



भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद

धनबाद, झारखण्ड, भारत, पिन-826004

(मानव संसाधन एवं विकास मंत्रालय, भारत सरकार के अधीन एक राष्ट्रीय महत्व का संस्थान)

INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD

DHANBAD, JHARKHAND, INDIA, PIN-826004

(An Institute of National Importance under Ministry of H.R.D., Govt. of India)

STORES & PURCHASE SECTION Phone (0326) 2235678 || Email : purchase@ismdhanbad.ac.in || Website : www.iitism.ac.in

No. MME-500057-2017-18

Date: May 22, 2017

NOTICE INVITING TENDER

Subject: Supply & Installation of Setup for Static VAR compensating device of 3-phase induction motor with variable loading arrangement

Indian Institute of Technology (Indian School of Mines), Dhanbad invites quotations for the following to be supplied and delivered in MME Department.

S No	Full Description of items/ store	Qty	Delivery
1	Supply & Installation of Setup for Static VAR compensating device of 3-phase induction motor with variable loading arrangement (Detailed Specification is given in Annexure – A)	01 No	At the Earliest /Ex-Stock

Tender Schedule

Particulars	Date & Time
Last date and time for submission of tenders	13.06.2017 at 3:00 P.M.
Date and time of opening of tenders	13.06.2017 at 4.00 P.M.

1. You are requested to quote your lowest rates for the supply of above items in the attached format for Financial Bid (Annexure – B)
2. You may send your representative in the office of the undersigned at the scheduled date and time of opening of tender.
3. Tender should be submitted in sealed cover only superscribed with Enquiry No. and due date at the following address only:

The Deputy Registrar (P&S)
Indian Institute of Technology (Indian School of Mines),
Dhanbad – 826 004 Jharkhand

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Terms & Conditions

- 1) The rates should be quoted for each item separately.
- 2) Conditional offer will not be accepted.
- 3) IIT (ISM) does not issue any Form 'C' or 'D' towards sales tax concessional rate. Hence, full rate of sales tax/VAT applicable should be quoted.
- 4) **Educational discount**, if any, should be clearly mentioned.
- 5) You are requested to submit your quotation strictly as per the specifications mentioned in the NIT.
- 6) Your tender must be valid for **minimum 90 days** from the date of opening of tender.
- 7) Please mention warranty/ guarantee in your offer clearly. Material/ equipment to be supplied must have minimum warranty/guarantee of **12 months**.
- 8) *Each page in the bid document must be numbered properly* and duly signed & sealed by the bidder on every page of the bid.
- 9) **The items/ materials shall be required to be delivered at MME Department/ Section through Purchase & Store Section, IIT (ISM) Dhanbad at the risk and cost of the tenderer.**
- 10) Unloading and installation shall be the complete responsibility of the supplier.
- 11) The stores are required to be delivered within 30 days. Late delivery may not be accepted.
- 12) The items offered should be of good quality confirming to BIS standards, wherever applicable.
- 13) **Advance payment is not admissible.** Payment shall normally be made within 3-4 weeks subject to receipt and acceptance & installation (as per Purchase Order Terms) of the ordered materials/items.
- 14) In the event date on which the tender is opened for acceptance is declared to be a holiday, the tenders shall be deemed to remain open for acceptance till the next working day.
- 15) Please send your offer by Regd.Post/ Speed Post/ Courier along with Courier receipt. Tender/ quotation will be received during IIT (ISM) working hours only (i.e. Monday to Friday). *Late or delayed tenders shall be summarily rejected.*
- 16) Any other information that you may like to obtain, you are free to contact IIT (ISM) before submission of tender.
- 17) IIT (ISM) reserves the right to accept and/or to reject any/ all tenders without assigning any reason.


