

DT: 20.01.2017

**HOSTING DETAILS**

Email offer send to: **tender\_** [cell@bheltry.co.in](mailto:cell@bheltry.co.in)

| DESCRIPTION                                   | REMARKS                                                                                                                      |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Contact Person/Address                        | N.KAVIYARASAN.DE/Purchase/Valves                                                                                             |
| Approved By                                   | PARMANAND LAL DEO. DM/Purchase/Valves                                                                                        |
| Email                                         | <a href="mailto:nkavi@bheltry.co.in">nkavi@bheltry.co.in</a><br><a href="mailto:pldeo@bheltry.co.in">pldeo@bheltry.co.in</a> |
| Telephone                                     | 0431 2577424/7137                                                                                                            |
| Fax                                           | Not applicable                                                                                                               |
| Notification (Reference) NO.                  | EN-SSB1397 DT: 20.01.2017                                                                                                    |
| Tender Title                                  | MOTOR-RSB-WB-FLPIIB-0.09KW                                                                                                   |
| Tender Type                                   | <b>BUY/SERVICE CONTRACT/WORK CONTRACT</b>                                                                                    |
| BRIEF DESCRIPTION                             | MOTOR-RSB-WB-FLPIIB-0.09KW                                                                                                   |
| Published in Newspaper                        | NA                                                                                                                           |
| Published On                                  | -                                                                                                                            |
| Tender Value in Rs.                           | -                                                                                                                            |
| EMD Value – Rs.                               | Not applicable                                                                                                               |
| Document Cost – Rs.                           | Not applicable                                                                                                               |
| Date of Issue of Notification – DD/MM/YY      | -                                                                                                                            |
| Date of Closure of Sale of Forms – DD/MM/YY   | Not applicable                                                                                                               |
| Completed Forms to be submitted by – DD/MM/YY | Not applicable                                                                                                               |
| Date of Opening of Bids – DD/MM/YY            | <b>25.01.2017</b>                                                                                                            |

**Brief Details:**

TYPE OF TENDER : OPEN TENDER  
TENDER OPENING DATE : 25.01.2017  
NUMBER OF BIDS : TWO PART BIDS  
DELIVERY PERIOD : 4 weeks  
LD : As Per BHEL LD Clause  
Payment Terms : 100% payment after 45 days of acceptance of materials.  
Delivery Terms : FOR BHEL (Stores), TRICHY-14

Tender forwarding Address:

**ENQ.NO: EN-SSB1397 DUE DT: 25.01.2017**

TENDER ROOM NO: 26,  
BHEL, ADMIN 24 BLDG,  
GROUND FLOOR,  
BHEL, TRICHY-14  
0431-257742/7424



434-003/A  
Dt.31.08.16

# BHARAT HEAVY ELECTRICALS LIMITED

( A Government of India Undertaking )  
HIGH PRESSURE BOILER PLANT  
PURCHASE DEPARTMENT / VALVES  
THIRUCHIRAPALLI - 620014  
TAMILNADU (INDIA)

Page : 1

PHONE :91-431-2577305  
GRAMS : BHARATELEC  
FAX NO: 91-431-2520383  
E-mail : valpur@bheltry.co.in  
WEB : http://mm.bheltry.co.in

|                                                                                                                                                   |                                              |                                |                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------|---------------------------------------------|
| Vendor Code :<br>Vendor Name :<br>M/S                                                                                                             | Enquiry No<br><br>EN-SSB1397 -<br>EN-SSB1397 | Enquiry Date<br><br>20.01.2017 | Due Date for<br>Quotation<br><br>25.01.2017 |
| <b>OFFICE COPY</b><br>Please quote Enquiry No, Date and due date in all correspondences.<br>This is only a request for quotation and not an order |                                              |                                |                                             |
| <b>VIGILANCE AWARENESS WEEK</b><br><b>31st OCT - 05th NOV 2016</b><br><b>FOR VIGILANCE RELATED COMPLAINTS</b>                                     |                                              |                                |                                             |

| Item | Description                                                                       | Unit | Delivery<br>Quantity | Schedule<br>Date |
|------|-----------------------------------------------------------------------------------|------|----------------------|------------------|
| 10   | 963533960000 42020100303/02<br>MOTOR-RSB-WB-FLPIIB-0.09KW<br>SPC:-SPEC:SB:0008/09 | NO   | 4.00                 | 22.02.17         |

