



# Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT/ MATERIALS MANAGEMENT

An ISO 9001  
Company

<b>ENQUIRY</b>	Phone: +91 431 257 76 53
<b>NOTICE INVITING TENDER</b>	Fax : +91 431 252 00 31
	Email : <a href="mailto:skaruna@bheltry.co.in">skaruna@bheltry.co.in</a>
	Web : <a href="http://www.bhel.com">www.bhel.com</a>

<b>TWO PART BID</b> Tender to be submitted in two parts.	<b>Enquiry Number:</b>  <b>2621400045</b>	<b>Enquiry Date:</b>  <b>25.10.2014</b>	<b>Due date for submission of quotation:</b>  <b>25.11.2014</b>
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You are requested to quote the Enquiry number date and due date in all your correspondence. This is only a request for quotation and not an order.

Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

Item	Description	Quantity
10	Power Transducer	80 Nos.
20	Pressure Transducer – Pencil Type 0 to 350kg/cm <sup>2</sup>	40 Nos.
30	Pressure Transducer – Pencil Type 0 to 100kg/cm <sup>2</sup>	20 Nos.

as per the technical specification, general guidelines instructions & commercial conditions applicable (to be downloaded from web site [www.bhel.com](http://www.bhel.com) or <http://tenders.gov.in>)

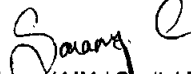
### Important points to be taken care during submission of offer

1. The rate of EMD for this Tender will be Rs. 40,000/-.
2. The Compliance Form for Commercial Terms & Conditions to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
3. All updates, amendments, corrigenda, etc., (if any), for each tender will be posted only on the websites from time to time, as and when required, until each tender is opened. There will be no publication of such updates, amendments, corrigenda, etc., through newspapers or any other media.

BHEL's General guidelines / instructions (refer MM/CE/GENL/001-EMD) including bank guarantee formats and list of consortium banks, commercial terms check-list can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference "2621400045".

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

Yours faithfully,  
For BHARAT HEAVY ELECTRICALS LIMITED

  
Sr. Engineer / MM / Capital Equipment

**POWER TRANSDUCER - Specification**  
**(WATT TRANSDUCER)**

Type	: To measure active power in 3 phase 3 wire system (3PT, 2CT) – Unbalanced
Input	: Current 1 Amp, Voltage 110 V, Frequency 50 Hz
PF range	: $\cos\phi$ Unity to 0 lead and lag
Output	: 4 to 20 mA
Aux. Power supply:	230VAC/ Self power
Burden	: Better than 0.5 VA
Accuracy	: $\pm 0.25$ % for full range
Stability	: 0.2 % per annum (non-cumulative)
Response time	: Better than 500 msec to 99 % output
Circuit	: Solid state
Capacity	: Maximum withstand capacity of 10 sec at 10 times rated current and 5 times rated voltage
Terminals	: Screwed terminals for easy connection. Protective cover for terminals to be provided.
Housing	: Fire proof and intrinsically safe casing to be provided
Operating temp	: 0 °C to 50 °C
Humidity	: Operating humidity 20% to 80 %
Weight	: Less than 1.5 kg

**Note:** Attached compliance report must be submitted along with offer.

**Specification for PRESSURE TRANSMITTER – PENCIL TYPE**

**Item Sl.No. 01 -- 0-350kg/cm<sup>2</sup>**

**Item Sl.No. 02 -- 0-100kg/cm<sup>2</sup>**

Working medium	: Water and Steam
Working pressure range	: Item Sl.No. 01 -- 0-350kg/cm <sup>2</sup> Item Sl.No. 02 -- 0-100kg/cm <sup>2</sup>
Working medium temperature	: 0-90°C
Accuracy	: +/- 0.1 % of FS or better including non linearity hysteresis and repeatability
Working principle	: Piezo-Resistive Silicon sensor
Instrument type	: Pencil type
Output	: 4-20mA
Loop voltage	: 12 - 48VAC +/- 10%
Wetted material	: SS 316
Proof pressure	: Twice the full scale
Enclosure protection	: IP65 / Explosion proof
Process connection	: As per design / 1/2" BSP(F)
Adapter	: As per design / 1/2" BSP(M) to M20 x 1.5(M)
Connection	: 2 wire through standard DIN plug
Humidity	: Operating humidity 20% to 80 %
Weight	: Less than 500grams

**Note**

1. Process connection and adapter one side male part should be same size of thread and other side should have M20 x 1.5(M)
2. Attached compliance report must be submitted along with offer.

