

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant) Tiruchirappalli – 620014,
TAMIL NADU, INDIA

CAPITAL PURCHASE / MATERIALS MANAGEMENT / RM

Title: HIGH TEMPERATURE STRAIN METER	Phone: +91 431 257 7054 Fax : +91 431 252 07 19 Email : sankars@bheltry.co.in gvijay@bheltry.co.in Web : www.bhel.com / www.tenders.gov.in
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	Enquiry Number: 2691300108/41	Enquiry Date: 16.09.2013	Due date for submission of quotation : 04.10.2013
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You are requested to quote the Enquiry number date and due date in all your correspondences. This is only a request for quotation and not an order.

ITEM DESCRIPTION: STRAIN METER

Confirmation of acceptance for BHEL commercial terms & conditions and Price Bid formats have been posted in BHEL Corporate web site www.bhel.com and on the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference “**2691300108/41**”.

Tenders should reach us before 14:00 hours on the due date.
Tenders will be opened at 14:30 hours on the due date.
Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present.

Yours faithfully,
For **BHARAT HEAVY
ELECTRICALS LIMITED**
SM-Pur (R & D)



General Note: **BHARAT HEAVY ELECTRICALS LIMITED**

(A Government of India Undertaking)

HIGH PRESSURE BOILER PLANT

PURCHASE DEPARTMENT - FOSSIL BOILERS

THIRUCHIRAPALLI - 620014

TAMILNADU (INDIA)

PHONE : 2577645

GRAMS : BHARATELEC

FAX NO: 2520719

E-mail :

Web :

429-002/A

OFFICE COPY	Collective No.	Enquiry Date	Due Date For Quotation
	2691300108	16.09.2013	04.10.2013
Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order			

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	Strain meter No of Channels: 12 electrically isolated input channels. Facility to upgrade to more than 100 channels Transducers Supported: Each channel must have a universal amplifier with individually adjustable inputs. All channels must support all common transducer types Quarter, half and full bridge strain gauges, inductive full bridge, piezoresistive full bridge, voltage, current, thermocouples, PT 100, PT 1000, Resistance, Potentiometer, frequency and puke counter. A/D Converter: Each channel should have separate 24 bit A/D for synchronous, parallel and simultaneous measurements. Sampling rate per channel: Min of 19000 samples/sec/channel. Individually adjustable / channel Carrier frequency (sine): 4800Hz Accuracy class: 0.05 Linearity error: 0.02% of the bridges ESO Zero drift: 0.02% of F.S.O Strain gauge based Sensors: ± 10 mV (must support 6 wires Krezuer circuitry) Inductive sensors: ± 300 mV Piezoresistive sensor: ± 2500 mV Resistance: ± 1250 mV LVDT: ± 3000 mV DC voltage and Currents: ± 60 V, ± 10 V and ± 100 mV, 4 to 20mA Thermocouples and Thermistors : Type K,J,S,T,R,N,B,E, PT 100, PT 1000 with Cold Junction compensation. Frequency and Pulse counting: 0.1 to 10, 00000 Hz; 0 to 10, 00,000 pulses Channel Isolation: All input channels to be electrically isolated Bessel and Butterworth Filters: 0.01 HZ to 3.2 KHz individually adjustable per channel	NO	1.000	1.00	30.11.13

The offers should reach us 30 minutes before the time of opening of tenders.
 The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

Yours faithfully,
 For **BHARAT HEAVY ELECTRICALS LIMITED**

MANAGER / PURCHASE
(FOSSIL BOILERS)



BHARAT HEAVY ELECTRICALS LIMITED

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HIGH PRESSURE BOILER PLANT

PURCHASE DEPARTMENT - FOSSIL BOILERS

THIRUCHIRAPALLI - 620014

TAMILNADU (INDIA)

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Transducer impedance: 300 to 1000 Ohms
System should have the transducer electronic data sheet support.
Transducer cable length up to : Atleast 100 meters
Ring Buffer Memory : Atleast for 10 minutes
Data Recording : Exchangeable 8 GB CF card, USB stick or external USB hard disk
Interface : Fire wire, Gigabit Ethernet, USB, WLAN, DVI
EMC requirements : EN 61326
Supply voltage for channels : 5 to 24V (in individually adjustable for each socket/channel)
Distributed and Scalable : Every unit must be usable separately with a computer. The full system must be scalable to more than 100 channels
Operating temperature range : minimum 0 C to + 50°C
Power Supply : 10V to 30V DC (regulated power supply with 230 VAC adapter).
Embedded Controller Software : Should include embedded software for :
Hardware setup, simplified data
No programming knowledge should be required to work on the system.
Embedded Software Online : Arithmetic, exponent, root, root mean square value, logic, trigonometry, calculations integral/differential, exponential, logarithm, limit values (connect digital output, play audio file via external speaker, entry in log file), software filters (moving averages, Bessel, Butterworth), experimental stress analysis using Strain gauge.
Data Storage Format : ASCII, Microsoft Excel, RPC III, MATLAB, nCode, MDF 4.0, NI DAQmx
The complete meta data (sensors, measurement, configuration, test parameters), statistics log should be stored for data traceability.
The system should be supplied with ITEM 20 and ITEM 30
The BIDDER / VENDOR shall meet the following requirements to get Qualified for submitting an offer for HIGH TEMPERATURE STRAIN METER.
The VENDOR shall have a minimum of THREE Years of Continuous Experience in the field of Design, manufacture and supply of HIGH TEMPERATURE STRAIN METERS.
Only those vendors, who have supplied, similar Equipment for some

