

ELECTRIC VEHICLE BATTERY CHARGER



EVERTEC

Specifications

| Parameter | | Value |
|---------------------------|--------------------------------|--|
| General Data | | |
| 1 | Type of Charger | Dual-connector DC output |
| 2 | Energy Transfer Mode | Conductive |
| 3 | Charging mode | Mode 4 |
| System Structure | | |
| 1 | Regulation Method | Regulated D.C. EV charging station with combination of CVC or CCC but not simultaneously |
| 2 | Isolation | Each output isolated from each other with proper insulation |
| 3 | Environmental conditions | Outdoor use |
| 4 | Power supply | D.C. EV charging station connected to A.C. mains |
| 5 | DC output voltage rating | Up to and including 100 V |
| 6 | Charge control communication | Communicate by digital and analog signals |
| 7 | Interface inter-operability | Inter-operable with any EV(non-dedicated, can be used by any consumer) |
| 8 | Operator | Operated by a trained person or EV Owner |
| Input Data | | |
| 1 | AC Supply System | 3-Phase, 5 Wire AC system (3Ph+N+E) |
| 2 | Nominal Input voltage | 3Ø, 415V (+6% and -10%) as per IS 12360 |
| 3 | Input Frequency | 50Hz, ±1.5Hz |
| 4 | Input Supply Failure backup | Battery backup for minimum 1 hour for control system and billing unit, to enable activities such as billing, to be provided. |
| Output Data | | |
| 1 | Output Details | Suitable for 48V/60V/72V vehicle battery configuration |
| 2 | Charger Configuration Types | i. Type 2: Single vehicle charging at 48V with a maximum of 10kW power or 60V /72V with a maximum of 15 kW power or a 2W vehicle charging at 48V with maximum power of 3.3 kW. |
| 3 | Output Current | 200 Amp Max |
| 4 | Number of Outputs | 2 |
| 5 | Output Connectors | 2 output connectors |
| 6 | Output Connector Compatibility | one connector with GB/T 20234.3 + 1 connectors configurable |
| 7 | Converter Efficiency | > 92 % at nominal output power |
| 8 | Power factor | ≥ 0.90 (Full load) |
| Cable Data | | |
| 1 | Charging Cable Length | 5 Meter, Straight Cable |
| 2 | Cable Type | Charging cable and connector permanently attached to DC FC |
| Environmental Data | | |
| 1 | Ambient Temperature Range | 0°C to 55°C |

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| 2 | Ambient Humidity | 5 to 95% |
| 3 | Ambient Pressure | 86 kpa to 106 kpa |
| 4 | Storage Temperature | 0 to 60°C |
| Mechanical Data | | |
| 1 | Ingress Protection | IP 54 |
| 2 | Mechanical Stability | As per IEC 61851-1 |
| 3 | Cooling | Air Cooled |
| 4 | Mechanical Impact | As per IEC 61851-1 |
| 5 | Dimension(W*H*D)/Weight | Will be informed later |
| User Interface & Display Requirements | | |
| 1 | ON- OFF (Start-Stop) switches | Available |
| 2 | Emergency stop switch | Simple Push button type in Red Color, visible and easily accessible |
| 3 | Visual Indicators | Error indication, Presence of input supply indication, State of charge process indication |
| 4 | Display | Minimum 3.5" inches with 720 x 480 pixels TFT LCD Screen, user interface with touch screen or keypad |
| 5 | Support Language | English |
| 5 | Display Messages | <ul style="list-style-type: none"> • Vehicle plugged in / Vehicle plugged out • Duration since start of charge, Time to charge, kWh. • User authorization status • Idle / Charging in progress: SOC • Fault conditions • Metering Information: Consumption Units |
| 7 | Authentication | As per OCPP (through mobile application) |
| Working | | |
| 1 | DC Output voltage and current tolerance | <p>DC Output current regulation in Constant Current Charging (CCC): ± 2.5 A for the requirement below 50 A, and ± 5 % of the required value for 50 A or more</p> <p>DC Output voltage regulation in Constant Voltage Charging (CVC): Max. 2 % for the max rated voltage of the EVSE</p> |
| 2 | Control delay of charging current in CCC | DC output current Demand Response Time: <1 s Ramp up rate: 20 A/s or more Ramp Down rate: 100 A/s or more |
| 3 | Descending rate of charging current | EVSE should be able to reduce DC current with the descending rate of 100 A/s or more |
| 4 | Periodic and random deviation (current ripple) | DC output current ripple limit of EVSE: 1.5 A below 10 Hz, 6 A below 5kHz, |

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| | | 9A below 150 kHz |
| 5 | Periodic and random deviation (voltage ripple) | Max. ripple voltage: ± 5 V. Max slew rate: ± 20 V/ms |
| Communication | | |
| 1 | Communication between EVSE and Vehicle | CAN based as per Annexure G of AIS138-2 |
| 2 | Communication interface between charger and central management system(CMS) | Ethernet(Standard)/ Wi-Fi/2G/3G/4G |
| 3 | Communication between EVSE and Central Server | Open Charge Point Protocol (OCPP) 1.5 protocol or higher versions compatible to OCPP 1.5. Metering: Grid responsive metering |
| Billing | | |
| 1 | Billing | Grid responsive metering |
| 2 | Payment | BHIM / Bharat QR or UPI compliant mobile application payment |
| Protection & Safety | | |
| 1 | Safety Parameters | Over current, under voltage, over voltage, Residual current, Surge protection, Short circuit, Earth fault at input and output, Input phase reversal, Emergency shut-down with alarm, Over temperature, Protection against electric shock |