



भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited

(A Govt of India Undertaking)

Power Sector - Western Region, 345 Kingsway, Nagpur 440 001

Phone: 0712-3048600-604 Fax 0712-3048605



PUR-F 31/01

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PURCHASE ENQUIRY

To M/s	Our E-mail : smborkar@bhelpswr.co.in	
	ENQUIRY No :	09045 E
	ENQ.DATE	21.01.10
	DUE DATE	05.02.10/ 15:00 Hrs

Dear sir,

Kindly submit your sealed quotation by Speed Post / Registered Post / Courier / Air Mail in **two bids viz. (1) Technical cum Commercial Bid & (2) Price Bid.** for the material indicated below confirming acceptance to the terms and conditions enclosed ,so as to reach our office on or before 3.00 PM on the due date. Quotation may be sent by Fax only if asked so by BHEL / with prior permission of BHEL.

S.. No	Description of Material	Unit	Qty	Delivery Schedule	Material Required at (Destination)
01	TRANSFORMER TEST KIT WITH TAN DELTA TESTER-Ref Annexure-I	Nos.	01	Within a month from PO date	Regional Service Manager, BHEL PSWR, Regional Service Centre, Baroda-390007-Gujarat

A) GENERAL TERMS AND CONDITIONS OF CONTRACT

Cl. No.	DESCRIPTION
01	Technical cum Commercial Bid' and 'Price Bid' shall be sealed in two separate envelopes. Cover-I shall contain: Technical-cum-Commercial Bid. This bid should accompany copy of documents like authorized dealership certificate, earlier supply order details of similar equipment, company profile, product catalogue of the models offered , technical specifications of the product, commercial Terms & Conditions, and other documents mentioned in this Enquiry .Cover-II shall contain: All indications of Rates and Prices shall be given in Part-II (Price bid) in BHEL's specified Price Bid format enclosed as a part of this purchase enquiry. Bidder must not include any Terms and/or Conditions in this bid. Bidder shall not indicate any Item Rates or Prices other than those specified in BHEL's Price Bid format. Cover – III shall contain: Cover-I (Technical cum Commercial Bid) and Cover-II (Sealed Price Bid)) All cover shall bear distinct identification with regard to the type of bid and Enquiry number and Due Date.Tender should be free from CORRECTION AND ERASURES, Corrections, if any must be attested.All amounts shall be indicated both in words as well as in figures. Where there is difference between amount in figures and words, amount quoted in words shall prevail.
02	Technical cum Commercial bid will be opened at 4.00 PM on 05.02.10.
03	Price bid of technically accepted bidders only will be opened. No revision of prices will be entertained after Tenders are opened, unless mentioned in our enquiry / asked so by BHEL.
04	Manufacturer's name, Trade Mark or Patent No. if any, shall be specified in the Technical cum Comm. Bid
05	Please mention the relevant national / international standard code of the product quoted for in the Technical cum Commercial bid.
06	The purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any tender in part or full without assigning any reason whatsoever.
07	Late tenders (received after Due Date and time shall not be accepted in any circumstances.
08	Price quoted shall be valid for 60 days from the date of opening

