



SATYENDRA NATH BOSE NATIONAL CENTRE FOR BASIC SCIENCES

[Funded by the Department of Science & Technology, Government of India]

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Ref:SNB/ENQ/RM/20KVA UPS/14-15/1196(WP)

12.12.2014

Sealed quotation are hereby invited for the following items in two parts (Technical and Commercial bids). One large envelope containing two smaller envelopes containing Part A : Technical Bid and Part B : Commercial Bid need to be submitted separately :-
Two smaller envelopes should be super-scribed "Technical Bid"/"Commercial Bid" as the case may be.

Sl. No.	PARTICULARS	Qty.
01.	20 KVA UPS with 60 minutes backup See attached sheet for detailed Technical Specifications.	01 no.

Note : Attached herewith "Annexure I" (as check list) to be duly filled in by the bidder and should be submitted with the Technical Bid only. Offer received without any of the relevant information / certificate / document asked as per "Annexure I" from sl. nos. 01 to 18 may not be considered.
The Centre reserves the right to accept or reject offer of the tenderer. The Centre's decision shall be final and binding on the Tenderer. Attached documents should be duly marked.

Technical bid should contain complete technical information literature/working manual of the quoted item & authorization certificate of the manufacturer.
Price Bid – In case of imported item CIF Kolkata airport price should be mentioned and for the indigenous item FOR basis up to S.N. Bose Centre, Kolkata may be quoted.

Note:-

- 1) The quoted price should be inclusive of delivery and installation charges.
- 2) Validity of quotation should not be less than 90 days from the date of opening.
- 3) Payment is subject to after delivery and satisfactory installation only.
- 4) Delivery period should be mentioned in the quotation.
- 5) Our ref. no. should be mentioned on top of the Quotation envelope.
- 6) Authorization certificate should be enclosed with the quotation.
- 7) Minimum one year warranty is to be provided for the above item.
- 8) OEM should have wholly owned Service Centre & Call Logging Facility with nearby Support Centres (Support Centre List to be provided with BID).
- 9) The above information should reach this office by **31st December, 2014**.

Thanking you,
Yours faithfully,

S. K. Singh
AR(Purchase)

Technical specification for 20 kVA UPS

Technology:

IGBT based rectifier & Inverter Digital Signal Processor controlled for the following:

- a. Rectifier/Charger
- b. Battery management.
- c. Inverter
- d. Static Switch

UPS type and configuration: True On-Line, Double conversion with inbuilt isolation transformer meeting VFI-SS-111

Rated output: 20KVA/18KW, The UPS system should be compatible for lagging power factor up to 0.9 leading PF loads without deviation.

Power factor: ≥ 0.99 at full load; ≥ 0.98 at 50% load.

Input current THDi at full load: $\leq 3\%$

Input:

Voltage:	380/400/415 V
Voltage tolerance:	320-480V at rated load, Up to 240-480V at 50% load.
Frequency:	50-60Hz $\pm 10\%$
Power Factor:	0.99 or better

Rectifier/Charger:

Type of rectifier used:	IGBT based DSP controlled Rectifier.
Ripple voltage at full load:	Typically 0.
Efficiency of rectifier:	$\geq 98\%$

Battery charger:

- i) Type of charging circuit: Constant Voltage Constant Current.
- ii) Battery status monitoring facility: Through LCD display at the front panel.
- iii) Battery protection circuits: Battery Breaker/Isolator should be provided

Inverter

Technology of inversion: IGBT based PWM design with DSP controlled.

Output:

Voltage:	380/400/415 VAC, 3 phase, 4 wire Settable.
Output voltage regulation:	$\pm 1\%$ (balanced load) $\pm 3\%$ for 4 wire system (unbalanced load)
Output Frequency:	50 ± 0.5 Hz
OP Frequency synchronising: range with	Selectable between 1Hz to 5Hz
Bypass:	

Transient voltage regulation for 0 to 100% and vice versa:	$\pm 2\%$
Recovery time:	< 10 ms
Wave form:	Sinusoidal
Crest Factor:	3 : 1

Harmonics :

