


|  <b>BHARAT HEAVY ELECTRICALS LIMITED</b><br><b>HEAVY POWER EQUIPMENT PLANT</b><br><b>RAMACHANDRAPURAM,</b><br><b>HYDERABAD - 502 032</b>  |   | Enquiry No. :                         |         |            |         |
|--|---|---------------------------------------|---------|------------|---------|
|  |   | Due Date :                            |         |            |         |
|  |   | Quotation. No:                        |         |            |         |
|  |   | Date :                                |         |            |         |
| <b>TENDER DOCUMENTS TO BE FILLED BY SUPPLIER FOR SUPPLY OF</b>   |   |                                       |         |            |         |
| <b>Permanent Magnet DC Tacho-Generator</b>   |   |                                       |         |            |         |
| <p>The "Offered" Column and where applicable, the "Deviations" &amp; "Remarks" Column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance.</p> |   |                                       |         |            |         |
| <b>ADDRESS OF THE SUPPLIER :</b>   |   |                                       |         |            |         |
| <b>TELEPHONE NOS.:</b>   |   |                                       |         |            |         |
| <b>FAX NOS.:</b>   |   |                                       |         |            |         |
| <b>E-MAIL ADDRESS :</b>  |   |                                       |         |            |         |
| S no.  | Description for BHEL Requirement:   | To be Specified / Confirmed by Vendor | Offered | Deviations | Remarks |
|  | <b>Title : Permanent Magnet Tacho-Generator</b>   |                                       |         |            |         |
|  | Replacement of existing Permanent Magnet DC Tacho-generator.  |                                       |         |            |         |
| <b>1</b>   | <b>Technical requirements:</b>  |                                       |         |            |         |
| 1.1  | The existing Permanent Magnet DC Tacho-generator shall be replaced by new Permanent Magnet DC Tacho-generator. DC Tacho generator is mounted to 112.5kW DC drive motor shaft extension and is connected to DC Thyristor control panel for speed feedback. |                                       |         |            |         |
| 1.2  | Details of existing Permanent Magnet DC Tacho-generator are as follows  |                                       |         |            |         |
| 1.2.1  | Make: G.E.C. Machines LTD   |                                       |         |            |         |
| 1.2.2  | Model: BD2510   |                                       |         |            |         |
| 1.2.3  | OCV/rev/min : 0.1 V   |                                       |         |            |         |
| 1.2.4  | Max Rev/min : 4000 RPM  |                                       |         |            |         |
| 1.2.5  | Max Amp : 0.1 Amps  |                                       |         |            |         |
| 1.3  | Details of model, type, rating, etc. of the offered Permanent Magnet DC Tacho-generator should be furnished by the vendor   |                                       |         |            |         |
| 1.4  | <b>The new Permanent Magnet DC Tacho-generator shall comply with the following specifications &amp; requirements :</b>  |                                       |         |            |         |
| 1.4.1  | OCV/rev/min : 0.1 V   | Vendor to Confirm                     |         |            |         |
| 1.4.2  | Max Rev/min : 4000 RPM  | Vendor to Confirm                     |         |            |         |
| 1.4.3  | Max Amp : 0.1 Amps  | Vendor to Confirm                     |         |            |         |
| 1.4.4  | Linearity Error $\leq \pm 0.5\%$  | Vendor to Confirm                     |         |            |         |
| 1.4.5  | Maximum Voltage Ripple $\leq \pm 0.5\%$   | Vendor to Confirm                     |         |            |         |
| 1.4.6  | Voltage Regulation $\leq \pm 5\%$   | Vendor to Confirm                     |         |            |         |
| 1.4.7  | Insulation: Class F   | Vendor to Confirm                     |         |            |         |
| 1.4.8  | Protection: Totally Enclosed  | Vendor to Confirm                     |         |            |         |
| 1.4.9  | Brushes: Silver Graphite/Carbon Graphite  | Vendor to Confirm                     |         |            |         |

|       |  |                   |  |  |  |
|-------|--|-------------------|--|--|--|
| 1.5   | <b>Armature</b>  |                   |  |  |  |
| 1.5.1 | Provision for connecting & disconnecting field cable at armature terminals shall be made available.  | Vendor to Confirm |  |  |  |
| 1.6   | Mounting Type : Flange   | Vendor to Confirm |  |  |  |
| 1.7   | Equal Brush tension & Spark free operation shall be ensured.   | Vendor to Confirm |  |  |  |
| 1.8   | OGA Requirement :Refer to Annexure-I   | Vendor to Confirm |  |  |  |
| 1.9   | Direction of Rotation: CW & CCW(Bi-Directional)  | Vendor to Confirm |  |  |  |
| 2     | <b>DOCUMENTATION :</b>   |                   |  |  |  |
| 2.1   | Two sets of Hard copies of following documents in English language should be supplied along with tacho generator   | Vendor to Confirm |  |  |  |
| 2.2   | Catalogues, Operation & Maintenance Manuals  | Vendor to Confirm |  |  |  |
| 2.3   | Data sheet   | Vendor to Confirm |  |  |  |
| 2.4   | Complete Parts List with details of Make, Specifications, Order No. etc.   | Vendor to Confirm |  |  |  |
| 3     | <b>GENERAL POINTS TO BE NOTED BY VENDOR :</b>  |                   |  |  |  |
| 3.1   | The Vendor shall quote on his own and shall take full responsibility of supplying.   | Vendor to Confirm |  |  |  |
| 3.2   | It is the responsibility of the vendor to ensure completeness of material & electricals supplied   | Vendor to Confirm |  |  |  |
|       | <b>Pre-Qualification Criteria</b>  |                   |  |  |  |
| 3.3   | Vendor should have supplied Two(2) numbers similar or higher rating tacho generators in the last 5 years and supporting documents like purchase order shall be furnished along with the offer. | Vendor to Confirm |  |  |  |
| 4     | <b>ELECTRICAL DRAWINGS FOR APPROVAL BY BHEL :</b>  |                   |  |  |  |
| 4.1   | Before commencing manufacture/fabrication of tacho-generator, OGA & electrical drawing should be submitted to BHEL for approval.   | Vendor to Confirm |  |  |  |

# ANNEXURE-I

OGA for Permanent Magnet DC Tacho Generator

## BD2510 Tachogenerator Dimensions

ALL DIMENSIONS IN mm WITH INCH CONVERSIONS IN BRACKETS.  
DIMENSIONS SHOULD NOT BE USED FOR INSTALLATION PURPOSES  
UNLESS SPECIALLY ENDORSED.

MASS WITHOUT BASE (STANDARD) = 12.8KG 28 1/4lb NETT  
MASS WITH BASE (SPECIAL ORDER) = 13.2KG 29 1/8lb NETT

