12kW DC to DC Converter Specification

Sl.No.	Parameter	Specification	Remarks	Compliance
1	Type	Boost Converter (Isolated)		
2	Input Voltage	36V - 82V DC		
3	Output Voltage	Nominal - 307V DC (Adjustable 280V to 350V)		
4	Output Power	12kW		
5	Efficiency	>90% plus		
6	Line and Load Regulation	±3%		
7	Ripple	Less than 2%		
8	Partial Load support	10% to 100%		
9	Over Current Protection at Input	Fuse (Field Replaceable)	Auto recover / resettable fuse desired	
10	Over Voltage Protection	auto recovery mode (above 5%)		
11	Protection	I/p: under & over voltage Polarity reversal O/p: under & over voltage, over load, high temp (thermal shutdown), short circuit. Reverse Current Protection, polarity reversal		
12	Short Circuit protection at output	short can be momentary to continuous	output voltage should fall back to "0", once the short is removed it should recover back to the set voltage	
13	Overload capability	up to 1.2 times the nominal load for 1Sec		
14	Display (optional)	LCD / OLED Display		
15	Management Port	RS485 / CAN (MODBUS)	share the details of existing interface available, will be finalized during design phase	
16	Management Protocol	Mutual agreed protocol to be followed		
17	Debug / Diagnostic Port	RS232		
18	Programmable output current control	Field programmable through RS485 / CAN (MODBUS)		
19	Output Current Control	Output current control in step of 0.1A via management port	resolution can be finalized during the design phase	
20	Output Voltage Control	Output Voltage control in step of 0.1V via management port	resolution can be finalized during the design phase	
21	Mode	Programmable constant Current or constant voltage mode		
22	Type of input and output connectors	Suitable connector with safety protection	will be finalized during design phase	
23	Insulation resistance	5 mega- ohm (500V DC)		
24	Operating temperature	-20°C to +45°C		
25	Storage Temperature	-40°C to +70°C		
26	Operating Altitude	0 to 3000mtr		
27	Cooling	Conventional / forced / Conduction cooling	will be finalized based on cost, weight & size - if using fan MTBF should be considered	
28	Weight	~25kg		
29	Dimension(W*L*H)	Size: 4U x 19" x 600mm (HxWxD)		

30	Vibration	5 to 8 Hz: ±6mm constant displacement 8 to 500 Hz: 1.5g constant acceleration. Two hours in each of three axes.		
31	Bump	25g, 6ms, 4000 bumps @ repetition rates of one to three bumps per second		
32	Shock	The equipment shall be subjected to three shocks (20g, 18ms) in each direction, along each of the three mutually perpendicular axes (i.e. total of 18 shocks).		
33	EMI/EMC	RE, CE, RS, CS as per industrial standards	Detailed spec will be finalized during the design phase	
34	Corrosion (salt)	The equipment shall be exposed to the salt mist, with the spray operating, for a period of 2 hours under the laboratory atmospheric conditions. The quantity of solution sprayed per hour shall be approximately one percent of the volume of the chamber. The equipment shall then be stored at a temperature of 35ºC ± 2ºC and a relative humidity of 90 to 95% for a period of 7 days. The above procedure constitutes one cycle. The equipment shall be subjected to a total of four consecutive cycles as above.		
35	Mould growth	Tested against Cultures viz. Aspergillus flavus, Aspergillus Versicolor, Penicillium funiculosum, Chaetomium globosum and Aspergillus niger for 28 days. The chamber shall be capable of maintaining its working space at a temperature of 30ºC + 1ºC. Any periodic change of temperature shall not exceed at a rate of 1ºC per hour. The relative humidity shall be maintained at a value greater than 90% by exposing a large area of water slurry of Potassium sulphate (K2SO4).		
36	Noise emission	MIL-STD-1474D		
37	ON/OFF control	Manual	will be finalized during design phase	
38	Audio & Visual Indication	LED indication & audio alarm for System health, input OK, output OK	LED to indicate fault detected- as per SL No 11	
39	Warranty Period	2 Years		
40	Deliverables	User Manual Troubleshoot manual test reports CAN protocols / message details NABL certificates		
41	Lead time	12weeks to 16weeks	Unit -1 to be delivered within 12weeks rest before 16weeks	
42	Quantity required	6 No	it can be staggered delivery (1+3+2)	