



NATIONAL INSTITUTE OF MENTAL HEALTH & NEURO SCIENCES  
(Institute of National Importance), Hosur Road, Bengaluru – 560 029

Ph: 26995023 to 25 / 26995780  
Fax: 091-080-26564830/2121/6811

E-mail: [aaos@nimhans.ac.in](mailto:aaos@nimhans.ac.in)

STR-D2/48/UPS/College of Nursing/19-20

20.06.2019

Sir,

**Subject: Quotation for the supply of 10 KVA UPS with parallelisation- 2 Nos..**

With reference to subject cited above, kindly make arrangements to send your Quotation/Proforma Invoice in a sealed cover to the undersigned for the supply of the following item/s as detailed below on or before **5<sup>th</sup> July 2019** positively by post/ courier/Hand. Quotation sent by Fax will not be accepted. Please enclose the copies of your Tin Number, Pan Number.

Sr. No.	Specifications	Requirement
<b>Technical Specifications for EH 10KVA UPS System-2 Nos.</b>		
1	<b>Capacity (in KVA / kW)</b>	<b>10 KVA/ 8 kW 3-Phase Input / 1-Phase Output</b>
2	<b>Technology and Capability</b>	a) True <b>Online</b> configuration with <b>double conversion</b> UPS b) <b>DSP</b> based control. c) Possibility of enhancing UPS capacity / redundancy by operating UPS in <b>N+X Parallel Redundant Configuration (PRS)</b> . d) Capability of <b>Independent</b> battery bank operation of the UPS when operated in PRS. e) UPS should be designed at <b>Rated PF of 0.8 i.e. 10kVA / 8 kW</b> UPS rating. f) Dual Input design.
3	<b>Model Name &amp; Number</b>	
3.1	10 kVA / 8 kW	<b>Make / Model / Part No</b> to be specified by the vendor
4	<b>Input</b>	
4.1	Input facility -Phases / Wires	3-Phase / 4-Wire & Gnd (3Phase & Neutral + Ground)
4.2	Input Voltage Range	220/380V, 230/400V, 240/415V Range (Full Load) 176~276 / 305~477V Range (Derating to 50% Load) 120~175 / 208~304V
4.3	Nominal Input Frequency	50/ 60 Hz ( <b>Auto selectable</b> )
4.4	Input Frequency Range	45 to 65 Hz
4.5	Input Power Factor	> 0.95 (full load)
4.6	Generator Compatibility	Compatibility to genset supply required
4.7	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

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<b>5</b>	<b>Output</b>	
5.1	Nominal Output voltage	220/230/240 VAC
5.2	Output Voltage Regulation	± 1 %
5.3	Nominal Output Frequency	50/60 Hz
5.4	Output Frequency Regulation	± 0.1Hz
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 Linear Load)
5.8	Crest Factor	3:1 On Full Load (Minimum)
5.9	Output Short circuit Protection	Electronic Protection
<b>6</b>	<b>Transient Response / Recovery</b>	
6.1	Transient Response: Dynamic Regulation for 10% to 90% step linear load	±7%
6.2	Transient Recovery to steady state condition after 10% to 90% step linear load	< 1 cycle
<b>7</b>	<b>Transfer Time</b>	
7.1	Transfer Time (Mode of operation)	Zero ms from Mains mode to Battery Mode Zero ms from Battery Mode to Mains mode
7.2	Transfer Time (Inverter to Bypass / Bypass to Inverter)	<1ms (Synchronized Mode)
7.3	<b>Automatic &amp; Bi-directional static bypass (In-built)</b>	Bypass To Inverter ±10 % (Rated Voltage) Inverter To Bypass ±7 % (Rated Voltage)
7.4	<b>Maintenance Bypass</b>	1. In built manual bypass instead of optional. 2. Maintenance bypass cover removal sensing. 3. The maintenance bypass should provide for Hot-swap of the faulty UPS PWB for repairs / service.
<b>8</b>	<b>Efficiency (At Nominal Voltage &amp; Resistive Load up to kW rating of UPS)</b>	
8.1	Overall Efficiency (AC to AC) - Online (Double Conversion)	Upto 92% (at 100% load)
8.2	Overall Efficiency (AC to AC) - ECO Mode (Bypass feeding the load under normal conditions)	Upto 96% (at 100% load)
8.1	Overall Efficiency (AC to AC) - Online (Double Conversion)	Upto 92% (at 100% load)
<b>9</b>	<b>Overload</b>	
9.1	Inverter Overload capacity	≤105% continuous, 106% ~ 110% 600sec, 111% ~ 125% 300sec, 126% ~ 150% 30 sec, >150% Immediate

