



National Center for Biological Sciences

Tata Institute of Fundamental Research

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Ref:NCB/CM19-2/190002

April 02, 2019

ENQUIRY

Dear Sirs

Please let us have your Quotation for the following:

S.No.	Item Description	Qty	UOM
1	supply testing and commissioning of 6kva/5400W online double conversion ups as per the specification attached.	1.00	NO
2	supply testing and commissioning of 10kva/9000W online double conversion ups as per the specification attached.	1.00	NO

1. The quotation shall be submitted in a sealed envelope duly superscribed with the enquiry number, and the due date for Ref No: 190002. The bids should be addressed and to be mailed/couriered (sent by post/courier) to 'THE HEAD-PURCHASE'.

The bids are liable to be rejected if the sealed envelope is not addressed to "THE HEAD-PURCHASE? with Tender Ref No. and Item Description and due date. The bids delivered in person shall be dropped in Purchase Section. If the bids are sent through courier or mail, it should reach by submission date and time and NCBS will not be responsible for the delay.

2. DUE DATE FOR SUBMISSION OF QUOTATION AGAINST THIS ENQUIRY IS 22/04/2019 BY 5.30PM.

3. QUOTATIONS RECEIVED AFTER THE DUE DATE SHALL BE REJECTED.

4. The validity of your quotation should be for 60 days from the due date.

5. All duties, taxes, surcharge and cess as currently applicable must be stated in your quotation, separately. Otherwise your quote is liable to be rejected.

6. Your quotation should indicate delivery period & warranty period.

7. Delivery to be made to our stores. Please indicate charges, if any extra. Transit Insurance should be done upto NCBS Stores.

8. If you are unable to supply the quality, specifications or brand as mentioned in our enquiry, please state so and then offer alternative to quality/specifications.

9. Payment: within one month after delivery & acceptance/satisfactory installation.

10. Please ensure that the enquiry number and the due date is superscribed on the envelope failing which your quotation is liable to be rejected.

11. Since we are a public funded research institution, we are exempted from paying Customs duty (Except ad valorem duty of 5% + 2% Cess and 1% Cus Sec & High Edu. CESS vide Notification No.51/96 with latest amendments) and excise duty vide Notification No. 10/97 CENTRAL EXCISE dated 01-03-1997 for all scientific equipments, technical instruments, equipments (including computers), their accessories, spares, consumables and software. Hence, please offer your prices

12. If the item is covered under DGS&D rate contract, please quote the rate as per the DGS&D rate contract with xerox copy of the DGS&D order.

13. Any dispute or differences that may arise between the parties shall be referred to the sole arbitration of the Centre Director or his nominees. The decision of the arbitrator shall be final and binding on the parties. The venue for arbitration shall be Bangalore. The provisions of the Arbitration and Conciliation Act, 1996 as amended from time to time shall apply. The courts in Bangalore shall have exclusive jurisdiction to deal with any or all disputes between the parties.


14. TIFR is a public funded research institute and is entitled to concessional rate of GST @ 5% for certain items supplied for research purpose vide notification no. 47/2017 and 45/2017 dated 14th Nov, 2017. The offer should be submitted after fully considering the above notification.

15. Liquidity Damages: If the equipment/ items as per specifications in our P.O. is not supplied (shipped) within the specified delivery schedule, then liquidated damages (not in terms of penalty) will be imposed automatically and shall be deducted from the bill at the rate of 0.5% per week subject to a maximum of 10% of the order value.

16. Income Tax at the applicable rates as per the Indian Income Tax Act 1961 will be deducted at source for the services availed / ordered. In case of service provider, the rate of tax deduction shall be at 2% as per Section 194C, and in case of fee for professional / technical services under section 194J, the tax deduction shall be at the rate of 10%. In case service provider does not provide PAN number, the deduction shall be at 20% under section 206 AA.

-Tax Deduction Certificates will be provided on request for non PAN holders & Foreign Vendors and PAN holders could avail them through NSDL site dealing with 26AS.

Yours faithfully
For and on behalf of
National Centre for Biological Sciences


Head Purchase

Supply, Installation, Testing & Commissioning of 10 KVA True Online conventional type UPS for high end Microscope application at NCBS-GKVK.

1. General specifications

- 1 UPS Type : DSP control based ONLINE Double Conversion Technology
- 2 Capacity : 10 KVA/9 kW
- 3 Preferable Make : Socomec/Eaton/Emerson-Vertiv/APC/ABB
- 4 Battery Backup : 10 min at full load on each UPS
- 5 Supply : 3-Phase Input, Single Phase Output
- 6 Operation Mode Normal (online): Emergency, Recharge, bypass, Maintenance bypass.
- 7 Rectifier / Inverter : IGBT with PFC control technology only
- 8 Total Efficiency AC/AC at 100% load: $\geq 92\%$ (Online mode)
9. Parallel configuration: ≥ 4 units
10. Noise level at full load: ≤ 60 dBA at 1 mtr from the unit

