

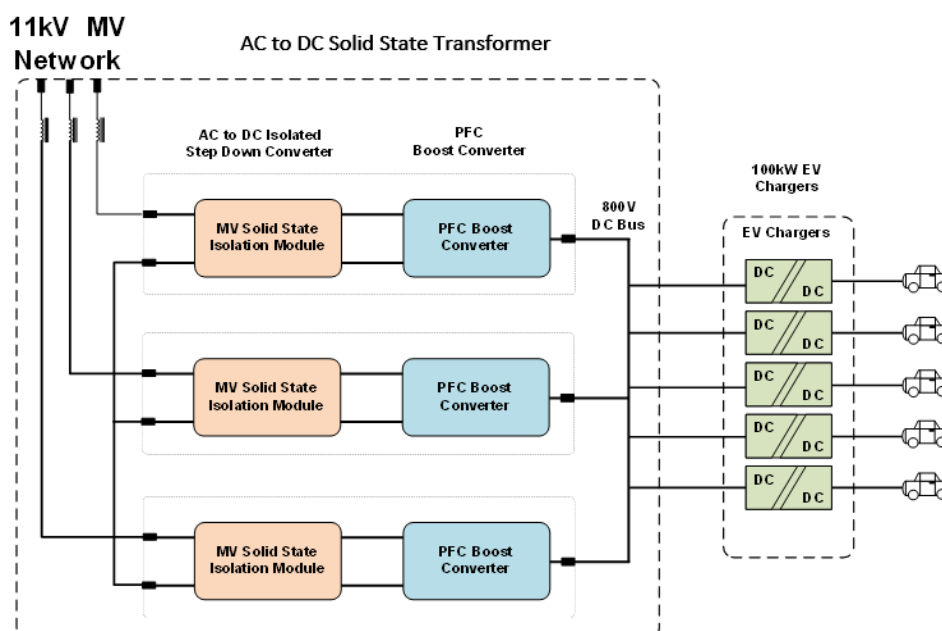
Medium Voltage EV Charger Specification



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Decarbonising Transport for a Greener Future

Turbo Power Systems unique Electric Vehicle Rapid Charger system will utilise the Medium Voltage network where greater electricity network capacity can be accessed without need for expensive sub-station and infrastructure upgrade. The system comprises two unique elements, first a Solid State Transformer comprising high efficiency Silicon Carbide power semiconductors to achieve a low weight, compact alternative to traditional transformer. A number of DC supplied Electric Vehicle rapid chargers, providing both CHAdeMO and CCS rapid charging and again using Silicon Carbide technology, can be connected to the output of the solid State Transformer to accommodate a range of charging infrastructure requirements with differing number and rating of chargers.





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AC to DC Solid State Transformer:

Input Supply	MV network 50 Hz, 11 kV, 3-phase
Input Power Factor	>0.95
Output Voltage	800 Vdc
Output Current	625 Adc
Power Rating	500 kW
PWM Switching Freq'	> 20 kHz

DC to DC Rapid Charger Converter:

Power:	100 kW
DC Input Voltage	800 Vdc
Output Voltage Range:	150 to 920 V
Maximum Current:	0-200 A for 100 kW @ minimum 500 V
PWM Switching Freq'	> 20 kHz

System Performance:

Efficiencies	TBC post completion of preliminary design
Temperature Range	-20°C to 35°C
Altitude	< 1000 m without de-rate
Humidity	85 % non-condensing
Mechanical Package	MV SST and EV Charger to IP65
Cooling	Force air cooled
Service Life	10 to 15 years
Sound Noise	<55 dB in all directions
Maintenance Period	12 months
Mean Time to Repair	< 2 hours

Functionality:

Charger Outlets	Dual (two standards)
Charger	Mono-Directional
Charging Standard	CHAdeMO and CCS
Display	Charging process and status
External Communication	WiFi, LAN, 3G/4G (optional)
Authentication	RFID, App
CSMS	OCPP compatible

Target Market:

Commercial, long range vehicle fleets. 250 to 280 kWh battery.

Geographic Markets:

United Kingdom



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