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Indian Institute of Technology Kanpur
Department of Physics

Tender Ref. No.IITK/PHY/2022-23/SoM/12 **Date: 05th August 2022**

Bid Opening Date : 05/08/2022
Bid Submission Closing Date : 15/08/2022

Sealed quotations (**technical and financial separately**) from prospective vendors are invited by the Department of Physics, IIT Kanpur for "**UPS System"** with the following technical specification. All the quotations and tender related documents should be sent by Speed Post/Courier to the inviting officer at the below mentioned address.

We are looking for 40 KVA UPS (Quantity: 01) and 20 KVA UPS (Quantity:01)

TECHNICAL SPECIFICATION FOR 40 & 20 KVA, 3-3 PHASE UPS

Sl No.	Parameters	Specification	Vendor's Compliance / non-compliance
	TECHNOLOGY	Should be IGBT based DSP controlled double conversion On-line **VFI** according to IEC62040-3 specification	
		Built-in Isolation Transformer should be provided on the Inverter output (No external Transformer will be accepted)	
01.	**Input**		
	Rated voltage	415 VAC three-phase + N	
	Voltage Range	- 25% + 20%	
	Frequency Range	50 hertz ± 4%.	
	Power Factor	≥ 0.98	
02.	**By Pass (Static & manual)**		
	Rated Voltage	380/400/415 VAC	
	Number of Phases	3 + N	
	Permitted voltage range	± 15% (selectable from ± 10% to ± 20% from front panel)	
	Rated Frequency	50/60 Hz	
	Permitted Frequency Range	± 5% (selectable from ± 2.5% to ± 10% from front panel)	
03.	**Battery Bank**		
	Backup time	30 Mins.	
	Battery Type	12V SMF VRLA	
	Battery Rack	Suitable MS Rack	
	Preferred make	Exide	
	Minimum VAH requirement	**For 20 KVA UPS : 16128 VAH** **For 40 KVA UPS : 36000 VAH**	
	Recharge Time	4-6 Hrs.	

	Automatic battery test	The UPS should carry out battery bank test automatically at regular intervals	
04.	**Output**		
	Active Power	40 KVA	
	Number of Phases	3 + N	
	Rated Voltage	380 – 400 – 415 V AC Selectable with ± 1% regulation	
	Power Factor	0.8 or better	
	Voltage setting	via Control Panel	
	VTHD	<3% for Linear load	
	Crest factor (Ipeak/Irms)	4 : 1	
	Waveform	Sinewave	
	Frequency	50 Hz ± 0.05%	
	Overload	110% for 1 Hr., 125% for 10 mins., 150% for 1 min.	
	Overall efficiency at full load	≥ 92%	
05.	**Protection**		
	Normal Protection	Input, output, rectifier input, battery fuse, bypass fuse, short circuit etc. Thermal on system, rectifier, bypass and inverter. Protection against prolonged battery discharge	
	Back Feed Protection	The back feed protection device should prevents any current that could cause an electric shock from back feeding to the incoming power supply connection	
06.	**Environmental Conditions**		
	Operating temp. for UPS	0 – 40º C	
	Relative humidity	<95% non-condensing	
	Noise	<65dBA at 1 m	
07.	**Mechanical Data**		
	Protection Degree of the cabinet	IP 20	
	Cable input	Bottom	
08.	**Display & Indications:**		
	Minimum List of information to be appeared on the LCD Display	Line input voltage, Frequency Output Voltage, current & frequency Output apparent power, Load output apparent power per phase Total Load Power, Apparent Power, Active Power, Load output Power Factor Load Power Percentage per phase, Total connected load in percentage Bypass voltage, input frequency Inverter voltage, Frequency Battery voltage, DC Bus voltage, charging current, discharging current, Battery max discharge time in battery mode, Battery warn volt, shutdown volt Temperature – Control board, Rectifier SCR, Inverter IGBT System shutdown time, restart time <u>Setting:</u> Clock, Date, Service contact, Battery Test, RS485, MODBUS, ALARM	
	LED Indication	UPS Start, Standby, Bypass Mode, Line Mode, Battery Mode, Fault, Warning Battery Test, ECO Mode	
	Buzzer	Beeping sound for Bypass, Standby, Battery Test, Low Battery, Fault, Warning for overload, overload	

