



NATIONAL INSTITUTE OF MENTAL HEALTH AND NEURO SCIENCES  
(Institute of National Importance), Bengaluru- 560 029

राष्ट्रीय मानसिक स्वास्थ्य और तंत्रिका विज्ञान संस्थान, (राष्ट्रीय महत्व संस्थान), बंगलूरु - 560 029  
ರಾಷ್ಟ್ರೀಯ ಮಾನಸಿಕ ಆರೋಗ್ಯ ಮತ್ತು ನರ ವಿಜ್ಞಾನ ಸಂಸ್ಥೆ, (ರಾಷ್ಟ್ರೀಯ ಪ್ರಾಮುಖ್ಯತಾ ಸಂಸ್ಥೆ), ಬೆಂಗಳೂರು - 560 029

Phone 26995023/5913/5923/5024/5025/5780 Website <http://www.nimhans.ac.in/tender>  
Fax 080-26571563/26564830/2121/6811 E-mail [aaos@nimhans.ac.in](mailto:aaos@nimhans.ac.in)



## PURCHASE SECTION

STR-D3/UPS/ /HBTR/2019-20

May 7, 2019

# LIMITED TENDER ENQUIRY

**Sub: Limited Tender Enquiry (two bid system) towards supply of 5 kVA UPS with parallelization**

Dear Sir/Madam,

With reference to the subject cited above, kindly make arrangements to submit your **tender bids (both technical & price bids i.e. two bid system)** in separate sealed covers for supply of the following items, as detailed below addressed to **“The Special Officer (E), Purchase Section, NIMHANS, Hosur Road, Bengaluru – 560 029”** before 4 pm on 07.06.2019 (due date). An early compliance is requested. Kindly look into the specifications from Page Nos. 2 to 5 and terms & conditions in Page Nos. 6 & 7 without fail.

Sl. No.	Description/Specification	Quantity
1	5 kVA UPS with parallelization	02 Nos.

Sd/-  
Registrar

### For technical clarifications contact:

Dr. M.G. Sindu,  
Head, Biomedical Engineering,  
Mob: 9480 829 700, Ph: 080-2699 5700/5220/5221  
Email: [sindumg@nimhans.ac.in](mailto:sindumg@nimhans.ac.in)

### End-user contact details:

Dr. Anita Mahadevan,  
Professor, Co-ordinator, HBTR  
Department of Neuropathology  
Mob: 9900 185 601, Ph: 080-2699 5137/5786  
Email: [mahadevananita@gmail.com](mailto:mahadevananita@gmail.com); [nimhansbrainbank@gmail.com](mailto:nimhansbrainbank@gmail.com)



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**PURCHASE SECTION**

Technical Specifications for 5 kVA UPS System		
Sl.No.	Specifications	Requirement
1	<b><u>Capacity (in kVA / kW)</u></b>	5 kVA/ 4.5 kW 1-Phase Input / 1-Phase Output
2	<b><u>Technology and Capability</u></b>	a) True Online configuration with double conversion UPS b) Microprocessor /DSP based control, using IGBT devices and high switching frequency PWM (>15kHz) c) Active Power Factor Correction (APFC) in converter to improve Input Power Factor > 0.99 d) Possibility of enhancing UPS capacity / redundancy by operating UPS in 1+1 Parallel Redundant Configuration(PRS). e) Capability of Independent or Common battery bank operation of the UPS when operated in PRS f)UPS should be designed at Rated output PF of 0.9
3	<b><u>Model Name &amp; Number</u></b>	
	5kVA / 4.5kW	Make / Model / Part No to be specified by the vendor
4	<b><u>Input</u></b>	
4.1	Input facility -Phases / Wires	1-Phase / 2-Wire & Gnd (Phase & Neutral + Ground)
4.2	Input Voltage Range	160 - 275V AC (On Full Load)
4.3	Nominal Input Frequency	50 / 60 Hz (Auto selectable)
4.4	Input Frequency Range	40 to 70 Hz
4.5	Input Power Factor	> 0.99 on Full Load
4.6	Input Current Harmonic Distortion (THDi)	< 8% on full resistive Load (with Mains THDu less than 1%)
4.7	Generator Compatibility	Compatibility to genset supply required
4.8	Input Protection (Thru In-built 1P MCB)	Should be provided at the input of the UPS suitable for the full rated capacity of the UPS
5	<b><u>Output</u></b>	
5.1	Nominal Output voltage	220/ 230/ 240VAC (Selectable)
5.2	Output Voltage Regulation	±2%
5.3	Nominal Output Frequency	50 / 60 Hz
5.4	Output Frequency Regulation	+/- 0.05 Hz (Free Running / Self Clocked Mode)
5.5	Output Frequency Slew Rate	< 1 Hz / s
5.6	Output Wave Form	Pure sine wave
5.7	Output Voltage Distortion (THDu)	<= 2% (For R Load) <= 3% (For RCD Load)
5.8	Crest Factor	3 : 1 On Full Load (Minimum)
5.9	Output Short circuit Protection	Electronic / Fused



