



PRE-Qualification Requirements against the tender

Mandatory Pre-Qualification requirements for RTD as per BHEL specification HW7322697 (Material code-HW7322697022)

Description:

The Duplex platinum resistance temperature detector is used in generators for Measurement of temperature of air, gas and oil. The RTD should be of very reliable and proven design for temperature measurement.

1.0 The vendor should be a regular manufacturer of such RTD with minimum following requirements –

Si No.	Parameter	Value
(i)	Suitable Environment	Tropical ,dusty and humid atmosphere
(ii)	Terminal Block	Ceramic terminal block fixed with the help of spring loaded screw
(iii)	Operating Temperature (Range)	0 C to 150 C
(iv)	Protective Sheath and Extension pipe	SS316 or equivalent
(v)	Resistance element	Resistance value as per IS 2848. Duplex non-inductive wire wound platinum resistance element.
(vi)	IR Test	Should not be less than 100M ohms at room temperature
(vii)	Routine Test	As per IS:2848
(viii)	Type Test	As per IS:2848
(ix)	Terminal head	Die cast aluminum/light metal alloy with protection class-IP65
(x)	Wires	Each of the two RTD elements shall consist of 2 PTFE insulated wires which shall terminate on the terminal block.
(xi)	Connection	Threaded connection for fitting into thermowell.

**Mandatory Pre-Qualification requirements for RTD as per BHEL specification
HW7322697 (Material code-HW7322697022)**

2.0 In support of above serial number-1, vendor shall furnish technical details RTD in below mentioned format for at least one nos. (1) of the P.O. executed in past 10 years (from date of enquiry) along with P.O. copies.

S. No.	Brief technical details	Application	Name & address of customer	Date of supply
1	-Resistance Element -Terminal Head -Routine Test -Type Test			

3.0 Vendor to furnish correlated test certificates against any one of the P.O. submitted as per clause 2.

4.0 Vendor to furnish acceptance certificate from one of the end users of RTD against any one of the P.O. submitted as per clause 2. (Original Certificate or through e-mail directly from the customer). Acceptance certificate should contain information like item details and its application or correlation with P.O.

5.0 The vendor should have in-house manufacturing facilities for manufacturing of RTD. Vendor to furnish details of the manufacturing facilities available at their works along with photographs

6.0 The vendor should have facilities for carrying out the following tests and provide details of test equipment available at their works.

- 1) Insulation Resistance Test
- 2) High Voltage Test
- 3) Resistance Accuracy Test
- 4) Type Test

7.0 The testing facilities available at vendor's works should be duly calibrated against measurement standards traceable to national/international measurement standards. Vendor to confirm the same. Alternatively, vendor to indicate their tie-up with accredited laboratory for performing Type tests or agree to carry out at NABL/ILAC/APLAC approved lab and provide the details for the same.

Note: BHEL reserves the right to verify information submitted by vendor. In case the information is found to be false / incorrect, the offer shall be rejected.

**Mandatory Pre-Qualification requirements for PRTD as per BHEL Specification-
AA7322620 (Material code- HW7322620925)
Indent Number-20212211**

Description:

The Two-wire duplex flat platinum resistance temperature detector is used in generator for Measurement of temperature of stator winding bars. The PRTD should be of very reliable and proven design for temperature measurement.

1.0 The vendor should be a regular manufacturer of such Two-wire duplex flat platinum resistance temperature detector) with minimum following requirements –

Si No.	Parameter	Value
(i)	Suitable Environment	Tropical, humid and dusty atmosphere
(ii)	Minimum dimension	150X10X2 mm
(iii)	Operating Temperature (Range)	0 C to 150 C
(iv)	Leads	Leads shall be of 10/0.193mm stranded copper with PTFE insulation. Insulated wire diameter shall not exceed 2mm.
(v)	Resistance element	Resistance value and tolerance Class-B as per IS 2848. The elements shall be non-inductively wound on a mica strip and suitably encapsulated using epoxy resin.
(vi)	Routine Test	As per IS:2848
(vii)	Type Test	As per IS:2848
(viii)	Pull Test	The leads shall be suitably brazed to the resistance element. Each lead shall withstand Pulling force of 5 kg when applied to each of the leads.

