW	Specifications 240kW	Specifications 360kW
AC Input	Voltage Rating	3-Phase, 415Vac (+10 %,-10%) 360V-460 V			
	Max. Input Current	150 Amp	200 A, +-5%	As per 240 KW @ 415 V 3 Phase	660 A, +-5%
	Input Frequency	50 Hz ± 1.5Hz or better			
	Insolation	one number MCCB at input in Charger			
	User Authentication	RFID, QR-Code Scan, OCPP based Mobile App Interface Any future upgradation (latest version of OCPP or any other upgraded protocol) till the completion of CAMC period, vendor would upgrade the same at no extra cost to OMCs.			
Backup Power	Input Supply Failure backup	Battery backup for minimum 15 minute for the control system and billing unit. The data logs should be synched with CMS during backup time, is case of drain out.			
DC Output	No. of Output Ports	2 Nos CCS Type 2, 5 meter cable length at a height between 0.4 m to 1.5 m as per IEC 61851-23, section 101.1.3.			
	Output Cable	As per Applicable IEC 62196-3 standard with a voltage range up to 1000V (DC). Connector must fulfill IATF 16949 automotive standard and ISO 9001. It is to be tested by ARAI at Indian atmospheric condition or at an ambient temperature of 50 deg which ever is higher.			
	Power factor	> 0.98			
	Current & voltage THD	Compliant with IEC 61000-3-12			
	Output Current	200 A (max) per Gun	250 A (max) per Gun	300 A (max) per Gun	400 A (max) per Gun
	Output Voltage	200-1000V DC			
	Rated outputs and maximum output power	As per IEC 61851-23,101.2.1.1 except for the ambient temperature range. Temp range to be -20 °C to 55 °C as per Indian climatic conditions.			
Minimum efficiency		94% for load more than 50%			
Internal Cabling		Should be FR grade			
Electrical metering		to comply with IEC 62052-11 and IEC 62053-21			
Charge Option		Auto Charge, Mode Selection (Time/amount/Power/SOC)			
Splitter	Splitting of power output between two guns	Unit shall have a splitter provision so When One gun is connected, then it shall be able to dispense maximum charger capacity and when both CCS2 charger connectors/guns are in parallel operation, the charger will share the power between both the connectors.			
AC Input Protections	AC Voltage Protection	AC Over-Voltage, AC Under-Voltage			
	AC Current Protection	AC Over Current / Short Circuit			
	AC Safety Protection	Residual current / Ground fault- (ELCB Required 30 ma)			
	Earth Monitoring	Earth Presence/Connection Monitoring			
	Ground Fault Protection	Ground Fault Protection			
	Surge Protection- 4 KV DM	Surge Protection minimum Class B SPD. SPD should have valid test report from NABL accredited Lab having facility as per IEC 61643-11/KEMA/VDE - 4KV DM			
	Temperature Protection	Over temperature			
ESD		Emergency Shut Button (ESD)			
EMI/EMC		As per IEC 61000 for complete unit			
		Immunity to electrostatic discharge (IEC 61000-4-2)			
		Supply Voltage Dips and Interruptions (IEC 61000-4-11)			
		Fast Transient (IEC 6100-4-4)			
		Voltage surges (IEC 61000-4-5)			
		Radiated Electro Magnetic Disturbances			
Energy Metering		Independent DC and AC Energy Meter for each output and Input and with cumulative			
Operating Temperature	Operating Temperature	-10 to 55 degC			
Humidity	Enclosure Protection	95% relative humidity, Non-condensing			
Enclosure Protection	Enclosure Protection	IP55 or better			
Cooling Method	Natural / Forced	Natural / FAN Cooling			
Applications	To Charge	4 wheelers compatible with CCS-2			
Communication between charger and EV	CCS2 : IEC 61851, PLC - DIN 70121 and ISO 15118	CCS2 : IEC 61851, PLC - DIN 70121 and ISO 15118			
Software		Software Upgradation through backend System through over the air			
Altitude		Upto 2000 m			
Keypad	Metallic/Membrane type /Touch screen	Alpha numeric keypad with minimum 12 keys If touch screen is offered it can be integral part of display			
Display	7" or bigger LCD or equivalent screen	>7" Industrial grade LCD or equivalent screen The following shall be displayed (a)KWhr consumed while charging (b)Date and time in DD/MM/YYYY, HH:MM (c.Total KWhr consumed (Totalizer) - On selection thru key pad/touchscreen (d.Output DCV and Amp while charging (e.Event logs- On selection basis thru keypad (f.Alarms (g.All error logs on selection basis (h. Price per unit (i. Total amount ,incremented during charging (In case two vehicles charging simultaneously, screen should display the information of charging for both vehicles)			
CEA compliance	Chargers to comply with CEA guidelines	Chargers to comply with CEA guidelines and equipment related guidelines given by PNGRB in vogue			
Certification		Certification from ARAI / ICAT (or any Govt/NABL approved lab) and comply the standard from IEC 61851			
Memory storage		To store last 50 event logs			
		To store last 50 charging transactions			
		To have memory of storing price of charging per unit with in the unit			
		To store total charging units (cumulative in KWhr)			
		Charging unit shall be able to take price per unit and billing information inputs thru key pad and store for calculation of amount			
Enclosure Protection	Protection against mechanical impact & stability	IK10,As per IEC 61851-1 Section 11.11.2 including charger Display			

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Solar and EV Charger Carport: The Future of Smart Energy

Embrace a future of eco-friendly transportation with Servotech's innovative Solar and EV Charger Carport, a game-changing solution designed to power your electric vehicle while utilizing solar energy. With Servotech's advanced technology, you can seamlessly charge your EV using clean, green energy generated from solar panels integrated into the carport structure.