2. INPUT

- 1 Voltage configuration : Three-phase, Neutral plus Ground (5-wire)
- 2 Rated line Voltage : 400V
- 3 Voltage tolerance : 320V to 480 V
- 4 Nominal Frequency : 50 Hz
- 5 Max/Min frequency : 50 Hz +/- 10%
- 6 Phase : Three Phase
- 7 Current Limit : 125% of nominal AC input current
- 8 Surge Protection : As per IEC standard
- 9 THDi : $\leq 4\%$ at full load (linear load)
- 10 Power factor : ≥ 0.95

3. OUTPUT

- 1 Voltage Configuration : Single phase, 3-wire (P+N+E)
- 2 Voltage : 230V
- 3 Voltage regulation : $\pm 2\%$
- 4 Voltage Distortion : $\leq 2\%$ total harmonic distortion (THDv) for linear loads. and $\leq 3\%$ THDv for 100% nonlinear loads.
- 5 Crest factor : 3:1
- 6 Frequency : 50 Hz and Pure sine wave
- 7 Frequency regulation : 50 Hz +/- 1%
- 8 Output power factor : ≥ 0.9
- 9 Overload Capacity : 125% for ten minutes (without bypass source).
: 150% for one minute (without bypass source).
- 10 Wave form : Pure Sinusoidal
- 11 Output Voltage adjustment : $\pm 5\%$ (Software Controlled adjustment)

4. Batteries:-

- 1 Make and model : Rocket /Quanta/Exide
- 2 Type : SMF Batteries (maintenance free)-VRLA type
- 3 Rated battery life : min 5 years

4. Battery back up : 10 mins with full load on each UPS.
For battery calculation, ECV should be consider as 1.75V at 20hrs rating.

5. Operating Ambient Temperature:-

UPS Module : (0°C to 0°C).
Battery: 25°C ±5°C.

6. Cooling

Cooling of the UPS shall be by forced air and there should be redundant fans.

7. 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.

8. Wiring

Installation and required accessories like cables, 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.

Certification:

Necessary Type test/third party certificate from CPRI/govt. authorized certificate agency should be enclosed along with technical bids. Third party certificate is essential for 10kVA UPS (same model proposed by vendor).

9. Uninterrupted Transfer / Retransfer

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 overvoltage or under voltage
- Battery protection period expired
- Out of tolerance inverter input DC voltage
- Over temperature
- Inverter fault

Retransfer of the critical AC load from the bypass source to the inverter output shall be automatically initiated unless inhibited by manual control.

10. 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).

11. 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.

12. Other Protections

- 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.
- It must have Generator Compatibility.
- Must have complete protection for EMI / RF as per the IEC standard.
- Units have built in surge, spike and line noise protection.
- It should have Intelligent Battery Management system
- UPS should be compact and with small footprints.
- UPS sound level should be within the limit as per the standard.

13. Warranty/Guaranty:

The equipments (complete system including battery banks) 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 bimonthly interval or earlier, 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.

14. Scope of Installation

- Minimum ground clearance for ups should be 200mm and for battery should be 150mm, hence suitable powder coated MS base frame shall be supply along with ups.

Note:

The Contractors shall submit all technical supporting document details/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 Tenderers shall give the names and full postal addresses of their clients (data center)

from Bangalore to whom similar equipments have been supplied by them.

Supply testing and commissioning of 6kva On-line double conversion ups for 2.2kw chiller compressor load

Rating and Type	: 6KVA/5400watts & On-line double conversion
Battery	: external battery for 15 min backup at full load
Technology	: IGBT based double conversion
Display	: LCD
Input	: 230Volts, single phase, 3wire
Input Voltage range	: 180V to 280V
Input Frequency range	: 45Hz to 55Hz
Input Power factor	: > 0.9
Output voltage & Regulation	: 230 V, 1 phase, 3wire and $\leq 1\%$
Output Power factor	: 0.9 to unity
Output frequency	: 50Hz +/- 1%
Over load capacity	: 1minutes @125% load
Over all AC-AC Efficiency	: $\geq 92\%$
Output wave form	: Pure Sine-wave
Current harmonics (THDi)	: $\leq 5\%$ at Input side
Voltage harmonics (THDv)	: $\leq 3\%$ for linear load at output side
Noise with rated load at 1Mtr	: $\leq 60\text{dB}$
Crest factor	: 3:1
Back-up time @ ECV 10.5Volts	: >15 min at of full load (5400W)
Terminals	: Hard wire
Protection	: Input Over/Under Voltage, Over load, Short circuit, output over voltage, batteries Over/Under charging, Over temperature, etc...
Replacement Warranty	: 2years for both UPS and Battery

Application : The ups should be capable enough to supply power and inrush current drawn by 2200w chiller compressor load while the compressor starting and running conditions.

5. Operating Ambient Temperature:-

UPS Module : (0°C to 0°C).
Battery: 25°C \pm 5°C.

6. Cooling

Cooling of the UPS shall be by forced air and there should be redundant fans.

7. 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.

8. Wiring

Installation and required accessories like cables, 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.

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