2.0 In support of above serial number-1, vendor shall furnish technical details of Two-wire duplex flat platinum resistance temperature detector in below mentioned format for at least one nos. (1) of the P.O. executed in past 10 years (from date of enquiry) along with P.O. copies.

S. No.	Brief technical details	Application	Name & address of customer	Date of supply
1	-Resistance Element -Routine Test -Type Test			

3.0 Vendor to furnish correlated test certificates against one of the P.O. submitted as per clause 2.

PQR/EME/TG035/14

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**Mandatory Pre-Qualification requirements for PRTD as per BHEL Specification-
AA7322620 (Material code- HW7322620925)
Indent Number-20212211**

- 4.0 Vendor to furnish acceptance certificate from one of the end users of Two-wire duplex flat platinum resistance temperature detector against any one of the P.O. submitted as per clause 2. (Original Certificate or through e-mail directly from the customer). Acceptance certificate should contain information like item details and its application or correlation with P.O.
- 5.0 The vendor should have in-house manufacturing facilities for manufacturing of Two-wire duplex flat platinum resistance temperature detector Vendor to furnish details of the manufacturing facilities available at their works along with photographs
- 6.0 The vendor should have facilities for carrying out the following tests and provide details of test equipment available at their works.
 - 1) Insulation Resistance Test
 - 2) High Voltage Test
 - 3) Resistance Accuracy Test
 - 4) Type Test
- 7.0 The testing facilities available at vendor's works should be duly calibrated against measurement standards traceable to national/international measurement standards. Vendor to confirm the same. Alternatively, vendor to indicate their tie-up with accredited laboratory for performing Type tests or agree to carry out at NABL/ILAC/APLAC approved lab and provide the details for the same.

Note: BHEL reserves the right to verify information submitted by vendor. In case the information is found to be false / incorrect, the offer shall be rejected.

Mandatory Pre-Qualification requirements for RTD for PW Header as per BHEL specification TG60054 (Material code-W96413500425)

Description:

The Duplex platinum resistance temperature detector for primary water header is used in generators for Measurement of temperature of water in water header. The RTD for PW Header should be of very reliable and proven design for temperature measurement.

1.0 The vendor should be a regular manufacturer of such RTD for PW Header with minimum following requirements –

Si No.	Parameter	Value
(i)	Suitable Environment	Tropical and humid atmosphere
(ii)	Terminal Block	Ceramic terminal block fixed with the help of spring loaded screw
(iii)	Operating Temperature (Range)	0 C to 200 C
(iv)	Extension Pipe	X10CrNiTi189 or equivalent
(v)	Resistance element	Resistance value and tolerance as per IS 2848. Duplex non- inductive wire wound platinum resistance element.
(vi)	IR Test	Should not be less than 100M ohms at room temperature
(vii)	Routine Test	As per IS:2848
(viii)	Type Test	As per IS:2848
(ix)	Terminal head	Plastic Form-B as per DIN 43729
(x)	Wires	Each of the two RTD elements shall consist of 2 PTFE insulated wires which shall terminate on the terminal block.
(xi)	Connection	Threaded connection for fitting into thermowell.

Mandatory Pre-Qualification requirements for RTD for PW Header as per BHEL specification TG60054 (Material code-W96413500425)

2.0 In support of above serial number-1, vendor shall furnish technical details RTD for PW Header in below mentioned format for at least one nos. (1) of the P.O. executed in past 10 years (from date of enquiry) along with P.O. copies.

S. No.	Brief technical details	Application	Name & address of customer	Date of supply
1	-Resistance Element -Terminal Head -Routine Test -Type Test			

3.0 Vendor to furnish correlated test certificates against any one of the P.O. submitted as per clause 2.

4.0 Vendor to furnish acceptance certificate from one of the end users of RTD for PW Header against any one of the P.O. submitted as per clause 2. (Original Certificate or through e-mail directly from the customer). Acceptance certificate should contain information like item details and its application or correlation with P.O.

5.0 The vendor should have in-house manufacturing facilities for manufacturing of RTD for PW Header. Vendor to furnish details of the manufacturing facilities available at their works along with photographs

6.0 The vendor should have facilities for carrying out the following tests and provide details of test equipment available at their works.

