

**Buyer Specific Special Terms and conditions (In addition to GTC & ATC of GeM)****Item name: Calibration Jig, Mahan Project.****A. SCOPE OF ENQUIRY**

E-bids on GeM are invited from bidders for the supply of Calibration Jig -Mahan Project as per requirement mentioned below:

Sl. No.	Project	Material Code & Item Description	Total Quantity (Nos)	Site requirement	Date for Supply Completion
1.	Mahan Project	W90313396248 Caliibration Jig	01 No	For_Mahan Project	16 weeks from the date of issue of PO

**B. Buyer Specific Special Terms and Conditions:**

S. N.	Terms	Description	Your confirmation
1.	<b>Compliance of GTC on GeM</b>	In addition to the terms & conditions mentioned in below table, General terms and conditions on GeM shall be applicable against this enquiry. Kindly confirm same is acceptable to you.	
2.	<b>Basis of quotation:</b>	The item is required for <b>For Mahan Project</b> . Prices are to be quoted on <b>FOR (Door delivery) site basis</b> . Kindly confirm that price has been quoted on FOR site basis i.e. including all taxes, duties, local levies/ transportation / loading & unloading charges, packing & forwarding charges etc. (except insurance charges)	
3.	<b>Transit Insurance:</b>	The Transit Insurance will be arranged by BHEL. Please submit your offer keeping this in view.	
4.	<b>Validity:</b>	Confirm that your offer shall be valid for 120 days from the date of tender opening.	
5.	<b>Technical Requirements:</b>	Please quote your valuable offer as per BHEL <b>ST48012 Rev.07, ST33002 Rev-02 &amp; drawing no. 31339623010 Rev 01 (copy enclosed)</b> . <b>Please ensure that documents submitted with the offer/bid shall be signed and stamped in each page by authorized representative of the bidder.</b>	
6.	<b>Evaluation criteria:</b>	Evaluation of tender shall be done on project wise basis. (i.e Total landed cost to BHEL up to project sites).	
7.	<b>Engineering Documents Approval:</b>	Drawings/Data sheets/documents/QAP as called in the specifications/drawing shall be submitted for approval to BHEL for BHEL/customer approval within 30 days of purchase order. BHEL will arrange the approval of these drawings/data sheets/documents/QAP within 30 days of their receipt provided those are complete in all respect. <b>Any delay in delivery on account of late submission of drawings/other documents/QAP shall be to vendor's account. Kindly confirm.</b>	
8.	<b>MDCC (Material dispatch clearance certificate) Clause:</b>	Please note that material shall be dispatched only after issue of Material dispatch clearance certificate (MDCC) by BHEL. For issue of MDCC, you are required to submit all test certificates (TCs as per QAP) & IRs to BHEL. BHEL will issue MDCC within 7 days of receipt TCs & IRs, if complete & clear in all respects. <b>Any delay in submission of complete reports (i.e. TCs as per QAP &amp; IR) will be to vendors account. Material shall be dispatched within 7 days of issuing dispatch clearance by BHEL.</b>	
9.	<b>Quality requirement</b>	<b>For Mahan Project:</b> Testing and certification (Material, Dimension and Hydraulic test certificate) required as per ordering drawing & specification. <b>At least 15 days' advance time should be given to inspection agency for carrying out inspection of material at your works w.r.t. PO delivery date. Any delay in delivery due to this reason would be to supplier account.</b>	

10	<b>Payment Terms:</b>	Payment terms shall be as per clause no. 12 of General terms and conditions on GeM 4.0 (Version 1.12). Please note that the payment period of 90 days for non MSME vendors in the concerned GeM functionality. However, for MSE vendors, payment period shall be 45 days & for Medium enterprises payment period shall be 60 days.	
11	<b>Guarantee/ Warranty Clause:</b>	Guarantee Certificate shall be 18 <b>months</b> from the actual delivery or <b>12 months</b> from the date of commissioning, whichever is earlier. <b>In case of any failure or trouble reported from site, the supplier shall depute their representative immediately to attend the problem and replace the defective component/ parts if required.</b>	
		<b>Kindly note that supplier not meeting above mentioned Guarantee/Warranty clause are liable for rejection.</b>	
12	<b>Delivery:</b>	Kindly quote your minimum <b>delivery period in no. of weeks/months</b> from the date of issue of purchase order/manufacturing clearance.	
13	<b>Documents Submissions:</b>	Confirm that all the documents/test certificates shall be provided as per BHEL <b>ST48012 Rev.07, ST33002 Rev-02 &amp; drawing no. 31339623010 Rev 01.</b>	
		Kindly confirm that quoted offer by you have been complied all technical requirements as given in tender documents and submit all documents to BHEL as per tender specifications and drawings without any deviations.	
14	<b>Manufacturing clearance from</b>	In case of ordering, vendor has to take manufacturing clearance from BHEL before starting manufacturing of material. No manufacturing is to be started without getting clearance from BHEL. Kindly confirm.	
15	<b>Gem Charges:</b>	GeM user charges (i.e. for buyers & sellers) for the various transaction on GeM portal as decided and notified on the GeM portal would be either side. Kindly confirm.	
16	<b>Arbitration clause:</b>	Arbitration shall be as per clause no. 16 of General terms and conditions on GeM 4.0 (Version 1.12). Kindly confirm.	
17	<b>Penalty / LD Clause :</b>	LD shall be as per clause no. 15 (iii) of General terms and conditions on GeM 4.0 (Version 1.12). liquidated Damages (LD) for Late Deliveries shall be applicable @0.5% per week or part thereof subject to maximum of 10% of the total value of each lot (Lot wise/Project wise/Unit wise). Purchase Order value for this purpose shall be the Total Gross Value payable to the vendor (Before LD) excluding taxes and duties for (Lot wise/Project wise/Unit wise). Penalty shall be applicable on undelivered portion of a lot /material code. Kindly confirm. Date of GR/LR shall be considered for LD purposes.	
18	<b>Delivery :</b>	Kindly confirm that the delivery period in no. of weeks/months from the date of issue of purchase order.	
19	<b>Business Dealing:</b>	Please note that BHEL will deal directly with manufacturer and no correspondence with the agent will be entertained. The ink signed offer / bid in original has to be submitted by the registered manufacturer / OEMs directly to BHEL. Subsequently also, no correspondence of any type shall be entered into with the agents. <b>Bids submitted by agents may not be considered for evaluation and shall be returned to them only, without assigning any reason. Please note the same.</b> <b>Also the name of principal supplier should be indicated on envelope in addition to Enquiry no and due date.</b>	
20	<b>Risk Purchase:</b>	<b>Risk Purchase:</b> In case of abnormal delays (beyond the maximum late delivery period as per Penalty clause) in supplies / defective supplies or non-fulfillment of any other terms and conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate	

		action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract. <b>Please note that deviation in Risk purchase clause shall not acceptable.</b>	
21.	<b>General Terms:</b>	Ink signed order acceptance shall be furnished within 15 days of order placement. In case, order acceptance do not received within 15 days of order placement, PO deemed to be accepted by you.	
		Confirm that Approx. Weight & Volume of the packages has been mentioned in techno-Commercial Offer (Part-1).	
		Confirm that prices will remain firm and fixed during the entire validity and execution of the project.	
		Kindly confirm no technical deviation taken in submitted offer with respect to requirements mentioned in <b>ST48012 Rev.07, ST33002 Rev-02 &amp; drawing no. 31339623010 Rev 01.</b> (copy enclosed).	
		Please note no revision in the prices or submission of supplementary price bid will be allowed during the validity of the offer. However, if there is any change by BHEL w.r.t. original specification/requirement/scope/terms and conditions, the bidders may be asked by BHEL to submit only the price impact bid for such changes only.	
22.	<b>Conflict of interest</b>	<p><b>A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. The bidder found to have a conflict of interest shall be disqualified. A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:</b></p> <p><b>they have controlling partner(s) in common; or</b></p> <p><b>they receive or have received any direct or indirect subsidy/ financial stake from any of them; or</b></p> <p><b>they have the same legal representative/agent for purposes of this bid; or</b></p> <p><b>they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder, or</b></p> <p><b>Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from one bidding manufacturer in more than one bid; or</b></p> <p><b>In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorize only one agent/dealer. There can be only one bid from the following:</b></p> <p><b>The principal manufacturer directly or through one Indian agent on his behalf; and</b></p> <p><b>Indian/foreign agent on behalf of only one principal, or</b></p> <p><b>A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid, or</b></p> <p><b>In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/similar line of business.</b></p>	
23.	<b>Special Instruction:</b>	<p>Kindly confirm the following points:</p> <p><b>For Mahan Project:-</b></p> <p><b>1) BHEL spec no ST33002 – Clause no 3.1 A be followed for packing of item.</b></p>	

