COMPLIANCE STATEMENT TO TECHINCAL SPECIFICATIONS OF THE UPS FOR

ALL VENDORS ARE REQUIRED TO FILL-UP THE `OFFERED SPECIFICATIONS' COLUMN
(Vendor not filling-up this format will be rejected)

SPECIFICATIONS FOR 2 Sets of 12 KVA ONLINE U.P.S. SYSTEM (Specifications for Each System)		
PARAMETER	**REQUIRED SPECIFICATION**	**OFFERED SPECIFICATION**
Topology	True Online Double Conversion Power Recreation	
Isolation	Regenerated Output Neutral for Galvanic Isolation between Mains and Load	
Rectifier Design	Fully Controlled	
Charger Design	Low Ripple CVCC Battery Charging	
Inverter Design	Advanced Sine-weighted High Frequency PWM using IGBT with Instantaneous Sine-wave Control	
Duty	Continuous Operation.	
INPUT		
Voltage Range	340 to 470 V, Three Phase	
Frequency Range	47 to 53 Hz	
Input Power Factor	>0.92	
OUTPUT		
Power Rating	12 KVA / 12 KW 230 V, 1 Phase	
Output Current	Continuous Output Current @ 230 V AC = 52.2 A	
Voltage Regulation	$\pm$ 1%	
Frequency	50 Hz $\pm$ 0.05% Crystal Controlled	
Waveform	Sine Wave	
Harmonic Distortion	Less than 2% on linear load	
Power Factor	Unity to 0.7 lag within specified power ratings	
Load Crest Factor	3:1 without derating	
Overload Rating	125% for 10 minutes 150% for 1 minute 300% for 10 milliseconds The UPS should not trip in case of Start-up of Any Load at the Output within the above specifications	Specify Output Current @ 230 V and 125% load: Specify Output Current @ 230 V and 150% load : Specify Output Current @ 230 V and 300% load :