BHARAT HEAVY ELECTRICALS LIMITED
PS-WR:HQ:NAGPUR

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DT. 22.01.10

DUE DATE: 05.02.10

09	Price shall be quoted as per enclosed 'Price Format' only. Quotations not accompanying filled in 'Price Format' are likely to be rejected. Please fill in all the columns of all formats
10	The price quoted should be as applicable to DGS & D (Govt. of India) and other Govt. Organizations. In case DGS & D rate / Running Contract is not existing, but a contract is in vogue with any BHEL Unit, reference of the same shall be furnished and same may be applicable to this contract.
11	SECURITY DEPOSIT: The supplier shall have to furnish Security Deposit (Cash/DD/Bank Guarantee from a Scheduled Bank) if so specified in the tender under Special Terms & Conditions.
12	DELIVERY FAILURE, TERMINATION & LIQUIDATED DAMAGE: The parties hereto agree that the timely dispatch/delivery and completion of the other schedules as stipulated in order/contract shall be the essence of the Order/Contract. If the seller/contractor fails to complete the dispatch/ delivery and other schedules within the time period stipulated in the order/contract, or within any extension of time granted by the purchaser, it shall be lawful for the purchaser to recover damages for the breach of order/contract without prejudice to any other rights and/or remedies provided for, in order/contract and hereunder. The purchaser reserves the right to recover from the Seller/Contractor, as agreed liquidated damages and not by way of penalty , a sum equivalent to half percent { ½% of the total contract price per week part thereof, subject to a maximum of ten percent @ 10%} of the total contract price excluding elements of taxes, duties and freight, if seller/contractor has failed to deliver any part of the goods within the period stipulated in the Order/Contract. The purchaser reserves the right to purchase from elsewhere on account of and at the risk and cost of the seller /contractor without notice to the seller /contractor of goods not so delivered or their equivalent , without canceling the order/contract in respect of the goods not yet due for delivery. The purchaser reserves the right to cancel the order/contract or a portion thereof for the goods not so delivered at the risk and cost of the seller/contractor and the seller/contractor shall be liable to the purchaser for any excess costs thereof.
13	RISK PURCHASE : In the event the supplier has failed to deliver or dispatch whole of the goods or any part within the time stipulated or if the same were not available in his stock, the best and the nearest available substitute thereof may be purchased/arranged by purchaser from elsewhere at the risk and the cost of the seller. The purchaser at his option will be entitled to terminate the contract and seller shall be liable for any loss which the purchaser may sustain by reason of such risk purchases in addition to penalty at the rate mentioned in clause 12 above.
14	Purchaser reserves it's right to the Public Enterprises price preference facilities as admissible under the Govt. of India policy from time to time.
15	PREFERENTIAL DELIVERY : It should be noted that if an Order is placed on a higher tenderer as a result of this invitation to tender, in preference to the lowest acceptable offer in consideration of the earlier delivery, the seller will be liable to pay the purchaser the difference between the contract rate and that of the lowest acceptable tender on the basis of final price F.O.R. destination including all elements of freight, sales tax, duties and other incidentals in case of failure to complete supplies in terms of such contract within the date of delivery specified in the tender and contract.
16	GENERAL: The purchaser reserves the right to split up the tender and place orders for individual item on different suppliers and also increase or decrease the quantity.
17	In case of any contradictions between General and special terms and conditions, the provisions in Special Terms & Conditions will prevail.

B) SPECIAL TERMS AND CONDITIONS OF CONTRACT

CI No.	Description

Thanking you,

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LTD.

SR.MANAGER (PURCHASE)

REGD OFFICE : BHEL House, Siri Fort, New Delhi

BHARAT HEAVY ELECTRICALS LIMITED
PSWR:HQ:NAGPUR

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TECHNO-COMMERCIAL TERMS & CONDITIONS: (PART OF TECHNICAL CUM COMMERCIAL BID)