## General Note:

1. DRAWINGS ATTACHED.
2. DETAILED TERMS AND CONDITIONS REFER NIT.

The bidder along with its associate/ collaborators/ sub-contractors/sub-vendors/ consultants/ service providers shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

RFQ No: 5200005647

23505

Open Tender Dummy Code

Yours faithfully,  
For BHARAT HEAVY ELECTRICALS LIMITED

MANAGER / PURCHASE / VALVES

N. KAVITHARASAN  
Dy. Engineer  
Purchase / Valves  
BHEL, TRICHY - 620 014



# BHARAT HEAVY ELECTRICALS LTD

## VALVES PURCHASE

Trichy - 620 014. India

### GENERAL TERMS AND CONDITIONS

#### 1. QUOTATIONS: EN-SSB1397

- a. **BID system:** The offers are invited in two Part bid system (techno-commercial+Price Bid). Bid should be submitted on or before due date.
- b. **Submission of Tender:** Each offer should be sent in double cover separately and the same should be sealed and super scribed with correct Tender No., item of supply and due date of opening. Two or more quotations should not be sent in one cover. Price Bid should contain only Price per unit for each type. Offer should sent to the below mentioned address:  
The Tender Opening Cell / Valves  
Room No. -26, Building -24  
Bharat Heavy Electricals Limited  
Tiruchirappalli - 620014, Tamilnadu, India  
Or  
Email ID: tender\_cell@bheltry.co.in
- c. **Late tenders:** Tender received after 2.00 pm on due date will be considered as Late tender. Late tenders will not be considered under any circumstance.
- d. **Regulations:** Tenders should be free from CORRECTION AND ERASURES. Corrections if any must be attested. All amounts shall be indicated both in words as well as figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.
- e. **PVC:** Price Variation clause not acceptable. Prices should be firm.
- f. **Deviation.** Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation".
- g. **Confirmation:** Confirmation for compliance is to be given in the offer for all the techno commercial conditions specified in the specification.

#### 2. COMMERCIAL TERMS & CONDITIONS:

- a. **Terms of Payment:**  
For Indigenous Suppliers: 100% after 45 days on satisfactory receipts and acceptance of material at BHEL stores/ Site acknowledgement.  
For Import Supplies: Payment term is 100% payment on CAD basis after 45 days from the date of receipt of documents, specified in PO, at BHEL bank. Respective bank charges to respective account.
- b. **Liquidated Damage:** LD shall be 0.5% of the undelivered portion per week of the delay or part thereof subject to a maximum of 10% of the total order value.
- c. **Delivery Terms:**  
For Indigenous Suppliers: FOR BHEL Trichy inclusive of freight and insurance.  
For import Supplies: CFR/CIF Chennai seaport/FOB airport as per incoterm 2010.
- d. **Validity of Offer:** Prices should be valid for 60 days from the date of tender opening.
- e. **Delivery period:** Delivery should be before 4 weeks from date of purchase order.
- f. **Taxes & Duties:** Excise duty, sales tax and other levies (if any) shall be indicated as extra in the offer. Sales Tax payable as extra should be specifically stated in quotation along with CST & T.N.G.S.T No. failing which the purchaser will not be liable for payment of Sales Tax. Our T.N.G.S.T No. 3550005 Dated 01-04-1995 C.S.T. No. 259383 Dt. 11.06.1991.
- g. **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 seller either the whole of 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. Supplier shall be liable for any loss which the purchaser may sustain by reason for such risk purchases in addition to penalty.
- h. **Guarantee Clause:** The vendor shall give a guarantee for the performance of his supplies for a period of eighteen months from the date of dispatch or twelve months from the date of commissioning whichever is earlier. Guarantee certificate should be part of test certificates which should be provided along with supply
- i. **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 offered material is availing MODVAT credit for his input materials, the effect of proforma invoice should be passed on to the purchaser. For imported components, Duty benefits should be passed to BHEL.
- j. **Miscellaneous:** Any conditions which might have been quoted by the seller and are in contravention to the terms prescribed in order and which have not been specifically accepted by Purchaser will not be applicable to the contract.