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<b>10</b>	<b>Display Panel (In-build LC Display &amp; LED )</b>	
10.1	<b>Measurements</b> (On LCD)	Input: Voltage / Frequency, Bypass: Voltage / Frequency, Output: Voltage / frequency, Battery: Remaining time / Battery Level Indicator, Load: Percentage / Load Level Indicator, Battery Voltage Capacity/Status/Test Result, System Date/Time Setting, Current Time, PFC Fuse Open, Battery Temperature Too High, Battery Over Charge, Battery Out of Date, INV Short Circuit, Output Breaker Off
10.2	<b>Fault Indication</b> (On LCD)	Main Input Sequence Fault, Power Module General Fault, Battery Ground Fault, Bypass Static Switch Fault, System General Fault, Parallel Fault, Provide Bypass O/P Even If UPS Fault,
10.3	<b>Indications</b> (LED)	Normal-Green/Battery-Orange/Bypass-Green/Fault-Red
<b>11</b>	<b>Alarms</b>	
11.1	Audible Alarms	Battery Low beep / DC Fault beep/ UPS Overload beep/ o/p short ckt fault beep/ Shutdown beep
<b>12</b>	<b>Battery Backup / Battery Bank &amp; Charger</b>	
12.1	Backup Required	1 Hr & 2 Hr
12.2	Battery Bank Voltage	240 V DC or higher
12.3	Battery Bank VAh (Vendor to include battery sizing calculations with tender)	19200 VAh for 1 Hr backup 31200 VAh for 2 Hr backup
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	Minimum Charger Rating (Including internal / external)	The charger should be able to deliver charging current equivalent to 10% of Battery Ah rating offered. (In case of external chargers, suitable monitoring of the chargers should be provided in the UPS. Also all external chargers taking AC input must have PFC - Power factor correction)
12.8	Charger type / Charging Method & Charging Voltages	<b>Constant Voltage Constant Current</b> Solid state <b>SMPS</b> charger Float Charge 270V±(2V) Boost Charge 280V±(2%V)
12.9	Battery recharge time (After complete discharge) to 90% capacity	10-12 hours
12.10	Battery Housing (Vendor to provide the GA drawings of the offered Battery Rack)	Should be compact and space saving <b>MS steel open racks</b> complete with interconnectors
12.11	Battery End Cell Voltage	1.75 V/cell
<b>13</b>	<b>Interfaces</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	Provide both onsite & remote EPO to shutdown UPS when emergency situation happens. REPO Port with a user-supplied switch

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13.3	Interface to NMS (Network Management System) - To be quoted as option	SNMP (IPV6) Card for connecting the UPS to LAN thru Ethernet port & monitoring thru NMS should be available (The cost of SNMP Card / NMS software to be quoted separately)
13.4	Interface to BMS (Building Management System) - To be quoted as option	ModBus Card for connecting to UPS to BMS thru RS485 & monitoring thru BMS
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
<b>14</b>	<b>Restart / Testing Capability</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
<b>15</b>	<b>Physical</b>	
15.1	Operating Temperature	0 to 40 deg C
15.2	Storage Temperature	-20 to 40 deg C
15.3	Operating Humidity	0% ~ 95%RH (No Condensing)
15.4	Operating Altitude	0-3000m (0 To 10000ft)
15.5	Type of Cooling	Forced Air
15.6	Noise Level	< 55 dbA at 1 meter distance
15.7	Form Factor	Rack & Tower mountable
15.8	Air Filters	UPS should have internal anticorrosion air filters for dust filtration( <b>Optional</b> )
15.9	Dimension (w x d x h) in mm	To be furnished by the vendor
15.10	Weight - in kg	To be furnished by the vendor
15.11	Reliability	MTBF greater than 100000 hours
15.12	Packaging Material / Vibration Withstand & Drop Test	Recyclable (No CFC) & 1. Vibration testing as per ISTA -1G Non-operational with Packing
15.13	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. Brackets for mounting in 19" IT Server / Networking Rack 6. UPS to Battery bank connecting Cable 7. User Manual
15.14	Parallel Configuration	UPS should have capability for parallel 4 units.
15.15	Grounding	UPS should have grounding arrangement