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<b>6</b>	<b><u>Transient Response / Recovery</u></b>	
6.1	Transient Response: Dynamic Regulation for 10% to 90% step linear load	+/- 8%
6.2	Transient Recovery to steady state condition after 10% to 90% step linear load	< 1 cycle
<b>7</b>	<b><u>Transfer Time</u></b>	
7.1	Transfer Time (Mode of operation)	Nil from Mains mode to Battery Mode Nil from Battery Mode to Mains mode
7.2	Transfer Time (Inverter to Bypass / Bypass to Inverter)	< 2 ms (Synchronized Mode)
7.3	<b>Automatic &amp; Bi-directional static by-pass (In-built)</b>	Should be provided to take care of uninterrupted transfer of load from Inverter to bypass (under overload / fault conditions) & automatic retransfer from bypass to inverter (on removal of overload / fault conditions)
7.4	<b>Maintenance Bypass</b>	1. UPS should have option for manual maintenance bypass 2. Transfer of load to maintenance bypass should be without disruption of the connected load 3. The maintenance bypass should provide for Hot-swap of the faulty UPS for repairs / service
<b>8</b>	<b><u>Efficiency (At Nominal Voltage &amp; Resistive Load up to kW rating of UPS)</u></b>	
8.1	Overall Efficiency (AC to AC) - Online (Double Conversion)	> 90 % (On Full R Load)
8.2	Overall Efficiency (AC to AC) - ECO Mode (Bypass feeding the load under normal conditions)	> 96 % (On Full R Load)
<b>9</b>	<b><u>Overload</u></b>	
9.1	Inverter Overload capacity	125% for 300 sec 150% for 30 sec
<b>10</b>	<b><u>Display Panel (In-build LC Display &amp; LED)</u></b>	
10.1	<b>Measurements (On LCD)</b>	<b>Input:</b> Voltage / Frequency <b>Output:</b> Voltage / frequency <b>Battery:</b> Remaining time / Voltage <b>Load:</b> Percentage / kW
10.2	<b>Fault Indication (On LCD)</b>	Charger Failure Battery Failed Battery Low Overload
10.3	<b>Indications (LED)</b>	AC indicator/Battery Mode of Operation / Bypass feeding the load / UPS Fault
<b>11</b>	<b><u>Alarms</u></b>	
11.1	<b>Audible Alarms</b>	Battery Low beep / DC Fault beep/ UPS Overload beep/ o/p short ckt fault beep/ Shutdown beep



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12	<b><u>Battery Backup / Battery Bank &amp; Charger</u></b>	
12.1	Backup Required	
12.2	Battery Bank Voltage	192 V DC or higher
12.3	Battery Bank VAh (Vendor to include battery sizing calculations with tender)	
12.4	Batteries Type	Sealed Maintenance Free (SMF) - 12V Cells
12.5	Battery Makes	Amara Raja / Exide / HBL / Amco / Rocket
12.6	Number of Battery Banks	Maximum Two Banks in parallel
12.7	Charger type / Charging Method & Charging Voltages	<b>Constant Voltage Constant Current Solid state SMPS charger</b> Float Voltage: 2.25 - 2.26 VPC minimum Boost Voltage: 2.30 - 2.33 VPC minimum
12.8	Battery recharge time (After complete discharge) to 90% capacity	8-10 hours
12.90	Battery Housing (Vendor to provide the GA drawings of the offered Battery Rack)	Should be compact and space saving MS steel open racks complete with interconnectors
12.10	Battery End Cell Voltage	1.75 VPC
13	<b><u>Interfaces</u></b>	
13.1	Serial Communication RS232 Port (Option of USB Port should be available)	RS2323 Port should be provided as standard in the UPS. However there should be provision for USB port also in the UPS
13.2	REPO(Remote Emergency Power OFF) / ROO(Remote ON - OFF) Port	Should be provided as standard in the UPS
13.3	Interface to NMS (Network Management System) - To be quoted	SNMP Card for connecting the UPS to LAN thru Ethernet port & monitoring thru NMS should be available
13.5	Interface to DCS (Distributed Control System) - To be quoted as option	Relay I/O Card or PFC (Potential free contacts) for connecting to UPS to DCS / PLC / SCADA system for communicating UPS operating status
14	<b><u>Restart / Testing Capability</u></b>	
14.1	Cold Start	UPS should start up On AC Supply (Mains) without DC Supply (Batteries) On DC Supply (Batteries) without AC Supply (Mains)
14.2	Automatic Restart	UPS should start up automatically on mains resumption after battery low shutdown
14.3	Self Diagnosis	UPS should be capable to carry out self test of Rectifier / Charger / Battery & Inverter module during start-up