ENQUIRY NO : 09045 E

DT. 22.01.10

DUE DATE: 05.02.10

SN	DESCRIPTION OF T & C	TERMS & CONDITIONS AS QUOTED IN THIS TENDER
01	DELIVERY TERMS	F.O.R.DESTINATION
02	PLACE OF DELIVERY	BHEL PSWR, Regional Service Centre, Baroda-Gujarat
03	DELIVERY PERIOD FROM THE DATE OF ORDER	WITHIN A MONTH FROM THE DATE OF PURCHASE ORDER.
04	CURRENCY OF PAYMENT	INR
05	PACKING & FORWARDING CHARGES	INCLUDED@_____ % / EXTRA@_____ % / NOT INCLUDED
06	EXCISE DUTY (% RATE)	INCLUSIVE@_____ % / EXTRA @% / AS APPLICABLE, PRESENTLY @_____ .% / NOT APPLICABLE
07	EXCISE INVOICE FOR CENVAT BENEFIT	SHALL BE PROVIDED / NOT PROVIDED
08	CST / VAT WITHOUT CONCESSIONAL FORMS "C" / "D" % RATE)	INCLUSIVE@_____ %/EXTRA@_____ % AS APPLICABLE, PRESENTLY @_____ % / NOT APPLICABLE (NO "C" OR "D" FORM WILL BE ISSUED BY BHEL)
09	OCTROI / ENTRY TAX AT DESTINATION	EXTRA IF APPLICABLE WILL BE PAID BY BHEL ON PRODUCTION OF ORIGINAL RECEIPT.
10	FREIGHT CHARGES UP TO DESTINATION	EXTRA @_____ % / INCLUDED @_____ %
11	TRANSIT INSURANCE CHARGES	BY BHEL. SUPPLIER HAS TO INTIMATE THE DISPATCH DETAILS TO BHEL'S UNDERWRITERS AS SOON AS THE MATERIAL DISPATCHED.
12	ANY OTHER CHARGES (please specify here the nature of charge)	(AMOUNT TO BE SPECIFIED IN THE PRICE FORMAT)
13	PAYMENT TERMS (Specify scope of Banker's Charges at both ends / Demand Draft Charges)	90% BASIC+100% TAXES AND DUTIES AGAINST DELIVERY. BALANCE 10% AGAINST SUBMISSION OF PERFORMANCE BG EQUAL TO THE WARRANTY PERIOD OR EXPIRY OF WARRANTY PERIOD.
14	MODE OF DISPATCH	BY ROAD / RAIL / SHIP / AIR / CARGO COURIER / SPECIAL MESSENGER / HAND DELIVERY
15	NAME OF THE GOODS MANUFACTURER / PRINCIPALS	
16	TRADE NAME / MODEL NUMBER OF GOODS	
17	AUTHORIZED DEALERSHIP CERTIFICATE	CERTIFICATE OF MANUFACTURER/PRINCIPALS: ENCLOSED / NOT ENCLOSED
18	WARRANTY / GUARANTEE CONDITIONS	12 MONTHS FROM THE DATE OF COMMISSIONING OR 18 MONTHS FROM THE DATE OF DISPATCH.
19	PRODUCT CATALOGUE / WRITE UP	ENCLOSED / NOT ENCLOSED

SIGNATURE & SEAL OF TENDERER

Dully filled and signed this sheet should be sent as a part of technical bid .Other wise the offer will not be considered for further processing)

PRICE FORMAT

BHARAT HEAVY ELECTRICALS LIMITED

POWER SECTOR:WESTERN REGION:NAGPUR

NAME OF THE TENDERER:_____

SELLER'S REF. No._____DATE :_____

ENQUIRY No.: 09045 E

DT. 22.01.10

DUE DATE: 05.02.10

S.N.	DESCRIPTION	PRODUCT - 1	PRODUCT-2	PRODUCT-3	PRODUCT-4	PRODUCT-5
A	ITEM DESCRIPTION AS PER ENQUIRY (PLEASE QUOTE THE BRAND NAME AND MODEL NUMBER)					
B	QTY OFFERED					
C	UNIT RATE					
D	CURRENCY					
E	DISCOUNT (%AGE & AMOUNT)					
F	DISCOUNTED UNIT RATE					
G	DISCOUNTED BASIC PRICE (G = B x F)					
H	PACKING & FORWARDING CHARGES					
I	EXCISE DUTY (PERCENTAGE AND AMOUNT)					
J	IMPORT DUTY (PERCENTAGE & AMOUNT)					
K	SALES TAX AS APPLI. WITHOUT C- FORM (PERCENTAGE & AMOUNT)					
L	FREIGHT UPTO DESTINATION					
M	TRANSIT INSURANCE					
N	OCTROI CHARGES / ENTRY TAX AT PLACE OF ORIGIN					
O	OCTROI CHARGES / ENTRY TAX AT DESTINATION					
P	TOTAL PRICE AT DESTINATION (SUM of 'G' to 'O')					

NOTES:

1. PLESAE USE ADDITIONAL SHEETS IF NECESSARY
2. FURNISH FURTHER BREAK UP OF PRICE IF NECESSARY

SIGNATURE OF THE TENDERER WITH SEAL

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR-WESTERN REGION
ANNEXURE-I (PAGE-1/6) Ref.Enq No.09045E dt.22.01.10
Specification for Transformer Test Kit