# BHARAT HEAVY ELECTRICALS LTD

## VALVES PURCHASE

Trichy - 620 014. India

### GENERAL TERMS AND CONDITIONS

#### **EN-SSB1397**

#### **k. Special Provisions for Micro and Small Enterprises (MSE):**

- i. 20% of the tendered quantity is earmarked for MSE suppliers in this tender.
- ii. Out of the 20% tendered quantity reserved for MSE suppliers, 4% shall be earmarked for procurement from MSE owned by SC/ST entrepreneurs.
- iii. In case MSE vendor participating in the tender quotes within the price band of LI +15%, they will be allowed to supply the portion of the requirement subject to acceptance of LI price by MSE vendor. In case of more than one such MSE, the supply shall be shared proportionately.
- iv. MSE suppliers can avail the intended benefits only if they submit along with offer, attested copies of either EM II certificate having deemed validity (Two years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with CA certificate applicable for the year, certifying quantum of investment in plant and machinery within the permissible limit as per the act for relevant status (Micro or small) where the deemed validity of EM II is over. Date to be reckoned for determining the deemed validity will be the last date of technical bid submission. Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents.

### **3. GENERAL CONDITIONS**

- a. The tender evaluation and finalisation will be done on items sl no wise.
- b. BHEL reserves the right to increase or reduce or split the Tender Quantity and NOT to order for some or all material based on the changes in project.
- c. BHEL shall have the right to visit vendor works during the execution of contract along with end customer for verifying status, inspection and testing of the material.
- d. BHEL reserves the right to negotiate or re-float the tender in case the quoted prices are not acceptable.
- e. Supplier shall arrange packing to avoid lose or damages during Road Transport, Site handling & Storage.
- f. BHEL reserves the right to finalize the tender either through price bid opening or through Reverse Auction route.
- g. BHEL reserves the right to reject the offer of a particular bidder due to unsatisfactory past performance in the execution of a contract at any of BHEL projects / units.
- h. The Drawings/Technical documents with this enquiry are sole property of BHEL & should not be misused in any form.
- i. The Bidder along with its associates/ collaborators/ subcontractors/sub-vendors/consultants/ service provider shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website <http://www.bhel.com> & shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

### **4. DOCUMENTATION:**

- a. **With Consignment:** Original duplicate for transporter copy, Invoice, Packing List, Delivery Challan, O&M manual Material Test Certificate, Calibration Report, Compliance Certificate, Guarantee/Warranty Certificate etc...
- b. **To Finance:** Original and Duplicate Invoice for payment should be sent directly to  
Senior Manager, Finance/Valves-Bills section  
BHEL TRICHY 620014
- c. **To Purchase:**
  - i. FOR BHEL TRICHY case- Copy of Invoice, Packing list, LWB and Delivery challan.
  - ii. FOR Site case- Original Excise Invoice, Original LWB, Original Packing List, Original IBR documents, Original despatch clearance Certificate and Inspection report, Test certificates as per PO, Original Site Acknowledgment etc...
- d. **Identification:** Material code, Purchase Order, PO item Sl No, Unique Sl No if any should be provided in all despatch documents, materials and packing clearly. All description should be exactly matching with the Purchase order

### **5. TENDER EVALUATION:**

#### **PART I Techno-commercial Bid.**

- All vendor should provide confirmation to Drawing/TDC/ Specification and commercial conditions. All vendors should also submit GA drawing, datasheet and C&I diagrams of the offered product wherever applicable.
- Offers from supplier not having technical capability or not agreed for commercial terms, will be rejected



# BHARAT HEAVY ELECTRICALS LTD

## VALVES PURCHASE

Trichy - 620 014. India

### GENERAL TERMS AND CONDITIONS

- Techno-commercially suitable vendors alone will be intimated for price bid opening.