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<b>15</b>	<b><u>Physical</u></b>	
15.1	Operating Temperature	0 to 40 deg C
15.2	Storage Temperature	-15 to 50 deg C
15.3	Operating Humidity	0% ~ 95%RH (No Condensing)
15.4	Operating Altitude	2000 m.a.s.l (meters above sea level)
15.5	Type of Cooling	Forced Air
15.6	Noise Level	< 56 dbA at 1 meter distance
15.7	Form Factor	Rack & Tower mountable
15.8	Dimension (w x d x h) in mm	To be furnished by the vendor
15.9	Weight - in kg	To be furnished by the vendor
15.10	Reliability	MTBF greater than 100000 hours
15.11	Packaging Material / Vibration Withstand & Drop Test	Recyclable (No CFC) & 1. Vibration testing as per ISTA -1G Non-operational with Packing 2. Drop Test as per ISTA 1A + 3inch Non-operational with Packing
15.12	Standard Package of UPS to include the following minimum accessories	1. UPS 2. CD - Monitoring Software 3. RS232 Cable 4. Tower Stand - For use as Tower 5. UPS to Battery bank connecting Cable 6. User Manual
<b>16</b>	<b><u>Certifications</u></b>	
16.1	Manufacturer	QMS: As per ISO 9001: 2008 EMS: As per ISO 14001: 2004 OSHAS: As per ISO 18001: 2007
16.2	Product Safety Certifications (Mandatory)	EN 50091-2:1995, Class A ESD: IEC61000-4-2: level4 RS : IEC61000-4-3: level3 EFT: IEC61000-4-4: level4 SURGE: IEC61000-4-5: level4 CS: IEC61000-4-6: level3 Conducted Magnetic Field: IEC61000-4-8: level3 CE declaration of conformity
<b>17</b>	<b><u>Warranty</u></b>	<b>2 years onsite manufacturer warranty including battery</b>



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May 7, 2019

### Terms & Conditions

1. The tender is of **Two bid system, i.e. Technical Bid** (Technical details, delivery period and other relevant documents **except Price bid**) and **Price Bid** (Price quotation) valid for **four months** from the due date should be submitted separately in different envelopes superscribing Technical Bid & Price Bid for the supply of **5 kVA UPS with parallelization – 02 nos.** for tender No. STR-D3/UPS/ /HBTR/2019-20. The tender bids received after the due date and time will be rejected. **NIMHANS, Bengaluru will not take any responsibility for delay, loss or non-receipt of the tender documents sent by post or under any other circumstances.**
2. Sealed tender bids (both technical & price) should be submitted only by either manufacturer of the articles or the authorized local supplier of the manufacturer. Copy of authorization letter has to be enclosed.
3. Validity of both the tender bids should be for 120 days from the due date.
4. **5 kVA UPS with parallelization – 02 nos.** each should be covered with **2 years onsite manufacturer warranty including battery** for normal or regular wear & tear from the date of complete installation (Ready to use in all respects).
5. Quantity of items may be increased / decreased as per requirement.
6. **Price bid should be in INR for NIMHANS door delivery price** and total cost with detailed breakup of cost towards Item wise price, taxes, any surcharges (such as transportation, installation, customs duty, etc.), **warranty period, delivery period, grand total, contact person details** (such as Mobile No., E-mail, local supplier address) should be clearly mentioned.
7. **Technical bid must be submitted along with relevant documents counter signed along with seal by the bidder (such as Authorization certificates, Purchase order related to previous supply to Institutes/Hospitals, Catalogues, Data Sheet, PAN number, GST Registration copy, Bank details, Technical Compliance Statement, Proprietary certificate from the manufacturer (if applicable), Pre requirements required for using chemicals, Non – blacklisting certification that the firm has not been blacklisted in the past by any Government / Private institution and certification for No Vigilance/CBI case pending against the firm/supplier by making an affidavit on non – judicial stamp paper of ₹10/-, Declaration, etc.) If not submitted, Technical bid will be treated as incomplete and may be rejected.**
8. If the purchase of article is approved by the Institute, the article should be supplied/installed within the delivery period quoted else penalty will be levied as per institute rules.
9. The cost of the “5 kVA UPS with parallelization” will be freezed for 1 Year from the date of purchase order; however Institute reserves the right to procure/reject the purchase of “5 kVA UPS with parallelization” with the successful tenderer on repeat order basis within 1 year from the date of purchase order.



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10. Sealed tender bids (both technical & price) shall be addressed to -

**THE SPECIAL OFFICER (E),  
PURCHASE SECTION, NIMHANS,  
HOSUR ROAD, BENGALURU – 560 029**

11. **Tender Bids (both technical & price) received after last date and time will not be considered under any circumstances.**

12. However, the Institute reserves the right to accept or reject any/all bids without assigning any reason whatsoever.

13. **NO ADVANCE PAYMENT.** Bill will be passed for payment to accounts section only after satisfactory supply/installation certification of the articles from the concerned Head of the Department/Section. Further payment will be made by accounts section.

14. If necessary, the firm may be called for presentation/demo of the articles.

15. None of the terms and conditions of the supplier shall be applicable to the purchase contemplated hereunder, irrespective of it being attached to any documents to be provided to NIMHANS. Such exercise shall have no meaning and binding effect unless the same is accepted by NIMHANS in writing.