09.	**Other Key features:**		
	Reliability of the system	The total system (Charger & Inverter section) should be controlled by redundant microprocessor system. If a fault occurred to either of the microprocessors, the power supply to the protected load will not be interrupted	
	EMI Filter	Input & output EMI Filter should be provided inside the UPS	
	Mimic Display	Mimic diagram should be provided to know the status of the rectifier, inverter, battery and output.	
	Self-Diagnostics	The system should provide "EVENT RECORDING" facility its include cause of the fault and should be able to display the name of the faulty area in terms of rectifier fault, inverter fault, battery contactor fault etc. through code. All events are readable from front panel LCD/LED of the system and also from PC/Laptop through the RS 232 communication interface port.	
	Input Phase Reversal	In the event of any phase reversal in the input power source, the system should neither trip nor go to battery discharge mode. It should work on mains but with fault alarm indicating input phase reversal.	
	EPO (Emergency Power Off)	In the event of an emergency the UPS should be completely shut down by an external command	
	Standards	Should comply the following safety, EMC & RoHS Standards: Low Voltage Directive 2006/95/EC EMC Directive 2004/108/EC RoHS Directive (EU) 2015/863 : (Copy of Certificate of the offered Model must be attached with the Bid documents)	
	Quality Certification	ISO 9001; ISO 14001; ISO 50001 & 45001 (copy must be enclosed)	
	E-Waste	EPR authorization from CPCB, Govt. of India (copy must be enclosed)	
	Warranty (onsite)	1 year for UPS and 2 years for batteries	
	Make in India Local content	Should be declared on the letterhead	
	Additional Items		
10	**Output Distribution Box**		
	For 40 KVA UPS	(a) 3-Phase 4-pole 63A, (b) 1-phase 15A, (c) 1-phase 5 A	
	For 20 KVA UPS	(a) 3-phase supply to the Compressor, (b) 1-phase supply to the pump.	
11	Battery Bank (**With Buy Back option**)		
	Backup time	30 Mins.	
	Battery Capacity	26 Ah (Preferred for 10 KVA UPS)	
	Battery Rack	Suitable MS Rack	
	Preferred make	Exide	
	Quantity	**30 Nos.**	

<u>Minimum Eligibility Criteria</u>:

1) Bidder should submit printed technical literature / brochure of the offered model, which should be fully complied with the specification as mentioned above otherwise the bid will be disqualified.

2) The Bidder shall be an established UPS Manufacturing company registered under the Companies Act, 1956 having operations in India for a minimum period of 10 years. Copy of Certificate of Incorporation shall be submitted.

3) The OEM should successfully installed and commissioned similar or higher rating UPS Systems to any Govt. / Defence / Research Institutions. Copy of PO / Installation report / Performance certificates should be submitted towards evidence.

4) The OEM should have minimum 10 years experience in UPS manufacturing

5) OEM should have local service engineer within the radius of 100 kms.

General Terms & Condition.

1. All vendors are requested to submit **"technical and financial bids"** together in separately sealed envelopes.
2. Evaluation will be done on the basis of technical specifications given in tender document.
3. Financial bid will be open for those only who qualify all the technical specification as per our tender notice.
4. Quotation must be valid for 60 days.
5. Payments terms: 100% after delivery & successfully installation.
6. Warranty should be clearly mentioned, the Warranty must start from the date of installation at IITK.
7. Only OEM or its authorized agents should quote, Quotation should carry proper certifications like proprietary certificate/ authorization certificate from manufacturer, etc.
8. Vendor must be able to perform factory acceptance testing of the product and demonstrate all the features prior to the dispatch.
9. The technical and price bid should indicate the model and part numbers of items quoted.
10. Bidders must submit minimum 5 satisfactory certificates from previous users
11. Delivery time 7-8 week from the date of receipt of purchase order.
12. As per the new GST rule, Institute is not able to provide GST exemption certificate. GST has to be levied as per the applicable rate.
13. At any time prior to the deadline for submission of bid, the institute may, for any reason, at its own initiative, modify the bid document by amendments. Such amendments shall be uploaded on the website through corrigendum and shall form an integral part of bid document. The relevant clauses of the bid document shall be treated as amended accordingly. It shall be the sole responsibility of the prospective bidders to check the website from time to time for any amendment in the tender document. In case of failure to get the amendments, if any, the Institute shall not be responsible for it.

14. The Penalty @1% per week or part thereof subject to max 10% of the delivery price will be deducted from the balance payment, if supply is not completed within aforesaid delivery period.
15. The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason is reserved.

Approved by

Dr. Soumik Mukhopadhayay (PI/Indenter)
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Inviting Officer

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