#### **EN-SSB1397**

#### **PART II Price Bid.**

- L1 bidder will be decided based on landed cost for the equipment to BHEL.
- For evaluation, the exchange rate shall be taken as TT selling rate of SBI on date of Part-1 bid opening.

#### **LOADING CRITERIA**

- "Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.
- For import vendors: Usance LCs the loading will be considered @ 1.5% on the offered Value. For LC at sight the loading will be considered @ 3.5% on the offered Value.
- Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value).
- If supplier offers more than the required delivery period BHEL will operate 0.5% loading factor for evaluation of their offer for every week delay.
- If suppliers not agrees with risk purchase clause, guarantee clause, term of payment other than mentioned above the offer will be rejected.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                             |                                           |                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>PRODUCT ENGINEERING / V&amp;SB<br/>PURCHASE SPECIFICATION FOR<br/>FLAME PROOF MOTORS</b> | <b>SPEC:SB:0008<br/>PAGE 01 OF 05</b>     | <b>REV:09<br/>Dt. 04.01.14</b> |
| 1.0 Component : Motors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                             |                                           |                                |
| 2.0 Material Code :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                             |                                           |                                |
| 96 353 395 0000 0.45 KW ROTARY MOTOR (TENV, S2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                             |                                           |                                |
| 96 353 394 0000 0.37 KW TRAVERSE MOTOR (TENV, S2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                             |                                           |                                |
| 96 353 394 0100 0.37 KW/TEFC/415V/CD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                             |                                           |                                |
| 96 353 396 0000 0.09 KW RB MOTOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                             |                                           |                                |
| 96 353 395 0100 0.45 KW/415V/CL.F/TEFC/CD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                             |                                           |                                |
| 96 353 395 0200 0.45KW/400V/CL.B/TEFC/CD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                             |                                           |                                |
| 96 353 395 0300 0.45 KW/415V/CL.B/TEFC/CD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                             |                                           |                                |
| 96 353 395 0400 0.45 KW/380V/CL.B/TEFC/CD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                             |                                           |                                |
| 96 353 395 0500 0.45KW/415V/CL.F/TEFC/CD/Ex(e)/TEMP.CL.T3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                             |                                           |                                |
| 97 366 189 0000 0.55KW/415V/CL.F/TEFC/CD/IIC/TEMP.CL.T4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                             |                                           |                                |
| 97 366 191 0000 0.09KW/415V/CL.F/TEFC/CD/IIC/TEMP.CL.T4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                             |                                           |                                |
| 96 353 396 0100 0.09KW/400V/ RB MOTOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                             |                                           |                                |
| 96 353 396 0200 0.09KW/380V/RB MOTOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                             |                                           |                                |
| 96 353 396 0300 0.09KW/415V/CL.F/TEFC/IIA/IIB/TEMP. CL. T3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                             |                                           |                                |
| 96 353 396 0400 0.25KW/415V/TEFC RB MOTOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                             |                                           |                                |
| 96 353 396 0500 0.09KW/400V/IIC RB MOTOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                             |                                           |                                |
| 96 353 396 0600 0.09KW/415V/50Hz/3Ø -IIA/IIB TEFC /EX 'n                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                             |                                           |                                |
