



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

R & D and COAL RESEARCH

SUPPLY OF MASS FLOW CONTROLLERS

Phone: +91 431 257 7558

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Email : mnthambi@bheltry.co.in

Web : www.bhel.com

Dear Sir/Madam

Sub : NOTICE INVITING TENDER

Reference Number:

2821100016

Date:

04/10/2011

**Due date for submission of
quotation :**

**28/10/2011
by 14.00 Hours**

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.*

Sealed offers in two part bid system are invited from reputed & experienced bidders (meeting PRE QUALIFICATION CRITERIA as mentioned in Annexure- BHE: CRC:02 Dt.01/09/'11 and 11/09/'11) for the **supply of mass flow controller** by the undersigned on the behalf of BHARAT HEAVY ELECTRICALS LIMITED as per the tender document and commercial terms & conditions attached.

Note: The offer should reach this office on or before the due date & we are not responsible for any postal delay. Late tender will not be considered.

M.NALLATHAMBI
MANAGER/ R&D AND COAL RESEARCH

**BHARAT HEAVY ELECTRICALS LIMITED**

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ENQUIRY
(INDIGENOUS)(A Government of India Undertaking)
HIGH PRESSURE BOILER PLANT
PURCHASE DEPARTMENT - FOSSIL BOILERS
THIRUCHIRAPALLI - 620014
TAMILNADU (INDIA)PHONE : 2577383
GRAMS : BHARATELEC
FAX NO: 2520696
E-mail :
Web :

429-002/A

OFFICE COPY**Collective No.**

2821100016

Enquiry Date

04.10.2011

**Due Date For
Quotation**

28.10.2011

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 | Mass flow controllers Flow range 0.2 to 10 LPM - 3 nos for O2, N2 and Argon gases Flow range 1.0 to 20 LPM - 2 nos for O2 and N2 gases Required features Analog and digital interface with LCD/LED Display Programmable flow configuration Selectable engineering units NIST calibration certificates All essential accessories Detailed technical specification has been enclosed Mass Flow Controller | NO | 5.000 | 5.00 | 30.11.11 |

General Note:

- 1) OFFERS WILL BE INVITED IN TWO PART BID ONLY.
- 2) IF REGRETTED MAKE MENTION ON THE TOP OF THE
REPLY COVER AS "REGRETTED"
- 3) LD CLAUSE HAS TO BE CONFIRMED WITHOUT FAIL, OTHERWISE
WE WOULD ASSUME THAT YOU HAVE ACCEPTED OUR LD CLAUSE.
- 4) REQUIRED: a) TEST CERTIFICATE. b) GUARANTEE CERTIFICATE
- 5) THE PREFERRED PAYMENT TERM IS 100% PAYMENT
AFTER RECEIPT AND ACCEPTANCE OF MATERIALS.
- 6) ADVANCE OR PROFORMA INVOICE PAYMENT IS NOT ACCEPTED.
- 7) TRANSPORT AND DELIVERY AT BHEL / SHALL BE VENDOR'S SCOPE.
- 8) DETAILED SPECIFICATION REF NO: BHE: CRC: 2 DT: 01.09.2011.
(3 pages) + QUALIFYING CRITERIA REF. BHEL: CRC: 1, DT: 11.09.2011
(1 page) ENCLOSED

Enclosures:**"LD clause has to be confirmed without fail."****"Payment to vendors will be made only thro E-Payment mode."**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 LIMITEDS. Subburaj
Deputy Manager / R&D and CR



BHARAT HEAVY ELECTRICALS LIMITED

R&D
TIRUCHIRAPALLI – 620 014.

MATERIAL MANAGEMENT DEPARTMENT

ANNEXURE TO PURCHASE ENQUIRY

Please ensure that the following details are incorporated in your Offer.

1. PRICE : Ex-Works / Ex-Godown
(or) F.O.R. – DESTINATION
2. DISCOUNT : % (or) Lumpsum amount – Rs.....
3. PACKING & FORWARDING : % (or) Lumpsum amount – Rs.....
4. TAX : TNGST % / CST %
without concession and with concession
(since, we are not eligible for Form-C please, FULL TAX may be mentioned)
(Rates of applicable Taxes & Duties and whether inclusive
or exclusive should also be mentioned)
5. SURCHARGE : %
6. DUTIES : %
7. FREIGHT & INSURANCE : %
8. DELIVERY PLACE :
9. DELIVERY PERIOD :
10. LD / PENALTY FOR DELAY IN DELIVERY : @ 0.5% PER WEEK SUBJECT TO A
MAXIMUM OF 15% IS APPLICABLE.
CONFIRM YOUR ACCEPTANCE.
11. OFFER VALIDITY :
12. PAYMENT TERMS : BHEL Payment terms are –
 - 1) 90% Payment through Bank against
proof of despatch documents. Balance 10%
after receipt and acceptance of materials.
 - 2) 100% payment within 45 days after
Receipt and Acceptance of Material.
13. GUARANTEE / TEST CERTIFICATE:

SIGNATURE OF SUPPLIER WITH SEAL

NOTE : Please do not Quote as EXTRA,
Quote the Rate in % / The Amount in Rupees.