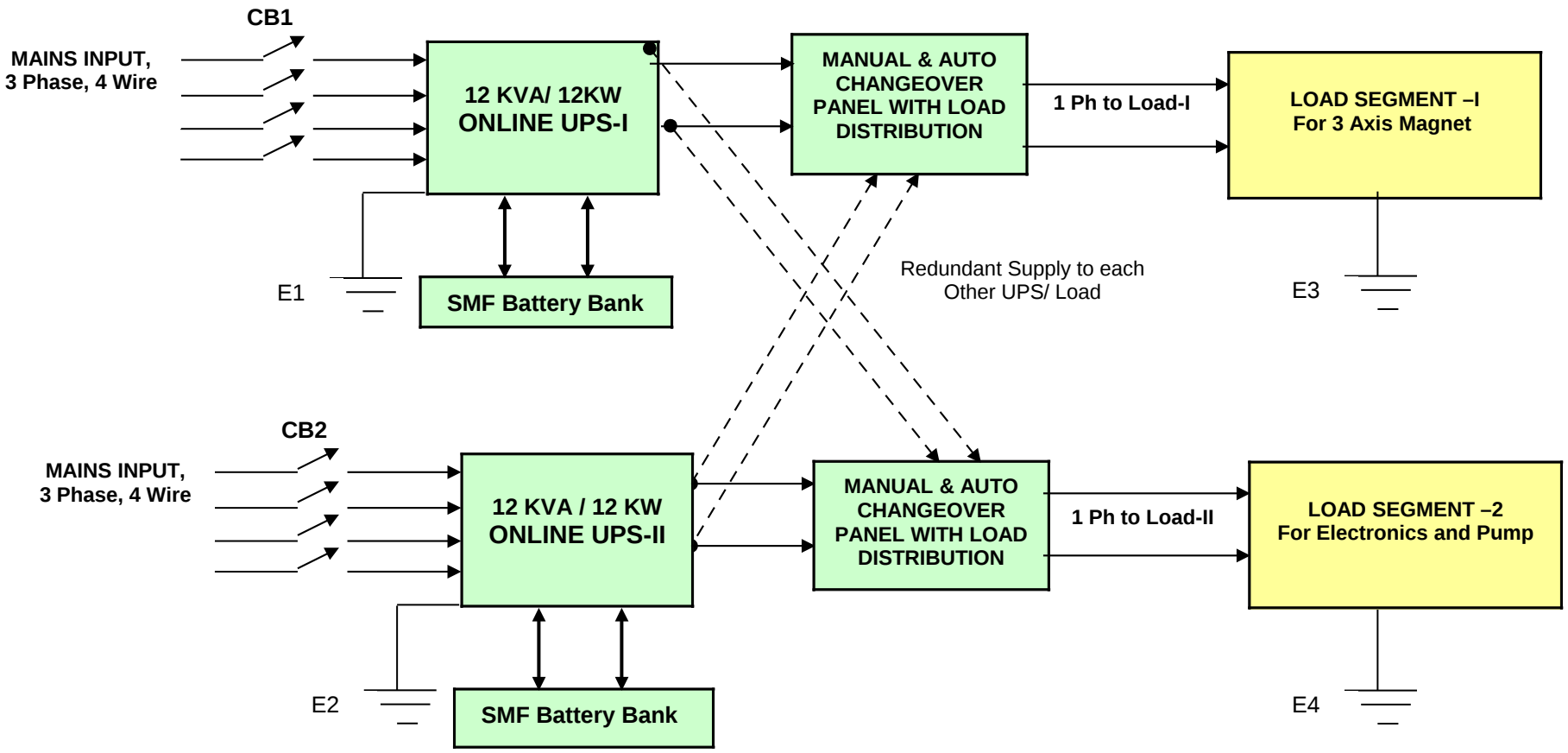
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PARAMETER	REQUIRED SPECIFICATION		OFFERED SPECIFICATION	
BATTERY				
Type	Sealed Lead Acid Maintenance Free			
Back-up Time	60 Minutes on full load. Battery Required : For 12 KVA /12KW UPS : 22600 VAh Minimum		Specify No. Of Batteries : Specify Voltage of Each Battery : Ampere-Hour Rating of Each Battery :	
Battery Installation	For Safety of the user, either the batteries should be built-in OR external Powder-coated battery cabinet should be supplied. There shall be a suitable Battery MCB / MCCB / Protection in addition to protection inside the UPS			
PROTECTIONS				
Input Over Current	Input Under/ Over Voltage	Output Under/ Over Voltage		
Over Temperature	Battery Under/ Over Voltage	Output Overload & Short Circuit		
ENVIRONMENTAL				
Operating Temperature	0 to 45 deg C (50 deg C Peak)			
Relative Humidity	Upto 95% Non-condensing			
Audible Noise	< 55 dB at 1 metre			
Ingress Protection	IP21			
Cooling	Forced Air Cooling			
EXTERNAL PANEL FOR UPS INPUT AND LOAD DISTRIBUTION				
Input	Suitable MCB / MCCB of Reputed Brand		Specify the Brand and rating :	
Output	Minimum 6 No. Through Two Pole MCB – C-Curve		Specify the No.	Rating
Change-Over Switch	Rated for 63 A, Single Phase, Two Pole			
Indications	Suitable Long-term Reliability LED Type			
ONSITE WARRANTY				
For UPS	5 years Minimum			
For Battery	5 years Minimum			

MATERIAL REQUIRED	VENDOR'S COMPLIANCE
2 No. 12 KVA / 12 KW UPS as per above specifications	
2 Sets of Battery Bank Each suitable for 60 Minutes back-up on 12 KW Load	
2 Sets of Battery Cabinets alongwith protection	
2 Sets of Input / Output Panels as per above requirements	

2X12 KVA/12 KW 3:1 ONLINE UPS PROPOSED LAY-OUT

Overall UPS Lay-out for Three Axis Super Conducting Magnet + Electronics & associated Pump.



1. **Under normal circumstances; the Total Load on Each UPS will be about 6 KW and the total load on both the UPS Systems combined shall be <12 KW. This is to ensure that when all the Loads are working and One UPS is kept under Maintenance; all the running systems should be protected and should have one hour battery back-up also.**
2. **By loss of Redundancy, it should be possible to run Total Load of 24 KW on both the UPS Systems.**
3. **The complete system should diversify the risk on Two Independent Power Sources and Distribution Cabling, Switchgears Etc.**
4. **Battery Back-up Time on Full Load should be One Hour on Full Load for Each UPS System. In case of normal functioning the expected total back-up time should be about 2 hours on total running load of 12 KW (about 6 KW on each system)**
5. **Galvanic Isolation between Mains & Load in all Modes of Operation must be ensured.**
6. **Systems must keep working on Mains Supply normally even when the Incoming Supply Phase Sequence is reversed.**