A. GENERAL SPECIFICATIONS:

1. A single unit should be capable of testing of Current Transformers, Voltage Transformers, Power Transformers and contact resistance Circuit Breakers.
2. The equipment should be portable. It should be suitable for on-site measurement and easy for transportation.
3. It should have built-in computer for its operation along with built-in LCD display and non-volatile memory for storing at least 300 results. The stored results should not be lost if input power supply to the test kit is interrupted.
4. The test current, voltage & frequency should be electronically generated and shall be completely independent of the input voltage & frequency fluctuations.
5. The test set should be able to test Current Transformers for its Ratio (by Primary Current Injection method) with test current of at least up to 800A AC (up to 2000A with or without external hardware), Polarity, Ratio & Phase angle errors, Knee-point voltage and Current (as per applicable standards), Secondary winding resistance, Secondary burden etc. If external hardware is necessary, the same shall be supplied at no extra cost. High Current Cables of at least **9m** length shall be supplied along with the kit for primary injection of 800A.
6. The test set should be able to test Large Power transformers for turn-ratio, winding resistance, Excitation Current. The turns-ratio measurement shall be completely automatic and three-phase measurement. If any external hardware required, same shall be supplied. Any other tests on transformer, if can be performed by the same test equipment, can be quoted as optional.
7. The kit shall be able to measure and record the per tap measurements of turns-ratio, errors of ratio & phase angles and excitation current to avoid manual recording of the test results. It should be possible to record measurements of at least 20 taps of each phase in a single test file.
8. The kit shall be able to measure and record the per tap measurements of Winding resistance (wherever applicable). It should also be able to detect any problem with On-load tap changer OLTC) & its operation.
9. The kit should have automatic safe discharge feature after the test for the safety of the operating personnel. The test kit should have audio/visual indication for the current flow and safe discharge.
10. The test kit should be able to measure the static contact resistance of the Circuit breakers with test current of at least 200A. The test lead of at least 9m length shall be supplied.

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR-WESTERN REGION
ANNEXURE-I (PAGE-2/6) Ref.Enq No. 09045E dt.22.01.10
Specification for Transformer Test Kit

11. The test set shall also be able to measure Ground resistance with or without any additional accessories. If any accessories required, the same shall be supplied without any additional cost.
12. The same test system should also be capable of measuring Capacitance and $\tan \delta$ (dissipation factor) of Power transformers, bushings, circuit breakers and other high voltage electrical apparatus. If any additional external hardware is required, the same shall be offered. The external hardware shall be of the same make. The test set should be fully automatic without any need for manual balancing.
13. The test set should be able to measure & display Capacitance, Tan delta, Power factor, test voltage, charging current, power loss etc. of the specimen under test.
14. The method used for interference suppression should be "Variable Frequency" and NOT by polarity reversal method or by injection of opposite interference signal. i.e. The test voltage shall be applied at two different frequencies (one above & one below the line frequency) and the kit should automatically display the test result corresponding to 50Hz. No manual calculation shall be required.
15. The test voltage & frequency should be electronically generated and shall be completely independent of the input voltage & frequency fluctuations. The frequency range of the test signal shall be from 15 ... 100Hz.
16. The test set should be able to output voltage up to 12 kV. The test voltage should be automatically applied to the test object up to the preset value with no manual control required. The test set should also automatically discharge the test object after the completion of the test.
17. The current output of the test set should be at least 100mA continuous and 300mA intermittent at 10kV.
18. The test equipment should be capable of measuring capacitance values of at least 95 nF at 10kV without any range extenders.
19. It should be possible to mount the whole test system along with the test leads on a transport trolley, which shall be a part of the supply at no extra cost.
20. The test set should have safety monitoring system to ensure perfect grounding of test system and audio/visual alarm while the test is under progress.
21. It should be possible to download the results from the test kit to an external Laptop/PC either through Ethernet/USB port. It should also have the facility to download the results to a pen drive directly from the test kit.
22. Necessary software shall be supplied to download the results from the test kit to external PC/Laptop. The software should be Windows based and also be able to convert the results to EXCEL/MS WORD or any other format.