		2) Items shall be dispatched in suitable “wooden boxes with Multiple Steel Strips around” which can withstand transit movement, Local Environment and Moisture/Water.	
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**SPECIAL NOTE FOR BIDDERS:**

Following documents are an integral part of this tender enquiry and endorsed copies of these documents (duly signed and stamped on each page, as a consider of acceptance) are to be uploaded along with offer on e-procurement portal.

1. Please submit replica of Price schedule (without prices) showing “quoted” in place of price along with techno-commercial bid (Part-I).
2. Please submit signed & Stamped copy (each page) of duly filled of confirmation column of “Buyers Specific Additional Terms & Conditions in addition to GTC (Annexure-A)” and its clause wise supporting documents where required.
3. Please submit signed & stamped copy (each page) of PQR documents with proper filled information and related supporting documents as mentioned in PQR.
4. Please submit signed & stamped copy (each page) of General terms and conditions on GeM 4.0 (Version 1.12) along with Tender documents.
5. Please submit signed & stamped copy (each page) of BHEL Technical specification no. ST48012 Rev.07, ST33002 Rev-02 & drawing no. 31339623010 Rev 01.

(Signature and seal of supplier)

**BHARAT HEAVY ELECTRICALS LIMITED, HARIDWAR**

Control &amp; Instrumentation Engineering (CIE)

**PRE-QUALIFICATION REQUIREMENT**  
Brief Description- Calibration Jig for Steam Turbine ApplicationsDOCUMENT NO.  
CIE/CJ/PQR  
Dt: 08.11.23

Indent No. : 20232638

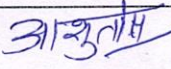
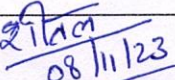
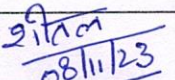
Brief Description : **Calibration Jig** ( This Item is used for Calibration of Rod Type Capacitance Switch and capacitance type Level transmitter used for Turbine Oil).

BHEL Material Code: W90313396248



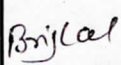
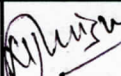
SR. NO.	PRE-QUALIFICATION REQUIREMENTS	VENDOR RESPONSE
1.	Bidder to confirm manufacturing capability of Calibration Jig, which is required for calibration of Level Switch/ Level Transmitter. The chamber of Calibration Jig should be suitable for Servo prime 46 of IOC /Turbine Oil -46 of H.P. Bidder to confirm.	
2.	Bidder should have minimum One-year experience of Design, Manufacturing and Supply of Calibration Jig or similar item, on date of enquiry. Bidder to confirm along with supporting documents i.e. Catalogue/ Datasheet/ Confirmation Letter/Unpriced PO Copies / Experience List (Any one can be provided), for the same.	

Notes –



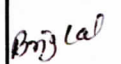

SR. NO.	NOTES	VENDOR RESPONSE
1	BHEL reserve the right to verify the information submitted by Bidder. In case the information is found to be false / incorrect, the offer shall be rejected. Bidder to confirm.	

Worked by	Reviewed by	Approved by
 08/11/23	 08/11/23	 08/11/23
A. Srivastava Dy. Manager	Sheetal Singh Sr. Manager	Sheetal Singh Sr. Manager



दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद मानक (हीप : हरिद्वार) <b>PRODUCT STANDARD (HEEP: HARIDWAR)</b>		ST33002 पृष्ठ 10 का 2 Page 2 of 10	
सामग्री सूची संख्या को प्रतिबिम्बित करता है SUPERSEDES INVENTORY	<p><b>3.0 PACKAGING INSTRUCTIONS :</b></p> <p><b>3.1 (A) GENERAL :</b></p> <p>(i) The packaging should be done in a clean, dust free packing area/room.</p> <p>(ii) Wherever possible, the original packing materials like thermocol box/ chips, packing paper, board, cotton waste, rubberized coir, wood wool etc. should be used for packaging of these equipments etc.</p> <p>(iii) All the items should be thoroughly checked for any possible mechanical damage/ distortion/ dents and rust/ corrosion etc. Appropriate rectification measures should be taken to remove such defects and if required engineering division should be consulted.</p> <p>(iv) While packaging, all the items should be temporarily stored on raised wooden platform covered with clean parchment paper.</p> <p>(v) The repacking of all the bought out items must be done in the original way as they were received from the manufacturers/ suppliers. It must be ensured that the polythene bags are properly sealed, air tight and sufficient cushioning with rubberized coir or wood wool has been provided to various items and containers/ boxes.</p> <p>(vi) The packing box should be made water proof by putting a continuous barrier of water- proof bitumen paper/craft paper over the internal surfaces of the box to make it sufficiently impervious to water, and small silica gel bags suitably placed inside the packages. This can be done by using tar felt on the top of all the boxes. It should project by 50mm on all the sides and projected part should be nailed and overlap of the tar felt should be avoided.</p> <p>(vii) The packaging should be done in such a way that the individual instruments/ containers/ boxes do not have relative movement inside the packing box during handling and transportation. Sufficient stiffness should be provided on the packing boxes to withstand mechanical shocks/ vibrations and other transit hazards.</p> <p>(viii) Wherever necessary, threaded/ machined portion should be coated with grease and wrapped with wax paper and tied with thread. Alternatively, threaded part may be wrapped with corrugated paper.</p>				
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स्वत्वाधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत हीवी इलेक्ट्रिकल्स लिमिटेड की सम्पत्ति है. इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, ओर किसी कम्पनी के हित में हानिकारक हो न किया जाय.					
दिनांक एवं हस्ताक्षर SIGN & DATE 	23/03/18				
सामग्री सूची संख्या INVENTORY NO. P-5284	REV. NO. 02		निर्माणकर्ता WORKED BY BRIJ LAL RAM		23/03/18
			जांचकर्ता CHECKED BY LAXMIKANT MISHRA		23/03/18



