

**Indian Institute of Technology Delhi**  
**(Nanoscale Research Facility)**

**Notice Inviting Quotation (NIQ) for the purchase of 40KVA Online UPS-System**

**(Last date of submission of Quotation 26<sup>th</sup> Nov 2012)**

**Date – 8<sup>th</sup> Nov 2012**

We are in the process of buying **02 Nos. of 40KVA Online UPS-System** in parallel Redundant mode on load sharing basis at 0.9 load power factor with In-built galvanic Isolation Transformer (strictly no additional transformer) and SNMP card as per the specifications as follows –

Battery Circuit breaker for Each UPS Module in CRCA housing with all required fixing accessories & hardware.

In-built Static switch for bypass & inverter in each UPS module.

Input filter with each UPS module.

1. Voltage

Input: 380V - 440V+N

Output: 3\*380/400V/415V+N (All three multiple output)

In-put current THD (Thermo Harmonic Distortion) = 8%.

2. Output wave form: Sinusoidal.

Out-put Voltage THD on Linear load ---- <2%.

Out-put Voltage THD on Non-Linear load --- <3%.

3. Frequency:

Input: 50/60 Hz +/- 10%.

Output:50/60Hz+/- .01%

4. The UPS System should have integrated 100% IGBT rectifier + IGBT based Inverter with **Inbuilt Galvanic Isolation Transformer**. The Isolation Transformer must be In-built. (Strictly no additional Isolation transformer).

The Transformer should be ZIG-ZAG type.

5. Input Power Factor  $\geq 0.92$

6. Parallel card

7. Crest Factor of output currents – 3:1

8. Output power factor = 1 (40KVA = 40KW)

9. UPS should be capable of automatic transfer to bypass in case of short circuits, overload and inverter failure.

10. Protection Degree: IP20 (IEC 60529)
11. UPS should have alarms for main power failure, low batteries, overload, high temperature and any unwanted problem.
12. UPS should have cooling system and able to work for following conditions:
  - Operating Temperature of the UPS --- (0-40) degree C.
  - Operating Temperature of the batteries – (20-25) degree C.
  - Humidity: up to 95%
13. UPS should have suitable display for Input/Output Parameters.
14. UPS should be able to interface with computer, RS232 port inbuilt.
15. UPS should have protection against overload, short circuit (>two time to normal current) over temperature and batteries failure
16. Overload on By-pass:200%for 5 min. and 35 times in for10ms on by pass
17. Over load capability (at Load PF = 0.9) --125% for 10 min & 150% for 1 min.
18. Backup time: 30 min each on full load.  
Minimum VAH= 38400 VAH each.
19. Overall Efficiency: > 90%
20. UPS safety standard and EMI/EMC certification: EN/IEC 62040-2  
Brust & surges 2KV L-L, 4 KV L-PE  
Harmonics: IEC 61003-2/IEC 61003-4
21. Design and Manufacturing: ISO 13001/ISO9001
22. Certification: CE (must)
23. Make of UPS: Merlyn Gerin (MG) / Mitsubishi / GE / APC / EMERSON / POWER WARE (EATON)
24. Make of Batteries: Quanta (Amar Raja) / Rocket / HBL / Panasonic.
25. Sealed Maintenance free batteries of 100Ah x 32 Nos. for **40KVA** UPS each UPS module with Interconnectors, Rack and accessories. Rack shall have shrouds for safety from live battery terminals.
26. Interconnecting copper cabling (DC cabling) between UPS, active filter, Battery breaker & Batteries of required length and size.
27. Warranty for UPS – 3/6 years (Quote seperately for each period)
28. Warranty for Battery – 2/4 years (Quote separately for each period)
29. Installation
  - (a) Unloading at site shifting of material to the point of installation including lifting using mechanical means to be designated floor. Insurance for the workmen, material and third party liability.
  - (b) Supervision of installation and commissioning of above UPS systems.

### **Terms & Conditions Covering Submission of Quotations**

1. If the item quoted for, are propriety in nature, please include propriety certificate.
2. Validity of the quotation should be minimum 90 days.
3. Freight, insurance and any other charges should be mentioned.
4. Guarantee or warranty conditions must be clearly specified, exemptions if any must be clearly stated.
5. Academic institution discount, if any can be mentioned.
6. Institute reserves the right to order equipment with better quality over lower price and to accept or reject any or all the quotations without assigning reasons thereof.
7. Specification of the quoted device should be supported by original manufacturer's pamphlet.

**Quotation must be reached to the following address by dated – 26<sup>th</sup> Nov 2012.**

**Prof. M. Jagadesh Kumar  
Block – 6, Room No. – 116  
Nanoscale Research Facility  
Indian Institute of Technology Delhi  
Hauz Khas, New Delhi – 110016**