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR-WESTERN REGION
ANNEXURE-I (PAGE-3/6) Ref.Enq No. 09045E dt.22.01.10
Specification for Transformer Test Kit

23. The test report should be generated automatically with date & time stamped.
24. **The test kit shall meet all the relevant safety specifications as per applicable national/international standards. Relevant type test certificates from a reputed certification agency shall be enclosed.**
25. The kit shall be easy to operate and user friendly.
26. The kit shall be supplied in a sturdy transport case with wheels for easy transportation. The cables & other accessories can be supplied in a soft carry bag.
27. On-site technical training on use of the test set should be provided.
28. The bidder shall have facility to provide necessary after-sales service support in India.

B. TECHNICAL SPECIFICATIONS:

CURRENT TRANSFORMER:

Current Output:

Range : up to 2000A AC
Resolution : 10mA or better
Accuracy : 0.2% of reading \pm 0.2% of Full scale or better

Phase Angle:

Range : 0 to 180 degree
Resolution : 0.1 degree or better
Accuracy : 0.2 degree or better

Winding resistance:

Range : 1m ohms to 100 ohms with automatic range switching
Accuracy : 1% of reading or better

Knee-point voltage:

Range : up to 2000V
Resolution : 1 V or better
Accuracy : 0.5% or better

TRANSFORMER:

Turns-ratio:

Range : 1 ... 2000 or better
Resolution : 0.01 or better
Accuracy : 0.5% or better
Test voltage : up to 2000V

Phase Angle:

Range : 0 to 180 degree
Resolution : 0.1 degree or better

BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR-WESTERN REGION
ANNEXURE-I (PAGE-4/6) Ref.Enq No. 09045E dt.22.01.10
Specification for Transformer Test Kit

Accuracy : 0.2 degree or better

Winding resistance:

Range : 1m ohms to 100 ohms with automatic range switching

Accuracy : 1% of reading or better

Test Current : up to 50 Amps or more

Contact Resistance:

Range : 1 micro Ohms to 10m Ohms

Resolution : 0.1micro Ohms or better

Accuracy : 1% or better

Test Current : 200A minimum

Technical Specifications for Capacitance & Tan Delta measurement:

1. Voltage Output : 0 to 12 KV

**2. Current Output : 100 mA continuous
300 mA intermittent**

3. Voltage Measurement :

Range : 0 to 12 kV AC

Resolution : 1V or better

Accuracy : +/- 1% or better

4. Current Measurement :

Range : 0 to 5 Amps AC

Resolution : 1 μ A or better

Accuracy : +/- 0.5% or better

5. Test Frequency :

Range : 15 400Hz

Resolution : 0.01Hz or better

Accuracy : 0.1% of reading or better

6. Capacitance :

Range : 1 pF to 95,000pF at 10kV
(up to 1 μ F @10kV with Resonating Inductors for testing large generators)

Resolution : 0.01pF or better

Accuracy : \pm 0.5% reading +1pF or better

7. Tan Delta (Dissipation Factor) :

Range : 0 – 100%

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ANNEXURE-I (PAGE-5/6) Ref.Enq No. 09045E dt.22.01.10
Specification for Transformer Test Kit

Resolution : 0.001% or better
Accuracy : $\pm 0.5\%$ of reading $+0.02\%$ or better

8. Power Factor :

Range : 0 – 100%
Resolution : 0.001% or better
Accuracy : $\pm 0.5\%$ of reading $+0.02\%$ or better

9. Inductance :

Range : 1 – 1000 kH
Resolution : 1 mH or better
Accuracy : 1% or better

C. Environmental Conditions:

Operating temperature : 0 to 50 deg C or better
Relative Humidity : up to 95% (non-condensing)
Storage Temperature-0-70 deg.C.