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For **BHARAT HEAVY ELECTRICALS LIMITED**

MANAGER / PURCHASE
(FOSSIL BOILERS)
Yours faithfully,



BHARAT HEAVY ELECTRICALS LIMITED

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HIGH PRESSURE BOILER PLANT
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THIRUCHIRAPALLI - 620014
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applications in the past Three years on the date of opening of Tender should quote.

The vendor should submit the following information where similar strain meters have been supplied, for qualification of their offer.

1 Name and postal address of the customer / company where similar strain meters were supplied.

2 Phone, FAX no. and email address of the contact person of the customer.

3 Month and Year of supply

4 Application for which the strain meters were supplied.

BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected.

Technical Offer shall be supported by Documents highlighting the specification with a comparative statement of Technical Specifications given by BHEL and the offer Details submitted by the Bidder, against

each clause. A mere #CONFIRMED# or #COMPLIES# or #YES# or #NO-DEVIATION# or similar words in the technical comparative statement [without any supporting technical write-ups, photos and datasheets] may lead to disqualification of the Technical Offer.

In case of preliminary qualification of the offer, on technical grounds, the BIDDER may be called for a detailed technical discussion on the original technical offer at BHEL Works, with a sufficient notice period.

STRAIN METER

20 M 1.000 1.00 30.11.13

R type thermocouple. The diameter of thermocouple wire shall not exceed 0.3 mm. Every thermocouple may be designed in such a way that a portion of the length of the thermo couple shall have the sensing element and the remaining length shall be made of cable for data transmission up to data logger. The distance between the source and the data logger will be a minimum of 5 meters. All the Thermocouples should meet this length requirement. Suitable size ceramic bead and omega pin if any has to be supplied along with each thermo couple. The thermocouple shall be

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Yours faithfully,



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connected to item 10 and be demonstrated for it proper function with Item 10.

Thermocouple

30 NO 10.000 10.00 30.11.13

LVDT Transducers with spring loaded type with Nominal Measuring Range of 0 to minimum of 100 mm with terminals compatible for the data logger mentioned in ITEM 10.

The LVDT should have the cable length of 3 meters minimum.

Type of connection: full bridge.

Sensitivity [mV/V]: maximum + 80.

Linearity deviation in %: minimum of ± 0.2 to ± 0.1 .

Nominal temperature range [°C]: -20 to + 80.

Carrier frequency [kHz]: shall be $4.8 \pm 1\%$.

LVDT Transducer

General Note:

PL. SUBMIT YOUR OFFER ON F.O.R/BHEL-TRICHY (TAMILNADU), INDIA BASIS AND IN TWO PART (TECHNO-COMMERCIAL BID AND PRICE BID) IN A SEPARATE COVER.

IF THE OFFER IS SUBMITTED IN SIGNLE PART AND THE SAME WILL BE LIABLE FOR REJECTION.

ANNEXURE-III ENCLOSED HERewith MUST BE FILLED, SIGNED AND SUBMITTED ALONG WITH YOUR OFFER.

ENCLOSURE: ANNEXURE - III

WE MAY GO FOR REVERSE AUCTION (ONLINE BIDDING) IF REQUIRED FOR THIS TENDER

Enclosures:

"LD clause has to be confirmed without fail."

"Payment to vendors will be made only thro E-Payment mode."