निम्न एवं तिथि SIGN & DATE		<b>उत्पाद मानक (हीप : हरिद्वार)</b> <b>PRODUCT STANDARD (HEEP: HARIDWAR)</b>		<b>ST33002</b> पृष्ठ 10 का 4 Page 4 of 10	
SUPERSEDES INVENTORY  मामूली सूची संख्या को अधिकृतित करना है	<p><b>3.4 (D) FITTINGS &amp; MOUNTING ACCESSORIES ETC. :</b></p> <p>(i) This category includes items like instrument valves, nipples, brackets, fasteners etc.</p> <p>(ii) Apply appropriate coating of grease on the threaded and machine portion and wrap the individual item with wax paper and tie with thread.</p>				
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company	<p><b>3.5 (E) IMPULSE PIPE LINES :</b></p> <p>(i) Impulse pipe lines are to be closed at both the ends by rubber plugs/ Neoprene grommets to prevent the clogging of pipelines by foreign materials/ dust, wood powder etc.</p> <p>(ii) While packing these pipelines care should be taken that no heavy material is put on top of them. This is necessary to ensure protection against mechanical damage.</p> <p>(iii) All the impulse pipe lines in a packing box should be tied with steel wires in small groups of 10-15 pipe lines</p> <p>(iv) Due care should be taken so that loose item such as above do not collide with each other causing damage to thread /machined port.</p>				
स्वतंत्रिकार एवं गोपनीय इस संस्था में की गई सूचना भारत के ही परियोजनागत लिखित की सम्पत्ति है, जिनका प्रयोग एवं प्रकाशन के बिना या किसी भी तरह प्रकाश को कि, सम्पत्ति के हित में हानिकारक हो न सके।	<p><b>4.0 SEA-WORTHY PACKING INSTRUCTIONS FOR EXPORT PROJECTS AND SEA COASTAL PROJECTS:</b></p> <p><b>4.1 GENERAL</b>          The standard covers guide lines for making Sea- worthy standard packing boxes to be used for transportation for export orders. Vendors shall be responsible for packing and shall meet the minimum requirements specified herein.</p> <p><b>4.2 SCOPE IN ADDITION TO CLAUSE NO. 1.0 AS ABOVE</b>          The procedure specifies minimum guidelines to be complied with for packing of electrical and electronic Components /Assemblies/Equipments. This specification shall be suitable for different handling operations and the adverse conditions during transportation and during indoor/outdoor storage for period of minimum two years.</p>				
निम्न एवं तिथि SIGN & DATE 	<p><b>4.3 WOOD SPECIFICATION FOR PACKING</b>          The wood used for packing shall conform to specification ISPM NO. 15. (International Standards for Phytosanitary Measures).</p>				
मामूली सूची संख्या INVENTORY NO. <b>P-5284</b>	REV. NO. 02		निर्माणकर्ता WORKED BY	BRIJ LAL RAM	 28/03/18
			जांचकर्ता CHECKED BY	LAXMIKANT MISHRA	 28/03/18

सामग्री सूची संख्या को  
अधिकतम करना है

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**स्वत्वाधिकार एवं गोपनीय**  
 इस दस्तावेज में की गई सूचना भारत हीवी इलेक्ट्रिकल्स लिमिटेड की संपत्ति है। इसका प्रयोग एवं प्रसारण केवल हीवी इलेक्ट्रिकल्स लिमिटेड के हित में ही किया जा सकता है। अन्यथा इसका प्रयोग कानून विरुद्ध होगा।

दिनांक एवं हस्ताक्षर  
SIGN & DATE  


सामग्री सूची संख्या  
INVENTORY NO.  
**P-5286**

**4.4 REQUIREMENTS FOR PACKING CASE:**

**4.4.1** All equipment and materials shall be suitably coated wrapped, or covered and boxed or crated for export shipment so as to prevent damage during handling and storage at the Site. Cardboard containers (if any) shall be enclosed in a solid wooden container to avoid damage during transit.

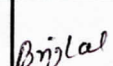

**4.4.2** Equipment and process materials shall be packed and semi knocked down, to the extent possible, to facilitate handling and storage and to protect bearings and other machine surfaces from oxidation. Each container box, crate or bundle shall be reinforced with steel strapping, in such a manner that breaking of one strap will not cause complete failure of the packaging. The packing shall be of best standard to withstand rough handling and to provide suitable protection from tropical weather while in transit and while awaiting erection at the site.

**4.4.3** Waterproof paper and felt linings shall overlap at seams at least 15mm and the seams shall be secured together.

**4.4.4** Equipment and materials in wooden cases or crates shall be properly cushioned to withstand the abuse of handling, transportation and storage. Packing shall include preservatives suitable for tropical conditions. All machine surfaces and bearings shall be coated with oxidation preventative compounds. All parts subject to damage when in contact with water shall be coated with suitable grease and wrapped in heavy asphalt or tar impregnated paper.

**4.4.5** Fumigation of boxes including plywood/spacers shall be carried out as per ISPM 15 to make it pest free. All wood packing in each consignment shall be free from bark and all visible signs and fungal attack at the time of shipment.

**4.4.6** Components sub-assemblies and assemblies sensitive to climatic conditions shall be packed seal tight. All the openings of the sensitive components, sub-assemblies and assemblies shall be blanketed to prevent the ingress of dust and moisture. The components sub-assemblies and assemblies shall be completely covered with 2 layers of polyethylene sheet. Polyethylene sheet to be used shall be UV stabilized. All sharp corners and edges are to be protected by rubber mats to prevent damage the polyethylene sheet. Top surface of the case shall be free from dents to prevent rain water pockets.

REV. NO. 02		निर्माणकर्ता WORKED BY	BRIJ LAL RAM		28/03/18
		जांचकर्ता CHECKED BY	LAXMIKANT MISHRA		28/03/18

दिनांक व हस्ताक्षर  
SIGN & DATE



# उत्पाद मानक (हीप : हरिद्वार)

ST33002

## PRODUCT STANDARD (HEEP: HARIDWAR)

पृष्ठ 10 का 6  
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SUPERSEDES  
INVENTORY

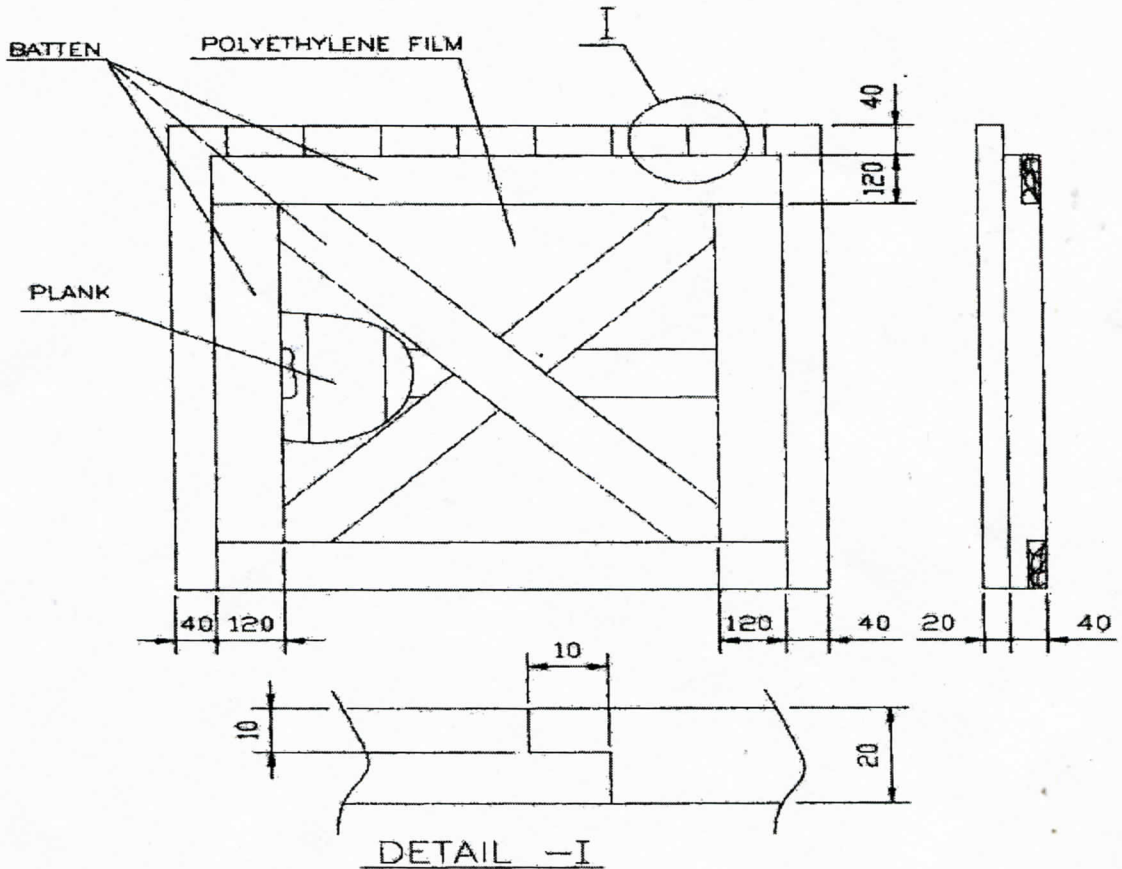
मापकी सूची संख्या को  
संशोधित करना है

**4.4.7** The four sides shall be lined, from inside with multi-layered polyethylene sheet of at least 120 GSM and tacked at suitable places.

