Supply, Installation, Testing and Commissioning of 6kva On-line, Double Conversion, Inbuilt Battery UPS for Biological Laboratory

Sl. No	Description	Specifications	To be filled by Vendor
1	General Specification	------	------
1.1	Rating and Type	6000VA/5400watts On-line UPS& Conventional type	
1.2	Battery	SMF VRLA type	
1.3	Technology	IGBT based double conversion	
1.4	Display	LCD	
1.5	Input	230 V, 1 phase, 3wire(P, N and E)	
1.6	Input Voltage range	185V to 280V	
1.7	Input Frequency range	45Hz to 55Hz	
1.8	Input Power factor	> 0.96	
1.9	Output voltage	230 V, 1 phase, 3wire(P, N and E)	
1.10	Output Voltage Regulation	≤ 1%	
1.11	Output Power factor	0.9 to unity	
1.12	Output frequency	50Hz +/- 1%	
1.13	Over load capacity	1minutes @125% load	
1.14	Over all AC-AC Efficiency	≥ 95%	
1.15	Output wave form	Pure Sine-wave	
1.16	Current harmonics (THDi)	≤ 4% at Input side	
1.17	Voltage harmonics (THDv)	≤ 2% for linear load at output side	
1.18	Noise with rated load at 1Mtr	≤ 60dB	
1.19	Crest factor	3:1	
1.20	Numbers & capacity of inbuilt Batteries	20 Nos & 12V/7AH SMF-VRLA batteries	
1.21	I/P and O/P Terminals	Hard wire	
1.22	Protection	Input Over/Under Voltage, Over load, Short circuit, output over voltage, batteries Over/Under charging, Over temperature, etc…	
1.23	Replacement Warranty	**2years for both UPS and Batteries**	
1.24	**Application**	The ups should be capable	

		enough to supply the rated power to the Biological laboratory equipments which are integrated with small motors based compressor (compressor motor capacity about 500 watts)	
2	Operating Ambient Temperature	UPS Module : 0°C to +40°C Battery: 25°C ± 5°C	
3	Cooling	Forced air cooling by UPS internal fan	
4	Grounding	The AC output neutral shall be electrically isolated from the UPS chassis. The UPS chassis shall have an equipment ground terminal. Provisions for local bonding shall be provided	
5	Wiring standards	Installation and required accessories like lugs etc will be in the scope of supplier and Wiring practices, materials and coding shall be in accordance with the requirements of the National Electrical Code (NFPA 70). All bolted connections of bus bars, lugs, and cables shall be in accordance with requirements of the National Electrical Code and other applicable standards. Conformity to standards The system must conform to the following standards: Necessary certificate from IEC shall be submitted wherever required. Safety: EN62040-1. EMC emissions: EN62040-2. EMC immunity: EN62040-2 class C2 and C3.	
6	Uninterrupted Transfer / Re-transfer	The transfer control logic shall automatically turn on the static transfer switch, transferring the	

		critical AC load to the bypass source, after the transfer logic senses any of the following conditions • Inverter overload capacity exceeded • Critical AC load over voltage or under voltage • Battery protection period expired • Out of tolerance inverter input DC voltage • Over temperature • Inverter fault Re-transfer of the critical AC load from the bypass source to the inverter output shall be automatically initiated unless inhibited by manual control	
7	Maintenance bypass	The manual bypass switch will be provided internally and must ensure that equipment downstream of the UPS is supplied directly by the UPS upstream power source when rectifier, inverter and static switches are open. Switching to the manual bypass and back will be possible without load supply interruption (Make Before Break)	
8	Replacement Parts Stocking	Parts shall be available through an extensive network to ensure around-the-clock parts availability throughout the country. Recommended spare parts shall be fully stocked by local field service personnel (in Bangalore office) with back-up available from national parts center and the manufacturing location. The national parts center Customer Support Parts Coordinators shall be on-call 24 hours/day, 7 days/week, and 365 days/year for immediate parts availability. Tenderers may also produce Bangalore	

		service center address along with strength support in the form of escalation chart. The UPS systems are going to feed the power to very critical equipments, and it is the responsibility of local service team to attend any emergency situation immediately during warranty period as well as post warranty period. Hence, service center at Bangalore is very much essential.	
9	Other Protections	1.Battery protection period expired Input Over/ under voltage, Output over/ under voltage, Output short circuit, Inverter overload, Rectifier overload, Inverter Overvoltage/under voltage, over temp, surge protection 2. UPS must have Generator Compatibility 3. UPS Must have complete protection for EMI / RF as per the IEC standard 4. UPS units should have built in surge, spike and line noise protection 5. It should have Intelligent Battery Management system	
10	Guaranty and Warranty	The equipments (complete system including batteries) supplied shall be guaranteed against all types of defects for a period of Two years (**2 years**) from the date of handing over of the equipment to NCBS after successful completion of acceptance testing. Any defects in the system/sub-assemblies found	

		within the guarantee period shall be rectified/replaced by the supplier **free of cost**. During this period, servicing at once in three months interval, as prescribed by the manufacturer and as mutually agreed to, shall be carried out free of cost. It also includes battery health checks of the all the battery banks. Supplier shall also indicate the service facility they can offer at the place of installation and the telephone number and address of their service center. During the warranty period, breakdown call response time should be within 4 hrs in all working hours and 24hrs during after office hours and weekends	

Note:-

Tenderer shall **confirm** the each and every specification mentioned above and submit all technical supporting documents along with third party certificates of the system along with the tender and also should attach the **Battery backup calculations and battery discharge characteristics catalog along with the technical bid for evaluation purpose.**

The Tenderer shall give the names and full postal addresses of their clients from Bangalore to whom similar equipments have been supplied.