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For **BHARAT HEAVY ELECTRICALS LIMITED**

MANAGER / PURCHASE
(FOSSIL BOILERS)
Yours faithfully,

MM: CAPITAL EQUIPMENT

Bharat Heavy Electricals Limited, Trichirapalli – 620 014
(To be filled and submitted along with Offer)

BHEL Enquiry No.:

Date:

BHEL Commercial Terms and Conditions for IMPORT SUPPLIES	Vendor's Confirmation/ Comments
Technical confirmation to BHEL's Specification as called for in BHEL Format shall be furnished. If needed additional sheets shall be used.	To be furnished along with offer
Prices shall be quoted item wise only.	
Prices shall be quoted on " FIRM PRICE " basis only. The prices should be only on FOB/FCA basis inclusive of Packing & Forwarding charges if any.	
Validity of offer shall be for a minimum period of 120 days from the date of Tender opening	
Delivery period from the date of Letter of Intent shall be clearly mentioned in the offer.	
Liquidated damages @ ½% per week subject to a maximum of 15% of the order value shall be applicable for delay in deliveries.	
Payment terms for Foreign vendor (Principal): 100% value of the goods will be paid through an irrevocable Letter of Credit established by our bankers. (OR) 100% payment on CAD (CASH AGAINST DOCUMENTS) BASIS All bank charges outside India are to vendor's account only. Any advance payment or payment before dispatch is not acceptable to us and If you fail to accept our payment terms, your offer is liable for rejection.	
Payment terms for Indian Agent: Indian Agency commission, if any, shall be clearly specified in the offer and the same will be paid in Indian Rupees against acceptance / commissioning of the equipment.	
Part Shipment or Transshipment is not permissible	
In case of any short shipment in the spares, where separate rates are not available in the contract, the customs duty levied on such supplies, shall be borne by the supplier / Indian agent.	
Any warranty replacement during warranty period shall be supplied free of charge on FOR BHEL, Trichy basis.	
Equipment will be inspected and proved at vendor's works prior to dispatch. However final inspection and acceptance of equipment will be after installation at BHEL, Trichy.	
The equipment shall be guaranteed for a period of 12 months from the date of commissioning.	
Offers should be submitted only in sealed cover superscribing clearly the Enquiry reference and due date.	

NOTE:-

- a) It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- b) The prices are to be offered only on FOB/FCA basis, inclusive of Packing & Forwarding charges if any.
- c) Your specific acceptance to BHEL Payment terms & LD are essential for consideration of your offer. Otherwise your offer is liable for rejection.

Signature & Office Seal of the vendor

Bharat Heavy Electricals Limited, Trichirapalli - 620 014

MM : CAPITAL PURCHASE

(To be filled and submitted along with offer)

BHEL Commercial Terms and Conditions for Indigenous Supplies	Vendor's Confirmation / Comments
Technical confirmation to BHEL's Specification as called for in BHEL Format shall be furnished. If needed additional sheets shall be used.	
Prices shall be quoted item wise only as per the model format enclosed.	
Prices shall be quoted on " FIRM PRICE " basis only. The prices should be only on F.O.R / Despatching station basis inclusive of Packing & Forwarding charges if any. Applicable % of ED & Sales Tax , Freight & Insurance, Installation & Commissioning Charges should be clearly indicated.	
Validity of offer shall be for a minimum period of 120 days from the date of Tender opening	
Delivery period from the date of Letter of Intent / Purchase order shall be clearly mentioned in the offer.	
Liquidated damages (at % per week subject to a maximum of 15% of the order value shall be applicable for delay in deliveries.	
Following Risk Purchase clause shall be applicable: The purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.	
Payment terms for supply portion: <ul style="list-style-type: none">• 100% payment will be made within 45 to 90 days after receipt and acceptance / commissioning of goods at BHEL. against submission of PBG for 10% of Order value with required validity. (or)* 80% value of the goods will be paid within 45 to 90 days against dispatch documents, negotiated through bank. Balance 20% will be paid within 45 to 90 days from the date of acceptance / commissioning of goods against submission of supplementary invoice and also against submission of PBG for 10% of Order value with required validity. All bank charges are to vendor's account only.	
Erection / commissioning: Erection / commissioning shall be done at free of cost.	
The equipment shall be guaranteed for a period of 12 months from the date of commissioning.	
Equipment will be inspected and proved at vendor's works prior to dispatch. However final inspection and acceptance of equipment will be after installation at BHEL, Trichy.	
The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals etc., as called for in the Technical Specification, in the required number of copies at no extra cost.	
Any warranty replacement during warranty period shall be supplied free of charge on FOR BHEL, Trichy basis.	
Offers should be submitted only in sealed cover super-scribing clearly the Enquiry reference and due date.	

NOTE:-

- a) It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- b) Your offer should be indicating applicable if any P&F Charges, % of ED, Sales Tax -CST or VAT, Service Tax), Freight, Insurance and Installation and Commissioning Charges etc., as per our Price Format.
- c) Your specific acceptance to our Payment terms, LD, Risk Purchase Clause & Submission of PBG for 10% of the order value are essential for consideration of your offer. Other wise your offer is liable for rejection.

Signature & Office Seal of the vendor

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