- 1) Insulation Resistance Test
- 2) High Voltage Test
- 3) Resistance Accuracy Test
- 4) Type Test

7.0 The testing facilities available at vendor's works should be duly calibrated against measurement standards traceable to national/international measurement standards. Vendor to confirm the same. Alternatively, vendor to indicate their tie-up with accredited laboratory for performing Type tests or agree to carry out at NABL/ILAC/APLAC approved lab and provide the details for the same.

Note: BHEL reserves the right to verify information submitted by vendor. In case the information is found to be false / incorrect, the offer shall be rejected.

**Mandatory Pre-Qualification requirements for PRTD as per BHEL Specification-
AA7322622 (Material code- HW7322622979)
Indent Number- 20212474**

Description:

The duplex cylindrical platinum resistance temperature detector is used in generator for Measurement of temperature of bearing bushes. The PRTD should be of very reliable and proven design for temperature measurement.

- 1.0 The vendor should be a regular manufacturer of such duplex cylindrical platinum resistance temperature detector) with minimum following requirements –

Si No.	Parameter	Value
(i)	Minimum dimension	Dia4 mm and length 25mm
(ii)	Operating Temperature (Range)	0 C to 200 C and above
(iii)	Resistance element	Resistance value and tolerance Class-B as per IS 2848. The elements shall be non-inductively wound on a mica strip and suitably encapsulated using epoxy resin.
(iv)	Routine Test	As per IS:2848
(v)	Type Test	As per IS:2848

- 2.0 In support of above serial number-1, vendor shall furnish technical details of duplex cylindrical platinum resistance temperature detector in below mentioned format for at least one nos. (1) of the P.O. executed in past 10 years (from date of enquiry) along with P.O. copies.

S. No.	Brief technical details	Application	Name & address of customer	Date of supply
1	-Resistance Element -Routine Test -Type Test			

- 3.0 Vendor to furnish correlated test certificates against one of the P.O. submitted as per clause 2.
- 4.0 Vendor to furnish acceptance certificate from one of the end users of duplex cylindrical platinum resistance temperature detector against any one of the P.O. submitted as per clause 2. (Original Certificate or through e-mail directly from the customer).
- 5.0 The vendor should have in-house manufacturing facilities for manufacturing of duplex cylindrical platinum resistance temperature detector Vendor to furnish details of the manufacturing facilities available at their works along with photographs.

**Mandatory Pre-Qualification requirements for PRTD as per BHEL Specification-
AA7322622 (Material code- HW7322622979)
Indent Number- 20212474**


- 6.0 The testing facilities available at vendor's works should be duly calibrated against measurement standards traceable to national/international measurement standards. Vendor to confirm the same. Alternatively, vendor to indicate their tie-up with accredited laboratory for performing Type tests or agree to carry out at NABL/ILAC/APLAC approved lab and provide the details for the same.


Note: BHEL reserves the right to verify information submitted by vendor. In case the information is found to be false / incorrect, the offer shall be rejected.

Quality requirement for tender

INSPECTION BY BHEL NOMINATED INSPECTION AGENCY (BVL) AS PER BHEL SQP "QA/BE/QP/908, REV. 07". VENDOR TO ENDORSE THE ATTACHED QP.

STANDARD QUALITY PLAN										Page 1 of 3		
QPNO : QA/BE/QP/908 SPECNO: As Per PO DRG : As Per PO		REV.NO. : 07 REV.NO. : -- REV.NO. : --		DESCRIPTION: (MATERIAL, CLASS, GRADE, RATING, SIZE ETC): PLATINUM RESISTANCE TEMPERATURE DETECTORS & ASSEMBLIES WITH THERMOWELL						LEGENDS: P-PERFORMED BY 1-BHEL REP. W-WITNESS BY 2-VENDOR V-VERIFIED BY 3-SUB-VENDOR		
SL NO.	COMPONENT/ OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY P W V			REMARKS
1	2	3	4	5	6	7	8	9	10	11	12	13
1.00	Raw Material											
1.01	Resistance Element	Material Grade, Type & Resistance Characteristics.	Major	Visual / Electrical	1 Sample / Lot	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Test Report* / Internal Records*	2	-	1	
1.02	Cable for RTD	Continuity	Major	Electrical	1 Sample / Lot	Mfg. Specn	Mfg. Specn	Internal Record	2	-	1	If Applicable
1.03	Protecting Sheath, Terminal Head & Spring	Material Type / Grade	Major	Chemical / Physical	1 Sample / Lot	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Test Report* / Internal Records*	2	-	1	
1.04	Extension Pipe & Thermowell	Chemical Analysis & Physical Properties	Major	Chemical / Physical	1 Sample / Lot	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Test Report* / Internal Records*	2	-	1	
2.00	Fitting & Assembly	Soundness of Embedment / Fitting / Connections & Terminal Marking	Major	Physical	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Internal Records	2	-	-	
3.00	Type Tests											Note: 3
4.00	Routine Tests											Note: 5
4.01		Visual and Dimensions	Major	Visual / Measurement	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Inspection Report*	2	1	-	
4.02		Resistance Accuracy	Major	Electrical	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Test Report*	2	1	-	
4.03		Pull out	Major	Physical	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Test Report*	2	1	-	Note: 2
4.04		Continuity	Major	Electrical	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Test Report*	2	1	-	
4.05		Insulation Resistance	Major	Electrical	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Test Report*	2	1	-	