Whenever specified in addition to the polyethylene sheet the top cover will have a layer of bitumen felt over the cover. This should project about 100 - 250 mm on all sides shall be provided between frame and planks of the end and side shock as shown in Fig. (For reference only.)

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### END SHOOK



स्वाधिकार एवं गोपनीय

इस प्रलेख में की गई सूचना भारत हेवी एलेक्ट्रिकल लिमिटेड की संपत्ति है इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग को कि कंपनी के हित में हानिकारक हो न सके।

दिनांक व हस्ताक्षर  
SIGN & DATE

*Handwritten signature and date: 23/03/18*

मापकी सूची संख्या  
INVENTORY NO.

*Handwritten number: P-5284*

REV. NO. 02

निर्माणकर्ता  
WORKED BY

BRIJ LAL RAM

*Handwritten signature: Brij Lal*

*Handwritten date: 23/03/18*

जांचकर्ता  
CHECKED BY

LAXMIKANT MISHRA

*Handwritten signature: Laxmikant Mishra*


*Handwritten date: 23/03/18*



SUPERSEDES INVENTORY  
  
 मामूली सूची संख्या को अधिकृत करता है

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**स्वाधिकार एवं गोपनीय**  
 इस दस्तावेज में दी गई सूचना भारत भारती एलईसी लिमिटेड की संपत्ति है जसका प्रयोग एवं प्रसारण के बिना या बिना संपत्ति के हित में हानिकारक हो, न किया जाये।

चिह्नक एवं दिनांक  
SIGN & DATE  


All packages shall be covered on all sides with suitable GI sheets.

**4.4.8** Cover the whole equipment with polyethylene sheet of at least 120 GSM, on all sides preferably by a single piece.

**4.4.9** Silica gel is used for this purpose to protect the contents over sufficiently long time from corrosion. At the time of use, silica gel should be so dried that its color becomes dark blue. These shall be filled in small cotton bags. Before sealing the equipment, the silica gel bags should be kept inside the polyethylene film cover at different locations. The quantity of silica gel should not be less than 2.0 Kg per m3 volume of the packing box.

**4.4.10** Each case shall contain a packing list showing the detailed contents of the package. When any technical documents are supplied along with the shipment of materials no single package shall contain more than one set of such documents. Shipping papers shall clearly indicate in which packages the technical documents are contained.

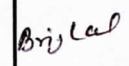
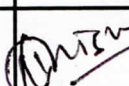
**4.4.11** The case number shall be written in the form of a fraction, the numerator of which is the serial number of the case and the denominator the total number of case in which a complete unit of equipment is packed.

**4.4.12** Wherever necessary besides usual Inscriptions the cases shall bear special indication such as "Top", "Do not turn over", "Care", "Keep dry", etc., as well as indication of the center of gravity (with red vertical lines) and places for attaching slings (with chain marks). For all fragile equipment, unit should take special care to pack and label with additional markings such as " **FRAGILE, HANDLE WITH CARE**", "LIFTING POINTS", "THIS WAY UP", " **DO NOT STACK**" etc. to protect them from damage in transit.

**4.4.13 Completeness of Contents of each packing case:**

Concerned CQA/Unit QC/Third Party Inspection Agency shall verify the completeness of contents of each package w.r.t. packing list both in terms of quality and quantity before authorizing dispatch of the consignment.

Packing commensurate with international standards and accepted norms will be ensured by CQA/ Unit QC/Third Party Inspection Agency. Packing has to be sea-worthy and secure. As far as possible, the packing has to be rectangular in shape for optimum space utilization in the ship and economize on shipping costs. Projections on packages are prohibited.

मामूली सूची संख्या INVENTORY NO. <b>P-5284</b>	REV. NO. 02		निर्माणकर्ता WORKED BY BRIJ LAL RAM 	23/03/18
			जांचकर्ता CHECKED BY LAXMIKANT MISHRA 	23/03/18

सामग्री सूची संख्या को अधिकृत किया जाता है  
 SUPERSEDES INVENTORY

**4.4.14 Completeness of Contents of each packing case:**

The packing list has to be checked and certified by the Inspection agency with due signatures. All packages shall be enclosed in suitable GI sheets on all sides. The top of box should be covered by GI sheet in single length & width.

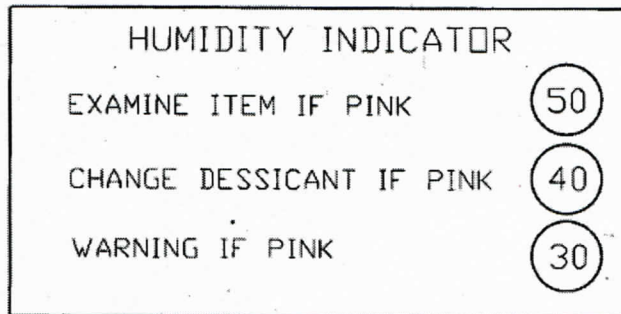
No loose items Gunny bag packing is allowed for shipment.

**4.4.15 Provision of Inspection Windows on Packages:**

Vendors should provide inspection window of size 6" x 4" (glass perplex) for customs examination for all packages (above 1.5 x 1.5 x 1.5 cum) involving panels of any kind. Care would be taken to ensure that all packages are properly sealed to avoid ingress of moisture, rodents etc. Packing slip folders shall be attached outside with each box.

**4.4.16 Provision of Humidity Indicator:**

- i. Humidity indicator must be provided in each packing boxes. Humidity indicator shall be placed behind inspection window or as far as practicable from the nearest unit of desiccant.
- ii. Use a three-spot paper card type 1x4 inches in size to show humidity with instruction as indicated in figure below. The spots indicate relative humidity of 50 percent, 40 percent and 30 percent, top to bottom, by changing color from blue to pink.




**4.4.17 Marking for Safe Handling:**


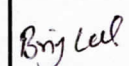

To ensure safe handling, packing case shall be marked to show the following:

- i. Upright position.
  - ii. Sling position and Centre of Gravity position.
  - iii. Storage category.
- Fragile components (to be marked properly with a clear warning for safe handling).