Assistant Registrar



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1. Input voltage: 415V, 3 phase, 50Hz from mains with MCCB of Siemens/Havells/L&T/ABB make.
2. Inductive load: Three phase induction motor, 415V, 3 ph, 3HP, 1440 rpm coupled with 2hp dc motor acting as a generator, resistive load for generator loading at different power (zero to full load in few steps, not less than 5).
3. STATIC Converter type: connected parallel to three phase induction motor load to compensate the lagging VAR: IGBT based three phase full bridge converter.
4. Converter topology: Full bridge three phase STATIC configurations with three inductors and capacitor as DC link.
5. Switching device: high-speed IGBT.
6. KVAR setting: any value between 3 KVAR leading and lagging, selectable uses a push button at the front panel.
7. Switching frequency: 10-20 kHz.
8. Gate drivers: Suitable isolated gate drivers for PWM control of six IGBTs switching between the DC bus voltages.
9. Power supply: SMPS based power supply to high-speed micro-controller, a gate driver, processing circuits, LCD display etc.
10. Controller: advanced high speed TMS320F2000 series micro-controller based IGBT ON/OFF duty generation through SIN pulse width modulator (SPWM), 12-bit ADC sampling at switching frequency, high-speed SPI for display data etc.
11. PWM Control: high-resolution digital PWM generation with the capability of changing PWM duty at switching frequency with high bandwidth with suitable deadtime between the top and bottom IGBT.
12. Feedback signals: Three phase load voltages, high-speed current sensing (Hall Effect) of three load currents, three STATCOM currents.
13. Load Reactive Power Calculation: using sensed three load voltages and currents sampled at PWM frequency.
14. Reactive power compensation: Synchronous frame d-q control on the commanded reactive power to the STATCOM, generating a modulating voltage to the PWM modulator.
15. Voltage modulator: Suitable conversion of synchronous frame modulating voltages to the stationary frame voltages.
16. A 4 line 20-character LCD display showing PWM duty, load active power, resultant reactive power load to the mains, STATCOM compensation, fault type (if any) etc.
17. Push button: push button to increase and decrease reactive power command within maximum limits.
18. 1 no of power factor meter across induction motor, complete system and statcom.
19. Power factor can be increased gradually from no load to unity at the step of 0.1 or 0.2.
20. Protection against the complete system: Over voltage, over current, over temperature etc.
21. Vibration pad and lifting "EYE BOLT" arrangement to be provided on the motor and generator unit.
22. All types of wiring for (a) power connection to be made by 5 square m.m. ISI marked wire, (b) control connection to be made by 2 square m.m. ISI marked wire with proper identification and ISI marked lugs.
23. Total instruments of the above system should be fitted within the cabinet as picture attached.
24. Jaw slider coupling system to be provided for motor and generator coupling.
25. Complete circuit diagram must be provided with the quotation.
26. The supplier may be asked for a technical discussion/presentation before issuing the purchase order if required.
27. The experimental manual must be provided at the time of supply.

Handwritten signature



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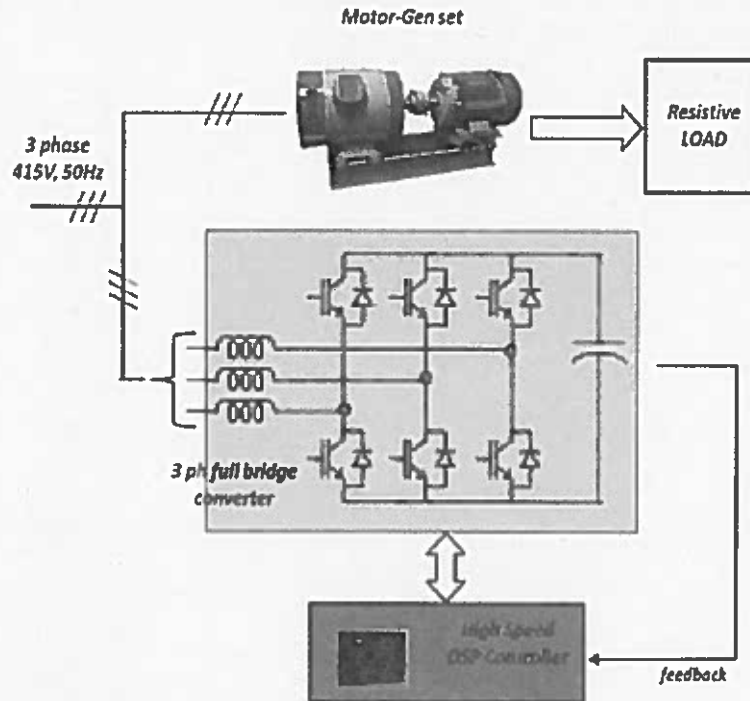