| 2.1. General Condition:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |                                           |                                |
| 2.1.1 As per IS 325 (latest revision) specification for 3 phase induction motors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                             |                                           |                                |
| 2.1.2 Motors should be of explosion proof type Ex'd shall be operable in Gas Groups I,IIA & IIB of IS – 2148 and class I Div I gas groups C&D of NEC Article 500 through 503. Wherever the gas group IIC with temp. Cl.T4 is specified the same shall be supplied.                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                             |                                           |                                |
| 2.1.3 All motors shall be IP 55 weather proof enclosure TENV motors and shall be provided with necessary certificates obtained after testing from competent authority.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                             |                                           |                                |
| 2.1.4 Design conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             |                                           |                                |
| 2.1.4.1. Motors shall be suitable for operation for 415 volts, 50 cycles, 3phase, 3 wire ungrounded supply system.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                             |                                           |                                |
| 2.1.4.2. All motors shall operate without any trouble under each of the following conditions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                             |                                           |                                |
| 2.1.4.2.1. If the terminal voltage varies within 10% above and below the rated value at the rated frequency.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                             |                                           |                                |
| 2.1.4.2.2. If the frequency of the source varies within five per cent above and below.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                             |                                           |                                |
| 2.1.4.2.3. If the voltage and frequency of the source vary simultaneously and the sum of absolute percentage values in variation does not exceed 10%.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                             |                                           |                                |
| 2.1.4.3. Motors shall have class F insulation with tropicalisation suitable for polluted dust and corrosive atmosphere with a relative humidity of 100%. However, the temperature raise shall be limited to Class B. The motors are to be designed for an ambient temperature of 40°C.                                                                                                                                                                                                                                                                                                                                                                        |                                                                                             |                                           |                                |
| 2.1.4.4. Motors shall be suitable for continuous winding heating with 24 volts AC when the motors are not operating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                             |                                           |                                |
| 2.1.5. The terminal box cable entry shall be capable of being turned through 360° in steps of 180°. Terminal boxes shall be weather proof. Spacing between the terminals and volume available inside the terminal box should be adequately designed so that no difficulty during the connecting of 3 core 2.5 sq. mm/PVC insulated Aluminium conductor cable or 3 core 2.5 sq. mm silicon rubber insulated copper/Aluminium conductor cable. The terminal box shall be provided with removal gland plates. The terminal box dimensional drawing should be sent for our approval. Detailed arrangement for the cable box weather proofing should be indicated. |                                                                                             |                                           |                                |
| REV 09.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             | CODE 96 353 396 0600 INCLUDED ON 04.01.14 |                                |
| Prepared (J.SANKAR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                             | Checked (S.K.GUPTA)                       |                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                             | Approved (HIRENDRA RAUT)                  |                                |