- i) Total harmonic distortion at 100% non-

linear load:	< 3%
ii) Total harmonic distortion at 100% linear load:	< 1%
Phase displacement:	120 ± 1 deg. Electrical (balanced load) 120 ± 2 deg. Electrical (100 % Unbalanced load)
Overload at 0.9 pf loads:	150% for 60 sec 125% for 10 min.
Neutral current & conductor size:	1.5 times of Phase current.
Static and Manual Bypass:	Standard and built-in
Eco mode should be available	.
Efficiency at ECO Mode:	98%

Efficiency:

≥93% (at full load); ≥93% (at 75% load); ≥93% (at 50% load); ≥90% (at 25% load)

Environmental and others:

Audible Noise:	< 55dB
Temperature (design ambient):	0 - 40 deg C
Relative humidity:	95% RH
Acoustic Noise measured at 1m Distance:	< 53 dBA

- Event logging facility should be available.
- The following protections should be available: Overload, Short circuit, Input low voltage, Output over voltage, Battery over charging, Battery over discharging.
- The UPS should be compact and modular designed, with forced air cooling.

Power rating:

20 KVA / 16 KW

Configuration:

20 KVA ON LINE UPS Systems with battery bank for 60 mins back up

Battery:

Type:	Maintenance Free Sealed Lead Acid
Duration of back up for rated output:	60 minutes on each UPS
Design Life:	5-6 years
Total VAH:	Minimum 31200 VAH
D C Bus voltage:	480V DC
Battery Voltage:	12 V SMF
End cell voltage:	1.75V
Charging time:	8-10 hours

Performance:	IEC 62040-3
ISO certification:	ISO 9001 (to be submitted with the BID)
Company Certification:	OHSAS (to be submitted with the BID)

- Paralleling facility of minimum 5 units of similar capacity is required for future use.
- OEM should have wholly owned Service Centre & Call Logging Facility with nearby Support Centres (Support Centre List to be provided with BID).

Annexure I

- The following form should be submitted with the technical bid duly filled and signed.
- **Relevant documents must be enclosed with the technical bid as per Sl. no. 01 to 18.**

S/N	PARTICULARS	Yes/No	REMARKS
01	Technical bid & Price bid duly sealed & signed enclosed in separate envelopes as instructed.		
02	<u>Contents of Technical bid</u> (a) Technical details as per specification enclosed with technical bid ⇨ (b) Technical Compliance Statement to be prepared in a separate sheet (and any deviation should be mentioned specifically) ⇨ (c) Literature/Manual of the offered item ⇨ (d) Current Authorization Certificate from the Principal Manufacturer ⇨ (e) Name, address, email & ph. no. of users in India. (Preferably Research laboratories) ⇨ (f) Copy of P.O. and installation certificate with the same specification from at least one user ⇨		
03	Delivery charges on F.O.R basis up to S. N. Bose Centre, Kolkata for indigenous items with detailed break-up of cost		
04	All applicable tax (VAT/CST/Sales/Service tax) should be mentioned		
05	Whether the price quoted is without excise duty, as the centre is fully exempted from payment of excise duty		
06	Copy of Trade License, VAT, PAN, Service Tax Registration no. enclosed with the technical bid.		
07	Installation charges included (if any) to be mentioned		
08	03 years Standard warranty from the date of installation to be mentioned		
09	Payment after installation of material at site		
10	Payment mode should be mentioned		
11	Delivery/installation time from the date of PO to be mentioned		
12	Enquiry no. should be mentioned on top of all quotation envelopes		
13	Validity of Quotation should not be less than 90 days from the date of submission		
14	Maintenance procedure of the offered item to be mentioned		
15	Contact details of after sales service centres in Kolkata to be mentioned		
16	Bank details of the beneficiary to be mentioned		
17	In case of any defect found after receipt of material or in case of any deviation from the specifications or in case of any operational defect found during the warranty period, any part or the entire material is to be replaced by the supplier at no extra cost to the Centre.		
18	Whether your company has been blacklisted by any Central/State Govt. organization.		

Note: Offer received without any of the relevant information / certificate / document asked in the above sl. nos. 01 to 18 may not be considered. The Centre reserves the right to accept or reject offer of the tenderer. The Centre's decision shall be final and binding on the tenderer. Attached documents should be duly marked.

Seal & Signature
of the bidder with date