Fig. 1 Schematic diagram of the system.

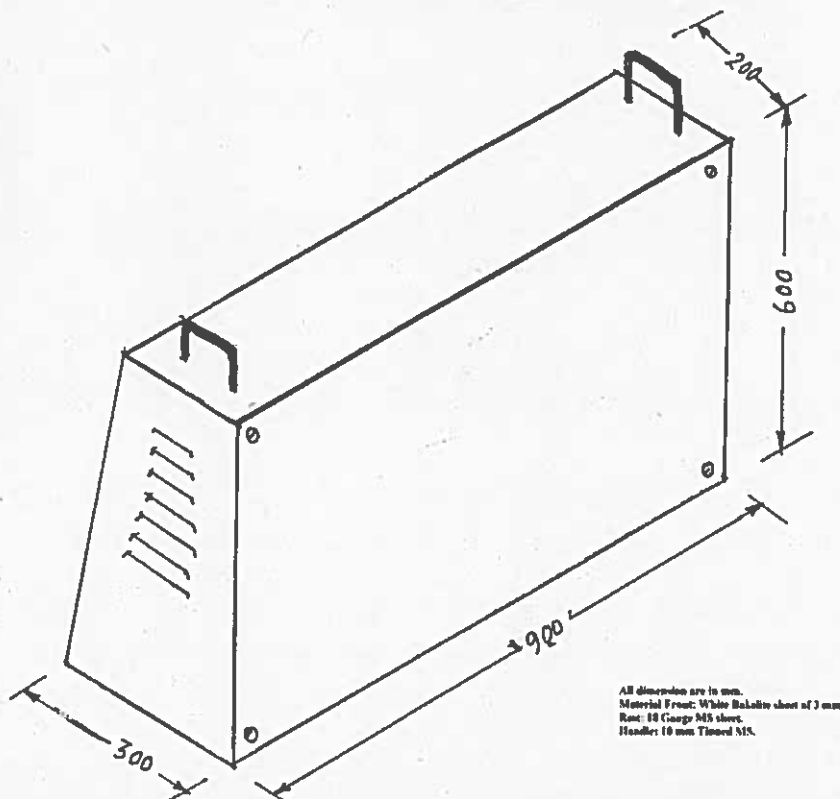


Fig. 2 Schematic diagram of the cabinet.



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Annexure - II

Format for Financial Bid

NIT No.: MME-500057-2017-18

Date:

Bidders Ref: No.

Date:

Subject: Supply & Installation of Setting up for Static VAR compensating device of 3-phase induction motor with variable loading arrangement

Sl. No.	Full Description of Items	Qty.	Rate	Amount
			Packing & Forwarding (if any)	
			Total	
			CST/VAT (if any)	
			Freight (if any)	
			Installation (if any)	
	Amount should be in figure as well as word		Grand Total	

Note:

- 1) All the details must be provided as per prescribed format only
- 2) Prices quoted by the bidders should include all local taxes, VAT, service tax, duties, livies, transportation cost and insurance costs etc. if any
- 3) Must have submit their PAN No. TIN No. etc.
- 4) All the rates must be quoted in Indian Rupees.

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