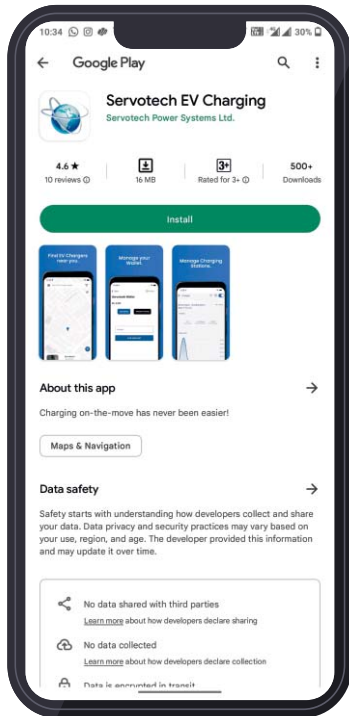


Charging Process



Servotech Cloud Based Charging Management System

Servotech Cloud Based Charging Management System enables seamless integration of chargers with back-end management system



Mobile App

- Safe & secure means of online payment.
- Get real-time charging notifications.
- Find nearby charging stations enroute.
- Control EV charging right from the app.

User Authorization

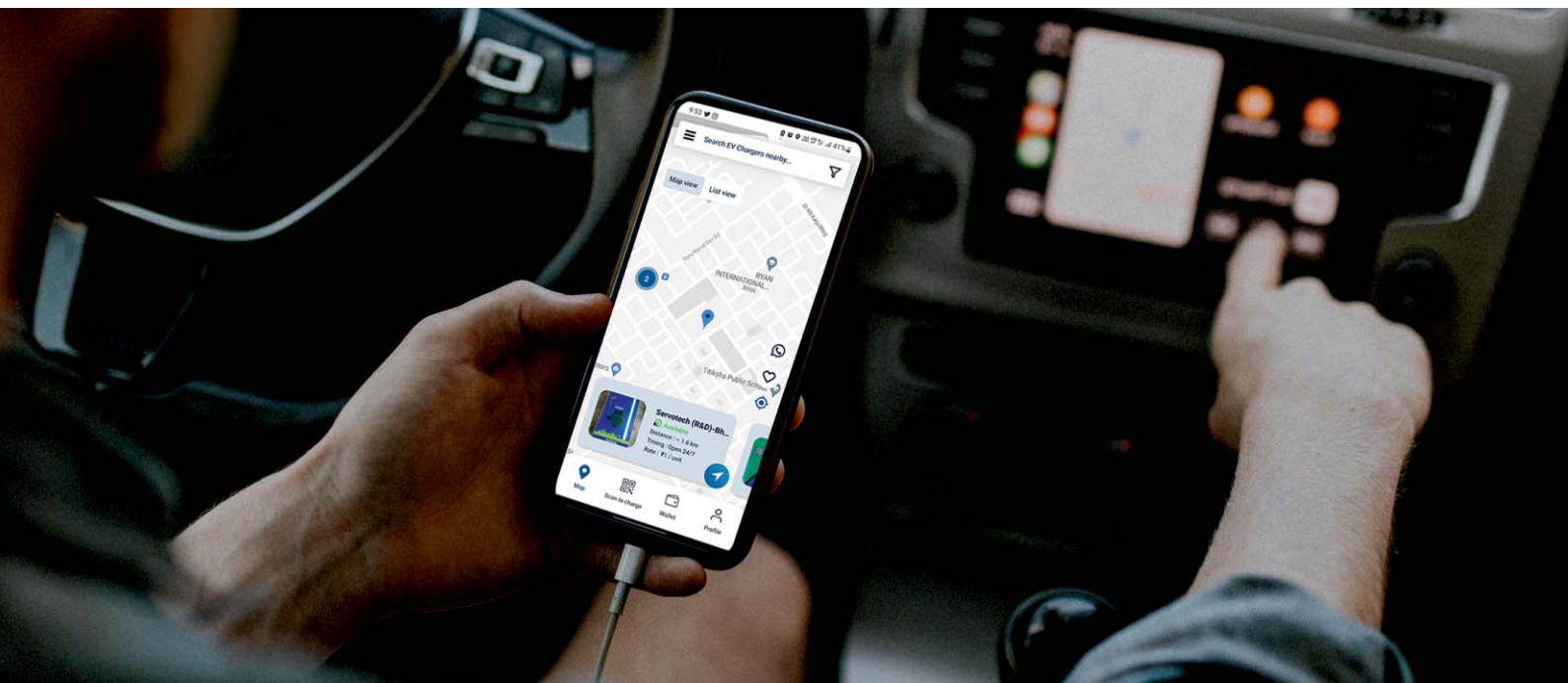
- QR based
- OTP based
- RFID based

Report Generation

- Capacity Utilization
- Charging Transactions
- Electricity Consumed

Payment Gateway

- Multiple payment gateway integrations including all major banks
- RazorPay/Paytm
- Coupons/Promo codes definition and utilization feature



Web & Mobile based Applications

Specification	Web based	Mobile application
Locate all Charging stations on the map with status indicators	●	●
Check the availability status, Operation timings, Estimated Charging Prices, Charging Point Status, Booking history of all the transactions	●	●
Charging Station Booking & Payment	●	●
Charging Station Directions	●	●
Navigate to a Charging Station	●	●
User Authorization (QR based/OTP based/RFID based)	●	●
Reporting Dashboard Track the capacity utilization, charging transactions, electricity consumed, charger status	●	●
Review and rate charging station and mark/unmark them as your favourite	●	●
Ocpp transaction	●	●
Notifications and alerts	●	●
Charging station management	●	●
Firmware Upgrades	●	●



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