D. Input Power Supply:

- 1) 230V AC $\pm 10\%$, 1-phase, 50Hz $\pm 5\%$, with no loss of performance within this range.
- 2) Connection as per IEC320/C20.
- 3) Display-LCD ,Viewable in bright sun light.
- 4) Safety Standards EN61010-1, EN60905,50191, IEC 61010-1.
- 5) Electromagnetic compatibility(EMC)-EN50081,55011,61000-3-2,EN50082-2,IES61000-4-2/3/4/8,CE confirm 89/336/EEC

E. Accessories to be supplied along with the kit:

The test system shall be offered complete with the following:

- Main equipment(s)
- Attachments for Turns-ratio/Winding resistance/Contact resistance/Ground Resistance measurement (if any additional hardware necessary)
- High Current cables of at least 9m length for Primary Current injection and Contact resistance measurements.
- AC Power cord of at least 2m length
- High voltage (2kV) shielded cables of at least 10m length.
- Measurement cables of at least 10m length.
- Necessary HV cable (12kV), double-shielded, for Capacitance & Tan Delta measurement of at least 18 meters.
- All necessary cables & accessories including connection clamps for Capacitance & Tan Delta measurement.
- Grounding cables

BHARAT HEAVY ELECTRICALS LIMITED
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ANNEXURE-I (PAGE-6/6) Ref.Enq No. 09045E dt.22.01.10
Specification for Transformer Test Kit

- All necessary Connectors/ Clamps/accessories (if not specified above) required for testing as mentioned in technical specifications.
- Hard carrying case with wheels for the equipment for easy transportation.
- Instruction/operation manual (in English)
- Necessary software in CD for data downloading/ printing/ converting the test results to any other format.
- Transport trolley
- Sturdy transport cases with wheels for main equipments.

SPECIAL TERMS AND CONDITIONS OF ENQUIRY NO.09045 E DT.22.01.10

Clause No.	Description
01	Delivery: Should be dispatched within a month from PO date.
02	PHYSICAL INSPECTION WILL BE DONE AT DESTINATION.
03	GURANTEE/WARRANTY & TEST CERTIFICATE REQUIRED ALONG WITH THE MATERIAL.
04	Any deviations from the Technical specifications and Commercial terms and conditions shall be recorded SEPARATELY and submitted with part-I of this bid.
05	All tenderers shall quote for F.O.R. Destination only. Tenderer's shall supply the material as detailed in Tech.Specs,,Annexure-I of the enquiry,
06	Payment Terms: 90 % OF BASIC PRICE AND 100% TAXES AND DUTIES AGAINST DELIVERY. BALANCE 10% AFTER EXPIRY OF WARRANTY PERIOD OR AGAINST SUITABLE PERFORMANCE BANK GUARANTEE.
07	Bidders has to quote their price as per the price format enclosed by giving split details (i.e Basic+P&F+ED+ST/VAT+Freight etc) for evaluation purpose. Bidder has also to confirm whether Excise Duty Gate Pass shall be provided by them or not for availing CENVAT benefit by BHEL. BHEL shall provide only their Service Tax Registration no. to avail this facility. Evaluation criteria shall be made by taking into consideration of this CENVAT benefit. (i.e Final Landed cost <u>minus</u> excise duty portion).Hence the supplier has to clearly mention about the submission of excise duty gate pass/excise Invoice.
08	Vendors are requested to submit the <u>duly filled and signed Techno-commercial Sheet and Copy of Un-priced bid format filling the required details explicitly should be submitted along with the technical bid, Without which the offer will not be considered.</u>
09	PRICES SHOULD BE INCLUSIVE OF ACCESSORIES, SOFTWARE AND ANY OTHER REQUIREMENT MENTIONED IN ANNEXURE-I.
10	Bidder who meets all the technical and commercial condition of this Enquiry shall be considered techno-commercially qualified. Price bid of only techno-commercially qualified bidder shall be opened.
11	Bidder must submit copy of this tender along with unpriced price bid duly signed and stamped as an acceptance of the tender along with their offer as a part of technical bid.
12	Bidder must submit all the documents as per CL No-1 of General terms and conditions of contract(Page 1).
13	Supplier's offer shall remain valid for 60 days from Due Date OF TENDER OPENING.