BHARAT HEAVY ELECTRICALS LIMITED

R&D / PURCHASE

TIRUCHIRAPALLI - 620 014.

PURCHASE ENQUIRY - TERMS & CONDITIONS

1. a) QUOTATIONS : Each tender should be sent in double cover, inner cover should be sealed with tenderer's distinctive seal and super scribed with correct tender No. item of supply and due of opening. The outer should only bear the address of this office and should not have any indication that a tender is within. Two or more quotation should not be sent in one cover but the quotation against each tender should be sent separately to avoid confusion. Tender should not be addressed to any individual's name but only by designation.
b) Tender should be free from CORRECTION AND ERASURES. Correction if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words prevail.
c) PRICE should be nett F.O.R. dispatching station inclusive of risk in transit and remain valid for 60 days from the due date.
d) If any Sales Tax is payable as extra to the quoted price it should be specifically stated in quotations alongwith CST & TNGST No. failing which the purchaser will not be liable for payment of Sales Tax. Our T.N.G.ST. No. 356005, Dated 01-04-1995, C.S.T. No. 239383, Dated 11-06-1991.
e) NO REVISION OF PRICES will be entertained after tenders are opened.
f) Manufacturer's Name, Trade Mark or Patent No. if any should be specified. Illustrative leaflets giving technical particulars are required along with quotation wherever necessary.
g) Products with I.S.I. certification marks will be preferred.
h) 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.
2. SAMPLES : Wherever possible, sample should be submitted separately whether specifically requested or not so as to reach the purchaser on or before the due date of the enquiry. They should be clearly marked with the Enquiry No. and the date on the outside cover to facilitate identification.
3. PACKING AND MARKING : The supplier shall arrange for securely protecting and packing the stores to avoid loss or damages during transit.
4. TERMS OF PAYMENT : Payment will be made within 45 days of satisfactory receipt of materials at site. Wherever required by the purchaser, the successful tenderer must send the operation and maintenance manuals, Test certificates, Drawings, etc., for the materials ordered. These should be sent immediately after dispatch of the materials and a statement to that effect should be made in the Invoice. Failure to comply with this provision will result in delay in payment of the Bills. Goods dispatched either by V.P.P. or by the document presented through bank will be accepted unless agreed to by the Purchaser.

The duplicate copy of the Invoice meant for the transporters should accompany the material as stipulated under C.E. Rules 52-A and 173-C (or) 57GG. A Photostat copy of the above Invoice for each delivery challan should be submitted alongwith the original bills router through Bank or submitted directly to BHEL Finance Department.
5. SECURITY DEPOSIT : For purchase over Rs. 5000/- the successful tenderer/s may be requested to furnish a BANK GUARANTEE / SECURITY DEPOSIT for an appropriate value as may be determined by BHEL.
6. LIQUIDATED DAMAGES / PENALTY AND INTEREST ON ADVANCEES FOR DELAY IN DELIVERY : "If the supplier fails to deliver the raw material / Equipment / Components within the period specified in the contract the purchaser shall deduct LIQUIDATED DAMAGES a sum equivalent to 0.5% of the Price for each week of delay upto a maximum of 15% of the price of the delayed / undelivered goods. In addition to the recovery of interest at normal cash credit rate plus 2% for the unadjusted portion of the advances. If the delay in delivery of a part contributes to delay in execution of total system. LD and interest on advances will be recovered on the total contract price / total advance paid".
7. RISK PURCHASE : Alternatively 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 as aforesaid 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 in addition to penalty at the rate mentioned in clause 6 above.
8. PREFERENTIAL DELIVERY : It should be noted if a contract is placed on a higher tenderer as results 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 to 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 of all elements of Frights, Sales Tax, Duties and other incidents, incidental in case of failure to complete supplies in terms of such contract within the date of delivery specified in the tender and incorporated in the contract.
9. MODVAT CREDIT : If any Excise Duty is payable, the chapter Head / Sub-Head reference and the rate of the duty should be quoted. If the tender is availing MODVAT credit for his input materials, the effect of Proforma credit should be passed on to the purchaser. Tenderer under "MODVAT" shall be preferred.
10. GENERAL : The purchaser reserves the right to split up the tender and place order for individual terms with different tenderers and also increase or decrease the quantity.

Any other Conditions which might have been quoted by the Seller and are in contravention to the terms prescribed in the order and which have not been specifically accepted in by Purchaser will not be applicable to the Contact.

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**Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE**

Technical Specifications For Mass Flow Controllers

(Also hosted in www.bhel.com)

Ref : BHE: CRC:2

Dt : 01-09-2011

Note :

The “Technical Bid” shall have vendor’s responses along with Product Catalogue, Data Sheets in ORIGINAL and complete technical details.