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 इस दस्तावेज में दी गई सूचना भारत हेवी इलेक्ट्रिकल लिमिटेड की सम्पत्ति है, इसका प्रयोग एवं अप्रयोग रूप में किसी भी तरह प्रयोग को बिना कंपनी के हित में हानिकारक हो न किताब आता,

दिनांक एवं हस्ताक्षर  
SIGN & DATE  


सामग्री सूची संख्या INVENTORY NO. 	REV. NO. 02		निर्माणकर्ता WORKED BY BRIJ LAL RAM		23/03/18
			जांचकर्ता CHECKED BY LAXMIKANT MISHRA		23/03/18

निर्माक एवं हस्ताक्षर  
SIGN & DATE



# उत्पाद मानक (हीप : हरिद्वार)

ST33002

## PRODUCT STANDARD (HEEP: HARIDWAR)

पृष्ठ 10 का 10

Page 10 of 10

SUPERSEDES  
INVENTORY

साथी सूची संख्या को  
अपडेट करना है

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स्वलाधिकार एवं गोपनीय

इस प्रयोग में की गई सूचना भारत हेवी एलेक्ट्रिकल्स लिमिटेड की सम्पत्ति है। इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप में किसी भी तरह का प्रयोग और कि कम्पनी के हित में हानिकारक हो न सिया जाय।

निर्माक एवं हस्ताक्षर  
SIGN & DATE

27/3/18

साथी सूची संख्या  
INVENTORY NO.

R-5286

REV. NO. 02

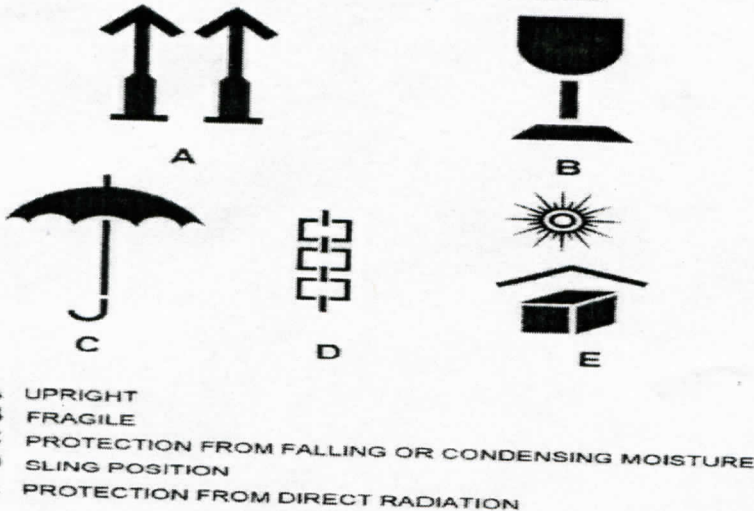
### 4.4.18 Shipping Documentation including those covered by customs requirements:

- i. Packing List (O&M manual to be listed in packing list, if sent along with consignment).
- ii. Fumigation certificate for wooden boxes

### 4.4.19 THE FOLLOWING DETAILS ARE TO BE MARKED ON THE PACKING CASES:

- a) Address of consignee.
- b) Purchase Order No.
- c) Description of item or title of packing list.
- d) Case identification Number.
- e) Net Weight.
- f) Gross Weight.
- g) Dimensions of box
- h) Marking showing upright position.
- i) Marking showing umbrella (i.e. for machines/ components to be stored under covered storage).

#### MARKING ON PACKING BOXES



### 5.0 CROSS REFERRED STANDARD:

IS 3401-1992, BS 3482-1991, IS 6263-1972 & IEC 68-2-30:1980.

निर्माककर्ता WORKED BY	BRIJ LAL RAM	<i>Brij Lal</i>	23/03/18
जांचकर्ता CHECKED BY	LAXMIKANT MISHRA	<i>Laxmi Kant</i>	23/03/18

दिनांक एवं हस्ताक्षर  
SIGN & DATE



उत्पाद मानक

ST- 48012

PRODUCT STANDARD  
STEAM TURBINE ENGINEERING

पृष्ठ 1 का 7

Page 01 of 07

सामग्री सूची संख्या  
को अधिकतम करता है।  
SUPERSEDES  
INVENTORY NO.

**VARIABLE CAPACITANCE TYPE LEVEL TRANSMITTER  
WITH PREAMPLIFIER AND AMPLIFIER**

**0.0 SCOPE:**

This specification covers the requirement of liquid level Transmitter with load independent 4-20 mA D.C. output Galvanically isolated in the tanks/chamber for turbine oil / fire-retardant fluid(phosphoric ester) used in power plants.

**1.0 DESIGNATION:**

The sensor with preamplifier of L=1600 (variant 001) of table 1 shall be designated as:

- 1.1 On Drawing i) Drg.No. Col. : ST 48012.001  
ii) Description Col.: Bar Probe, L = 1600 mm  
iii) Material Specn. : ST 48012

For purchase indents : Bar Probe,L=1600. ST 48012.001

- 1.2 The amplifier for Bar Probe shall be designated as:

- On Drawing i) Drg. No. Col. : ST48012.021  
ii) Description Col.: AMPLIFIER FOR BAR PROBE  
iii) Material Specn. : ST 48012

For Purchase Indents: Amplifier for Bar Probe ST48012.021

**2.0 COMPLIANCE WITH NATIONAL STANDARD:**

This standard is based on BHEL experience.

**3.0 TECHNICAL REQUIREMENT:**

The Transmitter shall be complete with sensor, preamplifier, amplifier, plug receptacle connector etc. as per detail below.

The basic measurement function shall be based on variable capacitance principle.

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इस दस्तावेज में दी गई सूचना भारत भारती इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रयोग एवं  
अनुवाद के बिना किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।

हस्ताक्षर एवं दिनांक  
SIGN & DATE

29.8.06

सामग्री सूची संख्या  
INVENTORY NO

P-5822

				नाम NAME	दिनांक एवं हस्ताक्षर SIGN. & DATE
PSC member	S.K. Sharma	<i>[Signature]</i>	अनुवादक TRANSLATED BY		
TSX	D.L. Oberoi	<i>[Signature]</i>	निर्माणकर्ता WORKED BY	SHEETAL	<i>[Signature]</i> 04/08/06.
QAX	S.K. Chaurhan	<i>[Signature]</i>	परीक्षणकर्ता CHECKED BY	V. KUMAR	<i>[Signature]</i> 04/08/06
सहमत विभाग AGREED DEPTT.	नाम NAME	दिनांक एवं हस्ताक्षर DATE & SIGNATURE	पर्यवेक्षणकर्ता SUPERVISED BY	S.K.SHARMA	<i>[Signature]</i> 04/08/06
REAFFIRM			स्वीकृति : APPROVED : K.B. BATRA	<i>[Signature]</i>	GR No 3.50
REY. NO. 07	WORKED BY	NAME	DATE & SIGN	निर्माण : PREPARED	जारी : ISSUED
DT. 10.12.19	CHECKED BY	ASHUTOSH	Ashutal 14/01/2020	CIE	TSX (HEEP) HWR
CHANGE ADVICE No.	STE-19-74				दिनांक : DATE 19.01.93

सामग्री सूची संख्या को अधिकारित करता है।  
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 इस प्रस्ताव में दी गई सूचना भारत भारती इलेक्ट्रिकल्स की संपत्ति है। इसका प्रयोग एवं अनुसंधान अन्य किसी भी तरह प्रयोग, जो कि कंपनी के हित में स्वत्वधिकार को न किंवा अन्य।

हस्ताक्षर एवं दिनांक  
SIGN & DATE  
 29.8.06  
 सामग्री सूची संख्या  
INVENTORY NO.  
 P-5882

**3.1 SENSORS:**

The sensor shall be based on variable capacitance principle consisting of rod probe with ground tube of SS-316 as per dimensions given in fig 1.

The probe and the ground tube form a capacitor whose capacitance changes on the change in level due to the difference in the dielectric constant of the liquid media and that of air.

The length of the probe for different applications is given in Table-1. The sensor, except the preamplifier shall be designed for maximum operating temperature of 150°C and pressure of 10 Bar.

**3.2 PREAMPLIFIER :**

The preamplifier shall convert the change in capacitance to a suitable electrical signal for transmission to a amplifier, which is located away to a safer distance.