 STANDARD QUALITY PLAN										Page 2 of 3		
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SL NO.	COMPONENT/ OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY P W V	REMARKS		
1	2	3	4	5	6	7	8	9	10 11 12	13		
4.06		High Voltage	Major	Electrical	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Test Report*	2 1 -	Note: 2		
4.07		Weld closure conformity	Major	Mechanical	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Inspection Report*	2 1 -	If Applicable		
4.08		Bore Concentricity & Dimensions of Thermowell including process connections.	Major	Measurement	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Inspection Report*	2 1 -	Note: 2 & BHEL Check Critical Dimensions		
4.09		Easy Opening / Closing of Terminal Head Cover / Operating of Spring Loaded Insert (Applicable for Terminal Head Type RTDs).	Major	Physical	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Inspection Report*	2 1 -	Note: 2		
4.10		Hydraulic on Thermowell	Major	Hydraulic	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	Test Report*	2 1 -	Note: 2		
4.11		Compliance of Technical Requirements	Major	--	100%	Ordering Specn / BHEL Appd Drawing.	Ordering Specn / BHEL Appd Drawing.	COC*	2 - -			
4.12		Completeness of TCs, COCs, & Inspection Reports	Major	Physical	100%	Ordering Specn./ BHEL Appd Drawing / QP/ PO	Ordering Specn./ BHEL Appd Drawing / QP/ PO	Documents*	2 - 1			
5.00	Identification / Marking & Packing											
5.01		Identification Marking / Firmness of Tagging of Each Instrument	Major	Visual	100%	Ordering Specn.	Ordering Specn.	Internal Records	2 - 1			
5.02		Soundness of Packing Against Transit Damage	Major	Physical	100%	Ordering Specn./ Vendor's STD	Ordering Specn./ Vendor's STD	Internal Records	2 - -			

 STANDARD QUALITY PLAN										Page 3 of 3		
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SL NO.	COMPONENT/ OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY P W V	REMARKS		
1	2	3	4	5	6	7	8	9	10 11 12	13		

NOTE:-

- Records as marked * shall essentially be submitted by vendor as QA documentation package.
- If applicable as per ordering specification, BHEL approved Drawing / BHEL Appd Data Sheet.
- Type tests clearance from BHEL Engineering to be verified by inspection engineer during inspection at vendor's works.
- Manufacturer to maintain calibrated instruments having better accuracy than the item under the test. Inspection engineer shall check the same.
- Witness by inspection agency to be random 10% of each material code (minimum 1 pieces per material code) from each lot. However vendor to carry out 100% tests internally and tests report shall be reviewed by inspection engineer during inspection at Vendor's works.

Note: -

- BHEL will consider only those bidders for technical scrutiny, who will qualify pre - qualification requirement.