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<b>16</b>	<b>Certifications</b>	
16.1	Manufacturer	<b>QMS:</b> As per ISO 9001: 2008 <b>EMS:</b> As per ISO 14001: 2004 <b>OSHAS:</b> As per ISO 18001: 2007
16.2	Product Safety Certifications (Mandatory)	<b>ESD:IEC61000-4-2: level4</b> <b>RS : IEC61000-4-3: level3</b> <b>EFT: IEC61000-4-4:level4</b> <b>SURGE: IEC61000-4-5:level4</b> <b>CS: IEC61000-4-6: level3</b> <b>IEC 61000-2-2</b> <b>EN 62040-2</b> <b>EN 61000-3-2</b>
16.3	ROHS compliance	UPS should be ROHS compliance

<b>Downloading of Tender documents from website</b>	<a href="http://www.nimhans.ac.in">www.nimhans.ac.in</a>
<b>Last date for Enquiry (If required)</b> <b>Contact: Mrs. Sindhu MG, HOD/Bio Medical Engineer</b> <b>Phone No.-26995700/5220</b> <b>Mobile No.:9480829700</b>	<b>27.06.2019</b>
<b>Quotation submission last date</b>	<b>05.07.2019</b>

**Note:**

- EMD amount of Rs 15,000/-** should be enclosed along with this quotation. EMD should be favour of ' The Director, NIMHANS, payable at Bengaluru. (EMD amount is exempted, if there enclose valid NSIC/MSME Certificate.)
- The tender is of **Two bid system, Technical Bid** (EMD, Application fee, Technical details, delivery period and other relevant documents except Price quotation) and **Price Bid** (Price quotation) valid for **four months** from the due date should be submitted separately in different envelopes super scribing Technical Bid & Price Bid for supply of **10 KVA UPS** for tender No. **STR-D2/48/UPS/College of Nursing/19-20 dated 20.06.2019..** The tender bid 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.**
- Sealed quotation has to 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.
- Quantity of items may be increased/decreased as per requirement
- Item wise price, taxes, any surcharges (such as transportation, installation, customs duty, etc.), grand total, warranty, delivery period, contact person details (such as Mobile No., E-mail, local supplier address) should be clearly mentioned and the price mentioned should be door delivery price.
- The unit quoted is to be for **5 years warranty.**
- Price quoted, should be valid for **1 year.**
- Mention our Reference No. and due date on envelope cover.
- Payment terms: No advance payment will be made. Payment will be released only after successful installation & commissioning in all formats and handing over the furniture/equipment to the End-user.
- Enclose the copies of your GST Number & PAN Number, Bank details, without these your quotation will be rejected.
- Mention the warranty period and delivery period of the item.
- Quotation must be submitted along with relevant documents counter signed along with seal by the bidder (if applicable such as authorization certificates, Item supplied list of Institutes/Hospitals, catalogues etc.). If not submitted quotation will be treated as incomplete and may be rejected.

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13. 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.
14. Sealed quotation shall be addressed to **THE SPECIAL OFFICER(E),PURCHASE SECTION, NIMHANS, HOSUR ROAD, BENGALURU – 560 029**
15. Quotation received after last date and time will not be considered under any circumstances.
16. However, the institute reserves the right to accept or reject any/all quotations without assigning any reason whatsoever.
17. If necessary the firm may be called for **demo or supply of samples** of the articles.
18. For equipments worth Rs. 2,00,000/- and above, Agreement has to be executed on Rs. 200/- stamp paper (Specimen will be provided with purchase order) and Bank Guarantee has to be executed from a Nationalized Bank for 10% of total value valid for a period of 60 days beyond the warranty period, else payment will not be processed .

**Yours faithfully**

**Sd/-**

**Special Officer(E)**