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| <br>365 - 148                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>PRODUCT ENGINEERING / V&amp;SB</b><br><b>PURCHASE SPECIFICATION FOR</b><br><b>FLAME PROOF MOTORS</b> | <b>SPEC:SB:0008</b><br><b>PAGE 02 OF 05</b> | <b>REV:09</b><br><b>Dt. 04.01.14</b> |
| <p>2.1.6. All motors shall be painted with corrosion proof Epoxy paint.</p> <p>2.1.7. Priority :</p> <p>In cases where there are any differences, between the IS specification and this motor specification the later has priority.</p> <p>2.2 Mechanical Construction :</p> <p>2.2.1. The frames and all external parts of the motors shall be as per specification attached. Name plates shall be of stainless steel with letters embossed on them.</p> <p>2.2.2. The motors shall be painted with one coat of rust preventing paint and two coats of suitable corrosion resisting and abrasion resisting paint. The type of paint shall be as per specification attached.</p> <p>2.2.3. All motors shall be provided with pre-lubricated ball bearings of suitable size. The bearings must be guaranteed to ensure a smooth operation and a life not shorter than 30,000 hours.</p> <p>2.2.4. The motors shall be dynamically balanced and shall rotate perfectly with no preferential stop points. The rotor shall be manufactured in such a way as to allow the removal or addition of material for balancing.</p> <p>2.2.5. These motors are open to atmosphere. Special emphasis should be guaranteed for weather proofness. To achieve weather proofness the points under 2.8 should be followed. The temperature rise calculation should be taken into account this point also.</p> <p>2.3 Starting :</p> <p>2.3.1. The motor shall be capable of being started direct on line across full line voltage or reduced voltage starting.</p> <p>2.3.2. Starting current will be limited to 6 times full load current (unless specified otherwise).</p> <p>2.3.3. Medium voltage motors may be connected to electrical network where transient disturbance occur in the supply line. During transient voltage disturbances, voltage on the system may disappear completely and return back in a few cycles with the motors still running. Under the above conditions, the returning voltage may occur at such an instant that the induced emf in the motor is in phase with the applied voltage giving rise to currents surges which may reach a value equal to twice the starting current. The motor shall be suitably designed and the coils and end turns strongly brazed to provide adequate thermal and mechanical strength for with standing conditions stated above.</p> <p>2.4 Accessories :</p> <p>The following accessories are to be provided for all induction motors.<br/> Two earth terminals outside of the enclosure on the main motor frame.<br/> Name plate should be made of stainless steel.</p> <p>2.5 Torque characteristics:</p> <p>The motors should be capable to producing the torque as listed in the annexure.</p> |                                                                                                         |                                             |                                      |
| REV 09.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CODES 96 353 396 0600 INCLUDED ON 04.01.14                                                              |                                             |                                      |
| Prepared (J.SANKAR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Checked (S.K.GUPTA)                                                                                     | Approved (HIRENDRA RAUT)                    |                                      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                             |                                       |                                |
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| <br>365 - 148                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>PRODUCT ENGINEERING / V&amp;SB<br/>PURCHASE SPECIFICATION FOR<br/>FLAME PROOF MOTORS</b> | <b>SPEC:SB:0008<br/>PAGE 03 OF 05</b> | <b>REV:09<br/>Dt. 04.01.14</b> |
| <p>2.6 Special Notes:</p> <p>2.6.1 The weight of the motors offered should not be more than the weight indicated against each blower in the motor data sheet.</p> <p>2.6.2 All motors should also be provided with an oil seal in the shaft outlet end.</p> <p>2.7 Technical Data :</p> <p>2.7.1 The supplier should furnish the details in the form.</p> <p>2.7.2 Detailed constructional drawings and Test Certificates as per relevant IS shall be supplied.</p> <p>2.8 Critical check list:</p> <p>2.8.1 The terminal box seating should be ground flat and smooth.</p> <p>2.8.2 A gasket should be introduced between the terminal box cover and box as well as between body and the box.</p> <p>2.8.3 Copper gasket should be used if bolts are used in the construction.</p> <p>2.8.4 The windings should have extra dip and backing.</p> <p>2.8.5 The dimensions should be as per the drawing 4-20-201-00303 for all frame sizes. Motor to be supplied with key and oil seals.</p> <p>3.0 Documents required for acceptance:</p> <p>3.1. BHEL will witness the type and routine tests as per the test procedures laid out in IS 325 on a proto type motor at supplier's works. On satisfaction of the proto type BHEL will give clearance for manufacture. All routine tests as per IS – 325 are to be carried out in all motors by the supplier. Guide lines for testing to be taken from IS-4029.</p> <p>3.2. Test certificate and drawings:<br/>6 sets of detailed constructional drawings, test certificates and technical data shall be supplied.</p> <p>3.3. Guarantee Certificate :<br/>To be given by the supplier for a period of 12/18 months.</p> <p>3.4 Compliance certificates.</p> <p>4.0 Weight : As in Data sheet.</p> |                                                                                             |                                       |                                |
| REV 09.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CODES 96 353 396 0600 INCLUDED ON 04.01.14                                                  |                                       |                                |
| Prepared (J.SANKAR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Checked (S.K.GUPTA)                                                                         | Approved (HIRENDRA RAUT)              |                                |