COMPLIANCE SHEET FOR TECHNICAL/COMMERCIAL TERMS AND CONDITIONS as per GISTC

Quotation against Enquiry No. _____ Dated: _____ Due on: _____

BHEL Standard Terms	Vendor's Acceptance
<p>1. Payment terms:</p> <p>a) Payment term should be <u>100% payment After Receipt & Acceptance of Material.</u></p> <p>b) Bank Charges shall be Not Applicable.</p> <p><i>“Please note that in case of any deviation in the payment term, BHEL shall evaluate your offer after loading on account of deviation in payment term and loading factor shall be as per GISTC.”</i></p>	
<p>2.TAXES : TAXES & DUTIES: Rate of GST must be indicated in your offer even if it is inclusive.</p>	
<p>i. Rate of GST</p>	
<p>ii. Input Tax Credit Shall be available</p>	
<p>iii. Any Other Duty:</p>	
<p>3. Packing Charges shall be included in quoted basic rates.</p>	
<p>4. Forwarding Charges shall be included in quoted basic rates.</p>	
<p>5. Delivery basis: On “FOR BHEL Haridwar” Basis & Freight charges shall be inclusive in quoted basic rates.</p>	
<p>6. Delivery Period: Please quote your shortest time period required for supply of material.</p>	
<p>7. Dispatch of Material: Items should be dispatched through BHEL approved transporters, however Indian bank approved transporters having their branch at Hardwar (details available at www.bhelhwr.co.in) may be considered for dispatch of material. However in case dispatch through IBA approved transporter demurrage/any other charges shall be borne by supplier. In case dispatch made through un-approved transporters payment shall be made after receipt & acceptance of material only and demurrage/any other charges shall be borne by supplier.</p>	
<p>8. Transit insurance will be arranged by BHEL for which immediate intimation of dispatch is required as indicated in purchase order.</p>	
<p>9. Late delivery penalty Clause:</p> <p>Liquidated Damages (LD) for Late Deliveries shall be applicable @0.5% per week or part thereof on the value of respective delayed supplies subject to a maximum of 10% of the value of respective delayed supplies. Value of delayed supplies will mean the Gross Value payable to the vendor (Before LD) against such supplies excluding taxes and duties..</p>	

<p>10. Drawing / data approval: (If applicable) Any drawing / data approval required from BHEL after placement of order Shall be submitted within 15 days of ordering and BHEL will ensure to provide approval within 15 days. Any delay beyond this period will be liability of the party at which end delay occurred. Further no change is acceptable in drawing/data after finalization of the offer.</p>	
<p>11. Authorization for Pre-inspection: BHEL is authorized to get pre inspect the material at vendor’s works by BHEL/BHEL nominated agency. inspection report.</p> <ul style="list-style-type: none"> • Pre dispatch inspection (PDI) call should be given at least 15 days in advance of schedule delivery. If supplier fails to give pre-inspection call with in stipulated time, this will not be a reason of penalty waiver or delivery extension. 	
<p>12. Offer Validity: Validity of the offer should be minimum 120 days from tender opening date.</p>	
<p>13. Confirm that there is no deviation with respect to BHEL Specifications/drawings. However, deviations, if any, are to be listed as a separate attachment. The offers that do not meet the substantial requirements of our enquiry are liable to be ignored.</p>	
<p>14. Please note that 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 specifications/ requirement/ scope/terms and conditions, the bidders may be asked by BHEL to submit only the price impact bid for such changes only.</p>	
<p>15. Origin of Quotation: The quotation should be from the principal/original supplier even if it is submitted through their authorized agents, failing which the quotation is liable to be ignored. Also the name of principal supplier should be indicated on envelop in addition to Enquiry no and due date.</p>	
<p>16. Pl. Confirm that the prices will remain firm during the entire validity and execution of the Project.</p>	
<p>17. Test Certificate as per BHEL Specification / drawing shall be provided along with dispatch documents.</p>	
<p>18. Guarantee certificate as per BHEL Specification shall be provided along with dispatch documents.</p>	
<p>19. Quality requirement: TESTING AND CERTIFICATION IS REQUIRED AS PER ORDERING DRAWING AND SPECIFICATION</p>	

20. Documents requirement confirmation:

1. Kindly ensure to submit PQR clause wise documents as per Annexure-A.
2. Vendors to submit detail QAP covering raw material stage, in-process checks & final inspection for BHEL approval (QAP format attached).

Note: Attach separate sheet for additional information if necessary. The above terms & condition supersedes the terms & conditions found contradictory written elsewhere in the tender enquiry and offer of bidder.

Vendors are requested to comment on each applicable clause and write as "NA" if not applicable. Please attach this sheet with your techno-commercial offer.

Signature with stamp