## **POWER TRANSDUCER (WATT TRANSDUCER)**

### **QUALIFYING CRITERIA**

The BIDDER has to meet the following requirements to get qualified for considering the technical offer

<b>Sl.No.</b>	<b>REQUIREMENTS</b>	<b>VENDOR's RESPONSE</b>
1	The uncontrolled ambient room conditions are a) Temperature 0°C to 50°C b) Relative Humidity 20% to 80%	
2	The Technical offer should be supported by product Catalogues & Data sheets.	
3	Copy of certificate of Manufacturer / 'Distributor Authentication Certificate' given by principle should be produced.	
4	Details on SERVICE-AFTER-SALES set-up in India including the address of Agents/Service centres in India.	
5	Attached compliance report must be submitted along with offer.	

## **PRESSURE TRANSMITTER – PENCIL TYPE**

### **QUALIFYING CRITERIA**

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**COMPLIANCE REPORT**

**POWER TRANSDUCER (WATT TRANSDUCER)**

<b>BHEL SPECIFICATION</b>			<b>VENDOR 'S CONFIRMATION OFFER</b>	<b>DEVIATION IF ANY</b>
1	TYPE	3 phase 3 wire system (3PT, 2CT) – unbalanced		
2	Input	Current 1 Amp, Voltage 110 V, 50 Hz		
3	PF range	cos $\phi$ Unity to 0 lead and lag		
4	Output	4 to 20 mA		
5	Aux.Power supply	230VAC / Self powered		
6	Burden	Better than 0.5 VA		
7	Accuracy	$\pm 0.25\%$ for full range		
8	Stability	0.2 % per annum (non-cumulative)		
9	Response time	Better than 500 msec to 99 % output		
10	Circuit	Solid state		
11	Capacity	Maximum withstand capacity of 10 sec at 10 times rated current and 5 times rated voltage		
12	Terminals	Screwed terminals for easy connection. Protective cover for terminals to be provided.		
13	Housing	Fire proof and intrinsically safe casing to be provided		
14	Operating temp	0 °C to 50 °C		
15	Humidity	Operating humidity 20 to 80 %		
16	Weight	Less than 1.5 kg		

Note: Vendor has to fill and submit this form separately against all the model for which they are submitting offer.  
For each model, vendor has to submit separate form.

**COMPLIANCE REPORT**

**PRESSURE TRANSMITTER – PENCIL TYPE 0-350kg/cm<sup>2</sup>**

BHEL SPECIFICATION			VENDOR 'S CONFIRMATION OFFER	DEVIATION IF ANY
1	Working medium	Water and Steam		
2	Working pressure range	0- 350kg/cm <sup>2</sup>		
3	Working medium temperature	0-90°C		
4	Accuracy	+/- 0.1 % of FS or better including non-linearity hysteresis and repeatability		
5	Working principle	Piezo-Resistive Silicon sensor		
6	Instrument type	Pencil type		
7	Output	4 – 20mA		
8	Loop voltage	12 - 48VAC +/- 10%		
9	Wetted material	SS 316		
10	Proof pressure	Twice the full scale		
11	Enclosure protection	IP65 / Explosion proof		
12	Process connection	As per design / 1/2" BSP(F)1/2" BSP(F)		
13	Adaptor	As per design / 1/2" BSP(M) to M20 x 1.5(M)		
14	Connection	2 wire through standard DIN plug		
15	Humidity	Operating humidity 20% to 80 %		
16	Weight	Less than 500 grams		

Note: Vendor has to fill and submit this form separately against all the model for which they are submitting offer.  
For each model, vendor has to submit separate form

### COMPLIANCE REPORT

PRESSURE TRANSMITTER – PENCIL TYPE 0-100kg/cm<sup>2</sup>

BHEL SPECIFICATION			VENDOR 'S CONFIRMATION OFFER	DEVIATION IF ANY
1	Working medium	Water and Steam		
2	Working pressure range	0- 100kg/cm <sup>2</sup>		
3	Working medium temperature	0-90°C		
4	Accuracy	+/- 0.1 % of FS or better including non-linearity hysteresis and repeatability		
5	Working principle	Piezo-Resistive Silicon sensor		
6	Instrument type	Pencil type		
7	Output	4 – 20mA		
8	Loop voltage	12 - 48VAC +/- 10%		
9	Wetted material	SS 316		
10	Proof pressure	Twice the full scale		
11	Enclosure protection	IP65 / Explosion proof		
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