All Technical terms can be here. **NO PRICE DETAIL IS ENTERTAINED HERE.**

Any deviation from the specifications may be brought-out clearly by the supplier in the technical bid

| Sl.No | Description | BHEL’s Specification/requirement | Supplier’s Offer (With complete details) |
|-------|-------------------------|--|---|
| 1. | Item | Digital mass flow controller | |
| 2. | Quantity | 2 nos for O ₂ gases 2 nos for N ₂ gases 1 no for Argon. Total : 5 nos | |
| 3. | Flow range | 0.2 to 5 LPM – 3 nos (One each for O ₂ , N ₂ & Ar gases) 1 to 20 LPM - 2 nos (One each for O ₂ and N ₂ gases) | |
| 4. | Gas | Pure gases O ₂ , N ₂ & Argon | |
| 5. | Material (wetted parts) | 316 Stainless steel | |
| 6. | Accuracy | ±1.0 % of full scale at operating conditions | |
| 7. | Repeatability | ± 0.5 % Full scale | |

Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE

Technical Specifications For Mass Flow Controllers

| | | | |
|-----|---------------------------|---|--|
| 8. | Typical Response Time | 0.5 to 1 s | |
| 9. | Standard Conditions (STP) | 25°C & 14.696psia | |
| 10. | Humidity Range | 0-100% Non-condensing | |
| 11. | Operating Temperature | 0-50°C | |
| 12. | Operating Pressure | 0-2 bar | |
| 13. | Mounting | Horizontal mounting | |
| 14. | Long term stability | ± 1 % F.S./year | |
| 15. | Control console | <ul style="list-style-type: none"> • Analog as well as digital interface • Output and command signal – Analog (Linear 4 to 20 mA) Digital (RS232/RS485) • Digital display (LCD/LED) of flow on the instrument • Programmable flow configuration • Selectable engineering units • All control functions must be available from face of the instrument as well as from PC through software . • All accessories required for the control system must be supplied | |
| 16. | Power supply | <ul style="list-style-type: none"> • 230 V , 50 Hz supply will be made available at the installation site. • Adaptors or accessories required for delivering the required power supply to drive the flow controllers must be supplied by the vendor. | |
| 17. | Weight and dimensions | To be specified | |

Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE

Technical Specifications For Mass Flow Controllers

| | | | |
|-----|--|---|--|
| 18. | Calibration | NIST Calibration certificates (with O ₂ , N ₂ & Argon gases) to be provided. | |
| 19. | End Connections | HDPE material , 1/4" NPT | |
| 20. | Accessories | All essential accessories including cables and adaptors required for supplying input power to MFC's must be supplied by the vendor. | |
| 21. | Installation | Free installation at BHEL works by the supplier. In case the installation is chargeable, the cost for the same may be clearly indicated in the price bid. | |
| 22. | Performance prove-out at BHEL | Supplier to demonstrate the performance as per the specification at BHEL's works. | |
| 23. | Manuals | Complete set of installation and O&M manuals in English language | |
| 24. | Documents to be furnished to BHEL along with the offer. | <ul style="list-style-type: none"> • Scope of supply – 2 signed copies • Catalogs of models quoted • Dimensional drawing | |
| 25. | Onsite performance guarantee | The supplied items are to be guaranteed for its performance for a minimum period of 1 year from the date of performance acceptance at BHEL works. | |
| | The total cost should be inclusive of the MFC's, control interfaces and all essential accessories. | | |

**Bharat Heavy Electricals Limited – Tiruchirapalli
COAL RESEARCH CENTRE**

Qualifying criteria for supply of Mass Flow Controller

Ref : BHE: CRC:2

Dt : 11-09-2011

QUALIFYING CRITERIA

The BIDDER / VENDOR have to necessarily provide the following details, for making an assessment of the firm's capability and competency.

The bid consists of 2 parts namely Technical and Price bid. Vendor shall submit Technical and Price bid separately. BHEL will study both the Qualifying Criteria and Response for Technical Specifications. The Price bid can be studied only if both the Qualifying Criteria and Response for Technical Specifications are found acceptable.

[The BIDDER is expected to give complete details against each clause in the table given below and wherever necessary an additional sheet may be attached giving clear reference number to cover the required details]

Name of the product: Mass Flow Controller

Please refer Technical Specification for further details.

| S. No. | PARTICULARS | VENDOR's RESPONSE |
|---------------|--|--------------------------|
| 1.0 | The BIDDER / VENDOR or their Principal shall have a minimum of FIVE Years of Continuous Experience in the Design, Manufacture & Supply of Mass Flow Controllers . Please indicate the actual experience. | |
| 2.0 | Number of " Mass Flow Controllers " supplied till date in India. Please furnish contact person name, address, phone number, fax number and mail id. | |
| 3.0 | Number of " Mass Flow Controllers " supplied till date outside India. Please furnish contact person name, address, phone number, fax number and mail id. | |
| 4.0 | Please enclose Performance Certificate from atleast one Indian or Foreign customer. | |
| 5.0 | Details of Technical Back-Up assured from the PRINCIPAL supplier. | |
| 6.0 | The BIDDER / VENDOR shall assure a continuous support for SERVICE for Five Years, from the date of installation of the item at BHEL Works. | |