The preamplifier shall be mounted on the sensor head as per mounting and connection arrangement shown in fig 2. The protection class shall be IP55(minimum) as per IS: 13947 (PART 1) and ambient temperature should be 0°C to +60° C.

**3.3 AMPLIFIER: Size No. 021 (Fig.3)**


The output signal from the preamplifier shall be, amplified and processed for the desired output. The amplifier shall have provision of adjustment and calibration. The measuring range shall be adjustable so that the output can be calibrated for any range between 0-50% to 0-100% of the span L1 (ref.fig.1). Provision shall be made to shift the range above or below so as to cover the entire length of the probe

The other requirements are given below.

- 3.3.1 Measuring range : Equal to the length of the probe (Ref.fig.1&Table 1)
- 3.3.2 Output..... : 4...20 mA Galvanically isolated D.C.for burden up to 500 ohm for any range as specified at clause 3.3.
- 3.3.3 Power supply ..... : 24 V DC nom. (variation from 20 to 30 V).
- 3.3.4 Accuracy.....: +/- 0.5% of full span. or better
- 3.3.5 Protection class : IP 55 ( minimum) or better
- 3.3.6 Housing : Sheet Steel/Cast Aluminium Stoving enamel painted,weather proof, projection mounting.
- 3.3.7 Ambient temperature : 0°C to (+) 60°C

REV NO.	07			निर्माणकर्ता Worked by	Sheetal	Sheetal	04/08/06
				जांचकर्ता Checked by	V.Kumar	[Signature]	04/8/06

दिनांक एवं हस्ताक्षर SIGN & DATE		<p style="text-align: center;"><b>उत्पाद मानक</b></p> <p style="text-align: center;"><b>PRODUCT STANDARD</b></p> <p style="text-align: center;"><b>STEAM TURBINE ENGINEERING</b></p>	<p style="text-align: right;"><b>ST- 48012</b></p> <p style="text-align: right;">पृष्ठ 3 का 7</p> <p style="text-align: right;">Page 03 of 07</p>						
सामग्री सूची संख्या को अधिकारित करता है । SUPERSEDES INVENTORY NO.	<p><b>4.0 SURFACE PROTECTION OF AMPLIFIER AND PROBE HEAD:</b></p> <p>The external surface shall be so treated that it can withstand a sustained environment of phosphoric ester fume at 60° C and/or medium turbine oil at 60° C.</p> <p><b>5.0 IDENTIFICATION:</b></p> <p>A blank stainless steel tag of size 60x20 mm shall be fastened with each sensor.</p> <p><b>6.0 TESTS:</b></p> <p><b>6.1 ROUTINE TESTS : -</b></p> <p>Following tests should be carried out by the supplier on each piece of sensor and Indicator/Amplifier.</p> <p>6.1.1 Visual inspection and dimensional check.</p> <p>6.1.2 Functional test for adjustable range.</p> <p>6.1.3 Accuracy test.</p> <p>6.1.4 Burn in test for amplifier electronics (for 48 hrs. at 55 °C.)</p> <p><b>6.2 TYPE TESTS : -</b></p> <p>Type Test reports (not more than 5 year old) shall be furnished for the following additional tests on amplifier electronics as per IEC 60068.</p> <p>a. Damp Heat Test b. Temperature Cycle Test c. Dry Heat Test d. Vibration Test e. Protection Class</p> <p><b>7.0 TEST CERTIFICATE:</b></p> <p>Each piece of sensor/ preamplifier/ amplifier shall accompany with 3 copies of the tests certificate with:</p> <p>i) Name of instrument. ii) Name of manufacturer. iii) Serial no &amp; model no. of the instrument. iv) Date of testing.</p> <p>Results of the test detailed in clause 6.0</p>								
स्वत्वाधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की संपत्ति है। इसका प्रयोग एवं आवृत्ति के बिना ही स्पष्ट रूप से किया जाये, जो कि कंपनी के हित में हानिकारक हो न किया जाये । The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	<p><b>6.1.1</b> Visual inspection and dimensional check.</p> <p><b>6.1.2</b> Functional test for adjustable range.</p> <p><b>6.1.3</b> Accuracy test.</p> <p><b>6.1.4</b> Burn in test for amplifier electronics (for 48 hrs. at 55 °C.)</p> <p><b>6.2 TYPE TESTS : -</b></p> <p>Type Test reports (not more than 5 year old) shall be furnished for the following additional tests on amplifier electronics as per IEC 60068.</p> <p>a. Damp Heat Test b. Temperature Cycle Test c. Dry Heat Test d. Vibration Test e. Protection Class</p> <p><b>7.0 TEST CERTIFICATE:</b></p> <p>Each piece of sensor/ preamplifier/ amplifier shall accompany with 3 copies of the tests certificate with:</p> <p>i) Name of instrument. ii) Name of manufacturer. iii) Serial no &amp; model no. of the instrument. iv) Date of testing.</p> <p>Results of the test detailed in clause 6.0</p>								
दिनांक एवं हस्ताक्षर SIGN & DATE 29.8.06	<p>REV NO. 07</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 25%;">निर्माणकर्ता Worked by</td> <td style="width: 25%;">Sheetal</td> <td style="width: 25%;">04/08/06</td> </tr> <tr> <td>जांचकर्ता Checked by</td> <td>V.Kumar</td> <td>04/08/06</td> </tr> </table>			निर्माणकर्ता Worked by	Sheetal	04/08/06	जांचकर्ता Checked by	V.Kumar	04/08/06
निर्माणकर्ता Worked by	Sheetal	04/08/06							
जांचकर्ता Checked by	V.Kumar	04/08/06							
सामग्री सूची संख्या INVENTORY NO. P-5282									

दिनांक एवं हस्ताक्षर SIGN & DATE		<p style="text-align: center;"><b>उत्पाद मानक</b></p> <p style="text-align: center;"><b>PRODUCT STANDARD</b></p> <p style="text-align: center;"><b>STEAM TURBINE ENGINEERING</b></p>	<p style="text-align: right;"><b>ST- 48012</b></p> <p style="text-align: right;">पृष्ठ 4 का 7</p> <p style="text-align: right;">Page 04 of 07</p>						
सामग्री सूची संख्या INVENTORY NO.	SUPERSEDES INVENTORY NO.	<p><b>8.0 GUARANTEE CERTIFICATE:</b></p> <p>Each piece of sensor /preamplifier /amplifier shall accompany a guarantee certificate for trouble free performance for 24 months from the date of shipment or 12 months from the date of commissioning, which ever is earlier.</p> <p><b>9.0 DOCUMENTS:</b></p> <p>Three copies of detail technical literatures including data sheet and drawing shall be furnished alongwith the offer. Complete technical literature including O &amp; M manual shall be furnished in hard copy (three no.s) and soft form (1 CDROM ), <del>after placement of order.</del> <i>after Placement of order.</i></p> <p><b>10.0 PACKING:</b></p> <p>Each instrument with dehydrating agent shall be sealed individually in a polythene sheet and packed in a thermocole box. Such boxes shall be packed in a carton or case with adequate cushioning material to withstand normal transit risk.</p> <p><b>11.0</b> Supplier shall enclose the list of spare parts required for 5 years normal operation and quote for the same separately.</p> <p><b>12.0 QUALITY PLAN:</b></p> <p>Detail quality plan for the tests and checks to be carried out during material induction , manufacturing and at final stage shall be submitted in BHEL's format alongwith in house standard procedures / normal for BHEL's approval.</p> <p><b>13.0 MARKING:</b></p> <p>The following details shall be marked on the packing case:</p> <p>(a) Manufacturer's name or trade mark. (b) BHEL order number.</p> <p><b>14.0 NAME PLATE:</b></p> <p>Each instrument shall have a name plate marked on it the following:</p> <p>(a) Manufacturer's name or trade mark. (b) Type of the Instrument. (c) Model NO's of the Manufacturer. (d) Range of Measurement. (e) Accuracy.</p>							
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दिनांक एवं हस्ताक्षर SIGN & DATE 23.8.06	सामग्री सूची संख्या INVENTORY NO. P-5882	REV NO. 07	<table border="1"> <tr> <td>निर्माणकर्ता Worked by</td> <td>Sheetal</td> <td>04/08/06</td> </tr> <tr> <td>जांचकर्ता Checked by</td> <td>V.Kumar</td> <td>04/8/06</td> </tr> </table>	निर्माणकर्ता Worked by	Sheetal	04/08/06	जांचकर्ता Checked by	V.Kumar	04/8/06
निर्माणकर्ता Worked by	Sheetal	04/08/06							
जांचकर्ता Checked by	V.Kumar	04/8/06							