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**PRODUCT ENGINEERING / V&SB  
PURCHASE SPECIFICATION FOR  
FLAME PROOF MOTORS****SPEC:SB:0008  
PAGE 04 OF 05****REV:09  
Dt. 04.01.14****DATA SHEET:**

| Sl. No. | Description                                                        | Long Retract                                                                                                                                                                       | Long Retract &Temp. probe            | Rotary Blower                 |       |
|---------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------|-------|
| 1.      | Application                                                        | Long Retract Rotary                                                                                                                                                                | Long Retract &Temp. probe - Traverse | Rotary blower motor           |       |
| 2.      | Frame size                                                         | 80                                                                                                                                                                                 | 80                                   | 71                            |       |
| 3.      | Flange Type                                                        | IS2223TypeC                                                                                                                                                                        |                                      |                               |       |
| 4.      | Dimensions                                                         | 4-20-201-00303<br>( REFER LATEST REVISION )                                                                                                                                        |                                      |                               |       |
| 5.      | Power in KW                                                        | 0.45                                                                                                                                                                               | 0.37                                 | 0.09                          | 0.25  |
| 6.      | Rated Voltage                                                      | 415                                                                                                                                                                                |                                      |                               |       |
| 7.      | No. of phases & frequency.                                         | 3PHASE & 50 HZ                                                                                                                                                                     |                                      |                               |       |
| 8.      | RPM (Approximate)                                                  | 1425                                                                                                                                                                               | 1365                                 | 1425                          | 1390  |
| 9.      | Duty                                                               | CONTINUOUS                                                                                                                                                                         |                                      |                               |       |
| 10.     | Ambient Temp. / Temp. Raise                                        | 40°C / 80°C                                                                                                                                                                        |                                      |                               |       |
| 11.     | Enclosure & Protection                                             | TEFC<br>IP55 PROTECTION                                                                                                                                                            |                                      | TENV/TEFC*<br>IP55 PROTECTION |       |
| 12      | a. Area of Classification<br><br>b. Class of insulation            | Flame proof Ex 'd' IS 2148 for gas Groups I, IIA & IIB, TEMP. CL T3. Wherever the gas group IIC with temp. Cl.T4 is specified the same shall be supplied.<br>Insulation Class 'F'. |                                      |                               |       |
| 13      | Voltage variation %                                                | 10                                                                                                                                                                                 |                                      |                               |       |
| 14      | Frequency variation                                                | 5%                                                                                                                                                                                 |                                      |                               |       |
| 15      | Combined Voltage & Frequency Variation %                           | 10                                                                                                                                                                                 | 10                                   | 10                            | 10    |
| 16      | Starting Torque in Kgm.(min.)                                      | 1.1                                                                                                                                                                                | 0.32                                 | 0.29                          | 0.437 |
| 17      | Rated torque in kgm.(min.)                                         | 0.3075                                                                                                                                                                             | 0.264                                | 0.063                         | 0.180 |
| 18      | Breakdown torque in kgm.(min.)                                     | 1.06                                                                                                                                                                               | 0.4                                  | 0.29                          | 0.495 |
| 19      | Full load current to be confirmed by supplier Amps. (approximate). | 1.26                                                                                                                                                                               | 0.86                                 | 0.64                          | 0.7   |
| 20      | No. of Leads.                                                      | 6                                                                                                                                                                                  |                                      |                               |       |

REV 09. CODES 96 353 396 0600 INCLUDED ON 04.01.14

Prepared (J.SANKAR)

Checked (S.K.GUPTA)

Approved (HIRENDRA RAUT)



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**PRODUCT ENGINEERING / V&SB  
PURCHASE SPECIFICATION FOR  
FLAME PROOF MOTORS****SPEC:SB:0008  
PAGE 05 OF 05****REV:09  
Dt. 04.01.14**

| Sl. No. | Description                              | Long Retract            | Long Retract & Temp. probe | Rotary Blower          |                 |
|---------|------------------------------------------|-------------------------|----------------------------|------------------------|-----------------|
| 21      | Name plate                               | Stainless steel         |                            |                        |                 |
| 22      | Paint                                    | Epoxy Grey              |                            |                        |                 |
| 23      | Conduit size in the terminal box.        | M20 x 1.5               |                            |                        |                 |
| 24      | Power factor & rated load (approximate). | 0.68                    | 0.88                       | 0.48                   | 0.72            |
| 25      | Efficiency at rated load (approximate).  | 71%                     | 75%                        | 44%                    | 75%             |
| 26      | Max. stalling time (approximate)         | Hot 20 sec cold 35 sec  | Hot 40 sec cold 75 sec     | Hot 35 sec cold 65 sec |                 |
| 27      | Direction of rotation                    | Reversible              |                            |                        |                 |
| 28      | Other Constructional feature.            | Shaft end with oil seal |                            |                        |                 |
| 29      | Weight of Motor (approximate).           | 13.5 kgs.               | 13.5 kgs.                  | 8 kgs.                 | 8kgs.           |
| 30      | Gd sq motor(Max)                         | 0.0073sq.kgm            | 0.0073sq.kgm.              | 0.0027 sq.kgm.         | 0.00260 sq.kgm. |
| 31      | No. of Poles                             | 4                       |                            |                        |                 |

TEFC - TOTALLY ENCLOSED FAN COOLED

TENV - TOTALLY ENCLOSED NON-VENTILATED

\*- MOTOR PART CODE TO BE CHECKED.

REV 09. CODES 96 353 396 0600 INCLUDED ON 04.01.14

Prepared (J.SANKAR)

Checked (S.K.GUPTA)

Approved (HIRENDRA RAUT)



# Bharat Heavy Electricals Ltd.

Valves Purchase  
Trichy - 620 014. India

ENQ.NO: EN-SSB1397 MOTOR-RSB-WB-FLPIIB-0.09KW

DT: 20.01.2017

| SN | <b><u>BHEL COMMERCIAL TERMS AND CONDITIONS for INDIGENOUS SUPPLIES</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Vendor's Confirmation |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1  | Vendor should give confirmation to BHEL's Technical Specification. Any deviations from the specification are to be furnished separately as "Schedule of Deviation". If there is no deviation vendor should indicate "No Deviation".                                                                                                                                                                                                                                                                                              |                       |
| 2  | Vendor to indicate Quoted/Not Quoted item wise.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |
| 3  | <b>Prices shall be quoted item wise only.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |
| 4  | Prices shall be quoted on " <b>FIRM PRICE</b> " basis only. The prices should be only on <b>FOR Trichy basis</b> inclusive of Packing & Forwarding charges if any.                                                                                                                                                                                                                                                                                                                                                               |                       |
| 5  | <b>Validity of offer</b> shall be 2 months from the date of tender opening.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |
| 6  | <b>Delivery</b> should be 4 weeks from the date of purchase order                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                       |
| 7  | <b>Liquidated damages @ ½% per week</b> subject to a maximum of 10% of the order value shall be applicable for delay in deliveries.                                                                                                                                                                                                                                                                                                                                                                                              |                       |
| 8  | <b>Following Risk Purchase clause</b> 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. |                       |
| 9  | <b>Payment terms</b> 100% after 45 days on acceptance of materials at BHEL stores, Trichy                                                                                                                                                                                                                                                                                                                                                                                                                                        |                       |
| 10 | Excise duty, sales tax and other levies (if any) shall be indicated as extra in the offer.                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |
| 11 | Any warranty replacement during warranty period shall be supplied free of charge on FOR Site basis/destination specified by BHEL                                                                                                                                                                                                                                                                                                                                                                                                 |                       |
| 12 | The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals as called for in the Technical Specification, in the required number of copies at no extra cost.                                                                                                                                                                                                                                                                                                                                |                       |

**NOTE:-**

- 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.
- Your specific acceptances to BHEL Payment terms, LD and Risk Purchase Clause are essential for consideration of your offer. Otherwise your offer is liable for rejection.

Signature & Office Seal of the vendor