दिनांक एवं हस्ताक्षर SIGN & DATE		<b>उत्पाद मानक</b>	<b>ST- 48012</b>
		<b>PRODUCT STANDARD</b>	पृष्ठ 5 का 7
		<b>STEAM TURBINE ENGINEERING</b>	Page 05 of 07

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SUPERSEDES INVENTORY NO.

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SIGN & DATE

सामग्री सूची संख्या  
INVENTORY NO.

**15.0 ELECTRICAL CONNECTIONS:**

Input /output connections for Bar probe & Amplifier should have connectors as given below & marked in fig 1, 2 & 3. of M/s Amphetronix, Poona or of M/s Allied Bombay or equivalent.

(a) BAR PROBE : 5 Pin Connector.

For Output/input. Model: MS-3102R-14SL-5P.  
MS-3106F-14SL-5S.

(b) AMPLIFIER : Connection as per Fig 2 & 3.

For Bar probe. 5 Pin Model: MS-3102R-14SL-5P.  
MS-3106F-14SL-5S.

For Power Supply. 4 Pin Model: MS-3102R-14SL-2P.  
MS-3106F-14SL-2S.

For Output. 7 Pin Model: MS-3102R-16SL-1P.  
MS-3106F-16SL-1S.

**Cross referred Standards :** IS 13947 , IEC 60068

स्वत्वाधिकार एवं गोपनीय  
 इस प्रलेख में दी गई सूचना भारत भारती इंजीनियरिंग की संपत्ति है इस्तेमाल करना एवं प्रकाशित करना इससे पूर्व लिखित रूप से अनुमति लेना आवश्यक है।

REV NO. 07			निर्माणकर्ता Worked by Sheetal	01/08/06
			जांचकर्ता Checked by V.Kumar	04/8/06



# उत्पाद मानक

ST - 48012

## PRODUCT STANDARD STEAM TURBINE ENGINEERING

पृष्ठ 6 का 7

Page 06 of 07

हस्ताक्षर और दिनांक  
SIGN & DATE

सामग्री सूची संख्या  
INVENTORY NO.

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स्वाधिकार एवं गोपनीय  
इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की  
सम्पत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह  
प्रयोग नहीं किया जाए जो कम्पनी के हित में हानिकारक हो।

हस्ताक्षर और दिनांक/SIGN & DATE  
29.8.06

सामग्री सूची संख्या  
INVENTORY NO.  
P-5882

REV NO  
07

निर्माणकर्ता  
Worked by  
जांचकर्ता  
Checked by

Sheetal  
V.Kumar

Sheetal  
01/08/06  
01/08/06

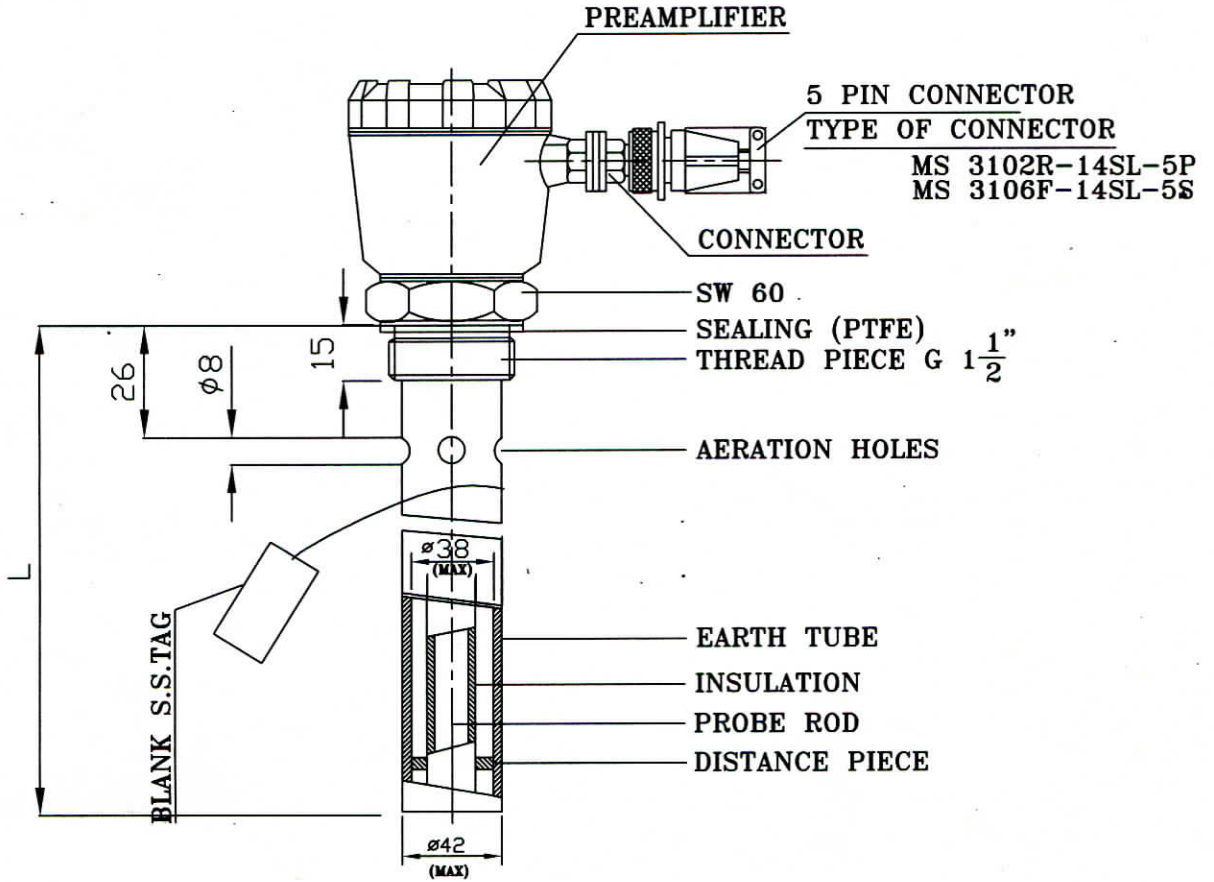


FIG. 1

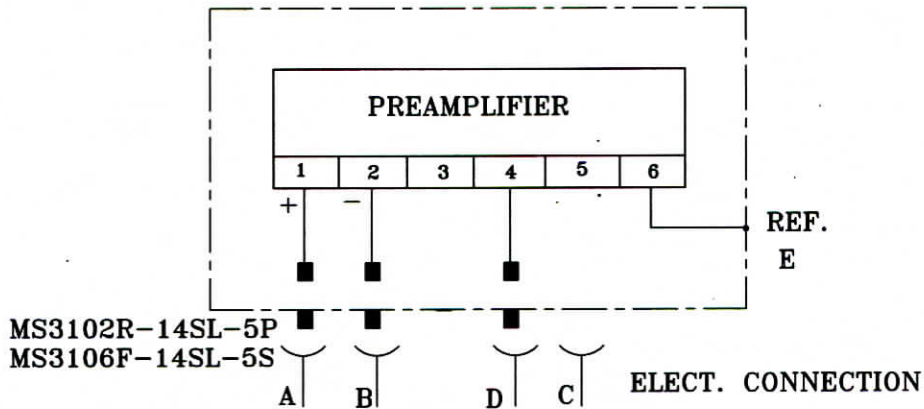


FIG 2

हस्ताक्षर और दिनांक  
SIGN & DATE



**उत्पाद मानक**

ST - 48012

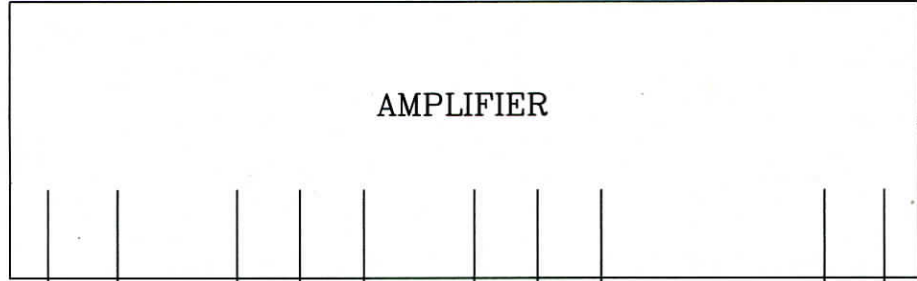
**PRODUCT STANDARD**  
STEAM TURBINE ENGINEERING

पृष्ठ 7 का 7

Page 07 of 07

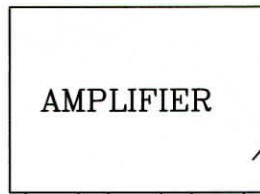
सामग्री सूची संख्या  
INVENTORY NO.

FIG 3



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इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की  
सम्पत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी तरह  
प्रयोग नहीं किया जाए जो कम्पनी के हितों में हानिकार हो।



5-PIN CONNECTOR

4-PIN CONNECTOR  
7-PIN CONNECTOR

LENGTH OF THE SENSOR  
'L' IN mm  
(AS SHOWN IN FIG.1)

SIZE NO OF ST 48012  
(SENSOR WITH PREAMPLIFIER)

- 1600
- 1450
- 1300
- 1250
- 1100
- 950
- 700
- 150

- 001
- 002
- 003
- 004
- 005
- 006
- 007
- 008

TABLE-1

हस्ताक्षर और दिनांक/SIGN & DATE  
25.8.06

सामग्री सूची संख्या  
INVENTORY NO.  
P-5882

REV NO  
07

निर्माणकर्ता  
Worked by

Sheetal

*Sheetal*

04/08/06

जांचकर्ता  
Checked by

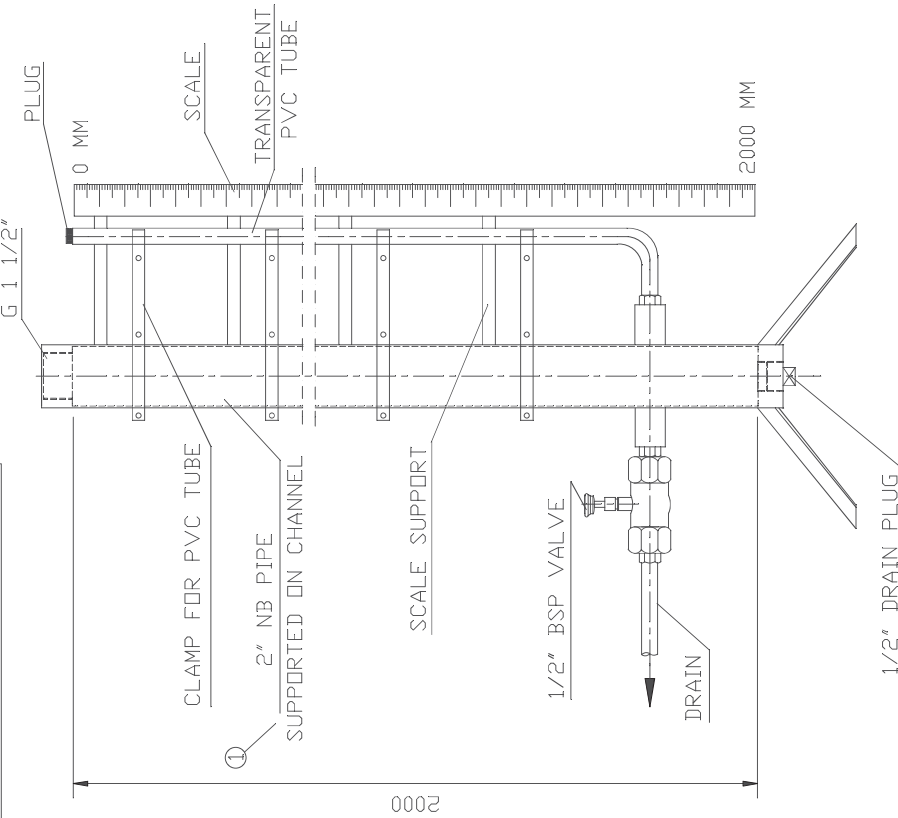
V.Kumar

*V.Kumar*

04/08/06

DRAWING NO.  
31339623010

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TECHNICAL REQUIREMENTS: -

1. APPLICATION-- FOR CALIBRATION OF BAR PROBES OF ST48011 & ST48012. BAR PROBES ARE USED TO MEASURE LEVEL OF MAIN OIL AND CONTROL FLUID TANKS.
2. WORKING MEDIUM : SERVOPRIME-46 OF IOC/TURBINEOIL-46 OF HP.,  
SP GRVITY: 0.846 AT 50°C.  
PRESSURE : ATMOSPHERIC, TEMP. : 60±5 C.
3. MOUNTING : VERTICAL.
4. SCALE : 0-2000 MM , LINEAR, MARKED IN MM WITH A LEAST COUNT OF 1 MM.
5. MATERIAL OF ALL PARTS EXCEPT TRANSPARENT PVC TUBE, SHALL BE S.S.
6. HYDRAULIC TEST PRESSURE OF MEASURING TUBE : 2 kg/cm<sup>2</sup> (MIN).
7. DRAWING SHOWING ,DETAIL DIMENSIONS, MATERIALS e.t.c. SHOULD BE SUBMITTED ALONG WITH THE OFFER..

GMS NO./GR SP NO CBOM 31339623000		STATUS OF DRG	TYPE OF PRODUCT		STEAM TURBINE			
AGREED DEPT.	NAME	SIGN	DATE	OR	NAME OF CUSTOMER/PROJECT			
REV DATE	ALTERED	BLAL	ASHTOSH SRIVASTAVA	DEPT STE	SCALE	WEIGHT (kg)	REF TO ASSY DRG.	ITEM NO OF NO ITEMS
01	03.11.17	CHECKED	PIPE SIZE CHANGED	CODE 4011	N.T.S.	25.00	31339623000	04
AS PER CHANGE ADVICE NO. STE-17-F0277.				TITLE CALIBRATION JIG (FOR BAR PROBE)		DRAWING NO. 31339623010		SHEET NO. 01 NO.OF SHEETS 01
GRADE OF UNTOL DIM : -				M/CG-C/M/F AA0230208		WELDING-A/B/C/D AA0621104		GAS CUTTING-T3'AA0621101
REV DATE				ALTERED		CHECKED		INVENTORY NO.
SIGN & DATE				REF. DRG. NO.		SIZE A3		